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

Assessing Technology Access and Use Through Surveys

Current, reliable information on technology access and use is critical to understanding the breadth of learning opportunities afforded by computers and the Internet. Timely surveys can also inform about the extent to which students and the U.S. population in general can access and use technology resources at school and in their homes and where gaps in opportunity remain. The National Center for Education Statistics (NCES) has benefited from the strong support of the Department of Education's Office of Educational Technology (OET) in designing and conducting the technology surveys featured in this issue of the *Education Statistics Quarterly.* Susan Patrick, the director of OET, provides the commentary for this issue.

NCES began tracking the use of technology for instruction in schools in 1994, when it launched its annual Fast Response Survey System (FRSS) survey on Internet access. "Internet Access in Public Schools," now in its 10th year, tracks progress made in connecting public schools and instructional rooms to the Internet, how public schools are connected to the Internet (broadband vs. narrowband), and the student-to-computer ratio. To keep up with advances in technology and Internet expansion, NCES has added questions to the survey to address emerging issues. These questions provide information on the technologies and procedures used to prevent student access to inappropriate material on the Internet, the availability of adaptive and assistive devices for students with disabilities, and access outside of regular school hours. Questions on topics such as platforms, memory, and disk space used on instructional computers; school web sites; school-sponsored e-mail; and laptop computer loans also enable school officials to compare their own technology programs to others.

NCES also tracks individual and household use of computers and the Internet. A number of different NCES surveys—the Education Longitudinal Study of 2002, the National Household Education Surveys Program, and the Early Childhood Longitudinal Study, Birth Cohort—contain items on this topic. The primary data collection that NCES uses to track changes in individual and household use of computers and the Internet, however, is the Current Population Survey (CPS). The first CPS collection on this topic was conducted in 1984. Since then, NCES and the U.S. Census Bureau (which fields the CPS) have worked with OET, the National Telecommunications and Information Administration, the Bureau of Labor Statistics, and other agencies to adjust the survey to reflect changes in technology over time. The most recent CPS collection on this topic was fielded in October 2003. It covered a wide range of related subjects including household computer ownership and Internet access, individual use of computers and the Internet for activities such as completing school and work projects, the locations where people use computers and the Internet, and the use of other information technologies.

In addition to technology access in schools and homes, NCES has studied

- classroom use of technology (using the Third International Mathematics and Science Study 1999 Video Study);

- technology use in kindergarten and first grade; and
- the use of distance learning and the range of offerings in postsecondary education.

NCES also expects to release in fall 2004 a new FRSS survey that will examine the extent to which school districts offer distance education courses to public elementary and secondary students. Anecdotal evidence suggests that technology-based education at the elementary and secondary levels enables school districts to expand the range of courses available and facilitates more flexibility in student schedules and instructional delivery. To date, however, no nationally representative studies have examined the relationship among distance education availability, course offerings, and enrollments in the nation's elementary and secondary schools. The new survey will provide for the first time

- the number of schools and districts with students enrolled in distance education courses;
- the number of enrollments in distance education courses by instructional level and curriculum area;
- reported reasons for having distance education courses;
- technologies used as the primary mode of instructional delivery for distance education courses;
- information about entities that deliver distance education courses;
- information about where students access online courses, and whether districts provide or pay for computers or Internet service providers for students accessing online courses at home; and
- information about whether districts plan to expand distance education course offerings and to what extent various factors may be keeping them from doing so.

Other NCES projects that relate to information and communications technology include the Technology-Rich Environments (TRE) pilot assessment, which is being conducted for the National Assessment of Educational Progress. The TRE assessment developed a set of example modules to use technology to assess student problem solving at the eighth grade. These example modules use the computer to present multimedia tasks that cannot be delivered through conventional paper-and-pencil assessments, but that tap important emerging skills.

To date, NCES surveys have generated findings that have been valuable to states, school districts, and postsecondary institutions by helping them benchmark their own technology goals and needs against national averages and comparable systems. In addition, the Department of Education has used results from these surveys to report to Congress about the outcomes of various technology initiatives and programs and to plan its own strategic agenda for using technology in education. The popular press, the education press, researchers, and the public have followed the survey releases, as evidenced by the large and growing volume of downloads from the NCES web site of the reports documenting these releases. Each new release documents that Internet access has expanded the reach of our reports to a wider audience and the increasing interest in these reports.

Featured Topic: Technology in Education

Computer and Internet Use

Computer and Internet Use by Children and Adolescents in 2001

Matthew DeBell and Chris Chapman

This article was originally published as the Highlights and Introduction of the Statistical Analysis Report of the same name. The sample survey data are from the Computer and Internet Use supplement to the Current Population Survey (CPS).

Introduction

Computers and the Internet recently passed a milestone: both are now used by a majority of Americans. Two-thirds of Americans used computers in 2001, up from about one-half in 1997, and 54 percent used the Internet, up from about a third in 1997. Comparable trend data have not been published for 5- to 17-year-olds, but among those ages 9 to 17, Internet use has increased from about one-third in 1997 to about two-thirds in 2001 (U.S. Department of Commerce 2002). In 2001, the use of these technologies was more widespread among children and adolescents ages 5 through 17 than among adults: about 90 percent of 5- to 17-year-olds used computers and 59 percent used the Internet in this year (table A).

This report uses data from the September Computer and Internet Use supplement to the 2001 Current Population Survey (CPS) to examine the use of computers and the Internet by American children and adolescents between the ages of 5 and 17.[1] The report examines the overall rate of use, the ways in which children and teens use the technologies, where the use occurs (home, school, and other locations), and the relationships of these aspects of

[1]CPS interviews were conducted in about 56,000 households in September 2001 and collected information regarding 28,002 5- to 17-year-olds, including those enrolled in school and those not enrolled in school. One respondent per household was interviewed and that respondent provided information about the household and about individual household members, including information about computer and Internet use. Because a household's respondent may not have full information regarding computer and Internet use by other members of the household, this method is a potential source of error in the data.

Table A. Percentage of children and adolescents ages 5 through 17 who use computers and the Internet, by child and family/household characteristics: 2001

Characteristics	Number of children (in thousands)	Percent using computers	Percent using the Internet
All persons ages 5 through 17	53,013	89.5	58.5
Child characteristics			
Age			
5–7	11,990	80.5	31.4
8–10	12,455	90.5	53.5
11–14	16,493	92.6	68.3
15–17	12,075	93.4	77.1
Sex			
Female	25,835	90.0	58.6
Male	27,178	89.1	58.3
Race/ethnicity[1]			
White	33,433	93.4	66.7
Black	8,275	85.0	45.3
Hispanic	8,400	78.7	37.2
Asian	2,268	89.7	64.6
American Indian	637	89.8	53.5
Disability status			
Disabled	626	80.0	48.9
Not disabled	45,416	89.8	59.4
Family and household characteristics			
Parent educational attainment			
Less than high school credential	5,450	75.6	31.6
High school credential	13,611	87.2	50.2
Some college	15,665	92.0	63.2
Bachelor's degree	6,712	94.2	69.3
Graduate education	9,114	96.4	74.4
Family/household type			
Two-parent household	37,230	91.3	62.2
Male householder	2,715	86.9	54.3
Female householder	12,440	85.5	48.8
Other arrangement	628	75.2	48.8
Household language			
Spanish-only	2,549	70.4	28.7
Not Spanish-only	50,464	90.5	60.0
Poverty status			
In poverty	9,277	80.5	36.7
Not in poverty	36,904	92.6	65.3
Family income			
Under $20,000	8,344	80.1	36.5
$20,000–$34,999	8,852	86.3	48.8
$35,000–$49,999	7,438	92.0	62.8
$50,000–$74,999	9,530	93.6	67.1
$75,000 or more	12,018	96.2	75.4
Urbanicity			
Metropolitan, city center	12,249	84.6	49.5
Metropolitan, not city center	23,566	91.1	61.9
Nonmetropolitan	9,609	91.4	59.7

[1]White, Black, Asian, and American Indian, respectively, indicate White, non-Hispanic; Black, non-Hispanic; Asian or Pacific Islander, non-Hispanic; and American Indian, Aleut, or Eskimo, non-Hispanic.

NOTE: Detail may not sum to totals because of rounding or missing data.

SOURCE: U.S. Census Bureau, Current Population Survey (CPS), September 2001. (Originally published as table 1 on p. 4 of the complete report from which this article is excerpted.)

computer and Internet use to demographic and socioeconomic characteristics such as children's age and race/ethnicity and their parents' education and family income.

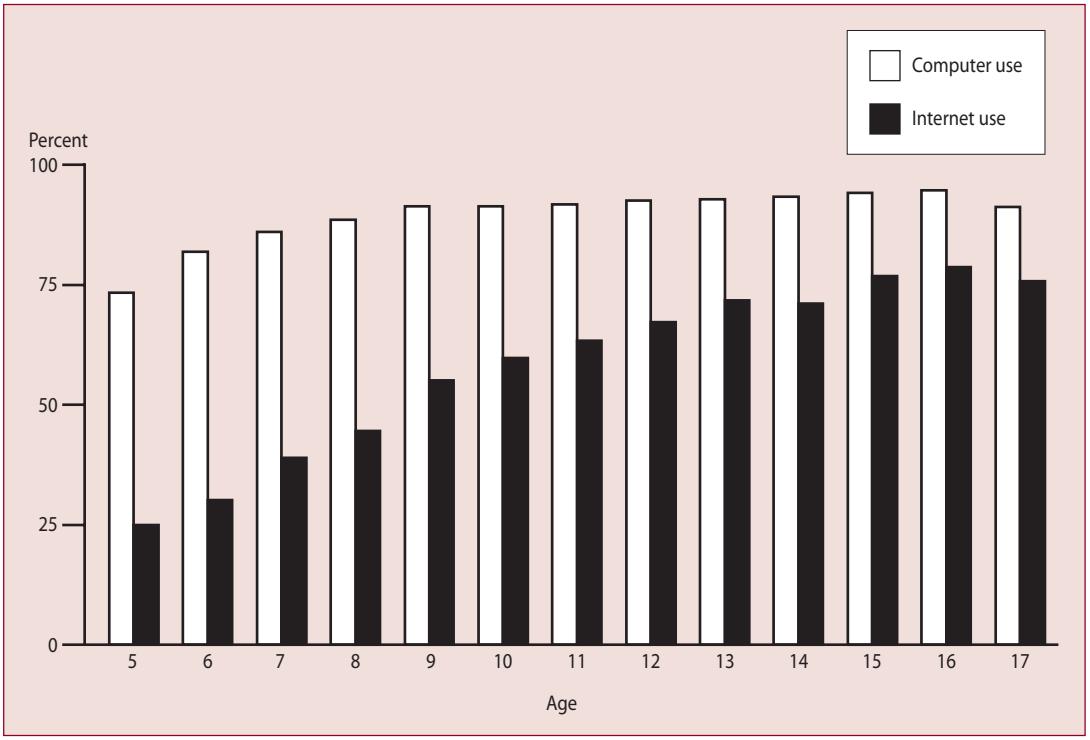
Key Findings

Key findings from the 2001 CPS are as follows:

- **Most children and adolescents use these technologies**. About 90 percent of children and adolescents ages 5–17 (47 million persons) use computers, and about 59 percent (31 million persons) use the Internet (table A).
- **Use begins at an early age**. About three-quarters of 5-year-olds use computers, and over 90 percent of teens (ages 13–17) do so (figure A). About 25 percent of 5-year-olds use the Internet, and this number rises to over 50 percent by age 9 and to at least 75 percent by ages 15–17.
- **There is a "digital divide."** Computer and Internet use are divided along demographic and socioeconomic lines. Use of both technologies is higher among Whites than among Blacks and Hispanics and higher among Asians and American Indians than among Hispanics (table A).[2] Five- through 17-year-olds living with more highly educated parents are more likely to use these technologies than those living with less well educated parents, and those living in households with higher family incomes are more likely to use computers and the Internet than those living in lower income households.
- **Disability, urbanicity, and household type are factors in the digital divide.** Consistent with the findings of previous research (U.S. Department of Commerce 2002), 5- through 17-year-olds without a disability are more likely to use computers and the Internet than their disabled peers, and children and adolescents living outside of central cities are more likely to use computers than those living in central cities. When not controlling for other factors, children and adolescents from two-parent households are more likely to use the computer and the Internet

[2] "White," "Black," "Asian," and "American Indian" refer to White, non-Hispanic; Black, non-Hispanic; Asian or Pacific Islander, non-Hispanic; and American Indian, Aleut, or Eskimo, non-Hispanic, respectively, and will be used throughout this report for ease of presentation. Hispanics may be of any race.

Figure A. Percentage of 5- through 17-year-olds using computers or the Internet, by age: 2001



SOURCE: U.S. Census Bureau, Current Population Survey (CPS), September 2001. (Originally published as figure 1 on p. 5 of the complete report from which this article is excerpted.)

than those from single-parent households,[3] and children and adolescents living outside of central cities are more likely to use the Internet than those living in central cities. However, when controlling for other factors such as family income and parent education, the association of household type and of Internet use outside of central cities was not statistically significant.

- **There are no differences between the sexes in overall computer or Internet use rates.** In contrast to the 1990s, when boys were more likely to use computers and the Internet than girls were, overall computer and Internet use rates for boys and girls are now about the same (table A).
- **More children and adolescents use computers at school (81 percent) than at home (65 percent)**. The difference in school versus home computer use is larger for groups of 5- through 17-year-olds who are generally less likely to use computers. Computer use at school exceeds use at home by 30 percentage points or more for Blacks and Hispanics (table B). Use at school also exceeds use at home by 30 percentage points or more for those whose parents did not complete high school, who live with a single mother, who live in households where Spanish is the only language spoken by household members age 15 or over, or who live in households where the family income is under $20,000. However, home use is slightly more prevalent than school use for two groups: (1) children and adolescents whose parents have at least some graduate school education, and (2) children and adolescents who live in families with incomes of $75,000 or more per year.[4]
- **The use of home computers for playing games, to connect to the Internet, and for work on school assignments are common activities**. A majority (59 percent) of 5- through 17-year-olds use home computers to play games, and over 40 percent use computers to connect to the Internet (46 percent) and to complete school assignments (44 percent). Middle-school-age and high-school-age youth (ages 11–17) use home computers to complete school assignments (57–64 percent), to connect to the Internet (54–63 percent), and to play games (60–63 percent).
- **Home is the most common location for Internet access, followed by school**. Although nearly all schools have Internet access, children and adolescents are more likely to access the Internet from their homes. Of those children and adolescents who use the Internet, 78 percent access it at home, compared to 68 percent who access it at school. Many of those who rely more on access at school come from lower income families (less than $35,000 per year) or have parents who have not earned at least a high school credential.
- **Many disadvantaged children and adolescents use the Internet only at school**. Among the group of children and adolescents who access the Internet at only one location, 52 percent of those from families in poverty and 59 percent of those whose parents have not earned at least a high school credential do so at school. In comparison, 26 percent of those from families not in poverty and 39 percent of those with more highly educated parents do so only at school. This illustrates the role of schools in bridging the digital divide.
- **Considering all locations, the use of the Internet for work on school assignments, e-mail, and games are common activities**. Among Internet users ages 5–17, about 72 percent (42 percent of all persons in this age range) use the Internet to complete school assignments, while 65 percent (38 percent of all persons in this age range) use the Internet for e-mail or instant messaging and 62 percent (36 percent of all persons in this age range) use it to play games.

[3]The categories for family structure include "male-headed single-householder" and "female-headed single-householder." "Single father" and "single mother" (or "single parent," when referring to both) are used for ease of presentation. Some single-householders include nonrelatives or relatives other than the father or mother such as a grandfather or grandmother.

[4]The prevalence of the use of a technology is measured in this report by the percentage of 5- to 17-year-olds using the technology. This report does not examine other aspects of the frequency of use, such as the number of incidents of use or the amount of time spent using technologies, because the CPS does not include these data.

Reference

U.S. Department of Commerce. (2002). *A Nation Online: How Americans Are Expanding Their Use of the Internet*. Washington, DC: Author.

Data source: U.S. Census Bureau, Current Population Survey (CPS), September 2001: Computer and Internet Use supplement.

For technical information, see the complete report:

DeBell, M., and Chapman, C. (2003). *Computer and Internet Use by Children and Adolescents in 2001* (NCES 2004–014).

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For questions about content, contact Chris Chapman (chris.chapman@ed.gov).

To obtain the complete report (NCES 2004–014), call the toll-free ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Table B. Percentage of children and adolescents ages 5 through 17 using computers at home and at school, by child and family/household characteristics: 2001

Characteristics	Number of children (in thousands)	Percent using computers at home	Percent using computers at school
All persons ages 5 through 17	53,013	65.2	80.7
Child characteristics			
Age			
5–7	11,990	56.4	68.2
8–10	12,455	62.7	83.1
11–14	16,493	68.6	85.2
15–17	12,075	72.0	84.5
Sex			
Female	25,835	65.7	81.6
Male	27,178	64.8	79.9
Race/ethnicity[1]			
White	33,433	76.9	83.5
Black	8,275	41.0	79.8
Hispanic	8,400	40.6	71.8
Asian	2,268	75.7	76.1
American Indian	637	54.1	83.0
Disability status			
Disabled	626	58.4	71.5
Not disabled	45,416	65.7	81.4
Family and household characteristics			
Parent educational attainment			
Less than high school credential	5,450	26.2	70.6
High school credential	13,611	53.7	80.2
Some college	15,665	70.7	82.0
Bachelor's degree	6,712	80.8	84.8
Graduate education	9,114	90.2	85.0
Family/household type			
Two-parent household	37,230	73.3	81.5
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Urbanicity			
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[1]White, Black, Asian, and American Indian, respectively, indicate White, non-Hispanic; Black, non-Hispanic; Asian or Pacific Islander, non-Hispanic; and American Indian, Aleut, or Eskimo, non-Hispanic.

NOTE: Detail may not sum to totals because of rounding or missing data.

SOURCE: U.S. Census Bureau, Current Population Survey (CPS), September 2001. (Originally published as table 3 on p. 12 of the complete report from which this article is excerpted.)

Internet Access

Internet Access in U.S. Public Schools and Classrooms: 1994–2002

Anne Kleiner and Laurie Lewis

This article was originally published as the Introduction and Selected Findings of the E.D. TAB report of the same name. The sample survey data are from "Internet Access in U.S. Public Schools, Fall 2002," conducted through the Fast Response Survey System (FRSS).

Since 1994, the National Center for Education Statistics (NCES) has surveyed public schools to estimate access to information technology in schools and classrooms. In the fall of each academic year, a new nationally representative sample of public schools is surveyed about Internet access and other Internet-related topics. The results of this survey—"Internet Access in U.S. Public Schools, Fall 2002"—show what progress has been made since these data were first collected in 1994, and help assess the magnitude of tasks remaining to make the Internet available as an educational tool in all schools.

Although some items, such as those on school and classroom connectivity, have appeared annually on the survey, new items have been added as technology has changed and new issues have arisen. For example, an item on types of Internet connections was added in 1996 and has remained part of the subsequent surveys, with some modifications. The fall 2002 survey included items on access to the Internet outside of regular school hours; technologies and procedures used to prevent student access to inappropriate material on the Internet; school web sites; staff responsible for computer hardware, software, Internet, and web site support; loans of laptop computers to students; and provision of hand-held computers to students and teachers.

This survey was conducted by NCES using the Fast Response Survey System (FRSS). FRSS is designed to administer short, focused, issue-oriented surveys that place minimal burden on respondents and have a quick turnaround from data collection to reporting. Questionnaires for this survey were mailed to a representative sample of 1,206 public schools in the 50 states and the District of Columbia. Data have been weighted to yield national estimates.

In addition to national estimates, selected survey findings are presented by the following school characteristics:

- instructional level (elementary, secondary);
- school size (enrollment of less than 300, 300 to 999, 1,000 or more);
- locale (city, urban fringe, town, rural);
- percent minority enrollment (less than 6 percent, 6 to 20 percent, 21 to 49 percent, 50 percent or more); and
- percent of students eligible for free or reduced-price lunch (less than 35 percent, 35 to 49 percent, 50 to 74 percent, 75 percent or more), which is used as a measure of poverty concentration at the school.

It is important to note that many of the school characteristics used for independent analysis may also be related to each other. For example, enrollment size and instructional level of schools are related, with secondary schools typically being larger than elementary schools. Similarly, poverty concentration and minority enrollment are related, with schools with a higher minority enrollment also more likely to have a high concentration of poverty. Other relationships between analysis variables may exist. Because of the relatively small sample size used in this study, it is difficult to separate the independent associations these variables have with the data of interest. Their existence, however, should be considered in the interpretation of the data.

Selected Findings

Key findings from the survey "Internet Access in U.S. Public Schools, Fall 2002" are presented below. For selected topics, data from previous FRSS Internet surveys are presented as well. The findings are organized as follows:

- school connectivity;
- students and computer access;
- school web sites;
- technologies and procedures to prevent student access to inappropriate material on the Internet; and
- teacher professional development on how to integrate the use of the Internet into the curriculum.

School connectivity

The survey asked whether schools had access to the Internet. Other data collected allowed for the computation of the proportion of instructional rooms with Internet access. In addition, schools were asked to indicate the type of Internet connections used, as well as the staff position of the person primarily responsible for computer hardware, software, and Internet support at the school.

School access

- In fall 2002, 99 percent of public schools in the United States had access to the Internet. When NCES first started estimating Internet access in schools in 1994, 35 percent of public schools had access. In 2002, no differences in school Internet access were observed by any school characteristics. This is consistent with data reported previously (Kleiner and Farris 2002), which showed that there have been virtually no differences in school access to the Internet by school characteristics since 1999.

Instructional room access

- Public schools have made consistent progress in expanding Internet access in instructional rooms,[1] from 3 percent in 1994 to 77 percent in 2000 and 92 percent in 2002 (figure 1).
- In 2002, there were differences in Internet access in instructional rooms by locale. A smaller percentage of instructional rooms were connected to the Internet in city schools (88 percent) than in schools located in towns (96 percent) and rural areas (93 percent).

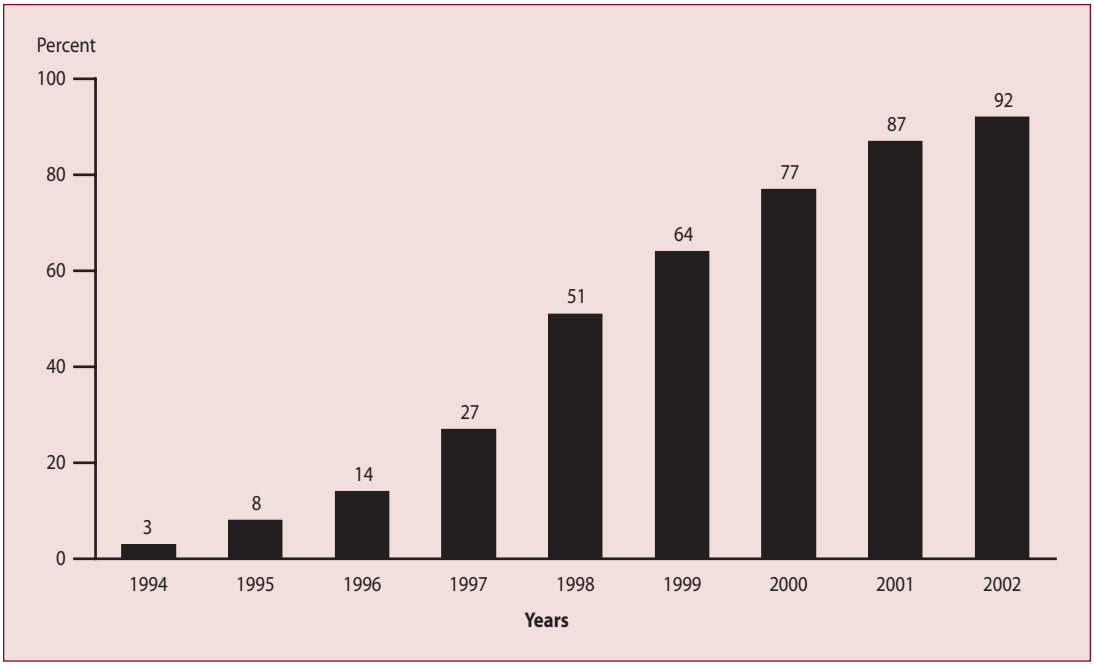
[1]Instructional rooms include classrooms, computer and other labs, library/media centers, and any other rooms used for instructional purposes.

Types of connections

Over the years, changes have occurred in the types of Internet connections used by public schools and the speed at which they are connected to the Internet. In 1996, dial-up Internet connections (a type of narrowband connection) were used by about three-fourths (74 percent) of public schools having Internet access (Heaviside, Riggins, and Farris 1997). In comparison, in 2001, 5 percent of schools used dial-up connections, while the majority of public schools (55 percent) reported using T1/DS1 lines (a type of broadband connection), a continuous and much faster type of Internet connection than dial-up connections (Kleiner and Farris 2002).

- In 2002, 94 percent of public schools with Internet access used broadband connections to access the Internet. This is an increase from 2001 and 2000, when 85 percent and 80 percent of the schools,

Figure 1. Percent of public school instructional rooms with Internet access: 1994–2002



NOTE: Percentages are based on all schools. All of the estimates in this report were recalculated from raw data files using the same computational algorithms. Consequently, some estimates presented here may differ trivially (i.e., by 1 percent) from results published prior to 2001.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS): "Survey on Advanced Telecommunications in U.S. Public Schools, K–12," FRSS 51, 1994; "Survey on Advanced Telecommunications in U.S. Public Schools, K–12," FRSS 57, 1995; "Advanced Telecommunications in U.S. Public Schools, Fall 1996," FRSS 61, 1996; "Internet Access in U.S. Public Schools, Fall 1997," FRSS 64, 1997; "Internet Access in U.S. Public Schools, Fall 1998," FRSS 69, 1998; "Internet Access in U.S. Public Schools, Fall 1999," FRSS 75, 1999; "Internet Access in U.S. Public Schools, Fall 2000," FRSS 79, 2000; "Internet Access in U.S. Public Schools, Fall 2001," FRSS 82, 2001; and "Internet Access in U.S. Public Schools, Fall 2002," FRSS 83, 2002.

respectively, were using broadband connections.[2] In 2002, as in previous years (Kleiner and Farris 2002), the likelihood of using broadband connections increased with school size; 90 percent of small schools reported using broadband connections to access the Internet, compared with 100 percent of large schools.

- The use of broadband connections increased between 2000 and 2002, from 81 percent to 95 percent, in schools with the highest minority enrollment. Similarly, the percentage of schools with the highest poverty concentration (as measured by the percent of students eligible for free or reduced-price lunch) using broadband connections to access the Internet increased from 75 percent to 95 percent.
- Twenty-three percent of public schools with Internet access used wireless Internet connections in 2002.[3] Large schools were more likely than medium-sized and small schools to use wireless Internet connections (37 percent compared with 23 percent and 17 percent, respectively).
- Of the schools using wireless Internet connections in 2002, 88 percent indicated that they used broadband wireless Internet connections. Across all school characteristics, this percentage ranged from 76 percent to 100 percent.
- In 2002, 15 percent of all public school instructional rooms had wireless Internet connections. Differences were observed only by instructional level. A higher percentage of instructional rooms had wireless Internet connections in secondary schools (19 percent) than in elementary schools (13 percent).

Computer hardware, software, and Internet support

- The staff position of the person with primary responsibility for computer hardware, software, and Internet support varied considerably across schools in 2002. Thirty-eight percent of schools indicated that it was a full-time, paid school technology director or coordinator; 26 percent, district staff; 18 percent, a teacher or other staff as part of formal responsibilities; 11 percent, a part-time, paid school technology director or coordinator; 3 percent, a consultant or outside contractor; 3 percent, a teacher or other staff as volunteers; and 1 percent, some other position (figure 2).
- The likelihood that the person primarily responsible for computer hardware, software, and Internet support would be a full-time, paid technology director or coordinator increased with school size in 2002, from 29 percent in small schools to 48 percent in large schools. Differences were also observed by percent minority enrollment; schools with the lowest minority enrollment were more likely than other schools to report that a full-time, paid technology director or coordinator was the person primarily responsible for computer hardware, software, and Internet support (49 percent compared with 32 to 34 percent in other schools).

