NCES

National Center for
Education Statistics

U.S. Department of Education
Institute of Education Sciences
NCES 2006-613

Education Statistics Quarterly

Volume 6, Issue 4, 2004

Editorial Note

National Center for Education Statistics

The National Center for Education Statistics (NCES) fulfills a congressional mandate to collect and report "statistics and information showing the condition and progress of education in the United States and other nations in order to promote and accelerate the improvement of American education."

Education Statistics Quarterly

Purpose and goals

At NCES, we are convinced that good data lead to good decisions about education. The *Education Statistics Quarterly* is part of an overall effort to make reliable data more accessible. Goals include providing a quick way to

- identify information of interest;
- review key facts, figures, and summary information; and
- obtain references to detailed data and analyses.

Content

The *Quarterly* gives a comprehensive overview of work done across all parts of NCES. Each issue includes short publications, summaries, and descriptions that cover all NCES publications and data products released during a 3-month period. To further stimulate ideas and discussion, each issue also incorporates

- a message from NCES on an important and timely subject in education statistics; and
- a featured topic of enduring importance with invited commentary.

A complete annual index of NCES publications appears in the fourth issue of each volume. Publications in the *Quarterly* have been technically reviewed for content and statistical accuracy.

General note about the data and interpretations

Many NCES publications present data that are based on representative samples and thus are subject to sampling variability. In these cases, tests for statistical significance take both the study design and the number of comparisons into account. NCES publications only discuss differences that are significant at the 95 percent confidence level or higher. Because of variations in study design, differences of roughly the same magnitude can be statistically significant in some cases but not in others. In addition, results from surveys are subject to nonsampling errors. In the design, conduct, and data processing of NCES surveys, efforts are made to minimize the effects of nonsampling errors, such as item nonresponse, measurement error, data processing error, and other systematic error.

For complete technical details about data and methodology, including sample sizes, response rates, and other indicators of survey quality, we encourage readers to examine the detailed reports referenced in each article.

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Note From NCES

Val Plisko, Associate Commissioner,
Early Childhood, International, and Crosscutting Studies Division

Comparing U.S. Students' Performance Internationally: Results From the 2003 TIMSS and PISA

The National Center for Education Statistics (NCES) participates in several international assessment programs to compare the achievement of students in the United States to that of students in other countries. It recently released findings from two of these assessments, the Trends in International Mathematics and Science Study (TIMSS) (formerly known as the Third International Mathematics and Science Study) and the Program for International Student Assessment (PISA), both conducted in 2003, which are the focus of this issue of the *Quarterly*. TIMSS, organized internationally by the International Association for the Evaluation of Educational Achievement (IEA), is an assessment in math and science. Much like the National Assessment of Educational Progress in this country, TIMSS tests students' mastery of the curricula expected to be taught. Beginning in 1995 and with subsequent assessments in 1999 and 2003, TIMSS is conducted on a 4-year cycle. Testing was conducted in the United States at the 4th, 8th, and 12th grades in 1995; at the 8th grade in 1999; and at the 4th and 8th grades in 2003.

The framework that guides the development of TIMSS is based on expert judgment of the content that is expected to be taught at the 4th and 8th grades in participating countries. The same assessment is administered in each participating nation, except for the language that it is given in, and can help to distinguish the knowledge level of students in the same grades in different countries.

Although the makeup of the groups of nations participating in TIMSS has varied, the United States has participated in each administration at each grade level. In 2003, 46 nations participated at one or both grades. For 15 nations, trend data are available for 4th-graders from 1995 to 2003; for 34 nations, trend data are available for 8th-graders from either 1995 or 1999 to 2003.

PISA, which is organized internationally by the Organization for Economic Cooperation and Development (OECD), is on a 3-year cycle and was conducted in 2000 and 2003. PISA assesses students at age 15, regardless of grade. Three areas are assessed in each administration of PISA—reading literacy, mathematics literacy, and science literacy—with one area being the focus of the assessment. The focus area includes more items in the assessment and receives a more detailed analysis and reporting of results. In 2003, the area of focus was mathematics literacy.

Literacy is defined in PISA as the ability to apply knowledge and skills gained in school or elsewhere to a broad range of situations. To test students' literacy, assessment items are therefore set in situations, or use materials, from everyday life whose solutions require the application of subject-area knowledge. Math items, for example, often use charts or graphs that students need to understand in order to solve the problem that is presented.

Participating countries are required to draw samples that are nationally representative. In 2003, almost 19,000 U.S. students participated in TIMSS and almost 5,500 U.S. students participated in PISA, drawn from public and private schools sampled across the country.

How TIMSS and PISA Differ

What is assessed

Perhaps most significantly, TIMSS and PISA differ in what they test. Whereas TIMSS tests students' mastery of the specific knowledge, skills, and concepts that are typically taught as part of school curricula, PISA tests students' ability to apply what they have learned to real-life situations. Thus, assessment items in PISA are presented in a variety of situations that students might encounter. The different emphases also are reflected in a difference in the format of the assessments: About two-thirds of the items in TIMSS are multiple choice, compared to about one-third of the items in PISA. PISA relies more heavily on constructed-response, or open-ended, items.

Students and countries assessed

Another important distinction between the two assessments is that TIMSS student samples are selected by grade, whereas PISA student samples are selected by age. While TIMSS focuses on assessing curricular learning at consistent grade levels in participating countries, PISA focuses on assessing the "yield" of education systems as students make the transition from school to society at large. PISA assesses students only at age 15; in 2003, 61 percent of the U.S. students participating in PISA were in the 10th grade. Similarly, most PISA students in other participating countries are also in a grade that is near the end of compulsory schooling.

Finally, the characteristics of the groups of participating countries differ. The 46 countries that participated in TIMSS in 2003 represent a wide range of development, with only 13 belonging to the OECD, and the international averages that are reported include all participating countries. In contrast, in 2003, participants in PISA included all 30 member countries of the OECD as well as 11 other countries. Thus, the participants in PISA are weighted toward developed countries. Furthermore, the international averages that are reported for PISA include only the OECD countries.

Because of these differences, TIMSS and PISA provide different kinds of information about different sample populations. The studies are complementary, but the results are not directly comparable.

Assessing problem-solving skills

In TIMSS, the assessment frameworks for grades 4 and 8 in 2003 included "problem-solving and inquiry" tasks. These tasks assessed how well students can "draw on and integrate information and processes in mathematics and science to solve problems." The problem-solving and inquiry tasks were embedded in the TIMSS math and science items and did not receive a separate score.

In PISA, each administration, in addition to literacy areas, assesses a different cross-curricular competency that is not repeated in following administrations. Unlike the problem-solving and inquiry tasks in TIMSS, the cross-curricular items are distinct from the literacy items

and receive a separate score. In 2003, the competency that was assessed was problem solving. To solve problem-solving items, students apply multistep reasoning to novel situations. Three types of problem-solving items were presented: "system analysis and design, where students had to use information about a complex situation to analyze or design a system that met stated goals; troubleshooting, where students had to understand the reasons behind a malfunctioning device or system; and decisionmaking, where students had to make decisions based on a variety of alternatives and constraints."

* * * * * * *

The results for TIMSS tell us that U.S. 4th- and 8th-graders scored higher than the international averages in math and science in 2003; however, between 1995 and 2003, while U.S. 8th-graders' scores and international standing increased, U.S. 4th-graders' scores remained the same and their standing decreased. The results for PISA show us that U.S. 15-year-olds in 2003 scored lower, on average, in math literacy and problem solving than the OECD averages. Despite the differences between the two assessments, both document that a number of Asian and European countries outperformed the United States in these critical areas in 2003. Joan Ferrini-Mundy, University Distinguished Professor, Michigan State University, discusses these and other findings as well as their implications in the invited commentary in this issue of the *Quarterly*. Highlighted findings from TIMSS 2003 and PISA 2003 are presented in the excerpts of the recently released reports that precede the commentary.

Featured Topic: International Assessments

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TIMSS 2003 Highlights

Highlights From the Trends in International Mathematics and Science Study (TIMSS) 2003

Patrick Gonzales, Juan Carlos Guzmán, Lisette Partelow, Erin Pahlke, Leslie Jocelyn, David Kastberg, and Trevor Williams

This article was originally published as the Introduction and Summary of the Statistical Analysis Report of the same name. The sample survey data are from the Trends in International Mathematics and Science Study (TIMSS).

Introduction

The 2003 Trends in International Mathematics and Science Study (TIMSS) is the third comparison of mathematics and science achievement carried out since 1995 by the International Association for the Evaluation of Educational Achievement (IEA), an international organization of national research institutions and governmental research agencies. TIMSS can be used to track changes in achievement over time. Moreover, TIMSS is closely linked to the curricula of the participating countries, providing an indication of the degree to which students have learned concepts in mathematics and science they have encountered in school. In 2003, some 46 countries participated in TIMSS, at either the fourth- or eighth-grade level, or both.

This summary highlights initial findings on the performance of U.S. fourth- and eighth grade students relative to their peers in other countries on the TIMSS assessment. The summary is based on the findings presented in two reports published by the IEA:

- *TIMSS 2003 International Mathematics Report: Findings From IEA's Trends in International Mathematics and Science Study at the Eighth and Fourth Grades* (Mullis et al. 2004); and

- *TIMSS 2003 International Science Report: Findings From IEA's Trends in International Mathematics and Science Study at the Eighth and Fourth Grades* (Martin et al. 2004).

These two IEA reports were simultaneously published with this summary report and are available online at http://www.timss.org.

This summary report describes the mathematics and science performance of fourth- and eighth-graders in participating countries over time. For a number of the participating countries, changes in mathematics and science achievement can be documented over 8 years, from 1995 to 2003. For others, changes can be documented over a shorter period of time, 4 years (from 1999 to 2003). Table A shows the countries that participated in TIMSS 2003, and their participation in earlier TIMSS data collections.* The fourth-grade assessment was offered in 1995 and 2003, while the eighth-grade assessment was offered in 1995, 1999, and 2003.

*Table A7 in appendix A of the full report groups the participating countries by continent and membership in the Organization for Economic Cooperation and Development (OECD), an intergovernmental organization of 30 industrialized countries that serves as a forum for members to cooperate in research and policy development on social and economic topics of common interest.

Average student performance in the United States is compared to that of students in other countries that participated in each assessment:

- At fourth grade, comparisons are made among students in the 25 countries that participated in TIMSS 2003, and in the 15 countries that participated in TIMSS 2003 and TIMSS 1995.
- At eighth grade, comparisons are made among students in the 45 countries that participated in TIMSS 2003, and in the 34 countries that participated in TIMSS 2003 and at least one earlier data collection, either TIMSS 1995 or 1999, or both.
- All estimates for the United States are based on the performance of students from both public and private schools, unless otherwise indicated.

All countries that participated in TIMSS 2003 were required to draw random, nationally representative samples of students and schools. The U.S. fourth-grade sample achieved an initial school response rate of 70 percent (weighted), with a school response rate of 82 percent after replacement schools were added. From the schools that agreed to

Table A. Participation in the TIMSS fourth-grade and eighth-grade assessments, by country: 1995, 1999, and 2003

	Fourth grade		Eighth grade		
Country	1995	2003	1995	1999	2003
Total	15	25	22	29	45
Armenia		✓			✓
Australia[1]	✓	✓	✓		✓
Bahrain					✓
Belgium-Flemish[2]		✓	✓	✓	✓
Botswana					✓
Bulgaria			✓	✓	✓
Chile				✓	✓
Chinese Taipei		✓		✓	✓
Cyprus	✓	✓	✓	✓	✓
England[3]	✓	✓			
Egypt					✓
Estonia					✓
Ghana					✓
Hong Kong SAR[4]	✓	✓	✓	✓	✓
Hungary	✓	✓	✓	✓	✓
Indonesia				✓	✓
Iran, Islamic Republic of	✓	✓	✓	✓	✓
Israel[5]				✓	✓
Italy[5]		✓		✓	✓

See notes at end of table.

Table A. Participation in the TIMSS fourth-grade and eighth-grade assessments, by country: 1995, 1999, and 2003—Continued

	Fourth grade		Eighth grade		
Country	1995	2003	1995	1999	2003
Japan	✓	✓	✓	✓	✓
Jordan				✓	✓
Korea, Republic of			✓	✓	✓
Latvia[6]	✓	✓	✓	✓	✓
Lebanon					✓
Lithuania		✓	✓	✓	✓
Macedonia, Republic of				✓	✓
Malaysia				✓	✓
Moldova, Republic of		✓		✓	✓
Morocco[5]		✓			✓
Netherlands	✓	✓	✓	✓	✓
New Zealand	✓	✓	✓	✓	✓
Norway	✓	✓	✓		✓
Palestinian National Authority					✓
Philippines		✓		✓	✓
Romania			✓	✓	✓
Russian Federation		✓	✓	✓	✓
Saudi Arabia					✓
Scotland	✓	✓	✓		✓
Serbia					✓
Singapore	✓	✓	✓	✓	✓
Slovak Republic			✓	✓	✓
Slovenia[1]	✓	✓	✓		✓
South Africa[7]				✓	✓
Sweden			✓		✓
Tunisia		✓		✓	✓
United States	✓	✓	✓	✓	✓

[1]Because of national-level changes in the starting age/date for school, 1999 data for Australia and Slovenia cannot be compared to 2003.
[2]Only the Flemish education system in Belgium participated in TIMSS in 2003.
[3]England collected data at grade 8 in 1995, 1999, and 2003, but due to problems with meeting the minimum sampling requirements for 2003, its eighth-grade data are not shown in this report.
[4]Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.
[5]Because of changes in the population tested, 1995 data for Israel and Italy, and 1999 data for Morocco are not shown.
[6]Only Latvian-speaking schools were included in 1995 and 1999. For trend analyses, only Latvian-speaking schools are included in the estimates.
[7]Because within-classroom sampling was not accounted for, 1995 data are not shown for South Africa.
NOTE: Countries that participated in 1995 and 1999 but did not participate in 2003 are not shown. Only countries that completed the necessary steps for their data to appear in the reports from the International Study Center are listed. In addition to the countries listed above, four separate jurisdictions participated in TIMSS 2003: the provinces of Ontario and Quebec in Canada; the Basque region of Spain; and the state of Indiana. Information on these four jurisdictions can be found in the international TIMSS 2003 reports. The Syrian Arab Republic participated in TIMSS 2003 at the eighth-grade level, but due to sampling difficulties, it is not shown in this report. Yemen participated in TIMSS 2003 at the fourth-grade level, but because it did not comply with the minimum sample requirements, it is not shown in this report. Countries could participate at either grade level. Countries were required to sample students in the upper of the two grades that contained the largest number of 9-year-olds and 13-year-olds, respectively. In the United States and most countries, this corresponds to grade 4 and grade 8. See table A1 in appendix A of the full report for details.
SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, 1999, and 2003. (Originally published as table 1 on pp. 1–2 of the complete report from which this article is excerpted.)

participate, students were sampled in intact classes. A total of 10,795 fourth-grade students were sampled for the assessment and 9,829 participated, for a 95 percent student response rate. The resulting fourth-grade overall response rate, with replacements included, was 78 percent. The U.S. eighth-grade sample achieved an initial school response rate of 71 percent, with a school response rate of 78 percent after replacement schools were added. A total of 9,891 students were sampled for the eighth-grade assessment and 8,912 completed the assessment, for a 94 percent student response

rate. The resulting eighth-grade overall response rate, with replacements included, was 73 percent.

In addition to the assessments, students, their teachers, and principals were asked to complete questionnaires related to their school and learning experiences. At fourth grade, the assessment took approximately 72 minutes to complete. At eighth grade, the assessment took approximately 90 minutes. Detailed information on data collection, sampling, response rates, test development and design, weighting, and scaling is included in appendix A of the full report. Example items from the fourth- and eighth-grade assessments are included in appendix B of the full report.

Comparisons made in this report have been tested for statistical significance at the .05 level. Differences between averages or percentages that are statistically significant are discussed using comparative terms such as "higher" and "lower." Differences that are not statistically significant are either not discussed or referred to as "no measurable differences found" or "not statistically significant." In this latter case, failure to find a statistically significant difference should not be interpreted to mean that the estimates are the same or similar; rather, failure to find a difference may also be due to measurement or sampling error. Information on the technical aspects of the study can be found in appendix A of the full report, as well as in the *TIMSS 2003 Technical Report* (Martin, Mullis, and Chrostowski 2004).

Detailed tables with estimates and standard errors for all analyses included in this report are provided in appendix C of the full report. A list of TIMSS publications and resources published by the National Center for Education Statistics (NCES) and the IEA is provided in appendix E of the full report.

Summary

Looking across the results in mathematics and science, the following points can be made:

- In 2003, fourth-graders in 3 countries—Chinese Taipei, Japan, and Singapore—outperformed U.S. fourth-graders in both mathematics and science, while students in 13 countries turned in lower average mathematics and science scores than U.S. students. U.S. fourth-grade students outperformed their peers in five OECD member countries (Australia, Italy, New Zealand, Norway, and Scotland), of which three are English-speaking countries (Australia, New Zealand, and Scotland).
- No measurable changes were detected in the average mathematics and science scores of U.S. fourth-graders between 1995 and 2003. Moreover, the available data suggest that the performance of U.S. fourth-graders in both mathematics and science was lower in 2003 than in 1995 relative to the 14 other countries that also participated in both studies (tables B and C).
- On the other hand, fourth-grade students in six countries showed improvement in both average mathematics and science scores between 1995 and 2003: Cyprus, England, Hong Kong SAR, Latvia-LSS, New Zealand, and Slovenia. At the same time, fourth-graders in Norway showed measurable declines in average mathematics and science achievement over the same time period.
- U.S. fourth-grade girls showed no measurable change in their average performance in mathematics and science between 1995 and 2003 (figures A and B). U.S. fourth-grade boys also showed no measurable change in their average mathematics performance, but did show a measurable decline in science performance over the same time period.
- U.S. Black fourth-graders improved in both mathematics and science between 1995 and 2003 (figures A and B). Hispanic fourth-graders showed no measurable changes in either subject, while White fourth-graders showed no measurable change in mathematics, but declined in science.
- As a result of changes in the performance of Black and White fourth-graders, the gap in achievement between White and Black fourth-grade students in the United States narrowed between 1995 and 2003 in both mathematics and science (figures A and B). In addition, the gap in achievement between Black and Hispanic fourth-graders also narrowed in science over the same time period.
- In 2003, U.S. fourth-graders in U.S. public schools with the highest poverty levels (75 percent or more of students eligible for free or reduced-price lunch) had lower average mathematics and science scores compared to their counterparts in public schools with lower poverty levels (figures A and B).

Table B. Average mathematics scale scores of fourth-grade students, by country: 1995 and 2003

Country	1995	Country	2003
Singapore	590	Singapore	594
Japan	567	Hong Kong SAR[1,2]	575
Hong Kong SAR[1,2]	557	Japan	565
(Netherlands)	549	Netherlands[1]	540
(Hungary)	521	Latvia-LSS[3]	533
United States	**518**	England[1]	531
(Latvia-LSS)[3]	499	Hungary	529
(Australia)	495	**United States[1]**	**518**
Scotland	493	Cyprus	510
England	484	Australia[1]	499
Norway	476	New Zealand[4]	496
Cyprus	475	Scotland[1]	490
New Zealand[4]	469	Slovenia	479
(Slovenia)	462	Norway	451
Iran, Islamic Republic of	387	Iran, Islamic Republic of	389

■ Average is higher than the U.S. average
□ Average is not measurably different from the U.S. average
■ Average is lower than the U.S. average

[1]Met international guidelines for participation rates in 2003 only after replacement schools were included.
[2]Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.
[3]Designated LSS because only Latvian-speaking schools were included in 1995. For this analysis, only Latvian-speaking schools are included in the 2003 average.
[4]In 1995, Maori-speaking students did not participate. Estimates in this table are computed for students taught in English only, which represents between 98–99 percent of the student population in both years.
NOTE: Countries are ordered based on the average score. Parentheses indicate countries that did not meet international sampling or other guidelines in 1995. All countries met international sampling and other guidelines in 2003, except as noted. See NCES (1997) for details regarding 1995 data. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between the United States and one country may be significant while a large difference between the United States and another country may not be significant. Countries were required to sample students in the upper of the two grades that contained the most number of 9-year-olds. In the United States and most countries, this corresponds to grade 4. See table A1 in appendix A of the full report for details.
SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2003. (Originally published as table 6 on p. 8 of the complete report from which this article is excerpted.)

- Eighth-graders in the five Asian countries that outperformed U.S. eighth-graders in mathematics in 2003—Chinese Taipei, Hong Kong SAR, Japan, Korea, and Singapore—also outperformed U.S. eighth-graders in science in 2003, with eighth-graders in Estonia and Hungary performing better than U.S. students in mathematics and science as well. Students in three of these Asian countries—Chinese Taipei, Japan, and Singapore—outperformed both U.S. fourth- and eighth-graders in mathematics and science on average.

- U.S. eighth-graders improved their average mathematics and science performances in 2003 compared to 1995. The growth in achievement occurred primarily between 1995 and 1999 in mathematics, and between 1999 and 2003 in science. Moreover, the available data suggest that the performance of U.S. eighth-graders in both mathematics and science was higher in 2003 than it was in 1995 relative to the 21 other countries that participated in the studies (tables D and E).

Table C. Average science scale scores of fourth-grade students, by country: 1995 and 2003

Country	1995	Country	2003
Japan	553	Singapore	565
United States	**542**	Japan	543
(Netherlands)	530	Hong Kong SAR[1,2]	542
England	528	England[1]	540
Singapore	523	**United States[1]**	**536**
(Australia)	521	Hungary	530
Scotland	514	Latvia-LSS[3]	530
Hong Kong SAR[2]	508	Netherlands[1]	525
(Hungary)	508	New Zealand[4]	523
New Zealand[4]	505	Australia[1]	521
Norway	504	Scotland[1]	502
(Latvia-LSS)[3]	486	Slovenia	490
(Slovenia)	464	Cyprus	480
Cyprus	450	Norway	466
Iran, Islamic Republic of	380	Iran, Islamic Republic of	414

■ Average is higher than the U.S. average
□ Average is not measurably different from the U.S. average
■ Average is lower than the U.S. average

[1]Met international guidelines for participation rates in 2003 only after replacement schools were included.
[2]Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.
[3]Designated LSS because only Latvian-speaking schools were included in 1995. For this analysis, only Latvian-speaking schools are included in the 2003 average.
[4]In 1995, Maori-speaking students did not participate. Estimates in this table are computed for students taught in English only, which represents between 98–99 percent of the student population in both years.
NOTE: Countries are ordered based on the average score. Parentheses indicate countries that did not meet international sampling or other guidelines in 1995. All countries met international sampling and other guidelines in 2003, except as noted. See NCES (1997) for details for 1995 data. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between the United States and one country may be significant while a large difference between the United States and another country may not be significant. Countries were required to sample students in the upper of the two grades that contained the most number of 9-year-olds. In the United States and most countries, this corresponds to grade 4. See table A1 in appendix A of the full report for details.
SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2003. (Originally published as table 12 on p. 18 of the complete report from which this article is excerpted.)

- In addition to students in the United States, eighth-graders in six other countries showed significant increases in both mathematics and science in 2003 compared to either 1999 or 1995: Hong Kong SAR, Israel, Korea, Latvia-LSS, Lithuania, and the Philippines. On the other hand, eighth-graders in nine countries declined in their mathematics and science performance in 2003 compared to either 1999 or 1995.

- In 2003, U.S. eighth-grade boys and girls, and U.S. eighth-grade Blacks and Hispanics, improved their mathematics and science performances from 1995 (figures C and D). As a result, the gap in achievement between White and Black eighth-graders narrowed in both mathematics and science over this time period.

- In 2003, U.S. eighth-graders in U.S. public schools with the highest poverty levels (75 percent or more of students eligible for free or reduced-price lunch) had lower average mathematics and science scores compared to their counterparts in public schools with lower poverty levels (figures C and D).

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Data Source: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995, 1999, and 2003.

For technical information, see the complete report:

Gonzales, P., Guzmán, J.C., Partelow, L., Pahlke, E., Jocelyn, L., Kastberg, D., and Williams, T. (2004). *Highlights From the Trends in International Mathematics and Science Study (TIMSS) 2003* (NCES 2005-005).

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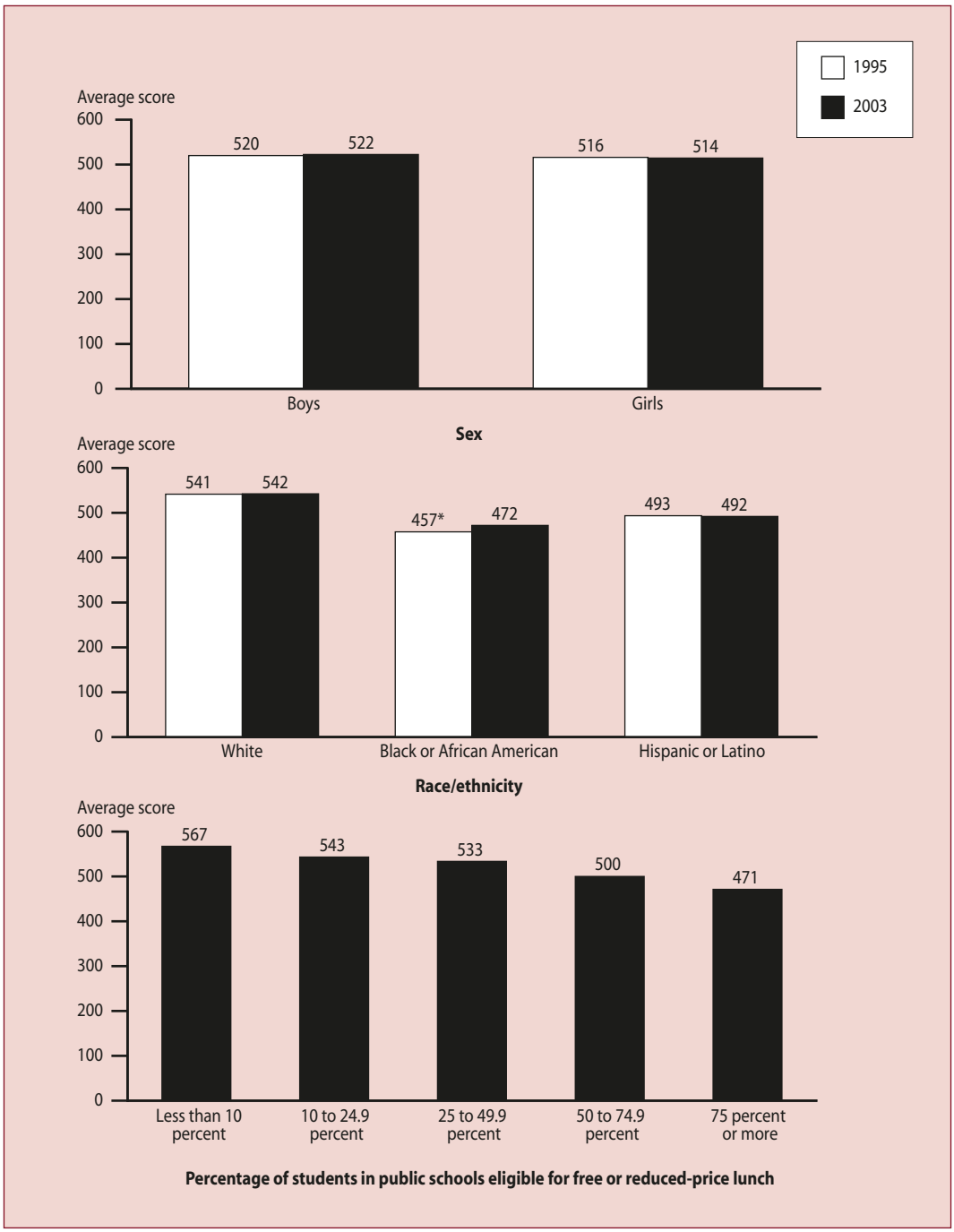
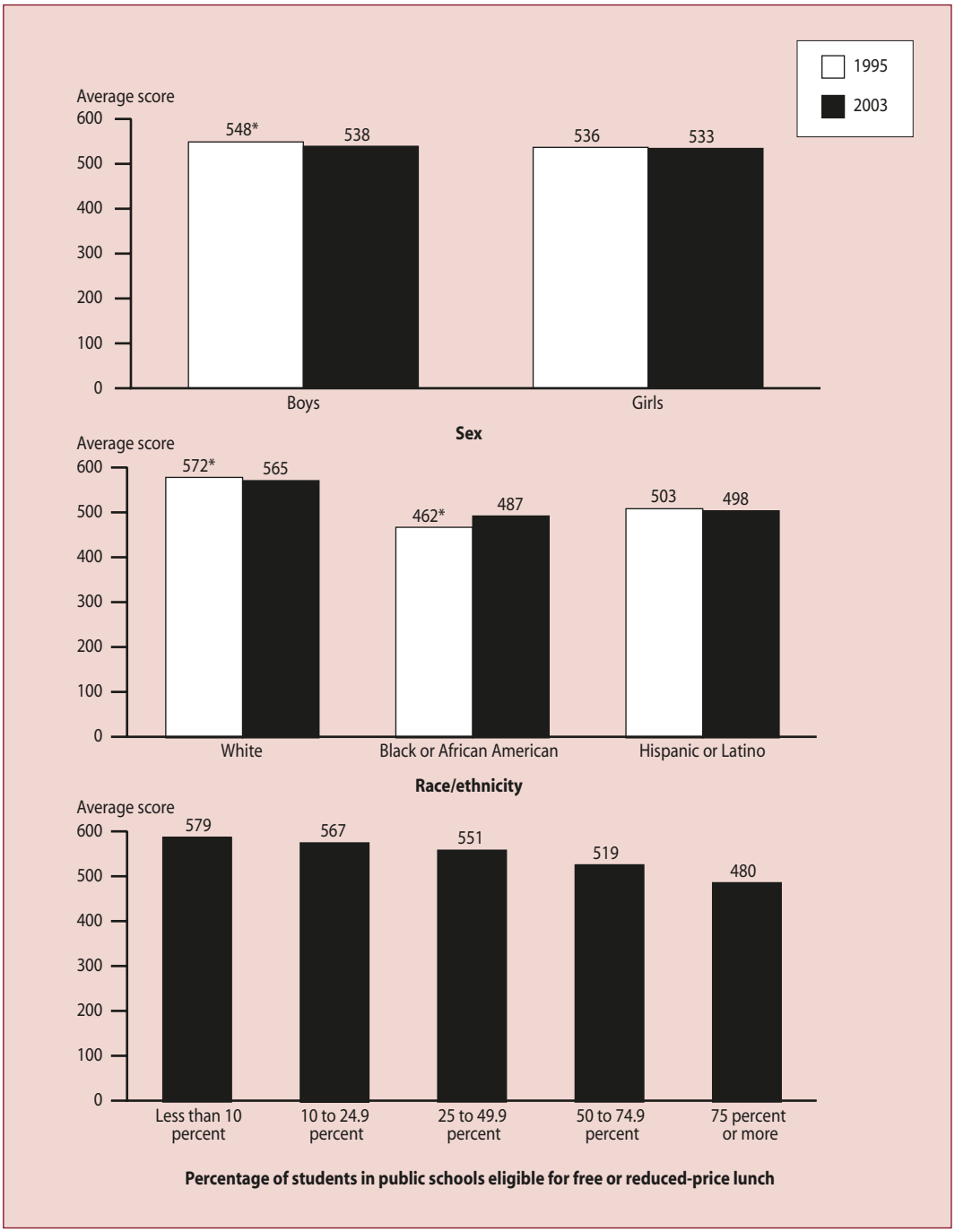
Figure A. Average mathematics scale scores of U.S. fourth-grade students, by sex, race/ethnicity, and poverty level: 1995 and 2003



*p<.05, denotes a significant difference from 2003 average score.
NOTE: Reporting standards not met for Asian category in 1995 and American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander for both years. Racial categories exclude Hispanic origin. Other races/ethnicities are included in U.S. totals shown throughout the report. Analyses by poverty level are limited to students in public schools only. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between averages for one student group may be significant while a large difference for another student group may not be significant. The United States met international guidelines for participation rates in 2003 only after replacement schools were included. See appendix A of the full report for more information.
SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2003. (Originally published as figure 1 on p. 11 of the complete report from which this article is excerpted.)

Figure B. Average science scale scores of U.S. fourth-grade students, by sex, race/ethnicity, and poverty level: 1995 and 2003



*p<.05, denotes a significant difference from 2003 average score.
NOTE: Reporting standards not met for Asian category in 1995 and American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander for both years. Racial categories exclude Hispanic origin. Other races/ethnicities are included in U.S. totals shown throughout the report. Analyses by poverty level are limited to students in public schools only. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between averages for one student group may be significant while a large difference for another student group may not be significant. The United States met international guidelines for participation rates in 2003 only after replacement schools were included. See appendix A of the full report for more information.
SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2003. (Originally published as figure 3 on p. 21 of the complete report from which this article is excerpted.)

Table D. Average mathematics scale scores of eighth-grade students, by country: 1995 and 2003

Country	1995	Country	2003
Singapore	609	Singapore	605
Japan	581	Korea, Republic of	589
Korea, Republic of	581	Hong Kong SAR[1,2]	586
Hong Kong SAR[1]	569	Japan	570
Belgium-Flemish	550	Belgium-Flemish	537
Sweden	540	Netherlands[2]	536
Slovak Republic	534	Hungary	529
(Netherlands)	529	Russian Federation	508
Hungary	527	Slovak Republic	508
(Bulgaria)	527	Latvia-LSS[3]	505
Russian Federation	524	Australia	505
(Australia)	509	**(United States)**	**504**
New Zealand	501	Lithuania[4]	502
Norway	498	Sweden	499
(Slovenia)	494	Scotland[2]	498
(Scotland)	493	New Zealand	494
United States	**492**	Slovenia	493
(Latvia-LSS)[3]	488	Bulgaria	476
(Romania)	474	Romania	475
Lithuania[4]	472	Norway	461
Cyprus	468	Cyprus	459
Iran, Islamic Republic of	418	Iran, Islamic Republic of	411

■ Average is higher than the U.S. average
□ Average is not measurably different from the U.S. average
■ Average is lower than the U.S. average

[1]Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.
[2]Met international guidelines for participation rates in 2003 only after replacement schools were included.
[3]Designated LSS because only Latvian-speaking schools were included in 1995. For this analysis, only Latvian-speaking schools are included in the 2003 average.
[4]National desired population does not cover all of the international desired population.
NOTE: Countries are ordered by average score. Parentheses indicate countries that did not meet international sampling or other guidelines in 1995 or 2003. See appendix A of the full report for details regarding 2003 data. See NCES (1997) for details regarding 1995 data. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between the United States and one country may be significant while a large difference between the United States and another country may not be significant. Countries were required to sample students in the upper of the two grades that contained the largest number of 13-year-olds. In the United States and most countries, this corresponds to grade 8. See table A1 in appendix A of the full report for details.
SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2003. (Originally published as table 7 on p. 9 of the complete report from which this article is excerpted.)

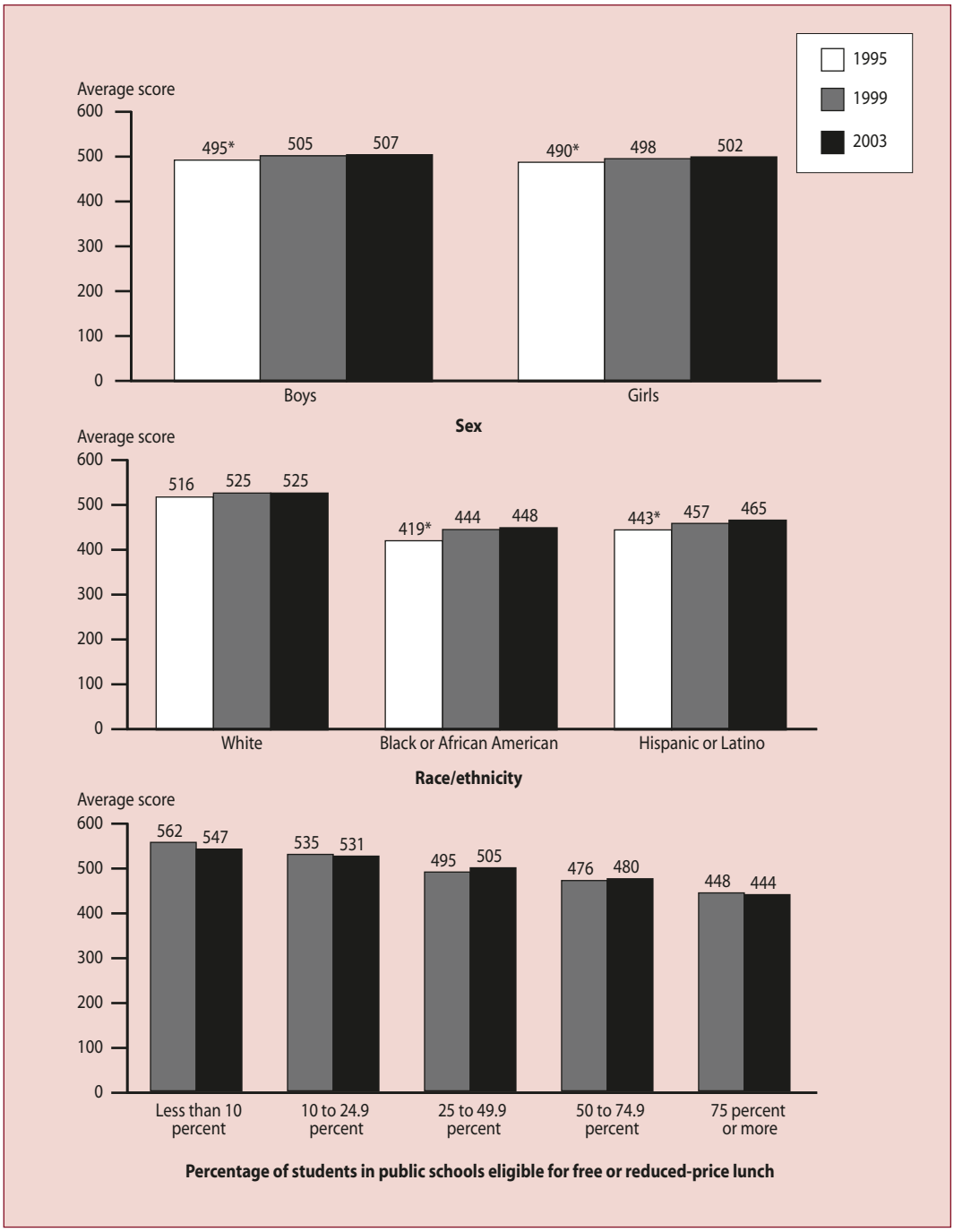
Table E. Average science scale scores of eighth-grade students, by country: 1995 and 2003

Country	1995	Country	2003
Singapore	580	Singapore	578
Japan	554	Korea, Republic of	558
Sweden	553	Hong Kong SAR[1,2]	556
Korea, Republic of	546	Japan	552
(Bulgaria)	545	Hungary	543
(Netherlands)	541	Netherlands[2]	536
Hungary	537	**(United States)**	**527**
Belgium-Flemish	533	Australia	527
Slovak Republic	532	Sweden	524
Russian Federation	523	Slovenia	520
Norway	514	New Zealand	520
(Australia)	514	Lithuania[3]	519
(Slovenia)	514	Slovak Republic	517
United States	**513**	Belgium-Flemish	516
New Zealand	511	Russian Federation	514
Hong Kong SAR[1]	510	Latvia-LSS[4]	513
(Scotland)	501	Scotland[2]	512
(Latvia-LSS)[4]	476	Norway	494
(Romania)	471	Bulgaria	479
Lithuania[3]	464	Romania	470
Iran, Islamic Republic of	463	Iran, Islamic Republic of	453
Cyprus	452	Cyprus	441

■ Average is higher than the U.S. average
□ Average is not measurably different from the U.S. average
■ Average is lower than the U.S. average

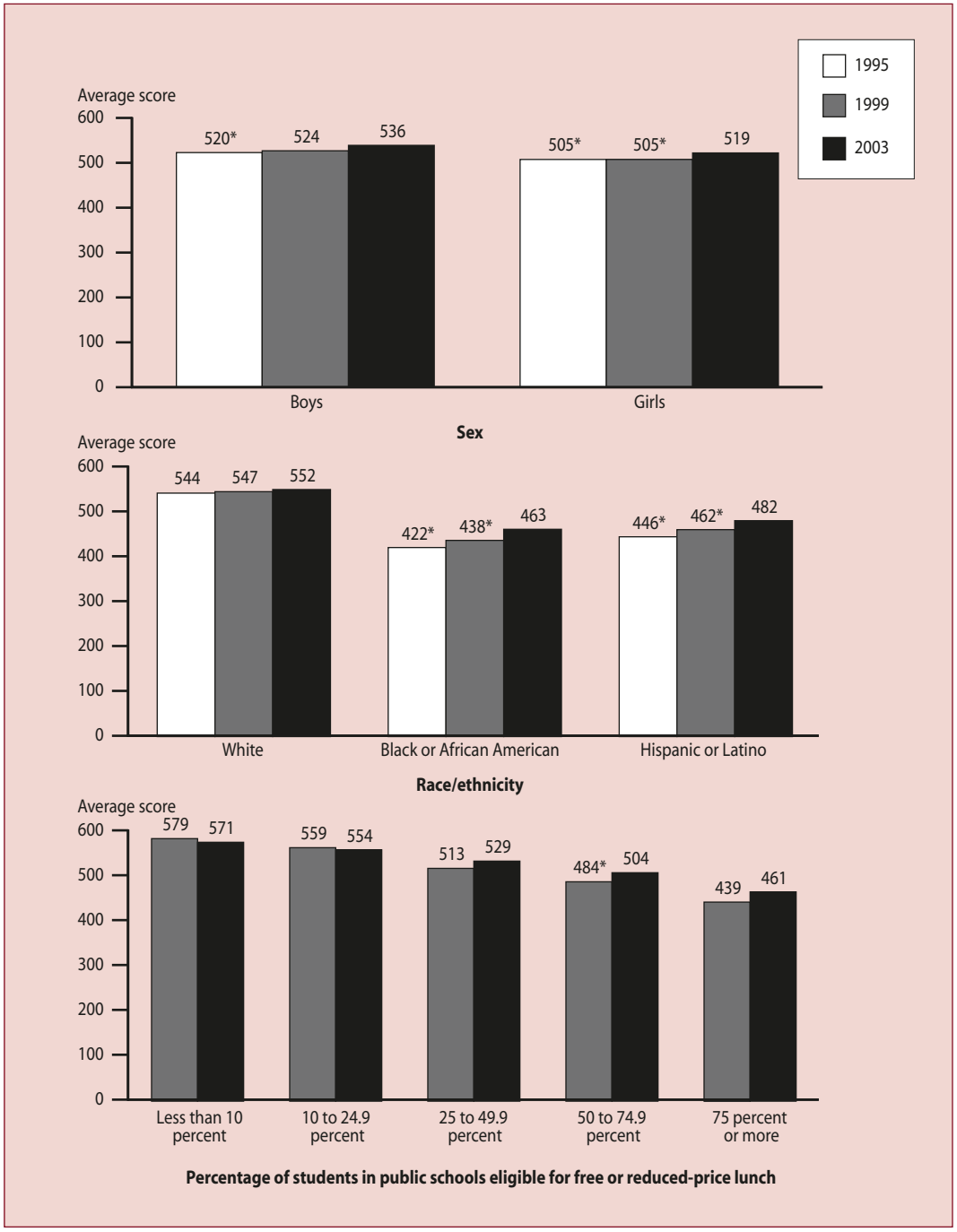
[1]Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.
[2]Met international guidelines for participation rates in 2003 only after replacement schools were included.
[3]National desired population does not cover all of the international desired population.
[4]Designated LSS because only Latvian-speaking schools were included in 1995. For this analysis, only Latvian-speaking schools are included in the 2003 average.
NOTE: Countries are ordered by average score. Parentheses indicate countries that did not meet international sampling or other guidelines in 1995 or 2003. See appendix A of the full report for details regarding 2003 data. See NCES (1997) for details regarding 1995 data. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between the United States and one country may be significant while a large difference between the United States and another country may not be significant. Countries were required to sample students in the upper of the two grades that contained the largest number of 13-year-olds. In the United States and most countries, this corresponds to grade 8. See table A1 in appendix A of the full report for details.
SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2003. (Originally published as table 13 on p. 19 of the complete report from which this article is excerpted.)

Figure C. Average mathematics scale scores of U.S. eighth-grade students, by sex, race/ethnicity, and poverty level: 1995, 1999, and 2003



*p<.05, denotes a significant difference from 2003 average score.
NOTE: Reporting standards not met for Asian category in 1995 or 1999. Reporting standards not met for American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander in 1995, 1999, and 2003. Racial categories exclude Hispanic origin. Other races/ethnicities are included in U.S. totals shown throughout the report. Analyses by poverty level are limited to students in public schools only. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between averages for one student group may be significant while a large difference for another student group may not be significant. The United States met international guidelines for participation rate in 2003 only after replacement schools were included. See appendix A of the full report for more information.
SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2003. (Originally published as figure 2 on p. 13 of the complete report from which this article is excerpted.)

Figure D. Average science scale scores of U.S. eighth-grade students, by sex, race/ethnicity, and poverty level: 1995, 1999, and 2003



*p<.05, denotes a significant difference from 2003 average score.
NOTE: Reporting standards not met for Asian category in 1995 or 1999. Reporting standards not met for American Indian or Alaska Native and Native Hawaiian or Other Pacific Islander in 1995, 1999, and 2003. Racial categories exclude Hispanic origin. Other races/ethnicities are included in U.S. totals shown throughout the report. Analyses by poverty level are limited to students in public schools only. The tests for significance take into account the standard error for the reported difference. Thus, a small difference between averages for one student group may be significant while a large difference for another student group may not be significant. The United States met international guidelines for participation rates in 2003 only after replacement schools were included. See appendix A of the full report for more information.
SOURCE: International Association for the Evaluation of Educational Achievement (IEA), Trends in International Mathematics and Science Study (TIMSS), 1995 and 2003. (Originally published as figure 4 on p. 23 of the complete report from which this article is excerpted.)