Students and computer access

More children and adolescents in the nation used computers at school than at home in 2001 (DeBell and Chapman 2003). The survey "Internet Access in U.S. Public Schools, Fall 2002" obtained information on various measures of student access to computers at school, such as the ratio of students to instructional computers with Internet access, student access to the Internet outside of regular school hours, the provision of hand-held computers to students and teachers, and laptop loans to students.

Students per instructional computer with Internet access

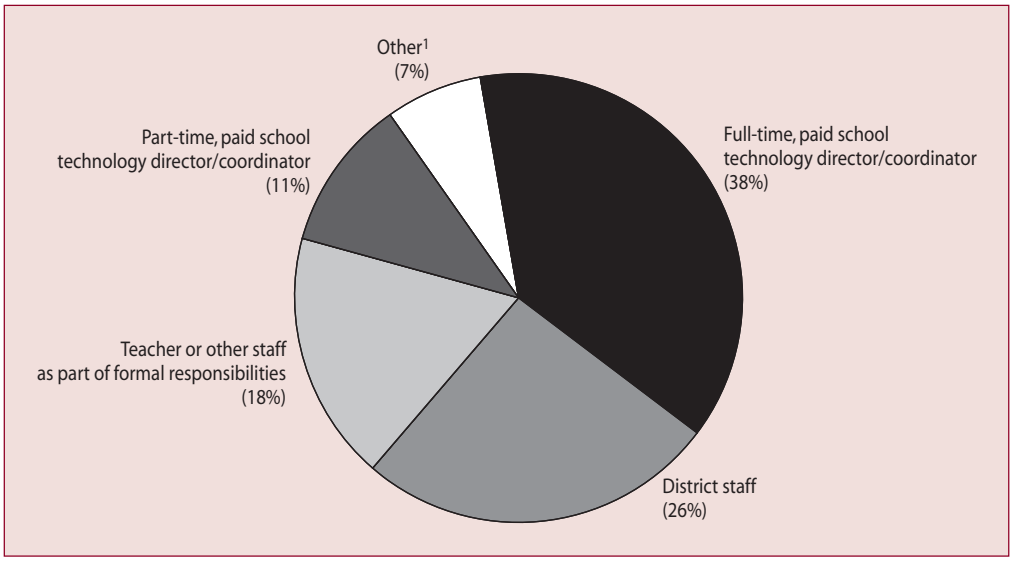
- The ratio of students to instructional computers with Internet access was computed by dividing the total number of students in all public schools by the total number of instructional computers with Internet access in all public schools (i.e., including schools with no Internet access).[4] In 2002, the ratio of students to instructional computers with Internet access in public schools was 4.8 to 1, an improvement from the 12.1 to 1 ratio in 1998, when it was first measured (figure 3).
- However, as in previous years (Kleiner and Farris 2002), there were differences by school characteris-

[2] In 2000 and 2001, respondents were instructed to circle as many types of connections as there were in the school. The 2002 questionnaire directly asked whether the schools used broadband and narrowband connections. These percentages include schools using only broadband connections, as well as schools using both broadband and narrowband connections. They do not include schools using narrowband connections exclusively. Broadband connections include T3/DS3, fractional T3, T1/DS1, fractional T1, and cable modem connections. In 2001 and 2002, they also included DSL connections, which had not been an option on the 2000 questionnaire.

[3] A school could use both wireless and wired Internet connections. Wireless Internet connections can be broadband or narrowband.

[4] This is one method of calculating students per computer. Another method involves calculating the number of students in each school divided by the number of instructional computers with Internet access in each school and then taking the mean of this ratio across all schools. When "students per computer" was first calculated for this NCES series in 1998, a decision was made to use the first method; this method continues to be used for comparison purposes. A couple of factors influenced the choice of that particular method. There was (and continues to be) considerable skewness in the distribution of students per computer per school. In addition, in 1998, 11 percent of public schools had no instructional computers with Internet access.

Figure 2. Percentage distribution of the staff position of those who were primarily responsible for computer hardware, software, and Internet support at the school: 2002

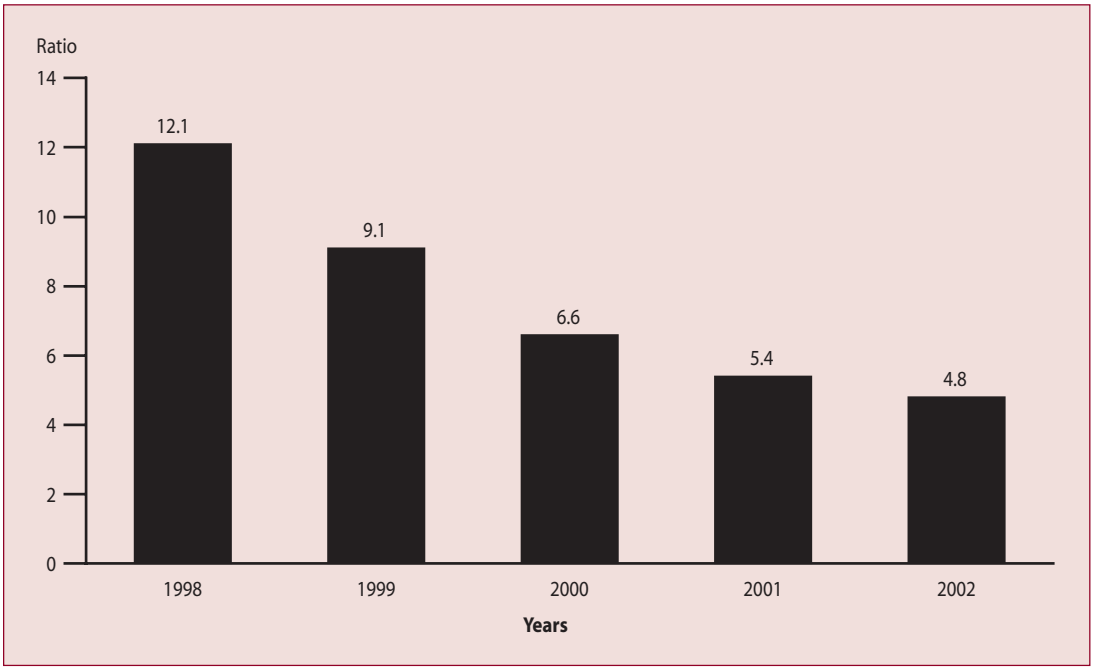


[1]This category includes consultant/outside contractor, teachers or other staff as volunteers, and other.

NOTE: Percentages are based on the 99 percent of public schools with Internet access.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Internet Access in U.S. Public Schools, Fall 2002," FRSS 83, 2002.

Figure 3. Ratio of public school students to instructional computers with Internet access: 1998–2002



NOTE: Ratios are based on all public schools. All of the estimates in this report were recalculated from raw data files using the same computational algorithms. Consequently, some estimates presented here may differ trivially (i.e., by 1 percent) from results published prior to 2001.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS): "Internet Access in U.S. Public Schools, Fall 1998," FRSS 69, 1998; "Internet Access in U.S. Public Schools, Fall 1999," FRSS 75, 1999; "Internet Access in U.S. Public Schools, Fall 2000," FRSS 79, 2000; "Internet Access in U.S. Public Schools, Fall 2001," FRSS 82, 2001; and "Internet Access in U.S. Public Schools, Fall 2002," FRSS 83, 2002.

tics in 2002. For example, the ratio of students to instructional computers with Internet access was higher in schools with the highest poverty concentration than in schools with the lowest poverty concentration (5.5 to 1 compared with 4.6 to 1). Despite this gap, in schools with the highest poverty concentration, the ratio improved from 6.8 students per computer in 2001 to 5.5 per computer in 2002. The difference between schools with the highest and lowest poverty concentrations in the ratio of students per instructional computer with Internet access decreased from 6.2 students per computer in 1998 to 0.8 students per computer in 2002.

Availability of computers with Internet access outside of regular school hours

- In 2001, 5- to 17-year-olds whose families were in poverty were less likely to use the Internet at their home than 5- to 17-year-olds whose families were not in poverty (47 percent compared with 82 percent) (DeBell and Chapman 2003). Making the Internet accessible outside of regular school hours allows students who do not have access to the Internet at home to use this resource for school-related activities such as homework.
- In 2002, 53 percent of public schools with Internet access reported that they made computers with access to the Internet available to students outside of regular school hours. Differences by school characteristics were observed only for instructional level and school size. Secondary schools were more likely to make the Internet available to students outside of regular school hours than were elementary schools (73 percent compared with 47 percent). Similarly, large schools reported making the Internet available to students outside of regular school hours more often than did medium-sized and small schools (79 percent compared with 50 percent and 49 percent, respectively).
- Among schools providing computers with Internet access to students outside of regular school hours in 2002, 96 percent made them available after school; 74 percent, before school; and 6 percent, on weekends. The availability of computers with Internet access before school was lower in schools with the highest minority enrollment (62 percent) than in schools with the two lowest categories of minority enrollment (80 percent and 78 percent). A similar pattern occurred by school poverty concentration for the availability of computers with Internet access before school, with 57 percent for schools with the highest poverty concentration, compared with 75 percent and 82 percent for schools with the two lowest categories of poverty concentration. There were no differences by school characteristics for the availability of computers with Internet access after school. In addition, there were virtually no differences by school characteristics for the availability of computers with Internet access on weekends.
- In 2002, schools making computers with Internet access available to students outside of regular school hours reported that students had, on average, access to 49 computers with Internet access. No increase was observed in the average number of computers with Internet access available to students outside of regular school hours between 2001 and 2002.

Provision of hand-held computers

- In 2002, 7 percent of public schools provided hand-held computers to students or teachers for instructional purposes.[5] No differences were observed by school characteristics.
- Among schools providing hand-held computers to students or teachers for instructional purposes in 2002, the median number of hand-held computers provided per school was 9 (i.e., half of the schools reported a lower number than 9 and the other half a higher number).[6]

Laptop computer loans

In addition to asking about the availability of computers with Internet access outside of regular school hours and the provision of hand-held computers to students or teachers, the survey asked whether the schools lent laptop computers to students, how many laptops were available for loan, and the maximum length of time for which they could be borrowed. If schools did not lend laptop computers to students in 2002, a question inquired whether they planned to lend them in the 2003–04 school year.

[5]Hand-held computers are computers, or personal digital assistants, small enough to be held in one hand. Examples are Palm Pilots or Pocket PCs.

[6]On average, 22 hand-held computers per school were provided to students or teachers in schools that supplied such computers in 2002. The average number of hand-held computers would decrease to 18 if the data for 1 school in the sample were taken out of the calculation because the school reported a number of hand-held computers much higher (1,000 hand-held computers) than any of the other schools in the sample (ranging from 1 to 140). The number of hand-held computers at that school was verified with the respondent.

- In 2002, 8 percent of public schools lent laptop computers to students.[7] In those schools, the median number of laptop computers available for loan was 7. This represents 1 laptop computer for 16 students.[8] Fifty-nine percent of schools lending laptop computers reported that students could borrow them for less than 1 week, 19 percent reported that students could borrow them for a period of 1 week to less than 1 month, and 16 percent reported lending laptops for the entire school year.
- Of the 92 percent of schools without laptop computers available for loan to students in 2002, 7 percent were planning to make laptops available for students to borrow during the 2003–04 school year. No differences were observed by school characteristics.

School web sites

Since 99 percent of public schools were connected to the Internet in 2002, most schools had the capability to make information available to parents and students directly via e-mail or through a web site. The survey asked whether the schools had a web site or a web page (e.g., a web page on the district's web site), how often it was updated, and who was primarily responsible for the school's web site or web page support.[9]

- Nationwide, 86 percent of public schools with access to the Internet had a web site or web page in 2002. This is an increase from 2001, when 75 percent of public schools reported having a web site. There were differences by school characteristics in the likelihood of having a web site or web page. For example, the likelihood of having a web site or a web page was lower in schools with the highest minority enrollment than in other schools (76 percent compared with 87 to 92 percent). The likelihood of having a web site or web page also decreased as the poverty concentration increased: 94 percent of schools with the lowest poverty concentration had a web site or web page, compared to 66 percent of schools with the highest poverty concentration.
- Of the schools having a web site or a web page, 68 percent reported that their web site or web page was updated at least monthly.[10] Among the 32 percent of schools updating their web site or web page less often than monthly, differences by school characteristics were observed. For example, schools with the highest minority enrollment (49 percent) were more likely than other schools (22 percent to 30 percent) to update their web site or web page less than monthly. The likelihood of updating the web site or web page less than monthly also increased with poverty concentration of the schools (from 22 percent for schools with the lowest poverty concentration to 51 percent for schools with the highest poverty concentration).
- Among schools having a web site or web page, 29 percent reported that a teacher or other staff member was primarily responsible for the school's web site or web page support as part of his or her formal responsibilities (figure 4). Schools also reported that primary responsibility was assigned to a full-time, paid school technology director or coordinator (22 percent); a teacher or other staff as volunteers (18 percent); district staff (18 percent); a part-time, paid school technology director or coordinator (5 percent); students (2 percent); or a consultant or outside contractor (2 percent). Some other person was cited by 4 percent of the schools.
- The likelihood of having a teacher or other staff primarily responsible for the school's web site as part of his or her formal responsibilities was higher in secondary schools (35 percent) than in elementary schools (28 percent). The likelihood also increased with school size (from 26 percent in small schools to 39 percent in large schools).

Technologies and procedures to prevent student access to inappropriate material on the Internet

Given the diversity of the information carried on the Internet, student access to inappropriate material is a major concern of many parents and teachers. Moreover, under the Children's Internet Protection Act (CIPA), no school may receive E-rate[11] discounts unless it certifies

[7]The difference between the percent of schools lending laptop computers to students in 2002 (8 percent) and in 2001 (10 percent) is not statistically significant.

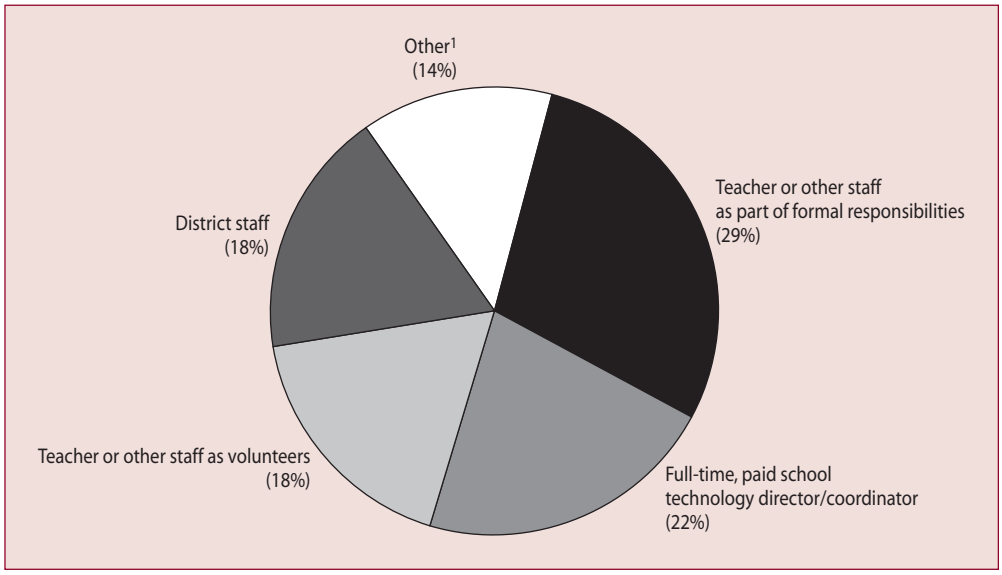
[8]The ratio of students per laptop computer would increase to 19.9 to 1 if 1 school in the sample were taken out of the calculation because the school reported a number of laptop computers much higher (2,700) than any of the other schools in the sample (ranging from 1 to 850). The number of laptop computers at that school was verified with the respondent.

[9]In 2001, the questionnaire asked about the school's "web site." In 2002, the wording was changed to "web site or web page."

[10]This estimate is derived from the percentage of public schools updating their web site monthly, weekly, or daily.

[11]The Education rate (E-rate) program was established in 1996 to make telecommunications services, Internet access, and internal connections available to schools and libraries at discounted rates based upon the income level of the students in their community and whether their location is urban or rural.

Figure 4. Percentage distribution of types of staff and students who were primarily responsible for the school's web site or web page support: 2002



[1]This category includes part-time, paid school technology director/coordinator, students, consultant/outside contractor, and other.

NOTE: Percentages are based on 85 percent of public schools (99 percent with Internet access x 86 percent with a web site or web page). Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System (FRSS), "Internet Access in U.S. Public Schools, Fall 2002," FRSS 83, 2002.

that it is enforcing a policy of Internet safety that includes the use of filtering or blocking technology.[12]

- In 2002, almost all public schools with Internet access (99 percent) used various technologies or procedures to control student access to inappropriate material on the Internet. Across all school characteristics, between 98 and 100 percent of schools reported using these technologies or procedures. In addition, 99 percent of these schools used at least one of these technologies or procedures on all Internet-connected computers used by students.
- Among schools using technologies or procedures to prevent student access to inappropriate material on the Internet in 2002, 96 percent used blocking or filtering software. Ninety-one percent of schools reported that teachers or other staff members monitored student Internet access, 82 percent had a written contract that parents have to sign, 77 percent had a contract that students have to sign, 52 percent used monitoring software, 41 percent had honor codes, and 32 percent allowed access only to their intranet.[13] As these numbers suggest, most of the schools (96 percent) used more than one procedure or technology as part of their Internet use policy (not shown in tables).
- Ninety percent of public schools using technologies or procedures to prevent student access to inappropriate material on the Internet in 2002 indicated that they disseminated the information about these technologies or procedures to students and parents via their school policies or rules distributed to students and parents. Sixty-four percent did so with a special notice to parents, 57 percent used their newsletters to disseminate this information, 32 percent posted a message on the school web site or web page, 24 percent had a notice on a bulletin board at the school, 15 percent had a pop-up message at computer or Internet log-on, and 5 percent used a method other than the ones listed above.

[12]More information about CIPA (P.L. 106-554) can be found at the web site of the Schools and Libraries Division, Universal Service Administrative Company (http://www.sl.universalservice.org/reference/CIPA.asp). The law is effective for Funding Year 4 (July 1, 2001, to June 30, 2002) and for all future years. Schools and libraries receiving only telecommunications services are excluded from the requirements of CIPA.

[13]An intranet is a controlled computer network similar to the Internet, but accessible only to those who have permission to use it. For example, school administrators can restrict student access to only their school's intranet, which may include information from the Internet chosen by school officials, rather than allow full Internet access.

Teacher professional development on how to integrate the use of the Internet into the curriculum

Although approximately one-half of public school teachers in 1999 reported that they used computers or the Internet for instruction during class time, and/or that they assigned their students work that involves research using the Internet, one-third of teachers reported feeling well or very well prepared (Smerdon et al. 2000). The survey "Internet Access in U.S. Public Schools, Fall 2002" asked about teacher professional development on how to integrate the use of the Internet into the curriculum.

- Nationwide, 87 percent of public schools with Internet access indicated that their school or school district had offered professional development to teachers in their school on how to integrate the use of the Internet into the curriculum in the 12 months prior to the fall 2002 survey.
- Forty-two percent of the schools that had professional development on how to integrate the use of the Internet into the curriculum had 1 to 25 percent of their teachers attending such professional development in the 12 months preceding the survey. Seventeen percent of the schools had 26 to 50 percent of their teachers, 11 percent of the schools had 51 to 75 percent of their teachers, and 30 percent of the schools had 76 percent or more of their teachers attending such professional development in the 12 months preceding the survey. Another 1 percent reported not having any teachers attending such professional development during this time frame.

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Data source: The NCES Fast Response Survey System (FRSS), "Internet Access in U.S. Public Schools, Fall 2002" (FRSS 83).

For technical information, see the complete report:

Kleiner, A., and Lewis, L. (2003). *Internet Access in U.S. Public Schools and Classrooms: 1994–2002* (NCES 2004–011).

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Technology-Based Education

Participation in Technology-Based Postcompulsory Education

Lisa Hudson and Linda Shafer

This article was originally published as an Issue Brief. The sample survey data are from the Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program (AELL-NHES).

Participation in both college programs and adult education activities has increased in recent decades (Kim and Creighton 1999; Kim et al. forthcoming; U.S. Department of Education 2002). The use of technology in education has also been increasing (Kleiner and Farris 2002; Waits and Lewis 2003), raising the possibility that technology could help increase participation in postcompulsory education overall and/or among groups of adults who traditionally have been underrepresented in education at this level. This Issue Brief addresses a more limited issue: Does technology-based education reach all adults equally, or are traditionally underrepresented or overrepresented adults more likely to be the beneficiaries of this type of education? It is important to note that this analysis cannot determine the extent to which participation is affected by learners' choices, their access to offerings, or the availability of offerings.

The data for this analysis come from the 2001 Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program (AELL-NHES:2001) at the National Center for Education Statistics (NCES). This survey asks about adults' participation in the following formal learning activities: English as a Second Language (ESL) classes, adult basic education classes, apprenticeship programs, postsecondary education programs (leading to a credential), postsecondary courses,[1] and other courses. Technology-based learning was defined as learning activities that involve instruction using computers, computer conferencing, or instruction over the Internet or World Wide Web.[2] Participation in full-time postsecondary credential programs (which typically is excluded from NCES analyses of adult education) is included in this analysis. However, participation in adult basic education, ESL, and apprenticeship programs is excluded because the survey did not ask about the use of technology for these activities. (About 4 percent of all adult education participants were excluded from this analysis because they participated in only these activities.)

To obtain more valid data on participation in ESL classes, the AELL-NHES survey was administered in both Spanish and English. However, this dual language administration makes the Hispanic AELL-NHES sample noncomparable to other racial/ethnic groups, since the Hispanic sample includes non-English (Spanish) speakers while the other (non-Hispanic) racial/ethnic groups consist of only English speakers. In particular, to the extent that non-English speakers utilize technology-based education to a different degree than English speakers, including Spanish speakers but not other non-English speakers would bias the comparisons of Hispanics and other groups. To create comparable racial/ethnic groups, the analysis in this Issue Brief was restricted to the English-speaking sample. Although this restriction means that the Hispanic sample does not represent all Hispanics (as is the case in analyses based on the full AELL-NHES sample), it does create an English-speaking Hispanic sample that is comparable to the English-speaking Asian sample, English-speaking Black sample, etc.[3]

Using these definitions and population (of English speakers), 49 percent of adults participated in postcompulsory learning activities in 2001, and 54 percent of these participants engaged in at least one activity that used technology (table 1). Looking at the types of activities engaged in, 12 percent of adults participated in a postsecondary credential program, 11 percent in a postsecondary course (separate from a credential program), and 38 percent in a course outside of postsecondary education. Technology was used as an instructional tool most often for postsecondary credential programs (used by 65 percent of these participants), followed by postsecondary courses (47 percent of participants) and, finally, other types of courses (43 percent of participants).

[1]Postsecondary education programs were defined as all activities listed in the two credential program sections ("college or university degree program" and "vocational or technical diploma program") of the survey; postsecondary courses were defined as all courses taken for college credit and all courses that had a postsecondary institution as the instructional provider.

[2]The survey questions also asked about instruction using (1) television, video, or radio and (2) other types of technology. Because the focus of this analysis is new technologies, these instructional methods were not counted as technology-based instruction. Also, because the analysis focuses only on formal instruction, the use of technology for self-instruction (included in the "work-related informal learning" section of AELL-NHES:2001) is not part of this analysis.

[3]The following statistics demonstrate the effects of including non-English-speaking Hispanics. In the population of English and Spanish speakers, Hispanics participated in postcompulsory education at a lower rate than (non-Hispanic) Whites (36 and 49 percent, respectively). When the sample is restricted to those who completed the survey in English (i.e., to English speakers), no differences are detected in the participation rates for Whites and Hispanics (49 and 51 percent, respectively). This restriction reduces the size of the Hispanic sample by roughly 40 percent, from 1,234 to 773 (unweighted). Otherwise, this analysis covers the AELL-NHES:2001 population of civilian, non-institutionalized adults age 16 or older who are not in compulsory education.

Table 1. Percent of adults who participated in a postcompulsory education activity and percent of participants for whom at least one activity used technology, overall and by type of activity, English-speakers only: 2000–01

Activity	Percent of adults participating in activity	Percent of participants for whom at least one activity used technology
All activities	49.0	53.6
Postsecondary credential program	11.7	64.7
Postsecondary course	10.9	47.1
Other (nonpostsecondary) course	38.0	42.5

NOTE: Detail sums to more than 49.0 in the "Percent of adults participating in activity" column because adults may have participated in more than one type of activity.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program, 2001 (AELL-NHES:2001).

The left-hand column in table 2 shows the percent of adults with various characteristics who participated in postcompulsory learning activities. This analysis is consistent with previous studies that have found that each of the following groups participate in adult education and/or postsecondary education at relatively low rates: males (vs. females) (Jacob 2002), Blacks (vs. Whites) (Jacobson et al. 2001), those from rural areas (vs. urban areas) (Ingels et al. 2002), those in lower status jobs (vs. higher status jobs) (Creighton and Hudson 2002), those with lower levels of education (vs. higher levels of education) (Creighton and Hudson 2002), and those from lower income or socioeconomic levels (vs. higher income or socioeconomic levels) (Creighton and Hudson 2002; Ingels et al. 2002).

To explore in greater depth which groups of adults are more or less likely to participate in technology-based education, one must take into account differences in participation rates in postcompulsory education generally. For example, a finding that females participate in technology-based education at the same rate as males would have different implications if females participated in all activities at a lower rate than males or at a higher rate than males. In effect, the question of interest is whether there are differences in who participates in technology-based versus non-technology-based education activities. To examine this question, one can compare the proportions of *participants* of each type (e.g., male vs. female) who are in technology-based education. If, for example, a higher proportion of male participants compared to female participants is in technology education, this would suggest that technology-based education is reaching relatively more men than women (accounting for each group's overall participation level).

The right-hand column in table 2 shows the percent of participants with various characteristics who were in activities that used technology-based instruction. Although females were more likely than males to participate in postcompulsory education, male participants were more likely than female participants to be in technology-based activities. Fifty-seven percent of male participants were in activities that involve technology compared to 51 percent of female participants. This difference in participation in technology-based activities may reflect many influences, including gender differences in occupations or in learning preferences.[4] Also, although Blacks participated in postcompulsory education at a lower rate than Whites, no difference was detected in the likelihood of Black or White participants being in a technology-based activity. (The apparent differences between Whites and their Black and Hispanic counterparts in table 2 are not statistically significant, possibly due to relatively small sample sizes.)[5]

Technology could be used specifically to reach adults in rural areas. However, participants in rural areas were less likely to be in technology-based activities than were participants in suburban or urban areas (table 2). Forty-seven percent of participants in rural areas were enrolled in technology-based education activities compared to about 55 percent of participants in suburban and urban areas.

[4]For example, although females are more likely than males to use computers at work, males use their computers at work in more varied ways than do females (analysis of Current Population Survey, September 2001, unpublished data). Females have also been found to have less positive attitudes toward computers than do males (Mitra, LaFrance, and McCullough 2001; Kadijevich 2000; Whitley 1997).

[5]Technology does seem to be reaching the "Other" race/ethnicity group (which is 54 percent Asian) more than Whites; 61 percent of "Other" participants were in technology-based activities compared to 53 percent of White participants.

Table 2. Percent of adults who participated in a postcompulsory education activity and percent of participants who were in a technology-based activity, by various characteristics, English-speakers only: 2000–01

Characteristic	Percent of adults who participated in postcompulsory activity	Percent of participants in technology-based activity
Total	49.0	53.6
Sex		
Male	45.4	57.4
Female	52.2	50.5
Race/ethnicity		
White, non-Hispanic	49.3	53.2
Black, non-Hispanic	44.2	49.7
Hispanic	51.3	56.6
Other	52.1	61.0
Occupation		
Not working	25.6	38.7
Trades	34.2	46.7
Sales, service, or support	56.8	53.1
Professional	74.5	61.6
Education level		
High school or less	29.5	40.4
Some college/associate's degree	62.8	58.2
Bachelor's degree or higher	69.0	59.1
Household income		
$20,000 or less	30.1	46.0
$20,001–$35,000	40.0	47.0
$35,001–$50,000	50.1	51.9
$50,001–$75,000	58.4	53.4
$75,001 and above	61.8	60.8
Locality		
Urban	52.6	55.4
Suburban	44.0	55.6
Rural	42.8	47.2

SOURCE: U.S. Department of Education, National Center for Education Statistics, Adult Education and Lifelong Learning Survey of the National Household Education Surveys Program, 2001 (AELL-NHES:2001).