PISA 2003 Results

International Outcomes of Learning in Mathematics Literacy and Problem Solving: PISA 2003 Results From the U.S. Perspective

Mariann Lemke, Anindita Sen, Erin Pahlke, Lisette Partelow, David Miller, Trevor Williams, David Kastberg, and Leslie Jocelyn

This article was originally published as the Summary of the Statistical Analysis Report of the same name. The sample survey data are from the Program for International Student Assessment (PISA).

Introduction to PISA

The Program for International Student Assessment (PISA) is a system of international assessments that measures 15-year-olds' capabilities in reading literacy, mathematics literacy, and science literacy every 3 years. PISA was first implemented in 2000 and is carried out by the Organization for Economic Cooperation and Development (OECD), an intergovernmental organization of industrialized countries. Each PISA data collection effort assesses one subject area in depth, even as all three are assessed in each cycle so that participating countries have an ongoing source of achievement data in every subject area. In addition to the major subject areas of reading literacy, mathematics literacy, and science literacy, PISA also measures general or cross-curricular competencies such as learning strategies. In this second cycle, PISA 2003, mathematics literacy was the subject area assessed in depth, along with the new cross-curricular area of problem solving. Major findings for 2003 in mathematics literacy and problem solving are provided here, as well as brief discussions of student performance in reading literacy and science literacy and changes in performance between 2000 and 2003. Table A shows the countries that participated in PISA in 2000 and 2003.

U.S. Performance in Mathematics Literacy and Problem Solving

In 2003, U.S. performance in mathematics literacy and problem solving was lower than the average performance for most OECD countries (table B). The United States also performed below the OECD average on each mathematics literacy subscale representing a specific content area (*space and shape*, *change and relationships*, *quantity*, and *uncertainty*). This is somewhat different from the PISA 2000 results, when reading literacy was the major subject area, which showed the United States performing at the OECD average (Lemke et al. 2001).

Along with scale scores, PISA 2003 also uses six proficiency levels (levels 1 through 6, with level 6 being the highest level of proficiency) to describe student performance in mathematics literacy and three proficiency levels (levels 1 through 3, with level 3 being the highest level of proficiency) to describe student performance in problem solving. In mathematics literacy, the United States had greater percentages of students below level 1 and at levels 1 and 2 than the OECD average percentages (figure A). The United States also had lower percentages of students at levels 4, 5, and 6 than the OECD average percentages. Results for each of the four mathematics content areas followed a similar pattern. In problem solving, the United States also had greater percentages of students below level 1 and at level 1 than the OECD average percentages, and lower percentages of students at levels 2 and 3 than the OECD average percentages (figure B).

This is also somewhat different from the PISA 2000 reading literacy results, which showed that while the percentages of U.S. students performing at level 1 and below were not measurably different from the OECD averages, the United States had a greater percentage of students performing at the highest level (level 5) compared to the OECD average (Lemke et al. 2001). In mathematics literacy and problem solving in 2003, even the highest U.S. achievers (those in the top 10 percent in the United States) were outperformed on average by their OECD counterparts.

There were no measurable changes in the U.S. scores from 2000 to 2003 on either the *space and shape* subscale or the *change and relationships* subscale, the only content areas for which trend data from 2000 to 2003 are available. In both 2000 and 2003, about two-thirds of the other participating OECD countries outperformed the United States in these content areas.

U.S. Performance in Reading Literacy and Science Literacy

The U.S. average score in reading literacy was not measurably different from the OECD average in 2000 or 2003, nor was there any measurable change in the U.S. reading literacy score from 2000 to 2003.

The U.S. score was below the OECD average science literacy score in 2003. There was no measurable change in the U.S. science literacy score from 2000 to 2003.

Table A. Participation in the Program for International Student Assessment (PISA), by country: 2000 and 2003

Country	2000	2003	Country	2000	2003
Organization for Economic Cooperation and Development (OECD) countries			Non-OECD countries		
Australia	√	√	Brazil[3]	√	√
Austria	√	√	Hong Kong-China		√
Belgium	√	√	Indonesia		√
Canada	√	√	Latvia	√	√
Czech Republic	√	√	Liechtenstein	√	√
Denmark	√	√	Macao-China		√
Finland	√	√	Russian Federation	√	√
France	√	√	Serbia and Montenegro		√
Germany	√	√	Thailand		√
Greece	√	√	Tunisia		√
Hungary	√	√	Uruguay		√
Iceland	√	√			
Ireland	√	√			
Italy	√	√			
Japan	√	√			
Korea, Republic of	√	√			
Luxembourg	√	√			
Mexico	√	√			
Netherlands[1]	√	√			
New Zealand	√	√			
Norway	√	√			
Poland	√	√			
Portugal	√	√			
Slovak Republic		√			
Spain	√	√			
Sweden	√	√			
Switzerland	√	√			
Turkey		√			
United Kingdom[2]	√	√			
United States	√	√			

[1]Due to low response rates, PISA 2000 data for the Netherlands are not discussed in this report. For information on the results for the Netherlands, see OECD (2001). *Knowledge and Skills for Life: First Results From the OECD Programme for International Student Assessment*. Paris: Author.
[2]Due to low response rates, PISA 2003 data for the United Kingdom are not discussed in this report.
[3]Although Brazil participated in PISA 2003, its data were not available in time for production of this report.
NOTE: A "√" indicates that the country participated in PISA in the specific year. Because PISA is principally an OECD study, non-OECD countries are displayed separately from the OECD countries.
SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2000 and 2003. (Originally published as table 1 on p. 1 of the complete report from which this article is excerpted.)

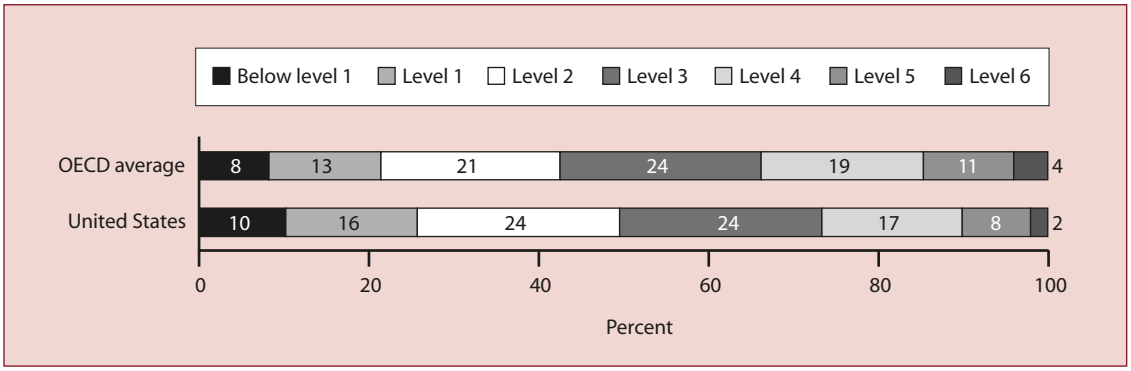
Table B. Average combined mathematics literacy scores and problem-solving scores of 15-year-old students, by country: 2003

Combined mathematics literacy		Problem solving	
Country	**Score**	**Country**	**Score**
OECD average	**500**	**OECD average**	**500**
OECD countries		OECD countries	
Finland	544	Korea	550
Korea	542	Finland	548
Netherlands	538	Japan	547
Japan	534	New Zealand	533
Canada	532	Australia	530
Belgium	529	Canada	529
Switzerland	527	Belgium	525
Australia	524	Switzerland	521
New Zealand	523	Netherlands	520
Czech Republic	516	France	519
Iceland	515	Denmark	517
Denmark	514	Czech Republic	516
France	511	Germany	513
Sweden	509	Sweden	509
Austria	506	Austria	506
Germany	503	Iceland	505
Ireland	503	Hungary	501
Slovak Republic	498	Ireland	498
Norway	495	Luxembourg	494
Luxembourg	493	Slovak Republic	492
Poland	490	Norway	490
Hungary	490	Poland	487
Spain	485	Spain	482
United States	**483**	**United States**	**477**
Portugal	466	Portugal	470
Italy	466	Italy	470
Greece	445	Greece	449
Turkey	423	Turkey	408
Mexico	385	Mexico	384
Non-OECD countries		Non-OECD countries	
Hong Kong-China	550	Hong Kong-China	548
Liechtenstein	536	Macao-China	532
Macao-China	527	Liechtenstein	529
Latvia	483	Latvia	483
Russian Federation	468	Russian Federation	479
Serbia and Montenegro	437	Thailand	425
Uruguay	422	Serbia and Montenegro	420
Thailand	417	Uruguay	411
Indonesia	360	Indonesia	361
Tunisia	359	Tunisia	345

- ■ Average is significantly higher than the U.S. average
- □ Average is not significantly different from the U.S. average
- ■ Average is significantly lower than the U.S. average

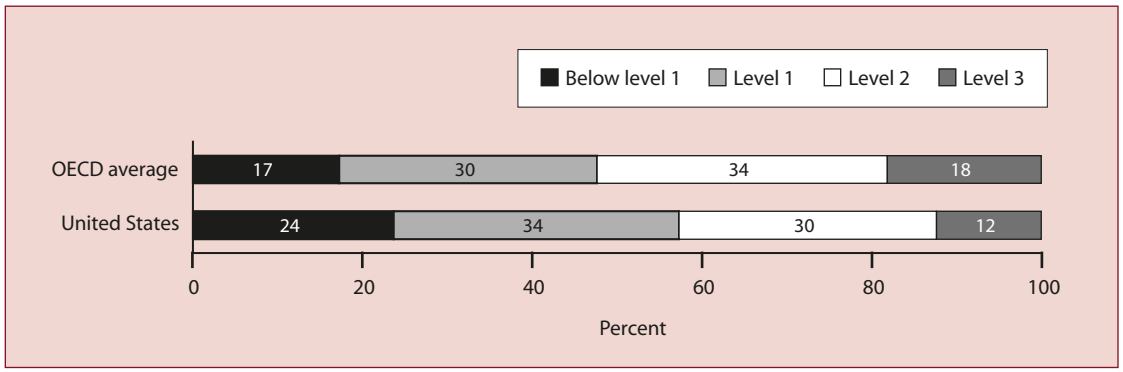
NOTE: Statistical comparisons between the U.S. average and the Organization for Economic Cooperation and Development (OECD) average take into account the contribution of the U.S. average toward the OECD average. The OECD average is the average of the national averages of the OECD member countries with data available. Because the Program for International Student Assessment (PISA) is principally an OECD study, the results for non-OECD countries are displayed separately from those of the OECD countries and are not included in the OECD average. Due to low response rates, data for the United Kingdom are not discussed in this report.
SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2003. (Taken from tables 2 and 3 on pp. 14-15 and p. 29 of the complete report from which this article is excerpted.)

Figure A. Percentage distribution of 15-year-old students in the OECD countries and the United States on the combined mathematics literacy scale, by proficiency level: 2003



NOTE: In order to reach a particular proficiency level, a student must have been able to correctly answer a majority of items at that level. Students were classified into mathematics literacy levels according to their scores. Exact cut point scores are as follows: below level 1 (*a score less than or equal to 357.77*); level 1 (*a score greater than 357.77 and less than or equal to 420.07*); level 2 (*a score greater than 420.07 and less than or equal to 482.38*); level 3 (*a score greater than 482.38 and less than or equal to 544.68*); level 4 (*a score greater than 544.68 and less than or equal to 606.99*); level 5 (*a score greater than 606.99 and less than or equal to 669.3*); level 6 (*a score greater than 669.3*). The Organization for Economic Cooperation and Development (OECD) average is the average of the national averages of the OECD member countries with data available. Detail may not sum to totals because of rounding.
SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2003.
(Originally published as figure 5 on p. 19 of the complete report from which this article is excerpted.)

Figure B. Percentage distribution of 15-year-old students in the OECD countries and the United States on the problem-solving scale, by proficiency level: 2003



NOTE: In order to reach a particular proficiency level, a student must have been able to correctly answer a majority of items at that level. Students were classified into problem-solving levels according to their scores. Exact cut point scores are as follows: below level 1 (*a score less than or equal to 404.06*); level 1 (*a score greater than 404.06 and less than or equal to 498.08*); level 2 (*a score greater than 498.08 and less than or equal to 592.10*); level 3 (*a score greater than 592.10*). The Organization for Economic Cooperation and Development (OECD) average is the average of the national averages of the OECD member countries with data available. Detail may not sum to totals because of rounding.
SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2003. (Originally published as figure 8 on p. 32 of the complete report from which this article is excerpted.)

Differences in Performance by Selected Student Characteristics

Sex

Males outperformed females in mathematics literacy in the United States and in two-thirds of the other countries. Within the United States, greater percentages of male students than female students performed at level 6 (the highest level) in mathematics literacy, but larger percentages of females were not seen at lower levels (below level 1 and levels 1 through 5). In other words, differences in the overall scores between males and females in the United States were due at least in part to the fact that a higher percentage of males were found among the highest performers, not to a higher percentage of females found among the lowest performers.

In the majority of the PISA 2003 countries (32 out of 39 countries), including the United States, there were no measurable differences in problem-solving scores by sex.

However, females outscored their male peers in problem solving in six of the seven remaining participating countries, as well as at the OECD average. Males outscored females in problem solving in Macao-China.

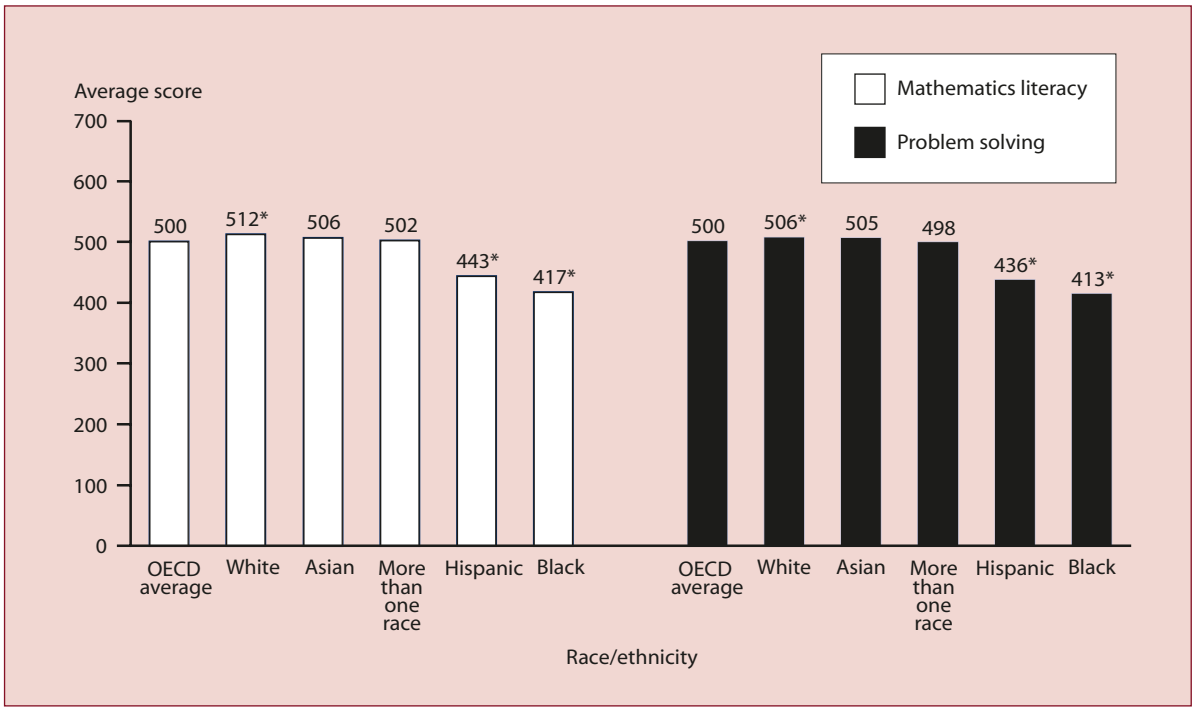
Socioeconomic background

In 2003, a few countries showed stronger relationships between socioeconomic background (as measured by parental occupational status) and student performance than the United States, while more showed weaker relationships. In 2003, the relationship between socioeconomic background and student performance in mathematics literacy was stronger in 5 countries (Belgium, the Czech Republic, Germany, Hungary, and Poland) than in the United States, while 11 countries had weaker relationships. Three of the same 5 countries (Belgium, Germany, and Hungary) had stronger relationships between socioeconomic background and problem-solving performance than the United States, while 12 had weaker relationships.

Race/ethnicity

In the United States in PISA 2003, Blacks and Hispanics scored lower on average than Whites, Asians, and students of more than one race in mathematics literacy and problem solving (figure C). Hispanic students, in turn, outscored Black students. In both mathematics literacy and problem solving, the average scores for Blacks and Hispanics were below the OECD average scores, while scores for Whites were above the OECD average scores.

Figure C. Average scores of U.S. 15-year-old students on the combined mathematics literacy scale and in problem solving, by race/ethnicity: 2003



*Average is significantly different from OECD average.
NOTE: Reporting standards not met for American Indian/Alaska Native and Native Hawaiian/Other Pacific Islander. Black includes African American and Hispanic includes Latino. Racial categories exclude Hispanic origin.
SOURCE: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment (PISA), 2003. (Originally published as figure 11 on p. 38 of the complete report from which this article is excerpted.)

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Data source: Organization for Economic Cooperation and Development (OECD), Program for International Student Assessment, 2000 and 2003.

For technical information, see the complete report:

Lemke, M., Sen, A., Pahlke, E., Partelow, L., Miller, D., Williams, T., Kastberg, D., and Jocelyn, L. (2004). *International Outcomes of Learning in Mathematics Literacy and Problem Solving: PISA 2003 Results From the U.S. Perspective* (NCES 2005-003).

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To obtain the complete report (NCES 2005-003), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

TIMSS & PISA 2003

Invited Commentary: The TIMSS 2003 and PISA 2003 Reports: Sustaining Focus and Concern About the State of Mathematics Education in the United States

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This commentary represents the opinions of the author and does not necessarily reflect the views of the National Center for Education Statistics.

The release in December 2004 of two reports from the National Center for Education Statistics (NCES)—*Highlights From the Trends in International Mathematics and Science Study (TIMSS) 2003* (Gonzales et al. 2004) and *International Outcomes of Learning in Mathematics Literacy and Problem Solving: PISA 2003 Results From the U.S. Perspective* (Lemke et al. 2004)—provides yet another catalyst and source of evidence for those concerned with improving the state of mathematics and science education in the United States. Reports such as these are crucial in efforts to maintain focus and sustain initiatives that can address our national challenges in key areas of the school curriculum. The availability of these and associated reports from the TIMSS and PIRLS International Study Center at Boston College and the Organization for Economic Cooperation and Development (OECD) (Mullis et al. 2004; OECD 2004a, 2004b) serves as yet another "call to action" both to the research community and to K–12 practitioners of the need to improve mathematics and science teaching and learning. Making good use of the data provided in these reports, especially in the context of the No Child Left Behind Act, where interpretation of state assessment results in both mathematics and science is a central component of ongoing improvement efforts, is likely to enrich our collective understanding of the overall picture of mathematics and science education. The databases that have been assembled in TIMSS and PISA—as well as the theoretical perspectives and the tools and instruments that were employed in these studies—have great potential as resources for making informed judgments about where to place the emphasis in ongoing K–12 improvement efforts.

The problems inherent in improving mathematics and science education are complex, and, while the most prominent features of international comparative studies are often the achievement results and international rankings, it is important to note that data on achievement are not sufficient for capturing this complexity. The additional contextual information available in the TIMSS and PISA reports—information about the performance of particular population groups, as defined by socioeconomic status and other variables—is helpful in making interpretations and conjectures about these problems. The studies alone can point us to some descriptive conclusions about the present state of affairs; an even greater contribution is the wealth of ideas they can provide that warrant more specific exploration and study. The involvement of mathematics and science researchers and K–12 practitioners—in collaboration with mathematicians, scientists, and psychometricians—in interpreting these reports, undertaking secondary analyses, and conceptualizing related follow-up studies is a promising pathway for making optimal use of the resources provided in the TIMSS and PISA suite of studies. Using mathematics as the context, the following discussion provides some highlights of the findings and some ideas about follow-up work for researchers and practitioners (see Ferrini-Mundy and Schmidt [2005] for additional discussion). Some findings from the problem-solving component of PISA are presented as well.

Key Findings

U.S. mathematics performance in TIMSS 2003

To interpret the TIMSS 2003 U.S. mathematics results, one needs to consider U.S. performance relative to that of other countries in 2003—as well as since 1995—and changes in U.S. performance since 1995.[1] In 2003, the scores of U.S. fourth- and eighth-graders on the mathematics component of TIMSS exceeded the international averages, with students in both grades outperforming a little more than half of their peers in the other participating countries (13 of 24 countries at grade 4; 25 of 44 countries at grade 8). In the content areas, U.S. fourth- and eighth-graders performed above the international averages in four of the five mathematics content areas measured in 2003.[2] U.S. eighth-graders also demonstrated significant improvement between 1999 and 2003 in two of the content areas—algebra and data. Looking at population groups, U.S. eighth-grade boys, girls, Blacks, and Hispanics improved their mathematics performance between 1995 and 2003—and the improved perfor-

[1] TIMSS 2003 is the third comparison of mathematics and science achievement carried out by the International Association for the Evaluation of Educational Achievement. Previously conducted in 1995 and 1999, TIMSS can be used to track changes in achievement over time.

[2] The five mathematics content areas measured in TIMSS 2003 were number, algebra (at the fourth grade, patterns and relationships), measurement, geometry, and data.

mance of Black eighth-graders resulted in a narrowing of the gap in achievement between White and Black students. The data suggest that the improved performance of U.S. eighth-graders in mathematics, combined with a decline in performance among some of the countries that were the top performers in the earlier assessments, resulted in a higher relative standing of U.S. eighth-graders in 2003 compared to 1995.

Whereas U.S. eighth-graders showed improved performance in mathematics between 1995 and 2003, U.S. fourth-graders showed no measurable improvement. Between 1995 and 2003, fourth-graders in 6 of the 15 countries participating in TIMSS 2003 and TIMSS 1995 demonstrated improved performance, but the United States was among a set of seven countries whose students' scores did not change measurably over the period (Gonzales et al. 2004, p. 6). Moreover, the data suggest that the performance of U.S. fourth-graders in mathematics was lower in 2003 than in 1995 relative to the 14 other countries that participated in both studies. Students in two countries (England and Latvia-LSS[3]) who performed below U.S. fourth-graders in mathematics in 1995 improved their performance to such a degree that they outperformed U.S. students in 2003. The one positive finding at grade 4 was that U.S. Black students improved their mathematics performance between 1995 and 2003, resulting in a narrowing of the achievement gap between White and Black students (Gonzales et al. 2004).

U.S. mathematics literacy and problem-solving performance in PISA 2003

In contrast to TIMSS, which is part of a long-standing series of international comparative assessments that have sought to measure achievement as it relates to the implemented and intended curriculum, PISA is not so explicitly focused on curricular issues. Rather, it "provides a unique and complementary perspective" by focusing "on the application of knowledge in reading, mathematics, and science to problems with a real-life context" (OECD 1999, cited in Lemke et al. 2004, p. 2). By choosing to address mathematics literacy, and by providing the associated definition[4] together with an accompanying conceptual framework, PISA has made a major contribution to the international comparative literature in mathematics.

In PISA 2003, the U.S. averages in mathematics literacy and problem solving were lower than the averages for most OECD countries. However, in mathematics literacy, the United States showed no measurable changes in the trend areas of *space and shape* and *change and relationships* from the 2000 administration of PISA. Comparisons in performance by gender, race/ethnicity, and socioeconomic status are also available. In mathematics literacy, U.S. males outperformed females at the high proficiency levels, although females were not overrepresented at the lowest proficiency levels. In problem solving, there were no gender differences in performance for U.S. students. Across proficiency levels in mathematics literacy and problem solving among U.S. students, the performance of Blacks and Hispanics was generally lower than that of students who were White, Asian, or of more than one race.

Some commentators have viewed the mathematics results of TIMSS 2003 and PISA 2003 as conflicting, with a sense that the TIMSS results are more positive than the results for PISA. The TIMSS results may suggest that U.S. students' performance is at least holding steady, and possibly improving, in relatively traditional school mathematics content. PISA is explicit about testing knowledge that may not be part of the intended curriculum and that reflects students' ability to apply mathematics in context. U.S. standards-based reforms in mathematics education in the past two decades have emphasized the importance of being able to use mathematics in real-world situations; U.S. students' performance in PISA thus provides a much-needed baseline for future examination of the ability of U.S. students to apply mathematics in context.

Opportunities for Related Research

The findings presented here, as well as others in the TIMSS and PISA reports, suggest that additional analyses of curriculum and the opportunity to learn might help to explain the differences in performance in certain subareas of TIMSS and PISA. In both assessments, the patterns of differential performance by specific subgroups and in specific subareas might lead researchers to revisit conjectures they have had about the nature of the curricular (and extracurricular) opportunities that are afforded to students to use mathematics. The conceptual framework of TIMSS 2003 (Mullis et al. 2003) (which closely mirrors the National Assessment of Educational Progress framework) and that of PISA 2003 (OECD 2003) can be helpful tools for researchers conducting alignment analyses of instructional materials and state frameworks similar to those performed by Schmidt and colleagues (e.g., Schmidt et al. 1997; Schmidt et al. 2001)

[3]Designated LSS because only Latvian-speaking schools were included in 1995. For this analysis, only Latvian-speaking schools are included in the 2003 average.

[4]Mathematics literacy is defined as "an individual's capacity to identify and understand the role that mathematics plays in the world, to make well-founded judgments and to use and engage with mathematics in ways that meet the needs of that individual's life as a constructive, concerned, and reflective citizen" (OECD 2003, p. 24).

using the TIMSS 1995 curriculum framework (Robitaille et al. 1993). A snapshot of the nature of curriculum and the nature of instruction available to students would provide additional useful context for interpretation. The uneven progress overall in the 8 years between TIMSS 1995 and TIMSS 2003 may indicate that efforts to improve mathematics performance in the United States lack collective focus, coherence, intensity, or scale—and that continued efforts to make improvements, together with research designed to understand the interventions and track their impact, are needed. The findings in these reports suggest the importance of secondary analyses and additional studies that probe in detail to better understand the contexts, conditions, and interventions that may have been at play in settings where improvement in achievement is occurring and the achievement gap is narrowing.

Summary

In summary, international comparative research such as that of TIMSS and PISA is essential for developing a better understanding of the state of U.S. mathematics and science education. The periodic opportunity to benchmark U.S. performance against that of countries around the world provides the impetus needed for an ongoing examination of all aspects of the U.S. education system, including curriculum, instruction, and teacher education and preparation. In addition, the ongoing development of conceptual frameworks such as those produced for TIMSS 2003 and PISA 2003—which push collective thinking about what is appropriate in the K–12 curriculum for mathematics and science—is a welcome contribution to the literature in mathematics and science education that comes from a source outside of the U.S. education community—the international comparative studies community.

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Children Born in 2001: First Results From the Base Year of the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B)
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First Results From the ECLS-B

Children Born in 2001: First Results From the Base Year of the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B)

Kristin Denton Flanagan and Jerry West

This article was excerpted from the Introduction and Selected Findings of the E.D. TAB of the same name. The sample survey data are from the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B).

Introduction

This E.D. TAB provides descriptive information about children born in the United States in 2001. It presents information on certain child and family characteristics, on children's mental and physical skills, on children's first experiences in child care, and on the fathers of these children. The report profiles data from a nationally representative sample of children at about 9 months of age, both overall and for various subgroups (i.e., male and female, children from different racial/ethnic groups, and children living in different types of families).

Data source

The ECLS-B is a nationally representative sample of the nearly 4 million children born in the United States in the year 2001.[1] During the first wave of the study, 10,688 parents provided information and 10,221 children were directly assessed.

The ECLS-B was designed to collect information from children and their families for the first time when the children were about 9 months of age (i.e., 8 to 10 months). However, information was collected from a few children as young as 6 months and as old as 22 months. The term "9 months" is used throughout this document to refer to the data collection that took place between fall 2001 and

[1]Sampling was based on occurrence of birth as listed on the birth certificate. Sampled children subsequently identified by the state registrars as having died or who had been adopted near or at the time of birth were excluded. However, data were collected when the children were 9 months of age, so there are some cases with adoptive parents.

fall 2002, at which time most of the sampled children were about 9 months of age (72 percent of the population was 8 to 10 months of age). For ease of reporting, this E.D. TAB uses the term "about 9 months of age" to refer to the entire population of children in the study. Four additional waves of data collection are planned for when the children are 2-year-olds, preschool-aged (e.g., age 4), and then when they are in kindergarten.

Organization of this report

The information in this report is presented in four sections: (1) characteristics of the children and their families; (2) children's early mental and physical skills; (3) children's first experiences in child care; and (4) the fathers of these children. The topics selected for this initial release of baseline information are only a small sampling of the types of questions that can be addressed.

Selected Findings

Demographic characteristics of children and their families

Information on the demographic characteristics of the children and their families was largely provided by the parents as part of the parent interview and also drawn from information presented on the child's birth certificate.

In 2001, of babies born in the United States

- 51 percent were boys and 49 percent were girls;
- 54 percent were White, non-Hispanic; 14 percent were Black, non-Hispanic; 26 percent were Hispanic; 3 percent were Asian/Pacific Islander, non-Hispanic; 1 percent were American Indian, non-Hispanic; and 4 percent were multiracial, non-Hispanic;
- 3 percent of babies born were twins, less than 0.5 percent were part of other multiple births (e.g., triplets, quadruplets), and 97 percent were single births;
- 12 percent of babies were born premature, 6 percent were low birth weight (i.e., more than 3.3 pounds to 5.5 pounds), and 1 percent were very low birth weight (i.e., 3.3 pounds or less); and
- 11 percent of babies were born to teenage mothers[2] (i.e., 15 to 19 years of age).

When these children were about 9 months of age

- 23 percent were living in families whose household income was below the poverty threshold;
- 64 percent were living with both of their married biological parents, 14 percent were living with unmarried biological parents, and 20 percent were living with one parent;
- 27 percent were living with mothers who had less than a high school education, and 17 percent were living with fathers who had less than a high school education; and
- 24 percent were living with mothers who had a bachelor's degree or higher, and 24 percent were living with fathers who had a bachelor's degree or higher.

Children's early mental and physical skills

The ECLS-B assessment of young children's mental and physical development relies on a direct measure of children—the Bayley Short Form-Research Edition (BSF-R), which was developed for use in the ECLS-B. The BSF-R is a shortened version of the Bayley Scales of Infant Development-Second Edition (BSID-II) (Bayley 1993), a standardized assessment of mental and motor developmental status for children from birth to 42 months of age.

This E.D. TAB presents information on young children's specific mental and physical skills (i.e., proficiencies). Proficiency scores provide a means of distinguishing status in specific skills within a content area. Clusters of two to five test questions having similar content and difficulty were included at several points along the score scale of the BSF-R mental and physical assessments. Clusters of items provide a more reliable test of proficiency than do single items.[3]

Below are the five proficiencies for early mental skills.

- *Exploring objects.* The child is reaching for and holding objects. He/she may have no specific purpose or goal except to play or discover.
- *Exploring objects with a purpose.* The child is manipulating objects with a purpose (e.g., to see what makes the ringing sound in a bell).
- *Babbling.* The child is making simple sounds and gestures (e.g., babbling or jabbering).
- *Early problem solving.* The child is using reasoning to interact with objects (e.g., if a toy is out of reach, using another object, like another toy, to bring the desired toy within reach).

[2]Children with mothers less than 15 years of age were excluded from the study.

[3]For more information on the content, administration, and properties of the direct child assessment, please refer to appendix A of the full report.

- *Communicating with words.* The child understands and uses words, both receptively (pointing to named objects) and expressively (saying words).

Below are the five proficiencies for early physical skills.

- *Eye-hand coordination.* The child demonstrates eye-hand coordination as he/she reaches for objects.
- *Sitting.* The child can sit alone, without leaning against something or other assistance.
- *Prewalking.* The child is taking steps and supporting his/her weight while standing, with assistance (moving along furniture or holding onto someone's hand).
- *Independent walking.* The child is walking alone, without assistance (without holding onto something or someone).
- *Balance.* The child can balance in various positions (e.g., squatting, standing on one foot).

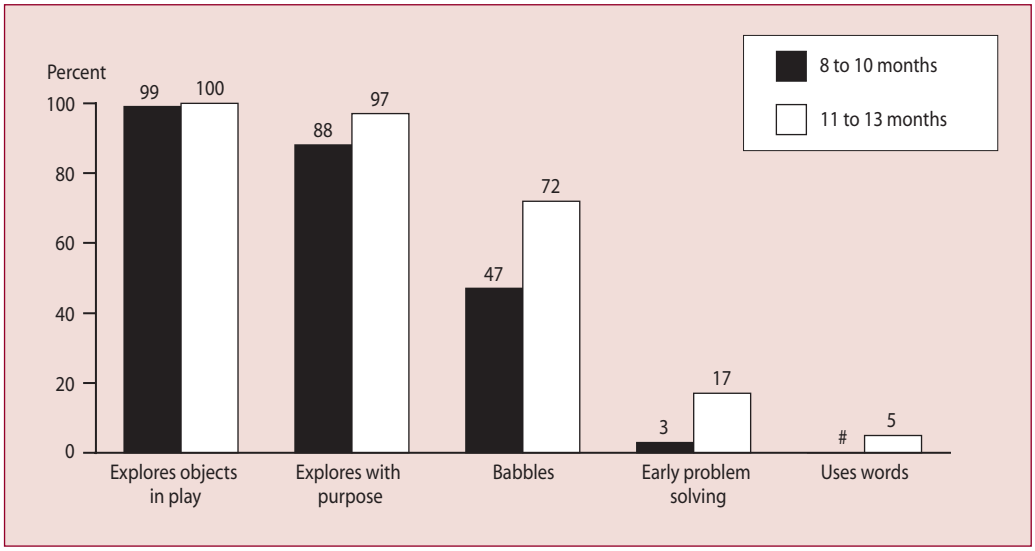
The ECLS-B was designed to collect information from children and their families for the first time when the children were about 9 months of age (i.e., 8 to 10 months). However, information was collected from a few children as young as 6 months and as old as 22 months. Young children's mental and physical skills develop rapidly. Therefore, this E.D. TAB presents information on young children's skills by their age at assessment, in several ways. First, this E.D. TAB presents information on the children in the sample 8 to 10 months of age at the time of assessment. Next, the E.D. TAB presents information on the children in the sample who were 11 to 13 months of age at the time of assessment. Tables 4 and 5 in the full report present a breakdown by age (i.e., age at assessment, month by month).[4]

When children were 8 to 10 months old, in terms of their mental skills (figure A)

- 99 percent were exploring objects in play;
- 88 percent were exploring objects with a purpose;
- 47 percent were babbling;

[4]This E.D. TAB does not present information on children's mental and physical skills by characteristics such as children's sex, race/ethnicity, and poverty status. Preliminary analyses revealed that, for the most part at this age, the mental and physical skills discussed in this report do not significantly differ by children's sex, race/ethnicity, and poverty status. A future NCES report will examine group differences in children's mental and physical skills in more detail, presenting information from the 9-month collection and the 2-year collection of the ECLS-B.

Figure A. Percentage of children demonstrating certain mental skills at 8 to 10 months of age and at 11 to 13 months of age: 2001



Less than .5 percent.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort, Restricted-Use File (NCES 2004-093). (Originally published as figure 4 on p. 12 of the complete report from which this article is excerpted.)

- 3 percent were demonstrating early problem solving; and
- less than 0.5 percent were using words.

When children were 8 to 10 months old, in terms of their physical skills (figure B)

- 91 percent demonstrated eye-hand coordination;
- 93 percent were sitting;
- 73 percent were showing prewalking skills;
- 19 percent were walking; and
- 1 percent could balance.

When children were 11 to 13 months old, in terms of their mental skills (figure A)

- 100 percent were exploring objects in play;
- 97 percent were exploring objects with a purpose;
- 72 percent were babbling;
- 17 percent were demonstrating early problem solving; and
- 5 percent were using words.

When children were 11 to 13 months old, in terms of their physical skills (figure B)

- 96 percent demonstrated good eye-hand coordination;
- 98 percent were sitting;
- 91 percent were showing prewalking skills;
- 55 percent were walking; and
- 10 percent could balance.

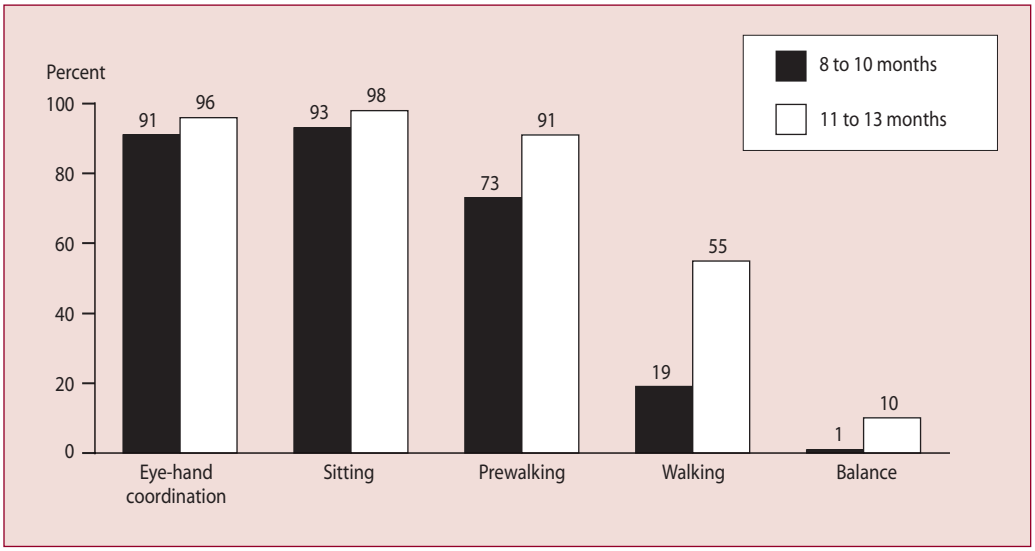
Children's first experiences in child care

As part of the parent interview, information was collected on children's first experiences in child care. Parents provided information on whether their child was in care, the type of care, the number of hours in care, and the age at which the child first entered care. The ECLS-B seeks to provide information on the care that young children receive on a regular basis from persons other than their parents.[5]

- When children were about 9 months of age, approximately one-half (50 percent) were in some kind of regular child care arrangement, such as a

[5]Parents include biological and adoptive parents as well as stepparents and guardians.

Figure B. Percentage of children demonstrating certain physical skills at 8 to 10 months of age and at 11 to 13 months of age: 2001



SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort, Restricted-Use File (NCES 2004-093). (Originally published as figure 5 on p. 12 of the complete report from which this article is excerpted.)

center-based care arrangement or care provided by a nonrelative or relative in a private home (table A).

- Black children (63 percent) were more likely to be in some kind of child care arrangement, compared to White (49 percent), Hispanic (46 percent), and Asian children (47 percent). Children whose mothers work (full time or part time) are more likely to be in child care than children whose mothers do not work or who are looking for work. Children in families who were not poor (at or above the poverty threshold) (52 percent) were more likely to be in child care than children from poor families (43 percent) (table A).
- Among children about 9 months of age (table A)
  - 26 percent were in relative care as their primary arrangement,[6] where they received care from someone related to them other than the parent, such as a grandparent, aunt, uncle, sibling, or some other relative. Relative care could be in the child's home or in the home of the caregiver.
  - 15 percent were in nonrelative care as their primary arrangement, where they received care from someone who is not related to them, such as a nanny, home-based care provider, regular sitter, or neighbor. This does not include day care centers or preschools. The care could be in the child's home or in the home of the caregiver.
  - 9 percent were in center-based care as their primary arrangement, such as early learning centers, nursery schools, and preschools (including Early Head Start).
  - 1 percent had a primary arrangement that was actually multiple arrangements, where they spent

[6]Primary care arrangement is where the child spends the most hours. If the child spent equal time across two or more arrangements, primary care was classified as multiple arrangements.

Table A. Percentage of children participating in child care at about 9 months of age, by primary type of arrangement, and by child and family characteristics: 2001

Child and family characteristics	Care arrangement				
	Relative care	Nonrelative care	Center-based care	Multiple arrangements	No regular arrangement
Total	26	15	9	1	50
Child's sex					
Male	26	15	9	1	50
Female	26	16	8	1	50
Child's race/ethnicity					
White, non-Hispanic	21	17	9	1	51
Black, non-Hispanic	33	15	14	1	37
Hispanic	30	11	5	#	54
Asian, non-Hispanic	33	10	4	#	53
Other, non-Hispanic[1]	28	14	10	1	46
Mother's employment status					
Full time (35 hours or more)	39	29	17	1	15
Part time	38	21	8	2	33
Looking for work	22	6	7	#	65
Not in workforce	9	4	3	#	84
No mother in household	37	2	17	#	45
Poverty status					
Below poverty threshold	28	8	7	1	57
At or above poverty threshold	25	17	9	1	48

Rounds to zero.
[1]Other includes Native Hawaiian, other Pacific Islanders, American Indian, Alaska Native, and multiracial children.
NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort, Restricted-Use File (NCES 2004-093). (Originally published as table 6 on p. 17 of the complete report from which this article is excerpted.)

equal numbers of hours across different care arrangement types (such as 20 hours a week with a relative and 20 hours a week in a center-based program).

- The type of child care children received varied by their race/ethnicity. Black children were more likely than White, Hispanic, or Asian children to be in center-based care. White children were less likely than Black, Hispanic, or Asian children to be cared for by a relative (table A).
- Of children in child care, 39 percent began when they were younger than 3 months, 47 percent were 3 to 6 months old, and 14 percent started care when they were older than 6 months. In terms of hours per week in child care, 19 percent of children about 9 months of age were in an arrangement 10 hours or fewer, 27 percent were in an arrangement 11 to 30 hours, 31 percent were in an arrangement 31 to 40 hours, and 24 percent were in an arrangement more than 40 hours.
- The age at which children entered child care and the number of hours they spent in the arrangement varied by their race/ethnicity. Asian children were more likely than White, Black, or Hispanic children to enter a child care arrangement when they were younger than 3 months of age. Asian children were more likely than White, Black, or Hispanic children to spend more than 40 hours a week in care, and Black children were more likely than White or Hispanic children to spend more than 40 hours a week in care.
- Children in relative care were more likely to be in care for 10 hours or fewer a week than children in nonrelative care or a center-based program. Children in multiple care arrangements were more likely to be in care more than 40 hours a week than children in a single care arrangement.

Fathers in children's lives

As part of the parent interview, information was collected on whether or not there was a father in the household (e.g., biological, nonbiological, no resident father) and if there was no resident biological father in the household, then information was collected on the amount of contact the biological father had with the child.

- When children were about 9 months of age, 1 in 5 (20 percent) lived in households with no father (table B).
- Black children (58 percent) were more likely than White children (10 percent), Hispanic children (20 percent), or Asian children (6 percent) to live in a household with no father present (table B). Forty-five percent of children living below the poverty threshold lived in households with no father present, while 12 percent of children living at or above the poverty threshold lived in households without a father.
- In the ECLS-B, in about 99 percent of the interviews, the biological mother was the respondent.[7] According to the child's mother, when there was no resident biological father in the household
  - 40 percent of young children had contact with their father the same day as the home visit (when the parent interview was conducted);
  - 38 percent of children had contact with their father within 2 to 7 days of the home visit;
  - 7 percent of children had contact with their father within the last 8 to 14 days of the home visit;
  - 2 percent of children had not seen their father in more than 2 weeks; and
  - 13 percent of children had never seen their father.
- Of children with no resident father, 6 percent of Black children had nonresident fathers who had never had contact with them, compared to 18 percent of White children, 21 percent of Hispanic children, and 25 percent of Asian children.

[7] In the ECLS-B, this was by design. When the home visit was conducted, the interviewer specifically asked for the biological mother to be the respondent.

Table B. Percentage of children with or without fathers in the household around 9 months of age, by child and family characteristics: 2001

Child and family characteristics	All children	Father in household		
		Biological	Non-biological	No father in household
Total	100	79	1	20
Child's sex				
Male	51	79	1	19
Female	49	78	1	20
Child's race/ethnicity				
White, non-Hispanic	54	88	2	10
Black, non-Hispanic	14	41	1	58
Hispanic	25	78	1	20
Asian, non-Hispanic	3	93	#	6
Other, non-Hispanic[1]	4	74	1	25
Poverty status				
Below poverty threshold	23	53	1	45
At or above poverty threshold	77	86	1	12

Rounds to zero.
[1]Other includes Native Hawaiian, other Pacific Islanders, American Indian, Alaska Native, and multiracial children.
NOTE: Detail may not sum to totals because of rounding. In the absence of a biological parent, the father designation (i.e., nonbiological) was assigned to the adoptive, step, foster/guardian, partner (including household members defined as spouses/partners of the parent respondent but were not identified by the respondent as mothers/female guardians or fathers/male guardians), or "unknown-type" parent.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort, Restricted-Use File (NCES 2004-093). (Originally published as table 8 on p. 21 of the complete report from which this article is excerpted.)

Reference

Bayley, N. (1993). *Bayley Scales of Infant Development, Second Edition Manual*. San Antonio, TX: The Psychological Corporation.

Data source: The NCES Early Childhood Longitudinal Study, Birth Cohort (ECLS-B).

For technical information, see the complete report:

Flanagan, K.D., and West, J. (2004). *Children Born in 2001: First Results From the Base Year of the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B)* (NCES 2005-036).

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To obtain the complete report (NCES 2005-036), call the toll-free ED Pubs Number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

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America's Charter Schools

America's Charter Schools: Results From the NAEP 2003 Pilot Study

U.S. Department of Education, National Center for Education Statistics

This article was originally published as the Executive Summary of the Research and Development Report of the same name. The sample survey data are from the National Assessment of Educational Progress (NAEP) Reading and Mathematics Charter School Pilot Study.

Research and Development Reports are intended to

- share studies and research that are developmental in nature;
- share results of studies that are on the cutting edge of methodoligical developments; and
- participate in discussions of emerging issues of interest to researchers.

These reports present results or discussions that do not reach definitive conclusions at this point in time, either because the data are tentative, the methodology is new and developing, or the topic is one on which there are divergent views. Therefore, the techniques and inferences made from the data are tentative and are subject to revision.

The National Assessment of Educational Progress (NAEP) conducted a pilot study of America's charter schools and their students as part of the 2003 NAEP assessments in reading and mathematics at the fourth-grade level. NAEP also surveyed participating charter schools about their practices, structure, and governance.