Moreover, education and occupation groups that historically have been underrepresented in adult education remain underrepresented among participants who are in technology-based activities.[6] For example, 40 percent of participants who have no more than a high school education were in technology-based activities compared to almost 60 percent of those with some college or with at least a bachelor's degree (table 2). Participants who are not working participated in technology-based activities at a lower rate than all groups of working adults (39 vs. 47 percent or more), and those working in the trades participated at a lower rate than those in other occupation groups (47 vs. 53 and 62 percent). At the same time, education, occupation, and income groups traditionally overrepresented in postcompulsory education are overrepresented among participants who are in technology-based activities. For example, 62 percent of professional workers who participated in learning were in technology-based activities compared to no more than 53 percent of those in other occupation groups. Participants with household incomes above $75,000 were more likely than those in all lower income groups to be in technology-based activities; 61 percent of those with household earnings above $75,000 were in these activities compared to 46 to 53 percent of those in other income categories.

Conclusion

The relatively widespread use of technology in education comes at a time when postcompulsory education is increasing. Nonetheless, patterns of participation in postcompulsory learning are similar now to what they were

[6]Findings were mixed for participants with the lowest level of income ($20,000 or less). No significant differences were detected between participants with the lowest level of income and those whose income was at the next two levels ($20,001–$35,000 and $35,001–$50,000), but participants at the lowest income level participated in technology-based activities at a lower rate than those at the highest two income levels ($50,001–$75,000 and $75,001 or more).

in the past (e.g., college-educated adults were more likely than other adults to participate in 2000–01 and in previous years). Further, with the exception of men and racial/ethnic minorities, groups under- or overrepresented in postcompulsory education tend to be correspondingly represented among those who participate in technology-based education rather than in non-technology-based education. These differences in participation in technology activities can arise from many sources, including differences in access to or availability of learning opportunities, personal interests and motivation, professional requirements, and other labor market incentives and opportunities. A better understanding of why these participation differences exist can help shed light on the potential and the limitations of technology as a tool for both increasing participation in learning and addressing possible inequities in participation.

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Educational Technology

Invited Commentary: Children, Schools, Computers, and the Internet: The Impact of Continued Investment in Educational Technology Under NCLB

Susan Patrick, Director, Office of Educational Technology, U.S. Department of Education

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

While public schools have made huge improvements in providing computer and Internet access, a disparity continues in minority and poor students' access to computers and the Internet at home.

The good news is the significant progress that has been made in connecting nearly every school in the nation to the Internet. However, significant differences remain in home computer use by students of disparate socioeconomic backgrounds.

The No Child Left Behind Act of 2001 (NCLB) supports enhancing education through technology and helps to support those students most in need. Approximately $2.1 billion has been appropriated for educational technology programs in the last 3 years under NCLB, a 50 percent increase from prior programs. Federal investments are being used to help schools access computers and the Internet. NCLB sets before the nation a challenge to ensure that all children will receive a quality education that prepares them for a 21st century America. The bottom line is unprecedented accountability to measure student progress. At the heart of this effort is a commitment to focus on students, equip teachers, empower parents, and inform decisionmakers to ensure every child receives the best possible education.

Two recent reports from the National Center for Education Statistics (NCES) shed light on the progress that our nation has made in the last decade in technology access and highlight the role schools play in achieving parity in computer and Internet access for children and adolescents. *Computer and Internet Use by Children and Adolescents in 2001* examines how children and adolescents from ages 5 through 17 access computers and the Internet, both at home and at school, using data from the 2001 Current Population Survey. *Internet Access in U.S. Public Schools and Classrooms: 1994–2002* explores a series of trends in school use of technology over the past 9 years, using data from the NCES Fast Response Survey System.

Technology by its nature is a "transforming" tool, enabling organizations and individuals to gain significant advantages in work and life. By 2001, computers and the Internet were used by a majority of the American population. Two-thirds of Americans used computers and over half used the Internet. In conjunction with this trend is the concerted national effort to ensure that all schools have access to computers and the Internet.

The generation of children known as the Millennials (children born between 1982 and 2000) are pioneering users of the Internet and adopt new technologies quickly. Findings in *Computer and Internet Use by Children and Adolescents in 2001* reflect this adaptability. In 2001, about 90 percent of 5- to 17-year-olds used computers and 59 percent used the Internet. And the rate of adoption increased with age. At age 5, about three-quarters of children used computers; at age 9, a majority used the Internet. By the time children reached high school, fully 90 percent used computers and at least 75 percent used the Internet.

Increased Access to Computers and the Internet at School

Both *Internet Access in U.S. Public Schools* and *Computer and Internet Use* document increased access to computers and the Internet at school for most students, regardless of ethnicity or economic background. *Internet Access in U.S. Public Schools* documents that 99 percent of American schools had access to the Internet in fall 2002. *Computer and Internet Use* indicates that more children and adolescents used computers at school (81 percent) than at home (65 percent) in 2001.

Schools are working to increase access to technology by providing access to computers and the Internet outside of school hours. Fifty-three percent of schools provided access to an average of 49 computers outside school hours in 2002, and of the schools that provided such access, 74 percent did so before school, 96 percent after school, and 6 percent on weekends. In addition, 8 percent of schools, regardless of economic or racial make-up, lent laptops to students, and 7 percent provided handheld computers to students or teachers.

High-minority schools are also making strides toward achieving parity in connecting instructional rooms to the Internet. For example, in schools with the highest minority enrollment (50 percent or more), 89 percent of instructional rooms were connected to the Internet in 2002, while in schools with lower minority enrollments, 91 to 93 percent of instructional rooms had Internet access. Similarly, in schools with the highest poverty concentration (75 percent or more students eligible for free or reduced-price lunch), 89 percent of instructional rooms had Internet access in 2002, while in schools with lower poverty concentrations (less than 35 percent eligible students and 35 to 49 percent eligible students), 93 percent and 90 percent, respectively, of instructional rooms had access. It is important to note the significant strides that have been made over the past decade. In schools with the highest poverty concentration, only 2 percent of instructional rooms were connected to the Internet in 1994 and only 60 percent were connected in 2000.

Gender differences are being mitigated. There is no longer a difference in the overall rates of use of computers or the Internet between boys and girls. *Computer and Internet Use* indicates that the traditional gender divide in technology use has all but disappeared.

Continuing Disparities in Technology Access and Use

Despite schools across the country achieving near parity in the availability and quality of access, there continue to be significant disparities across different groups of children and adolescents in terms of computer and Internet use. For example, White children and adolescents were more likely to use computers in 2001 than their Black and Hispanic counterparts (93 percent vs. 85 and 79 percent, respectively). Differences in Internet use were wider, with 67 percent of White 5- to 17-year-olds using the Internet compared to 45 percent of Black and 37 percent of Hispanic 5- to 17-year-olds.

Poverty status and disability are related to differences in computer and Internet use. Children and adolescents living in poor families were less likely to use computers (81 percent) and the Internet (37 percent) in 2001 than children and adolescents living in nonpoor families (93 percent and 65 percent, respectively). Children and adolescents with disabilities were less likely than those without disabilities to use computers (80 percent vs. 90 percent) and the Internet (49 percent vs. 59 percent).

Disparities in computer use across groups of children and adolescents vary between home and school settings. For example, there was a relatively large gap in 2001 between the percentage of White 5- to 17-year-olds who used computers at home (77 percent) and Black and Hispanic 5- to 17-year-olds who used computers at home (41 percent for each group). The difference was smaller for the use of computers at school, where 84 percent of White 5- to 17-year-olds used computers compared to 80 percent of Black and 72 percent of Hispanic 5- to 17-year-olds.

Internet use varies similarly between home and school settings. Eighty-three percent of White 5- to 17-year-olds who used the Internet in 2001 did so at home compared to 60 percent of Black and 62 percent of Hispanic 5- to 17-year-olds. When considering who uses the Internet at school, these differences largely disappeared, with 69 percent of White 5- to 17-year-old Internet users accessing the Internet at school compared to 66 percent of their Black and 67 percent of their Hispanic counterparts.

Disparities in home versus school use are important because, while there is increased availability of computers at school and, in many cases, higher bandwidth, the preferred Internet access point for students may be home, rather than school.

Conclusion

The nation's continued investment in school-based technology has resulted in significant progress toward achieving parity with regard to children's and adolescents' computer and Internet access. Nevertheless, significant disparities remain by racial and economic characteristics and by disability status in technology use patterns among children across the country.

It is important not to underestimate the role that continued investments in educational technology play, especially when the investments are aligned with educational goals. The challenge now is for an education system based on an agricultural calendar and organized after an Industrial Age model to transform itself to provide a 21st century education that prepares students for the Information Age. New circumstances demand not a reinforcing of Industrial Age structures and systems but rather a building anew with new initiatives, tools, and institutions for our time. Our nation needs a revolution in the *way* we educate students in order to meet the expectations of excellence set forth by NCLB. This is the strategic role of technology. As Secretary of

Education Rod Paige states, "We need to address the limited access to technology that many students have outside of school. There is much more we can do. Closing the digital divide will also help close the achievement gap that exists within our schools."*

*See http://www.ed.gov/news/pressreleases/2003/10/10292003a.html.

Elementary and Secondary Education

NAEP Math Highlights

The Nation's Report Card: Mathematics Highlights 2003

James S. Braswell, Mary C. Daane, and Wendy S. Grigg

This article was excerpted from* The Nation's Report Card: Mathematics Highlights 2003, *a tabloid-style publication. The sample survey data are from the National Assessment of Educational Progress (NAEP) 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

Introduction

Since 1969, the National Assessment of Educational Progress (NAEP) has been an ongoing nationally representative indicator of what American students know and can do in major academic subjects. Over the years, NAEP has measured students' achievement in many subjects, including reading, mathematics, science, writing, U.S. history, geography, civics, and the arts. In 2003, NAEP conducted a national and state assessment in mathematics at grades 4 and 8. NAEP is a project of the National Center for Education Statistics (NCES) within the Institute of Education Sciences of the U.S. Department of Education, and is overseen by the National Assessment Governing Board (NAGB).

Beginning in 2002, the NAEP national sample was obtained by aggregating the samples from each state, rather than by obtaining an independently selected national sample. As a consequence, the size of the national sample increased, and smaller differences between years or between types of students were found to be statistically significant than would have been detected in previous assessments. In keeping with past practice, all statistically significant differences are indicated in the current report.

The results presented in this report distinguish between two different reporting samples that reflect a change in administration procedures beginning in 1996. This change involved permitting students with disabilities or limited-English-proficient students to use certain accommodations (e.g., extended time, small group testing). Comparisons between results from 2003 and those from assessment years in which both types of administration procedures were used (1996 and 2000) are discussed based on the results when accommodations were permitted, although significant differences in results when accommodations were not permitted may be noted in the figures and tables.

Achievement Levels Provide Standards for Student Performance

Achievement levels are performance standards set by NAGB to provide a context for interpreting student performance on NAEP. These performance standards, based on recommendations from broadly representative panels of educators and members of the public, are used to report what students should know and be able to do at the *Basic, Proficient,* and *Advanced* levels of performance in each subject area and at each grade assessed.*

The minimum scale scores for achievement levels are as follows:

	Grade 4	Grade 8
Basic	214	262
Proficient	249	299
Advanced	282	333

*The NAEP achievement levels are as follows: *Basic* denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade. *Proficient* represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter. *Advanced* signifies superior performance. Detailed descriptions of the NAEP mathematics achievement levels can be found on the NAGB web site (http://www.nagb.org/pubs/pubs.html).

As provided by law, NCES, upon review of a congressionally mandated evaluation of NAEP, has determined that achievement levels are to be used on a trial basis and should be interpreted and used with caution. However, both NCES and NAGB believe that these performance standards are useful for understanding trends in student achievement. NAEP achievement levels have been widely used by national and state officials.

NAEP 2003 Mathematics Assessment Design

Assessment framework

The NAEP mathematics framework, which defines the content for the 1990–2003 assessments, was developed through a comprehensive national consultative process and adopted by NAGB. The mathematics framework calls for the assessment to include questions based on five mathematics content areas: (1) number sense, properties, and operations; (2) measurement; (3) geometry and spatial sense; (4) data analysis, statistics, and probability; and (5) algebra and functions. In addition, the framework specifies that each question measure one of three mathematical abilities. The three mathematical abilities specified by the framework are (1) conceptual understanding, (2) procedural knowledge, and (3) problem solving. The complete framework is available on the NAGB web site (http://www.nagb.org/pubs/pubs.html).

Student samples

Results from the 2003 mathematics assessment are reported for the nation and states at grades 4 and 8. The national results are based on a representative sample of students in both public schools and nonpublic schools, while the state results are based only on public school students.

Accommodations

It is NAEP's intent to assess all selected students from the target population. Before 1996, no testing accommodations were provided to students with disabilities and limited-English-proficient students who participated in the NAEP mathematics assessments. In 1996 (national only) and 2000 (national and state), NAEP was administered to two reporting samples—"accommodations not permitted" and "accommodations permitted." Beginning in 2003, the NAEP mathematics assessment has adopted the new "accommodations-permitted" procedure as its only administration procedure, and thus again had only one reporting sample as in mathematics assessment years prior to 1996.

Because the representativeness of samples is ultimately a validity issue, NCES has commissioned studies of the impact of assessment accommodations on overall scores. One paper that explores the impact of two possible scenarios on NAEP is available on the NAEP web site (http://nces.ed.gov/nationsreportcard/pdf/main2002/statmeth.pdf).

Fourth- and Eighth-Graders' Average Mathematics Scores Increase

Average scores were higher in 2003 than in all the previous assessment years at both grades 4 and 8 (figure A). (Differences are discussed in the report only if they were found to be statistically significant.)

How Well Did Students Perform in 2003?

Thirty-two percent of fourth-graders and 29 percent of eighth-graders performed at or above the *Proficient* level in 2003. The percentages of students performing at or above *Basic* in 2003 were 77 percent at grade 4 and 68 percent at grade 8.

Gain Overall Since 1990 in Achievement-Level Performance

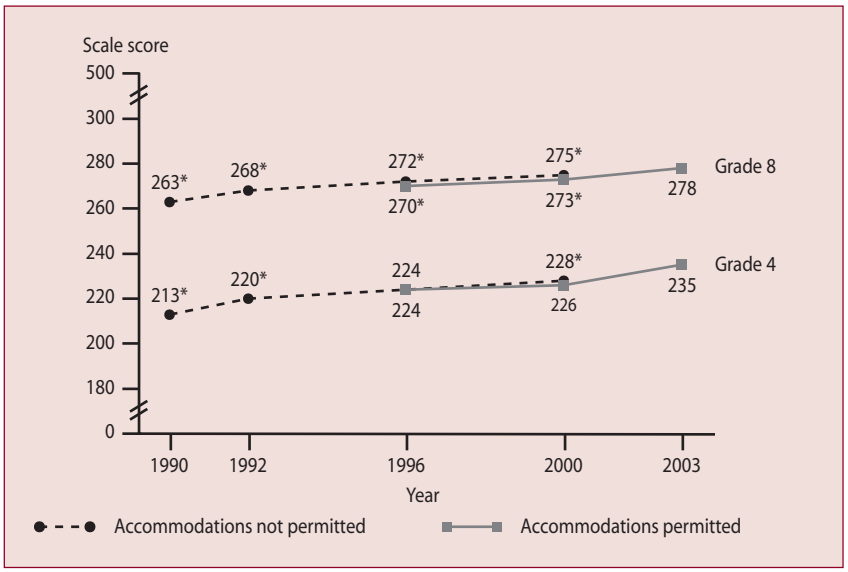
The percentages of fourth- and eighth-graders at or above *Basic*, at or above *Proficient*, and at *Advanced* were all higher in 2003 than in 1990. There were also recent increases from 2000 to 2003 in the percentages of fourth-graders at or above *Basic* and *Proficient* and at *Advanced*, and in the percentages of eighth-graders at or above *Basic* and *Proficient*.

Improvement Seen Among Lower-, Middle-, and Higher-Performing Students

Looking at changes in scores for students at lower, middle, and higher performance levels gives a more complete picture of student progress. An examination of scores at different percentiles on the 0–500 mathematics scale at each grade indicates whether or not the changes seen in the national average score results are reflected in the performance of lower-, middle-, and higher-performing students.

The percentile indicates the percentage of students whose scores fell below a particular score. For example, 25 percent

Figure A. Average mathematics scores, grades 4 and 8: 1990–2003



*Significantly different from 2003.

NOTE: Average mathematics scores are reported on a 0–500 scale. In addition to allowing for accommodations, the accommodations-permitted results (1996–2003) differ slightly from previous years' results, and from previously reported results for 1996 and 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers.

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. (Originally published as the first figure on p. 1 of the publication from which this article is excerpted.)

of assessed students' scores fell below the 25th percentile score and 75 percent fell below the 75th percentile score.

At both grades 4 and 8, scores at the 10th, 25th, 50th, 75th, and 90th percentiles were higher in 2003 than in any of the previous assessment years.

At grade 4, gains detected between 2000 and 2003 ranged from approximately 5 scale score points for students performing at the 90th percentile to 13 points for students at the 10th percentile. At grade 8, increases since 2000 ranged from approximately 3 scale score points at the 90th percentile to 7 points at the 10th percentile.

Most Participating States and Jurisdictions Show Gains at Grades 4 and 8

In addition to national results, the 2003 mathematics assessment collected performance data for fourth- and eighth-graders who attended public schools in 50 states and 3 other jurisdictions that participated.

State average score results

Among the 43 states and jurisdictions that participated in both the 2000 and 2003 fourth-grade assessments, all showed increases in average scores. Similarly, all 42 of the states and jurisdictions that participated in the 1992 and 2003 assessments showed increases in average scores.

At grade 8, of the 42 states and jurisdictions that participated in both the 2000 and 2003 assessments, 28 had higher average scores in 2003 and none showed a decline. All 38 states and jurisdictions that participated in both 1990 and 2003 had higher average scores in 2003.

State versus national comparisons

In 2003, 26 of the 53 states and other jurisdictions that participated at grade 4 had average scores that were higher than the national average, 11 had scores that were not found to differ significantly from the national average, and 16 had scores that were lower than the national average.

Of the 53 states and other jurisdictions that participated at grade 8, 30 had average scores higher than the national average, 7 had average scores that were not found to differ significantly from the national average, and 16 had average scores that were lower than the national average.

State achievement-level results

At grade 4, 18 states and other jurisdictions had higher percentages of students at or above *Proficient* than the nation, 19 had percentages that were not found to be statistically different from the nation, and 16 had percentages that were lower than the nation.

At grade 8, 24 states and other jurisdictions had higher percentages of students at or above *Proficient* than the nation, 12 had percentages that were not found to be significantly different from the nation, and 17 had percentages that were lower than the nation.

Percentage of students at or above *Proficient* across years by state

The percentage of fourth-graders at or above *Proficient* was higher in 2003 than in 2000 for all 43 states and jurisdictions that participated in both years. The percentages also increased from 1992 to 2003 for all 42 states and jurisdictions that participated in both those assessment years.

Among the 42 states and jurisdictions that participated in both the 2000 and 2003 eighth-grade assessments, 18 showed an increase in the percentage of students at or above *Proficient* and none showed a decline. The percentage of eighth-graders at or above *Proficient* was higher in 2003 than in 1990 for all 38 states and jurisdictions that participated in both years.

Subgroup Results Reveal How Various Groups of Students Performed on NAEP

In addition to reporting on overall students' performance on its assessments, NAEP also reports on the performance of various subgroups of students. The mathematics performance of subgroups of students in 2003 indicates whether they have progressed since earlier assessments and allows for comparisons with the performance of other subgroups in 2003.

When reading these subgroup results, it is important to keep in mind that there is no simple, cause-and-effect relationship between membership in a subgroup and achievement in NAEP. A complex mix of educational and socioeconomic factors may interact to affect student performance.

Gender

Average mathematics scores by gender. At both grades 4 and 8, the average scores for male and female students were higher in 2003 than in any of the previous assessment years. In 2003, male students scored higher on average than female students at both grades.

Achievement-level results by gender. At grade 4, the percentages of male and female students at or above *Basic* and *Proficient* were higher in 2003 than in any of the previous assessment years. At grade 8, the percentages of male and female students at or above *Basic* and *Proficient* were also higher in 2003 than in all previous assessment years.

Race/ethnicity

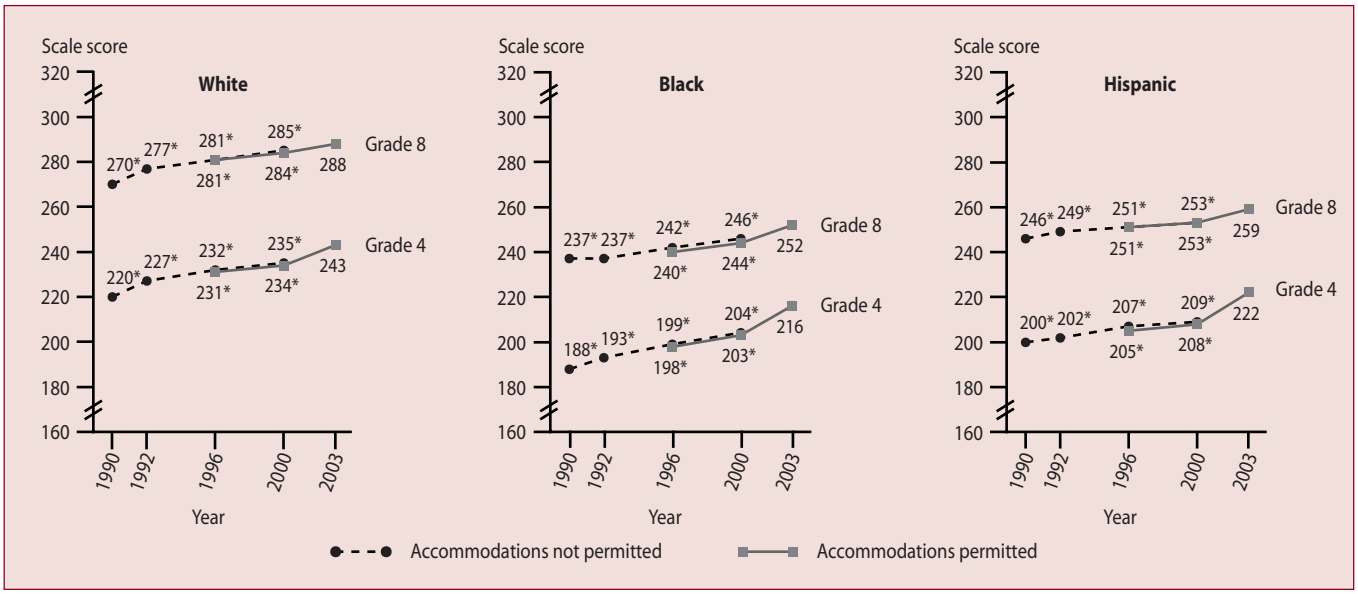
Average mathematics scores by race/ethnicity. At grades 4 and 8, White, Black, and Hispanic students all had higher average scores in 2003 than in any of the previous assessment years (figure B). The average score of Asian/Pacific Islander students was higher in 2003 than in 1990 at both grades 4 and 8. There was no significant change detected in the average score for Asian/Pacific Islander students between 2000 and 2003 at grade 8. American Indian/Alaska Native students had higher average scores in 2003 than in 2000 at grade 4, but the apparent increase at grade 8 was not found to be statistically significant.

At both grades 4 and 8, Asian/Pacific Islander students scored higher on average in 2003 than White students. Both White and Asian/Pacific Islander students had higher average scores than Black, Hispanic, and American Indian/Alaska Native students. Hispanic and American Indian/Alaska Native students scored higher on average than Black students at both grades.

Average mathematics score gaps between selected racial/ethnic subgroups. At grade 4, the score gap between White and Black students decreased between 2000 and 2003, and was smaller in 2003 than in 1990. The gap between White and Hispanic fourth-graders also narrowed between 2000 and 2003, but the gap in 2003 was not found to be significantly different from that in 1990.

At grade 8, the score gap between White and Black students was narrower in 2003 than in 2000, but the gap in 2003 was not found to differ significantly from 1990. The score gap

Figure B. Average mathematics scale scores, by selected race/ethnicity, grades 4 and 8: 1990–2003



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between White and Hispanic eighth-graders in 2003 was not found to differ significantly from the gap in any of the previous assessment years.

Achievement-level results by race/ethnicity. At grade 4, the percentages of White, Black, and Hispanic students at or above the *Basic* and *Proficient* levels were higher in 2003 than in any of the previous assessment years. The percentages of Asian/Pacific Islander students at or above *Basic* and *Proficient* were higher in 2003 than in 1990. The percentage of American Indian/Alaska Native students at or above *Basic* was higher in 2003 than in 2000, but the apparent increase in the percentage at or above *Proficient* was not found to be statistically significant.

At grade 8, the percentages of White, Black, and Hispanic students at or above *Basic* and *Proficient* were higher in 2003 than in any of the previous assessment years. The percentages of Asian/Pacific Islander students at or above *Basic* and *Proficient* were higher in 2003 than in 1990.

Eligibility for free/reduced-price school lunch

Average mathematics scores by students' eligibility for free/reduced-price school lunch. NAEP collects data on students' eligibility for free/reduced-price lunch as an indicator of family economic status. Eligibility for free and reduced-price lunches is determined by students' family income in relation to the federally established poverty level. Free lunch qualification is set at 130 percent of the poverty level, and reduced-price lunch qualification is set at between 130 and 185 percent of the poverty level. Information regarding students' eligibility in 2003 was not available for 10 percent of fourth-graders and 11 percent of eighth-graders, either because their schools did not participate in the National School Lunch Program or for other reasons.

At both grades 4 and 8, average mathematics scores in 2003 were higher than the scores in 1996 and 2000 both for students who were eligible and for students who were not eligible for free/reduced-price lunch. The average mathematics score for students who were eligible for free/reduced-price lunch was lower than the average score for students who were not eligible at both grades. Results broken down by students' eligibility for free lunch and eligibility for reduced-price lunch are available on the NAEP web site (http://nces.ed.gov/nationsreportcard/naepdata).

Achievement-level results by students' eligibility for free/reduced-price lunch. At both grades 4 and 8, the percentages of students at or above *Basic* and *Proficient* were higher in 2003 than in 1996 and 2000 for both students who were eligible and students who were not eligible for free/reduced-price lunch.

Average mathematics score gaps between students who were eligible and those who were not eligible for free/reduced-price lunch. At grade 4, the average score gap between students who were eligible and students who were not eligible for free/reduced-price lunch decreased from 2000 to 2003, but the gap in 2003 was not found to be significantly different from the gap in 1996. No significant change was detected in the gap in 2003 compared to the gap in any of the previous assessment years at grade 8.

Data source: The NAEP 1990, 1992, 1996, 2000, and 2003 Mathematics Assessments.

For technical information, see the NAEP web site (http://nces.ed.gov/nationsreportcard) or see the complete 2003 Mathematics Report Card:

Braswell, J.S., Dion, G.S., Daane, M.C., and Jin, Y. (forthcoming). *The NAEP 2003 Mathematics Report Card* (NCES 2004–460).

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The complete* 2003 Mathematics Report Card *(NCES 2004–460) will be available through the ED Pubs number (877–433–7827) and at the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

The Nation's Report Card: Trial Urban District Assessment, Mathematics Highlights 2003

Anthony D. Lutkus and Arlene W. Weiner

This article was excerpted from* The Nation's Report Card: Trial Urban District Assessment, Mathematics Highlights 2003, *a tabloid-style publication. The sample survey data are from the National Assessment of Educational Progress (NAEP) 2003 Trial Urban District Mathematics Assessment.

Introduction

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In 2001, after discussion among NCES, NAGB, and the Council of the Great City Schools, Congress appropriated funds for a district-level assessment on a trial basis, similar to the trial for state assessments that began in 1990, and NAGB passed a resolution approving the selection of urban districts for participation in the Trial Urban District Assessment (TUDA), a special project within NAEP.

Representatives of the Council of the Great City Schools worked with the staff of NAGB to identify districts for the trial assessment. Districts were selected that permitted testing of the feasibility of conducting NAEP over a range of characteristics, such as district size, minority concentrations, federal program participation, socioeconomic conditions, and percentages of students with disabilities (SD) and limited-English-proficient (LEP) students.

By undertaking the TUDA, NAEP continues a tradition of extending its service to education, while preserving the rigorous sampling, scoring, and reporting procedures that have characterized prior NAEP assessments at both the national and state levels.

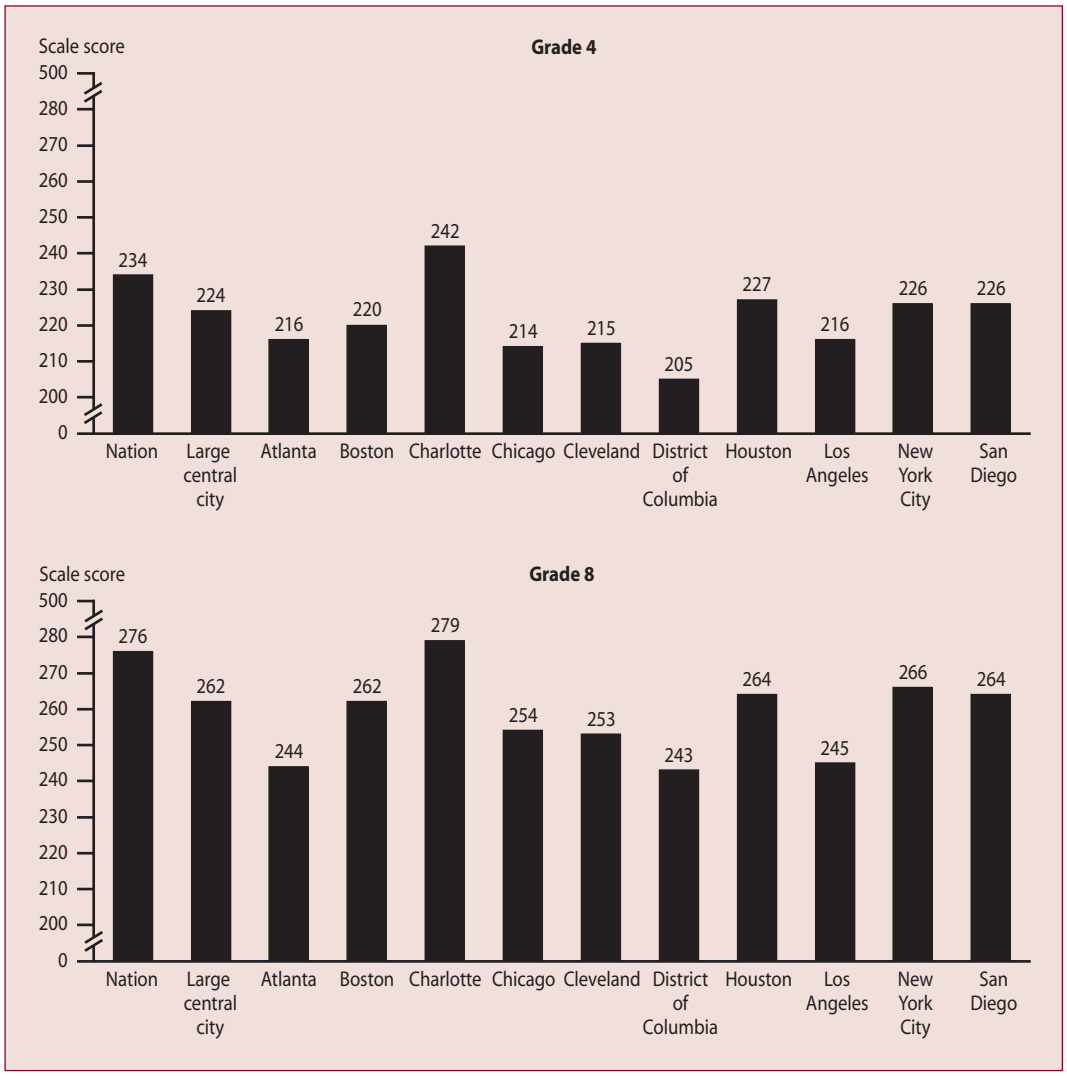
In 2002, five urban school districts participated in NAEP's first TUDA in reading and writing. In 2003, nine urban districts (including the original five) participated in the TUDA in reading and mathematics at grades 4 and 8: Atlanta City, Boston School District, Charlotte-Mecklenburg Schools, City of Chicago School District 299, Cleveland Municipal School District, Houston Independent School District, Los Angeles Unified, New York City Public Schools, and San Diego City Unified. Only public school students were sampled in the TUDA. Results for the District of Columbia public schools, which normally participate in NAEP's state assessments, are also reported (figure A).

Average mathematics scores are reported on a 0–500 scale. Figure A shows the average scores at both grades for the districts that participated in 2003. The average scores for public school students in the nation and for public school students attending schools located in large central cities are also shown for comparison. "Urban districts" refers to the 10 districts reported in this trial study. Eight of the 10 urban districts consist entirely of schools in cities with a population of 250,000 or more (i.e., large central cities as defined by NCES); two of them (Charlotte and Los Angeles) consist primarily of schools in large central cities, but also have from one-quarter to one-third of their fourth- and eighth-grade students enrolled in surrounding urban fringe or rural areas. All of the data for both districts were used to compare with data from large central cities and the nation.

At grade 4, the average score in Charlotte was higher than the average scores for the nation, large central cities, and the other participating districts. All participating districts at grade 4 except Charlotte had lower average scores than the average score for the nation. Compared with the average score in large central cities, the average scores in three districts (Houston, New York City, and San Diego) were not found to be significantly different, and the average scores in the remaining six districts were lower.

At grade 8, the average score in Charlotte was again higher than the average scores for the nation, large central cities, and the other participating districts, while the average scores for all other districts were lower than that for the nation. Students in New York City also scored higher, on average, than students in large central city public schools, while the average scores for students in Boston, Houston, and San Diego were not found to be significantly different from that in large central cities. The average scores in the remaining five districts were lower than the average score in large central cities.

Figure A. Average NAEP mathematics scores, grade 4 and grade 8 public schools: By urban district, 2003



SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment. (Originally published as the figure on p. 1 of the publication from which this article is excerpted.)

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Advanced	282	333

As provided by law, NCES, upon review of a congressionally mandated evaluation of NAEP, has determined that achievement levels are to be used on a trial basis and should be interpreted and used with caution. However, both NCES and NAGB believe that these performance standards are useful for understanding trends in student achievement. NAEP achievement levels have been widely used by national and state officials.

[1]The NAEP achievement levels are as follows. *Basic* denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade. *Proficient* represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter. *Advanced* signifies superior performance. Detailed descriptions of the NAEP mathematics achievement levels can be found on the NAGB web site (http://www.nagb.org/pubs/pubs.html).

NAEP 2003 Mathematics Assessment Design

Assessment framework

The NAEP mathematics framework, which defines the content for the 2003 assessment, was developed through a comprehensive national consultative process and approved by NAGB. The mathematics framework calls for the assessment to include questions based on five mathematics content areas: (1) number sense, properties, and operations; (2) measurement; (3) geometry and spatial sense; (4) data analysis, statistics, and probability; and (5) algebra and functions.

In addition, the framework specifies that each question should measure one of three mathematical abilities. The three mathematical abilities specified by the framework are (1) conceptual understanding, (2) procedural knowledge, and (3) problem solving. The complete framework is available on the NAGB web site (http://www.nagb.org/pubs/pubs.html).

Student samples

Results from the 2003 TUDA are reported for the participating districts for public school students at grades 4 and 8. The TUDA employed larger-than-usual samples within the districts, making reliable district-level data possible. The samples were also large enough to provide reliable estimates on subgroups within the districts, such as female students or Hispanic students.

Accommodations

It is NAEP's intent to assess all selected students from the target population. Beginning in 2002, SD and LEP students who require accommodations have been permitted to use them in NAEP, unless a particular accommodation would alter the skills and knowledge being tested. For example, students may not use calculators for questions not intended for calculator use. Because the representativeness of samples is ultimately a validity issue, NCES has commissioned studies of the impact of assessment accommodations on overall scores. One paper that explores the impact of two possible scenarios on NAEP is available on the web site (http://nces.ed.gov/nationsreportcard/pdf/main2002/statmeth.pdf).

Achievement-Level Results for Urban Districts

At grade 4, the percentages of students in Charlotte performing at or above *Basic*, at or above *Proficient*, and at *Advanced* were higher than the corresponding percentages in both large central cities and the nation. The percentages of fourth-graders at or above *Basic* in Houston and New York City were higher than the percentage in large central cities.

At grade 8, the percentages of students in Charlotte at or above *Proficient* and at *Advanced* were higher than the corresponding percentages in both large central cities and the nation. The percentage of eighth-graders at or above *Basic* in Boston, Houston, New York City, and San Diego was not found to be different from the percentage in large central cities.[2]

Percentile Results for 2003

Examining the performance of students at different locations (high, middle, and low) on the full student score distribution gives a more complete picture than examining the average score alone. The percentile indicates the percentage of students whose scores fell below a particular score. For example, to score above the 25th percentile nationally, a fourth-grade public school student would have had to score at least 215, compared to a fourth-grade public school student in a large central city who would have had to score at least 204.

At both grades 4 and 8, the scores for all of the districts except Charlotte were lower than those of public schools in the nation at the 25th, 50th, and 75th percentiles. At grade 4, the score at the 75th percentile for students in large central cities was lower than the score for Charlotte; not found to differ significantly from the scores for Houston, New York City, and San Diego; and higher than the scores in the remaining districts.

At grade 8, the score at the 75th percentile for students in large central cities was lower than that for Charlotte; not found to differ significantly from the scores for Boston, New York City, and San Diego; and higher than the scores in the remaining districts.

How Various Groups of Students Performed in Mathematics

In addition to reporting the overall performance of assessed students, NAEP also reports on the performance of various subgroups of students. The performance of subgroups of students on the 2003 TUDA in mathematics can be compared

[2]For Charlotte and Los Angeles, statistical comparisons restricted to just the schools in large central cities, as distinct from the whole-district comparisons used here, are available from the online Data Tool on the NAEP web site (http://nces.ed.gov/nationsreportcard/naepdata). The results of significance tests in this report for these two districts may differ slightly from those found by type of location in the online Data Tool.

with that of their counterparts in large central city public schools and the nation. In addition, this assessment serves as a baseline for future comparisons of students' performance in mathematics.

When reading these subgroup results, it is important to keep in mind that there is no simple, cause-and-effect relationship between membership in a subgroup and achievement in NAEP. A complex mix of educational and socioeconomic factors may interact to affect student performance.

Gender

Average mathematics scores by gender. Male students scored higher, on average, than female students nationally in both grades 4 and 8. At grade 4, the average scores for both male and female students in Charlotte were higher than those of their counterparts in the nation and in large central cities. The average scores for male fourth-graders in Houston, New York City, and San Diego, and the average scores for female students in New York City and San Diego were not found to differ significantly from the corresponding average scores in large central cities. Male and female fourth-graders in Atlanta, Boston, Chicago, Cleveland, the District of Columbia, and Los Angeles had lower average scores than their counterparts in large central cities and in the nation.

At grade 8, the average scores for both male and female students in Charlotte were higher than the corresponding average score for large central cities. The average scores for both male and female eighth-graders in Boston, Houston, New York City, and San Diego were not found to differ significantly from the corresponding average scores in large central cities. Both male and female eighth-graders in Atlanta, Chicago, Cleveland, the District of Columbia, and Los Angeles had lower average scores than their counterparts in large central cities and in the nation.

Average score gaps between male and female students in mathematics. In 2003, male public school students in the nation scored higher, on average, than female students by 3 points at grade 4 and by 2 points at grade 8. At grade 4, the score gap between male and female students in the District of Columbia was the reverse of the gap in the nation and large central cities (i.e., female students outscored males). The score gap between male and female students for Los Angeles was wider than that in the nation. At grade 8, there was also a reversal of the score difference for male and female students in Atlanta, Boston, and the District of Columbia (i.e., female students outscored male students).

Achievement-level results by gender. The percentages of male and female students performing below *Basic*, at or above *Basic*, at or above *Proficient*, and at *Advanced* are presented below. At grade 4, the percentages of male and female students performing at or above *Proficient* in public schools nationally were higher than the percentages for all districts except Charlotte, where the percentages at or above *Proficient* were higher than those for the nation. When compared with male and female students in large central city public schools, higher percentages of both male and female fourth-grade students in Charlotte performed at or above *Proficient*. The percentages of fourth-grade male and female students performing at or above *Proficient* in Houston, New York City, and San Diego were not found to differ significantly from the corresponding percentages at or above *Proficient* in large central cities.

At grade 8, greater percentages of male students in Charlotte performed at or above *Proficient* than in public schools nationally and in large central cities. Greater percentages of female eighth-grade students in Charlotte and New York City performed at or above *Proficient* than those in large central city public schools. The percentages of eighth-grade male and female students in Boston and San Diego and eighth-grade male students in New York City were not found to differ significantly from the percentage at or above *Proficient* in large central cities. Lower percentages of male and female students in the other TUDA districts performed at or above *Proficient* than the percentages of their counterparts in large central city public schools.

Race/ethnicity

Average mathematics scores by race/ethnicity. In each of the urban districts participating in the 2003 TUDA in mathematics, Black students and/or Hispanic students constituted the majority or the largest racial/ethnic subgroup in both grades 4 and 8. This distribution differs from that for the 2003 national assessment, in which White students constituted a majority—58 percent of the fourth-grade sample and 62 percent of the eighth-grade sample (table A). Statistically significant differences between the average scores of racial/ethnic subgroups in the districts and their counterparts in the nation and in large central cities are marked with asterisks in the table.

At grade 4, the average scale scores for White students in Charlotte, the District of Columbia, and Houston; Black students in Boston, Charlotte, Houston, and New York City; and Hispanic students in Charlotte and Houston were higher than the corresponding scores in large central cities

Table A. Average mathematics scale score results, by selected race/ethnicity, grades 4 and 8 public schools: By urban district, 2003

	Grade 4		Grade 8	
	Percentage of students	Average scale score	Percentage of students	Average scale score
White				
Nation (public)	58	243	62	287
Large central city (public)	22	243	24	285
Atlanta	10	258	5	298 *
Boston	12	234 *,**	16	289
Charlotte	41	257 *,**	42	301 *,**
Chicago	11	235 *,**	10	276 **
Cleveland	16	233 *,**	15	269 *,**
District of Columbia	4	262 *,**	3	‡
Houston	7	254 *,**	8	293 *,**
Los Angeles	11	241	10	277
New York City	15	244	16	289
San Diego	23	243	27	284
Black				
Nation (public)	17	216	17	252
Large central city (public)	34	212 **	35	247 **
Atlanta	87	211 **	93	241 *,**
Boston	46	216 *	46	251
Charlotte	46	229 *,**	46	258 *,**
Chicago	52	207 *,**	51	245 **
Cleveland	76	210 **	72	249
District of Columbia	87	202 *,**	87	240 *,**
Houston	35	221 *,**	33	259 *,**
Los Angeles	10	208 **	12	234 *,**
New York City	35	219 *	36	253 *
San Diego	17	216	16	252
Hispanic				
Nation (public)	19	221	15	258
Large central city (public)	35	220 **	32	257
Atlanta	2	‡	1	‡
Boston	33	215 *,**	28	252 **
Charlotte	7	233 *,**	6	262
Chicago	34	217 **	36	259
Cleveland	6	220	11	249 **
District of Columbia	8	205 *,**	9	246 *,**
Houston	56	226 *,**	55	261 *
Los Angeles	73	211 *,**	71	240 *,**
New York City	37	220	34	260
San Diego	42	216 *,**	38	248 *,**

The estimate rounds to zero.

‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.

* Significantly different from large central city public schools.

** Significantly different from nation (public schools).

NOTE: Significance tests were performed using unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2003 Trial Urban District Mathematics Assessment. (Adapted from the table on p. 7 of the publication from which this article is excerpted.)

(table A). The average scores for fourth-grade White students in Boston, Chicago, and Cleveland; Black students in Chicago and the District of Columbia; and Hispanic students in Boston, the District of Columbia, Los Angeles, and San Diego were lower than the corresponding scores in large central cities.

At grade 8, the average scale scores for White students in Atlanta, Charlotte, and Houston; Black students in Charlotte, Houston, and New York City; and Hispanic students in Houston were higher than the corresponding scores in large central cities (table A). The average scores for eighth-grade White students in Cleveland; Black students in Atlanta, the District of Columbia, and Los Angeles; and Hispanic students in the District of Columbia, Los Angeles, and San Diego were lower than the corresponding scores in large central cities.

Average mathematics score gaps between selected racial/ethnic subgroups. At grade 4, the gaps between White students and Black students in Boston and New York City were narrower than that in large central cities; the gaps in Atlanta and the District of Columbia were wider than the gap between White students and Black students in large central cities. The gap between White students and Hispanic students was wider in the District of Columbia than the gap in large central cities.

At grade 8, the gap between White students and Black students in Cleveland was narrower than the gap in large central cities, and the gaps in Atlanta and Charlotte were wider than the gap between White students and Black students in large central cities. The gaps between White students and Hispanic students for eighth-graders were wider in Boston and San Diego than in large central cities and wider in Charlotte than in the nation. In Chicago, the gap between White students and Hispanic students was narrower than that in large central cities and the nation.

Achievement-level results by race/ethnicity. At grade 4, the percentages of students at or above the *Proficient* level were higher for White students in Atlanta, Charlotte, the District of Columbia, and Houston; Black students in Charlotte and New York City; and Hispanic students in Charlotte than the corresponding percentage in large central cities. The percentages of fourth-grade students at or above *Proficient* for White students in Boston, Chicago, and Cleveland; Black students in Chicago, Cleveland, and the District of Columbia; and Hispanic students in Boston, the District of Columbia, Los Angeles, and San Diego were lower than the corresponding percentage in large central cities.

At grade 8, the percentages of students at or above the *Proficient* level were higher for White students in Atlanta, Boston, Charlotte, and Houston and for Black students in Charlotte and New York City than that of their counterparts in large central cities. The percentages of eighth-grade students at or above the *Proficient* level for White students in Cleveland; Black students in Atlanta, the District of Columbia, and Los Angeles; and Hispanic students in Boston, the District of Columbia, Los Angeles, and San Diego were lower than the corresponding percentage in large central cities.

Eligibility for free/reduced-price lunch

Mathematics performance by students' eligibility for free/reduced-price lunch. NAEP collects data on students' eligibility for free/reduced-price lunch as an indicator of economic status. In 2003, approximately 7 percent of fourth-graders and 6 percent of eighth-graders nationally attended schools that did not participate in the National School Lunch Program. Note that Cleveland chose to define all of its students as eligible for free or reduced-price lunch. Information regarding students' eligibility in 2003 was not available for 4 percent of fourth-graders and 6 percent of eighth-graders nationally. For information on the National School Lunch Program, see http://www.fns.usda.gov/cnd/lunch/default.htm.

At grade 4, the average scores for students eligible for free/reduced-price lunch in Charlotte, Houston, and New York City were higher than the average score for large central cities nationally. The average scores for eligible fourth-graders in Boston, Cleveland, and San Diego were not found to differ significantly from the average score for large central cities; the average scores for eligible students in Atlanta, Chicago, the District of Columbia, and Los Angeles were lower than the average score for eligible students in large central cities.

At grade 8, the average scores for students who were eligible for free/reduced-price lunch in Boston, Houston, and New York City were higher than the average score for large central cities. In Charlotte, Chicago, Cleveland, and San Diego, the average scores for eligible eighth-graders were not found to differ from that in large central cities. The average scores for eligible students in Atlanta, the District of

Columbia, and Los Angeles were lower than the average score in large central cities.

Average mathematics score gaps between students who were eligible and those who were not eligible for free/reduced-price lunch. In 2003, public school students in the nation who were not eligible for free/reduced-price lunch scored higher, on average, than eligible students by 23 points at grade 4 and by 28 points at grade 8. At grade 4, the gaps in Boston and Houston were narrower than the nation's. At grade 8, the District of Columbia, Houston, and Los Angeles had narrower score gaps than large central cities and the nation, while Charlotte had a wider gap in the average score than the gap found in large central cities and in the nation.

Mathematics performance by student-reported highest level of parents' education, grade 8

Eighth-grade students who participated in the NAEP 2003 mathematics assessments, including those in the TUDA, were asked to indicate, from among five options, the highest level of education completed by each parent. The question was not posed to fourth-graders.

The average score for students who indicated that a parent graduated from college was lower in Atlanta, Chicago, Cleveland, the District of Columbia, and Los Angeles than the average score for students in the same parental education category in public schools in large central cities. The average score for students who reported that a parent graduated from college was higher in Charlotte and San Diego than for comparable students in large central cities as a whole. Students in Boston, Houston, and New York City who reported that a parent graduated from college had an average score that was not found to differ statistically from that of their counterparts in large central cities.

Testing Status of Special-Needs Students Selected in NAEP Samples

NAEP endeavors to assess all students selected in the randomized sampling process, including SD students and students who are classified by their schools as LEP students. Some students who are sampled for participation, however, can be excluded from the sample according to carefully defined criteria. School personnel, guided by the student's Individualized Education Program (IEP), as well as by eligibility for Section 504 services, make decisions regarding inclusion in the assessment of SD students. Based on NAEP's guidelines, they also make the decision regarding inclusion of LEP students. The process includes evaluating the student's capability to participate in the assessment in English, as well as taking into consideration the number of years the student has been receiving instruction in English. The percentage of students excluded from NAEP may vary considerably across states or districts. Comparisons of achievement results across districts should be interpreted with caution if the exclusion rates vary widely.

Data source: The NAEP 2003 Trial Urban District Mathematics Assessment.

For technical information, see the NAEP web site (http://nces.ed.gov/nationsreportcard) or see the complete 2003 Mathematics Report Card:

Braswell, J.S., Dion, G.S., Daane, M.C., and Jin, Y. (forthcoming). *The NAEP 2003 Mathematics Report Card* (NCES 2004–460).

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To obtain the* Highlights *publication from which this article is excerpted (NCES 2004–458), call the ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

The complete* 2003 Mathematics Report Card *(NCES 2004–460) will be available through the ED Pubs number (877–433–7827) and at the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

NAEP Reading Highlights

The Nation's Report Card: Reading Highlights 2003

Patricia L. Donahue, Mary C. Daane, and Wendy S. Grigg

This article was excerpted from* The Nation's Report Card: Reading Highlights 2003, *a tabloid-style publication. The sample survey data are from the National Assessment of Educational Progress (NAEP) 1992, 1994, 1998, 2000, 2002, and 2003 Reading Assessments.

Introduction

Since 1969, the National Assessment of Educational Progress (NAEP) has been an ongoing nationally representative indicator of what American students know and can do in major academic subjects. Over the years, NAEP has measured students' achievement in many subjects, including reading, mathematics, science, writing, U.S. history, geography, civics, and the arts. In 2003, NAEP conducted a national and state assessment in reading at grades 4 and 8. NAEP is a project of the National Center for Education Statistics (NCES) within the Institute of Education Sciences of the U.S. Department of Education, and is overseen by the National Assessment Governing Board (NAGB).

Beginning in 2002, the NAEP national sample was obtained by aggregating the samples from each state, rather than by obtaining an independently selected national sample. As a consequence, the size of the national sample increased, and smaller differences between years or between types of students were found to be statistically significant than would have been detected in previous assessments. In keeping with past practice, all statistically significant differences are indicated in the current report.

The results presented in this report distinguish between two different reporting samples that reflect a change in administration procedures. The more recent results are based on administration procedures in which testing accommodations (e.g., extended time, small group testing) were permitted for students with disabilities (SD) and limited-English-proficient (LEP) students. Accommodations were not permitted in 1992 or 1994. Comparisons between results from 2003 and those from assessment years in which both types of administration procedures were used (in 1998 and 2000 at grade 4 and in 1998 at grade 8) are discussed based on the results when accommodations were permitted, even though significant differences in results when accommodations were not permitted may be noted in the figures and tables.

Achievement Levels Provide Standards for Student Performance

Achievement levels are performance standards set by NAGB to provide a context for interpreting student performance on NAEP. These performance standards, based on recommendations from broadly representative panels of educators and members of the public, are used to report what students should know and be able to do at the *Basic, Proficient,* and *Advanced* levels of performance in each subject area and at each grade assessed.*

The minimum scale scores for achievement levels are as follows:

	Grade 4	Grade 8
Basic	208	243
Proficient	238	281
Advanced	268	323

As provided by law, NCES, upon review of a congressionally mandated evaluation of NAEP, has determined that achievement levels are to be used on a trial basis and should be interpreted and used with caution. However, both NCES and NAGB believe that these performance standards are useful for understanding trends in student achievement. NAEP achievement levels have been widely used by national and state officials.

NAEP 2003 Reading Assessment Design

Assessment framework

The NAEP reading framework, which defines the content for the 1992–2003 assessments, was developed through a comprehensive national consultative process and adopted by NAGB. The reading framework is organized along two dimensions, the *context* for reading and the *aspect* of reading. The context dimension is divided into three areas that characterize the purposes for reading: reading for literary experience, reading for information, and reading to perform a task. All three contexts are assessed at grade 8, but reading to perform a task is not assessed at grade 4. The aspects of reading, which define the types of comprehension questions used in the assessments, include forming a

*The NAEP achievement levels are as follows: *Basic* denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade. *Proficient* represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter. *Advanced* signifies superior performance. Detailed descriptions of the NAEP reading achievement levels can be found on the NAGB web site (http://www.nagb.org/pubs/pubs.html).

general understanding, developing interpretation, making reader/text connections, and examining content and structure. The complete framework is available on the NAGB web site (http://www.nagb.org/pubs/pubs.html).

Student samples

Results from the 2003 reading assessment are reported for the nation and states at grades 4 and 8. The national results are based on a representative sample of students in both public schools and nonpublic schools, while the state results are based only on public school students.

Accommodations

It is NAEP's intent to assess all selected students from the target population. Before 1998, no testing accommodations were provided to SD and LEP students who participated in the NAEP reading assessments. In 1998 and 2000 (at fourth grade only), NAEP was administered to two reporting samples—"accommodations not permitted" and "accommodations permitted." Beginning in 2002, the NAEP reading assessment adopted the new "accommodations permitted" procedure as its only administration procedure, and thus had only one reporting sample as in reading assessment years prior to 1998.

Because the representativeness of samples is ultimately a validity issue, NCES has commissioned studies of the impact of assessment accommodations on overall scores. One paper that explores the impact of two possible scenarios on NAEP is available on the NAEP web site (http://nces.ed.gov/nationsreportcard/pdf/main2002/statmeth.pdf).

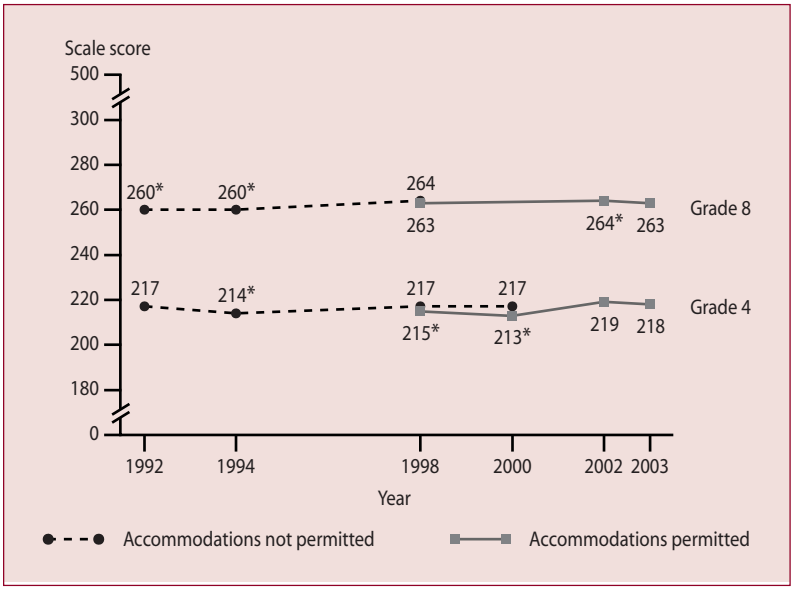
Average Fourth- and Eighth-Grade Reading Scores Show Little Change

No significant change was detected between 2002 and 2003 in the average score for fourth-graders (figure A). The average fourth-grade score in 2003 was not found to differ significantly from that in 1992. The average reading score for eighth-graders decreased by 1 point between 2002 and 2003; however, the score in 2003 was higher than that in 1992. (Differences are discussed in this report only if they were found to be statistically significant.)