Charter schools are public schools of choice. A number of states have few or no charter schools; many charter schools have just recently opened; and some charter schools last only a few years. All of these factors make the selection of a representative sample challenging.

For example, the final sample of 150 charter schools was obtainable only after multiple sources of information were consulted. Information from local school administrators, follow-up interviews, and field staff were used to update and verify the original school questionnaire data.

While charter schools are similar to other public schools in many respects, they differ in several important ways, including the makeup of the student population and their location. For example, in comparison to other public schools, higher percentages of charter school fourth-grade students are Black and attend schools in central cities.

Thus, when comparing the performance of charter and other public school students, it is important to compare students who share a common characteristic. For example, in mathematics, fourth-grade charter school students as a whole did not perform as well as their public school counterparts. However, the mathematics performance of White, Black, and Hispanic fourth-graders in charter schools was not measurably different from the performance of fourth-graders with similar racial/ethnic backgrounds in other public schools.

In reading, there was no measurable difference in performance between charter school students in the fourth grade and their public school counterparts as a whole. This was true even though, on average, charter schools have higher proportions of students from groups that typically perform lower on NAEP than other public schools have. In reading, as in mathematics, the performance of fourth-grade students with similar racial/ethnic backgrounds in charter schools and other public schools was not measurably different.

There are also instances where the performance of students with shared characteristics differed. For example, among students eligible for free or reduced-price lunch, fourth-graders in charter schools did not score as high in reading or mathematics, on average, as fourth-graders in other public schools.

When considering these data, it should be noted that the charter school population is rapidly changing and growing. Future NAEP assessments may reveal different patterns of performance. Further, NAEP does not collect information about students' prior educational experience, which contributes to present performance. Nonetheless, the data in this report do provide a snapshot of charter school students' current performance.

Data source: The National Assessment of Educational Progress (NAEP) 2003 Reading and Mathematics Charter School Pilot Study.

For technical information, see the complete report:

U.S. Department of Education, National Center for Education Statistics. (2004). *America's Charter Schools: Results From the NAEP 2003 Pilot Study* (NCES 2005-456).

For questions about content, contact Arnold Goldstein (arnold.goldstein@ed.gov).

To obtain the complete report (NCES 2005-456), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Characteristics of Private Schools in the United States: Results From the 2001–2002 Private School Universe Survey

Stephen P. Broughman and Kathleen W. Pugh

This article was originally published as the Summary of the E.D. TAB of the same name. The universe data are from the Private School Universe Survey (PSS).

Introduction

In 1988, the National Center for Education Statistics (NCES) introduced a proposal to develop a private school data collection that would improve on the irregular collection of private school data dating back to 1890. Since 1989, the U.S. Bureau of the Census has conducted the biennial Private School Universe Survey (PSS) for NCES. The PSS is designed to generate biennial data on the total number of private schools, students, and teachers and to build a universe of private schools in the 50 states and the District of Columbia to serve as a sampling frame of private schools for NCES sample surveys. The survey design is described in the Technical Notes section of the complete report.

This report on the 2001–2002 private school universe presents data on schools with grades kindergarten through 12[1] by school size, school level, religious orientation, geographical region, community type, and program emphasis. The numbers of students and teachers are reported by the same categories. The number of students is also reported by race/ethnicity, gender, and grade level.

Tables present data by two primary classification schemes: private school typology and religious orientation. They also present data by grade level, association membership, and state. The private school nine-category typology is based on methodological work completed at NCES (McMillen and Benson 1991). Each of the primary divisions (Catholic, other religious, and nonsectarian) is subdivided into three additional categories: Catholic into parochial, diocesan, and private; other religious into conservative Christian, affiliated, and unaffiliated; and nonsectarian into regular program, special emphasis, and special education.[2]

Highlights

All statements of comparison made below have been tested for statistical significance using *t* tests adjusted for multiple comparisons using the Bonferroni adjustment, and are significant at the 95 percent level.

Schools

- In the fall of 2001, there were an estimated 29,273 private elementary and secondary schools in the United States, an increase of 2,050 over the 27,223 schools estimated in the fall of 1999 (table A and Broughman and Colaciello 2001).

- Among the 29,273 private schools in existence in 2001–02, there was considerable diversity as to orientation and affiliation. Of the three primary types of private schools—Catholic, other religious, and nonsectarian—other religious schools were the most numerous, followed by Catholic schools and then nonsectarian schools, representing 49, 28, and 23 percent, respectively, of all private schools (table A).

- The region with the most private schools was the South (9,171), while the regions with the fewest were the West (6,092) and the Northeast (6,556) (table A).

- Ninety-one percent of private schools offered at least some elementary grades, with 60 percent offering elementary grades only and 31 percent offering a combination of elementary and secondary grades; the remaining 9 percent offered secondary grades only (table A).

- Most private schools (82 percent) emphasized a regular elementary/secondary program. The other program emphasis categories—Montessori, special emphasis, special education, vocational/technical, alternative, and early childhood—each contained less than 10 percent of private schools (table A).

Enrollment

- A total of 5,341,513 students were enrolled in the nation's private schools in the fall of 2001, an increase of 178,829 over the 5,162,684 students enrolled in the fall of 1999 (table A and Broughman and Colaciello 2001).

[1]Beginning in 1995, the PSS definition of a school was expanded to include those schools for which kindergarten was the highest grade, referred to as kindergarten-terminal (k-terminal) schools. Estimates presented in this report, except those presented in appendix D of the complete report, are for schools (traditional schools) meeting the more restrictive pre-1995 PSS definition of having at least one of grades 1 through 12.

[2]For a description of typology, see the glossary in the complete report.

Table A. Number and percentage distribution of private schools, students, and full-time-equivalent (FTE) teachers, by selected characteristics: United States, 2001–02

	Schools		Students		FTE teachers	
Selected characteristics	Number	Percent	Number	Percent	Number	Percent
Total	29,273	100.0	5,341,513	100.0	425,406	100.0
NCES typology						
Catholic	8,207	28.0	2,515,524	47.1	155,514	36.6
Parochial	4,347	14.9	1,221,685	22.9	71,058	16.7
Diocesan	2,933	10.0	925,288	17.3	56,343	13.3
Private	927	3.2	368,552	6.9	28,113	6.6
Other religious	14,388	49.2	1,924,874	36.0	166,005	39.0
Conservative Christian	5,527	18.9	823,469	15.4	66,963	15.7
Affiliated	3,406	11.6	562,686	10.5	51,184	12.0
Unaffiliated	5,455	18.6	538,718	10.1	47,858	11.3
Nonsectarian	6,678	22.8	901,114	16.9	103,887	24.4
Regular	2,939	10.0	622,715	11.7	67,326	15.8
Special emphasis	2,381	8.1	176,987	3.3	20,433	4.8
Special education	1,358	4.6	101,412	1.9	16,128	3.8
School level						
Elementary	17,427	59.5	2,883,010	54.0	202,071	47.5
Secondary	2,704	9.2	835,328	15.6	67,318	15.8
Combined	9,142	31.2	1,623,175	30.4	156,017	36.7
Program emphasis						
Regular elementary/secondary	23,991	82.0	4,932,957	92.4	374,977	88.2
Montessori	1,377	4.7	84,525	1.6	9,828	2.3
Special program emphasis	1,076	3.7	127,179	2.4	13,228	3.1
Special education	1,552	5.3	115,164	2.2	18,121	4.3
Vocational/technical	‡	‡	‡	‡	‡	‡
Alternative	1,148	3.9	74,695	1.4	8,531	2.0
Early childhood	120	0.4	4,672	0.1	535	0.1
Size (number of students)						
Less than 50	8,955	30.6	232,342	4.4	32,476	7.6
50–149	8,336	28.5	765,056	14.3	80,269	18.9
150–299	6,554	22.4	1,408,132	26.4	104,858	24.7
300–499	3,199	10.9	1,223,135	22.9	87,317	20.5
500–749	1,392	4.8	829,642	15.5	57,324	13.5
750 or more	836	2.9	883,205	16.5	63,161	14.9
Region						
Northeast	6,556	22.4	1,336,770	25.0	111,127	26.1
Midwest	7,455	25.5	1,354,861	25.4	95,501	22.5
South	9,171	31.3	1,641,474	30.7	142,650	33.5
West	6,092	20.8	1,008,408	18.9	76,128	17.9
Community type						
Central city	10,117	34.6	2,276,808	42.6	176,559	41.5
Urban fringe/large town	10,948	37.4	2,276,823	42.6	176,173	41.4
Rural/small town	8,209	28.0	787,882	14.8	72,674	17.1

‡ Reporting standards not met.
NOTE: Detail may not sum to totals because of rounding or missing values in cells with too few sample cases.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Private School Universe Survey (PSS), 2001–2002. (Originally published as table 1 on p. 9 of the complete report from which this article is excerpted.)

- Private school students represented approximately 10 percent of the total elementary and secondary enrollment in the United States in 2001–02.[3]

- The distribution of enrollment by type of private school differed from the distribution of individual schools. More students were enrolled in Catholic schools than in other religious schools: 47 and 36 percent, respectively, of total private enrollment. Enrollment in nonsectarian schools, representing 17 percent of all private school students, was less than that of Catholic or other religious schools (table A).

- The region with the most private school students was the South (1,641,474), while the region with the fewest was the West (1,008,408) (table A).

- Approximately 54 percent of private school students were enrolled only in elementary schools, 16 percent were enrolled only in secondary schools, and 30 percent were enrolled in combined schools (table A).

- Ninety-two percent of private school students were enrolled in schools with a regular elementary/secondary program emphasis, while fewer than 5 percent of private school students were enrolled in schools featuring any one of the other categories of program emphasis (table A).

- Forty-three percent of all private school students attended schools that were located in central cities, 43 percent attended schools that were located in urban fringe areas or large towns, and 15 percent attended schools in rural areas (table A).

- Approximately three-quarters (76 percent) of private school students were White, non-Hispanic; 10 percent were Black, non-Hispanic; 9 percent were Hispanic; 1 percent were American Indian/Alaska Native; and 5 percent were Asian/Pacific Islander (table B).[4]

Teachers

- The nation's private school students were taught by 425,406 full-time-equivalent (FTE) teachers in the fall of 2001, representing an increase of 30,089 FTE teachers over the 395,317 FTE teachers employed in private schools in the fall of 1999 (table A and Broughman and Colaciello 2001).

- The order of the distribution of FTE teachers by type of private school was the same as that of schools. Other religious schools employed the most FTE teachers, followed by Catholic schools, then by nonsectarian schools, representing 39, 37, and 24 percent, respectively, of total private school FTE teachers (table A).

- The region with the most private school FTE teachers was the South (142,650), while the region with the fewest was the West (76,128) (table A).

- Nearly one-half of private school FTE teachers (48 percent) were teaching in elementary schools, 37 percent were teaching in combined schools, and 16 percent were teaching in secondary schools (table A).

- Approximately 88 percent of private school FTE teachers were teaching in schools with a regular elementary/secondary program emphasis. As in the case of students, fewer than 5 percent of private school FTE teachers were teaching in schools featuring any one of the other categories of program emphasis (table A).

Kindergarten-Terminal Schools

- Since 1995, schools for which kindergarten was the highest grade have been included in the PSS. In the fall of 2001, there were 6,622 of these schools enrolling 98,413 students and employing 15,398 FTE teachers nationwide (table C). Sixty-seven percent of the k-terminal schools were nonsectarian, 31 percent were other religious, and 2 percent were Catholic.

- By definition, all of the k-terminal schools were classified as elementary, and most of them (98 percent) enrolled fewer than 50 students. Seventy-eight percent of these schools emphasized an early childhood program, 21 percent emphasized a Montessori program, and fewer than 5 percent each emphasized any one of the other programs (table C).

- When the k-terminal schools are included with the other PSS schools, the total number of schools becomes 35,895, with 5,439,925 students and 440,804 FTE teachers (table D).

[3]Public school K–12 enrollment for 2001–02 was 46,820,902 (Young 2003).

[4]For comparisons of the racial/ethnic composition of private school enrollment with that of public schools from the 1987–88, 1990–91, and 1993–94 Schools and Staffing Surveys, see McLaughlin, O'Donnell, and Ries (1995) and McLaughlin (1997).

Table B. Percentage distribution of students, by racial/ethnic background, and percentage minority students in private schools, by selected characteristics: United States, 2001–02

Selected characteristics	White, non-Hispanic	Black, non-Hispanic	Hispanic	American Indian/ Alsaka Native	Asian/ Pacific Islander	Minority
Total	75.9	9.7	8.6	0.7	5.1	24.1
NCES typology						
Catholic	74.5	8.4	11.9	0.7	4.6	25.5
Parochial	74.2	8.6	12.1	0.6	4.5	25.8
Diocesan	75.2	8.3	11.3	0.7	4.5	24.8
Private	73.4	7.9	12.5	0.8	5.5	26.6
Other religious	78.7	10.6	5.5	0.7	4.5	21.3
Conservative Christian	76.4	11.7	7.1	0.8	4.0	23.6
Affiliated	81.0	8.5	4.8	0.4	5.3	19.0
Unaffiliated	80.0	11.2	3.7	0.8	4.4	20.0
Nonsectarian	74.0	11.5	5.8	0.8	7.8	26.0
Regular	76.9	9.1	4.8	0.7	8.5	23.1
Special emphasis	71.6	12.0	6.8	1.0	8.7	28.4
Special education	60.8	25.7	10.6	0.8	2.1	39.3
School level						
Elementary	74.2	10.3	9.9	0.8	4.9	25.9
Secondary	76.4	8.3	9.8	0.5	5.0	23.6
Combined	78.8	9.4	5.5	0.6	5.7	21.2
Program emphasis						
Regular elementary/secondary	76.5	9.2	8.6	0.7	5.0	23.5
Montessori	70.9	10.7	7.1	1.3	10.1	29.1
Special program emphasis	75.1	10.6	6.0	0.6	7.8	24.9
Special education	60.3	26.4	10.5	0.9	1.9	39.7
Vocational/technical	‡	‡	‡	‡	‡	‡
Alternative	70.1	15.4	8.1	1.1	5.3 !	29.9
Early childhood	72.6	11.8	8.4	1.3	5.9	27.4
Size (number of students)						
Less than 50	73.6	14.9	6.9	1.4 !	3.2	26.4
50–149	72.1	15.1	7.8	1.1	3.9	27.9
150–299	71.5	12.3	10.5	0.8	4.9	28.5
300–499	78.4	7.7	8.6	0.6	4.8	21.6
500–749	80.4	6.2	8.1	0.5	4.8	19.6
750 or more	79.3	5.7	7.0	0.4	7.7	20.7
Region						
Northeast	76.0	11.6	7.8	0.6	4.0	24.0
Midwest	84.1	8.5	4.7	0.5	2.3	15.9
South	77.1	11.1	7.9	0.5	3.4	22.9
West	62.9	6.8	15.8	1.3	13.1	37.1
Community type						
Central city	68.1	13.8	11.1	0.5	6.4	31.9
Urban fringe/large town	79.2	7.7	7.7	0.6	4.8	20.8
Rural/small town	89.1	3.8	3.4	1.4	2.3	10.9

! Interpret data with caution. The coefficient of variation for this estimate is larger than 25 percent. The standard error for this estimate is presented in the corresponding table in appendix C of the complete report.
‡ Reporting standards not met.
NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Private School Universe Survey (PSS), 2001–2002. (Originally published as table 20 on p. 28 of the complete report from which this article is excerpted.)

Table C. Number and percentage distribution of kindergarten-terminal private schools, students, and full-time-equivalent (FTE) teachers, by selected characteristics: United States, 2001–02

Selected characteristics	Schools		Students		FTE teachers	
	Number	Percent	Number	Percent	Number	Percent
Total	6,622	100.0	98,413	100.0	15,398	100.0
NCES typology						
Catholic	133	2.0	3,210	3.3	484	3.2
Parochial	27	0.4	742	0.8	104	0.7
Diocesan	33	0.5	892	0.9	159	1.0
Private	74	1.1	1,576	1.6	221	1.4
Other religious	2,059	31.1	33,048	33.6	4,616	30.0
Conservative Christian	215	3.3	3,809	3.9	651	4.2
Affiliated	391	5.9	6,317	6.4	920	6.0
Unaffiliated	1,453	21.9	22,922	23.3	3,046	19.8
Nonsectarian	4,429	66.9	62,154	63.2	10,297	66.9
Regular	3,107	46.9	46,335	47.1	6,627	43.0
Special emphasis	1,295	19.6	15,418	15.7	3,594	23.3
Special education	27!	0.4!	401!	0.4!	77!	0.5!
School level						
Elementary	6,622	100.0	98,413	100.0	15,398	100.0
Secondary	†	†	†	†	†	†
Combined	†	†	†	†	†	†
Program emphasis						
Regular elementary/secondary	0	0.0	0	0.0	0	0.0
Montessori	1,373	20.7	16,113	16.4	3,809	24.7
Special program emphasis	52!	0.8!	987!	1.0!	107!	0.7!
Special education	36!	0.5!	448!	0.5!	86!	0.6!
Vocational/technical	0	0.0	0	0.0	0	0.0
Alternative	‡	‡	‡	‡	‡	‡
Early childhood	5,157	77.9	80,793	82.1	11,388	74.0
Size (number of students)						
Less than 50	6,479	97.8	87,466	88.9	14,222	92.4
50–149	132	2.0	8,807	9.0	954	6.2
150–299	‡	‡	‡	‡	‡	‡
300–499	0	0.0	0	0.0	0	0.0
500–749	0	0.0	0	0.0	0	0.0
750 or more	0	0.0	0	0.0	0	0.0
Region						
Northeast	1,950	29.4	28,811	29.3	4,336	28.2
Midwest	1,211	18.3	16,960	17.2	2,721	17.7
South	1,715	25.9	27,288	27.7	4,308	28.0
West	1,747	26.4	25,354	25.8	4,032	26.2
Community type						
Central city	2,314	35.0	34,431	35.0	5,381	35.0
Urban fringe/large town	3,479	52.5	52,894	53.8	8,410	54.6
Rural/small town	829	12.5	11,087	11.3	1,607	10.4

† Not applicable.
! Interpret data with caution. The coefficient of variation for this estimate is larger than 25 percent. The standard error for this estimate is presented in the corresponding table in appendix C of the complete report.
‡ Reporting standards not met.
NOTE: Detail may not sum to totals because of rounding or missing values in cells with too few sample cases. Kindergarten-terminal schools are schools in which the highest grade is kindergarten.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Private School Universe Survey (PSS), 2001–2002. (Originally published as table D-1 on p. 91 of the complete report from which this article is excerpted.)

Table D. Number and percentage distribution of traditional Private School Universe Survey (PSS) and kindergarten-terminal private schools, students, and full-time-equivalent (FTE) teachers, by selected characteristics: United States, 2001–02

	Schools		Students		FTE teachers	
Selected characteristics	Number	Percent	Number	Percent	Number	Percent
Total	35,895	100.0	5,439,925	100.0	440,804	100.0
NCES typology						
Catholic	8,340	23.2	2,518,735	46.3	155,998	35.4
Parochial	4,374	12.2	1,222,427	22.5	71,163	16.1
Diocesan	2,965	8.3	926,180	17.0	56,502	12.8
Private	1,001	2.8	370,128	6.8	28,334	6.4
Other religious	16,447	45.8	1,957,922	36.0	170,621	38.7
Conservative Christian	5,743	16.0	827,278	15.2	67,613	15.3
Affiliated	3,796	10.6	569,003	10.5	52,103	11.8
Unaffiliated	6,908	19.3	561,640	10.3	50,904	11.6
Nonsectarian	11,107	30.9	963,269	17.7	114,184	25.9
Regular	6,046	16.8	669,050	12.3	73,952	16.8
Special emphasis	3,677	10.2	192,406	3.5	24,027	5.5
Special education	1,385	3.9	101,813	1.9	16,205	3.7
School level						
Elementary	24,049	67.0	2,981,423	54.8	217,469	49.3
Secondary	2,704	7.5	835,328	15.4	67,318	15.3
Combined	9,142	25.5	1,623,175	29.8	156,017	35.4
Program emphasis						
Regular elementary/secondary	23,991	66.8	4,932,957	90.7	374,977	85.1
Montessori	2,750	7.7	100,638	1.9	13,637	3.1
Special program emphasis	1,128	3.1	128,167	2.4	13,335	3.0
Special education	1,588	4.4	115,612	2.1	18,207	4.1
Vocational/technical	‡	‡	‡	‡	‡	‡
Alternative	1,153	3.2	74,767	1.4	8,539	1.9
Early childhood	5,277	14.7	85,465	1.6	11,923	2.7
Size (number of students)						
Less than 50	15,434	43.0	319,808	5.9	46,699	10.6
50–149	8,468	23.6	773,863	14.2	81,223	18.4
150–299	6,566	18.3	1,410,272	25.9	105,079	23.8
300–499	3,199	8.9	1,223,135	22.5	87,317	19.8
500–749	1,392	3.9	829,642	15.3	57,324	13.0
750 or more	836	2.3	883,205	16.2	63,161	14.3
Region						
Northeast	8,506	23.7	1,365,581	25.1	115,464	26.2
Midwest	8,665	24.1	1,371,821	25.2	98,222	22.3
South	10,885	30.3	1,668,762	30.7	146,958	33.3
West	7,839	21.8	1,033,761	19.0	80,160	18.2
Community type						
Central city	12,431	34.6	2,311,239	42.5	181,940	41.3
Urban fringe/large town	14,427	40.2	2,329,718	42.8	184,583	41.9
Rural/small town	9,037	25.2	798,969	14.7	74,281	16.9

‡ Reporting standards not met.
NOTE: Detail may not sum to totals because of rounding or missing values in cells with too few sample cases. Kindergarten-terminal schools are schools in which the highest grade is kindergarten.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Private School Universe Survey (PSS), 2001–2002. (Originally published as table D-3 on p. 93 of the complete report from which this article is excerpted.)

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For technical information, see the complete report:

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To obtain the complete report (NCES 2005-305), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Dropout Rates in the United States: 2001

Phillip Kaufman, Martha Naomi Alt, and Christopher D. Chapman

This article was originally published as the Executive Summary of the Statistical Analysis Report of the same name. The sample survey data are from the Current Population Survey, conducted by the U.S. Census Bureau.

This report is the latest in a series of National Center for Education Statistics (NCES) reports on high school dropout and completion rates that began in 1988. It presents estimates of rates in 2001, and includes time series data on high school dropout and completion rates for the period 1972 through 2001. In addition to extending time series data reported in earlier years, the report examines the characteristics of high school dropouts and high school completers in 2001. It shows that while progress was made during the 1970s and 1980s in reducing high school dropout rates and increasing high school completion rates, these rates have since stagnated. The report includes four rates to provide a broad picture of high school dropouts and completers in the United States: the event dropout rate, the status dropout rate, the status completion rate, and the 4-year completion rate. Each rate, defined in the sections that follow, provides unique information about the state of high school education.

Event Dropout Rates

Event dropout rates indicate the percentage of students who dropped out of school over a relatively short period of time. They are useful for studying the possible effects of particular phenomena, or events, on the propensity to drop out. Such events might include the introduction of new education policies or changes in economic conditions.

The event dropout rates presented in this report estimate the percentage of high school students who dropped out of high school between the beginning of one school year and the beginning of the next. Using data from the Current Population Survey (CPS), event dropout rates are presented that describe the percentage of youth ages 15 through 24 who dropped out of grades 10–12. Demographic data collected in the CPS permit event dropout rates to be calculated across various individual characteristics, including race/ethnicity, sex, region of residence, and income level.

- Five out of every 100 students enrolled in high school in October 2000 left school before October 2001 without successfully completing a high school program. The percentage of students who were event dropouts decreased from 1972 through 1987.[1] However, despite some year-to-year fluctuations, the percentage of students dropping out of school each year has stayed relatively flat since 1987 (table A and figure A).

- From 1990 through 2001, between 347,000 and 544,000 students in grades 10 through 12 left school each year without successfully completing a high school program.

- In 2001, students living in low-income families were six times more likely than their peers in high-income families to drop out of high school over the 1-year period of October 2000 to 2001. (Low income is defined as the lowest 20 percent of all family incomes,

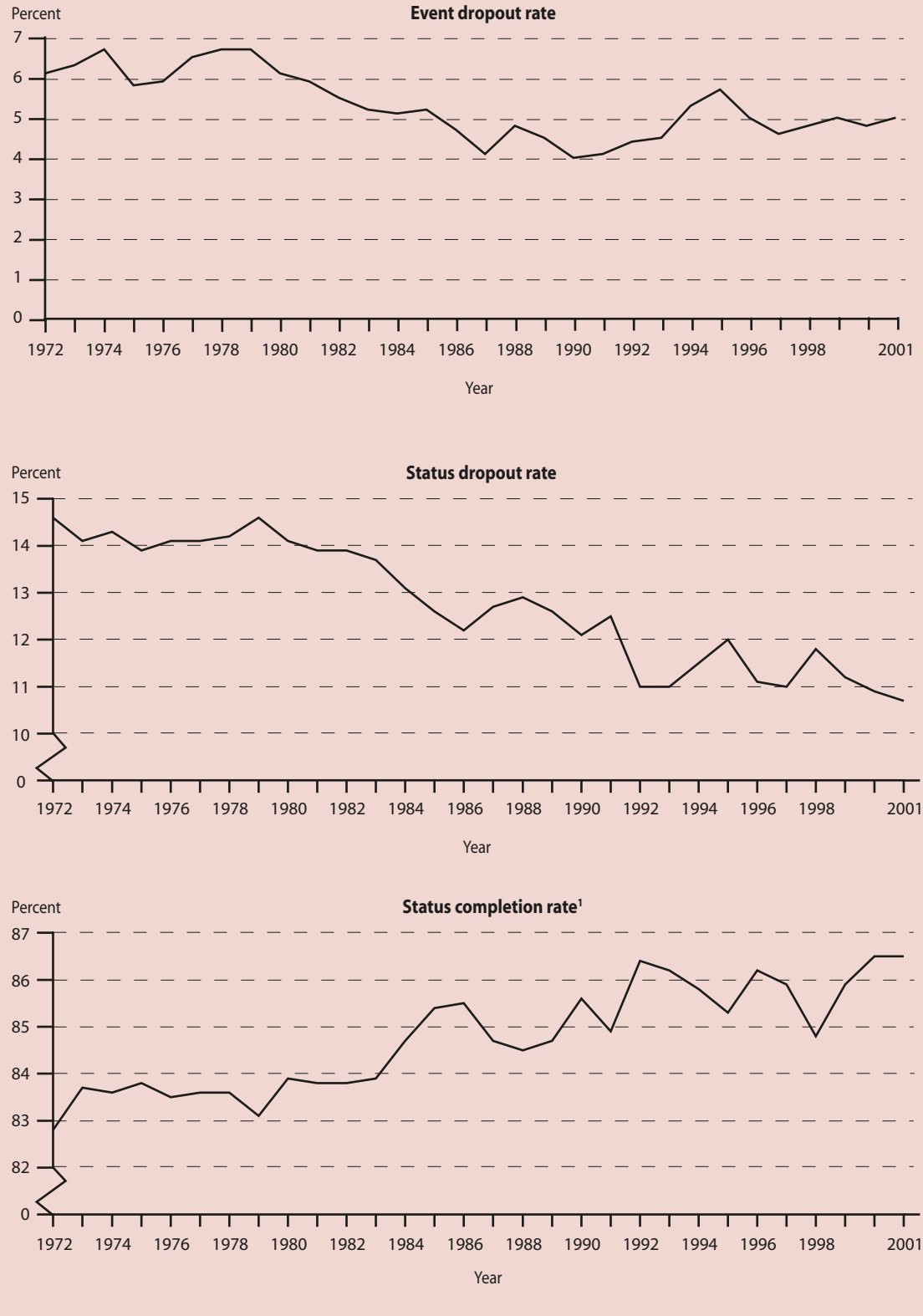
[1]The statistical significance of time trends noted in this report were assessed using weighted least squares regressions. Comparisons among groups in 2001 were assessed using Student's *t* test, without Bonferroni adjustment (for number of comparisons). In previous reports, Bonferroni adjustments had been applied. This change in statistical testing may lead to tests being significant in this report that were noted as not significant in previous reports. All changes or differences noted in this report are statistically significant at the $p \leq .05$ level. For a full discussion of the statistical methods used, see appendix C in the full report.

Table A. Percentage of 15- through 24-year-olds who dropped out of grades 10–12 in the past year (event dropout rate), percentage of 16- through 24-year-olds who were dropouts (status dropout rate), and percentage of 18- through 24-year-olds who completed high school (status completion rate), by race/ethnicity: October 2001

Dropout and completion measures	Total[1]	White, non-Hispanic	Black, non-Hispanic	Hispanic	Asian/Pacific Islander
Event dropout rate	5.0	4.1	6.3	8.8	2.3
Status dropout rate	10.7	7.3	10.9	27.0	3.6
Status completion rate[2]	86.5	91.0	85.6	65.7	96.1

[1]Due to small sample sizes, American Indians/Alaska Natives are included in the total but are not shown separately.
[2]Excludes those still enrolled in high school.
SOURCE: U.S. Department of Commerce, Bureau of the Census , Current Population Survey (CPS), October 2001.

Figure A. Percentage of 15- through 24-year-olds who dropped out of grades 10–12 in the past year (event dropout rate), percentage of 16- through 24-year-olds who were dropouts (status dropout rate), and percentage of 18- through 24-year-olds who completed high school (status completion rate): October 1972 through October 2001



[1]Excludes students still enrolled in high school.
NOTE: Data for 1987 through 2001 reflect new editing procedures instituted by the U.S. Census Bureau for cases with missing data on school enrollment items. Data for 1992 through 2001 reflect new wording of the educational attainment item in the Current Population Survey beginning in 1992. Data for 1994 through 2001 reflect computer-assisted interviewing methods and a change in population controls (adjustment for undercounting) in the 1990 U.S. Census. See appendix C in the full report for a description of the impact of these changes on rates.
SOURCE: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1972–October 2001.

while high income refers to the top 20 percent of the income distribution.)

- About three-fourths (77.3 percent) of event dropouts in 2001 were ages 15 through 18, and about two-fifths (42.5 percent) were ages 15 through 17.

In order to look at variation in event dropout rates at the state level, a second data source is necessary. Using data from the Common Core of Data (CCD), event dropout rates are presented that describe the percentage of public high school students who dropped out of grades 9–12 in the 2000–01 school year.

- Among those states for which CCD dropout data are available, event dropout rates for public high school students ranged from 2.2 percent to 10.9 percent.

Status Dropout Rates

Because event dropout rates look at what happened over a relatively short period of time, they are not well suited for the study of broader and less time-sensitive educational issues such as the general educational attainment level of a population. For example, an event dropout rate can indicate how many people dropped out last year, but cannot show how many Americans lack a basic high school education more generally. Status dropout rates are better suited to study more general questions of educational attainment.

Status dropout rates measure the percentage of individuals who are not enrolled in high school and who lack a high school credential, irrespective of when they dropped out. Using data from the CPS, status dropout rates show the percentage of young people ages 16 through 24 who are out of school and who have not earned a high school credential (either diploma or equivalency credential such as a General Educational Development [GED] certificate). Status rates are higher than event rates because they include all dropouts in this age range, regardless of when they last attended school, as well as individuals who may have never attended school in the United States (for example, immigrants who did not complete a high school diploma in their home country).

- In October 2001, some 3.8 million 16- through 24-year-olds were not enrolled in a high school program and had not completed high school (status dropouts). These individuals accounted for 10.7 percent of the 35.2 million 16- through 24-year-olds in the United States in 2001 (table A). As noted with event rates, this estimate is consistent with the estimates reported over the last 10 years (figure A).

- The status dropout rate of Whites[2] remains lower than that of Blacks, but over the past 30 years the difference between the rates of Whites and Blacks has narrowed. However, this narrowing of the gap occurred during the 1980s; since 1990, the gap between Whites and Blacks has remained fairly constant. In addition, Hispanics in the United States continued to have relatively high status dropout rates when compared to Whites, Blacks, or Asians/Pacific Islanders (table A).

- In 2001, the status dropout rate for Asians/Pacific Islanders ages 16–24 was lower than for other 16- through 24-year-olds. The status rate for Asians/Pacific Islanders was 3.6 percent, compared with 27.0 percent for Hispanics, 10.9 percent for Blacks, and 7.3 percent for Whites (table A).

- In 2001, 43.4 percent of Hispanic 16- through 24-year-olds born outside of the United States were high school dropouts. Hispanics born in the United States were much less likely to be dropouts. Regardless of when the youth or their families immigrated to the United States, Hispanic youth were more likely to be dropouts than their counterparts of other racial and ethnic groups.

Sample size limitations on the CPS prohibit the development of state-level status dropout rate estimates. Unfortunately, there are no good alternative sources of data available to calculate state-level status dropout rates on an annual basis.

Status Completion Rates

Status completion rates measure the percentage of a given population that has a high school credential, regardless of when the credential was earned. Using data from the CPS, status completion rates are presented that show the percentage of young adults between the ages of 18 and 24 who hold a high school credential. Credentials include regular and alternative diplomas as well as equivalent credentials such

[2]The racial/ethnic categories used in this report are White, non-Hispanic; Black, non-Hispanic; Hispanic (any race); and Asian/Pacific Islander, non-Hispanic. However, for ease of reading, the shorter terms White, Black, Hispanic, and Asian/Pacific Islander are sometimes used.

as the GED certificate. Those still enrolled in high school are excluded from the equation.[3]

- In 2001, 86.5 percent of 18- through 24-year-olds not enrolled in elementary or secondary school had completed high school. Between 1972 and 1990, status completion rates increased by 2.8 percentage points from 82.8 percent in 1972 to 85.6 percent in 1990; since 1991, the rate has shown no consistent trend and has fluctuated between 84.8 and 86.5 percent.

- High school status completion rates for White and Black young adults increased between the early 1970s and 1990 but have remained relatively flat since 1990. In 2001, 91.0 percent of White and 85.6 percent of Black 18- through 24-year-olds had completed high school (table A).

- Whites and Asians/Pacific Islanders in 2001 were more likely than their Black and Hispanic peers to have completed high school (table A).

4-Year Completion Rates

Four-year completion rates report the percentage of ninth-grade students who left school over a subsequent 4-year period and who did so with a high school credential. Put simply, it asks, "of those who left school, what proportion did so as a completer?" Similar to the status completion rate, those who are still enrolled in high school 4 years after entering ninth grade are excluded from the calculation. Using data from the CCD, an annual cross-sectional data collection, 4-year completion rates are presented for public school students at the state level. Students earning a regular diploma and students who meet modified graduation requirements established for special conditions are considered completers. Though considered valid credentials, students earning alternative credentials such as GEDs are not considered completers for this measure.

- Looking at completers at the end of the 2000–01 school year, the 4-year high school completion rates ranged from 65.0 percent to 90.1 percent among reporting states (table B).

Data Considerations

As with all data collections, those used in this report are useful for calculating some estimates but are poorly suited for calculating other types of estimates. For example, the CPS data are well suited for studying the civilian, noninstitutionalized population residing in the United States. They are not designed to provide information about military personnel or individuals residing in group quarters such as prison inmates. In addition, data from the CCD are well suited for studying the public school student population in a given year. They are not well suited for studying private school students, and because of missing data from some states, are not well suited for studying high school dropouts at the national level.

Legislation enacted as part of the No Child Left Behind Act has increased interest in being able to study yearly change in high school graduation rates in general, and in on-time public high school graduation rates more specifically. Graduation rates measure the percent of a population holding a regular high school diploma. Measuring such rates requires an analytic ability to separate regular diploma holders from GED recipients and individuals who earn other alternative credentials, and to have a clearly defined population that should be graduates. Existing CPS and CCD data that might be used to develop such rates on an annual basis have important limitations on one or both of these prerequisites. For example, CPS estimates of GED recipients appear to be unreliable, and it is not clear which reference population to use to determine who should be graduates for CCD-based calculations. Such limitations become even more significant for developing on-time graduation rates. NCES is currently working with experts in the field of high school outcomes research to develop graduation rate statistics that can be produced on an annual basis to help address this research need. While there is ongoing research into different measurement approaches, this report does not include statistics on either concept. For additional technical information about the data and rates presented in this report, please see appendix C in the full report.

[3]Status completion rates and status dropout rates presented in this report are not complementary. The status completion rates exclude those still enrolled in high school or below, while the status dropout rates account for these individuals. They are also based on different age groups.

Data source: U.S. Department of Commerce, Bureau of the Census, Current Population Survey (CPS), October 1972–October 2001.

For technical information, see the complete report:

Kaufman, P., Alt, M.N., and Chapman, C.D. (2004). *Dropout Rates in the United States: 2001* (NCES 2005-046).

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To obtain the complete report (NCES 2005-046), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Table B. Four-year completion rates for 9th-grade public school students, by state: 2000–01

State	Total number of completers	4-year completion rate (percent)[1]		
		Total	Diploma	Other completers
United States	2,616,570	—	—	—
Alabama	39,613	80.0	74.9	5.1
Alaska	6,829	75.2	75.0	0.2
Arizona[3]	47,543	68.3	67.2	1.1
Arkansas	29,019	79.1	73.9	5.2
California	316,124	—	—	—
Colorado	39,370	—	—	—
Connecticut	30,435	86.6	86.5	0.1
Delaware	6,712	81.6	80.4	1.2
District of Columbia[4]	3,043	—	—	—
Florida[4]	115,522	—	—	—
Georgia	69,215	71.1	64.2	6.9
Hawaii	10,323	77.7	76.0	1.7
Idaho[3]	16,101	76.9	76.5	0.4
Illinois	110,624	75.8	75.8	†
Indiana	60,464	—	—	—
Iowa	33,909	89.2	88.9	0.4
Kansas	29,360	—	—	—
Kentucky[4]	37,293	79.9	79.2	0.7
Louisiana	39,296	65.0	63.4	1.6
Maine	12,129	86.5	86.4	0.1
Maryland	49,569	83.2	82.6	0.6
Massachusetts	54,393	86.3	86.3	†
Michigan	97,124	—	—	—
Minnesota	56,550	82.5	82.5	†
Mississippi	25,762	77.3	71.3	6.0
Missouri	54,198	81.0	80.9	0.1
Montana	10,628	82.1	82.1	†
Nebraska	19,738	83.9	83.2	0.7
Nevada	15,880	73.5	70.3	3.1
New Hampshire[4]	12,294	—	—	—
New Jersey	75,948	88.0	88.0	†
New Mexico	18,354	74.4	73.8	0.6
New York	147,305	81.6	78.6	3.0
North Carolina[4]	63,954	—	—	—
North Dakota	8,445	90.1	90.1	†
Ohio	113,973	81.0	77.3	3.7
Oklahoma	37,448	79.2	79.2	†
Oregon	33,713	76.4	70.4	6.0
Pennsylvania	114,436	84.0	84.0	†
Rhode Island	8,617	79.8	79.7	0.1
South Carolina[4]	30,577	—	—	—
South Dakota	8,881	84.6	84.6	†
Tennessee	44,663	79.5	72.4	7.2
Texas[4]	215,316	—	—	—
Utah	31,214	82.6	82.2	0.4
Vermont	6,876	81.9	81.6	0.2
Virginia	68,593	83.8	80.7	3.1
Washington[4]	55,337	—	—	—
West Virginia	18,452	83.4	83.3	0.1
Wisconsin[5]	59,341	90.0	90.0	—
Wyoming[5]	6,067	76.5	76.5	—

— Not available.
† Not applicable; state does not award this type of credential.
[1]The 4-year completion rate is calculated by dividing the number of high school completers in a given year by the number of high school completers in that year and dropouts over the preceding 4-year period.
[2]Includes regular and other diplomas as well as other completers, but does not include high school equivalencies (e.g., GED).
[3]Values for 1 year of the 4-year completion rate denominator are imputed.
[4]States that reported completers but not 4 consecutive years of dropout data cannot have a 4-year high school completion rate.
[5]Other completers data are missing for Wisconsin and Wyoming.
NOTE: See appendix C in the full report for a detailed discussion of the CCD dropout definition. Includes public school students only.
SOURCE: Data are reported by states to the U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Local Education Agency Universe Dropout and Completion Data File: School Year 2000–01," Version 1a. The data in the 2000–01 Version 1a file are preliminary release data. (Originally published as table 5 on pp. 26–27 of the complete report from which this article is excerpted.)

Indicators of School Crime and Safety: 2004

Jill F. DeVoe, Katharin Peter, Philip Kaufman, Amanda Miller, Margaret Noonan, Thomas D. Snyder, and Katrina Baum

This article was originally published as the Executive Summary of the report of the same name. The report is a joint effort of the Bureau of Justice Statistics (BJS) and the National Center for Education Statistics (NCES). The numerous data sources, most of which are sample surveys, are listed at the end of this article.

For youth to fulfill their potential in school, schools should be safe and secure places for all students, teachers, and staff members. Without a safe learning environment, teachers may have difficulty teaching and students may have difficulty learning. Gauging the safety of the school environment, however, may be difficult given the large amount of attention devoted to isolated incidents of extreme school violence nationwide.

Ensuring safer schools requires establishing good indicators of the current state of school crime and safety across the nation and periodically monitoring and updating these indicators. *Indicators of School Crime and Safety* is designed to provide an annual snapshot of specific crime and safety indicators, covering topics such as victimization, fights, bullying, classroom disorder, teacher injury, weapons, and student perceptions of school safety. In addition to covering a wide range of topics, the indicators are based on information drawn from a wide range of sources, including surveys of students, teachers, and principals, and data collections by federal departments and agencies such as the National Center for Education Statistics (NCES), the Bureau of Justice Statistics (BJS), the Federal Bureau of Investigation (FBI), and the Centers for Disease Control and Prevention (CDC).

Key Findings

The key findings of the report are presented below.

Violent deaths at school

From July 1, 1999, through June 30, 2000, there were 32 school-associated violent deaths in the United States. Twenty-four of these violent deaths were homicides and 8 were suicides. Sixteen of the 24 school-associated homicides involved school-aged children. These 16 homicides are a relatively small percentage (1 percent) of the total of 2,124 children ages 5–19 who were victims of homicide over the same period. Six of the 8 school-associated suicides from July 1, 1999, through June 30, 2000, involved school-aged children. Away from school, there were a total of 1,922 suicides of children ages 5–19 during the 2000 calendar year.

Nonfatal student victimization—student reports

The victimization rate for students ages 12–18 generally declined both at school and away from school between 1992 and 2002; this was true for the total crime rate as well as for thefts, serious violent crimes (including rape, sexual assault, robbery, and aggravated assault), and violent crimes (that is, serious violent crime plus simple assault) (figure A). While this overall trend indicates a decline during this time frame, no difference was detected between 2001 and 2002 in the total crime rate, the rate of theft, or the rate of violent victimization either at or away from school.

- In 2002, students ages 12–18 were more likely to be victims of nonfatal serious violent crime away from school than at school.* Students in this age range were victims of about 309,000 serious violent crimes away from school, compared with about 88,000 at school.

- In 2002, younger students (ages 12–14) were more likely than older students (ages 15–18) to be victims of crime at school, while older students were more likely than younger students to be victims away from school.

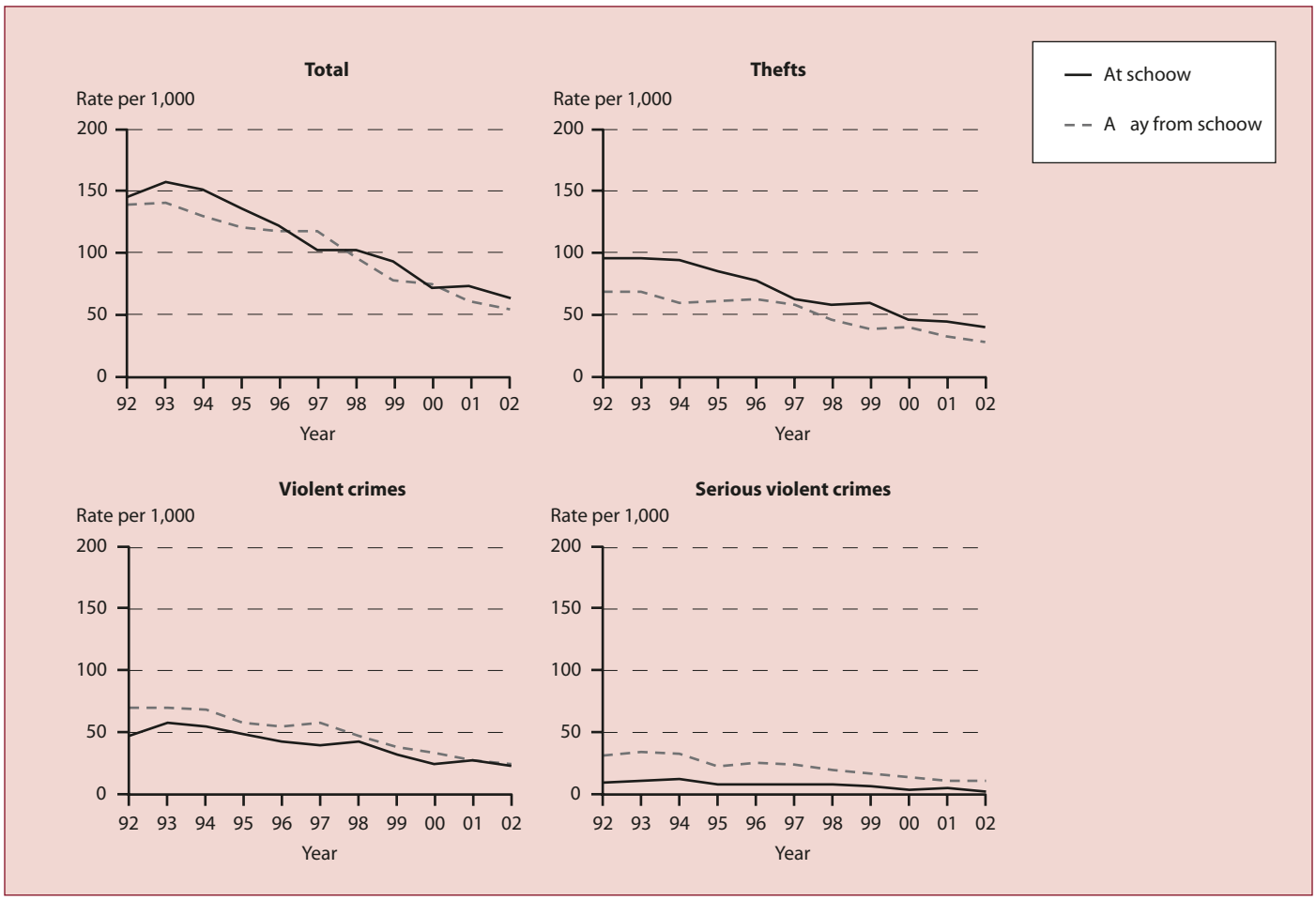
- In 2003, 5 percent of students ages 12–18 reported being victims of nonfatal crimes, 4 percent reported being victims of theft, and 1 percent reported being victims of violent incidents.

- The percentage of students in grades 9–12 who have been threatened or injured with a weapon on school property fluctuated between 1993 and 2003, but without a clear trend. In all survey years from 1993 to 2003, 7–9 percent of students reported being threatened or injured with a weapon such as a gun, knife, or club on school property in the preceding 12 months.

- Between 1993 and 2003, the percentage of students in grades 9–12 who reported being in a fight anywhere declined from 42 percent to 33 percent. Similarly, the percentage of students in grades 9–12 who reported fighting on school property declined over this period, from 16 percent to 13 percent.

*These data are not adjusted by the number of hours that students spend on school property and the number of hours they spend elsewhere.

Figure A. Rate of nonfatal crimes against students ages 12–18 per 1,000 students, by type of crime and location: 1992–2002



NOTE: Serious violent crimes include rape, sexual assault, robbery, and aggravated assault. Violent crimes include serious violent crimes and simple assault. Total crimes include violent crimes and theft. "At school" includes inside the school building, on school property, or on the way to or from school.
SOURCE: U.S. Department of Justice, Bureau of Justice Statistics, National Crime Victimization Survey (NCVS), 1992–2002. (Originally published as figure 2.1 on p. 11 of the complete report from which this article is excerpted.)

- In 2003, 7 percent of students ages 12–18 reported that they had been bullied at school. The percentage of students in this age range who had been bullied increased from 5 percent in 1999 to 8 percent in 2001, but no differences were detected between 2001 and 2003.

- In 2003, public school students were more likely than private school students to report being bullied (7 vs. 5 percent). In the same year, rural students were more likely than their urban and suburban counterparts to report being bullied (10 percent of rural students vs. 7 percent each of urban and suburban students).

Violence and crime at school—public school reports

In 1999–2000, 20 percent of all public schools experienced one or more serious violent crimes such as rape, sexual assault, robbery, and aggravated assault. Seventy-one percent of public schools reported violent incidents and 46 percent reported thefts. This report also provides the number of disciplinary actions taken by school principals for reasons not related to academics. About 54 percent of public schools reported taking a serious disciplinary action in the 1999–2000 school year. Of those disciplinary actions, 83 percent were suspensions lasting 5 days or more, 11 percent were removals with no services (i.e., expulsions), and 7 percent were transfers to specialized schools.

- Secondary schools were more likely than other schools to experience a violent incident during the 1999–2000 school year (92 vs. 61–87 percent for elementary, middle, and combined schools).

- Two percent of public schools took a serious disciplinary action for the use of a firearm or explosive

device, and 4 percent did so for the possession of a firearm or explosive device.

Nonfatal teacher victimization at school—teacher reports

Annually, over the 5-year period from 1998 to 2002, teachers were the victims of approximately 234,000 total nonfatal crimes at school, including 144,000 thefts and 90,000 violent crimes (rape, sexual assault, robbery, aggravated assault, and simple assault).

- Over the 5-year period from 1998 to 2002, senior high school and middle/junior high school teachers were more likely than elementary school teachers to be victims of violent crimes (most of which were simple assaults) (30 and 26 crimes, respectively, vs. 12 crimes per 1,000 teachers).

- Teachers were differentially victimized by violent crimes at school according to where they taught. Over the 5-year period from 1998 to 2002, urban teachers were more likely than rural and suburban teachers to be victims of violent crimes.

- In the 1999–2000 school year, 9 percent of all elementary and secondary school teachers were threatened with injury by a student, and 4 percent were physically attacked by a student.

School environment

The percentage of students who reported being afraid of being attacked at school or on the way to and from school decreased from 12 percent in 1995 to 6 percent in 2001. No difference was detected between the most recent survey years, 2001 and 2003, in the percentage of students who feared such an attack. In 1999 and 2001, students were more likely to be afraid of being attacked at school or on the way to and from school than away from school; however, in 2003, no difference was detected in the percentage of students who reported fear of an attack at school and those fearing an attack away from school.

- Between 1993 and 2003, the percentage of students in grades 9–12 who reported carrying a weapon such as a gun, knife, or club on school property within the previous 30 days declined—from 12 percent to 6 percent.

- In 2003, 4 percent of students ages 12–18 reported that they had avoided one or more places in school. Between 1995 and 1999, the percentage of students ages 12–18 who avoided one or more places in school decreased from 9 to 5 percent, but no difference was detected in the percentage of students who did so in 1999, 2001, and 2003 (between 4 and 5 percent in each year).

- In 2003, 12 percent of students ages 12–18 reported that someone at school had used hate-related words against them. That is, in the previous 6 months, someone at school had called them a derogatory word related to race, religion, ethnicity, disability, gender, or sexual orientation. During the same period, about 36 percent of students ages 12–18 saw hate-related graffiti at school.

- In 2003, 21 percent of students ages 12–18 reported that street gangs were present at their schools. Students in urban schools were the most likely to report the presence of street gangs at their school (31 percent), followed by suburban students and rural students, who were the least likely to do so (18 and 12 percent, respectively).

- In 1999–2000, public school principals were asked to report how often certain disciplinary problems occurred at their schools. Twenty-nine percent reported that student bullying occurred on a daily or weekly basis and 19 percent reported that student acts of disrespect for teachers occurred at the same frequency. Additionally, 13 percent reported student verbal abuse of teachers, 3 percent reported occurrences of student racial tensions, and 3 percent reported widespread disorder in the classrooms on a daily or weekly basis.

- In 2003, 5 percent of students in grades 9–12 had at least one drink of alcohol on school property in the 30 days prior to the survey, and 45 percent of students had at least one drink anywhere.

- In 2003, 22 percent of students in grades 9–12 reported using marijuana anywhere during the previous 30 days, and 6 percent reported using marijuana on school property.

- In 2003, 29 percent of students in grades 9–12 reported that someone had offered, sold, or given them an illegal drug on school property in the 12 months prior to the survey.

Data sources:

NCES: School Survey on Crime and Safety (SSOCS), 2000; Schools and Staffing Survey (SASS), "Public, Private, and Charter Teacher and School Questionnaires," 1993–94 and 1999–2000.

Bureau of Justice Statistics: National Crime Victimization Survey (NCVS), 1992–2002; School Crime Supplement (SCS) to the NCVS, selected years, 1995–2003.

Centers for Disease Control and Prevention: National Center for Injury Prevention and Control, 1992–2002 School-Associated Violent Deaths Surveillance Study (SAVD), previously unpublished tabulation (August 2003); National Center for Injury Prevention and Control, web-based Injury Statistics Query and Reporting System (2003), retrieved August 2003 from http://www.cdc.gov/ncipc/wisqars; National Center for Chronic Disease Prevention and Health Promotion, Youth Risk Behavior Surveillance System, "Youth Risk Behavior Survey (YRBS)," selected years, 1993–2003.

Federal Bureau of Investigation: Supplementary Homicide Reports (SHR), 1992–2001, selected years. Special tabulation from the Bureau of Justice Statistics, preliminary data (October 2003).

For technical information, see the complete report:

DeVoe, J.F., Peter, K., Kaufman, P., Miller, A., Noonan, M., Snyder, T.D., and Baum, K. (2004). *Indicators of School Crime and Safety: 2004* (NCES 2005-002).

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Postsecondary Education

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College Persistence

College Persistence on the Rise? Changes in 5-Year Degree Completion and Postsecondary Persistence Rates Between 1994 and 2000

Laura Horn and Rachael Berger

This article was originally published as the Executive Summary of the Statistical Analysis Report of the same name. The sample survey data are from the Beginning Postsecondary Students Longitudinal Study (BPS).

Using two longitudinal surveys of beginning postsecondary students (i.e., first-time freshmen),[1] this study examines whether students who enrolled in the beginning of the 1990s were more or less likely than those who enrolled in the mid-1990s to complete postsecondary education. Specifically, the analysis compares the degree completion and persistence rates among two cohorts—students who first enrolled in postsecondary education in academic year 1989–90 and their counterparts who first enrolled in 1995–96. The study focuses on the rates at which students in each cohort completed a degree within 5 years or were still enrolled at the end of 5 years; it also examines changes in the students' demographic profile and other population characteristics. The findings are based on data from the 1990/94 and 1996/01 Beginning Postsecondary Students Longitudinal Studies (BPS:90/94 and BPS:96/01). Each of these studies surveys a sample of students who enrolled in postsecondary education for the first time in a specific academic year. The earlier cohort of beginning postsecondary students consisted of students who first began their postsecondary education in 1989–90 (BPS:90/94) and were interviewed again in 1992 and 1994. The more recent

[1]The surveys included students in the 50 states, the District of Columbia, and Puerto Rico.

cohort followed students who began in 1995–96 (BPS:96/01) and were interviewed subsequently in 1998 and 2001.[2] The later survey actually covers a 6-year period, but in order to make comparisons with BPS:90/94, which ended after 5 years, measures of 5-year degree completion and persistence are analyzed. It is important to note that the findings from this analysis are entirely descriptive in nature and, while associations are noted, they should not be interpreted as causal inferences.

Historical research based on data collected by the U.S. Department of Education and the U.S. Census Bureau has shown that college completion rates have changed little since the early 1970s (Barton 2002; Adelman 2004), with completion rates of 66–67 percent for 1972, 1982, and 1992 high school graduates who ever enrolled at a 4-year college. In the current study, no overall change in the 5-year *bachelor's degree completion rate* was detected. However, despite the relatively short period of 6 years between the two surveys, measurable changes in 5-year *persistence rates* were evident. Students in the more recent (1995–96) cohort were more likely to be enrolled 5 years after they began their postsecondary studies. As a result, the combined rate of degree completion and 5-year persistence for students who began their undergraduate education in a 4-year institution rose from 76 to 80 percent.

Changes in Student Populations

Between 1989 and 1995, total undergraduate fall enrollment in institutions of higher education increased from 11.7 million to 12.2 million (U.S. Department of Education 2000, table 190). In addition to the increase in the total undergraduate population, the racial/ethnic composition and income level of students just beginning their postsecondary education changed over the 6-year period. In particular, as shown in table A, Black and Hispanic students made up larger proportions of beginning postsecondary students over the study period, while the proportion of White students declined over time. Although no overall change in the gender distribution was detected, when the data were broken out by the type of institution students first attended, among students enrolled in private not-for-profit 4-year institutions, it appears that the percentage who were women increased from 51 percent in 1989–90 to 57 percent in 1995–96; however, the difference is not statistically significant.

Coinciding with the rise in Black and Hispanic student enrollment in the 6-year period between cohorts was an increase in the proportion of low-income students. The percentage of low-income students increased from 13 to 16 percent overall for dependent students.[3] This increase held for dependent students who began in public 4-year institutions (from 10 to 15 percent) and private for-profit institutions (from 21 to 35 percent).

The age distribution of beginning students changed to some degree. As of December 31 in the year they enrolled, the percentage of 19-year-olds and students in their twenties increased, while the proportion of 18-year-olds declined.

As the demographic profile of beginning students changed, so did the level of education achieved by their parents. Students in the later cohort were more likely to have at least one parent who held a bachelor's degree or higher. Such students are typically more successful in completing college degrees than their counterparts whose parents never attended postsecondary education (Nuñez and Cuccaro-Alamin 1998). The change in parents' education levels was particularly evident among students who began in 4-year institutions, among whom the percentage with parents who held bachelor's degrees or higher increased from 44 to 50 percent for those who started in public institutions and from 53 to 60 percent for those who started in private not-for-profit institutions (figure A).

There was some indication that students' academic preparation may have changed over time, primarily for students who began in public 2-year colleges. Among these students, the percentage who reported taking remedial mathematics courses in their first year of enrollment increased from 11 to 17 percent. About 1 in 10 students who began in public 2-year colleges reported taking remedial reading courses in both cohorts.

Changes in Student Borrowing

Over the 6-year period between cohorts, rising tuition and changes in federal loan regulations were associated with changes in the way in which beginning students financed their postsecondary education. Between 1989–90 and 1995–96, tuition at postsecondary institutions increased 20 to 40 percent, depending on the institution type (The College Board 1998). Financial aid also increased over this period, but loans made up a greater portion of aid in

[2]Overall weighted response rates for these two studies are 91 and 86 percent, respectively (see appendix B in the full report for more information).

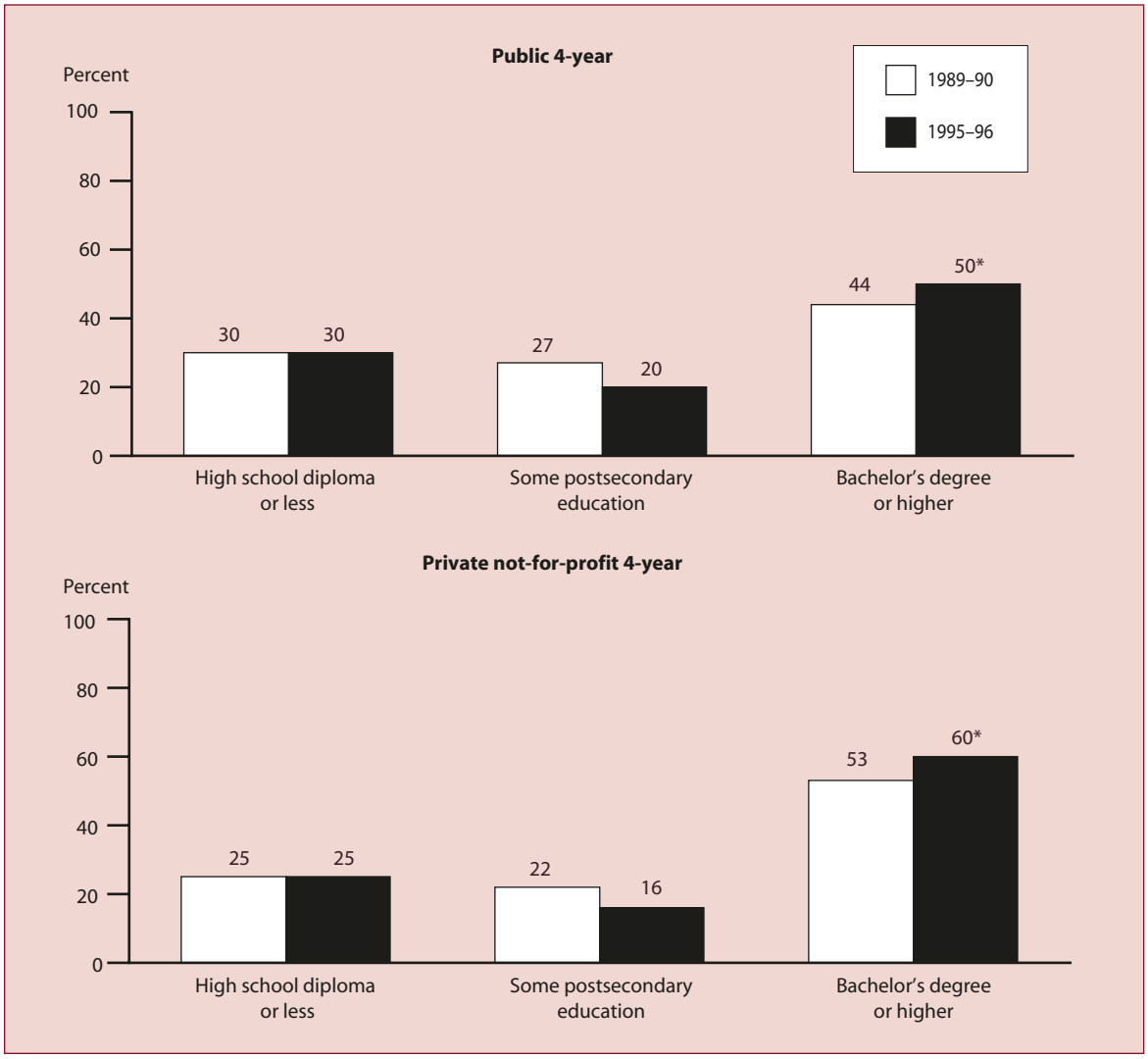
[3]In the analysis comparing income levels between the BPS cohorts, "low income" is defined as family incomes that did not exceed 125 percent of established poverty levels. Poverty levels are calculated for families of different sizes. Dependent students are typically those under the age of 24 and are reported as dependents by their parents on financial aid applications. Dependent income levels are based on parents' income the year before students enrolled. See appendix A in the full report for more details.

Table A. Percentage distributions of beginning postsecondary student characteristics, by year enrolled: 1989–90 and 1995–96

	1989–90	1995–96
Total	100.0	100.0
Gender		
Male	46.0	45.2
Female	54.0	54.8
Race/ethnicity[1]		
American Indian	0.7	0.8
Asian/Pacific Islander	4.0	4.6
Black	8.8	11.9*
White	78.8	70.6*
Hispanic[2]	7.6	12.2*
Income relative to poverty level[3]		
Dependent students		
Below 125 percent	12.6	16.2*
125–449 percent	58.9	56.0
450 percent or higher	28.5	27.8
Independent students		
Below 125 percent	38.4	47.1*
125–449 percent	56.0	46.4*
450 percent or higher	5.7	6.5
Age as of 12/31 in year of enrollment		
18 years or younger	55.2	45.3*
19 years	17.0	21.9*
20–29 years	18.1	21.1*
30 years or older	9.7	11.8

*Estimate for the 1995–96 cohort is statistically significantly different from the estimate for the 1989–90 cohort ($p < .05$).
[1]American Indian includes Alaska Native, Black includes African American, Pacific Islander includes Native Hawaiian, and Hispanic includes Latino. Race categories exclude Hispanic origin unless specified.
[2]It should be noted that 14 percent of Hispanic students in the later BPS survey (BPS:96/01) were from Puerto Rican institutions, while in the earlier survey, students from Puerto Rico accounted for 3 percent of Hispanic students. When students from Puerto Rico are removed, the total percentages of Hispanic students are 7.4 and 10.8, respectively, for the two cohorts (BPS:90/94 and BPS:96/01).
[3]Describes income as a percentage of the established poverty threshold for a given family size (see appendix A in the full report for detailed definition). For dependent students, calculation is based on parents' income. For independent students, calculation is based on their own income.
NOTE: Detail may not sum to totals because of rounding. Unless otherwise specified, all variables refer to the first time students first enrolled.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990/94 Beginning Postsecondary Students Longitudinal Study (BPS:90/94) and 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

Figure A. Percentage distribution of the highest level of education completed by students' parents among beginning postsecondary students who first enrolled in 4-year institutions: 1989–90 and 1995–96



*Difference between 1989–90 and 1995–96 is statistically significant ($p < .05$).
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990/94 Beginning Postsecondary Students Longitudinal Study (BPS:90/94) and 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

1995–96 (The College Board 2000). Changes in federal loan regulations expanded students' eligibility for both unsubsidized and subsidized loans (Berkner 2000). Consistent with these changes, the percentage of students who borrowed to help pay for their postsecondary education increased. During the course of their enrollment, nearly one-half of students who began their postsecondary education in 1995–96 took out student loans to help pay for their education, compared with about one-third of their counterparts who first enrolled 6 years earlier. Thus, beginning postsecondary students who enrolled in 1995–96 were more likely to accrue loan debt over the course of their studies than their counterparts who enrolled in 1989–90.

Changes in Degree Completion and 5-Year Persistence

Table B summarizes the educational outcomes of students in the two cohorts in terms of their 5-year degree completion and persistence rates. The first column displays the percentage of students who completed any degree in 5 years (the sum of columns 2, 3, and 4). Columns 2, 3, and 4 show the rate at which students completed each type of degree (bachelor's degree, associate's degree, and vocational certificate), while columns 5 and 6 display the percentage of students who had not earned a degree, but were still enrolled in either a 4-year institution or a subbaccalaureate institution. Column 7 shows the percentage of students who were not enrolled after 5 years and had not earned a degree. It is possible that these students resumed their postsecondary education at a later date (i.e., stopped out), but within the 5-year time frame of each survey, they had not earned a degree and were not enrolled. The last column of the table displays the combined 5-year degree completion and persistence rate (the sum of columns 1, 5, and 6), which, in other words, is the percentage of students who had completed a degree or were still enrolled 5 years after they began their postsecondary education. Where differences between the two student populations are statistically significant ($p < .05$),

Table B. Percentage of beginning postsecondary students who had completed a degree or were still enrolled 5 years after they began postsecondary education, by type of first institution and year enrolled: 1989–90 and 1995–96

		Highest degree completed			No degree, 5-year persistence			
	Total completed	Bachelor's degree	Associate's degree	Vocational certificate	Still enrolled at 4-year	Still enrolled at 2-year or less	No degree, not enrolled	Total completed or persisted
Total[1]								
1989–90	49.9	25.8	11.2	13.0	8.1	5.2	36.8	63.2
1995–96[2]	46.6*	25.1	9.9	11.7	11.6*	6.6	35.2	64.9
Type of first institution								
All 4-year								
1989–90	60.3	53.3	4.2	2.9	13.3	1.9	24.4	75.6
1995–96	59.3	53.4	3.7	2.3	17.2*	3.2*	20.4*	79.6*
Public 4-year								
1989–90	54.8	46.9	4.7	3.2	16.1	2.3	26.8	73.2
1995–96	53.3	46.6	4.1	2.6	20.9*	3.7*	22.1*	77.9*
Private not-for-profit 4-year								
1989–90	71.9	66.6	3.0	2.3	7.4	1.2	19.6	80.4
1995–96	69.8	65.3	2.9	1.6	10.7*	2.2*	17.3	82.7
Public 2-year								
1989–90	36.7	6.3	17.5	12.9	5.1	9.6	48.6	51.4
1995–96	32.0	6.9	15.9	9.3*	9.7*	10.5	47.8	52.2
Private for-profit								
1989–90	59.7	1.6	11.1	46.9	0.7	1.1	38.6	61.4

*Estimate for the 1995–96 cohort is statistically significantly different from the estimate for the 1989–90 cohort ($p < .05$).
[1]Total also includes private not-for-profit 2-year and less-than-2-year institutions and public less-than-2-year institutions.
[2]The 6-year completion and persistence rates for the 1995–96 cohort are presented in table B-1 in the full report.
NOTE: Detail may not sum to totals because of rounding. Unless otherwise specified, all variables refer to the first time students enrolled.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990/94 Beginning Postsecondary Students Longitudinal Study (BPS:90/94) and 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

an asterisk appears next to the number for the more recent (1995–96) cohort.

The results indicate an increase in the percentage of students who had not yet completed a degree, but were still enrolled in a 4-year institution 5 years after first enrolling. These are students who are taking longer than 5 years in their efforts to complete a bachelor's degree. This finding held across all institution types except those in the for-profit sector. Among all students who started in 1989–90, 8 percent were still enrolled in a 4-year institution, while among those who began 6 years later, 12 percent were still enrolled. The increase in enrollment after 5 years was accompanied by an overall decline in degree completion from 50 to 47 percent. However, for both cohorts, bachelor's degree completion remained at about one-quarter among all beginning students and at about 53 percent among students who began in 4-year institutions.

Changes in persistence and completion rates varied across the institution types that students first attended. For example, among students who began in public 4-year colleges or universities, the likelihood of still being enrolled in a 4-year institution increased (from 16 to 21 percent). Commensurate with this, the combined degree completion and 5-year persistence rate went up as well (from 73 to 78 percent).[4] This finding implies that given more time, the rate of bachelor's degree completion in public 4-year institutions may increase. In private not-for-profit 4-year institutions, on the other hand, a change in the combined completion and persistence rate could not be detected even though the likelihood of still being enrolled in a 4-year institution increased measurably (from 7 to 11 percent).

Like students who first enrolled in the 4-year sector, those who started in public 2-year colleges increased their likelihood of being enrolled in a 4-year institution at the end of 5 years (from 5 to 10 percent). At the same time, comparisons between the two cohorts revealed no measurable change in either transfer rates from public 2-year colleges or bachelor's degree completion of transfer students. Therefore, the fact that a greater percentage of transfer students are enrolled in a 4-year institution after 5 years suggests that public 2-year college students in the later cohort may have been more persistent in pursuing a bachelor's degree. At the same time, however, the rate at which students in public 2-year colleges completed vocational certificates declined over the 6 years between cohorts, from 13 percent to 9 percent.

Changes by gender, race/ethnicity, and income

The analysis detected some variations in postsecondary completion and persistence measures by demographic characteristics; however, most of these changes were observed among students in specific institution types rather than among all students. In fact, the main finding overall—the increase in the percentage of students still enrolled in a 4-year institution—held for both men and women, for White students, and across all income levels.

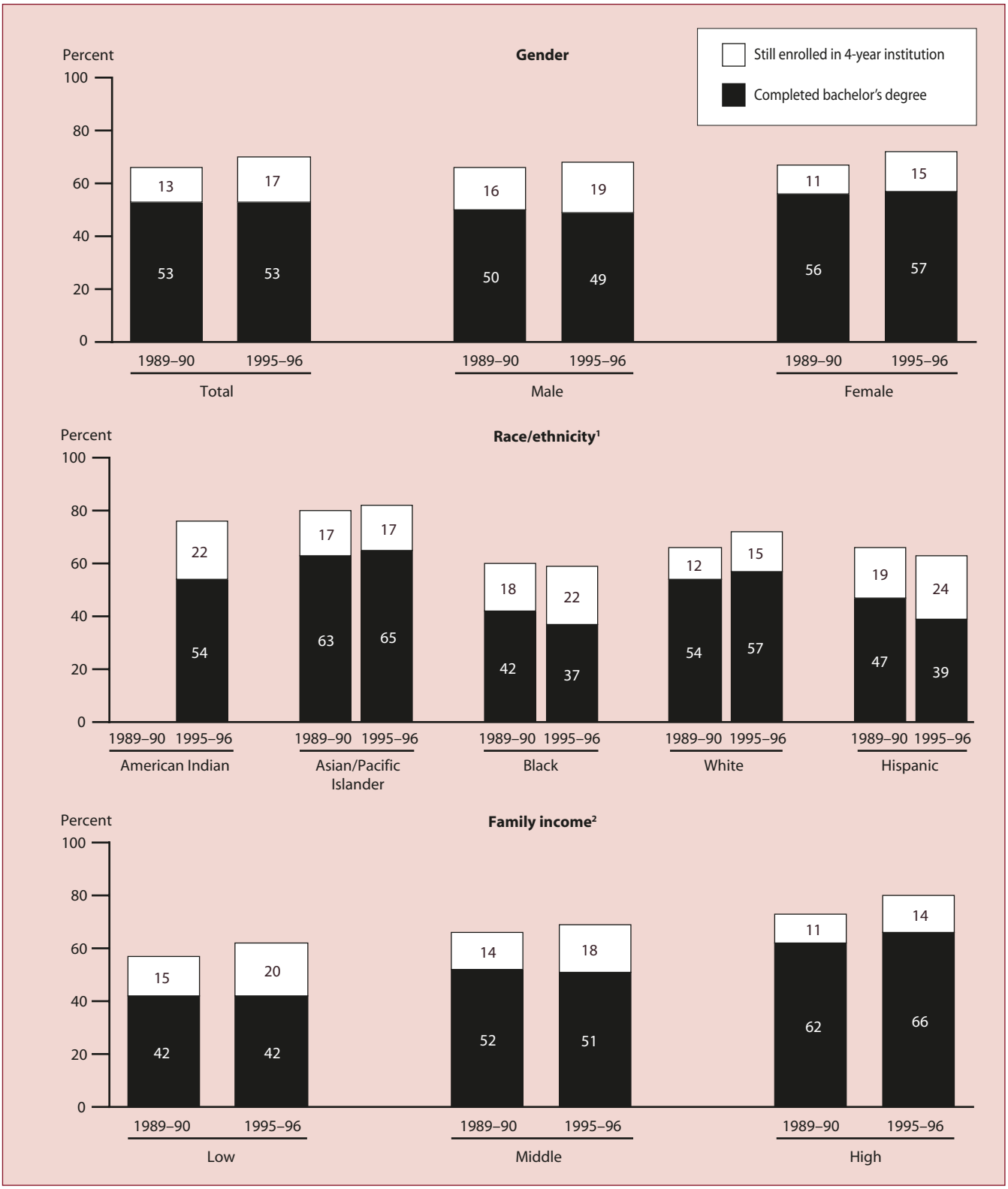
Figure B illustrates changes by demographic characteristics for students who began in 4-year institutions. Differences in the combined 5-year degree completion and persistence rates were found primarily for those in public 4-year institutions, where males, Whites, and low-income students experienced increases over time, while changes were not detected for women, other racial/ethnic groups, or higher income levels. Despite their financial disadvantage, the trends within income levels indicate that low-income students who first enrolled in public 4-year colleges improved their combined persistence and degree completion rate (figure C). Apparent increases for middle- and high-income students in the same sector were not statistically significant. In contrast to public 4-year institutions, among students who started in private not-for-profit 4-year institutions, high-income students improved their combined degree completion and persistence rate, while no change was detected for lower income students or for any other group of students.

Conclusions

On the whole, when comparing students who began their postsecondary education in 1989–90 with those who began 6 years later, no change was detected in the rate at which students earned a bachelor's degree within 5 years. However, for those who had not completed a degree, a higher percentage of students in the later cohort were still enrolled after 5 years. These findings indicate that students in the later cohort who had not earned a degree were more persistent in staying enrolled, but required more than 5 years in their efforts to complete a degree. Among students who began in public 2-year colleges, those in the later cohort were also more likely than their counterparts who enrolled 6 years earlier to be enrolled in a 4-year institution. This result suggests that community college students in the later cohort were more persistent in maintaining their enrollment toward a bachelor's degree than their counterparts who enrolled 6 years earlier.

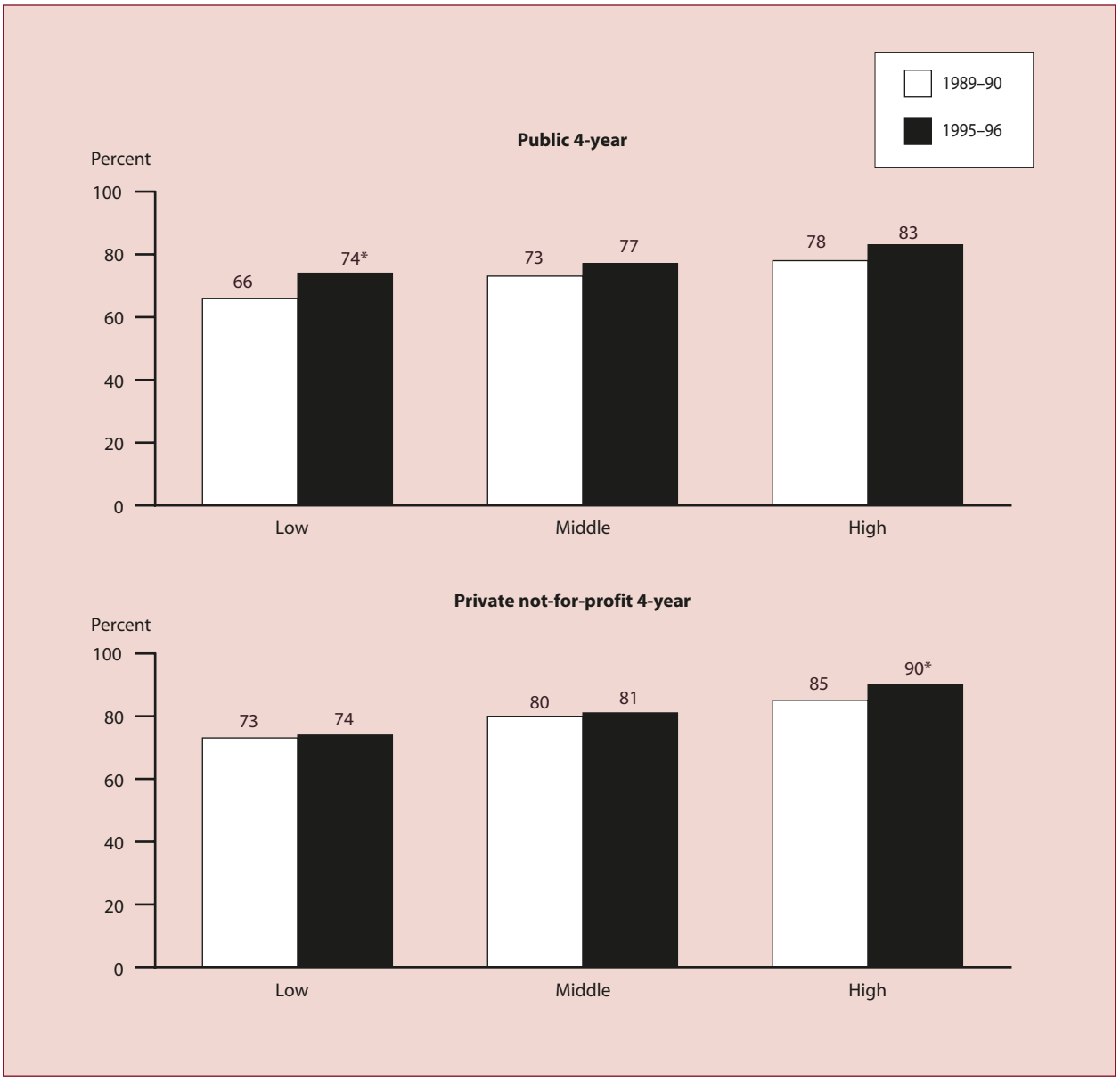
[4]The combined rate of degree completion and persistence includes the small percentage of students enrolled in a less-than-4-year institution. For students who started in a 4-year college, being enrolled in a less-than-4-year institution would not be an indication of persisting toward a bachelor's degree.

Figure B. Among beginning postsecondary students who first enrolled in 4-year institutions, the percentage who had completed a bachelor's degree or were still enrolled in a 4-year institution 5 years after they enrolled, by gender, race/ethnicity, and family income: 1989–90 and 1995–96



‡Reporting standards not met (too few cases).
[1]American Indian includes Alaska Native, Black includes African American, Pacific Islander includes Native Hawaiian, and Hispanic includes Latino. Race categories exclude Hispanic origin unless specified.
[2]Calculated separately for dependent and independent students. "Low" refers to the bottom 25 percent of the income distribution; "Middle" refers to the middle 50 percent; and "High" refers to the upper 25 percent. See appendix A in the full report for detailed definitions.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990/94 Beginning Postsecondary Students Longitudinal Study (BPS:90/94) and 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

Figure C. Among beginning postsecondary students who first enrolled in 4-year institutions, the percentage who had completed a degree or were still enrolled 5 years after they began postsecondary education, by family income: 1989–90 and 1995–96



*Difference between 1989–90 and 1995–96 is statistically significant ($p < .05$).
NOTE: Family income is calculated separately for dependent and independent students. "Low" refers to the bottom 25 percent of the income distribution; "Middle" refers to the middle 50 percent; and "High" refers to the upper 25 percent. See appendix A in the full report for detailed definitions.
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1990/94 Beginning Postsecondary Students Longitudinal Study (BPS:90/94) and 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

It is difficult to pinpoint what accounts for the increase in persistence between the two cohorts and to determine whether or not it is a temporary occurrence. Changes in the demographic composition of the two cohorts may be related to the changes in persistence. Black, Hispanic, and low-income students gained greater representation between 1989–90 and 1995–96. Such students have historically been underrepresented in postsecondary education and often face additional barriers to completing a degree. However, the data indicate that low-income students in public 4-year institutions actually increased their likelihood of succeeding as evidenced by an increase in their 5-year persistence rate. Also, the percentage of students whose parents graduated from college rose over time, which would typically be associated with higher completion and persistence rates.

Changes in students' reliance on loans may also have influenced their decision to stay enrolled. Students who entered college in 1995–96 were more likely than their counterparts who enrolled 6 years earlier to have taken out student loans to help finance their education. Over the course of their postsecondary studies, nearly one-half of these students borrowed, compared with about one-third of their counterparts who had enrolled earlier. The prospect of leaving college in debt may have motivated these students to stay enrolled and complete a degree.

It is also possible that the economy played a role in changing the rates at which students persisted. Students who began their postsecondary education in 1989–90 and who were still enrolled in college 5 years later (in 1994) encountered a growing economy with plentiful job opportunities (Schwenk and Pfuntner 2003). Those students who had not yet finished their degree may have been attracted to the high-tech industry job market and thought they could join the labor force and return later to finish their degree. On the other hand, students who began college in 1995–96 and who were still enrolled 5 years later (in 2000) faced an economy in the beginning stages of a recession (Martel and Langdon 2001). With fewer job options and greater debt, these students may have been less willing to take a break from their studies and leave without a degree.

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Data source: The NCES 1990/94 Beginning Postsecondary Students Longitudinal Study (BPS:90/94) and 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

For technical information, see the complete report:

Horn, L., and Berger, R. (2004). *College Persistence on the Rise? Changes in 5-Year Degree Completion and Postsecondary Persistence Rates Between 1994 and 2000* (NCES 2005-156).

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To obtain the complete report (NCES 2005-156), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Staff and Salaries

Staff in Postsecondary Institutions, Fall 2002, and Salaries of Full-Time Instructional Faculty, 2002–03

Laura G. Knapp, Janice E. Kelly-Reid, Roy W. Whitmore, Shiying Wu, Seungho Huh, Burton Levine, and Susan G. Broyles

This article was originally published as the Summary of the E.D. TAB of the same name. The universe data are from the Integrated Postsecondary Education Data System (IPEDS).

Introduction

This report presents findings from the Integrated Postsecondary Education Data System (IPEDS) winter 2002–03 data collection that included both primary occupational activity information for staff[1] employed in fall 2002 and salaries and fringe benefits of full-time instructional faculty[2] for academic year 2002–03. The data included in this publication were collected through the IPEDS web-based data collection system.

IPEDS began collecting data in 1985 from all postsecondary institutions in the United States (the 50 states and the District of Columbia) and its outlying areas.[3] Prior to that, institutions of higher education provided data through the Higher Education General Information Surveys (HEGIS), which began in 1966. IPEDS defines a postsecondary institution as an organization that is open to the public and has a primary mission of providing education or training beyond the high school level. This includes institutions that offer academic, vocational, and continuing professional education programs and excludes institutions that offer only avocational (leisure) and adult basic education programs.

Since 1992, participation in IPEDS has been required for all postsecondary institutions and central or system offices that participate in Title IV federal student financial aid programs, such as Pell Grants or Stafford Loans.[4] During the 2002–03 academic year, 6,508 institutions and 80 central or system offices were required to participate in IPEDS. Because 2 of these institutions closed after the 2002–03 collection cycle began, 6,506 institutions were expected to participate in the winter 2002–03 collection. Moreover, the 80 central or system offices were not required to participate because neither of the two required component surveys—Employees by Assigned Position (EAP) and Salaries—was applicable to them. The EAP component was required of all 6,506 Title IV institutions, and 6,405—or 98.4 percent—responded. The Salaries component was required of all 4-year Title IV institutions and the 2-year degree-granting Title IV institutions; note that less-than-4-year institutions granting only certificates are *not* surveyed. In addition, institutions are not required to respond to the Salaries component if all instructional faculty are part-time, contribute their services, are in the military, or teach clinical or preclinical medicine. For the winter 2002–03 collection, 4,102 institutions were required to complete the Salaries component. Of these, 4,052—or 98.8 percent—responded. The Fall Staff component, which is applicable to Title IV institutions that employ 15 or more full-time staff, was optional during the winter 2002–03 collection.[5] Because the Fall Staff component is not required of all Title IV institutions, the EAP component was designed to collect annual data on the total number of employees in Title IV postsecondary institutions.

Tabulations in this report present selected data collected during the winter 2002–03 IPEDS collection about staff employed at Title IV institutions[6] in the United States. Degree-granting institutions (those offering associate's, bachelor's, master's, doctor's, and first-professional degrees) are displayed separately in some tables. Summary data only are provided for institutions in the outlying areas.

Employees in All Title IV Institutions

In fall 2002, the 6,506 Title IV institutions in the United States employed more than 2.9 million staff (table A). Institutions are asked to report employees in medical schools separately from all others in the EAP component of IPEDS. Table A also indicates that institutions that do not have a medical school component employed nearly 2.1 million

[1]The term "staff," as used in this report, is synonymous with employees and includes faculty.

[2]Instructional faculty are those whose specific assignments customarily are made for the purpose of providing instruction or teaching, or for whom it is not possible to differentiate between teaching, research, and public service because each of these functions is an integral component of their regular assignment.

[3]The outlying areas are American Samoa, the Federated States of Micronesia, Guam, the Marshall Islands, the Northern Marianas, Palau, Puerto Rico, and the Virgin Islands.

[4]Institutions participating in Title IV programs are accredited by an agency or organization recognized by the Secretary of the U.S. Department of Education, have a program of over 300 clock hours or 8 credit hours, have been in business for at least 2 years, and have a signed Program Participation Agreement (PPA) with the Office of Postsecondary Education (OPE), U.S. Department of Education.

[5]Fall Staff data are required biannually, in odd-numbered years.

[6]Title IV institutions described in this report include the 6,506 Title IV institutions, all of which are required to complete the Employees by Assigned Position component; of these, 4,102 Title IV institutions are required to complete the Salaries component.

Table A. Employees in all Title IV institutions, by school type, employment status, and control and level of institution: United States, fall 2002

School type, employment status, and control and level of institution	Number	Percent
Total	2,938,458	100.0
Institutions with no medical school component	2,092,068	71.2
Institutions with a medical school component	826,604	28.1
Medical school component only	266,589	9.1
Freestanding medical schools	19,786	0.7
Full-time	2,092,286	71.2
Part-time	846,172	28.8
Public	1,951,751	66.4
Private not-for-profit	880,273	30.0
Private for-profit	106,434	3.6
4-year	2,242,374	76.3
2-year	651,303	22.2
Less-than-2-year	44,781	1.5

NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Winter 2002–03.

staff in fall 2002, while those with a medical school component employed 826,600 staff. Freestanding medical schools employed an additional 19,800 staff in 2002. Overall, 10 percent of all staff, or about 286,400 people, were employed in medical schools.

In the tables in this publication, institutions or their components will be referred to either as "medical schools" (those that are freestanding plus the medical school component that is affiliated with an institution of higher education) or as "institutions (excluding medical schools)," which include those with no medical school component and the nonmedical component of institutions with a medical school.

Just over 70 percent of all staff were employed full time in fall 2002. Approximately 66 percent of all staff were employed by public institutions, 30 percent were employed by private not-for-profit institutions, and the remaining 4 percent were employed by private for-profit institutions. About 76 percent of staff were employed by 4-year institutions, 22 percent were employed by 2-year institutions, and the remaining 2 percent were employed by less-than-2-year institutions.

More than 1.2 million, or 42 percent, of all employees in Title IV institutions in the United States were classified as faculty (either as primarily instruction, primarily research, primarily public service, or instruction combined with research and/or public service) (table B). About 30 percent of all employees were in positions classified as primarily instruction, 2 percent were primarily research, 1 percent were primarily public service, and 9 percent were instruction combined with research and/or public service.

About 7 percent of all employees held executive, administrative, or managerial positions; 20 percent held other professional (support/service) positions; 7 percent held technical and paraprofessional positions; 15 percent held clerical/secretarial positions; 2 percent held skilled craft positions; and 8 percent held service maintenance positions.

Title IV medical school employees had different patterns of activity compared to the majority of employees in Title IV institutions. For example, in Title IV institutions (excluding medical schools), 32 percent of employees were in positions classified as primarily instruction; however, in Title IV medical schools, 11 percent of employees were in positions classified as primarily instruction. Also, a higher proportion of employees in Title IV medical schools were in positions classified as instruction combined with research and/or public service (17 percent), compared to about 8 percent of employees in the same positions in Title IV institutions (excluding medical schools).

Table B. Employees in all Title IV institutions, by school type, employment status, control of institution, and primary function/occupational activity: United States, fall 2002

Primary function/occupational activity	Total	School type		Employment status		Control		
		Institutions (excluding medical schools)[1]	Medical schools[2]	Full time	Part time	Public	Private not-for-profit	Private for-profit
	Number							
Total	2,938,458	2,652,083	286,375	2,092,286	846,172	1,951,751	880,273	106,434
Primarily instruction	888,572	857,055	31,517	413,817	474,755	578,513	252,297	57,762
Instruction/research/public service	255,490	206,559	48,931	192,179	63,311	186,975	66,553	1,962
Primarily research	54,810	38,346	16,464	41,094	13,716	40,804	13,983	23
Primarily public service	20,933	14,188	6,745	14,224	6,709	13,734	7,042	157
Executive/administrative/managerial	190,449	176,861	13,588	180,846	9,603	95,743	82,446	12,260
Other professional (support/service)	579,405	496,487	82,918	493,300	86,105	385,906	176,347	17,152
Technical and paraprofessionals	205,862	173,103	32,759	160,713	45,149	150,047	52,756	3,059
Clerical and secretarial	450,113	405,321	44,792	348,128	101,985	298,444	140,797	10,872
Skilled crafts	66,727	65,303	1,424	62,659	4,068	50,902	15,454	371
Service maintenance	226,097	218,860	7,237	185,326	40,771	150,683	72,598	2,816
	Percent							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Primarily instruction	30.2	32.3	11.0	19.8	56.1	29.6	28.7	54.3
Instruction/research/public service	8.7	7.8	17.1	9.2	7.5	9.6	7.6	1.8
Primarily research	1.9	1.4	5.7	2.0	1.6	2.1	1.6	#
Primarily public service	0.7	0.5	2.4	0.7	0.8	0.7	0.8	0.1
Executive/administrative/managerial	6.5	6.7	4.7	8.6	1.1	4.9	9.4	11.5
Other professional (support/service)	19.7	18.7	29.0	23.6	10.2	19.8	20.0	16.1
Technical and paraprofessionals	7.0	6.5	11.4	7.7	5.3	7.7	6.0	2.9
Clerical and secretarial	15.3	15.3	15.6	16.6	12.1	15.3	16.0	10.2
Skilled crafts	2.3	2.5	0.5	3.0	0.5	2.6	1.8	0.3
Service maintenance	7.7	8.3	2.5	8.9	4.8	7.7	8.2	2.6

#Rounds to zero.
[1]Includes institutions with no medical school component and the nonmedical component of institutions with a medical school.
[2]Includes freestanding medical schools and the medical school component affiliated with an institution of higher education.
NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Winter 2002–03.