How Well Did Students Perform in 2003?

Thirty-one percent of fourth-graders and 32 percent of eighth-graders performed at or above the *Proficient* level in 2003. The percentage of students performing at or above

Figure A. Average reading scores, grades 4 and 8: 1992–2003



*Significantly different from 2003.

NOTE: Average reading scores are reported on a 0–500 scale. Data were not collected at grade 8 in 2000. In addition to allowing for accommodations, the accommodations-permitted results at grade 4 (1998–2003) differ slightly from previous years' results, and from previously reported results for 1998 and 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, 1998, 2000, 2002, and 2003 Reading Assessments.
(Originally published as the first figure on p. 1 of the publication from which this article is excerpted.)

the *Basic* level in 2003 was 63 percent at grade 4 and 74 percent at grade 8.

Higher Percentages of Fourth- and Eighth-Graders Performed at or Above *Proficient* in 2003 Compared to 1992

The percentages of students performing at or above the *Proficient* level were higher in 2003 than in 1992 at both grades 4 and 8. No significant change was detected in the percentage of fourth-graders at or above *Basic* from 2002 to 2003, and the percentage of fourth-graders at or above *Basic* in 2003 was not found to differ significantly from that in 1992. The percentage of eighth-graders at or above *Basic* decreased by 1 point between 2002 and 2003, but was higher in 2003 than in 1992.

Trends in Percentiles Differ by Grade Level

Looking at changes in scores for students at lower, middle, and higher performance levels gives a more complete picture of student progress. An examination of scores at different percentiles on the 0–500 reading scale at each grade indicates whether or not the changes seen in the national average score results are reflected in the performance of lower-, middle-, and higher-performing students.

The percentile indicates the percentage of students whose scores fell below a particular score. For example, 25 percent of assessed students' scores fell below the 25th percentile score and 75 percent fell below the 75th percentile score.

There was a 1-point increase in the fourth-grade reading score at the 90th percentile between 2002 and 2003, and the score in 2003 was not found to be significantly different from that in 1992. The score at the 75th percentile for fourth-graders showed no significant change since 2002, but was higher in 2003 than in 1992.

There were decreases in eighth-grade scores at the 10th and 25th percentiles from 2002 to 2003. Scores at the 10th, 25th, 50th, and 75th percentiles were higher in 2003 than in 1992.

How States Performed in Reading

In addition to national results, the 2003 reading assessment collected performance data for fourth- and eighth-graders who attended public schools in states and other jurisdictions that participated. In 2003, all 50 states and 3 other jurisdictions participated at grades 4 and 8.

State average score results

Among the 46 states and jurisdictions that participated in both the 2002 and 2003 fourth-grade assessments, 1 showed an increase in the average reading score and 1 showed a decrease. Of the 42 states and jurisdictions that participated in both the 1992 and 2003 fourth-grade assessments, 13 showed increases and 5 showed declines in average scores.

At grade 8, of 44 states and jurisdictions that participated in both 2002 and 2003, 1 showed a gain and 6 showed declines in average scores. Of the 39 states and jurisdictions that participated in both 1998 (when accommodations were permitted) and 2003, 8 showed increases and 7 showed declines in average scores.

State versus national comparisons

In 2003, 28 of the 53 states and other jurisdictions that participated at grade 4 had average scores that were higher than the national average, 11 had scores that were not found to differ significantly from the national average, and 14 had average scores that were lower than the average score for the nation.

Of the 53 states and other jurisdictions that participated in 2003 at grade 8, 31 had average scores that were higher than the national average, 6 had average scores that were not found to differ significantly from the national average, and 16 had average scores that were lower than the national average score.

State achievement-level results

At grade 4, 24 states and other jurisdictions had higher percentages of students at or above *Proficient* than the nation, 16 had percentages that were not found to be statistically different from the nation, and 13 had percentages that were lower than the nation.

At grade 8, 25 states and other jurisdictions had higher percentages of students at or above *Proficient* than the nation, 11 had percentages that were not found to be significantly different from the nation, and 17 had percentages that were lower than the nation.

Percentage of students at or above *Proficient* across years by state

Of the 46 states and other jurisdictions that participated in both the 2002 and 2003 fourth-grade reading assessments, 1 showed an increase and 1 showed a decrease in the percentage of students at or above *Proficient*. The percentage of

fourth-graders at or above *Proficient* increased in 17 of the 42 states and jurisdictions that participated in both the 1992 and 2003 assessments, and none showed a decline since 1992.

Of the 44 states and jurisdictions that participated in the 2002 and 2003 eighth-grade reading assessments, 1 showed an increase and 2 showed declines in the percentage of students at or above *Proficient*. Between 1998 (when accommodations were permitted) and 2003, the percentage of eighth-graders performing at or above *Proficient* increased in 5 of the 39 states and jurisdictions that participated in both years, and 1 showed a decline.

How Various Groups of Students Performed in Reading

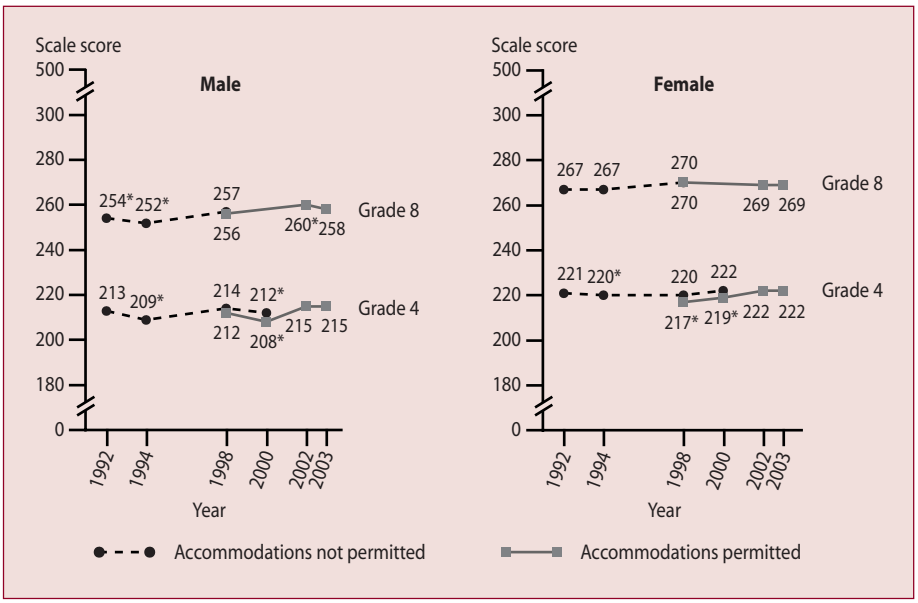
In addition to reporting on overall students' performance on its assessments, NAEP also reports on the performance of various subgroups of students. The reading performance of subgroups of students in 2003 indicates whether they have progressed since earlier assessments and allows for comparisons with the performance of other subgroups in 2003.

When reading these subgroup results, it is important to keep in mind that there is no simple, cause-and-effect relationship between membership in a subgroup and achievement in NAEP. A complex mix of educational and socioeconomic factors may interact to affect student performance.

Gender

Average reading scores by gender. No statistically significant changes were detected in average scores of male or female fourth-graders between 2002 and 2003, or between 1992 and 2003. The average reading score for male eighth-graders declined 2 points between 2002 and 2003; the average score in 2003 was higher than in 1992 (figure B). The average score for female eighth-graders in 2003 was not

Figure B. Average reading scale scores, by gender, grades 4 and 8: 1992–2003



*Significantly different from 2003.

NOTE: Data were not collected at grade 8 in 2000. In addition to allowing for accommodations, the accommodations-permitted results at grade 4 (1998–2003) differ slightly from previous years' results, and from previously reported results for 1998 and 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, 1998, 2000, 2002, and 2003 Reading Assessments. (Originally published as the first figure on p. 11 of the publication from which this article is excerpted.)

found to differ significantly from the scores in any of the previous assessment years. Female students scored higher on average than male students at both grades 4 and 8.

Average reading score gaps between males and females. In 2003, female students scored higher on average than male students by 7 points at grade 4 and by 11 points at grade 8. No statistically significant change was detected in the gender gaps between 2002 and 2003, and the fourth- and eighth-grade gaps observed in 2003 were not found to be significantly different from those in 1992.

Achievement-level results by gender. At grade 4, no significant change was detected from 2002 to 2003 in the percentages of male or female students performing at or above the *Basic* and *Proficient* levels, and the percentages in 2003 were not found to differ significantly from those in 1992 for either subgroup.

At grade 8, the percentage of male students at or above *Proficient* was higher in 2003 than in 1992. There was no significant difference detected in the percentage of female eighth-graders at or above *Proficient* in 2003 in comparison to any of the previous assessments. The percentages of both male and female students at or above *Basic* declined from 2002 to 2003, but both percentages were higher in 2003 than in 1992.

Race/ethnicity

Average reading scores by race/ethnicity. There were no significant changes detected since 2002 in the average scores for any of the racial/ethnic groups at either grade 4 or grade 8. The average scores for White, Black, and Asian/Pacific Islander fourth-graders were higher in 2003 than in 1992. The average scores for White, Black, and Hispanic eighth-graders were also higher in 2003 than in 1992 (figure C). The apparent decrease in the average score for American Indian/Alaska Native students in 2003 was not found to be statistically significant at either grade 4 or grade 8.

In 2003, White students and Asian/Pacific Islander students outperformed Black, Hispanic, and American Indian/Alaska Native students on average at both grades 4 and 8. At grade 4, White students also scored higher on average than Asian/Pacific Islander students, and Hispanic students scored higher on average than Black students. There were no significant differences detected at grade 8 between the average scores for White and Asian/Pacific Islander students or between the average scores for Hispanic and Black students.

Average reading score gaps between selected racial/ethnic subgroups. At both grades 4 and 8, the average score gaps between White and Black students and between White and Hispanic students in 2003 were not found to differ significantly from those in 2002 or 1992.

Achievement-level results by race/ethnicity. At both grades 4 and 8, there were no significant changes detected in the percentages of students at or above the *Basic* and *Proficient* levels within any of the racial/ethnic subgroups since 2002. At grade 4, the percentages of White, Black, and Asian/Pacific Islander students at or above *Proficient* were higher in 2003 than in 1992. Also, the percentages of White and Black students at or above *Basic* were higher in 2003 compared to 1992. No significant changes were detected in the percentages of Hispanic students at or above *Basic* or *Proficient* in 2003 compared to 1992. At grade 8, the percentages of White students and Black students at or above the *Basic* and *Proficient* levels were higher in 2003 than in 1992. A higher percentage of Hispanic students scored at or above *Basic* in 2003 than in 1992.

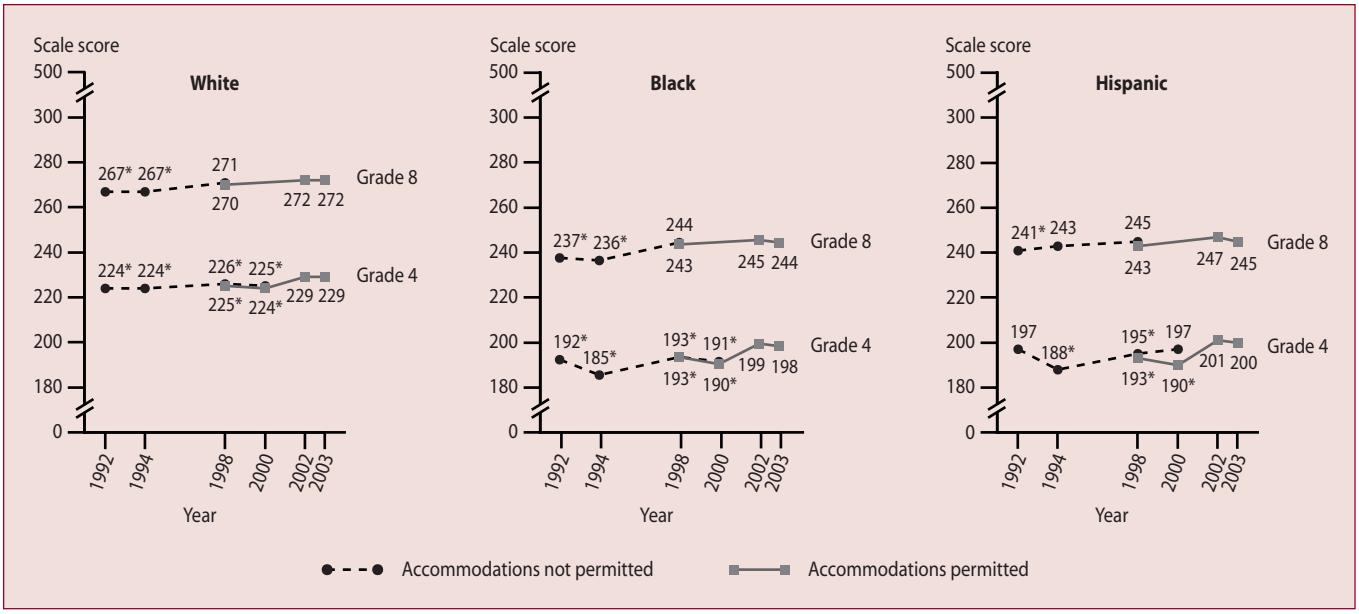
Eligibility for free/reduced-price school lunch

Average reading scores by students' eligibility for free/reduced-price school lunch. NAEP collects data on students' eligibility for free/reduced-price lunch as an indicator of family economic status. Eligibility for free and reduced-price lunches is determined by students' family income in relation to the federally established poverty level. Free lunch qualification is set at 130 percent of the poverty level, and reduced-price lunch qualification is set between 130 and 185 percent of the poverty level. Information regarding students' eligibility in 2003 was not available for 10 percent of fourth-graders and 11 percent of eighth-graders, either because their school did not participate in the National School Lunch Program or for other reasons.

At grade 4, average scores were higher in 2003 than in 1998 for students who were eligible for free/reduced-price lunch and for students who were not eligible, but showed no significant change between 2002 and 2003.

At grade 8, the average score for students who were eligible for free/reduced-price lunch showed a decrease between 2002 and 2003. Average scores in 2003 were not found to differ significantly from those in 1998 for students who were eligible for free/reduced-price lunch or for students who were not eligible.

Figure C. Average reading scale scores, by selected race/ethnicity, grades 4 and 8: 1992–2003



*Significantly different from 2003.

NOTE: Data were not collected at grade 8 in 2000. In addition to allowing for accommodations, the accommodations-permitted results at grade 4 (1998–2003) differ slightly from previous years' results, and from previously reported results for 1998 and 2000, due to changes in sample weighting procedures. Significance tests were performed using unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1992, 1994, 1998, 2000, 2002, and 2003 Reading Assessments. (Adapted from the first figure on p. 13 of the publication from which this article is excerpted.)

Results broken down by students' eligibility for free lunch and eligibility for reduced-price lunch are available on the NAEP web site (http://nces.ed.gov/nationsreportcard/naepdata). The average reading scores for fourth- and eighth-graders who were eligible for free lunch were lower than the scores for students who were eligible for reduced-price lunch, and both were lower than the scores for students who were not eligible.

Achievement-level results by students' eligibility for free/reduced-price lunch. The percentages of fourth-graders at or above *Basic* were higher in 2003 than 1998 for students who were eligible and for students who were not eligible for free/reduced-price lunch. For those students who were eligible, the percentage at or above *Proficient* was higher in 2003 than in 1998.

At grade 8, the percentage of students at or above *Basic* decreased between 2002 and 2003 for students who were eligible, but the percentage at or above *Basic* in 2003 was not found to differ significantly from that in 1998.

Average reading score gaps between students who were eligible and those who were not eligible for free/reduced-price lunch. At grade 4, the average score gap between students who were eligible and students who were not eligible for free/reduced-price lunch in 2003 was not found to be significantly different from the gap in either 1998 or 2002. At grade 8, the gap in 2003 was larger than in 2002 but was not found to be significantly different from 1998.

Data source: The NAEP 1992, 1994, 1998, 2000, 2002, and 2003 Reading Assessments.

For technical information, see the NAEP web site (http://nces.ed.gov/nationsreportcard) or see the complete 2003 Reading Report Card:

Donahue, P.L., Daane, M.C., and Jin, Y. (forthcoming). *The NAEP 2003 Reading Report Card* (NCES 2004–461).

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To obtain the* Highlights *publication from which this article is excerpted (NCES 2004–452), call the ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

The complete* 2003 Reading Report Card *(NCES 2004–461) will be available through the ED Pubs number (877–433–7827) and at the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

NAEP TUDA Reading

The Nation's Report Card: Trial Urban District Assessment, Reading Highlights 2003

Anthony D. Lutkus and Arlene W. Weiner

This article was excerpted from* The Nation's Report Card: Trial Urban District Assessment, Reading Highlights 2003*, a tabloid-style publication. The sample survey data are from the National Assessment of Educational Progress (NAEP) 2002 and 2003 Trial Urban District Reading Assessments.

Introduction

Since 1969, the National Assessment of Educational Progress (NAEP) has been an ongoing nationally representative indicator of what American students know and can do in major academic subjects. Over the years, NAEP has measured students' achievement in many subjects, including reading, mathematics, science, writing, U.S. history, geography, civics, and the arts. In 2003, NAEP conducted a national and state assessment in reading at grades 4 and 8. NAEP is a project of the National Center for Education Statistics (NCES) within the Institute of Education Sciences (IES) of the U.S. Department of Education, and is overseen by the National Assessment Governing Board (NAGB).

In 2001, after discussion among NCES, NAGB, and the Council of the Great City Schools, Congress appropriated funds for a district-level assessment on a trial basis, similar to the trial for state assessments that began in 1990, and NAGB passed a resolution approving the selection of urban districts for participation in the Trial Urban District Assessment (TUDA), a special project within NAEP.

Representatives of the Council of the Great City Schools worked with the staff of NAGB to identify districts for the trial assessment. Districts were selected that permitted testing of the feasibility of conducting NAEP over a range of characteristics, such as district size, minority concentrations, federal program participation, socioeconomic conditions, and percentages of students with disabilities (SD) and limited-English-proficient (LEP) students.

By undertaking the TUDA, NAEP continues a tradition of extending its service to education, while preserving the rigorous sampling, scoring, and reporting procedures that have characterized prior NAEP assessments at both the national and state levels.

In 2002, five urban school districts participated in NAEP's first TUDA in reading and writing. In 2003, nine urban districts (including the original five) participated in the TUDA in reading and mathematics at grades 4 and 8: Atlanta City, Boston School District, Charlotte-Mecklenburg Schools, City of Chicago School District 299, Cleveland Municipal School District, Houston Independent School District, Los Angeles Unified, New York City Public Schools, and San Diego City Unified. Only public school students were sampled in the TUDA. Results for the District of Columbia public schools, which normally participate in NAEP's state assessments, are also reported.

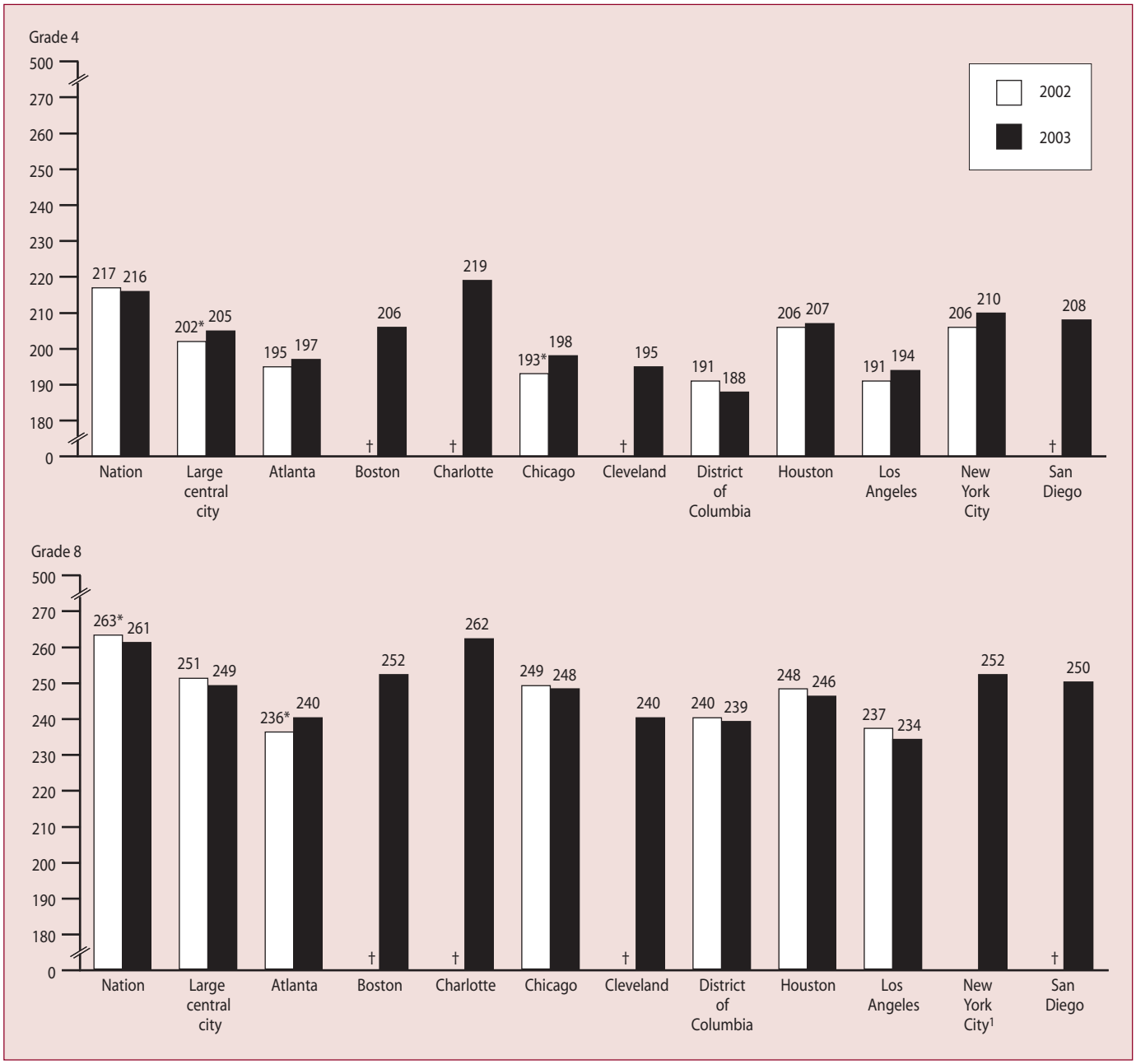
Average reading scores are reported on a 0–500 scale. Figure A shows the average scores at both grades for the participating districts. The average scores for public school students in the nation and for public school students attending schools located in large central cities are also shown for comparison. "Urban districts" refers to the 10 districts reported in this trial study. Eight of the 10 urban districts consist entirely of schools in cities with a population of 250,000 or more (i.e., large central cities as defined by NCES); two of them (Charlotte and Los Angeles) consist primarily of schools in large central cities, but also have from one-quarter to one-third of their fourth- and eighth-grade students enrolled in surrounding urban fringe or rural areas. All of the data for both districts were used to compare with data from large central cities and the nation.

Average reading scores for fourth-graders in Chicago and for eighth-graders in Atlanta increased between the 2002 and 2003 assessments. Among public school students in the nation, the average reading score at grade 4 did not change significantly from 2002 to 2003, and at grade 8 the average score decreased. In public schools in large central cities, the average score at grade 4 increased from 2002 to 2003. At both grades 4 and 8, the average score for each participating district was lower than the nation, except in Charlotte, where the average scores at grades 4 and 8 were not found to differ significantly from those of the nation.

Achievement Levels Provide Standards for Student Performance

Achievement levels are performance standards set by NAGB to provide a context for interpreting student performance on NAEP. These performance standards, based on recommendations from broadly representative panels of educators and members of the public, are used to report what students should know and be able to do at the *Basic, Proficient,* and

Figure A. Average NAEP reading scores, grade 4 and grade 8: By urban district, 2002 and 2003



*Significantly different from 2003.

† Not applicable. Did not participate in 2002.

[1]Data for grade 8 for New York City were not published in 2002 because the district did not meet the required 70 percent school participation rate.

NOTE: NAEP sample sizes increased since 2002 compared to previous years, resulting in smaller detectable differences than in previous assessments. Significance tests were performed using unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2002 and 2003 Trial Urban District Reading Assessments. (Originally published as the figure on p.1 of the publication from which this article is excerpted.)

Advanced levels of performance in each subject area and at each grade assessed.[1]

The minimum scale scores for achievement levels are as follows:

	Grade 4	Grade 8
Basic	208	243
Proficient	238	281
Advanced	268	323

As provided by law, NCES, upon review of a congressionally mandated evaluation of NAEP, has determined that achievement levels are to be used on a trial basis and should be interpreted and used with caution. However, both NCES and NAGB believe that these performance standards are useful for understanding trends in student achievement. NAEP achievement levels have been widely used by national and state officials.

NAEP 2003 Reading Assessment Design

Assessment framework

The NAEP reading framework, which defines the content for the 2003 assessment, was developed through a comprehensive national consultative process and adopted by NAGB. The reading framework is organized along two dimensions, the *context for reading* and the *aspect of reading*. The context for reading dimension is divided into three areas that characterize the purposes for reading: reading for literary experience, reading for information, and reading to perform a task. Reading to perform a task is not assessed at grade 4, but all three contexts are assessed at grade 8. The aspects of reading, which define the types of comprehension questions used in the assessments, include forming a general understanding, developing an interpretation, making reader/text connections, and examining content and structure. Each student read one or two passages and responded to approximately 13–20 questions in 50 minutes. The complete framework is available on the NAGB web site (http://www.nagb.org/pubs/pubs.html).

Student samples

Results from the 2002 and 2003 TUDA are reported for the participating districts for public school students at grades 4 and 8. The TUDA employed larger-than-usual samples within the districts, making reliable district-level data possible. The samples were also large enough to provide reliable estimates on subgroups within the districts, such as female students or Hispanic students. Data for grade 8 in New York City were not published for 2002 because the district did not meet the required 70 percent school participation rate.

Accommodations

It is NAEP's intent to assess all selected students from the target population. Beginning in 2002, SD students and LEP students who require accommodations have been permitted to use them in NAEP, unless a particular accommodation would alter the skills and knowledge being tested. For example, in a reading assessment, NAEP does not permit the reading passages to be read aloud. Because the representativeness of samples is ultimately a validity issue, NCES has commissioned studies of the impact of assessment accommodations on overall scores. One paper that explores the impact of two possible scenarios on NAEP is available on the NAEP web site (http://nces.ed.gov/nationsreportcard/pdf/main2002/statmeth.pdf).

Achievement-Level Results for Urban Districts

Among the districts that participated in both 2002 and 2003, the percentages of students at or above *Proficient* were found to be significantly higher in 2003 for students in Chicago at grade 4, and for students in Atlanta at grade 8. In all other participating districts, the percentages at or above *Proficient* were not found to differ from 2002 to 2003. The percentages at or above *Proficient* for public school students nationally were not found to differ significantly in 2002 from the corresponding percentages in 2003 at either grade 4 or grade 8. At grade 4, the percentage of students at or above *Proficient* in large central city public schools was higher in 2003 than in 2002. At grades 4 and 8, the percentage of students at or above *Proficient* in all urban districts was lower than that for the nation, except for Charlotte where the percentage of students at or above *Proficient* was not significantly different from that of the nation.[2]

Percentile Results From 2002 to 2003

Looking at changes in scores (for districts with 2 years of participation) for students at higher, middle, and lower

[1]The NAEP achievement levels are as follows. *Basic* denotes partial mastery of prerequisite knowledge and skills that are fundamental for proficient work at each grade. *Proficient* represents solid academic performance for each grade assessed. Students reaching this level have demonstrated competency over challenging subject matter, including subject-matter knowledge, application of such knowledge to real-world situations, and analytical skills appropriate to the subject matter. *Advanced* signifies superior performance. Detailed descriptions of the NAEP reading achievement levels can be found on the NAGB web site (http://www.nagb.org/pubs/pubs.html).

[2]For Charlotte and Los Angeles, statistical comparisons restricted to just the schools in large central cities, as distinct from the whole-district comparisons used here, are available from the online Data Tool on the NAEP web site (http://nces.ed.gov/nationsreportcard/naepdata). The results of significance tests in this report for these two districts may differ slightly from those found by type of location in the online Data Tool.

performance levels gives a more complete picture of student progress. An examination of scores at different percentiles on the 0–500 reading scale at each grade indicates whether changes in average score results are reflected in the performance of lower-, middle-, and higher-performing students. Comparing scores at percentiles also shows differences in performance across levels within 1 year. The percentile indicates the percentage of students whose scores fell below a particular score. For example, in 2003, a fourth-grade public school student would have had to score at least 193 to score above the 25th percentile in the nation, but would have had to score only 179 or better to score above the 25th percentile compared with students in large central cities.

At grade 4, the national and large central city public school scores at the 25th, 50th, and 75th percentiles were not found to differ significantly from 2002 to 2003; the scores for the 50th and 75th percentiles for students in Chicago were higher in 2003 than in 2002. The score for students in the District of Columbia at the 25th percentile was lower in 2003 than in 2002. At grade 8, scores for public school students in the nation were lower at the 25th and the 50th percentiles in 2003 than in 2002; the score for students in Houston at the 75th percentile was also lower in 2003 than in 2002. Scores at the 25th, 50th, and 75th percentiles for students in large central cities were not found to differ significantly between 2002 and 2003 at grade 8.

How Various Groups of Students Performed in Reading

In addition to reporting the overall performance of assessed students, NAEP also reports on the performance of various subgroups of students. Five of the nine districts, as well as the District of Columbia, were assessed both in 2002 and 2003, so that comparisons over time will indicate whether the subgroup has progressed. Additionally, subgroups can be compared to each other within an assessment year.

When reading these subgroup results, it is important to keep in mind that there is no simple, cause-and-effect relationship between membership in a subgroup and achievement in NAEP. A complex mix of educational and socioeconomic factors may interact to affect student performance.

Gender

Average reading scores by gender. Table A presents the percentages of assessed male and female students and average reading scores in the 2 assessment years, where applicable. In 2003, at grade 4, female students scored higher, on average, than male students in every district (except Atlanta and Houston), in the nation, and in large central cities. Where data were available in both assessment years, there were no significant differences detected in any district for male students or female students between their respective average score in 2002 and their average score in 2003.

At grade 8, while the average score for male students in public schools in the nation declined, the average scores for both male and female students in each of the districts and in large central cities in 2003 were not found to differ significantly from those in 2002 (table A). Female eighth-graders scored higher, on average, than male eighth-graders in the 10 urban districts, in large central cities, and in the nation.

Average reading score gaps between female and male students. At grade 4, the score gaps between female and male students in Charlotte and the District of Columbia were wider than the gaps in the nation and large central cities. At grade 8, the score gap was wider in the District of Columbia than in public schools in large central cities and narrower in Chicago than in the nation. In 2003, female public school students in the nation scored higher, on average, than male students by 8 points at grade 4 and by 11 points at grade 8.

Achievement-level results by gender. In 2003 at grade 4, Charlotte had a higher percentage of female students performing at or above *Proficient* than the nation, but no statistically significant difference was found between the percentage of male students at or above *Proficient* in Charlotte and those at or above *Proficient* in the nation. Compared to the nation, 9 of the 10 urban districts had lower percentages of both female and male fourth-grade students who performed at or above *Proficient*. Compared to public schools in large central cities, Charlotte had higher percentages of both male and female fourth-grade students who performed at or above *Proficient*. In New York City, the percentage of female fourth-grade students performing at or above *Proficient* was also higher than that recorded in large central cities.

At grade 8, greater percentages of both male and female students in Charlotte performed at or above *Proficient* than their peers in public schools in large central cities. The percentages of eighth-grade male students at or above *Proficient* in Boston, Chicago, New York City, and San Diego and of female eighth-graders in Boston and San Diego were

Table A. Average reading scale score results, by gender, grades 4 and 8 public schools: By urban district, 2002 and 2003

	Grade 4				Grade 8			
	Percentage of students		Average scale score		Percentage of students		Average scale score	
	2002	2003	2002	2003	2002	2003	2002	2003
Male								
Nation (public)	51	51	214	213	50	50	258 ***	256
Large central city (public)	50	50	199	201 **	50	50	245	244 **
Atlanta	47	50	191	193 *,**	49	47	231	234 *,**
Boston	—	53	—	201 **	—	47	—	246 **
Charlotte	—	50	—	211 *	—	50	—	257 *
Chicago	50	49	189	194 *,**	50	46	245	245 **
Cleveland	—	50	—	191 *,**	—	48	—	235 *,**
District of Columbia	49	49	185	182 *,**	47	48	235	231 *,**
Houston	51	49	204	205 **	51	49	243	241 *,**
Los Angeles	51	51	188	189 *,**	53	52	233	229 *,**
New York City	50	50	199	204 **	—	47	—	246 **
San Diego	—	51	—	205 **	—	48	—	244 **
Female								
Nation (public)	49	49	220	220	50	50	267	267
Large central city (public)	50	50	206	209 **	50	50	256	254 **
Atlanta	53	50	200	200 *,**	51	53	240	245 *,**
Boston	—	47	—	211 **	—	53	—	258 **
Charlotte	—	50	—	227 *,**	—	50	—	267 *
Chicago	50	51	198	201 *,**	50	54	254	251 **
Cleveland	—	50	—	200 *,**	—	52	—	246 *,**
District of Columbia	51	51	196	195 *,**	53	52	245	245 *,**
Houston	49	51	208	208 **	49	51	253	251 **
Los Angeles	49	49	194	198 *,**	47	48	241	240 *,**
New York City	50	50	213	216 *,**	—	53	—	257 **
San Diego	—	49	—	211 **	—	52	—	256 **

— Not available.

* Significantly different from large central city public schools.

** Significantly different from nation (public schools).

*** Significantly different from 2003.

NOTE: NAEP sample sizes increased since 2002 compared to previous years, resulting in smaller detectable differences than in previous assessments. Detail may not sum to totals because of rounding. Significance tests were performed using unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2002 and 2003 Trial Urban District Reading Assessments. (Originally published as the first table on p. 5 of the publication from which this article is excerpted.)

not found to differ significantly from the percentages of their counterparts at or above *Proficient* in large central cities.

At both grades 4 and 8, the percentages of male and female students performing at or above *Proficient* were not found to differ statistically in 2003 from the percentages in 2002 in the nation, in large central cities, or in any of the districts that participated in both assessments.

Race/ethnicity

Average reading scores by race/ethnicity. In each of the urban districts participating in the 2003 TUDA, Black students and/or Hispanic students constituted the majority or the largest racial/ethnic subgroup in both grades 4 and 8. This distribution differed from that for the 2003 national assessment, in which White students constituted a majority—59 percent of the fourth-grade sample and 61 percent of the eighth-grade sample (table B).

At grade 4, Black students in Chicago scored higher on average in 2003 than in 2002, and Black students in the District of Columbia scored lower in 2003 than their counterparts in 2002 (table B). No significant difference was found between the national or large central city overall scores in 2003 and those for 2002 for any racial/ethnic subgroup.

Table B. Average reading scale score results, by selected race/ethnicity, grades 4 and 8 public schools: By urban district, 2002 and 2003

	Grade 4				Grade 8			
	Percentage of students		Average scale score		Percentage of students		Average scale score	
	2002	2003	2002	2003	2002	2003	2002	2003
White								
Nation (public)	60	59	227	227	64	61	271	270
Large central city (public)	22	23	224	226	26	23	270	268 **
Atlanta	6	10	250	250 *,**	5	5	275	‡
Boston	—	11	—	225	—	16	—	273
Charlotte	—	42	—	237 *,**	—	46	—	278 *,**
Chicago	10	10	221	224	11	10	266	265
Cleveland	—	16	—	208 *,**	—	16	—	250 *,**
District of Columbia	3	5	248	254 *,**	3	3	‡	‡
Houston	10	10	233	235 *,**	8	8	279	270
Los Angeles	9	10	223	217 *,**	10	10	264	266
New York City	15	14	226	231	—	13	—	270
San Diego	—	22	—	231	—	24	—	269
Black								
Nation (public)	18	17	198	197	15	17	244	244
Large central city (public)	38	35	192	193 **	33	36	241	241 **
Atlanta	90	87	192	191 **	92	91	233 ***	237 *,**
Boston	—	49	—	202 *	—	47	—	245 *
Charlotte	—	45	—	205 *,**	—	43	—	247 *,**
Chicago	48	53	185 ***	193 **	50	52	245	243
Cleveland	—	73	—	191 **	—	78	—	238 **
District of Columbia	88	85	188 ***	184 *,**	88	88	238	236 *,**
Houston	37	40	200	201 *,**	31	34	247	244
Los Angeles	12	12	186	187 **	14	13	236	233 *,**
New York City	36	37	197	201 *	—	38	—	245 *
San Diego	—	18	—	196	—	16	—	236 **
Hispanic								
Nation (public)	17	18	199	199	15	15	245	244
Large central city (public)	34	33	197	198	31	31	243	241
Atlanta	3	2	‡	‡	2	2	‡	‡
Boston	—	30	—	201	—	25	—	245
Charlotte	—	8	—	202	—	6	—	244
Chicago	37	35	193	196	35	34	248	249 *,**
Cleveland	—	7	—	201	—	5	—	‡
District of Columbia	7	9	193	187 *,**	7	8	240	240
Houston	50	47	203	203 *	58	56	243	242
Los Angeles	72	72	185	189 *,**	67	69	230	228 *,**
New York City	40	37	201	205 *,**	—	33	—	247
San Diego	—	43	—	195 **	—	37	—	238 **

— Not available.

‡ Reporting standards not met. Sample size is insufficient to permit a reliable estimate.

* Significantly different from large central city public schools.

** Significantly different from nation (public schools).

*** Significantly different from 2003.

NOTE: NAEP sample sizes increased since 2002 compared to previous years, resulting in smaller detectable differences than in previous assessments. Significance tests were performed using unrounded numbers.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2002 and 2003 Trial Urban District Reading Assessments. (Adapted from the table on p. 7 of the publication from which this article is excerpted.)

At grade 8, there was also no average score difference detected between 2002 and 2003 for any subgroup in the nation, in large central cities, or in the participating urban districts, except that Black eighth-graders in Atlanta scored higher on average in 2003 than in 2002 (table B). Statistically significant differences between racial/ethnic subgroups in the districts and their counterparts in the nation and in large central cities within the 2003 assessments are marked with asterisks in table B, as are statistically significant differences between 2002 and 2003.

Average reading score gaps between selected racial/ethnic subgroups. At grade 4, the gaps between the average scores of White and Black students in Cleveland and Boston were narrower than the corresponding gap in large central cities. The gap between average scores of White and Hispanic students in Cleveland was also narrower than that in large central cities. The gaps between the average scores for White and Black students in Atlanta and the District of Columbia were wider than the corresponding gaps in large central cities and the nation. Similarly, the District of Columbia and San Diego had wider gaps between White students' and Hispanic students' average scores than the gap found in the nation.

At grade 8, there was a narrower gap in Cleveland between White and Black students' scores and a narrower gap in Chicago between White and Hispanic students' scores than the corresponding gaps in large central cities and the nation. Los Angeles had a wider gap between White students' and Hispanic students' average scores than the corresponding gaps found in large central cities and the nation.

Achievement-level results by race/ethnicity. At grade 4, no significant differences were detected between 2002 and 2003 in the percentages of subgroups of students at or above *Proficient* in public schools in the nation, in large central cities, or in any of the participating urban districts. At grade 8, there were also no significant differences detected between 2002 and 2003 in the percentages of subgroups of students performing at or above *Proficient,* except that Black eighth-grade students in Atlanta had a higher percentage at or above *Proficient* in 2003 than did their counterparts in 2002.

Eligibility for free/reduced-price lunch

Reading performance by students' eligibility for free/reduced-price lunch. NAEP collects data on students' eligibility for free/reduced-price lunch as an indicator of economic status. In 2003, approximately 7 percent of fourth-graders and 6 percent of eighth-graders nationally attended schools that did not participate in the National School Lunch Program. Information regarding students' eligibility in 2003 was not available for 2 percent or less of fourth- and eighth-graders. For information on the National School Lunch Program, see http://www.fns.usda.gov/cnd/lunch/default.htm.

At grade 4, no statistically significant differences from 2002 to 2003 were detected between the average scores or the percentages of students at or above *Proficient* in the nation or large central cities for students who were eligible for free/reduced-price lunch or for those who were not eligible. Among the participating urban districts, there were also no significant differences for these measures in 2002 and 2003, except in New York City where students who were not eligible for free/reduced-price lunch had a higher average scale score in 2003 than in 2002.

At grade 8, students in public schools in the nation who were eligible for free/reduced-price lunch scored lower, on average, in 2003 than did their counterparts in 2002. For the participating districts, there were no significant differences detected in the average scores between 2002 and 2003, except that eighth-graders in Atlanta who were not eligible for free/reduced-price lunch scored higher in 2003 than did their counterparts in 2002. Similarly, at grade 8, students in Atlanta who were not eligible for free/reduced-price lunch were the only group whose percentage of students at or above *Proficient* was significantly higher in 2003 than in 2002.

Average reading score gaps between students who were eligible and those who were not eligible for free/reduced-price lunch. In 2003, public school students who were not eligible for free/reduced-price lunch scored higher, on average, than eligible students, by 28 points at grade 4 and 25 points at grade 8. At grade 4, the gap in Houston was narrower than the gaps in large central cities and the nation, while the gap in Charlotte was wider than those in both large central cities and the nation. At grade 8, the District of Columbia and Houston had narrower score gaps than those in large central cities and the nation, while Charlotte and New York City had wider gaps in average scores than the gap found in large central cities.

Reading performance by student-reported highest level of parents' education, grade 8

Eighth-grade students who participated in the NAEP 2002 and 2003 reading assessments, including those in the TUDA, were asked to indicate, from among five options, the highest level of education completed by each parent. The question was not posed to fourth-graders.

In 2003, the average scores for students who indicated that a parent graduated from college were lower in Atlanta, Chicago, Cleveland, the District of Columbia, and Los Angeles than the average score for students in the same parental education category in public schools in large central cities. Average scores for students who reported that a parent graduated from college were higher in Charlotte than average scores for comparable students in large central cities.

Among eighth-graders in public schools nationally, average scores were lower in 2003 than in 2002 for students who indicated that their parents either did not graduate from high school or did graduate from high school or college and for students who indicated that they did not know their parents' highest level of education. Among the participating urban districts, no statistically significant differences in average scores were detected between 2003 and 2002 at any level of parental education.

Testing Status of Special-Needs Students Selected in NAEP Samples

NAEP endeavors to assess all students selected in the randomized sampling process, including SD students and students who are classified by their schools as LEP students. Some students who are sampled for participation, however, can be excluded from the sample according to carefully defined criteria. School personnel, guided by the student's Individualized Education Program (IEP), as well as by eligibility for Section 504 services, make decisions regarding inclusion in the assessment of SD students. Based on NAEP's guidelines, they also make the decision regarding inclusion of LEP students. The process includes evaluating the student's capability to participate in the assessment in English, as well as taking into consideration the number of years the student has been receiving instruction in English. The percentage of students excluded from NAEP may vary considerably across states or districts. Comparisons of achievement results across districts should be interpreted with caution if the exclusion rates vary widely.

Data source: The NAEP 2002 and 2003 Trial Urban District Reading Assessments.

For technical information, see the NAEP web site (http://nces.ed.gov/nationsreportcard) or see the complete 2003 Reading Report Card:

Donahue, P.L., Daane, M.C., and Jin, Y. (forthcoming). *The NAEP 2003 Reading Report Card* (NCES 2004–461).

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To obtain the* Highlights *publication from which this article is excerpted (NCES 2004–459), call the ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

The complete* 2003 Reading Report Card *(NCES 2004–461) will be available through the ED Pubs number (877–433–7827) and at the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

2000 SSOCS

Violence in U.S. Public Schools: 2000 School Survey on Crime and Safety

Amanda K. Miller

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 School Survey on Crime and Safety (SSOCS).

In the United States, school safety continues to be a priority for educators, policymakers, parents, and the public (Elliott, Hamburg, and Williams 1998). Schools are responsible for the effective education of their students, and creating an environment in which students and teachers are safe is an important component of the education process. A safe school is necessary for students to learn and teachers to teach.

As a result of highly publicized acts of extreme violence, increased national attention has focused on crime and violence in public schools. Reliable data collection is important in order to understand the extent to which American schools experience crime and violence, and to prevent emerging problems. Because of the need for accurate information on crime, violence, and disorder, the National Center for Education Statistics (NCES) administered the 2000 School Survey on Crime and Safety (SSOCS), a survey of public schools in the United States. SSOCS is a nationally representative sample of 2,270 regular public elementary, middle, secondary, and combined public schools. It was designed to provide an overall picture of school crime and safety in the United States by asking school principals about the characteristics of school policies, school violence prevention programs and practices, violent deaths at school and elsewhere, frequency of crime and violence, disciplinary problems and actions, and other school characteristics that have been associated with school crime.

The federal government has collected data about the safety of American schools from school principals for several decades. The first large-scale study, the Safe Schools Study, was administered to principals, teachers, and students in the 1970s. Since that time, the Department of Education has periodically collected information about crime and safety from school principals. SSOCS builds upon previous surveys conducted by NCES using the Fast Response Survey System (FRSS). These surveys collected a limited amount of information about crime and violence, disciplinary actions and problems, and policies related to school crime. The 2000 SSOCS questionnaire expanded on these topics and included additional topics related to school practices to prevent or reduce crime, violence prevention programs and activities, and other school characteristics that may be associated with the presence of crime at school.

One of the topics covered by SSOCS was violence-related activities that occurred at public schools during the 1999–2000 school year. The focus of this report is the presence of violence and serious violence (a subset of violence) that occurred in American public schools. The incidents of violence collected in SSOCS included rape, sexual battery other than rape, physical attacks or fights with and without a weapon, threats of physical attack with and without a weapon, and robberies with and without a weapon. The measure of serious violence is a subset of these items that includes all of the incidents described above with the exception of physical attacks or fights without a weapon and threats of physical attacks without a weapon.

The report from which this summary is excerpted provides the first analysis of the 2000 SSOCS. Additional information about this survey and other school crime surveys can be found at http://nces.ed.gov/programs/crime. The following are some of the key findings found in this report:

Incidents of Violence in Public Schools

- According to school principals, 71 percent of public elementary and secondary schools experienced at least one violent incident during the 1999–2000 school year (including rape, sexual battery other than rape, physical attacks or fights with and without a weapon, threats of physical attack with and without a weapon, and robbery with and without a weapon). In all, approximately 1,466,000 such incidents were reported in public schools.

- One or more serious violent incidents (including rape, sexual battery other than rape, physical attacks or fights with a weapon, threats of physical attack with a weapon, and robbery with and without a weapon) occurred in 20 percent of public schools.

School Demographic Characteristics and Violence

- Secondary schools were more likely than elementary, middle, and combined schools to report a violent incident during the 1999–2000 school year (92 percent of secondary schools vs. 61 percent, 87 percent, and 77 percent for elementary, middle, and combined schools, respectively) (figure A). Elementary schools were less likely to report a serious violent crime than middle or secondary schools, between which no difference was detected in their likelihood of reporting a serious violent incident (14 percent of elementary schools vs. 29 percent for middle schools and 29 percent for secondary schools).

- In the 1999–2000 school year, the size of a school's student enrollment was related to the prevalence of both violent and serious violent incidents. That is, as enrollment size increased, schools were more likely to report one or more violent or serious violent incidents (figure B).

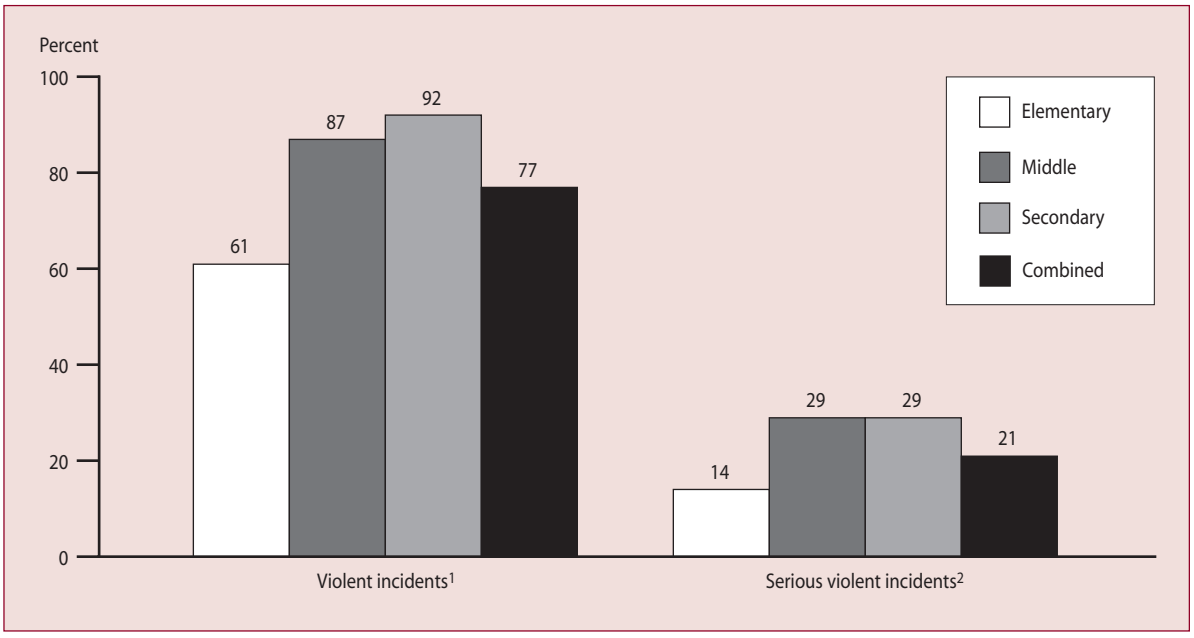
- City schools (77 percent) were more likely than urban fringe schools (67 percent) to report an occurrence of at least one violent incident during the 1999–2000 school year, while no differences were detected among schools in other locations. When looking at serious violent incidents, however, no such differences were detected when comparing schools in city, urban fringe, or town locations. Rural schools (12 percent) were less likely than schools in cities (27 percent), urban fringe areas (22 percent), or towns (20 percent) to experience a serious violent incident (figure C).

- Principals reporting that their students lived in neighborhoods with high or mixed levels of crime were more likely to report a violent or serious violent incident than those principals with students who lived in neighborhoods with low levels of crime.

Characteristics of the Student Population

- Schools with the largest percentage (more than 15 percent) of students below the 15th percentile on standardized tests were more likely than those schools with the smallest percentage (0–5 percent) of students below the 15th percentile to have experienced at least one violent or serious violent incident.

Figure A. Percentage of public schools reporting at least one violent or serious violent incident, by school level: 1999–2000

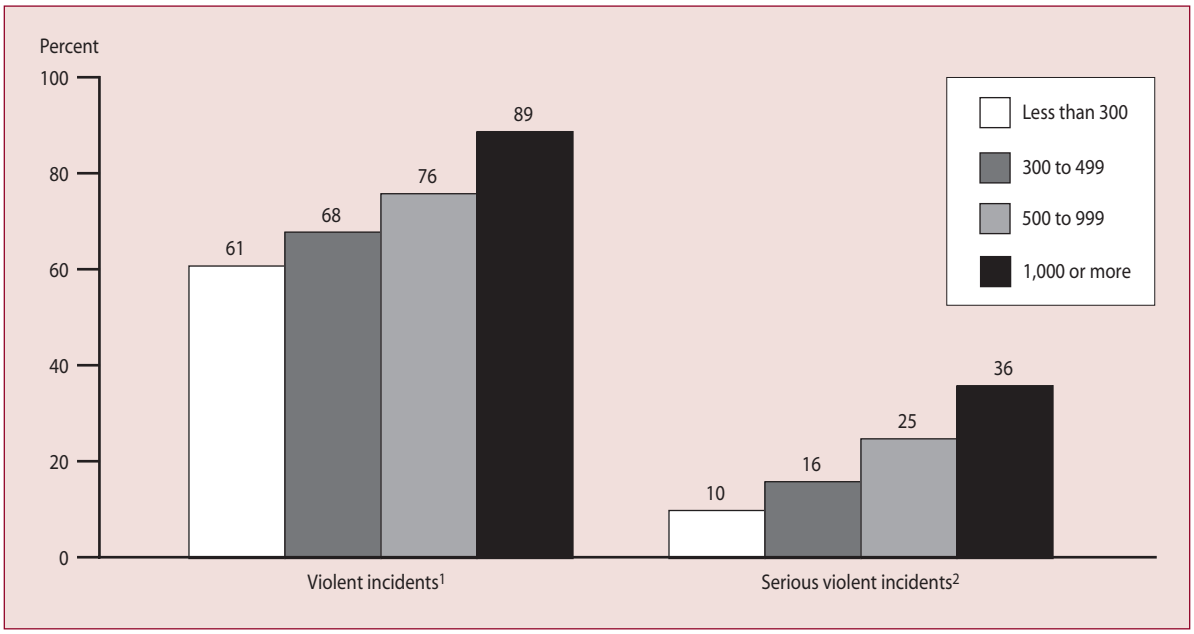


[1]Violent incidents include rape, sexual battery other than rape, physical attack or fight with or without a weapon, threat of physical attack with or without a weapon, and robbery with or without a weapon.

[2]Serious violent incidents include rape, sexual battery other than rape, physical attack or fight with a weapon, threat of physical attack with a weapon, and robbery with or without a weapon.

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Survey on Crime and Safety (SSOCS), 2000. (Originally published as figure 1 on p. 7 of the complete report from which this article is excerpted.)

Figure B. Percentage of public schools reporting at least one violent or serious violent incident, by enrollment size: 1999–2000

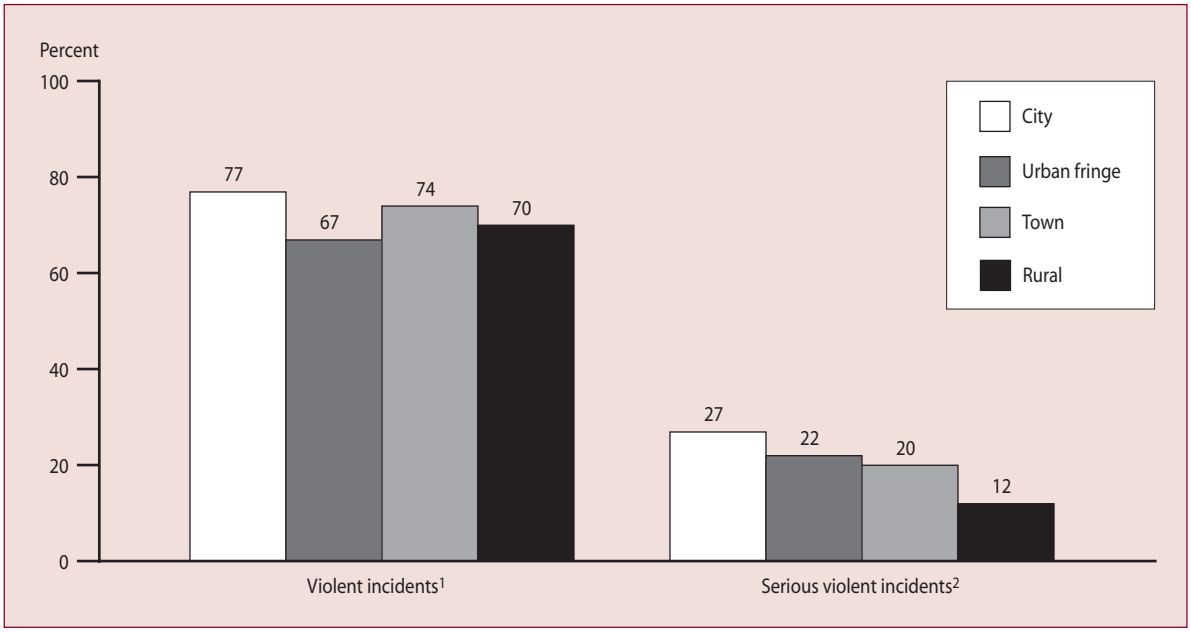


[1]Violent incidents include rape, sexual battery other than rape, physical attack or fight with or without a weapon, threat of physical attack with or without a weapon, and robbery with or without a weapon.