Patterns also varied by control of institution. About 54 percent of all employees in private for-profit institutions held positions classified as primarily instruction, while about 29 percent held similar positions in public and private not-for-profit institutions. The private sector institutions employed higher percentages of staff with executive/administrative/managerial functions: 12 percent in the for-profit institutions and 9 percent in the not-for-profit institutions, compared to 5 percent in public institutions.

One of the major differences between full-time and part-time employees involved those in positions classified as primarily instruction. More than half of all part-time employees (56 percent) were in positions classified as primarily instruction, compared to 20 percent of full-time employees. However, a greater proportion of full-time than part-time employees held positions classified as other professional (support/service)—24 percent and 10 percent, respectively.

Full-Time Professional Employees in Title IV Degree-Granting Institutions

About 1.1 million full-time professionals[7] were employed in Title IV degree-granting institutions (excluding medical schools) in fall 2002, and another 169,000 professionals were employed full time in Title IV medical schools (table C).

[7]Professionals include faculty; staff in executive, administrative, and other managerial positions; and other professional (support/service) staff.

In Title IV degree-granting institutions, 24 percent of full-time professional employees in institutions other than medical schools were tenured, while 12 percent of full-time professional employees in medical schools were tenured. Public institutions (excluding medical schools) reported that more than 27 percent of their full-time professional employees were tenured, while 21 percent of these employees in private not-for-profit institutions were tenured, and only 1 percent in the private for-profit institutions were tenured. The proportion of tenured employees was smaller for medical schools regardless of institutional control (about 13 percent in public institutions and 10 percent in private not-for-profit institutions).

Among the full-time professional employees in institutions (excluding medical schools), 67 percent were employed in public institutions, 30 percent were employed in private not-for-profit institutions, and the remaining 3 percent were employed in private for-profit institutions (figure A). Of the professional staff employed by medical schools, 58 percent were employed in public institutions, 42 percent were employed in private not-for-profit institutions, and less than 1 percent (17 employees) were employed in private for-profit institutions.

Salaries of Full-Time Instructional Faculty

During the 2002–03 academic year, full-time instructional faculty on 9/10-month contracts earned an average salary of about $61,000, while full-time instructional faculty on 11/12-month contracts earned an average salary of about $70,000 (table D).

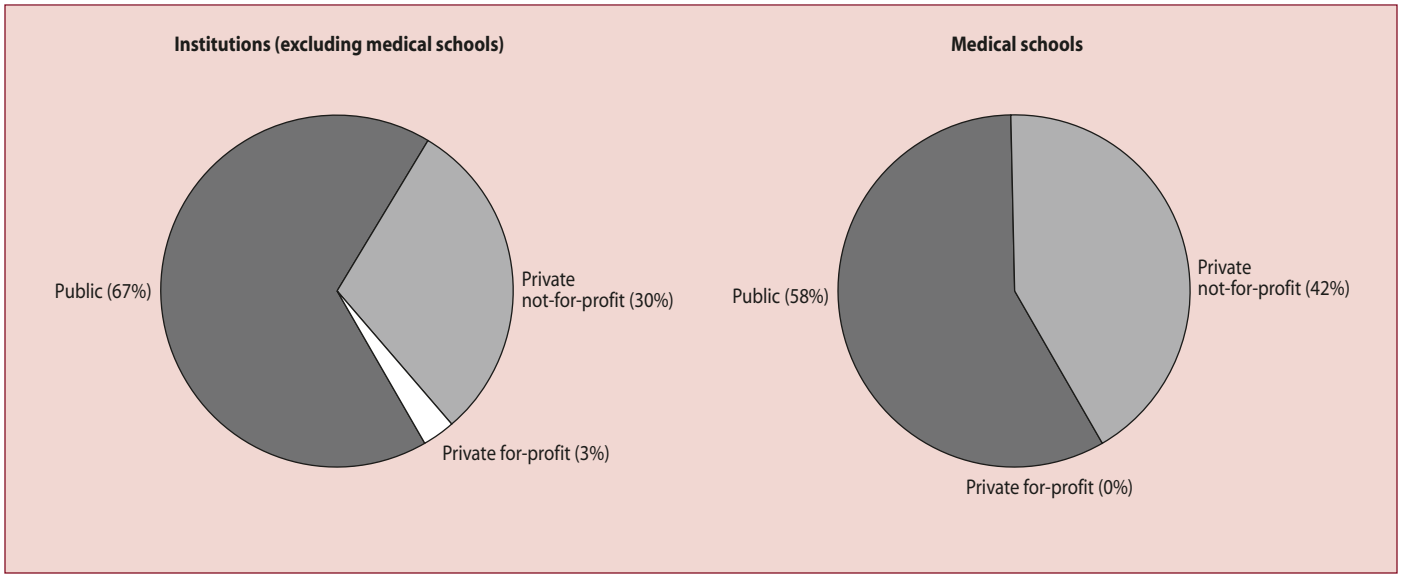
As expected, salaries varied by rank, with faculty holding higher ranks earning higher average salaries. Among full-time instructional faculty on 9/10-month contracts, professors earned an average salary of $83,000, associate professors earned an average salary of $60,000, assistant professors averaged $51,000, instructors averaged $48,000, and lecturers earned an average salary of $43,000. Full-time instructional faculty on 9/10-month contracts who work at institutions without standard academic ranks (no academic rank) earned an average salary of $46,000. Those on 11/12-month contracts earned the following average salaries: professors—$100,000; associate professors—$77,000; assistant professors—$66,000; instructors—$45,000; and lecturers—$52,000. Full-time instructional faculty on 11/12-month contracts who work at institutions without standard academic ranks (no academic rank) earned an average salary of $47,000.

Table C. Full-time professional employees in Title IV degree-granting institutions, by control of institution, school type, and faculty status: United States, fall 2002

	Number				Percent			
School type and faculty status	Total	Public	Private not-for-profit	Private for-profit	Total	Public	Private not-for-profit	Private for-profit
Institutions (excluding medical schools)[1]	1,131,051	754,373	344,082	32,596	100.0	100.0	100.0	100.0
With faculty status								
Tenured	275,355	204,148	70,767	440	24.3	27.1	20.6	1.3
On tenure track	114,801	79,775	34,923	103	10.1	10.6	10.1	0.3
Not on tenure track/no tenure system	194,665	122,607	56,134	15,924	17.2	16.3	16.3	48.9
Without faculty status	546,230	347,843	182,258	16,129	48.3	46.1	53.0	49.5
Medical schools[2]	168,996	97,604	71,375	17	100.0	100.0	100.0	100.0
With faculty status								
Tenured	20,483	13,027	7,456	0	12.1	13.3	10.4	0
On tenure track	15,045	6,500	8,545	0	8.9	6.7	12.0	0
Not on tenure track/no tenure system	43,947	24,678	19,252	17	26.0	25.3	27.0	100.0
Without faculty status	89,521	53,399	36,122	0	53.0	54.7	50.6	0

[1]Includes institutions with no medical school component and the nonmedical component of institutions with a medical school.
[2]Includes freestanding medical schools and the medical school component affiliated with an institution of higher education.
NOTE: Detail may not sum to totals because of rounding. Professional employees include those whose primary function or occupational activity is classified as either faculty (including primarily instruction, instruction combined with research and/or public service, primarily research, and primarily public service); executive/administrative/managerial; and other professional.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Winter 2002–03.

Figure A. Full-time professional employees in Title IV degree-granting institutions, by school type and control of institution: United States, fall 2002



SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Winter 2002–03.

Table D. Average salaries of full-time instructional faculty on 9/10- and 11/12-month contracts in Title IV degree-granting institutions, by gender, control of institution, and academic rank: United States, academic year 2002–03

		Gender		Control		
Contract length and academic rank	Total	Men	Women	Public	Private not-for-profit	Private for-profit
Total faculty with 9/10-month contracts, all ranks	$61,330	$66,126	$54,105	$60,014	$64,634	$39,629
Professor	83,466	86,191	75,028	80,872	88,817	46,059
Associate professor	60,471	62,226	57,716	60,308	60,786	55,220
Assistant professor	50,552	52,441	48,380	50,659	50,370	36,764
Instructor	48,304	50,272	46,573	49,976	38,090	29,209
Lecturer	42,622	45,469	40,265	41,474	46,064	†
No academic rank	46,338	47,412	45,251	46,102	48,289	48,427
Total faculty with 11/12-month contracts, all ranks	$69,572	$75,004	$60,530	$77,665	$69,117	$37,345
Professor	99,792	103,275	86,729	107,245	88,413	55,743
Associate professor	76,573	79,011	72,185	80,508	71,835	50,359
Assistant professor	66,463	68,872	63,670	68,551	64,461	49,114
Instructor	44,745	44,351	45,205	51,125	47,672	36,222
Lecturer	51,875	55,832	47,334	53,376	51,566	40,624
No academic rank	47,298	48,271	46,081	54,733	50,255	27,961

†Not applicable. There are no faculty members in this cell.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Winter 2002–03.

On average, men generally earned higher average salaries than women regardless of contract length or rank. Overall, male faculty with 9/10-month contracts earned an average salary of $66,000, while female faculty with contracts of the same length earned an average salary of $54,000. Likewise, male faculty with 11/12-month contracts earned an average salary of $75,000, while female faculty with contracts of the same length earned an average salary of $61,000. Similarly, male professors with 9/10-month contracts earned an average salary of $86,000, while female professors with contracts of the same length earned an average salary of $75,000. Male professors with 11/12-month contracts earned an average salary of $103,000, while female professors with contracts of the same length earned an average salary of $87,000.

In general, public and private not-for-profit faculty earned higher average salaries than private for-profit faculty, regardless of contract length or rank. Faculty with 9/10-month contracts at public institutions earned an average salary of $60,000, and those at private not-for-profit institutions earned $65,000, while those at private for-profit institutions earned average salaries of $40,000. Likewise, faculty with 11/12-month contracts at public institutions earned an average salary of $78,000, and those at private not-for-profit institutions earned $69,000, while those at private for-profit institutions earned average salaries of $37,000.

Professors at public institutions with 9/10-month contracts earned an average salary of $81,000, and those at private not-for-profit institutions earned $89,000, while those at private for-profit institutions earned average salaries of $46,000. Professors at public institutions with 11/12-month contracts earned an average salary of $107,000, and those at private not-for-profit institutions earned $88,000, while those at private for-profit institutions earned average salaries of $56,000.

Overall, between 2001–02 and 2002–03, average salaries of full-time instructional faculty with 11/12-month contracts rose slightly more than average salaries of those with 9/10-month contracts (3.5 percent compared to 2.7 percent) (data derived from table E). Likewise, considering full-time instructional faculty employed at public and private

Table E. Change in average salaries of full-time instructional faculty on 9/10- and 11/12-month contracts in Title IV degree-granting institutions, by control of institution and academic rank: United States, academic years 2001–02 and 2002–03

Contract length and academic rank	Public			Private not-for-profit			Private for-profit		
	2001–02	2002–03	Percent change	2001–02	2002–03	Percent change	2001–02	2002–03	Percent change
Total faculty with 9/10-month contracts, all ranks	$58,524	$60,014	2.5	$62,947	$64,634	2.7	$33,891	$39,629	16.9
Professor	78,387	80,872	3.2	85,867	88,817	3.4	54,882	46,059	–16.1
Associate professor	58,663	60,308	2.8	58,871	60,786	3.3	43,124	55,220	28.0
Assistant professor	48,956	50,659	3.5	48,504	50,370	3.8	33,884	36,764	8.5
Instructor	48,279	49,976	3.5	37,637	38,090	1.2	29,957	29,209	–2.5
Lecturer	40,809	41,474	1.6	44,762	46,064	2.9	†	†	†
No academic rank	46,772	46,102	–1.4	46,043	48,289	4.9	31,987	48,427	51.4
Total faculty with 11/12-month contracts, all ranks	$74,932	$77,665	3.6	$65,158	$69,117	6.1	$39,187	$37,345	–4.7
Professor	103,936	107,245	3.2	85,320	88,413	3.6	54,256	55,743	2.7
Associate professor	77,529	80,508	3.8	66,036	71,835	8.8	47,199	50,359	6.7
Assistant professor	66,475	68,551	3.1	59,294	64,461	8.7	42,978	49,114	14.3
Instructor	50,715	51,125	0.8	45,758	47,672	4.2	37,359	36,222	–3.0
Lecturer	53,444	53,376	–0.1	44,282	51,566	16.4	38,768	40,624	4.8
No academic rank	52,664	54,733	3.9	55,046	50,255	–8.7	38,040	27,961	–26.5

† Not applicable. There are no faculty members in this cell.
NOTE: Average salaries data should be used with caution; some averages may represent small numbers of individuals.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), Winter 2001–02 and Winter 2002–03.

not-for-profit institutions, average salaries of those with 11/12-month contracts rose 3.6 percent and 6.1 percent, respectively, while average salaries of those with 9/10-month contracts rose 2.5 percent and 2.7 percent, respectively, during this period.

Data source: The NCES Integrated Postsecondary Education Data System (IPEDS), Winter 2002–03.

For technical information, see the complete report:

Knapp, L.G., Kelly-Reid, J.E., Whitmore, R.W., Wu, S., Huh, S., Levine, B., and Broyles, S.G. (2004). *Staff in Postsecondary Institutions, Fall 2002, and Salaries of Full-Time Instructional Faculty, 2002–03* (NCES 2005-167).

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To obtain the complete report (NCES 2005-167), visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Participation in Adult Education and Lifelong Learning: 2000–01
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Adult Education: 2000–01

Participation in Adult Education and Lifelong Learning: 2000–01

Kwang Kim, Mary Collins Hagedorn, Jennifer Williamson, and Christopher Chapman

This article was originally published as the Executive Summary of the Statistical Analysis Report of the same name. The sample survey data are from the National Household Education Surveys Program (NHES).

Adults participate in various types of educational activities in order to acquire the knowledge and skills necessary to succeed in the workforce, to earn a college or advanced degree, to learn basic skills or English language skills, or to enrich their lives. Taken as a whole, these activities constitute adult education. Traditionally, full-time enrollment in postsecondary degree or diploma programs is not considered to be adult education participation.[1] This report holds to that convention. A recent study indicates that participation in adult education has grown steadily over the past three decades (Kim and Creighton 2000; Creighton and Hudson 2002). Many societal factors influence participation in adult education activities. Changing demographics, including the aging of the population, reentry of women into the workplace, and an influx of immigrants alter the base of potential participants. The effect of the global economy and technological advances on the nature of adult education has been significant.

This is the first full report using data from the Adult Education and Lifelong Learning Survey of the 2001 National Household Education Surveys Program (AELL-NHES:2001) on the educational activities of adults in the United States. The NHES:2001 was a random digit dial (RDD) telephone survey of the civilian, noninstitutionalized population of

[1]Part-time participation in postsecondary programs is considered to be adult education in this analysis, and those who were enrolled in postsecondary programs on a part-time basis in the previous 12 months are included as participants. Those who were full-time postsecondary students may also have participated on a part-time basis at some point in the previous 12 months and, if so, are included as participants due to their part-time participation. Thus, reports of participation in postsecondary programs include those who participated on a part-time basis and those who participated on both part-time and full-time bases in the previous 12 months. Full-time postsecondary students may also have participated in adult education activities such as English as a Second Language, work-related courses, or personal interest courses in addition to their full-time college or vocational programs and, if so, are included as participants.

the 50 states and the District of Columbia conducted from January 2 through April 14 of 2001. For the Adult Education and Lifelong Learning Survey, the population of interest included civilian, noninstitutionalized persons age 16 and older who were not enrolled in elementary or secondary school at the time of the interview.

Adult education is a diverse arena defined in a variety of ways (Cross 1984; Elias and Merriam 1984; Knowles 1980; Merriam and Caffarella 1999; Peters, Javis, and Associates 1991). Some regard adult education as noncompulsory or voluntary learning activities constituting a continuous learning process throughout life (Belanger and Tuijnman 1997). Others include required activities in their definitions because a fairly large proportion of adults are required to participate in work-related adult education for continuing professional development purposes (Cervero 1989). Yet another way of defining adult education includes not only formal coursework or training, but also informal educational activities (that is, those that do not involve an instructor). The AELL-NHES:2001 incorporates a broad approach to the range of activities that may be considered adult education. This approach distinguishes voluntary and required educational activities that are formal, as defined by the presence of an instructor, from activities that are informal.

In the AELL-NHES:2001, respondents were asked about both formal and informal learning activities in which they may have participated during the 12-month period prior to the interview. The seven types of formal learning activities included English as a Second Language (ESL), basic skills education, college or university degree programs, vocational or technical diploma programs, apprenticeship programs, work-related courses, and personal interest courses. Work-related informal learning activities included supervised training or mentoring, self-paced study using books or video tapes, self-paced study using computers, attending "brown-bag" or informal presentations, attending conferences or conventions, and reading professional journals or magazines.

This report provides a broad overview of the extent to which adults participate in educational activities and their educational experiences in such activities. Major topics include participation rates overall and in various types of formal educational activities; characteristics of participating adults; educational experiences in college or university degree programs on a part-time basis, work-related courses, and personal interest courses; reasons for participation in work-related courses; characteristics of participants who received employer support; and characteristics of participants in work-related informal learning activities. Because there is variation in the nature and purpose of various adult education activities, this analysis examines individual types of activities in addition to adult education overall.

The research questions addressed in this report are listed below along with a brief summary of the findings from the AELL-NHES:2001.

Participation in Adult Education

To what extent do adults participate in educational activities, and how is participation in educational activities related to characteristics of adults?

The two previous NHES adult education surveys conducted during the 1990s (i.e., AE-NHES:1995 and AE-NHES:1999), which excluded informal work-related training, found increasing rates of participation in formal adult education, from 40 percent in 1995 to 45 percent in 1999 (Kim et al. 1995; Kim and Creighton 2000; Creighton and Hudson 2002) (figure A). In 2001, the overall participation rate in formal adult education during the 12-month period prior to the interview was 46 percent (table A). About 92 million adults participated in one or more types of formal educational activities during this period.

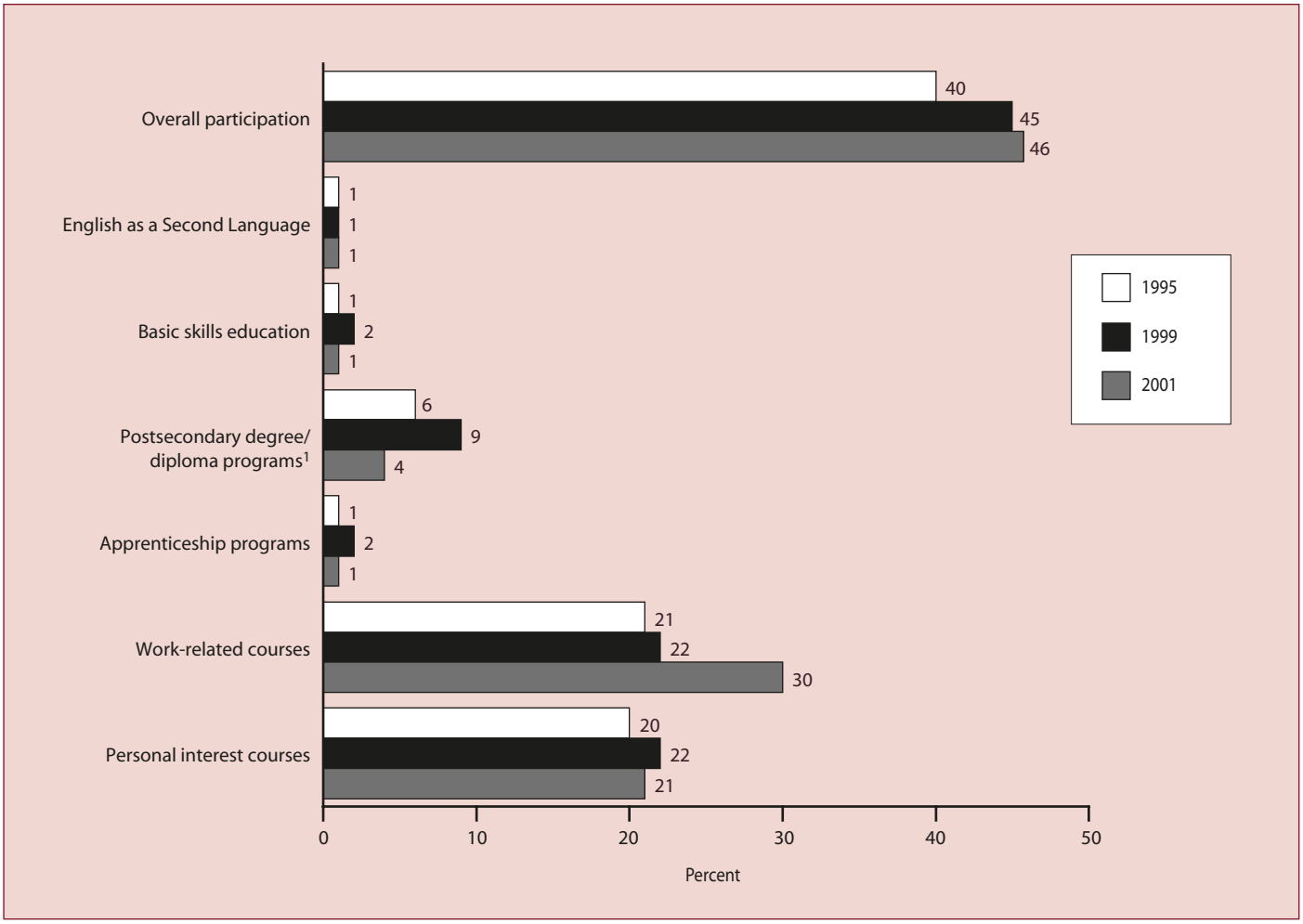
Adult education participation rates were higher among the population age 50 and younger. The rates of participation for the three younger age groups (ages 16–30, 31–40, and 41–50) were 53 to 55 percent, compared to 41 and 22 percent for the two older age groups (ages 51–65 and 66 and older) (table A).

Merriam and Caffarella (1999) noted that women have had a higher rate of participation than men since 1978. The AELL findings are consistent with this observation; females were more likely than males to participate in an educational activity (49 percent versus 43 percent) (table A).

The prior educational attainment of adults was positively associated with participation in educational activities. Among those who had not completed high school, 22 percent participated in educational activities during the 12-month period prior to the interview, whereas 34 percent of those with a high school diploma or equivalent, 58 percent of those with some college education, and 66 percent of those with a bachelor's degree or more education did so (table A).

The overall participation rate among adults who were never married (52 percent) was higher than the rate among adults who were married (47 percent), unmarried and living with

Figure A. Participation rates in adult education activities: 1995, 1999, and 2001



[1]Includes those who participated in a college or university degree or certificate program or in a vocational/technical diploma or degree program on a part-time basis during the previous 12 months.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program (NHES), 2001; Adult Education Survey of the NHES, 1999; and Adult Education Survey of the NHES, 1995. (Originally published as figure 1 on p. 11 of the complete report from which this is excerpted.)

a partner (43 percent), and separated, divorced, or widowed (38 percent) (table A).

Participation rates in adult education also varied by the employment status and occupation of adults. Those adults who had worked for pay or income during the 12 months prior to the survey were more likely to participate in educational activities (54 percent) than those who had not worked (25 percent). Adults in professional or managerial occupations had a higher rate of participation in adult education activities (71 percent) than those in other occupations (i.e., service, sales, or support occupations and those employed in the trades) (55 percent and 34 percent, respectively), and adults in service and sales occupations had a higher participation rate than those in the trades (table A).

Adults who had an occupational or legal requirement to take continuing education were more likely to participate in educational activities than those who did not have such a requirement (64 percent versus 40 percent) (table A).

Household income was positively related to the participation of adults in educational activities. Adults in households with incomes over $50,000 were more likely to participate in educational activities (56 to 59 percent) than those in households with incomes of $50,000 or less (28 to 48 percent). Participation rates in adult education activities also increased at every household income level up to $50,000 (table A).

Adults who had children under the age of 10 in their households were more likely to participate in adult education activities than their counterparts. In 2001, 52 percent of adults with children under 10 in their households participated compared with 44 percent of adults without children under age 10.

A logistic regression analysis was conducted to examine whether the relationships between individual personal characteristics and participation observed in the bivariate analyses remain when these characteristics are examined simultaneously. The regression analysis yielded findings generally consistent with the bivariate analyses for age, sex, race/ethnicity, employment/occupation, income, and prior educational attainment. Bivariate findings by the presence of children under age 10 in the household were not observed when the other characteristics of adults were taken into account. Somewhat different findings were observed by

Table A. Number of adults and rates of participation in selected adult education activities, by selected demographic, educational, and occupational characteristics: 2000–01

Characteristic	Total adults (in thousands)	Percent							
		Overall participation[1]	College or university degree programs[2]	Work-related courses	Personal interest courses	English as a Second Language[3]	Basic skills education[4]	Vocational or technical diploma programs[5]	Apprenticeship programs
Total	198,803	46	4	30	21	1	1	1	1
Age									
16 to 30 years old	46,905	53	10	28	24	3	3	2	3
31 to 40 years old	41,778	53	4	39	20	1	1	1	2
41 to 50 years old	41,255	55	4	42	21	#	1	1	1
51 to 65 years old	39,523	41	1	28	21	#	#	1	#
66 years and older	29,342	22	#	4	19	#	#	#	#
Sex									
Male	94,955	43	4	29	16	1	1	2	2
Female	103,848	49	5	30	26	1	1	1	1
Race/ethnicity									
White, non-Hispanic	144,147	47	4	32	22	#	1	1	1
Black, non-Hispanic	22,186	43	5	23	26	#	3	1	1
Hispanic	21,537	42	4	22	16	8	3	2	2
Other	10,932	49	6	32	18	3	1	2	2
Educational attainment									
Less than high school	31,343	22	#	6	11	4	7	1	1
High school diploma or its equivalent	64,606	34	2	20	15	1	#	1	1
Some college	52,559	58	8	36	26	1	#	2	2
Bachelor's degree or higher	50,295	66	6	51	30	1	†	1	1
Marital status[6]									
Married	121,455	47	3	33	21	1	#	1	1
Living with a partner, unmarried	14,009	43	5	27	15	2	2	3	3
Separated/divorced/widowed	30,503	38	2	23	20	1	1	1	1
Never married	32,836	52	10	26	26	3	4	1	2
Employment/Occupation[7]									
Employed in the past 12 months	145,249	54	6	39	22	1	1	1	2
Professional or managerial	42,230	71	8	59	29	#	#	1	1
Service, sales, or support	65,298	55	6	36	23	1	2	2	1
Trades	37,722	34	2	21	12	2	2	1	3
Not employed in the past 12 months	53,553	25	1	5	19	1	1	#	1

See notes at end of table.

Table A. Number of adults and rates of participation in selected adult education activities, by selected demographic, educational, and occupational characteristics: 2000–01—Continued

Characteristic	Total adults (in thousands)	Percent							
		Overall participation[1]	College or university degree programs[2]	Work-related courses	Personal interest courses	English as a Second Language[3]	Basic skills education[4]	Vocational or technical diploma programs[5]	Apprentice-ship programs
Continuing education requirements									
Yes	50,549	64	6	49	25	1	1	2	2
No	148,253	40	4	23	20	1	1	1	1
Household income									
$20,000 or less	40,246	28	3	12	15	2	2	1	1
$20,001–$35,000	38,876	39	4	20	18	2	2	1	1
$35,001–$50,000	33,035	48	4	31	22	1	1	1	2
$50,001–$75,000	40,725	56	6	39	24	#	#	1	1
$75,001 or more	45,922	59	5	45	26	#	#	1	1
Children under 10 years old in household									
Yes	55,333	52	5	35	21	2	1	2	2
No	143,469	44	4	28	21	1	1	1	1

† Not applicable.
# Rounds to zero or zero cases in sample.
[1]Adults who participated in college or university degree or certificate programs or vocational or technical diploma programs on a full-time basis only, for part or all of the year, and did not participate in any other type of formal educational activities are not counted as participants in adult education. Adults who participated in college or university degree programs or vocational or technical diploma programs on a full-time basis only and also participated in another type of formal educational activity are included in the overall participation rate and the rate for the type of non-degree/diploma programs in which they participated, but not in the college or university degree programs or vocational or technical diploma programs.
[2]Adults who participated in college or university degree or certificate programs on a part-time basis or on both part-time and full-time bases are included in the participation rate.
[3]Adults whose first language was any language other than English were asked about participation in English as a Second Language and are included in the participation rate.
[4]Adults who did not have a high school diploma or its equivalent or who received a high school diploma in the past 12 months are included in the participation rate.
[5]Adults who participated in vocational or technical diploma or degree programs on a part-time basis or on both part-time and full-time bases are included in the participation rate.
[6]For the purpose of this report, marital status was coded as follows. Respondents who reported being married are coded as "Married." Respondents living in households with another adult member (over age 16) and who were separated, divorced, widowed, or never married were asked if they were currently living with a partner. If the respondents reported that they were living with a partner, they are coded as "Living with a partner, not married" regardless of their current marital status (i.e., separated, divorced, widowed, and never married). Respondents not living with a partner or living in households with no other adults who reported being separated, divorced, or widowed are coded as "Separated/divorced/widowed." Respondents not living with a partner or living in households with no other adults who reported never having been married are coded as "Never married."
[7]*Professional or managerial occupations* include executive and managerial occupations, engineers, natural scientists, social scientists, teachers, health diagnosing, registered nurses, writers, health technologies; *service, sales, or support occupations* include technologists, marketing and sales occupations, administrative support, service occupations, miscellaneous occupations; *trades occupations* include agricultural occupations, mechanics, construction occupations, precision production occupations, production working occupations, transportation and laborer occupations.
NOTE: Because of rounding, details may not add to totals.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program (NHES), 2001. (Originally published as table 1 on pp. 9–10 of the complete report from which this article is excerpted.)

marital status; specifically, never-married adults were not more likely to participate than married adults or those who were separated, divorced, or widowed.

In what specific types of educational activities do adults participate and what characteristics of adults are associated with participation in specific types of educational activities?

Approximately 4 percent of adults were enrolled part time in college or university degree or certificate programs in the previous 12 months. Several characteristics were found to be related to participation in college degree or certificate programs. Participants tended to be less than 30 years of age, had never married, had worked in the past 12 months, had continuing education requirements for their occupations, had at least a high school education, or worked at professional or managerial occupations or service, sales, or support occupations (table A).[2]

Thirty percent of adults participated in work-related courses during the 12 months prior to the interview. Several characteristics examined in this study were found to be associated

[2]Readers should note that each of the characteristics noted is individually associated with participation; the intent is not to suggest that the combination of these individual characteristics constitute typical characteristics of participants.

with participation in work-related courses. Participants tended to be of White, non-Hispanic race/ethnicity;[3] have some education after high school; work in a professional or managerial occupation; have continuing education requirements for their occupations; be age 31 to 50; or have children under 10 years old in the households (table A).

About one in five adults (21 percent) participated in personal interest courses. Participants tended to be female, had completed some college or more education, worked in professional or managerial occupations, had continuing education requirements for their occupations, and had never been married (table A).

Compared to the other adult education activities, a smaller percentage of adults participated in ESL, basic skills education, vocational or technical diploma or degree programs, and apprenticeship programs (4 to 30 percent compared to 1 percent) (table A).

Characteristics of Participation in Adult Education

The diversity of adult education is reflected not only in the various types of educational activities in which adults participate, but also in important features of their participation. Characteristics of participation in educational activities collected in the AELL-NHES:2001 included credit and instructional hours, instructional providers, personal expenses for participation, the use of automated technology as an instructional tool, and keeping or obtaining a certificate or license.

How much time do adults spend in educational activities?

Participation in college or university degree programs varied considerably in terms of the number of credit hours taken. Forty-five percent of adults who participated in college or university degree programs on a part-time basis took 11 credit hours or less in the previous 12 months, 26 percent took 12 to 18 credit hours, and 7 percent took 31 credit hours or more during the year (table B).[4]

There was wide variability in the amount of time that adults spent in work-related courses. Twenty-eight percent of adults spent 10 hours or less in such courses, 25 percent spent 11 to 25 hours, 23 percent spent 26 to 50 hours, and 24 percent spent 51 hours or more. The amount of time that adults spent in personal interest courses also varied considerably. Twenty-five percent of participating adults spent 10 hours or less and 33 percent spent 51 hours or more in such courses during the year (table B).

To what extent do adults participate in educational activities provided by various institutions or organizations?

More adults took work-related courses provided by business and industry (49 percent) than any other provider type. Twenty percent of adults took work-related courses from postsecondary institutions (2-year and 4-year colleges, and postsecondary vocational/technical schools), 20 percent from professional organizations, and 15 percent from government agencies (local, state, or federal) (table B).

Participants in personal interest courses also received instruction from a wide variety of providers. Fifty percent of participants took personal interest courses from "other" types of providers, examples of which include community centers, public libraries, private organizations, and religious organizations. Twenty percent of adults took personal interest courses from postsecondary institutions and 17 percent from business or industry (table B).

To what extent do adults use their own resources to pay for participation in educational activities?

Information about personal expenses for participation in educational activities, such as tuition and fees and costs for books or other materials, was collected in the AELL-NHES:2001. Twenty-five percent of the participants in college or university degree programs reported no personal expenses for their programs, 34 percent spent $1 to $1,000, 23 percent spent $1,001 to $3,000, and 18 percent spent more than $3,000 (table B).

A large majority of participants in work-related courses (73 percent) reported that they had not spent any of their own or their families' money to pay for the courses. Twenty percent reported that they spent $1 to $500 for all of their work-related courses and 6 percent reported spending more than $500. Forty percent of participants in personal interest courses reported paying none of their own money to take courses, 48 percent spent $1 to $500, and 12 percent spent more than $500 over the previous 12 months (table B).

To what extent do adults participate in educational activities where technologies are used as an instructional method?

The AELL-NHES:2001 data indicate that adult education providers are turning to emerging technologies to increase

[3]For the remainder of this report, the descriptor "White" is used for ease of presentation.

[4]Participants include those who participated in college programs on a part-time basis (an estimated 886,384 adults) as well as those who participated on both part-time and full-time bases in the previous 12 months (an estimated 1,981,794 adults). An additional estimated 6,798,999 adults participated in college programs on a full-time basis only and are not included as adult education participants in college programs here. It is not possible to differentiate credit hours taken on a part-time basis or a full-time basis for those who participated in both statuses in the previous 12 months.

Table B. Number and percent of adults reporting selected educational characteristics in college or university degree programs, work-related courses, and personal interest courses: 2000–01

Characteristic	Estimate		
	College or university degree programs[1]	Work-related courses	Personal interest courses[2]
Number of adults (in thousands)	8,781	59,084	42,346
Total credit hours[3]			
11 credit hours or fewer	45%	†	†
12–18 hours	26	†	†
19–30 hours	18	†	†
31 hours or more	7	†	†
Credit hours do not apply	4	†	†
Total instructional hours			
10 hours or less	†	28%	25%
11–25 hours	†	25	22
26–50 hours	†	23	20
51 hours or more	†	24	33
Instructional providers[4]			
Postsecondary school	†	20	20
Other school or school district	†	7	6
Business or industry	†	49	17
Government agency	†	15	5
Professional association	†	20	8
Others[5]	†	15	50
Personal expenses for participation[6]			
None	25	73	40
$500 or less	17	20	48
$501–$1,000	17	3	7
$1,001–$3,000	23	2	4
$3,001 or more	18	1	1
Use of technology in instruction[4]			
TV, video, or radio	26	54	32
Computer	57	53	19
Computer conferencing	12	10	4
Internet or WWW	32	16	8
Participated in programs/courses to obtain or maintain certificate or license			
Yes	48	38	†
No	52	62	†

† Not applicable.
[1]Participants include those who participated in college programs on a part-time basis (an estimated 886,384 adults) as well as those who participated on both part-time and full-time bases in the previous 12 months (an estimated 1,981,794 adults). An additional estimated 6,798,999 adults participated in college programs on a full-time basis only and are not included as adult education participants in college programs here.
[2]Personal interest courses include educational activities that have an instructor other than English as a Second Language, basic skills courses, college or vocational degree or diploma programs, and work-related courses. Examples include courses related to health, hobbies or sports lessons, foreign languages, dance or music, and Bible study.
[3]Total credit hours for the previous 12 months are given. It is not possible to differentiate credit hours taken on a part-time basis or a full-time basis for those who participated in both statuses in the previous 12 months.
[4]Participants could give more than one response.
[5]Other providers include religious organizations, community organizations, a tutor or private instructor, or some other organization.
[6]Participants were asked about personal expenses for tuition, fees, books, and other materials.
NOTE: Because of rounding and/or because some categories are not mutually exclusive, percents may not sum to 100.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program (NHES), 2001. (Originally published as table 3 on p. 28 of the complete report from which this article is excerpted.)

the flexibility and accessibility of their programs. For college or university instruction, the use of computers was reported by more participants (57 percent) than any other automated technology, followed by the use of the Internet or World Wide Web (32 percent), and television, video, or radio (26 percent) (table B).

The use of automated technology for instruction in work-related courses was also reported by many participants. The types of technology most often reported were television, video, or radio, reported by 54 percent of participating adults, and computer instruction, reported by 53 percent (table B).

About one-third (32 percent) of participants in personal interest courses reported the use of television, video, or radio as an instructional mode and 19 percent reported the use of computers for instruction (table B).

To what extent do adults participate in educational activities in order to obtain or to maintain a certificate or license?

About half of the adults participating in college or university degree programs on a part-time basis or both part-time and full-time bases reported that they did so to obtain or to maintain a state, industry, or company certificate or license (48 percent). Among those adults who took work-related courses, 38 percent reported taking courses to obtain or to maintain a state, industry, or company certificate or license (table B).

Receipt of Employer Support for Participation

In the AELL-NHES:2001, information was collected on employer support for participation, including provision of instruction, offering courses or classes at the workplace, providing courses or classes during paid work hours, and paying for or reimbursing educational expenses. A question about employer requirements for taking courses or classes also was included.

To what extent do adults report employer support and incentives for participation in educational activities?

Sixty-eight percent of employed adults who participated in educational activities received some type of employer support (table C). Several characteristics examined in this study were found to be associated with receipt of employer support: being White adults; having higher prior educational attainment; being of a marital status other than never married;[5] working in a professional or managerial occupation; working for a large employer (i.e., 500 or more employees); having a higher household income;[6] or being required to participate in continuing professional education (table D).

[5]Adults in the marital statuses of (1) currently married, (2) separated, divorced, or widowed, and (3) living with a partner were more likely to report receipt of employer support for adult education participation than those who had never been married.

[6]Those with household incomes of $50,000 or more were more likely to participate than those with household incomes under $35,000.

Table C. Number of adult education participants who worked in the previous 12 months and the percent who received any employer support for participating, by selected demographic, educational, and occupational characteristics: 2000–01

Characteristic	Total adults who worked in the previous 12 months (in thousands)	Any employer support[1] for participation in adult education activities (percent)
Total	78,883	68
Age		
16 to 30 years old	22,539	60
31 to 40 years old	20,323	73
41 to 50 years old	21,223	74
51 to 65 years old	13,372	68
66 years and older	1,427	40
Sex		
Male	37,451	68
Female	41,432	68

See notes at end of table.

Table C. Number of adult education participants who worked in the previous 12 months and the percent who received any employer support for participating, by selected demographic, educational, and occupational characteristics: 2000–01—Continued

Characteristic	Total adults who worked in the previous 12 months (in thousands)	Any employer support[1] for participation in adult education activities (percent)
Race/ethnicity		
White, non-Hispanic	59,040	71
Black, non-Hispanic	8,071	63
Hispanic	7,292	53
Other	4,481	70
Educational attainment		
Less than high school	4,835	34
High school diploma or its equivalent	17,849	62
Some college	26,394	70
Bachelor's degree or higher	29,805	76
Marital status[2]		
Married	49,215	71
Living with a partner, not married	5,583	68
Separated/divorced/widowed	8,767	68
Never married	15,319	59
Occupational group[3]		
Professional or managerial	30,087	78
Service, sales, or support	35,883	63
Trades	12,914	60
Employer size		
1–24 employees	18,642	43
25–499 employees	21,793	73
500 employees or more	38,448	78
Continuing education requirements		
Yes	28,789	74
No	50,094	65
Household income		
$20,000 or less	7,956	48
$20,001–$35,000	12,436	58
$35,001–$50,000	13,735	66
$50,001–$75,000	19,970	76
$75,001 or more	24,785	75

[1]Employer support includes providing instruction, providing classes at the workplace, providing classes during work hours, and paying for or reimbursing expenses for classes, programs, or courses.
[2]For the purpose of this report, marital status was coded as follows. Respondents who reported being married are coded as "Married." Respondents living in households with another adult member (over age 16) and who were separated, divorced, widowed, or never married were asked if they were currently living with a partner. If the respondents reported that they were living with a partner, they are coded as "Living with a partner, not married" regardless of their current marital status (i.e., separated, divorced, widowed, and never married). Respondents not living with a partner or living in households with no other adults who reported being separated, divorced, or widowed are coded as "Separated/divorced/widowed." Respondents not living with a partner or living in households with no other adults who reported never having been married are coded as "Never married."
[3]*Professional or managerial occupations* include executive and managerial occupations, engineers, natural scientists, social scientists, teachers, health diagnosing, registered nurses, writers, health technologies; *service, sales, or support occupations* include technologists, marketing and sales occupations, administrative support, service occupations, miscellaneous occupations; *trades occupations* include agricultural occupations, mechanics, construction occupations, precision production occupations, production working occupations, transportation and laborer occupations.
NOTE: Because of rounding, percents may not sum to 100. Includes participating adults who worked for pay or income in the previous 12 months.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program (NHES), 2001.
(Originally published as table 4 on p. 34 of the complete report from which this article is excerpted.)

Table D. Results of logistic regression analysis of adult characteristics and receipt of any employer support for participating in adult education activities, by selected demographic, educational, and occupational characteristics: 2000–01

Characteristic	Parameter estimate	Odds ratio
Age (Reference category: 41 to 50 years old)		
16 to 30 years old	-0.28	0.75*
31 to 40 years old	0.02	1.02
51 to 65 years old	-0.36	0.69*
66 years and older	-1.13	0.32*
Sex (Reference category: Female)		
Male	0.03	1.03
Race/ethnicity (Reference category: White, non-Hispanic)		
Black, non-Hispanic	-0.28	0.75*
Hispanic	-0.41	0.66*
Other, non-Hispanic	0.09	0.92
Educational attainment (Reference category: Bachelor's degree or higher)		
Less than high school	-0.83	0.43*
High school diploma or its equivalent	-0.18	0.84
Some college	0.04	1.04
Marital status[1] (Reference category: Never married)		
Married	0.28	1.32*
Living with a partner, unmarried	0.48	1.62*
Separated/divorced/widowed	0.37	1.44*
Employment/Occupation[2] (Reference category: Professional or managerial)		
Service, sales, or support	-0.37	0.69*
Trades	-0.53	0.59*
Employer size (Reference category: 500 employees or more)		
1–24 employees	-1.48	0.23*
25–499 employees	-0.25	0.78*
Continuing education requirements (Reference category: Yes)		
No	-0.31	1.37*
Household income (Reference category: $75,001 or more)		
$20,000 or less	-0.50	0.61*
$20,001–$35,000	-0.30	0.74*
$35,001–$50,000	-0.16	0.85
$50,001–$75,000	0.16	1.17

*$p < .05$.
[1]For the purpose of this report, marital status was coded as follows. Respondents who reported being married are coded as "Married." Respondents living in households with another adult member (over age of 16) and who were separated, divorced, widowed, or never married were asked if they were currently living with a partner. If the respondents reported that they were living with a partner, they are coded as "Living with a partner, not married" regardless of their current marital status (i.e., separated, divorced, widowed, and never married). Respondents not living with a partner or living in households with no other adults who reported being separated, divorced, or widowed are coded as "Separated/divorced/widowed." Respondents not living with a partner or living in households with no other adults who reported never having been married are coded as "Never married."
[2]*Professional or managerial occupations* include executive and managerial occupations, engineers, natural scientists, social scientists, teachers, health diagnosing, registered nurses, writers, health technologies; *service, sales or support occupations* include technologists, marketing and sales occupations, administrative support, service occupations, miscellaneous occupations; *trades occupations* include agricultural occupations, mechanics, construction occupations, precision production occupations, production working occupations, transportation and laborer occupations.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program (NHES), 2001. (Originally published as table 5 on p. 36 of the complete report from which this article is excerpted.)

A logistic regression analysis was conducted to examine whether the relationships observed in the bivariate analysis are also observed when they are examined simultaneously. The results of the regression analysis were consistent with the bivariate analyses for marital status, prior educational attainment, occupation, employer size, continuing education requirement, race/ethnicity, and household income.

Reasons for Participation

For what reasons do adults participate in work-related courses?

The most frequently reported reasons for participation in work-related courses were maintaining or improving skills or knowledge (95 percent) and learning new skills or methods (84 percent).[7] Sixty-two percent of participants reported being required to take courses by an employer or due to professional certification requirements, legal requirements, and so on.

Work-Related Informal Learning

Informal learning is regarded as a major source of the acquisition of new knowledge and skills in the workplace (Bruce, Aring, and Brand 1998). In the AELL-NHES:2001 survey, respondents were asked about their participation in a variety of work-related informal learning, including supervised training or mentoring; self-paced study using manuals, videos, or a computer; attending informal presentations; attending conferences; or reading professional journals or magazines. With the exception of supervised training or mentoring, respondents were asked about each type of informal learning regardless of whether they were working in the 12 months prior to the interview.

To what extent do adults participate in work-related informal learning activities?

Nearly two-thirds of adults (about 125 million) reported participating in work-related informal learning activities in the 12 months prior to the interview. Those adults with some college or more education, those in professional or managerial occupations, and those with higher household incomes were generally more likely to participate in work-related informal learning activities (table E).

Summary

Education, employment and occupation, and household income were consistently associated with participation in adult education. Prior educational attainment is positively associated with overall participation and with participation in the two most common forms of formal learning—work-related courses and personal interest courses—and with participation in work-related informal learning activities. In addition, having worked in the previous 12 months and having a professional or managerial occupation are characteristics associated with participation overall, in work-related courses, in personal interest courses, and in work-related informal learning. Also, higher levels of household income are associated with overall adult education participation, and participation in work-related courses, personal interest courses, and work-related informal learning.

The characteristics of educational activities in which adults participate are associated with the type of adult education activity in which they engage. The participation of adults in educational activities encompasses a variety of providers, with business and industry being a leading provider of instruction for work-related courses. Intensity of participation (e.g., number of courses and hours of instruction) varies considerably among all education types. The use of automated technology in instruction is quite common in college or university degree programs, work-related courses, and, to a lesser extent, personal interest courses.

[7]Some participants gave more than one reason, so percents sum to more than 100.

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Table E. Number of adults and rates of participation in selected work-related informal learning activities, by selected demographic, educational, and occupational characteristics: 2000–01

Characteristic	Total adults (in thousands)	Percent						
		Any work-related informal learning activities	Used self-paced study using books, procedures manuals, or video tapes	Used self-paced study using computer-based software	Attended "brown bag" or informal presentations	Attended conferences or conventions	Read professional journals or magazines	Received supervised training or mentoring[1]
Total	198,803	63	30	21	20	25	43	46
Age								
16 to 30 years old	46,905	72	36	24	21	26	38	58
31 to 40 years old	41,778	71	35	25	24	30	50	46
41 to 50 years old	41,255	73	37	28	25	31	54	43
51 to 65 years old	39,523	58	26	20	18	24	44	35
66 years and older	29,342	28	9	5	4	6	22	22
Sex								
Male	94,955	67	34	23	21	29	48	44
Female	103,848	59	27	20	18	21	38	49
Race/ethnicity								
White, non-Hispanic	144,147	64	29	22	20	25	45	46
Black, non-Hispanic	22,186	61	30	20	19	25	38	50
Hispanic	21,537	57	30	15	15	20	34	45
Other	10,932	63	37	24	20	26	42	40

See notes at end of table.

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Data Source: The NCES Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program (NHES), 2001; the Adult Education Survey of the NHES, 1999; and the Adult Education Survey of the NHES, 1995.

For technical information, see the complete report:

Kim, K., Collins Hagedorn, M., Williamson, J., and Chapman, C. (2004). *Participation in Adult Education and Lifelong Learning: 2000–01* (NCES 2004-050).

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To obtain the complete report (NCES 2004-050), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Table E. Number of adults and rates of participation in selected work-related informal learning activities, by selected demographic, educational, and occupational characteristics: 2000–01—Continued

Characteristic	Total adults (in thousands)	Percent						
		Any work-related informal learning activities	Used self-paced study using books, procedures manuals, or video tapes	Used self-paced study using computer-based software	Attended "brown bag" or informal presentations	Attended conferences or conventions	Read professional journals or magazines	Received supervised training or mentoring[1]
Educational attainment								
Less than high school	31,343	34	16	5	4	8	16	35
High school diploma or its equivalent	64,606	52	22	14	12	16	28	40
Some college	52,559	72	36	27	21	25	48	52
Bachelor's degree or higher	50,295	84	42	36	38	46	73	50
Employment/Occupation[2]								
Employed in the past 12 months								
Professional or managerial	42,230	91	47	39	41	52	77	49
Service, sales, or support	65,298	73	36	25	21	27	43	48
Trades	37,722	62	29	15	14	17	33	38
Not employed in the past 12 months	53,553	28	11	8	4	6	22	†
Marital status[3]								
Married	121,455	63	31	22	21	26	46	43
Living with a partner, not married	14,009	69	36	23	21	25	42	51
Separated/divorced/widowed	30,503	49	23	15	14	17	35	40
Never married	32,836	70	32	23	20	25	39	56
Household income								
$20,000 or less	40,246	41	20	8	8	11	22	38
$20,001–$35,000	38,876	56	27	16	13	16	33	47
$35,001–$50,000	33,035	65	31	19	18	23	42	47
$50,001–$75,000	40,725	70	33	29	24	29	50	49
$75,001 or more	45,922	78	38	32	32	40	63	46

† Not applicable.
[1]Questions about supervised training or mentoring were only asked of adults who were employed during the 12-month period prior to the interview.
[2]*Professional or managerial occupations* include executive and managerial occupations, engineers, natural scientists, social scientists, teachers, health diagnosing, registered nurses, writers, health technologies; *service, sales, or support occupations* include technologists, marketing and sales occupations, administrative support, service occupations, miscellaneous occupations; *trades occupations* include agricultural occupations, mechanics, construction occupations, precision production occupations, production working occupations, transportation and laborer occupations.
[3]For the purpose of this report, marital status was coded as follows. Respondents who reported being married are coded as "Married." Respondents living in households with another adult member (over age16) and who were separated, divorced, widowed, or never married were asked if they were currently living with a partner. If the respondents reported that they were living with a partner, they are coded as "Living with a partner, not married" regardless of their current marital status (i.e., separated, divorced, widowed, and never married). Respondents not living with a partner or living in households with no other adults who reported being separated, divorced, or widowed are coded as "Separated/divorced/widowed." Respondents not living with a partner or living in households with no other adults who reported never having been married are coded as "Never married."
NOTE: Percentage for supervised training/mentoring is based on adults who worked in the past 12 months. Other estimates are based on all adults. Because of rounding, percents may not sum to 100.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program (NHES), 2001. (Originally published as table 8 on p. 42 of the complete report from which this article is excerpted.)

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Library Agencies

State Library Agencies: Fiscal Year 2003

Barbara Holton, Elaine Kroe, Patricia O'Shea, Cindy Sheckells, Suzanne Dorinski, and Michael Freeman

This article was originally published as the Summary and Selected Findings of the E.D. TAB of the same name. The universe data are from the State Library Agencies (StLA) Survey.

Introduction

This report contains data on state library agencies in the 50 states and the District of Columbia for state fiscal year (FY) 2003.[1] The data were collected through the State Library Agencies (StLA) Survey, the product of a cooperative effort between the Chief Officers of State Library Agencies (COSLA), the U.S. National Commission on Libraries and Information Science (NCLIS), the National Center for Education Statistics (NCES), and the U.S. Census Bureau. This cooperative effort makes possible the 100 percent response rate achieved for this survey. The frame or source of the list of respondents for this survey is based on the list that COSLA maintains of state library agencies. The FY 2003 survey is the 10th in the StLA series. The data upon which this report is based are final. Data from previous administrations of the survey have been revised, and a complete list of references can be found on page 65 of the full report.

[1]See the section on *Reporting Period* in appendix A of the full report for more information on state fiscal year.

Background

A state library agency is the official agency of a state that is charged by state law with the extension and development of public library services throughout the state and that has adequate authority under state law to administer state plans in accordance with the provisions of the Library Services and Technology Act (LSTA) (P.L. 104-208). Beyond these two roles, state library agencies vary greatly. They are located in various departments of state government and report to different authorities. They are involved in various ways in the development and operation of electronic information networks. They provide different types of services to different types of libraries. They provide important reference and information services to state governments and administer the state libraries and special operations such as state archives, libraries for the blind and physically handicapped, and the State Center for the Book.[2] The state library agency may

[2]The State Center for the Book, which is part of the Center for the Book program sponsored by the Library of Congress, promotes books, reading, and literacy, and is hosted or funded by the state.

also function as the state's public library at large, providing library services to the general public. This report provides information on the range of roles played by state library agencies and the various combinations of fiscal, human, and informational resources invested in such work. Some state library agencies perform allied operations, services not ordinarily considered a state library agency function. These special operations may include maintaining state archives, managing state records, conducting legislative research for the state, or operating a museum or art gallery.

The state library agencies of the District of Columbia, Hawaii, and Maryland are different from the other state libraries in a variety of ways. They are administrative offices without a separate state library collection. In the District of Columbia, which is treated as a state for reporting purposes, the Martin Luther King Memorial Library, the central library of the District of Columbia Public Library, functions as a resource center for the municipal government. In Hawaii, the state library is located in the Hawaii State Public Library System. State law designates Enoch Pratt Free Library's central library as the Maryland State Library Resource Center. These collections are reported on the NCES Public Libraries Survey (PLS) and thus are not reported on the StLA Survey, to avoid duplication. The state library agencies of the District of Columbia, Hawaii, and Maryland administer LSTA funds and report LSTA revenue and expenditures in this report. The District of Columbia and Maryland state library agencies administer and staff the Library for the Blind and Physically Handicapped (LBPH). The Library of Congress owns the LBPH collections.

Purpose of survey

The purpose of the StLA Survey is to provide state and federal policymakers, researchers, and other interested users with descriptive information about state library agencies. The data collected are useful to (1) chief officers of state library agencies; (2) policymakers in the executive and legislative branches of federal and state governments; (3) government and library administrators at the federal, state, and local levels; (4) the American Library Association and its members or customers; (5) library and public policy researchers; and (6) the public, journalists, and others. Decisionmakers use this survey to obtain information about services and fiscal practices.

Organization of this report

This report presents selected findings and background information about the survey. The body of this report is composed of tables providing an overview of state library agencies during the 2003 fiscal year. The tables present data on six main topics.

- Governance—describes the organizational location of state library agencies within state governments.
- Collections and Services—characterizes state library agencies in terms of holdings, library service transactions, and services to libraries and systems.
- Service Outlets and Staff—describes the availability of state library agency locations and bookmobiles providing services to the public or specific constituencies and characterizes staff and the functions they perform.
- Revenue—identifies various sources of state library agency revenue or income.
- Expenditures—describes how state library agency funds are expended.
- Public Policy Issues—presents special projects sponsored by state library agencies.

Finally, relevant references and four appendixes supply supporting information. Appendix A of the full report provides technical information about the survey, data processing, and response rates. State library agencies listed in appendix B of the full report have received federal income other than LSTA state library agency allocations. Appendix C of the full report contains the survey instrument, instructions, and definitions of terms used in the survey and this report. A reference list, consisting of reports and data files from previous administrations of this survey, appears in appendix D of the full report.

The survey asks each state library agency about the kinds of services it provides, its staffing practices, its collections, its income and expenditures, and more. The data include services and financial assistance provided to public, academic, and school libraries, and to library systems. When added to the data collected through the NCES surveys of public, academic, and school libraries,[3] these data help complete the national picture of library service.

Congressional authorization

The StLA Survey is conducted in compliance with the NCES mission to "collect, report, analyze, and disseminate statistical data related to education in the United States and in other nations, including . . . assisting public and private

[3]The NCES Public Libraries Survey collects data from U.S. public libraries. The Academic Libraries Survey collects data from postsecondary institution libraries. The "School Library Media Center Questionnaire" of the NCES Schools and Staffing Survey (SASS) collects data from elementary and secondary school library media centers.

educational agencies, organizations, and institutions in improving and automating statistical and data collection activities. . . . The Statistics Center may establish one or more national cooperative education statistics systems for the purpose of producing and maintaining, with the cooperation of the States, comparable and uniform information and data on early childhood education, elementary and secondary, postsecondary education, adult education, and libraries, that are useful for policymaking at the Federal, State, and local levels." (H.R. 3801, Education Sciences Reform Act of 2002 [ESRA 2002])

Selected Findings

Governance

- Nearly all state library agencies (49 agencies) are located in the executive branch of government. Two state library agencies are located in the legislative branch.
- Sixteen state library agencies are independent agencies within the executive branch. Of the state library agencies located in the executive branch, almost two-thirds (33 agencies) are part of a larger agency.
- Of the 33 state library agencies that were part of a larger state agency, 14 were part of the state department of education. Four state library agencies were located in a department of cultural resources, and five states were part of a department of state.

Collections and services

- State library agency collections averaged 531,000 uncataloged government documents. State library agencies averaged 457,000 book and serial volumes. The median number of books and serial volumes held by state library agencies was 179,000.
- State library agencies also held audio or visual materials or serial subscriptions. The average number of such materials held by state library agencies varied by format: 3,700 audio materials, 3,000 video materials, and 1,300 serial subscriptions.
- During the 2003 fiscal year, state library agencies averaged 37,000 library visits. State library agencies averaged 61,000 circulation transactions. The median number of circulation transactions was 9,400. State library agency staff responded to an average of 26,000 reference transactions in fiscal year 2003. The median number of reference transactions was 14,000.

Services to public libraries

Public libraries serve all residents of a given community, district, or region, and typically receive financial support, in whole or part, from public funds.

- All state library agencies provided the following types of services to public libraries: administration of LSTA grants; collection of library statistics; continuing education programs; and library planning, evaluation, and research. Nearly all state library agencies (47 to 50 agencies) provided consulting services, interlibrary loan referral services, library legislation preparation or review, and review of technology plans for the E-rate discount program.
- Services to public libraries provided by 40 to 45 state library agencies were administration of state aid, reference referral services, state standards or guidelines, statewide public relations or library promotion campaigns, and summer reading program support. Three-fourths of state library agencies (39 agencies) provided literacy program support to public libraries.
- Thirteen state library agencies reported accreditation of public libraries, and 24 state library agencies reported certification of public librarians.

Services to academic libraries

Academic libraries are integral parts of colleges, universities, or other academic institutions for postsecondary education, organized and administered to meet the needs of students, faculty, and affiliated staff.

- Over two-thirds of state library agencies (35 to 41 agencies) provided the following services to academic libraries: administration of LSTA grants, continuing education, interlibrary loan referral services, or reference referral services. Thirty-two state library agencies provided consulting services, 26 provided union list development, and 23 state library agencies provided statewide public relations/library promotion campaigns to academic libraries.
- Services to academic libraries provided by four to six state library agencies were administration of state aid, certification of academic librarians, literacy program support, and state standards/guidelines. No state library agency accredited academic libraries.

Services to school library media centers

School library media centers (LMCs) are integral parts of the educational program of elementary and secondary schools, with materials and services that meet the curricular, information, and recreational needs of students, teachers, and administrators.

- Almost two-thirds or more of state library agencies (33 to 41) provided administration of LSTA grants, continuing education, interlibrary loan referral services, or reference referral services to LMCs.
- Twenty-nine state library agencies provided consulting services to school libraries, 24 provided library planning/evaluation research or statewide public relations/library promotions campaigns to LMCs, 21 supported union list development, and 20 state library agencies provided library legislative preparation/review.
- No state library agency reported accreditation of school library media centers. Three state library agencies administered state aid to school LMCs; four reported certification of library media specialists; six reviewed technology plans for the E-rate discount program; and eight state library agencies reported retrospective conversion of bibliographic records.

Services to special libraries

Special libraries are located in business firms, professional associations, government agencies, or other organized groups. A special library may be maintained by a parent organization to serve a specialized clientele; or an independent library may provide materials or services, or both, to the public, a segment of the public, or other libraries. Special libraries include libraries in state institutions. The scope of special library collections and services is limited to the subject interests of the host or parent institution.

- Two-thirds or more of state library agencies (34 to 43 agencies) served special libraries through administration of LSTA grants, consulting services, continuing education, interlibrary loan referral services, and reference referral services.
- Twenty-six state library agencies provided union list development; 25 agencies supported special library planning, evaluation, and research; and 20 offered statewide public relations/library program campaigns.
- Six state library agencies administered state aid to special libraries, maintained state standards/guidelines, or reviewed technology plans for the E-rate discount program. Five state library agencies supported special library summer reading programs, and four reported certification of librarians of special libraries. No state library agency accredited special libraries.

Services to systems

Systems are groups of autonomous libraries joined together by formal or informal agreements to perform various services cooperatively, such as resource sharing or communications. Systems include multi-type library systems and public library systems, but not multiple outlets under the same administration.

- Two-thirds of state library agencies (34 agencies) administered LSTA grants to library systems.
- Furthermore, at least half of state library agencies (26 to 31 agencies) provided the following services to library systems: administration of state aid; collection of library statistics; consulting services; continuing education; interlibrary loan referral; library legislation preparation or review; library planning; evaluation and research; and review of technology plans for the E-rate discount program.
- Six state library agencies reported library system accreditation, and seven reported certification of librarians of library systems.

Service outlets and staff

State library agency service outlets have regular hours of service in which state library agency staff are present to serve users. The state library agency, as part of its regular operation, pays the staff and all service costs. The main or central outlet is a single unit library where the principal collections are located and handled. Other outlets have separate quarters, a permanent basic collection of books and/or other materials, permanent paid staff, and a regular schedule of hours open to users. Bookmobiles are trucks or vans specially equipped to carry books and other library materials. They serve as traveling branch libraries.

- State library agencies reported a total of 134 service outlets—47 main or central outlets, 71 other outlets (excluding bookmobiles), and 16 bookmobiles. The user groups receiving library services through these outlets, and the number of outlets serving them, included the general public (95 outlets); state government employees (77 outlets); blind and physically

handicapped individuals (56 outlets); residents of state correctional institutions (31 outlets); and residents of other state institutions (27 outlets).[4]

- The total number of budgeted full-time-equivalent (FTE) positions in state library agencies was 3,600. Librarians with American Library Association-accredited Master of Library Science degrees (ALA-MLS) represented 1,100 positions; other professionals accounted for 718 FTE positions; and other paid staff represented 1,700 FTE positions.
- Most of the budgeted FTE positions in state library agencies (55 percent) provided library services; 19 percent were in library development; and 13 percent of budgeted FTE positions were in administration or other services.[5]

Revenue

Sources of state library agency revenue are the federal government, state governments, and other sources, such as local, regional, or multijurisdictional sources. State library agencies may also receive income from private sources, such as foundations, corporations, Friends of Libraries groups, and individuals. State library agencies may also generate revenue through fees for service or fines. Revenue may be designated for aid to libraries, for the current and recurrent costs necessary for the provision of services by the state library agencies, or other purposes.

- State library agencies reported a total revenue of $1.1 billion in FY 2003. The states provided $916 million, $154 million came from federal sources, and $33 million came from other sources.[6]
- Among states with populations of 2.6 million to 5 million, 18 percent of state library agencies' revenue came from LSTA. State library agencies in states with fewer than 800,000 residents received 8 percent of their revenue from LSTA. The state library agencies in the remaining population categories received between 12 and 14 percent of their federal funds from LSTA.
- States designated $595 million of state library agency revenue for state aid to libraries. Revenue from state sources for state aid to libraries varied by population categories from $2.44 per capita for states with 10 million or more residents to $.37 per capita among states with fewer than 800,000 residents.

Expenditures

Operating expenditures are the current and recurrent costs necessary for the provision of services by the state library agencies. Operating expenditures include LSTA expenditures for statewide services conducted directly by the state library agencies and administration of the LSTA funds. Not included are the LSTA expenditures for grants and other funds distributed to libraries.

- State library agencies reported total expenditures of $1.1 billion in FY 2003. Of those expenditures, $301 million were operating expenditures, representing 28 percent of total expenditures, and $764 million were financial assistance to libraries, or 70 percent of total expenditures.
- Among states with $50 million or more in revenue, 84 percent ($3.94 per capita) of state library agency expenditures were for financial assistance to libraries, and 13 percent of expenditures ($.61 per capita) were for operating expenditures. States with less than $4 million in revenue used 85 percent ($2.86 per capita) of their expenditures for operating costs, and 12 percent ($.40 per capita) of expenditures was for financial assistance to libraries.
- State library agencies reported $172 million of their operating expenditures was for employee salaries and wages and benefits. State library agencies with the largest total revenue ($50 million or more) had employee costs of $38.7 million. The state library agencies with the smallest total revenue (less than $4 million) had operating expenditures for salaries and benefits of $9.6 million. State library agencies' total staffing costs ranged, by revenue category, from 53 percent to 62 percent of the total operating expenditures for fiscal year 2003.
- Of the financial assistance to libraries provided by state library agencies in 2003, 50 percent ($385 million) were targeted to individual public libraries, and 21 percent ($163 million) went to public library systems.

Public policy issues

State library agencies had a combined total of $26 million in grant and contract expenditures to assist public libraries with

[4]The number of outlets by user group may not sum to total outlets because some outlets serve multiple user groups.

[5]This includes staff not reported under administration, library development, or library services, such as staff in allied operations.

[6]Federal income includes State Program income under the LSTA (P.L. 104–208), income from Title II of the Library Services and Construction Act (LSCA) (P.L. 101–254), and other federal income. Note: LSCA was superseded by LSTA, but LSCA Title II funds are still active.

state or federal education reform initiatives. The area of adult literacy and family literacy accounted for 85 percent of such expenditures, and prekindergarten learning accounted for 15 percent. State library agencies with total revenue of $50 million or more directed 92 percent of reform initiative funds to adult and family literacy and 8 percent to prekindergarten learning. For state library agencies with revenue of less than $4 million, 63 percent of reform initiative funds went to adult or family literacy and 37 percent of such funds were spent on prekindergarten learning.

Data source: The NCES State Library Agencies (StLA) Survey, fiscal year 2003.

For technical information, see the complete report:

Holton, B., Kroe, E., O'Shea, P., Sheckells, C., Dorinski, S., and Freeman, M. (2004). *State Library Agencies: Fiscal Year 2003* (NCES 2005-330).

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To obtain the complete report (NCES 2005-330), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Crosscutting Statistics

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Educational Equity

Trends in Educational Equity of Girls & Women: 2004

Catherine E. Freeman

This article was originally published as the Executive Summary of the Statistical Analysis Report of the same name. The sample survey and universe data are primarily from NCES surveys, although there are other sources of national and international data as well.

This report draws upon a wide range of published and unpublished statistical materials to present an overview of the educational status of girls and women in the United States. *Trends in Educational Equity of Girls & Women* contains a selection of indicators that illustrate the educational gains made by females in recent years as well as areas where gaps continue to exist. This statistical report assembles a series of indicators that examine the extent to which males and females have access to the same educational opportunities, avail themselves equally of these opportunities, perform at similar levels throughout schooling, succeed at similar rates, and reap the same benefits from their educational experiences.

This report serves as an update of an earlier publication, *Trends in Educational Equity of Girls & Women* (Bae et al. 2000). General topics covered by this report are similar to those addressed in the 2000 report. Many indicators that were included in the 2000 report have been updated with the most recent data available. In addition, a number of new indicators have been added, designed to reflect the most current research on topics relevant to educational equity.

The full report begins with an overview that summarizes the report's major findings. A series of 38 indicators follow, which examine various facets of educational equity. The indicators begin with preprimary and early elementary education, move through elementary and secondary education and postsecondary education, and finally, consider educational outcomes. Each indicator shows the status of females relative to males. Some indicators include further breakdowns, such as those by race/ethnicity; however, the general focus of this report is on overall comparisons between males and females and not on the experiences of various

subgroups, which may show different patterns. The data for the indicators are drawn primarily from surveys conducted by the National Center for Education Statistics (NCES), although several other sources of national and international data are used as well. Although these indicators provide valuable information on many aspects of educational equity, some important topics cannot be addressed with available, nationally representative data. Examples of such topics include the extent to which sexual harassment undermines the ability of schools to provide a safe and comfortable learning environment and whether girls and young women are encouraged to challenge themselves in their educational pursuits, especially in mathematics and science.

The data presented in this publication demonstrate that in elementary and secondary school and in college, females are now doing as well as or better than males on many indicators of achievement and educational attainment, and that large gaps that once existed between males and females have been eliminated in most cases and have significantly decreased in other cases. Women are still underrepresented in some fields of study, as well as more generally in doctoral and first-professional degree programs, although they have made substantial gains in the past 30 years. These differences may have labor market consequences.

Preprimary and Early Elementary Education

Certain kinds of preschool experiences, such as participating in high-quality preprimary programs and engaging in early literacy activities with parents, are widely believed to help prepare young children for the more structured learning that takes place in elementary school. Therefore, whether males and females have the same access to these kinds of opportunities is of interest from an educational equity standpoint.

In terms of many learning opportunities, males and females start school on a similar footing. In certain other areas, females appear to start school ahead.

Between 1990 and 2001, the percentage of 3- to 5-year-olds enrolled in preprimary programs and kindergarten increased. In 2001, similar percentages of males (63 percent) and females (64 percent) were enrolled in preprimary and kindergarten education. However, in terms of early learning experiences in the home, a higher percentage of females (86 percent) than males (82 percent) had been read to three or more times in the past week. For both males and females, participation in literacy activities generally increased between 1991 and 2001.

General knowledge assessments indicate that males and females are similar in terms of their general knowledge in kindergarten and first grade. Males and females also generally performed similarly on the overall reading assessment; however, higher percentages of females (80 percent) than males (73 percent) could recognize words by sight in the spring of first grade. Males and females had similar levels of sight word recognition in third grade.

Kindergartners who entered in the fall of 1998 increased their overall mathematics performance scores by 10 points by the spring of their kindergarten year compared to their initial assessment. By the end of third grade, these students more than tripled their performance. With the exception of the third-grade assessment, males and females performed similarly on overall mathematics performance. In third grade, males scored higher than females, 87 to 83. No differences were detected between males and females on any of the assessments of addition and subtraction skills.

Elementary and Secondary Education

Because school attendance is generally compulsory between ages 6 and 16, equal access to schooling at the elementary and secondary levels is not at issue. However, many topics beyond access to schooling remain of critical importance from an equity standpoint, such as the extent to which males and females have access to the same types of educational opportunities, take similar advantage of these opportunities, and achieve at the same level while in school. Data on various aspects of the elementary and secondary school experiences of males and females—such as their progress through school, academic performance, access to computers, and participation in extracurricular activities—provide some indication of the extent to which gender equity in education has been achieved.

Progress through school

Females are less likely than males to repeat a grade and to drop out.

The percentage of 5- to 12-year-old males who had repeated at least one grade declined between 1996 and 1999. In 1999, females ages 5 to 12 years old were less likely than males of the same age to have repeated a grade: approximately 8 percent of males compared to 5 percent of females had repeated a grade since starting school. In recent years, females have also become less likely than males to drop out of high school; for example, in 2001, the status dropout rate for 16- to 24-year-olds (i.e., the percentage who had not completed high school and were not enrolled in school)

was 12 percent for males, compared to 9 percent for females. This marks a change from the general pattern in the 1970s, when dropout rates were similar for males and females.

The status dropout rate decreased for both males and females between 1972 and 2001. When examined by sex and race/ethnicity, the dropout rate of White males and females, Black males and females, and Hispanic females decreased during this period, while no decrease was detected for Hispanic males.

Males and females who have a child in high school are more likely to drop out of high school and less likely to receive a bachelor's degree. Among females who were eighth-graders in 1988, 71 percent who had a child in high school had completed high school as of 2000, compared to 95 percent who had no child as of 2000. Furthermore, only 2 percent of females who had a child in high school had received a bachelor's degree by 2000, compared to 44 percent of those with no child. Becoming a parent while still in high school was related to the educational attainment of males as well. Males who became fathers in high school were significantly less likely than those who were not fathers, as of 2000, to have completed high school (65 vs. 94 percent) and to have received a bachelor's degree (4 vs. 36 percent).

On a variety of measures, males seem to be more likely than females to experience serious problems at school and to engage in risky behaviors.

Evidence suggests that females are less likely than males to have certain problems, such as being diagnosed with a learning disability and being victimized at school, which may negatively affect their progress through school (U.S. Department of Education 1997). In 1999, males in grades 1–5 were more likely than females to have been identified as having a disability (21 vs. 14 percent, respectively). In particular, males were more likely than females to have been identified with a learning disability, emotional disturbance, and speech impediment.

In 2001, among 12- to 18-year-old students, the percentage of males who reported that they had experienced criminal victimization at school during the previous 6 months was higher than the percentage of females reporting the same experience (6 vs. 5 percent). Similarly, a higher percentage of males than females reported being bullied at school (9 vs. 7 percent).

In addition, female students appear to be less likely than male students to engage in certain behaviors, such as drug use and violence, that may put themselves and others at risk. In 2001, females in grades 9–12 were less likely than males to report using alcohol at least once in the previous 30 days on school property (4 vs. 6 percent), as well as in general (45 vs. 49 percent). Likewise, high school females were also less likely than their male counterparts to report using marijuana at least once in the previous 30 days on school property (3 vs. 8 percent) as well as in general (20 vs. 28 percent). The percentage of students who reported being offered or given an illegal drug on school property in the previous 12 months was also lower for females (23 percent) than males (35 percent). Overall, the percentages of students who reported using cigarettes and marijuana, and who were offered, sold, or given an illegal drug on school property decreased between 1997 and 2001. However, there was no decrease detected during this period in the percentage of students who reported using alcohol on school property. Males in these grades were also much more likely than females to engage in certain violent activities on school property; higher percentages of males than females reported being in a physical fight in the previous 12 months (18 vs. 7 percent) and carrying a weapon to school in the previous 30 days (10 vs. 3 percent).

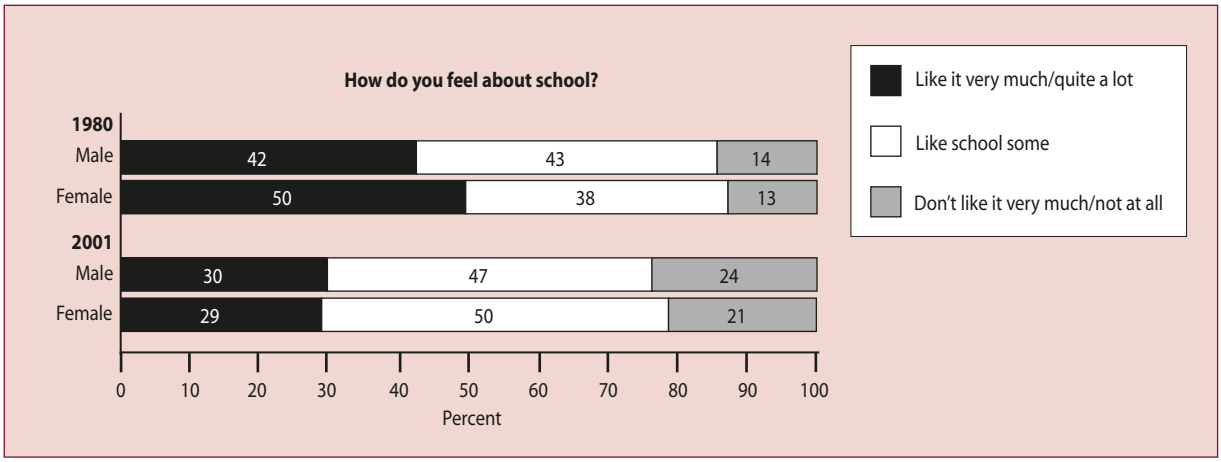
High school seniors' attitudes toward school have become increasingly negative, particularly among females.

Despite apparent differences in the extent to which females and males experience certain problems as they progress through school, the general attitudes of male and female high school seniors toward school were similar in 2001; 29 percent of females and 30 percent of males reported liking school very much (figure A). This marked a change from 1980, when females were more likely than males to report liking school. It also marked a decline, among both males and females, in these positive attitudes toward school from 1980, when 50 percent of females and 42 percent of males reported liking school very much. This decline occurred at a faster rate for females than for males.

Academic performance

Academic performance is a key measure of school success because high performance in school opens doors to postsecondary education and to well-paying jobs. For females to have the same opportunities as males in postsecondary education and in the labor market, it is important for them to

Figure A. Percentage of high school seniors' responses to the question, "How do you feel about school?," by sex: 1980 and 2001



NOTE: Detail may not sum to totals because of rounding. The response rates for this survey do not meet NCES statistical standards. The response rate for this survey was less than 70 percent, and a full nonresponse bias analysis has not been done to date.
SOURCE: University of Michigan, Institute for Social Research, Monitoring the Future study, 1980 and 2001 unpublished data.

be equally well prepared academically. Overall, females have done much better than males in reading and writing, but have generally, though not always, lagged behind in science and mathematics. Concern exists that this gap in science and mathematics may give them less access to high-paying jobs, although there are no data to compare this disadvantage with the possible disadvantage faced by males because of their lower reading and writing achievement.

Females have consistently outperformed males in reading and writing.

Reading and writing are basic skills required for most jobs and for functioning in contemporary society. Scores on the main assessment of the National Assessment of Educational Progress (NAEP) reveal that females in grades 4, 8, and 12 have consistently outperformed males in reading. The main assessment data from NAEP show that females continued to have higher reading scores than males at all three grades, but there were no measurable increases in females' scores when 1992 data were compared to 2003 data at grades 4 and 8, and there was a decrease in 12th-grade reading scores for females—from 297 in 1992 to 295 in 2002 (figure B).

Gender differences in reading achievement have been observed internationally as well. In every G8 country participating in the Progress in International Reading Literacy Study (PIRLS) in 2001, fourth-grade girls scored significantly higher than boys on the combined reading literacy scale. In the United States, girls scored an average of 18 points higher. In each of 28 Organization for Economic Cooperation and Development (OECD) countries participating in the Program for International Student Assessment (PISA) in 2000, 15-year-old females outperformed their male peers in reading.

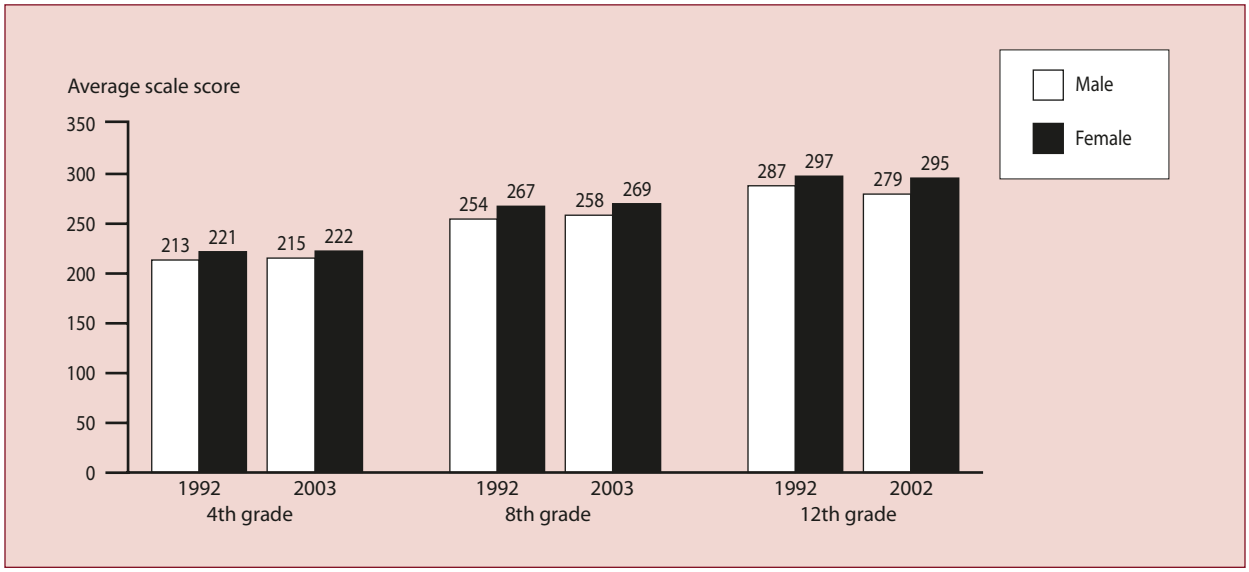
Females in the United States in grades 4, 8, and 12 also outperformed their male peers in writing in 1998 and 2002 (figure C).

However, females' higher achievement in reading and writing on the NAEP assessments did not translate into higher achievement on Advanced Placement (AP) examinations in English. Although females accounted for a higher proportion of students taking the AP examination in English in 2002, their average score was lower than that of males (figure D).

There are some gender differences favoring male students in mathematics and science.

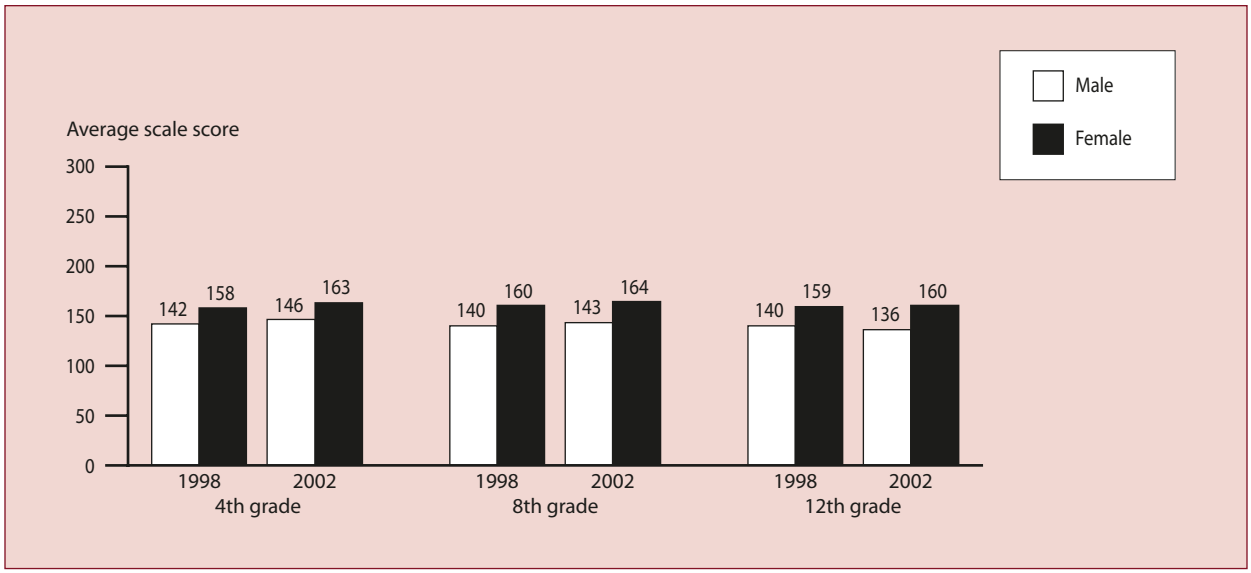
Proficiency in science and mathematics has become particularly important, as jobs in our technological society increasingly require workers to use complex mathematics skills and scientific knowledge to solve problems (U.S. Department of Education 2001). Although there is a common perception that males consistently outperform females in mathematics, NAEP mathematics scores have not shown this (figure E). In mathematics, the gap between average scale scores has been quite small and fluctuated only slightly between 1990 and 2003.

Figure B. Average scale scores in reading for 4th-, 8th-, and 12th-graders, by sex: Various years, 1992, 2002, and 2003



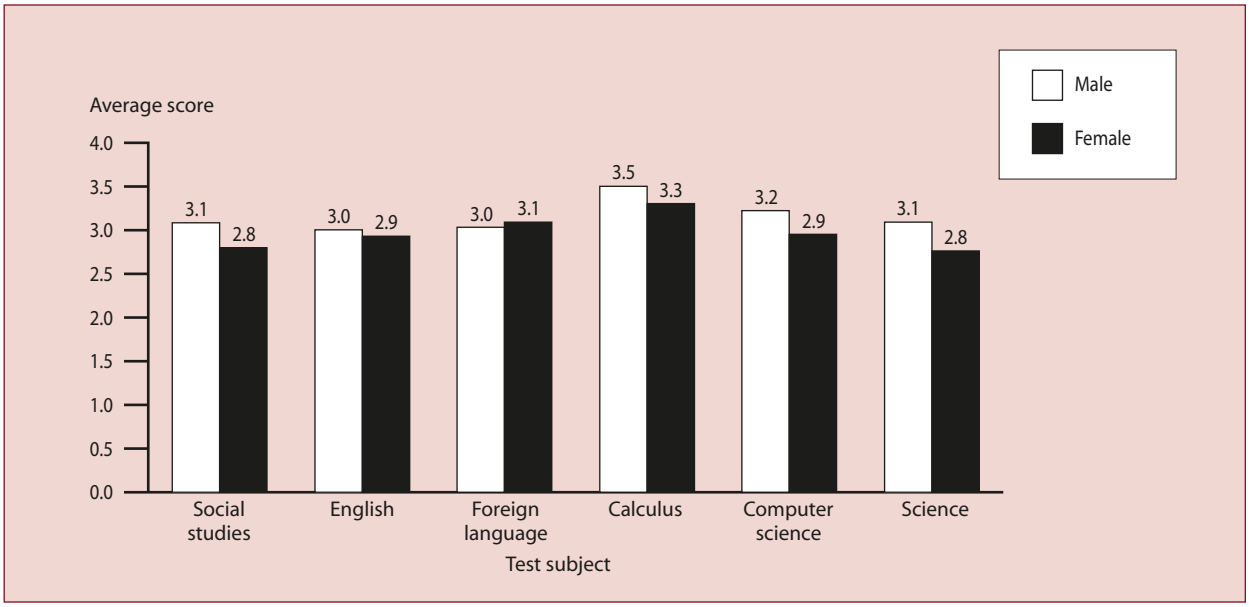
NOTE: These test scores are from the National Assessment of Educational Progress (NAEP). Accommodations were not permitted for the 1992 assessment. Scale ranges from 0 to 500. For a discussion of the reading scale score definitions, please see http://nces.ed.gov/nationsreportcard/reading/scale.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 2002, and 2003 Reading Assessments.

Figure C. Average scale scores in writing for 4th-, 8th-, and 12th-graders, by sex: 1998 and 2002



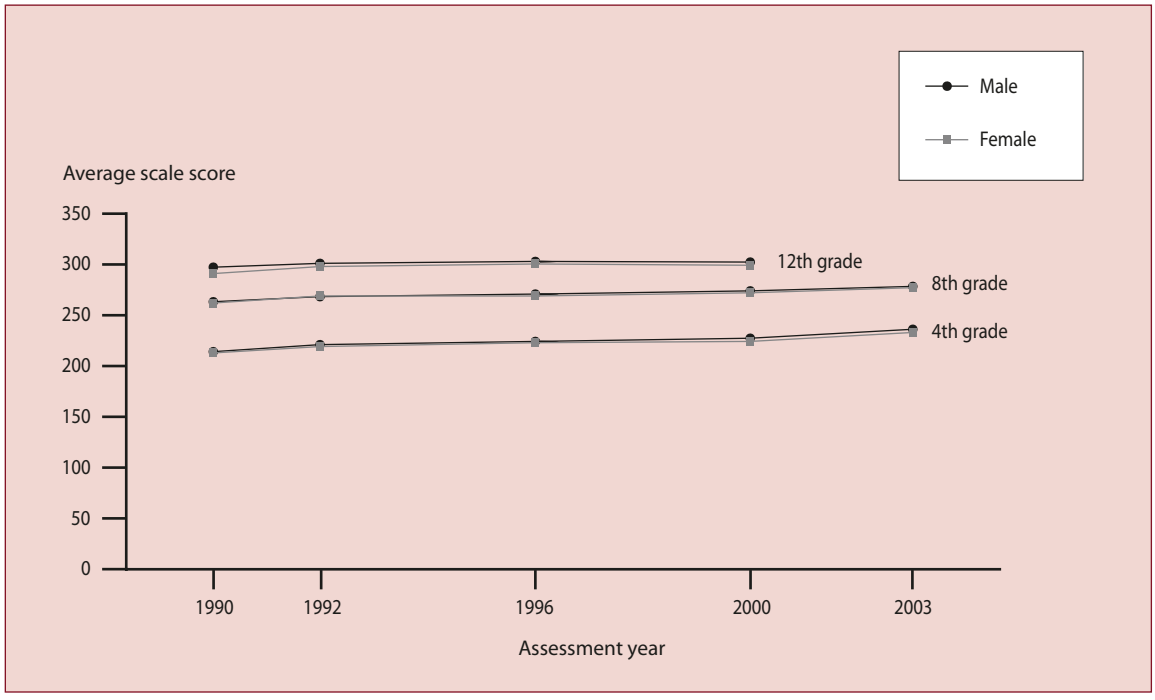
NOTE: These test scores are from the National Assessment of Educational Progress (NAEP) Main Assessment. Scale ranges from 0 to 300, with a national average of 150. See *The Nation's Report Card: Writing 2002* (NCES 2003-529) for further score descriptions.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 and 2002 Writing Assessments.

Figure D. Average score on Advanced Placement (AP) examinations, by test subject area and sex: 2002



NOTE: Please see the *National Summary Report, 2002*, from the College Board for more specific information regarding test subjects.
SOURCE: The College Board, Advanced Placement Program, *National Summary Report, 2002*.

Figure E. Average scale scores in mathematics for 4th-, 8th-, and 12th-graders, by sex: 1990, 1992, 1996, 2000, and 2003



NOTE: These test scores are from the National Assessment of Educational Progress (NAEP) Main Assessment. Scale ranges from 0 to 500. For both the 1990 and 1992 assessments, accommodations were not permitted. For a discussion of the mathematics scale score definitions, please see http://nces.ed.gov/nationsreportcard/mathematics/scale.asp.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

In 2002, males made up a higher proportion of students taking AP exams in science and calculus. Males also obtained higher average scores on these examinations compared to females (figure D).

Gender differences in mathematics proficiency favoring males were observed internationally in PISA, although the differences were neither as large nor as consistent across countries as the differences favoring females in reading. In 13 of 28 participating countries, males outperformed females; however, this was not the case in the United States.

Trends in science achievement have been slightly different. Among fourth- and eighth-graders, males scored higher than females on the 2000 science assessment, but not on the 1996 assessment. In contrast, among 12th-graders, males outperformed females on the 1996 assessment, but there was no measurable difference on the 2000 assessment. The score gap between males and females increased between 1996 and 2000 at the 4th and 8th grades, but there was no measurable difference in the size of the gap at 12th grade.

Gender gaps in mathematics and science coursetaking appear to be shrinking.

Overall, females' high school academic programs in mathematics and science are at least as challenging as those taken by males. Female high school graduates in 2000 were more likely than their male peers to have taken algebra II, biology, AP/honors biology, and chemistry (figure F). Males, by contrast, were more likely than females to have taken physics. The percentage of male graduates who took calculus increased from 6 to 12 percent, and the percentage of female graduates who took calculus increased from 4 to 11 percent between 1982 and 2000.