[2]Serious violent incidents include rape, sexual battery other than rape, physical attack or fight with a weapon, threat of physical attack with a weapon, and robbery with or without a weapon.

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Survey on Crime and Safety (SSOCS), 2000. (Originally published as figure 2 on p. 8 of the complete report from which this article is excerpted.)

Figure C. Percentage of public schools reporting at least one violent or serious violent incident, by urbanicity: 1999–2000



[1]Violent incidents include rape, sexual battery other than rape, physical attack or fight with or without a weapon, threat of physical attack with or without a weapon, and robbery with or without a weapon.

[2]Serious violent incidents include rape, sexual battery other than rape, physical attack or fight with a weapon, threat of physical attack with a weapon, and robbery with or without a weapon.

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Survey on Crime and Safety (SSOCS), 2000. (Originally published as figure 3 on p. 9 of the complete report from which this article is excerpted.)

- The percentage of students who principals felt considered academics to be very important was inversely related to the prevalence of violent and serious violent incidents. As the percentage of students who considered academics important increased, the likelihood of schools experiencing a violent or serious violent incident decreased.

School Administrative Practices

- During the 1999–2000 school year, schools in which students have a larger number of classroom changes in a typical school day were more likely to experience at least one violent or serious violent incident.

School Disorder

- Schools in which a greater number of serious discipline problems (three or more problems) occurred were more likely to experience a violent or serious violent incident than schools with fewer discipline problems (zero to two problems).

- Schools that reported at least one disruption (such as a bomb or anthrax threat) were more likely to experience a violent or serious violent incident than those that did not have any disruptions during the 1999–2000 school year.

Relationship Between School Characteristics and Violence and Serious Violence

- While controlling for other factors, six school characteristics were related to the prevalence of violent incidents in public schools during the 1999–2000 school year, including school level, urbanicity, academic importance, number of classroom changes, number of serious discipline problems, and number of schoolwide disruptions.

- Five school characteristics were related to the likelihood that a school would experience at least one serious violent incident, while controlling for all other factors: enrollment size, urbanicity, percentage of males, number of serious discipline problems, and number of schoolwide disruptions.

Patterns of School Violence

- During the 1999–2000 school year, 7 percent of public schools accounted for 50 percent of the total violent incidents that were reported (table A). Approximately 2 percent of schools accounted for 50 percent of the serious violent incidents (table B).

- When comparing the characteristics of those schools with a high number of incidents (those schools in which 50 percent of violent incidents occurred) to those schools with no incidents or a low to moderate number of incidents, school level, enrollment size, urbanicity, crime where students live, number of classroom changes, number of serious discipline problems, and number of schoolwide disruptions were related to the number of violent incidents.

- When compared to schools with either no incidents or a low to moderate number of incidents, schools with a high level of serious violent incidents differ by enrollment size, percentage of students below the 15th percentile on standardized tests, student-to-teacher ratio, number of serious discipline problems, number of students transferring from the school, and number of schoolwide disruptions.

Reference

Elliott, D.S., Hamburg, B.A., and Williams, K.R. (1998). Violence in American Schools: An Overview. In D.S. Elliott, B.A. Hamburg, and K.R. Williams (Eds.), *Violence in American Schools* (pp. 3–28). New York, NY: Cambridge University Press.

Table A. Percent and number of public schools, by percentage of violent incidents: 1999–2000

Percent of violent incidents[1]	Percent of schools	Number of schools	Number of incidents
25	1.6	1,300	360,000
50	6.6	5,400	735,000
75	18.0	14,800	1,090,000
100	71.4	58,500	1,466,000

[1]Violent incidents include rape, sexual battery other than rape, physical attack or fight with or without a weapon, threat of physical attack with or without a weapon, and robbery with or without a weapon.

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Survey on Crime and Safety (SSOCS), 2000. (Originally published as table B on p. 28 of the complete report from which this article is excerpted.)

Table B. Percent and number of public schools, by percentage of serious violent incidents: 1999–2000

Percent of serious violent incidents[1]	Percent of schools	Number of schools	Number of incidents
25	0.5	434	14,900
50	1.9	1,600	30,100
75	6.5	5,400	46,100
100	19.7	16,200	60,700

[1]Serious violent incidents include rape, sexual battery other than rape, physical attack or fight with a weapon, threat of physical attack with a weapon, and robbery with or without a weapon.

SOURCE: U.S. Department of Education, National Center for Education Statistics, School Survey on Crime and Safety (SSOCS), 2000. (Originally published as table C on p. 29 of the complete report from which this article is excerpted.)

Data source: The 2000 NCES School Survey on Crime and Safety (SSOCS).

For technical information, see the complete report:

Miller, A.K. (2003). *Violence in U.S. Public Schools: 2000 School Survey on Crime and Safety* (NCES 2004–314).

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To obtain the complete report (NCES 2004–314), call the toll-free ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Indicators of School Crime and Safety: 2003

Jill F. DeVoe, Katharin Peter, Phillip Kaufman, Sally A. Ruddy, Amanda K. Miller, Mike Planty, Thomas D. Snyder, and Michael R. Rand

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, disorder, teacher injury, weapons, student perceptions of school safety, and others. In addition to covering a wide range of topics, the indicators are based on information drawn from surveys of students, teachers, and principals, and data collections by federal agencies such as the Federal Bureau of Investigation and the Centers for Disease Control and Prevention.

Students ages 12–18 were victims of about 2 million nonfatal crimes of violence or theft at school in 2001, with the majority (62 percent) of all victimizations at school being thefts. However, this report is not only concerned with the safety of students in schools. Where comparable data are available for crimes that occur outside of school grounds, these data are offered as a point of comparison. In fact, as the data in this report show, a larger number of serious violent victimizations (i.e., rape, sexual assault, robbery, and aggravated assault) take place away from school than at school.[1]

Data on homicides and suicides at school show there were 32 school-associated violent deaths in the United States between July 1, 1999, and June 30, 2000, including 24 homicides, 16 of which involved school-age children. In each school year from 1992 to 2000, youth ages 5–19 were at least 70 times more likely to be murdered away from school than at school.

Trends in school crime over time are also of interest to researchers, educators, and families. Data show that the percentage of students being victimized at school has declined over recent years. Between 1995 and 2001, the percentage of students who reported being victims of crime at school decreased from 10 percent to 6 percent. This included a decrease in theft (from 7 percent to 4 percent) and a decrease in violent victimization (from 3 percent to 2 percent) over the same time period.

For some other types of crime at school, the frequency of these behaviors has shown no detectable pattern of increase or decrease over time. These include the percentage of suicides of school-age youth between 1992 and 1999; the percentage of students being threatened or injured with a weapon such as a gun, knife, or club on school property between 1993 and 2001; and the percentage of teachers being physically attacked by a student between 1993–94 and 1999–2000. Hate-related graffiti between 1999 and 2001, and measures of marijuana use, alcohol use, and drug distribution at school between 1993 and 2001 have also shown no detectable pattern of change over their respective survey periods.

The prevalence of one problem behavior at school has increased. In 2001, 8 percent of students reported that they had been bullied at school in the last 6 months, up from 5 percent in 1999.

Organization of This Report

This report, the sixth in a series of annual reports on school crime and safety from the Bureau of Justice Statistics (BJS) and the National Center for Education Statistics (NCES), presents the latest available data on school crime and student safety. The report repeats some indicators from the 2002 report and also provides updated data on nonfatal student victimization; nonfatal victimization of teachers; principal reports of select crimes; and principal reports of

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

disciplinary problems and actions at school. This year's report also includes data from last year's *Indicators* on fatal student victimization and students' reports of being threatened or injured with a weapon, being in fights, being bullied, avoiding places, being called hate-related words, and seeing hate-related graffiti. Data are also included on students' perceptions of personal safety, gangs, carrying weapons at school, using alcohol and marijuana, and drug availability on school property.

The report is organized as a series of indicators, with each indicator presenting data on a different aspect of school crime and safety. It starts with a description of the most serious violence. There are five sections to the report: Violent Deaths at School; Nonfatal Student Victimization—Student Reports; Violence and Crime at School—Public School Reports; Nonfatal Teacher Victimization at School—Teacher Reports; and School Environment. Each section contains a set of indicators that, taken together, describe a distinct aspect of school crime and safety.

Rather than relying on data from a large omnibus survey of school crime and safety, this report uses a variety of independent data sources from federal departments and agencies, including the BJS, NCES, and the Centers for Disease Control and Prevention. Each data source has an independent sample design, data collection method, and questionnaire design. By combining multiple and independent sources of data, this report aims to present a more complete portrait of school crime and safety than would be possible using any single source of information.

However, because the report relies on so many data sets, the age groups, time periods, and types of respondents analyzed can vary from indicator to indicator. Readers should keep these variations in mind when they compare data from different indicators. Readers should also note that trends in the data are discussed when possible. Where trends are not discussed, either the data are not available in earlier surveys or survey question wording changed from year to year, eliminating the ability to discuss any trend. Furthermore, while every effort has been made to keep key definitions consistent across indicators, readers should always use caution in making comparisons between results from different data sets for several reasons: the data sets may contain definitional differences, such as those used for specific crimes and crimes that occur "at school," and respondent differences, such as examining student reports of victimization (at the individual level) and a school reporting one or more victimizations schoolwide. Appendix A of the full report contains descriptions of all the data sets used in the report.

Key Findings

The following section presents the key findings of the report:

Violent deaths at school

From July 1, 1999, through June 30, 2000, 32 school-associated violent deaths occurred 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-age children. These 16 homicides are relatively few (1 percent of all homicides of youth) when comparing them with a total of 2,124 children ages 5–19 who were victims of homicide in the United States over the same period. Six of the 8 school-associated suicides from July 1, 1999, through June 30, 2000, involved school-age 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

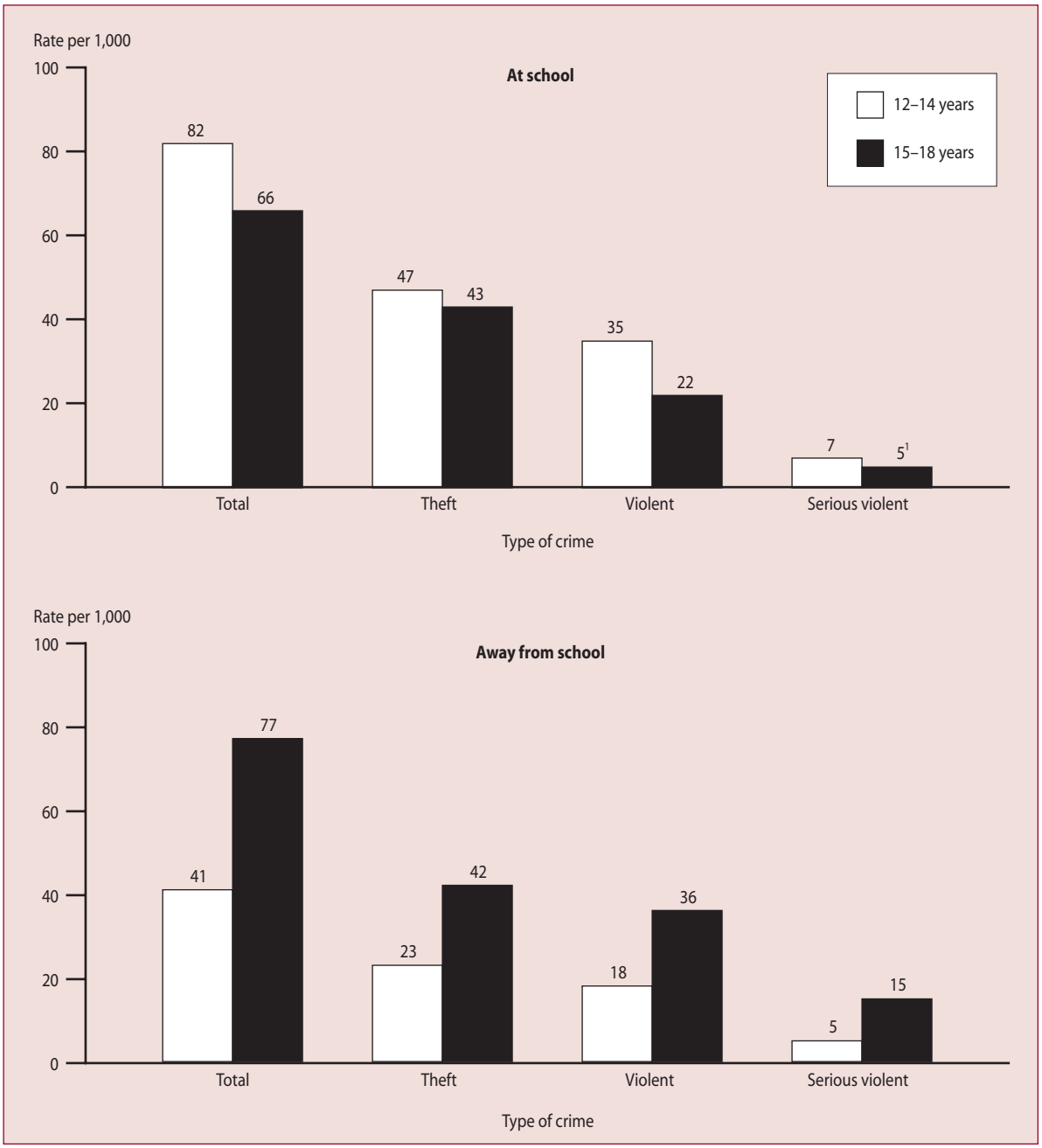
Students ages 12–18 were more likely to be victims of nonfatal serious violent crime—including rape, sexual assault, robbery, and aggravated assault—when they were away from school than at school. In 2001, students in this age range were victims of about 290,000 serious violent crimes away from school, compared with about 161,000 at school.

- Between 1992 and 2001, the violent crime victimization rates (i.e., serious violent crime plus simple assault) for students ages 12–18 both at school and away from school decreased from 48 violent crimes per 1,000 students in 1992 to 28 violent crimes per 1,000 students in 2001. While this trend indicates an overall decline during this time frame, no difference was detected between 2000 and 2001 in the number of violent victimizations.

- In 2001, younger students (ages 12–14) were more likely to be victimized at school than older students (ages 15–18) (figure A); however, away from school, older students were more likely to be victimized than their younger counterparts.

- The percentages of students in grades 9–12 who have been threatened or injured with a weapon on school

Figure A. Rate of nonfatal crimes against students ages 12–18 occurring at school or going to or from school, and away from school, per 1,000 students, by type of crime and age of student: 2001



[1]Estimate based on fewer than 10 cases.

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. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Justice, Bureau of Justice Statistics, National Crime Victimization Survey (NCVS), 2001. (Based on figures 2.2 and 2.3 on pp. 8 and 9 of the complete report from which this article is excerpted.)

property[2] have shown no measurable differences in recent years. In 1993, 1995, 1997, 1999, and 2001, between 7 and 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.

- The percentage of students who reported being in a fight anywhere declined between 1993 and 2001, from 42 percent to 33 percent. Similarly, the percentage of students who reported fighting on school property also declined over this period, from 16 percent to 13 percent.

- In 2001, 8 percent of 12- through 18-year-old students reported being bullied at school in the last 6 months, up from 5 percent in 1999.

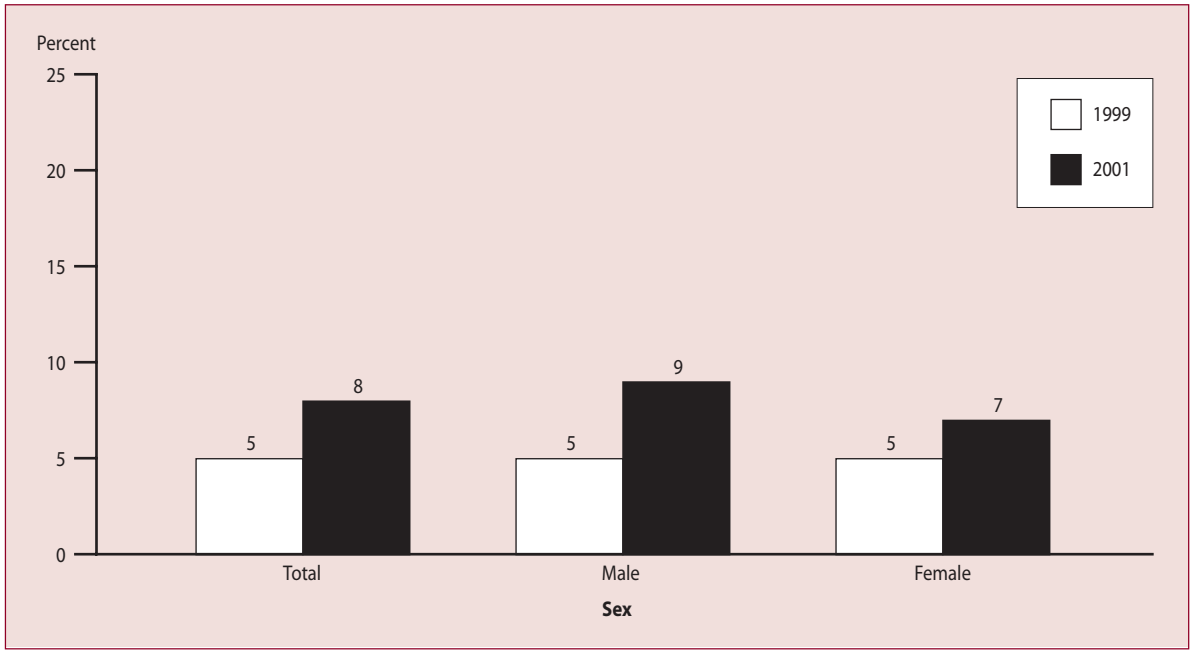
[2]Definitions for "on school property" and "at school" may differ. See appendix B of the full report for specific definitions.

- Both males and females were more likely to report being bullied in 2001 than in 1999 (figure B). In 2001, males were more likely than females to report being bullied (9 and 7 percent, respectively); however, in 1999, no such difference could be detected (5 percent each).

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 schools reported at least one violent incident. Forty-six percent of public schools reported property crimes, or 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.

Figure B. Percentage of students ages 12–18 who reported being bullied at school during the previous 6 months, by sex: 1999 and 2001



NOTE: In the 1999 survey, "at school" was defined as in the school building, on the school grounds, or on a school bus. In the 2001 survey, "at school" was defined as in the school building, on school property, on a school bus, or going to and from school.

SOURCE: U.S. Department of Justice, Bureau of Justice Statistics, School Crime Supplement (SCS) to the National Crime Victimization Survey (NCVS), 1999 and 2001. (Originally published as figure 6.1 on p. 17 of the complete report from which this article is excerpted.)

- 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). Likewise, larger schools were more likely to experience a violent incident than smaller schools. About 89 percent of schools with 1,000 or more students experienced a violent incident, compared with 61 percent of schools with less than 300 students.

- 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 such a weapon.

Nonfatal teacher victimization at school—teacher reports

Over the 5-year period from 1997 through 2001, teachers were victims of approximately 1.3 million nonfatal crimes at school, including 817,000 thefts and 473,000 violent crimes (rape or sexual assault, robbery, and aggravated and simple assault).

- From 1997 through 2001, senior high school and middle/junior high school teachers were more likely to be victims of violent crimes (most of which were simple assaults) than elementary school teachers (figure C).

- Teachers were differentially victimized by violent crimes at school according to where they taught. From 1997 through 2001, urban teachers were more likely to be victims of violent crimes than suburban and rural teachers (figure C).

- 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. This represented about 305,000 teachers who were victims of threats of injury by students that year and 135,000 teachers who were victims of attacks by students.

School environment

Between 1995 and 1999, the percentage of students ages 12–18 who felt unsafe while they were at school or on the way to and from school decreased. However, between 1999 and 2001, no change was found in the percentage of students who felt unsafe. In both 1999 and 2001, students were more likely to be afraid of being attacked when they were at school than away from school.

- Between 1993 and 2001, 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.

- Between 1999 and 2001, no differences were detected in the percentage of students ages 12–18 who avoided one or more places at school (about 5 percent in each year). These estimates represented a decrease from 1995, when 9 percent of students avoided places at school.

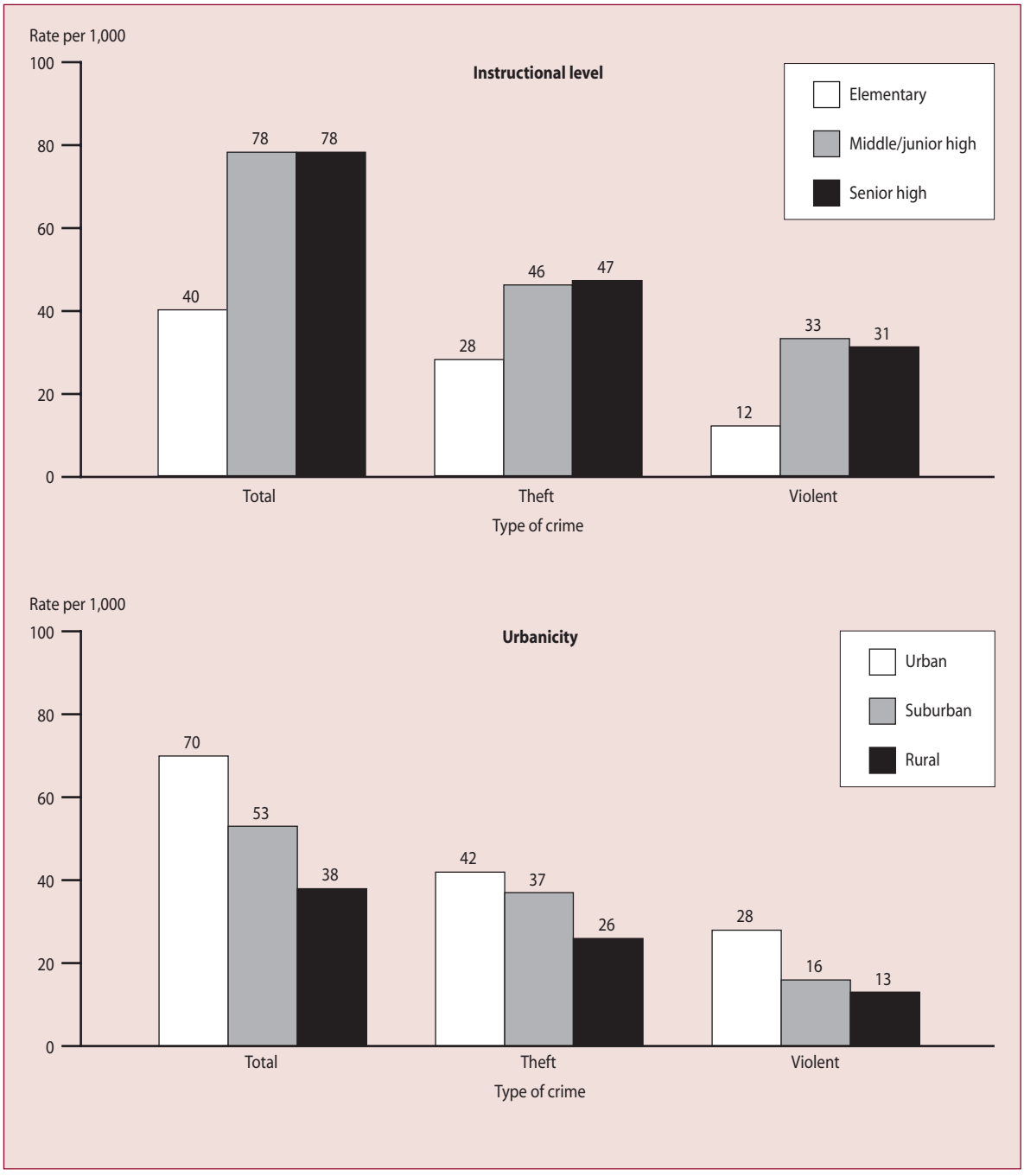
- In 2001, 12 percent of students ages 12–18 reported that someone at school had used hate-related words against them. That is, in the previous 6 months, someone at school had called them a derogatory word related to race, religion, ethnicity, disability, gender, or sexual orientation. During the same period, about 36 percent of students saw hate-related graffiti at school.

- In 2001, 20 percent of students reported that street gangs were present at their schools. Students in urban schools were more likely to report the presence of street gangs at their schools (29 percent) than were suburban and rural students (18 and 13 percent, respectively).

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

- Between 1993 and 2001, no consistent patterns of increase or decrease were found in the percentage of students who had consumed alcohol, both anywhere and on school property. In 2001, 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.

Figure C. Average annual rate of nonfatal crimes against teachers at school per 1,000 teachers, by type of crime and selected teacher and school characteristics: 1997–2001



NOTE: Violent crimes include rape, sexual assault, robbery, aggravated assault, and simple assault. Total crimes include violent crimes and theft. "At school" includes inside the school building, on school property, at the work site, or while working. For thefts, "while working" was not considered, since thefts of teachers' property kept at school can occur when teachers are not present. The data were aggregated from 1997–2001 due to the small number of teachers in each year's sample. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Justice, Bureau of Justice Statistics, National Crime Victimization Survey (NCVS), 1997–2001. (Originally published as figure 9.1 on p. 29 of the complete report from which this article is excerpted.)

Forty-seven percent of students had at least one drink anywhere during the same period.

- Between 1993 and 2001, no consistent patterns of increase or decrease were found in the percentage of students who had used marijuana—both anywhere and on school property. In 2001, 24 percent of students reported using marijuana anywhere during the previous 30 days, and 5 percent reported using marijuana on school property.

- In 2001, 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: Schools and Staffing Survey (SASS), "Public School Questionnaire," "Private School Questionnaire," "Charter School Questionnaire," "Public Teacher Questionnaire," "Private Teacher Questionnaire," and "Charter Teacher Questionnaire," 1993–94 and 1999–2000; School Survey on Crime and Safety (SSOCS), 2000.

Bureau of Justice Statistics (BJS): National Crime Victimization Survey (NCVS), 1992–2001.

Joint NCES and BJS: School Crime Supplement (SCS) to the NCVS, 1995, 1999, and 2001.

Centers for Disease Control and Prevention (CDC): national school-based Youth Risk Behavior Survey (YRBS), selected years 1993–2001; 1992–2002 School-Associated Violent Deaths Surveillance System (SAVD), previously unpublished tabulation, August 2003; and web-based Injury Statistics Query and Reporting System Fatal (WISQARS Fatal), 2003.

Federal Bureau of Investigation (FBI): Supplementary Homicide Reports (SHR), 1976–2001.

For technical information, see the complete report:

DeVoe, J.F., Peter, K., Kaufman, P., Ruddy, S.A., Miller, A.K., Planty, M., Snyder, T.D., and Rand, M.R. (2003). *Indicators of School Crime and Safety: 2003* (NCES 2004–004).

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To obtain the complete report (NCES 2004–004), call the toll-free ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

Dropouts and Completers

Public High School Dropouts and Completers From the Common Core of Data: School Year 2000–01

Beth Aronstamm Young

This article was originally published as the Statistical Analysis Report of the same name. The universe data are from the Common Core of Data (CCD). Technical notes and some tables from the original report have been omitted.

Two of the most important indicators of the educational system's success are the rates at which young people drop out of and complete high school each year. The Common Core of Data (CCD) survey system of the National Center for Education Statistics (NCES) annually collects information about public school dropouts and completers. This report presents the number and percentage of students dropping out of and completing public school (among states that reported dropouts) for the 2000–01 school year.

Background

The CCD consists of five surveys that are completed each year by state education agencies (SEAs). Three of these surveys provide basic statistical information about public elementary/secondary institutions, students, and staff. Although all information is reported directly by SEAs, the surveys include data about individual states, local education agencies, and schools. The numbers of students who complete high school with a regular diploma or some alternative credential have been reported at the state and local education agency levels since the 1987–88 CCD collection. A dropout statistic was added to the *Local Education Agency Universe* beginning with the 1992–93 collection (reporting 1991–92 dropouts).