Computer usage

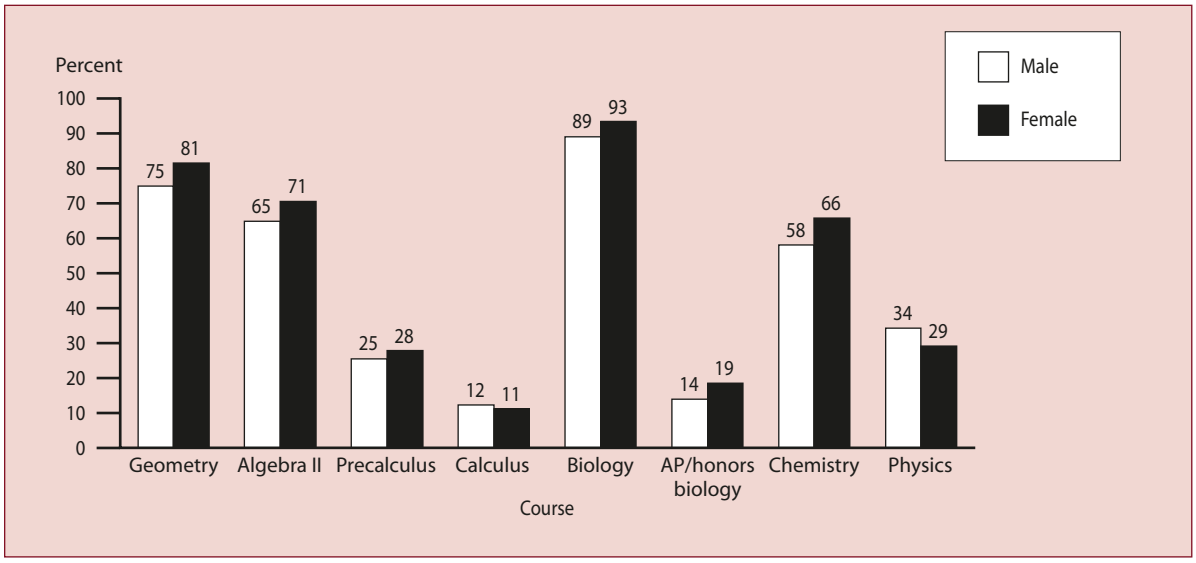
The computer has become a tool of vital importance in the home, classroom, and workplace. If females are less comfortable with this tool or have less access to a computer at home or at school, they could be at a disadvantage later in their educational careers or in the workplace. Based on available data, males and females have equal access to computers.

Females are just as likely as males to use computers at home and at school.

Reflecting the rapid spread of technology throughout society, the percentage of students in elementary and secondary school using computers at school increased from 60 percent of students in 1993 to 84 percent of students in 2001. The percentage of students who used a computer at home increased from 25 percent of students to 66 percent of students.

Similar percentages of males and females used computers at school. In addition, similar percentages of males and

Figure F. Percent of public high school graduates of 2000 who had taken various mathematics and science courses in high school, by sex: 2000



SOURCE: U.S. Department of Education, National Center for Education Statistics, 2000 High School Transcript Study (HSTS).

females reported computer use at home, both in general and for schoolwork. However, when looking at 5- through 17-year-olds, girls are slightly more likely than boys to use home computers for e-mail, word processing, and completing school assignments (DeBell and Chapman 2004). Despite evident parity in general access to and use of computers, however, there is some evidence that at least some males leave high school with greater interest in and specialized knowledge of computers. For instance, males accounted for 86 percent of students who took the AP examination in computer science in 2002, and males had higher average scores on the examination than females (figure D).

Extracurricular activities

Extracurricular activities offer opportunities for students to develop skills that are important in the workplace and in society, such as team values, individual and group responsibility, physical strength and endurance, competition, and a sense of community. Consequently, equal access to opportunities to develop such skills is an important component of educational equity.

Females are more likely than males to participate in various afterschool activities, except for athletics.

In 2001, females were more likely than their male peers to participate in music or other performing arts, belong to academic clubs, work on the school newspaper or yearbook, or to participate in the student council or government (figure G). Male students, however, were more likely to participate in school athletics than female students. Roughly one-third of female seniors reported participating in music or other performing arts, and one-third reported participating on athletic teams. In contrast, 19 percent of male students reported participating in music or other performing arts, while 45 percent reported participating on athletic teams. It is difficult to assess the relative importance of the different types of skills learned in the various activities.

Postsecondary Education

Females currently have greater success than males in attaining postsecondary education. Females have higher aspirations than males while in high school, they are more likely to enroll in college immediately after graduating from high school, and they persist and complete degrees at higher rates than males. More than half of all bachelor's and master's degrees are awarded to females. Nevertheless, gender differences in majors still exist, with female bachelor's degree recipients much less likely than their male peers to major in computer science, engineering, and physical sciences. Females also still lag behind males in enrollment in first-professional and doctoral programs, but they have made gains in the past 30 years and are closing the gender gap.

Transition to postsecondary education

High school students' plans for further education indicate the importance that young people attach to postsecondary education and their perceptions of their access to it. Aspirations are important, because they are a first step toward attainment. Both aspirations and undergraduate enrollment rates of females have increased, and females have now surpassed males in both areas.

Female high school seniors tend to have higher educational aspirations than their male peers.

In 1990 and 2001, female high school seniors were more likely than their male peers to report that they definitely planned to graduate from a 4-year college (62 vs. 51 percent in 2001). By 2001, female high school seniors were also more likely than males to report that they definitely would attend graduate or professional school (25 vs. 16 percent). This marked a change from 1980, when a higher percentage of males than females reported that they definitely would attend graduate or professional school.

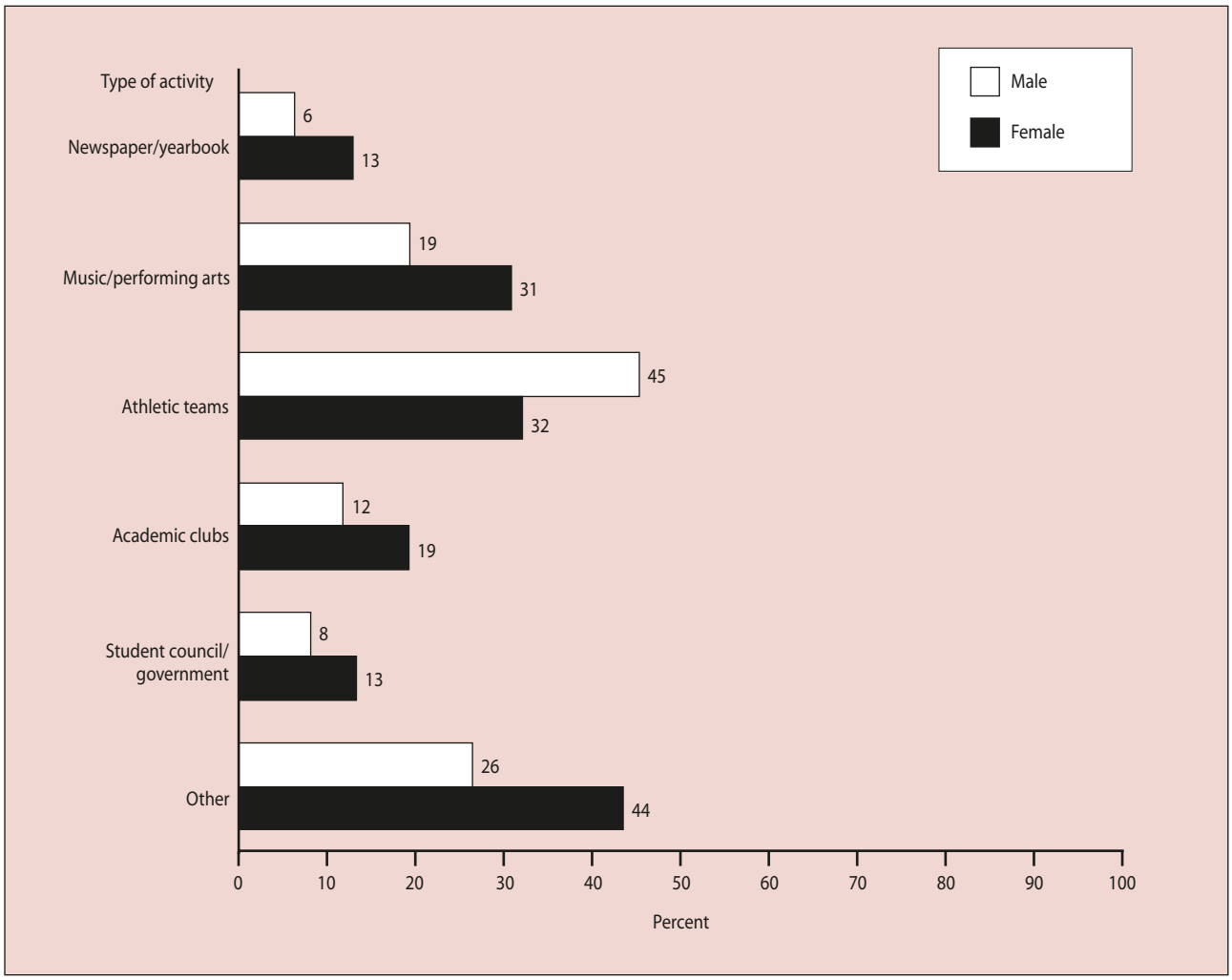
Females are more likely than males to enroll in college the fall immediately following graduation from high school.

From 1972 to 2001, the proportions of both males and females who enrolled in college immediately after finishing high school increased, but females' enrollment increased at a faster rate. In 1972, male high school graduates were more likely than their female peers to enroll in a 2- or 4-year college in the fall after graduating from high school (53 vs. 46 percent) (figure H). However, despite long-term increases in enrollment between 1972 and 2001, the proportions of females who enrolled in college after high school declined by 7 percentage points between 1997 and 2001.

A majority of undergraduates are female.

The proportion of undergraduates who were female increased from the minority to the majority of students between 1970 and 2000; in 1970, 42 percent of all undergraduates were female, while in 2000, 56 percent were female. In part, this reflects an increase in the numbers of young women who enter college immediately after completing high school, but it also reflects a sizable number of older women enrolled in school (U.S. Department of Education 2003). Since the late 1970s, at least half of all part-time students have been female,

Figure G. Percent of high school seniors who participated in various school-related activities during the school year, by sex: 2001



NOTE: The response rates for this survey do not meet NCES statistical standards. The response rate for this survey was less than 70 percent, and a full nonresponse bias analysis has not been done to date.
SOURCE: University of Michigan, Institute for Social Research, Monitoring the Future study, 2001.

and since 1985, a majority of full-time students have been female as well (figure I). In 2000, females accounted for 55 percent of full-time enrollment and 58 percent of part-time enrollment.

Females make up the majority of graduate, but not first-professional, students.

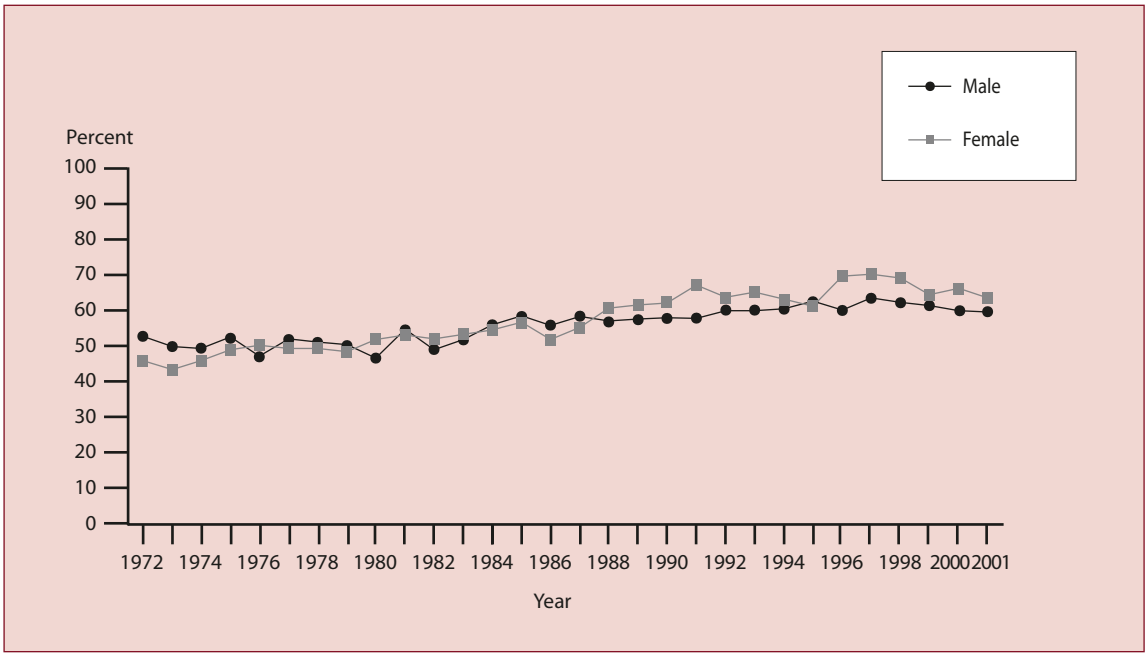
Females have made even larger gains at the graduate level than at the undergraduate level. In 1970, 39 percent of all graduate students were female, a slightly lower proportion than at the undergraduate level, but in 2000, 58 percent of graduate students were female, a slightly higher proportion than at the undergraduate level (figure J). Female graduate students accounted for a greater percentage of part-time enrollment (61 percent) than of full-time enrollment (54 percent) in 2000.

The majority of first-professional students are still men, but women have made dramatic and consistent gains in their representation since 1970 (figure J). While 9 percent of students in first-professional degree programs were women in 1970, by 2000, 47 percent of full-time and 44 percent of part-time first-professional students were women.

Persistence and attainment

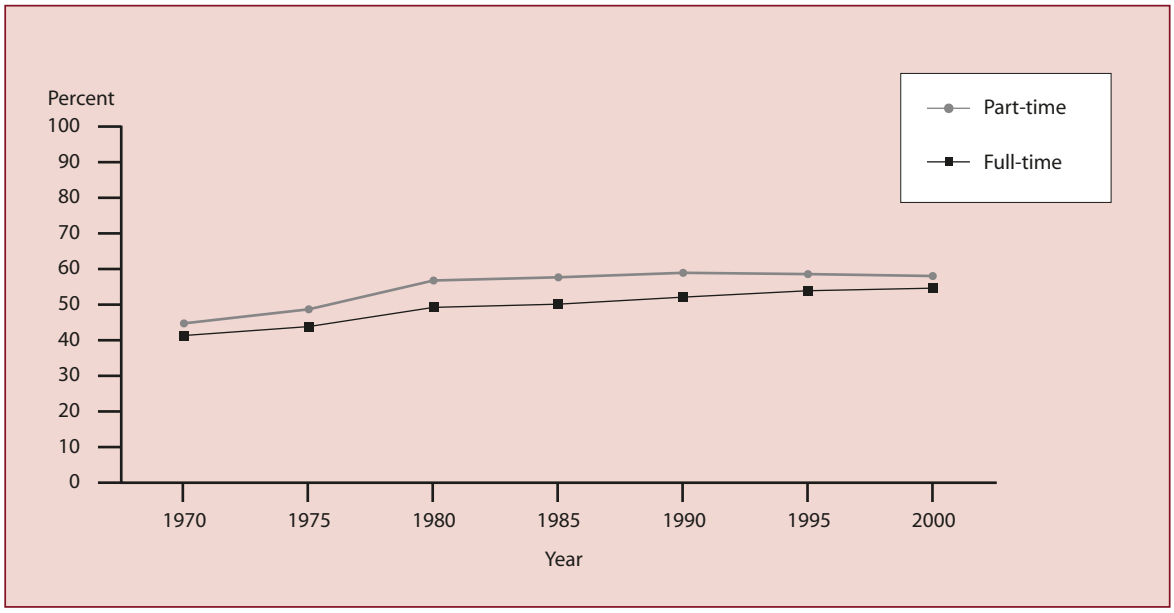
Enrollment in postsecondary education is one indicator of access. However, completion of postsecondary programs is an even more important indicator of personal success and of an education climate that fosters parity in opportunity.

Figure H. Percent of high school completers who were enrolled in college the October following high school completion, by sex: October 1972 to October 2001



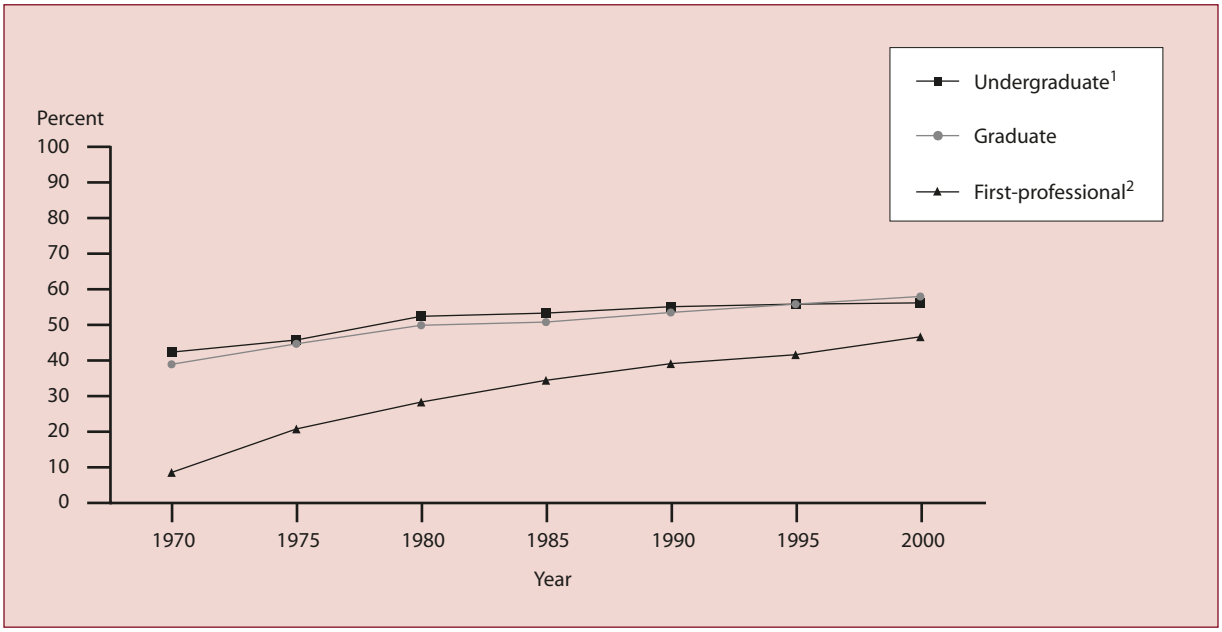
SOURCE: U.S. Department of Commerce, Bureau of the Census, October Current Population Surveys (CPS), 1972–2001.

Figure I. Percent of undergraduates who were female, by enrollment status: Various years, fall 1970 to fall 2000



NOTE: Includes unclassified undergraduate students.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics 2002* (NCES 2003-060), based on Higher Education General Information Survey (HEGIS), "Fall Enrollment in Colleges and Universities" surveys; and Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment Survey."

Figure J. Females as a percent of total enrollment in undergraduate, graduate, and first-professional education: Various years, fall 1970 to fall 2000



[1]Includes unclassified undergraduate students.
[2]First-professional students are enrolled in the fields of dentistry (D.D.S. or D.M.D.), medicine (M.D.), optometry (O.D.), osteopathic medicine (D.O.), pharmacy (D. Phar.), podiatric medicine (D.P.M.), veterinary medicine (D.V.M.), chiropractic medicine (D.C. or D.C.M.), law (J.D.), and the theologicial professions (M. Div. or M.H.L.).
SOURCE: U.S. Department of Education, National Center for Education Statistics, *Digest of Education Statistics 2002* (NCES 2003-060), based on Higher Education General Information Survey (HEGIS), "Fall Enrollment in Colleges and Universities" surveys; and Integrated Postsecondary Education Data System (IPEDS), "Fall Enrollment Survey."

Females are more likely than males to persist and attain degrees.

Among freshmen who enrolled in a college or university for the first time in 1995–96 seeking a bachelor's degree, a greater percentage of females (66 percent) than males (59 percent) had earned a bachelor's degree by the spring of 2001. A greater percentage of males than females were still enrolled (16 vs. 13 percent), indicating that some of the difference in attainment rates might eventually be reduced. A higher percentage of males (21 percent) than females (16 percent) had not obtained a bachelor's degree and were no longer enrolled for a bachelor's degree.

Considering degree attainment more generally (not just those who started in 1995–96), females earned more than half of all bachelor's degrees in 2001 (57 percent). This statistic reflects the increasing proportions of female students in postsecondary education, as previously noted. The proportions of Black and Hispanic bachelor's degree recipients who were female in 2000–01 (66 and 60 percent, respectively) were higher than the proportion of White degree recipients who were female (57 percent).

The increase in participation by females in postsecondary education over the past 30 years has meant that, among the general population ages 25–29 in 2002, a slightly higher percentage of females than males had attained a bachelor's degree or higher (32 vs. 27 percent).

Degrees in certain fields of study continued to be disproportionately awarded to males or to females, although changes have occurred in recent years.

Historically, females have tended to account for the majority of bachelor's degrees in fields that often lead to lower paying occupations, such as education and health professions, while males typically have predominated in higher paying fields, such as computer science and engineering. While some of these disparities persist, many changes have occurred since 1970. Certain fields in which men received the majority of degrees in 1970, such as social sciences and history, psychology, biological sciences/life sciences, and business management and administrative services, attained relative gender parity or were disproportionately female by 2001 (figure K). And while other fields, such as computer and information sciences, physical sciences and science technologies, and engineering, continue to have a larger

proportion of males, the percentages of females majoring in these areas have risen since 1970.

Females have made substantial progress at the graduate level overall, but still earn fewer than half of the degrees in many fields.

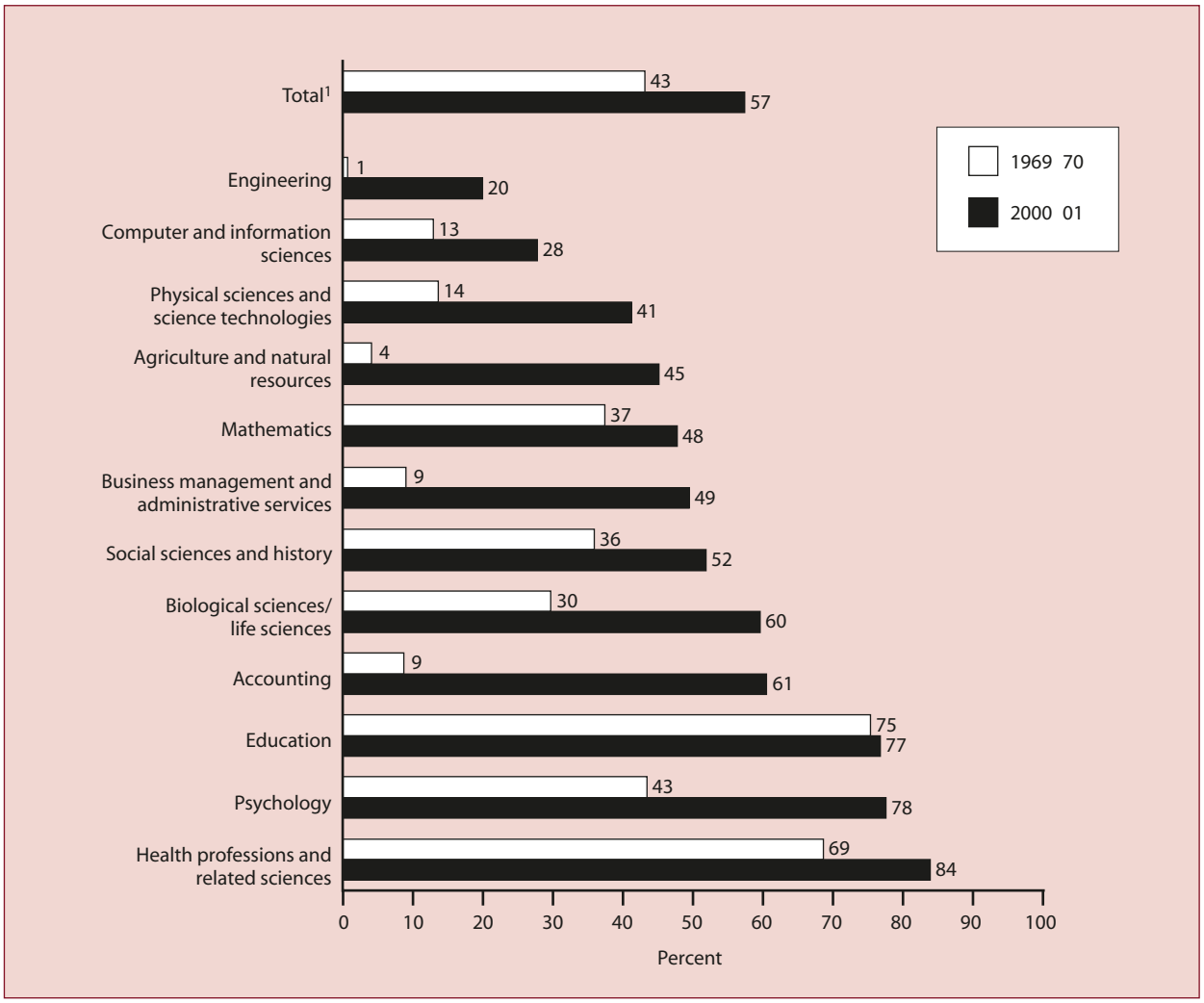
Between 1970 and 2001, the percentages of master's, doctor's, and first-professional degrees earned by females increased substantially in many fields. However, advanced degrees conferred still tend to follow traditional patterns, with women accounting for the majority of master's and doctor's degree recipients in education and health, and men accounting for the majority of recipients in computer and information sciences and engineering.

Women's progress toward earning an equal share of first-professional degrees has been notable. In 1970, 5 percent of law degrees, 8 percent of medical degrees, and 1 percent of dentistry degrees were awarded to females; in 2001, the corresponding percentages were 47 percent, 43 percent, and 39 percent.

Gender differences in participation rates in collegiate sports have narrowed.

One final measure of gender equity at the college level is participation in National Collegiate Athletic Association (NCAA)-sponsored sports. Males still outnumber females in collegiate sports participation, but the gap has narrowed. Between 1981–82 (when detailed statistics on females' sports first became available) and 2001–02, the number

Figure K. Percent of bachelor's degrees conferred to females, by selected fields of study: 1969–70 and 2000–01



[1]Includes other fields of study not shown separately.
SOURCE: U.S. Department of Education, National Center for Education Statistics: Higher Education General Information Survey (HEGIS), "Degrees and Other Formal Awards Conferred Survey," 1969–70; and Integrated Postsecondary Education Data System, "Completions Survey" (IPEDS-C:01), 2000–01.

of females participating in Division I sports increased 150 percent, compared with 15 percent for males.

Female athletes are more likely than male athletes to graduate in a timely fashion. Among female athletes who entered college in 1995, 69 percent graduated by 2001, compared with 54 percent of men.

Outcomes

An examination of equity in education requires considering the benefits that males and females receive at the end of schooling. Higher levels of educational attainment are associated with certain labor market outcomes, such as higher labor force participation rates, higher rates of employment, and higher earnings. Labor market outcomes are not the only important outcomes of participation in formal education, but they are the most readily measured with available national and international data.

Employment rates for females have increased across all levels of educational attainment since the 1970s.

The gap between male and female employment rates has narrowed since the 1970s. Both the decline in employment rates of males who did not attend college and the increase in the employment rate of females across all education levels contributed to the overall narrowing of the gap. In 2002, the gender gaps in employment rates were smaller among people with higher levels of education compared to those with a high school diploma or less. However, males continued to have higher employment rates across all levels of education.

Females with bachelor's degrees tend to earn less than males with the same level of educational attainment, but the gap is narrowing.

Among young people ages 25–34, the median annual earnings for full-time, year-round workers are lower for females than for their male counterparts with the same level of educational attainment. However, over the last 30 years, women have begun to narrow the earnings gap with men. In 1970, young women with a bachelor's degree had a median annual salary that was equivalent to 71 percent of what their male peers earned; in 2000, it was 78 percent. The male-female difference in annual earnings for full-time, year-round workers may be attributable at least in part to different occupations and job tenure.

Females ages 25–64 have lower labor force participation rates than males, regardless of education, but participation increases with education.

In 2001, females ages 25–64 had lower labor force participation rates than males at all levels of education in the United States. This difference was also evident in other selected large, industrialized countries, such as Canada, France, Germany, Italy, and the United Kingdom. However, the percentage of females participating in the labor force increased in all six countries between 1995 and 2001, while the percentage of males stayed the same or decreased. Female labor force participation rates also generally increased with educational attainment.

Females are more likely than males to participate in adult education.

Women not only have made important progress in terms of their formal educational attainment, but also have been actively involved in adult education activities. In 2001, the overall participation rate of females in adult education activities was higher than that of their male peers (53 vs. 46 percent). However, when examined by type of activity, the only significant gender difference was in participation in personal development activities. The percentages of males and females who participated in basic skills and work-related adult education were similar.

Conclusion

Various indicators have been presented here to examine the extent to which males and females have access to similar educational opportunities, take advantage of those opportunities, and have similar educational outcomes. By most of these measures, females are doing at least as well as males.

Males and females begin school with similar preschool experiences, although females may have an advantage in early literacy participation experiences. Females outperform males on reading and writing assessments at 4th, 8th, and 12th grades. Throughout their elementary and secondary education, females are less likely than males to repeat grades and seem to have fewer problems that put them at risk.

While females' performance in mathematics is often perceived to be lower than that of males, NAEP results have shown few consistent gender differences over the years,

particularly among younger students. Twelfth-grade NAEP assessments in mathematics and science show no significant gender differences in achievement scores. However, females were less likely to report liking math or science. This is true despite the fact that young women take equally or more challenging mathematics and science coursework than their male peers in high school (with the exception of physics, which females are slightly less likely than males to take).

Since the early 1970s, women have made gains in postsecondary education in terms of enrollment and attainment. Female high school seniors tend to have higher educational aspirations than their male peers and are more likely to enroll in college immediately after graduating from high school. Females also account for the majority of undergraduate enrollment and the majority of bachelor's degree recipients.

Gender differences in college majors persist, however, with females still predominant in somewhat lower paying fields like education, and males more likely to earn degrees in engineering, physics, and computer science. Females are also still underrepresented in first-professional programs, although they have made substantial progress toward parity in the past 30 years.

In terms of labor market outcomes, the findings are mixed and depend somewhat on factors beyond the scope of the education system. Females ages 25–34 are less likely than their male counterparts to be employed, but it is unknown to what extent this is by choice. The gap between males and females in employment rates has narrowed over time, and females with higher levels of educational attainment are employed at rates more similar to those of males than are females with lower levels of attainment. Females tend to earn less than males with similar educational attainment, but this may be partly a reflection of different patterns of labor market participation and job choice.

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For questions about content, contact Catherine E. Freeman (catherine.freeman@ed.gov).

To obtain the complete report (NCES 2005-016), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

High School Dropouts

Educational Attainment of High School Dropouts 8 Years Later

David Hurst, Dana Kelly, and Daniel Princiotta

This article was originally published as an Issue Brief. The sample survey data are from the National Education Longitudinal Study of 1988 (NELS:88).

Dropping out of high school is not necessarily the end of a student's formal education. Some students who drop out return a short time later to earn a diploma, some may pursue an alternative credential such as a General Educational Development (GED) certificate, and others may enroll in a postsecondary institution without having earned a high school credential. Using data on public and private school students from the National Education Longitudinal Study of 1988 (NELS:88), Berktold, Geis, and Kaufman (1998) examined the educational attainment of the 21 percent of 1988 eighth-graders who had dropped out of high school at least once between eighth grade and the spring of 1994, 2 years after they would have graduated if they had finished with the majority of their cohort.[1] They found that about 44 percent of these dropouts had received a high school diploma or an alternative high school credential by 1994. Of the 56 percent of all dropouts who had not completed high school by 1994, 43 percent indicated that they were working on a high school credential.

This Issue Brief extends Berktold, Geis, and Kaufman's analysis of the NELS:88 cohort another 6 years, by examining dropouts' high school completion status and postsecondary experiences as of the year 2000—8 years after the cohort's expected graduation from high school.[2,3]

Defining Dropouts

There are a number of ways to define dropouts. For the purposes of this analysis, students were considered dropouts if they ever reported dropping out of high school or passing the GED exam, if their high school transcripts showed that they had dropped out or passed the GED exam, or if in the 1994 or 2000 follow-up surveys they reported that they were working on an alternative credential or that they had not completed high school and were not working on an alternative credential. Generally, a student absent from school for 4 consecutive weeks or more and not absent due to accident or illness was considered to have dropped out (see Ingels et al. 1994). Members of the 1988 eighth-grade cohort were classified as dropouts after they had dropped out for the first time, whether or not they eventually earned a credential. This definition is consistent with the definition used by Berktold, Geis, and Kaufman (1998) in the analysis upon which this Issue Brief builds.[4]

High School Completion Status

About 92 percent of NELS 1988 eighth-graders, regardless of dropout status, earned a high school diploma or alternative by spring 2000; 88 percent earned a high school diploma or an alternative credential by spring 1994, and an additional 4 percent did so after spring 1994 but by spring 2000 (table 1).[5]

Of students in the 1988 eighth-grade cohort, 20 percent—about 587,000 students—dropped out of high school at least once (not shown in tables). Among students who had ever dropped out, 43 percent earned a high school diploma or alternative credential by spring 1994 (14 percent earned a high school diploma and 29 percent earned a GED or certificate). An additional 20 percent earned a high school diploma or alternative credential after spring 1994 but by spring 2000 (5 percent earned a high school diploma and 15 percent earned a GED or certificate). Thus, 63 percent of students who had ever dropped out earned a high school credential by 2000. Forty-four percent of students who dropped out of high school at least once earned a GED or certificate and 19 percent earned a diploma by 2000. As of 2000, 37 percent of dropouts had not earned a high school diploma or alternative credential, with 5 percent reportedly working toward a high school diploma or equivalent and

[1]The NELS:88/2000 base-year sample excluded about 5 percent of the 1988 eighth-grade student population due to serious physical or mental disabilities and/or greatly limited English language proficiency. For more information about the base-year sample and for a discussion of issues of eligibility, inclusion, and the effect of exclusion on national estimates, see Spencer et al. (1990) and Ingels (1996).

[2]The estimates in this Issue Brief were produced using F4PNLWT, the panel weight for eighth-grade members of the NELS:88 base-year sample who also participated in the first, second, third, and fourth follow-ups. The unweighted sample size was 10,827 cases, representing the approximately 2.9 million people living in the United States in the year 2000 who were members of the eighth-grade class of 1988. This sample size is smaller than that used in Berktold, Geis, and Kaufman's (1998) analysis and may yield slightly different results.

[3]The data on postsecondary educational experiences presented in this Brief in table 3 are based on respondents' reports. These self-reports may encompass some error in recall and thus may differ from information based on the respondents' postsecondary transcripts, which became available after this analysis was completed.

[4]A small number of students who were not classified as dropouts as of 1994 were considered dropouts for this analysis because they reported having earned a GED or alternative credential after spring 1994 but by spring 2000, or indicated that they had not earned a high school credential as of 2000.

[5]The NELS third follow-up was conducted between February and June 1994 (referred to as "spring 1994" in this Brief), and the fourth follow-up was conducted between January and August 2000 (referred to as "spring 2000").

Table 1. Percentage distribution of 1988 eighth-graders, by high school completion status: 1994 and 2000

	Completed by spring 1994[1]			Completed after spring 1994 but by spring 2000[2]			Not completed as of spring 2000		
Dropout status	Total	High school diploma	GED or certificate	Total	High school diploma	GED or certificate	Total	Working toward diploma or equivalent	Not enrolled and not working toward diploma or equivalent
All students	88	83	6	4	1	3	7	1	6
Dropped out at least once	43	14	29	20	5	15	37	5	32

[1]Includes students who earned a high school diploma or alternative credential by the time of the NELS third follow-up in spring 1994.
[2]Includes students who earned a high school diploma or alternative credential between the NELS third follow-up and the NELS fourth follow-up in spring 2000.
NOTE: Detail may not sum to totals because of rounding. Students were classified as dropouts after they had dropped out of high school for the first time, regardless of whether they eventually completed a credential. Students who completed or were working on a GED or an alternative credential were considered to have dropped out at least once.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988 (NELS:88/2000).

32 percent reportedly not enrolled or not working toward a diploma or equivalent.[6]

Consistent with Berktold, Geis, and Kaufman's (1998) analysis of high school completion status as of 1994, this analysis shows that high school dropouts' characteristics as of eighth grade (socioeconomic status, test performance, and expectations of eventually earning a bachelor's degree or higher) were associated with earning a high school diploma or alternative credential as of 2000. As shown in table 2, 7 percent of dropouts whose families were in the highest socioeconomic status quarter in 1988 had not attained a high school diploma or alternative credential as of 2000. In contrast, 31 percent of dropouts in the middle socioeconomic status range and 49 percent of dropouts in the lowest quarter had not done so as of 2000. As of 2000, 43 percent of dropouts whose NELS reading and mathematics composite test score was in the bottom quarter had not earned a diploma or alternative credential and were not working toward a diploma or equivalent, compared to 26 percent of dropouts who scored in the middle range and 16 percent of dropouts who scored in the highest quarter.

Dropouts who reported in eighth grade that they expected to complete a bachelor's degree or higher were more likely to have earned a high school diploma or alternative credential by 2000 than their peers with lower educational expectations. As shown in table 2, some 50 percent of dropouts who expected in eighth grade that they would finish high school or less had not earned a high school diploma or alternative credential as of 2000; in contrast, 25 percent of dropouts who expected in eighth grade that they would earn a bachelor's degree or higher had not earned a high school diploma or alternative credential as of 2000. By 2000, 23 percent of dropouts who expected in eighth grade that they would earn a bachelor's degree or higher had not earned a high school credential and were not working toward one; by comparison, 44 percent of dropouts who expected in eighth grade that they would finish high school or less had not earned a high school credential and were not working toward one.

Postsecondary Experience of Dropouts

By 2000, 43 percent of students who dropped out of high school at least once reported having enrolled in a postsecondary institution (table 3). Of these students, 13 percent reported first enrolling in a 4-year institution, 58 percent in a public 2-year institution (i.e., a community college), and 29 percent in some other type of institution. Dropouts who had earned a high school diploma or alternative credential by spring 1994 were more likely to have attended a postsecondary institution than dropouts who had done so after spring 1994 but by spring 2000 (66 percent compared with 45 percent). Fifteen percent of students who had not earned a high school diploma or alternative credential as of 2000 nevertheless reported having attended a postsecondary institution, and of those students, 9 percent reported first enrolling in a 4-year institution, 38 percent in a public 2-year

[6]Some dropouts who responded to the base-year and first three NELS follow-up surveys did not respond to the fourth follow-up survey. Estimates presented in this Brief may be biased slightly if these nonrespondents were less likely to have received a high school credential than those who responded to all surveys. One way to estimate the potential magnitude of this bias is to assume that none of the fourth follow-up nonrespondents earned a high school credential. Using this unlikely assumption yields a high school completion rate of 57 percent for dropouts, while this Brief reports a completion rate of 63 percent for dropouts. Because some fourth follow-up nonrespondents most likely completed high school, the true magnitude of this bias is expected to be less. A more detailed nonresponse bias analysis is available upon request from Edith McArthur, NCES, at 202-502-7393 or edith.mcarthur@ed.gov.

Table 2. Of 1988 eighth-graders who dropped out of high school at least once, percentage distribution according to high school completion status, by selected student characteristics: 2000

Student characteristics	Completed by spring 1994[1]			Completed after spring 1994 but by spring 2000[2]			Not completed as of spring 2000		
	Total	High school diploma	GED or certificate	Total	High school diploma	GED or certificate	Total	Working toward diploma or equivalent	Not enrolled and not working toward diploma or equivalent
Dropped out at least once	43	14	29	20	5	15	37	5	32
Eighth-grade socioeconomic status									
Bottom 25 percent	31	11	19	20	5	15	49	7	42
Middle 50 percent	50	14	36	19	5	15	31	3	28
Top 25 percent	74	21	53	19	7	13	7	‡	5
Eighth-grade reading and mathematics composite test performance									
Bottom 25 percent	28	10	17	22	8	14	51	8	43
Middle 50 percent	51	16	35	20	3	17	28	3	26
Top 25 percent	73	22	51	9	‡	7	18	‡	16
Student's educational expectations in eighth grade									
High school or less	30	8	22	20	4	16	50	6	44
Some postsecondary education	38	13	25	21	5	16	41	8	33
Bachelor's degree or higher	56	18	38	19	5	13	25	2	23

‡ Reporting standards not met.
[1]Includes students who earned a high school diploma or alternative credential by the time of the NELS third follow-up in spring 1994.
[2]Includes students who earned a high school diploma or alternative credential between the NELS third follow-up and the NELS fourth follow-up in spring 2000.
NOTE: Detail may not sum to totals because of rounding. Students were classified as dropouts after they had dropped out of high school for the first time, regardless of whether they eventually completed a credential. Students who completed or were working on a GED or an alternative credential were considered to have dropped out at least once.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988 (NELS:88/2000).

institution, and 54 percent in some other type of institution. Among dropouts who had some postsecondary experience, 27 percent reported earning a certificate or license and 9 percent reported obtaining an associate's degree or higher by spring 2000 (not shown in tables).

Summary

Overall, the results presented in this Issue Brief suggest that a majority of students who drop out of high school at least once go on to earn a high school diploma or alternative credential within several years (63 percent), and many enroll in a postsecondary institution (43 percent). These estimates offer an early look at the postsecondary experiences of students who ever dropped out of high school, particularly for those who delayed entry into a postsecondary institution. Some dropouts who were enrolled in a postsecondary institution in 2000 may eventually earn a certificate or degree, and others who dropped out of high school may decide to further their education at a later date. Future research could use NELS respondents' postsecondary transcripts to investigate the types of postsecondary coursework engaged in by students who ever dropped out of high school.

Table 3. Percentage of 1988 eighth-graders who attended a postsecondary institution by 2000 and the percentage distribution of level of first enrollment, by high school completion status: 2000

Dropout status	Ever attended postsecondary institution	Of those who ever attended postsecondary institution: First attended 4-year institution	First attended public 2-year institution	First attended other type of institution[1]
All students	78	52	39	10
Never dropped out	87	56	36	7
Dropped out at least once	43	13	58	29
Completed by spring 1994[2]	66	15	60	25
High school diploma	65	20	61	19
GED or certificate	67	13	59	28
Completed after spring 1994 but by spring 2000[3]	45	11	64	25
High school diploma	47	19	49	31
GED or certificate	44	7	70	23
Not completed as of spring 2000	15	9	38	54
Working toward diploma or equivalent	24	‡	‡	‡
Not enrolled and not working toward diploma or equivalent	13	‡	31	62

‡ Reporting standards not met.
[1]Other type of institution includes: private for-profit; private nonprofit, less-than-4-year; and public less-than-2-year schools.
[2]Includes students who earned a high school diploma or alternative credential by the time of the NELS third follow-up in spring 1994.
[3]Includes students who earned a high school diploma or alternative credential between the NELS third follow-up and the NELS fourth follow-up in spring 2000.
NOTE: Detail may not sum to totals because of rounding. Students were classified as dropouts after they had dropped out of high school for the first time, regardless of whether they eventually completed a credential. Students who completed or were working on a GED or an alternative credential were considered to have dropped out at least once.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988 (NELS:88/2000).

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Data source: The NCES National Education Longitudinal Study of 1988 (NELS:88).

For technical information, see the NCES National Education Longitudinal Study of 1988 website (http://nces.ed.gov/surveys/nels88).

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To obtain this Issue Brief (NCES 2005-026), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Digest 2003

Digest of Education Statistics 2003

Thomas D. Snyder, Alexandra G. Tan, and Charlene M. Hoffman

This article was excerpted from the Foreword and Introduction to the Compendium of the same name. The sample survey and universe data are from numerous sources, both government and private, and draw especially on the results of surveys and activities carried out by NCES.

The 2003 edition of the *Digest of Education Statistics* is the 39th in a series of publications initiated in 1962. (The *Digest* has been issued annually except for combined editions for the years 1977–78, 1983–84, and 1985–86.) Its primary purpose is to provide a compilation of statistical information covering the broad field of American education from prekindergarten through graduate school.

The publication contains information on a variety of subjects in the field of education statistics, including the number of schools and colleges, teachers, enrollments, and graduates, in addition to educational attainment, finances, federal funds for education, libraries, and international education. Supplemental information on population trends, attitudes on education, education characteristics of the labor force, government finances, and economic trends provides background for evaluating education data.

In addition to updating many of the statistics that have appeared in previous years, this edition contains new material, including

- suspensions and expulsions of public elementary and secondary schools, by state, sex, and percent of enrollment;
- total fall enrollment in private not-for-profit degree-granting institutions, by attendance status, sex, and state or jurisdiction;
- percent of degree-granting institutions with first-year undergraduates using various selection criteria for admission, by type and control of institution;
- total revenue of private not-for-profit degree-granting institutions, by source of funds and type of institution;
- total revenue of private for-profit degree-granting institutions, by source of funds and type of institution; and
- total expenditures of private not-for-profit degree-granting institutions, by purpose and type of institution.

Participation in Formal Education

In the fall of 2003, about 70.7 million persons were enrolled in American schools and colleges (table A). About 4.2 million were employed as elementary and secondary school teachers and as college faculty. Other professional, administrative, and support staff at educational institutions numbered 4.8 million. Thus, about 79.7 million people were involved, directly or indirectly, in providing or receiving formal education. All data for 2003 in this article are projected. Some data for other years are projected or estimated as noted.

Elementary/Secondary Education

Enrollment

Enrollment in public elementary and secondary schools rose 22 percent between 1985 and 2003. The fastest public school growth occurred in the elementary grades (prekindergarten through grade 8), where enrollment rose 25 percent over this period, from 27.0 million to 33.8 million. Private school enrollment grew more slowly than public school enrollment from 1985 to 2003, rising 13 percent, from 5.6 million to 6.3 million. As a result, the proportion of students enrolled in private schools declined slightly, from 12.4 percent in 1985 to 11.5 percent in 2003. Since the enrollment rates of kindergarten and elementary school-age children have not changed much in recent years, increases in public and private elementary school enrollment have been driven primarily by increases in the number of children in this age group. Public secondary school enrollment declined 8 percent from 1985 to 1990, but then rose 25 percent from 1990 to 2003, for a net increase of 15 percent.

The National Center for Education Statistics (NCES) forecasts record levels of total elementary and secondary enrollment through 2013, as the school-age population continues to rise. The projected fall 2003 public school enrollment marks a new record, and new records are expected every year through 2013, the last year for which NCES enrollment projections have been developed. Public elementary school enrollment (prekindergarten through grade 8) is projected to decline slowly between 2003 and 2005, and then increase, so that the fall 2013 projected enrollment is 5 percent higher than the 2003 projected

Table A. Projected number of participants in educational institutions, by level and control of institution: Fall 2003

[In millions]

Participants	All levels (elementary, secondary, and degree-granting)	Elementary and secondary schools			Degree-granting institutions		
		Total	Public	Private	Total	Public	Private
Total	79.7	60.9	53.9	6.8	18.9	14.3	4.6
Enrollment	70.7	54.3	48.0	6.3	16.4	12.5	3.8
Teachers and faculty	4.2	3.4	3.0	0.4	0.8	0.6	0.3
Other professional, administrative, and support staff	4.8	3.1	2.9	0.2	1.7	1.2	0.5

NOTE: Includes enrollments in local public school systems and in most private schools (religiously affiliated and nonsectarian). Excludes subcollegiate departments of institutions of higher education and federal schools. Elementary and secondary includes most kindergarten and some nursery school enrollment. Excludes preprimary enrollment in schools that do not offer first grade or above. Degree-granting institutions include full-time and part-time students enrolled in degree-credit and nondegree-credit programs in universities, other 4-year colleges, and 2-year colleges that participated in Title IV federal financial aid programs. Data for teachers and other staff in public and private elementary and secondary schools and colleges and universities are reported in terms of full-time equivalents. Detail may not sum to totals due to rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 2013;* and unpublished projections and estimates.
(This table was prepared September 2003.) (Originally published as table 1 on p. 13 of the complete report from which this article is excerpted.)

enrollment. Public secondary school enrollment (grades 9 through 12) is expected to increase 1 percent between 2003 and 2013.

Teachers

A projected 3.4 million elementary and secondary school teachers were engaged in classroom instruction in the fall of 2003. This number has risen in recent years, up about 22 percent since 1990. The 2003 projected number of teachers includes 3.0 million public school teachers and 0.4 million private school teachers.

The number of public school teachers has risen faster than the number of students over the past 10 years, resulting in small declines in the pupil/teacher ratio. In the fall of 2002, there were a projected 16.1 public school pupils per teacher, compared with 17.4 public school pupils per teacher 10 years earlier.

The salaries of public school teachers, which lost purchasing power to inflation during the 1970s, rose faster than the inflation rate in the 1980s. Since 1990–91, salaries for teachers have generally maintained pace with inflation. The average salary for teachers in 2002–03 was $45,822, about 2 percent higher than in 1992–93, after adjustment for inflation.

Student performance

Most of the student performance data in the *Digest* are drawn from the National Assessment of Educational Progress (NAEP). NAEP conducts assessments using three basic designs: the main NAEP, state NAEP, and long-term trend NAEP. These three basic designs are described in the paragraphs that follow. The main NAEP assessments report current information for the nation, specific geographic regions of the country, and (beginning in 2002) states. They include students drawn from both public and nonpublic schools and report results for student achievement at grades 4, 8, and 12. The main NAEP assessments follow the frameworks developed by the National Assessment Governing Board and use the latest advances in assessment methodology. NAEP frameworks are designed to reflect changes in educational objectives and curriculum.

Since 1990, NAEP assessments have also been conducted at the state level. Each state that chooses to participate receives assessment results that report on the performance of students in that state. In its content, the state assessment is identical to the assessment conducted nationally. However, because the national NAEP samples prior to 2002 were not designed to support the reporting of accurate and representative state-level results, separate representative samples of students were selected for each participating jurisdiction/state and additional students needed to yield national estimates were selected from nonparticipating states.

NAEP also conducts long-term trend assessments, which are designed to give information on changes in the basic achievement of America's youth since the early 1970s. They are administered nationally and report student performance at ages 9, 13, and 17 in reading, mathematics, and science, and in grades 4, 8, and 11 in writing. Measuring trends of student achievement or change over time requires the precise replication of past procedures. Therefore, the long-

term trend instrument does not evolve based on changes in curricula or in educational practices.

Reading

Overall achievement scores on the NAEP long-term trend reading assessment for the country's 9-, 13-, and 17-year-old students are mixed. Reading performance scores for 9- and 13-year-olds were higher in 1999 than they were in 1971. However, there were no detectable differences between their 1999 and 1984 scores. There was no detectable difference in the reading performance of 17-year-olds in 1999 compared to 1971.

Black 9-, 13-, and 17-year-olds exhibited higher reading performance in 1999 than in 1971. However, the performance of Black 9-, 13-, and 17-year-olds was not significantly different in 1999 from that in 1984. The performance levels of White 9- and 13-year-olds also rose between 1971 and 1999. Separate data for Hispanics were not gathered in 1971, but changes between 1975 and 1999 indicate an increase in performance among 9-, 13-, and 17-year-olds. There was no significant difference between the 1984 and 1999 reading performance of 9-, 13-, and 17-year-old Hispanics.

The 2003 NAEP reading assessment of states found that reading proficiency varied widely among fourth-graders in the 53 participating jurisdictions (50 states, Department of Defense overseas and domestic schools, and the District of Columbia). The U.S. average score was 216. The scores for the participating jurisdictions ranged from 188 in the District of Columbia and 203 in New Mexico to 228 in New Hampshire, Massachusetts, and Connecticut.

Mathematics

Results from NAEP assessments of mathematics proficiency indicate that the scores of 9-, 13-, and 17-year-old students were higher in 1999 than in 1973. This pattern was similar for White, Black, and Hispanic students.

The 2003 NAEP assessment of states found that mathematics proficiency varied widely among public school eighth-graders in the 53 participating jurisdictions (50 states, Department of Defense overseas and domestic schools, and the District of Columbia). Overall, 67 percent of these eighth-grade students performed at or above the *Basic* level in mathematics, and 27 percent performed at or above the *Proficient*[1] level. Mississippi and the District of Columbia had significantly fewer than 50 percent of students performing at least at the *Basic* level in math.

Science

Long-term changes in science performance on the NAEP assessments have been mixed, though scores during the 1990s were stable for two out of the three age groups. Among 17-year-olds, science performance was lower in 1999 than in 1969, but higher than in 1990. No difference was detected between the science performance of 13-year-olds in 1999 compared to 1970 or 1990. The science performance of 9-year-olds increased between 1970 and 1999, but there was no significant difference between 1990 and 1999.

International comparisons

The Trends in International Mathematics and Science Study (TIMSS 1999),[2] which was conducted 4 years after the original TIMSS, focuses on the mathematics and science achievement of eighth-graders in 38 countries. In TIMSS 1999, the average scores of the 38 participating countries in mathematics and science were 487 and 488, respectively. In 1999, U.S. eighth-graders' average scores were higher in both mathematics and science than the averages of the 38 countries. In mathematics, the average U.S. score was higher than the score in 17 countries, no different from the score in 6 countries, and lower than the score in 14 countries. In science, the average U.S. score was higher than the score in 18 countries, no different from the score in 5 countries, and lower than the score in 14 countries in 1999.

Postsecondary Education

College enrollment

College enrollment hit a record level of 15.9 million in fall 2001. Another record of 16.4 million is anticipated for fall 2003. Enrollment is expected to increase by an additional 11 percent between 2003 and 2013. Despite decreases in the traditional college-age population during the late 1980s and early 1990s, total enrollment increased. Between 1991 and 2001, the number of full-time students increased by 16 percent compared to a 4 percent increase in part-time students.

Faculty and staff

In the fall of 2001, there were 1.1 million faculty members in degree-granting institutions, including 0.6 million full-time and 0.5 million part-time faculty. In 1998, full-time instructional faculty and staff generally taught more hours and more students than part-time instructors. About 21 percent of full-time faculty taught 15 or more hours per

[1]The NAEP achievement levels are set by the National Assessment Governing Board. The *Basic* level denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work, while the *Proficient* level represents solid academic performance.

[2]In earlier reports, TIMSS 1999 is also referred to as TIMSS–R (TIMSS–Repeat).

week, compared with 9 percent of part-time faculty. About 13 percent of full-time faculty taught 150 or more students, compared with 4 percent of part-time faculty.

Graduates, degrees, and attainment

The estimated number of high school graduates in 2002–03 totaled 3.0 million, including 2.7 million public school graduates and 0.3 million private school graduates. The number of high school graduates is lower than its peak in 1976–77, when 3.2 million students earned diplomas. In contrast, the number of General Educational Development (GED) credentials issued rose from 332,000 in 1977 to 648,000 in 2001. The dropout rate also declined over this period, from 14 percent of all 16- to 24-year-olds in 1977 to 11 percent in 2001. The number of postsecondary degrees conferred during the 2002–03 school year by degree level has been projected: 662,000 associate's degrees; 1,311,000 bachelor's degrees; 492,000 master's degrees; 80,400 first-professional degrees; and 43,300 doctor's degrees.

The U.S. Census Bureau collects annual statistics on the educational attainment of the population. Between 1990 and 2002, the proportion of the adult population 25 years of age and over who had completed high school rose from 78 percent to 84 percent, and the proportion of adults with a bachelor's degree increased from 21 percent to 27 percent. Over the same period, the proportion of young adults (25- to 29-year-olds) completing bachelor's degrees rose from 23 percent to 29 percent.

Education expenditures

Expenditures for public and private education, from kindergarten through graduate school (excluding postsecondary schools not awarding associate's or higher degrees), are estimated at $780 billion for 2001–02. Expenditures of elementary and secondary schools are expected to total $463 billion, while those of colleges and universities are expected to total $317 billion. Total expenditures for education are expected to amount to 7.7 percent of the gross domestic product in 2001–02, about 0.5 percentage points higher than in 1991–92.

Data sources: Many sources of data, including most NCES studies.

For technical information, see the complete report:

Snyder, T.D., Tan, A.G., and Hoffman, C.M. (2004). *Digest of Education Statistics 2003* (NCES 2005-025).

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National Household Education Surveys Program: 2001: Methodology Report
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NHES Methodology: 2001

National Household Education Surveys Program: 2001: Methodology Report

Mary Jo Nolin, Jill Montaquila, Patricia Nicchitta, Mary Collins Hagedorn, and Chris Chapman

This article was originally published as the Introduction of the Technical/Methodological Report of the same name. The sample survey data are from the National Household Educations Surveys Program (NHES).

The National Household Education Surveys Program (NHES) was developed by the National Center for Education Statistics (NCES) to study educational issues that cannot be addressed in institutional surveys. The NHES collects timely information on specific education topics from a relatively large, targeted sample of households and has been conducted approximately every other year since 1991. The NHES gathers data on several important topics on a rotating basis. For instance, adult education and early childhood program participation have been the focus of several NHES surveys. One-time surveys on current issues, such as school readiness, school safety and discipline, and civic involvement, have been conducted as well.

The NHES surveys conducted in 2001 (NHES:2001) included two that had been fielded in previous years, the Early Childhood Program Participation survey (ECPP-NHES:2001) and the Adult Education and Lifelong Learning survey (AELL-NHES:2001). The third NHES:2001 survey was the Before- and After-School Programs and Activities survey (ASPA-NHES:2001); this was the first full-scale NHES survey on this issue, although questions on the topic had been included in previous survey administrations.

The NHES provides data on the populations of special interest to NCES and education researchers as defined by age and/or grade in school for each survey. It targets these populations using specific screening and sampling procedures. Populations of interest include children from birth to 12th grade and civilian adults age 16 and older and not enrolled in 12th grade or below. Specific age or grade ranges for a given survey are determined by the survey topic and the research questions formulated for the specific survey administration.

The NHES provides national cross-sectional estimates for the 50 states and the District of Columbia. The NHES design also yields estimates for subgroups of interest for each

survey, as defined by age or grade for children, educational participation status for adults, and Black and Hispanic origin for all populations of interest. In addition to providing cross-sectional estimates, the NHES is also designed to provide estimates of change over time in key statistics. The survey instruments are designed to address the selected issues in sufficient detail so that analyses can be performed to help explain the phenomena of interest.

The NHES surveys are random-digit-dial (RDD) telephone surveys of households in the United States. Interviews are administered using computer-assisted telephone interview (CATI) technology, which is a data collection methodology specifically designed so that relatively complex questionnaires can be handled smoothly and efficiently. Previous NHES surveys have been conducted in 1991, 1993, 1995, 1996, and 1999. All surveys were conducted at the same time of the year, winter to early spring. The 2001 administration was conducted by Westat from January 2 through April 14, 2001.

The NHES was intended by NCES to complement its institutional surveys. It also fills a need that existing household surveys, such as the Current Population Survey (CPS) and the Survey of Income and Program Participation (SIPP), cannot satisfy because they are designed to focus primarily on issues other than education. In these other survey systems, data on educational issues are usually collected through supplements to the main household survey, and supplemental surveys have not provided NCES with the level of detail needed for desired analyses.

NHES Survey Topics

This section presents the topics that have been addressed in the prior NHES surveys, including those that have been conducted on a recurring basis and one-time surveys. Exhibit 1-1 shows the topics of the NHES surveys from the inception of the program in 1991 through the 2001 administration.

Early Childhood Program Participation

The nonparental care and education of preschool children has been an important recurring topic for the NHES and was the subject of the 1991 Early Childhood Education survey (ECE-NHES:1991) and the Early Childhood Program Participation surveys of 1995 and 2001 (ECPP-NHES:1995 and ECPP-NHES:2001). In addition, selected items about nonparental care were included in the 1999 Parent survey (Parent-NHES:1999). The ECPP surveys have provided cross-sectional, national estimates of participation in early care and education programs for children in varying age groups, depending on the specific research questions addressed in a given survey. Estimates can be computed for White, Black, and Hispanic children for subgroups composed of 2 to 3 years of age or two to three grades in school, depending on the survey year. In addition, the surveys were designed to support the analysis of change in early childhood care and education over time.

In the ECE-NHES:1991, parents of children ages 3 through 8 completed interviews about their children's early childhood education, including participation in nonparental care by relatives, nonrelatives, or in center-based programs

Exhibit 1-1. Surveys conducted under the National Household Education Surveys Program and years administered: NHES

Survey	NHES:1991	NHES:1993	NHES:1995	NHES:1996	NHES:1999[1]	NHES:2001
Early Childhood Program Participation	√		√		√	√
Adult Education/Lifelong Learning	√		√		√	√
School Readiness		√			√	
School Safety and Discipline		√				
Parent and Family Involvement in Education/Civic Involvement				√	√	
Adult Civic Involvement				√		
Youth Civic Involvement				√	√	
Before- and After-School Programs and Activities					√	√
Household and Library Use				√		

[1]The NHES:1999 was a special end-of-decade administration that measured key indicators from NHES surveys fielded during the 1990s.
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Household Education Surveys Program (NHES), 1991, 1993, 1995, 1996, 1999, and 2001.

(including Head Start). They also answered questions about early school experiences, including delayed kindergarten entry and grade retention, and activities children engaged in with parents and other family members inside and outside the home. For the ECPP-NHES:1995, the population was expanded to include children newborn through third grade. Parents were again asked detailed questions about their children's participation in nonparental care and education programs. Other items captured information about early school experiences of school-age children and home and out-of-home family activities with children. The ECPP-NHES:2001 focused on preschool children from birth through age 6 who were not yet enrolled in kindergarten. In addition to obtaining the same in-depth information on relative care, nonrelative care, center-based program participation, and participation in Early Head Start and Head Start, questions designed to capture continuity of care, parents' perceptions of the quality of care, and reasons for choosing parental over nonparental care were included.

Information on early childhood care and program participation for preschool children was also gathered in the Parent-NHES:1999, which collected data on key indicators that had been measured in previous NHES collections in order to provide the Department of Education with end-of-decade estimates for important education issues. The Parent-NHES:1999 was administered to parents of children from birth through grade 12. Detailed information about children's health and disability status and parent and family characteristics has also been obtained in all NHES ECPP surveys as well as in the Parent-NHES:1999.

Adult Education

Adult educational activities capture the interest of educational researchers and policymakers interested in the phenomenon of learning over the lifetime. This topic is appropriate for a household survey, and consequently, it has been an important focus of the NHES. Adult Education surveys were conducted in 1991, 1995, and 1999 (AE-NHES:1991, AE-NHES:1995, AE-NHES:1999), and the Adult Education and Lifelong Learning survey was administered in 2001 (AELL-NHES:2001). Each of the surveys provided cross-sectional, national estimates of educational participation for persons 16 years and older who were not enrolled in grade 12 or below, as well as estimates for White, Black, and Hispanic adults. The 1995 and 2001 surveys provided estimates for adults who did not have a high school diploma or a GED. The surveys were also designed to permit the analysis of change over time in educational participation.

Respondents were asked about their participation in basic skills courses, English as a second language (ESL) courses, credential (degree or diploma) programs, apprenticeships, work-related courses, courses taken for personal development or personal interest, and in the AELL-NHES:2001, informal learning at work. Adults participating in programs or courses provided details about those programs or courses, such as subject matter, duration, cost, location and sponsorship, and employer support. In the AE-NHES:1991 and AE-NHES:1995, adults who had not participated in selected types of adult education were asked about their interest in educational activities and the barriers to participation in educational activities that they perceived. A battery of personal background, employment, and household questions was also asked in each Adult Education survey.

School Readiness

The School Readiness survey was conducted in 1993 (SR-NHES:1993); a subset of key items was also included in the Parent-NHES:1999 survey. Adopting a broad approach to assessing children's readiness for entering school, the survey encompassed a range of items related to learning. Parents of 3- to 7-year-olds who were in second grade or below completed interviews about their children's developmental accomplishments and difficulties, including emerging literacy and numeracy, center-based program participation, educational activities with family members, and health and nutrition status. Parents of children in elementary school were also asked about school adjustment, early school experiences, and feedback from teachers on children's school adjustment. Information about family stability and other risk factors was collected along with parent and household characteristics. The SR-NHES:1993 provided cross-sectional, national estimates for the population of interest, for White, Black, and Hispanic subgroups, and for preschoolers (children ages 3 to 5 and not yet in kindergarten).

School Safety and Discipline

In 1993, the NHES included the School Safety and Discipline survey (SSD-NHES:1993). Interviews were conducted with parents of students in grades 3 through 12 and with youth in grades 6 through 12. Parents and youth were asked about the school learning environment, discipline policy, safety at school, victimization, availability and use of alcohol and drugs, and alcohol and drug education. Youth were also asked about peer norms for achievement and behavior in school and substance use. The survey addressed parents' contributions to their children's learning environment through questions about parental expectations for academic achievement and good behavior at school, parental efforts

to educate and protect their children, and parental involvement in the school. Parent and family characteristics were also elicited. The SSD-NHES:1993 provided national estimates of the topics above for the full population of interest, for White, Black, and Hispanic children, and for children in grades 3 through 5, 6 through 8, and 9 through 12.

Parent and Family Involvement in Education and Civic Involvement

The Parent and Family Involvement in Education and Civic Involvement survey was conducted in 1996 (PFI/CI-NHES:1996). Key family involvement items were incorporated in the Parent-NHES:1999 as well. The PFI/CI-NHES:1996 was different from the ECPP surveys in population of interest and subtopics incorporated in the survey; it focused on parents' participation in educational activities at home as well as participation in various capacities at the programs or schools their children attended. The population of interest was children age 3 through 12th grade. Questions for parents whose children attended school or a center-based program addressed specific ways the family was involved in the school/program, communication with teachers and other school practices to involve families, and parent involvement with children's homework. Parents of all children responded to questions about parent and family involvement with their children in educational activities outside of school. Children's contact with nonresidential parents and the involvement of those parents with school was also captured. An additional topic for parents of preschoolers was support and training received for parenting.

The civic involvement of parents of students in grades 6 though 12 and that of the students themselves, as well as a separate random sample of adults, was addressed in the PFI/CI-NHES:1996 and in two other 1996 surveys, the Youth Civic Involvement survey (YCI-NHES:1996) and the Adult Civic Involvement survey (ACI-NHES:1996). The topic of community service was expanded for inclusion in the end-of-decade 1999 Youth survey (Youth-NHES:1999). Questions related to the diverse ways that parents and other adults may socialize children for informed civic participation. The surveys were intended to provide an assessment of the opportunities that youth have to develop the personal responsibility and skills that would facilitate their taking an active role in civic life, such as through exposure to information about politics or national issues, through discussion of politics and national issues, and by the example of adults who participate in community or civic life. Questions about attitudes that relate to democratic values and knowledge about government were also included. In the YCI-NHES:1996, special emphasis was placed on the opportunities youth had for participation in community service and the extent of school efforts to support youth community involvement.

The PFI/CI-NHES:1996 and Parent-NHES:1999 provided cross-sectional national estimates of the topics described above for all children in the population of interest, for White, Black, and Hispanic children, for preschoolers, and for 3-year groupings of grades.

Before- and After-School Programs and Activities

This topic, focusing on the ways that parents arrange for supervision and enrichment during the out-of-school hours for children who are enrolled in kindergarten through eighth grade, was introduced as part of the Parent-NHES:1999. It was the focus of the 2001 Before- and After-School Programs and Activities survey (ASPA-NHES:2001). Interviews were conducted with parents who reported on the before- and/or after-school arrangements in which their children participated, including care by relatives or nonrelatives in a private home, before- or after-school programs in centers and in schools, activities that might provide adult supervision in the out-of-school hours, and children's self-care. Items also addressed continuity of care arrangements, parental perceptions of quality, reasons for choosing parental care, and obstacles to participation in nonparental arrangements. The child's health and disability status and characteristics of the parents and household were also collected.

The ASPA-NHES:2001 provided cross-sectional estimates of participation in various types of arrangements for White, Black, and Hispanic children, and for children in grades K through 5 and 6 through 8.

Household and Library Use

The Household and Library Use survey of 1996 (HHL-NHES:1996) examined public library use by household members. This brief survey was administered to every household screened in 1996. The items tapped the ways in which household members used public libraries (e.g., borrowing books, lectures, story hour) and the purposes for using public libraries (e.g., for school assignments, enjoyment, work-related projects). The HHL-NHES:1996 provided cross-sectional, national estimates of household characteristics and library use for all households in the United States as well as estimates by state.

NHES:2001 Surveys

The preceding discussion contains a description of each of the topical areas covered by NHES surveys since the survey program's inception. A more detailed discussion of the topics and issues for the NHES:2001 surveys follows. There were two types of instruments in the NHES:2001, the screening interview (referred to as the Screener) and three extended interviews, one for the ECPP-NHES:2001, one for the ASPA-NHES:2001, and one for the AELL-NHES:2001. (See appendix A of the full report for copies of the NHES:2001 survey instruments.) The Screener was completed by a member of the household who was age 18 or older.[1] It was used to determine whether sampled telephone numbers belonged to households, gather the information needed to sample household members to be interview subjects for one or more surveys,[2] select the appropriate respondent for ECPP and ASPA interviews, and administer some items about household characteristics in households in which no one was sampled for an extended interview. The Screener was designed to accomplish these tasks efficiently, placing minimum burden on the respondent.

Early Childhood Program Participation Survey (ECPP-NHES:2001)

In the ECPP-NHES:2001 survey, data were collected about children from birth through age 6 as of December 31, 2000, who were not enrolled in kindergarten or a higher grade in school.[3] The respondent for the ECPP interview was the adult living in the household who was the most knowledgeable about the child's care and education.[4]

In the ECPP interview, subjects were routed to one of two questionnaire paths, infant or preschool. The infant path (I) of the ECPP interview was for children newborn through 2 years of age. The preschool path (N) was for children who were age 3 or older and not yet attending kindergarten or primary school. These children were typically 3 to 5 years old, but eight were 6 years old. Information was collected about participation in early childhood care and programs (relative care, nonrelative care, center-based programs, and Early/Head Start), program continuity, parental perceptions of the quality of arrangements, and factors in parental choice of arrangement, literacy-related skills and activities, and training and support for families of preschoolers.

Irrespective of the questionnaire path for the child, parents were asked basic demographic questions about the child, the child's health and disability status, parent/guardian characteristics, and household characteristics. To avoid redundancy and greater response burden in households with multiple interviews, household information was collected only at the end of the first extended interview conducted in each household. Similarly, parent/guardian information was collected only once per household, unless sampled children in the same household had different parents.[5] Exhibit 1-2 shows the structure of the ECPP and ASPA interviews, which contained many parallel items, and the distribution of topics among the paths for each interview.

Before- and After-School Programs and Activities Survey (ASPA-NHES:2001)

In the ASPA-NHES:2001 survey, data were collected about children who were in kindergarten through eighth grade provided they were age 15[6] or younger. The respondent for the ASPA interview was the parent or guardian living in the household who was the most knowledgeable about the sampled child's care and education. There were two paths through the interview items, the school path and the home-school path. All respondents were asked basic demographic questions about the child, the child's health and disability status, parent/guardian characteristics, and household characteristics in both paths of the interview (see exhibit 1-2).

The subjects of the school path (S) were children currently attending a regular school in kindergarten, including transitional kindergarten and prefirst grade, through eighth grade. The ages of the children ranged from 3 to 15; however, all but 95 of them were ages 5 to 14. In the school

[1]Any household member age 18 or older was eligible to respond to the screening interview. However, if there were no household members age 18 or older, the male or female head of the household completed the Screener. Household members were defined as persons who considered that household as their residence, kept their possessions there, and had no other place to live.

[2]Up to three interviews were conducted in a household. Interviews could have been conducted about a maximum of two children and one adult in any household.

[3]Because the proportion of 7-year-olds who are not enrolled in school is very small (about 1.5 percent), an upper age limit of 6 was established for the ECPP survey.

[4]The respondent for the ECPP and ASPA surveys was identified by the Screener respondent as the household member most knowledgeable about the care and education of the sampled child. In more than 75 percent of the cases, it was the child's mother; in more than 96 percent of the cases, it was the child's mother or father. In about 2 percent of the cases, it was the child's grandmother. For ease of discussion, the respondent to the ECPP and ASPA surveys is referred to as the parent/guardian.

[5]Demographic information on the mother and father residing in the household was collected in the first ECPP or ASPA interview conducted in the household and was copied to the interview for a second sampled child if the sampled children had the same mother and father. If a sampled child had no mother and no father in the household, parent information was collected about the guardian responding to the interview.

[6]Less than 1.5 percent of children enrolled in 8th grade are 16 years or older; therefore, the upper age limit for the ASPA survey was set at 15 years.

Exhibit 1-2. Content by path: ECPP-NHES:2001 and ASPA-NHES:2001

Characteristic	ECPP survey			ASPA survey	
		Preschoolers (N)			
	Infants/ toddlers (I)	Not enrolled	Center-based[1]	Enrolled in school (S)	Home-schooled (H)
Demographics[2]	√	√	√	√	√
Current school/program status		√	√	√	√[3]
Characteristics of program/school			√		
Homeschooling					√
Care/program characteristics	√	√	√	√	
School characteristics				√	√[3]
Student academic performance and behavior				√	√[3]
Nonparental care/education	√	√	√		
Before-/after-school care arrangements/programs				√	
Parental care during out-of-school hours				√	
Program continuity	√	√	√	√	
Perceptions of quality of care and programs	√		√	√	
Factors in parental choice	√	√	√	√	
Support for families of preschoolers	√	√	√		
Home activities	√	√	√		
Emerging literacy and numeracy	√	√	√		
Health and disability	√	√	√	√	√
Parent/guardian characteristics	√	√	√	√	√
Household characteristics	√	√	√	√	√

[1]Center-based programs include day care centers, nursery schools, preschools, and prekindergartens.
[2]Age and sex were collected in the Screener for some household members. This information was confirmed in the ECPP and ASPA extended interviews.
[3]Asked of homeschooled students who also attended regular school for 9 hours per week or more.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Program Participation (ECPP) Survey of the National Household Education Surveys Program (NHES), 2001; and Before- and After-School Programs and Activities (ASPA) Survey of the NHES, 2001.

path, data were collected about enrollment in school, school characteristics, student academics and behavior at school, before- and after-school care arrangements and programs, before- and after-school activities, self-care, parental care during the out-of-school hours, program continuity, parental perceptions of the quality of arrangements, and factors in parental choice of arrangement.

The homeschool path (H) was for children who were being instructed at home for some or all of their classes instead of attending regular school and who had a grade equivalent of kindergarten through eighth grade. Parents of homeschoolers were asked questions about the student's grade equivalent, reasons for schooling their child at home, and receipt of support for homeschooling from their public school or district. For those students who were reported to be homeschooled but also attended a school 9 or more hours per week, parents/guardians were administered the sections on school characteristics and student performance at school.

Adult Education and Lifelong Learning Survey (AELL-NHES:2001)

The AELL-NHES:2001 was designed to provide national estimates of participation in adult educational activities. Adults age 16 and older who were not enrolled in grade 12 or below, not institutionalized, and not on active duty in the military were eligible for this survey.

Respondents were asked about their participation in the following types of educational activities: English as a second language, basic skills/GED preparation, credential courses in colleges or universities, vocational or technical credential courses, apprenticeships, career- or job-related training or courses, personal interest/development classes, and informal

learning activities at work. Information about employer support for educational activities was obtained. Other items gathered demographic, household, and detailed employment information.

Data source: The NCES National Household Education Surveys Program (NHES), 2001.

For technical information, see the complete report:

Nolin, M.J., Montaquila, J., Nicchitta, P., Collins Hagedorn, M., and Chapman, C. (2004). *National Household Education Surveys Program: 2001: Methodology Report* (NCES 2005-071).

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To obtain the complete report (NCES 2005-071), visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

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Data Products

Data File: Longitudinal School District Fiscal-Nonfiscal File, Fiscal Years 1990 to 2000

This data product includes a new database in SAS format of fiscal and nonfiscal school district data for each fiscal year from 1990 through 2000. The data are for the universe of regular public elementary and secondary school districts. Also included in this data product is documentation describing the creation of the NCES longitudinal school district fiscal-nonfiscal (FNF) file.

The database is available in two forms. The primary FNF file contains a separate record for each regular school district that was open during some years in the 1990s. The other file, the longitudinal unified fiscal-nonfiscal (UFNF) file, combines data from separate elementary districts with the secondary districts they feed, so that each record contains data for a unified K–12 "pseudo-district." The database is designed for research use in testing hypotheses about longitudinal trends in school districts over this period. To facilitate analysis, all missing data have been replaced by statistical imputations, and clearly erroneous responses have been edited and replaced by plausible values.

For questions about this data product, contact William J. Fowler, Jr. (william.fowler@ed.gov).

To obtain this data product (NCES 2005-863), visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Data File: CCD National Public Education Financial Survey: Fiscal Year 2002, Revised

The Common Core of Data (CCD) "National Public Education Financial Survey" (NPEFS) provides detailed state-level data on public elementary and secondary education finances. Financial data are audited at the end of each fiscal year and then submitted to NCES by the state education agencies (SEAs) from their administrative records. This file provides revised data for fiscal year 2002 (school year 2001–02). The dataset contains 55 records, one for each of the 50 states, the District of Columbia, and four of the outlying areas (American Samoa, the Northern Marianas, Puerto Rico, and the Virgin Islands). (Guam did not report any data.)

For each state or jurisdiction, the data file includes revenues by source (local, intermediate, state, and federal); local revenues by type (e.g., local property taxes); current expenditures by function (instruction, support, and noninstruction) and by object (e.g., teacher salaries or food service supplies); capital expenditures (e.g., school construction and instructional equipment); average number of students in daily attendance; and total number of students enrolled.

Revisions to the fiscal year 2002 NPEFS data in this final file include data revisions from Arizona, Kansas, Minnesota, North Carolina, and Tennessee. These changes resulted in changes in imputations and adjustments for other states.

The data can be downloaded from the NCES Electronic Catalog either as an Excel file or as a flat file that can be used with statistical processing programs, such as SPSS or SAS. Documentation is provided in separate files.

For questions about this data product, contact Frank H. Johnson (frank.johnson@ed.gov).

To obtain this data product (NCES 2004-336R), visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

CD-ROM: Education Longitudinal Study: 2002 Data Files and Electronic Codebook System

The Education Longitudinal Study of 2002 (ELS:2002) is designed to monitor the transition of a national sample of young people as they progress from 10th grade through high school and on to postsecondary education or the world of work, or both.

ELS:2002 has two distinctive features. First, it is a longitudinal study, that is, the same individuals are surveyed repeatedly over time. Second, it is a multilevel study, involving multiple respondent populations that represent students, their parents, their teachers, their librarians, and their schools. The multilevel aspect of the survey will supply researchers with a comprehensive picture of the home, community, and school environments and their influences on the student.

The first year of data collection (the 2002 base year) included a baseline survey of high school sophomores; cognitive tests in reading and mathematics; and questionnaires administered to parents, math and English teachers, school principals, and heads of library media centers. This CD-ROM contains ELS:2002 public-use data from the base year, electronic codebook software, and documentation.

For questions about this CD-ROM, contact Jeffrey A. Owings (jeffrey.owings@ed.gov).

To obtain this CD-ROM (NCES 2004-404), call the toll-free ED Pubs number (877-433-7827).

Other Publications

Forum Guide to Building a Culture of Quality Data: A School and District Resource

National Forum on Education Statistics

Quality data, like quality students, come from schools. Recently, there has been a growing awareness that effective teaching, efficient schools, and quality data are related. The quality of information used to develop an instructional plan, run a school, plan a budget, or place a student in a class depends upon the school data clerk, teacher, counselor, and/or school secretary who enter data into a computer. Their understanding of the role of data quality, and of how the data entry process affects that quality, is central to producing quality data. This handbook offers recommendations to staff in schools and school districts about best practices for data entry.

For questions about content, contact Ghedam Bairu (ghedam.bairu@ed.gov).

To obtain this handbook (NFES 2005-801), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

How Does Technology Affect Access in Postsecondary Education? What Do We Really Know?

National Postsecondary Education Cooperative Working Group on Access-Technology

This report examines the relationship between technology and access to postsecondary education in four basic areas: technology and access to postsecondary education in general; access to technology-based learning; preparation for using technology; and the effectiveness of technology in learning. The report reviews recent literature concerning each of these areas, and it offers new analyses of available national data that expand and further inform the knowledge base. The report concludes with recommendations for additional data collection through NCES surveys.

For questions about content, contact Nancy B. Borkow (nancy.borkow@ed.gov).

To obtain this publication (NPEC 2004-831), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Handbooks Online—Version 2

ESP Solutions Group and Council of Chief State School Officers (CCSSO) Data Quality Support Project, and Beth Young

Handbooks Online—Version 2 is a searchable web tool that provides access to the NCES data handbooks for elementary, secondary, and early childhood education. These handbooks offer guidance on consistency in data definitions and in maintaining data so that they can be accurately aggregated and analyzed. The updated database includes data elements for students, staff, and education institutions; added data elements for food service, technology, and discipline; and a link to the current NCES accounting handbook.

Author affiliations: ESP Solutions Group and CCSSO Data Quality Support Project; B. Young, NCES.

For questions about content, contact Lee M. Hoffman (lee.hoffman@ed.gov).

To use this handbook (NCES 2005-345), visit the Handbooks Online home page (http://nces.ed.gov/programs/handbook).

Mini-Digest of Education Statistics 2003

Thomas D. Snyder

The *Mini-Digest of Education Statistics 2003* (the 11th edition) is a pocket-size compilation of statistical information covering the broad field of American education from kindergarten through graduate school. It presents brief text summaries and short tables that serve as a convenient reference for materials found in greater detail in the complete *Digest of Education Statistics 2003*.

The *Mini-Digest* includes sections on the number of schools and colleges, elementary/secondary and postsecondary enrollments, teachers and staff, educational outcomes, finances, and federal funds for education. The data are from numerous sources, especially surveys and activities carried out by NCES. Current and past-year data are included, as well as projections for elementary/secondary enrollment through 2013.

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For questions about content, contact Thomas D. Snyder (tom.snyder@ed.gov).

To obtain this publication (NCES 2005-017), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

To obtain the complete* Digest *(NCES 2005-025), call the toll-free ED Pubs number (877-433-7827), visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch), or contact GPO (202-512-1800).

National Institute of Statistical Sciences/ Education Statistics Services Institute Task Force on Graduation, Completion, and Dropout Indicators: Final Report

National Institute of Statistical Sciences and the Education Statistics Services Institute

In October 2003, NCES asked the National Institute of Statistical Sciences (NISS) and the Education Statistics Services Institute (ESSI) to convene a task force of measurement and policy experts to examine current high school graduation, completion, and dropout indicators and recommend improvements in the measures. The task force was asked to consider these issues both in terms of developing indicators for reporting measures of schools and school systems and for broader measures of community-level needs. This report contains key recommendations from the task force.

For questions about content, contact Chris Chapman (chris.chapman@ed.gov).

To obtain this report (NCES 2005-105), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

1999–2000 Schools and Staffing Survey (SASS) Data File User's Manual

Steven C. Tourkin, Kathleen Wise Pugh, Sharon E. Fondelier, Randall J. Parmer, Cornette Cole, Betty Jackson, Toni Warner, Gayle Weant, and Elizabeth Walter

The Schools and Staffing Survey (SASS) collects data on public and private elementary and secondary schools. SASS provides data on the characteristics and qualifications of teachers and principals, teacher hiring practices, professional development, class size, and other conditions in schools across the nation. This data file user's manual provides documentation and guidance for users of the public-use data of the 1999–2000 SASS.

Included in the manual are chapters on SASS design, content, and methodology; sample design and implementation; data collection; response rates; data processing; imputation procedures; weighting and variance estimation; reviewing the quality of SASS data; differences between the restricted-use and public-use data files; sampling, created, weighting, and imputation flag variables; and user notes and cautions.

Author affiliations: S.C. Tourkin, K.W. Pugh, S.E. Fondelier, R.J. Parmer, C. Cole, B. Jackson, T. Warner, and G. Weant, U.S. Bureau of the Census; E. Walter, Synectics for Management Decisions, Inc.

For questions about content, contact Kerry Gruber (kerry.gruber@ed.gov).

To obtain this publication (NCES 2004-303), call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Training and Funding Opportunities

Training

NCES is offering a special session of NCES Database Training for Research on American Indian/Alaska Native students, November 7–10, 2005:

In an effort to encourage research on American Indian/Alaska Native students, the National Center for Education Statistics (NCES), Institute of Education Sciences, U.S. Department of Education, will conduct a 4-day advanced studies seminar on the use of the NCES databases for education research and policy analysis on American Indian/Alaska Native students. This seminar, sponsored by the Office of Indian Education (OIE), will focus primarily on the NAEP database containing both achievement scores for 4th-, 8th-, and 12th-graders from public and nonpublic schools in various subject areas, and background information on the students who were assessed and their learning environment. In addition, the seminar will provide an overview of other NCES databases that contain information on American Indian/Alaska Native students.

This seminar is aimed at faculty and advanced graduate students from colleges, universities, and tribal colleges and universities. Education researchers and policy analysts with strong statistical skills from state, local, and tribal education agencies and professional associations are also welcome. This special seminar is only for those interested in the education of American Indian and Alaska Native students in the United States.

For general information, contact Beverly Coleman (beverly.coleman@ed.gov).

For more detailed information on this session or if you are interested in attending, please visit the conference/training section of the NCES website: http://nces.ed.gov/conferences/.

The AERA Grants Program

Jointly funded by the National Science Foundation (NSF), NCES, and the Institute of Education Sciences, this training and research program is administered by the American Educational Research Association (AERA). The program has four major elements: a research grants program, a dissertation grants program, a fellows program, and a training institute. The program is intended to enhance the capability of the U.S. research community to use large-scale datasets, specifically those of the NSF and NCES, to conduct studies that are relevant to educational policy and practice, and to strengthen communications between the educational research community and government staff.

Applications for this program may be submitted at any time. The application review board meets three times per year. The following are examples of grants recently awarded under the program:

Research Grants

- Sigal Alon, Tel-Aviv University—New Conceptual Framework for Assessing the Influence of Financial Aid on Student Success
- Jennifer Bausmith, Rutgers University—Reducing the Gap: Factors Associated With High Achievement Growth Among Student Racial/Ethnic Groups
- Natasha Beretvas, University of Texas at Austin—Extension of the Hierarchical Generalized Linear Model for Validation of Test Scores' Psychometric Functioning
- Rachelle Brooks, Association of American Universities and University of Maryland—Analyzing Faculty Scholarly Activity Across Disciplines: Individual and Structural Influences on Research Processes and Products
- David Burkam, University of Michigan—Social Class Instability and Children's Early Academic Growth
- Robert Crosnoe, University of Texas at Austin—Poverty, Family Processes, and the Transition to Elementary School
- Jacqueline Shannon, New York University—Minority Fathers' Contributions to Their Young Children's Overall Development: Variations by Race/Ethnicity, SES, and Family Structure
- Laura Szalacha, Brown University—The Relationship Between Practice-Oriented Education and Post-Graduate Work Experience

Dissertation Grants

- Nikki Aikens, University of North Carolina, Chapel Hill—Out-Of-School and Within-School Influences on Socioeconomic Differences in Reading Trajectories
- Wade Cole, Stanford University—Legitimating Difference: Minority-Serving Colleges and the Institutionalization of Culture
- Sarah Crissey, University of Texas at Austin—Gender Differences in the Academic Consequences of Adolescent Romantic Relationships
- Li Feng, Florida State University—Combating Teacher Shortages: Who Leaves Teaching and Why?
- Claudia Galindo, Pennsylvania State University—Hispanic Immigrants' Learning Trajectories: The Role of English Ability, Parental Involvement, and Language Support Programs in the First Years of Schooling
- Allison Gruner, Harvard University—Inclusion: What Is the Impact on Students Without Disabilities?
- Josh Klugman, Indiana University—Status Competition Among Schools and the Consequences for Students
- Kimberly Lowry, University of Central Florida—The Paths to Becoming a Mathematics Teacher
- Yuko Nonoyama, Teachers College, Columbia University—A Cross-National, Multi-Level Study of Family Background and School Effects on Educational Achievement
- Phyllis Rippeyoung, University of Iowa—Is It Too Late Baby? Pinpointing the Emergence of a Black-White Skills Gap in Infancy
- Katharine Strunk, Stanford University—Accountability and Local Control: Incentive Response With and Without Authority Over Resource Generation and Allocation
- Hyunsil Yoo, University of Virginia—School Factors Affecting Postsecondary Career Pursuits of High-Achieving Girls in Math and Science

For more information, contact Edith McArthur (edith.mcarthur@ed.gov) or visit the AERA Grants Program website (http://www.aera.net/grantsprogram).

The NAEP Secondary Analysis Grant Program

The NAEP Secondary Analysis Grant Program was developed to encourage education researchers to conduct secondary analysis studies using data from the National Assessment of Educational Progress (NAEP) and the NAEP High School Transcript Studies. This program is open to all public or private organizations and consortia of organizations. The program is typically announced annually, in midsummer, in the *Federal Register*. Grants awarded under this program run from 12 to 18 months and awards range from $15,000 to $100,000. The following grants were awarded for fiscal year 2005:

- Joseph Meyer, James Madison University—Comparison of Bridging Methods in Analysis of NAEP Trends With New Race and Ethnicity Subgroup Definitions
- Edward Ip, Wake Forest University—Multiscale Visualization of National and State NAEP Data Through Interactive Graphics
- Diane Whitmore, University of Chicago—Advancing Education Improvement by Improving Child Health: An Analysis of NAEP Data
- Kerry Englert, Mid-Continent Research for Education and Learning—State Policy, Multicultural Teacher Education, and Student Learning
- Jaekyung Lee, Research Foundation of the State University of New York—Evaluating State Equity and Adequacy in School Resources in Math Achievement: Multilevel Joint Analyses Linking NAEP to SASS and F-33
- Sarah Lubienski, University of Illinois—A New Look at School Type, Mathematics Achievement and Equity
- Jimmy de la Torre, Rutgers University—NAEP Proficiency and Skill Profile Comparisons at the State Level

For more information, contact Alex Sedlacek (alex.sedlacek@ed.gov).

AIR Grants Program

The Association for Institutional Research (AIR), with support from NCES and the National Science Foundation (NSF), has developed a grants program titled Improving Institutional Research in Postsecondary Educational Institutions. The goals of this program are to provide professional development opportunities to doctoral students, institutional researchers, educators, and administrators, and to foster the use of federal databases for institutional research in postsecondary education. The program has the following four major components:

- dissertation research fellowships for doctoral students;
- research grants for institutional researchers and faculty;
- a Summer Data Policy Institute in the Washington, DC, area to study the national databases of NSF and NCES; and
- a senior fellowship program.

For more information, contact Susan Broyles (susan.broyles@ed.gov) or visit the AIR website (www.airweb.org).

NPEC/AIR Focused Grants

The National Postsecondary Education Cooperative (NPEC) and the Association for Institutional Research (AIR) have developed a focused grant program to fund research and studies to increase understanding and knowledge in a specific issue area that has been identified by the NPEC Executive Committee as critically important to the postsecondary education community. For the 2006 grant year, the focus is on improving information for student decisions about postsecondary education. Proposals are due January 15 of each year.

In 2005, NPEC and AIR made nine 1-year grant awards ranging up to $15,000 for dissertation work and up to $30,000 for other activities. Grant recipients will make a presentation of their work at an NPEC national policy panel in 2008. Travel to this meeting will be paid for by NPEC.

Following are grants awarded for fiscal year 2005 in the focus area of student success in postsecondary education:

- Thomas Bailey and Davis Jenkins, Columbia University—Using State Student Record Data to Map Pathways to Success for Underserved Community College Students

- Rachelle L. Brooks and Dennis M. Kivlighan, Jr., University of Maryland-College Park—A Longitudinal Study of Student Success: The Relation Between Academic Major, Student Demographics, and Broad Student Outcomes

- Anna Chung, Indiana University-Bloomington—For-Profit Colleges: An Opportunity for the Under-Served? Analysis of Educational and Economic Outcomes for Proprietary Students

- Lamont A. Flowers, University of Florida—Exploring Racial Differences in the Effects of College on Students' Law School Admission Test Scores

- Sandra Kortesoja, University of Michigan—Factors Influencing Nontraditional Age Student Participation in Postsecondary Education: How Do Student Motivations and Characteristics Relate to Participation in Credential Programs?

- Crystal Gafford Muhammad, North Carolina State University—The Black-Black Educational Attainment Gap: Socio-Cultural and Academic Identity at a Crossroads

- Sarah Rab, University of Wisconsin-Madison—How Complex Postsecondary Educational Transitions Shape Student Success

- Laura Wilson-Gentry, Daniel Martin, Merrill Pritchett, and Daniel Gerlowski, University of Baltimore—Student Success and Web-Based Graduate Education

- Po Yang, Columbia University—A Generation on the Move: Education and Economic Attainment of Four-Year College Transfer Students

For more information, contact Roz Korb (roslyn.korb@ed.gov) or visit the AIR website (www.airweb.org) for more information and instructions for writing and submitting proposals.

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