Limitations in This Report

The high school 4-year completion rate presented here differs in its calculation from other published rates, and readers should be alert to this when making comparisons with other studies (Kaufman, Alt, and Chapman 2001; Young 2002; Young and Hoffman 2002). The inclusion of both regular and other high school completions, and the exclusion of General Educational Development (GED) recipients, may also lead to differences with other reports. (See the "High School Completers" section for a further description.)

Also, state and local policies and data collection administration may have profound effects on the count of dropouts and completers reported by a state. One example of a discrepancy is that not all states provide multiple types of high school completions. Some states award regular diplomas to all students while others award some form of alternative credential to special education students. Another example of a discrepancy is the degree of rigor with which states or districts verify the enrollment status of students who have transferred out of state. Dropout and completion data collected by the CCD are reported from the administrative records of SEAs. Some states collect their data through student-level records systems, while others collect aggregate data from schools and districts. Although state CCD coordinators verify each year that they have followed the CCD dropout definition, states vary in their ability to track students who move in and out of districts, and it is probable that some students have been misclassified.

High School Dropouts

Determining dropout status

The CCD definition determines whether an individual is a dropout by his or her enrollment status at the beginning of the school year (the same day used for the enrollment count). Beginning in 1990, NCES defined a dropout as an individual who

1) was enrolled in school at some time during the previous school year (e.g., 1999–2000); and
2) was not enrolled at the beginning of the current school year (e.g., 2000–01); and
3) has not graduated from high school or completed a state- or district-approved educational program; and
4) does not meet any of the following exclusionary conditions:
   a) transfer to another public school district, private school, or state- or district-approved educational program (including correctional or health facility programs);
   b) temporary absence due to suspension or school-excused illness; or
   c) death.

Individuals who complete 1 year of school but fail to enroll at the beginning of the subsequent year ("summer dropouts") are counted as dropouts from the school year and grade in which they fail to enroll. Those who leave secondary education but are enrolled in an adult education

program at the beginning of the school year are considered dropouts. However, note that dropout status is determined by a student's status on October 1. Students who receive their GED certificate by October 1 are not counted as dropouts if the state or district recognizes this as an approved program. Although a student whose whereabouts are unknown is considered a dropout, states are not required to count students who leave the United States as dropouts even if there is no information about such students' subsequent enrollment status. A student can be counted as a dropout only once for a single school year but can, if he or she repeatedly drops out and re-enrolls, appear as a dropout in more than 1 year.

Dropout rate

This is an annual event dropout rate: the number of dropouts for a school year divided by the number of students enrolled at the beginning of that school year. For example, to compute the 9th- through 12th-grade dropout rate, the calculation is

$$\frac{\text{Number of October 1st 9th- through 12th-grade dropouts}}{\text{October 1st 9th- through 12th-grade enrollment count}}$$

High School Dropout Results

The 2000–01 school year

In the 2000–01 school year, 45 states reported dropouts using the CCD definition.[1] The 9th- through 12th-grade dropout rate in the reporting states ranged from 2.2 percent in North Dakota to 10.9 percent in Arizona (table A).

The majority of reporting states in 2000–01 (26 of the 45) had dropout rates ranging from 4.0 to 7.0 percent. The median dropout rate of reporting states was 4.2. There were four states that had a dropout rate of less than 3.0: Iowa, New Jersey, North Dakota, and Wisconsin. Three states had a dropout rate of more than 8.0 percent: Alaska, Arizona, and Louisiana.

Because of differences in public school-age population size, the numbers of dropouts varied greatly among reporting states. In the 2000–01 school year, while Texas had the greatest number of dropouts (46,973) among reporting states, it did not have the highest dropout rate. On the other hand, North Dakota had the smallest number of dropouts (784) among reporting states and also the lowest dropout rate.

Over time

Dropout rates are available for the aggregate of grades 9 through 12 from 1991–92 through 2000–01. During the first 2 years of the dropout statistic collection, no more than 15 states reported publishable data. Because the data are most complete for the period 1993–94 through 2000–01, discussion of changes over time is limited to this time period for states reporting in both 1993–94 and 2000–01.

A total of 33 states reported publishable data for both 1993–94 and 2000–01. (Louisiana's data were not comparable between these 2 years and were also not included in this analysis.) Among this group, the range of dropout rates generally decreased from 1993–94 to 2000–01. Dropout rates for reporting states in 1993–94 ranged from a low of 2.7 percent in North Dakota to a high of 13.7 percent in Arizona. Seven years later, the reported rates ranged from 2.2 percent in North Dakota to 10.9 percent in Arizona.

Of those 33 states that had dropout rates in 1993–94 and 2000–01, 8 states (24 percent) reported dropout rates of less than 4 percent in 1993–94; this increased to 12 states (36 percent) in 2000–01. In 1993–94, dropout rates for 20 of the 33 states ranged from 4 to 7 percent. In 2000–01, 19 of the 33 states had dropout rates that ranged from 4 to 7 percent. Of those 33 states, 6 states reported dropout rates of higher than 7 percent in 1993–94, and only 3 states reported dropout rates of higher than 7 percent in 2000–01.

Dropout rates were more likely to decline than increase over the 7-year interval: only 4 of the 33 reporting states' dropout rates increased and none by more than 1 percentage point. In this period, the dropout rates decreased by at least 2 percentage points in Arizona, Idaho, Missouri, Nevada, New Mexico, and Oregon.

By race/ethnicity

High school dropout rates for each of five racial/ethnic groups[2] were calculated by dividing the number of grade 9 through 12 dropouts in a racial/ethnic group by the grade 9 through 12 membership for that group. Of the 46 states that reported dropouts for the 2000–01 school year, 43 were able to do so by race/ethnicity. Caution should be used when interpreting results by race/ethnicity as some of the racial/ethnic group populations are quite small in some states.

[1]The following four states' 2000–01 dropout data were not available: California, Colorado, Indiana, and Michigan. (The District of Columbia's dropout data were also not available.) These states, as well as the District of Columbia, did not report dropouts that were consistent with the NCES definition.

[2]The groups were American Indian/Alaska Native; Asian/Pacific Islander; Hispanic; Black, non-Hispanic; and White, non-Hispanic. Non-White includes all groups except White, non-Hispanic.

Table A. Dropout numbers and rates in grades 9–12, by state: School year 2000–01

State	9th through 12th grades			Rates by grade			
	Membership[1]	Number of dropouts	Dropout rate	9th	10th	11th	12th
Alabama[2]	200,923	8,238	4.1	3.4	4.4	4.7	4.1
Alaska[2]	38,914	3,177	8.2	6.6	8.4	8.5	9.8
Arizona[2]	234,367	25,632	10.9	11.3	10.2	11.0	11.3
Arkansas	131,898	6,987	5.3	3.4	4.9	6.7	6.6
California	†	—	—	—	—	—	—
Colorado	†	—	—	—	—	—	—
Connecticut	155,731	4,649	3.0	2.9	3.0	3.2	2.8
Delaware	33,875	1,420	4.2	4.9	4.6	3.7	3.1
District of Columbia	†	—	—	—	—	—	—
Florida[2]	674,817	29,965	4.4	4.8	4.1	4.0	4.7
Georgia	384,954	27,543	7.2	6.5	7.3	7.2	8.1
Hawaii[2]	52,053	2,968	5.7	3.9	5.8	6.2	7.8
Idaho	74,357	4,143	5.6	4.1	5.7	6.6	6.0
Illinois[2]	564,633	34,008	6.0	6.0	6.0	6.2	5.9
Indiana	†	—	—	—	—	—	—
Iowa	158,050	4,193	2.7	1.5	2.4	3.2	3.7
Kansas	143,763	4,565	3.2	1.7	3.1	3.9	4.2
Kentucky	185,003	8,557	4.6	3.9	5.1	5.0	4.6
Louisiana	196,040	16,361	8.3	9.1	8.2	7.7	8.2
Maine	61,426	1,926	3.1	1.8	3.1	4.3	3.6
Maryland[2]	242,502	9,930	4.1	4.1	4.2	4.1	4.0
Massachusetts	272,497	9,380	3.4	3.3	3.4	4.0	3.0
Michigan	†	—	—	—	—	—	—
Minnesota	275,502	11,014	4.0	1.4	3.1	4.6	7.1
Mississippi	131,787	6,108	4.6	4.3	4.9	4.8	4.7
Missouri	271,455	11,447	4.2	3.1	4.4	5.2	4.4
Montana	49,668	2,095	4.2	3.2	4.3	4.7	4.9
Nebraska	90,344	3,614	4.0	3.0	4.1	4.5	4.6
Nevada	90,125	4,730	5.2	3.4	1.7	5.2	12.2
New Hampshire[3]	51,592	2,763	5.4	2.3	4.6	7.6	8.0
New Jersey[2]	351,496	9,882	2.8	2.9	2.8	2.9	2.6
New Mexico	95,427	5,092	5.3	5.4	5.8	5.7	4.1
New York[2]	809,036	30,898	3.8	2.7	4.0	5.5	3.6
North Carolina	346,424	21,773	6.3	6.3	6.9	6.4	5.2
North Dakota	36,230	784	2.2	1.1	2.4	2.5	2.7
Ohio	590,120	22,822	3.9	3.6	3.4	3.7	4.8
Oklahoma[2]	177,577	9,202	5.2	5.1	5.1	5.7	4.7
Oregon	163,106	8,696	5.3	3.1	4.5	5.8	8.6
Pennsylvania	548,125	19,568	3.6	2.1	3.3	4.5	4.7
Rhode Island	44,499	2,212	5.0	5.0	5.0	4.9	5.0
South Carolina	183,896	6,089	3.3	3.5	3.7	3.1	2.6
South Dakota	40,784	1,571	3.9	2.9	3.8	4.2	4.6
Tennessee[2]	244,897	10,499	4.3	2.8	3.6	5.1	6.6
Texas	1,116,518	46,973	4.2	3.4	4.4	4.0	5.5
Utah	147,086	5,449	3.7	1.2	2.5	4.1	7.1
Vermont[2]	31,138	1,476	4.7	2.9	4.6	5.8	5.9
Virginia	329,575	11,415	3.5	3.3	3.3	3.4	3.9
Washington	†	—	—	—	—	—	—
West Virginia	85,100	3,570	4.2	3.5	4.8	4.6	4.0
Wisconsin	259,047	6,002	2.3	1.8	1.6	1.9	4.2
Wyoming	29,758	1,900	6.4	3.0	6.5	8.0	8.4

See footnotes at end of table (on next page).

Table A. Dropout numbers and rates in grades 9–12, by state: School year 2000–01—Continued

State	9th through 12th grades			Rates by grade			
	Membership[1]	Number of dropouts	Dropout rate	9th	10th	11th	12th
Department of Defense (DoD) dependents schools, Bureau of Indian Affairs, and outlying areas							
DoD schools (overseas)	†	—	—	—	—	—	—
DoD schools (domestic)	†	—	—	—	—	—	—
Bureau of Indian Affairs	†	—	—	—	—	—	—
American Samoa	3,773	73	1.9	1.2	1.5	2.3	3.2
Guam	8,775	1,001	11.4	7.6	17.6	13.5	8.6
Northern Marianas	2,206	134	6.1	8.6	7.4	2.4	2.9
Puerto Rico[2]	166,476	1,737	1.0	0.7	1.4	1.3	0.8
Virgin Islands	5,454	215	3.9	6.8	2.4	2.8	2.2

— Not available. These states do not report dropouts that are consistent with the NCES definition.

† Not applicable. Total 9th- through 12th-graders not reported for states without conforming dropout data.

[1]Ungraded students are prorated into the 9th- through 12th-grade total for dropout rate calculation purposes. For those states that did not report dropouts, no prorated 9th- through 12th-grade enrollment was calculated.

[2]These states reported on an alternative July through June cycle rather than the specified October through September cycle.

[3]New Hampshire is missing reported dropouts for 14 of its 76 school districts that operate high schools (16.3 percent of enrollment in the 76 school districts).

SOURCE: 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. (Originally published as table 1 on p. 7 of the complete report from which this article is excerpted.)

In the 2000–01 school year, dropout rates were generally lowest for White, non-Hispanic and Asian/Pacific Islander students and highest for American Indian/Alaska Native; Black, non-Hispanic; and Hispanic students in reporting states. Relative to groups other than White, non-Hispanic students, dropping out was rare for Asian/Pacific Islander high school students in reporting states. The Asian/Pacific Islander dropout rate was less than 4 percent in more than two-thirds (30) of reporting states. No state reported a dropout rate of 10 percent or more for this group.

More than 15 percent of American Indian/Alaska Native high school students dropped out in Arizona, Minnesota, and South Dakota. Twelve states had a dropout rate of 10 percent or higher for American Indian/Alaska Native students. Only one state (Wyoming) reported a Black, non-Hispanic dropout rate of more than 15 percent. However, there were eight states that reported dropout rates of 10 percent or more among Black, non-Hispanic high school students. Among Hispanic high school students, dropout rates were 10 percent or higher in 11 reporting states.

By district locale code

The CCD assigns each school a locale code that identifies its location relative to a population center; the codes range from "large city" to "rural." The school locale codes have been aggregated to the school districts with which the schools are associated and the dropout rates among the different types of locales computed. Not all states have one or more school districts in every locale. Hawaii, for example, consists of a single urban fringe school district while South Dakota has no large city school districts. Because of this, caution should be used when interpreting state differences.

Relatively high dropout rates were most often observed in reporting school districts that served large or midsize cities and least frequently in rural areas. Nine reporting states had dropout rates of more than 10 percent in large city school districts, while only one state had a dropout rate of more than 10 percent for its rural school districts inside of a Metropolitan Statistical Area (MSA).

High School Completers

The term "high school completer" includes both diploma recipients and other high school completers. Thus, the CCD 4-year high school completion rate includes both diploma recipients and other high school completers. (This rate includes other high school completers but does not reflect those receiving a GED-based equivalency credential.)

Diploma recipients

These are individuals who are awarded, in a given year, a high school diploma or a diploma that recognizes some

higher level of academic achievement. They can be thought of as students who meet or exceed the coursework and performance standards for high school completion established by the state or other relevant authorities.

Other high school completers

These individuals receive a certificate of attendance or some other credential in lieu of a diploma. Students awarded this credential typically meet requirements that differ from those for a high school diploma. Some states do not issue an "other high school completion" type of certificate, but award all students who complete school a diploma regardless of what academic requirements the students have met. Thus, in order to make data as comparable as possible across states, this report includes both regular and other diploma recipients in its high school 4-year completion rate.

Exclusion of high school equivalency recipients

High school equivalency recipients are awarded a credential certifying that they have met state or district requirements for high school completion by passing an examination or completing some other performance requirement. High school equivalency diplomas are considered valid completion credentials, but high school equivalency recipients are not included in the CCD completion rate. There are two reasons for this exclusion. First, high school equivalency recipients are reported on the CCD only at the state level and cannot be disaggregated to the district level. Second, not all states report high school equivalency counts on the CCD, and the statistic is therefore not comparable across states.

High school 4-year completion rate

Put simply, this rate asks, "Of those students who have left school, what proportion have done so as completers?" This rate does not include those students who are still enrolled. The rate incorporates 4 years' worth of data and thus is an estimated cohort rate. It is calculated by dividing the number of high school completers by the sum of dropouts for grades 9 through 12, respectively, in consecutive years, plus the number of completers. If a hypothetical graduating class began as 9th-graders in year 1, this 4-year completion rate would look like

$$\frac{\text{High school completers year 4}}{\text{Dropouts (grade 9 year 1 + grade 10 year 2 + grade 11 year 3 + grade 12 year 4) + high school completers year 4}}$$

Note that the completion rate is not the same as a cohort graduation rate that shows the proportion of 9th-grade students who graduate 4 years later. To get a more detailed description of the development and limitations of the dropout and completion rates, see *Public High School Dropouts and Completers From the Common Core of Data: School Years 1991–92 Through 1997–98* (Young and Hoffman 2002).

High School Completer Results

The 2000–01 school year

As with states' numbers of high school dropouts, states' numbers of high school completers varied widely, in part because of the sizes of states' public school populations. As might be expected, in 2000–01, the state with the largest public school population, California, had the most high school completers (316,124), and the District of Columbia, with the smallest public school population,[3] had the fewest high school completers (3,043). Seven states had more than 100,000 high school completers: California, Florida, Illinois, New York, Ohio, Pennsylvania, and Texas (table B).

In the 2000–01 school year, the 4 years of dropout data needed to calculate a high school 4-year completion rate were available for 39 states. The high school 4-year completion rates ranged from a high of 90.1 percent in North Dakota to a low of 65.0 percent in Louisiana for those states with data. In 2000–01, seven of the reporting states had 4-year completion rates above 85 percent: Connecticut, Iowa, Maine, Massachusetts, New Jersey, North Dakota, and Wisconsin. Five states had 4-year completion rates below 75 percent: Arizona, Georgia, Louisiana, Nevada, and New Mexico.

The majority of high school completion credentials are in the form of a diploma. There were 37 reporting states with data available to calculate a 2000–01 high school 4-year completion rate that either reported other high school completer data (i.e., certificates of completion) or did not award any type of other high school completer credentials. (Wisconsin and Wyoming's other high school completers were missing and were therefore not included.) Other high school completers made up only 1.8 percent of all high school completers in these 37 reporting states (derived from table B). Twenty-eight of these states awarded other high school completion credentials (the other nine states did not award these credentials) and had data necessary to calculate

[3]Total students by state is from the CCD state-level survey and can be found in *Public School Student, Staff, and Graduate Counts by State: School Year 2001–02* (Young 2003).

Table B. Numbers and rates of high school completers, by state: School year 2000–01

State	Number of completers[1]			4-year completion rate[2]		
	Total	Total diplomas	Other completers[3]	Total	Total diplomas	Other completers
United States	2,616,570	2,569,413	47,157	—	—	—
Alabama	39,613	37,082	2,531	80.0	74.9	5.1
Alaska	6,829	6,812	17	75.2	75.0	0.2
Arizona[4]	47,543	46,773	770	68.3	67.2	1.1
Arkansas	29,019	27,100	1,919	79.1	73.9	5.2
California	316,124	316,124	†	—	—	—
Colorado	39,370	39,241	129	—	—	—
Connecticut	30,435	30,388	47	86.6	86.5	0.1
Delaware	6,712	6,614	98	81.6	80.4	1.2
District of Columbia[5]	3,043	2,808	235	—	—	—
Florida[5]	115,522	110,858	4,664	—	—	—
Georgia	69,215	62,499	6,716	71.1	64.2	6.9
Hawaii	10,323	10,102	221	77.7	76.0	1.7
Idaho[4]	16,101	16,021	80	76.9	76.5	0.4
Illinois	110,624	110,624	†	75.8	75.8	†
Indiana	60,464	58,323	2,141	—	—	—
Iowa	33,909	33,774	135	89.2	88.9	0.4
Kansas	29,360	29,360	†	—	—	—
Kentucky[5]	37,293	36,957	336	79.9	79.2	0.7
Louisiana	39,296	38,314	982	65.0	63.4	1.6
Maine	12,129	12,110	19	86.5	86.4	0.1
Maryland	49,569	49,222	347	83.2	82.6	0.6
Massachusetts	54,393	54,393	†	86.3	86.3	†
Michigan	97,124	96,490	634	—	—	—
Minnesota	56,550	56,550	†	82.5	82.5	†
Mississippi	25,762	23,748	2,014	77.3	71.3	6.0
Missouri	54,198	54,099	99	81.0	80.9	0.1
Montana	10,628	10,628	†	82.1	82.1	†
Nebraska	19,738	19,565	173	83.9	83.2	0.7
Nevada	15,880	15,200	680	73.5	70.3	3.1
New Hampshire[5]	12,294	12,294	—	—	—	—
New Jersey	75,948	75,948	†	88.0	88.0	†
New Mexico	18,354	18,199	155	74.4	73.8	0.6
New York	147,305	141,884	5,421	81.6	78.6	3.0
North Carolina[5]	63,954	63,288	666	—	—	—
North Dakota	8,445	8,445	†	90.1	90.1	†
Ohio	113,973	108,722	5,251	81.0	77.3	3.7
Oklahoma	37,448	37,448	†	79.2	79.2	†
Oregon	33,713	31,076	2,637	76.4	70.4	6.0
Pennsylvania	114,436	114,436	†	84.0	84.0	†
Rhode Island	8,617	8,603	14	79.8	79.7	0.1
South Carolina[5]	30,577	29,742	835	—	—	—
South Dakota	8,881	8,881	†	84.6	84.6	†
Tennessee	44,663	40,642	4,021	79.5	72.4	7.2
Texas[5]	215,316	215,316	†	—	—	—
Utah	31,214	31,054	160	82.6	82.2	0.4
Vermont	6,876	6,856	20	81.9	81.6	0.2
Virginia	68,593	66,067	2,526	83.8	80.7	3.1
Washington[5]	55,337	54,885	452	—	—	—
West Virginia	18,452	18,440	12	83.4	83.3	0.1
Wisconsin	59,341	59,341	—	90.0	90.0	—
Wyoming	6,067	6,067	—	76.5	76.5	—

See footnotes at end of table (on next page).

Table B. Numbers and rates of high school completers, by state: School year 2000–01—Continued

State	Number of completers[1]			4-year completion rate[2]		
	Total	Total diplomas	Other completers[3]	Total	Total diplomas	Other completers
Department of Defense (DoD) dependents schools, Bureau of Indian Affairs, and outlying areas						
DoD schools (overseas)	2,621	2,621	†	—	—	—
DoD schools (domestic)	568	568	†	—	—	—
Bureau of Indian Affairs	—	—	—	—	—	—
American Samoa	726	724	2	90.0	89.7	0.2
Guam	1,371	1,371	†	51.2	51.2	†
Northern Marianas	361	361	†	64.5	64.5	†
Puerto Rico	32,574	30,154	2,420	94.6	87.5	7.0
Virgin Islands	966	966	†	72.3	72.3	†

— Not available.

† Not applicable.

[1]Includes regular and other diplomas as well as other completers, but does not include high school equivalencies (e.g., GED). Total completers may be different than reported on the state-level file.

[2]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 a 4-year period.

[3]Other completers data are missing for the following states: New Hampshire, Wisconsin, and Wyoming.

[4]Values for 1 year of the 4-year completion rate denominator are imputed.

[5]States that reported completers but not 4 consecutive years of dropout data cannot have a 4-year high school completion rate.

SOURCE: 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. (Originally published as table 5 on p. 11 of the complete report from which this article is excerpted.)

a 2000–01 4-year completion rate for other high school completers (e.g., recipients of certificates of completion). In 6 of these 28 states—Alabama, Arkansas, Georgia, Mississippi, Oregon, and Tennessee—the percent of all students who completed by means of another high school completion credential was 5 percent or more.

Over time

The rate of high school completions over time includes diplomas and other high school completers, but excludes high school equivalencies. It is important to note that states have different policies in regard to awarding high school diplomas versus other high school credentials. Caution should be used when comparing states.

This report includes 4-year completion rates for the 1994–95 through 2000–01 school years. Since 4 years of dropout data are required to calculate a 4-year high school completion rate, fewer than 15 states had completion rates in 1994–95 or 1995–96. For this reason, discussions of the 4-year completion rate over time are based on the 1996–97 and 2000–01 school years; there are 32 states that had 4-year high school completion rates in these 2 years. Seven of the states' 4-year completion rates went down between 1996–97 and 2000–01. The changes (increases and decreases) were relatively small: less than 2 percentage points in 18 states. Two states, Idaho and Nevada, increased their 4-year high school completion rates by over 9 percentage points between 1996–97 and 2000–01.

By race/ethnicity

Four-year completion rates by race/ethnicity can be presented for 36 states in the 2000–01 school year. Caution should be used when interpreting results by race/ethnicity as some of the racial/ethnic group populations are quite small in some states.

As might be expected given the dropout rates, Asian/Pacific Islander and White, non-Hispanic students were more likely to have higher completion rates than Black, non-Hispanic; Hispanic; and American Indian/Alaska Native students. High school 4-year completion rates were below 60 percent in six reporting states for Black, non-Hispanic students; in seven reporting states for Hispanic students; and in eight reporting states for American Indian/Alaska Native students. No state had a 4-year completion rate below 60 percent for Asian/Pacific Islander or White students.

The 4-year completion rate was over 80 percent in 78 percent (28) of reporting states for White, non-Hispanic students and in 75 percent (27) of reporting states for Asian/Pacific Islander students.

By district locale code

Reporting states' large city school districts were more likely than other districts to have a relatively low high school 4-year completion rate of less than 60 percent. In 2000–01, no reporting state's large city school districts had 4-year completion rates of 80 percent or more. The reporting states' districts in urban fringes of large cities fared much better, with 19 (66 percent) with completion rates of 80 percent or more. The same was true for 25 (74 percent) of districts in urban fringes of midsize cities.

Four-year completion rates of 80 percent or higher were more likely to occur in reporting states' rural school districts than in any other district locale. In fact, more than three-fourths of the reporting states had a 4-year completion rate of 80 percent or more in their rural school districts (78 percent in rural districts outside of MSAs and 80 percent in rural districts inside of MSAs).

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Data sources: The NCES Common Core of Data (CCD): "Local Education Agency Universe Dropout and Completion Data File: School Years 1991–92 through 1996–97 and 2000–01," Version 1a; and "Local Education Agency Universe Dropout and Completion Data File: School Years 1997–98, 1998–99, and 1999–2000," Version 1b.

For technical information, see the complete report:

Young, B.A. (2003). *Public High School Dropouts and Completers From the Common Core of Data: School Year 2000–01* (NCES 2004–310).

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To obtain the complete report (NCES 2004–310), visit the NCES Electronic Catalog (http://nces.ed.gov/pubsearch).

100 Largest School Districts

Characteristics of the 100 Largest Public Elementary and Secondary School Districts in the United States: 2001–02

Jennifer Sable and Beth Aronstamm Young

This article was originally published as the Introduction and summary sections of the Statistical Analysis Report of the same name. The universe data are from the Common Core of Data (CCD). Detailed data tables and the Methodology section from the original report have been omitted.

Introduction

This publication provides basic descriptive information about the 100 largest school districts (ranked by student membership) in the United States and jurisdictions (Bureau of Indian Affairs, Department of Defense schools, and five outlying areas: American Samoa, Guam, the Northern Marianas, Puerto Rico, and the Virgin Islands). When discussing characteristics, the term "United States and jurisdictions" refers to all 50 states, the District of Columbia, Bureau of Indian Affairs, Department of Defense schools, and five outlying areas. This is different from most National Center for Education Statistics (NCES) reports, which include only the 50 states and the District of Columbia in U.S. totals. Readers interested in examining data for the 50 states and District of Columbia only can refer to *Public School Student, Staff, and Graduate Counts by State: School Year 2001–02* (Young 2003) and *Overview of Public Elementary and Secondary Schools and Districts: School Year 2001–02* (Hoffman 2003).

Approximately one in four public school students in the United States and jurisdictions is served by one of the 100 largest school districts (table A). These districts are distinguished from other school districts by characteristics other than the size of their membership, such as average and median school size, number of high school graduates, number of pupils receiving special education services, and minority enrollment as a proportion of total enrollment.

Information about the characteristics listed above is found in 18 "basic tables" (tables 1–18) in the full report. The report also includes six tables (tables 19–21 and appendixes E–G) with supplemental data from the 2000 School District Tabulations (STP2) from the Bureau of the Census, which present decennial census data on household poverty, educational attainment of adults, and English language proficiency of children. For the purpose of establishing a meaningful context for the information on the 100 largest districts, four text tables that are in this article (tables A–D)

Table A. Selected statistics for the United States and jurisdictions, the 100 largest, and the 500 largest school districts: School year 2001–02

Data item	National total[1]	100 largest districts[1] Total	100 largest districts[1] Percentage of national total	500 largest districts[1] Total	500 largest districts[1] Percentage of national total
Districts	17,140	100	0.6	500	2.9
Schools	96,193	15,838	16.5	30,662	31.9
Students	48,521,731	11,168,631	23.0	20,912,064	43.1
Teachers (full-time-equivalent)	3,051,638	662,162	21.7	1,239,595	40.6
High school completers (2000–01)[2]	2,723,872	517,898	19.0	1,024,853	37.6
Median pupil/teacher ratio[3]	15.9	16.9	†	16.9	†
Average school size	504.4	705.2	†	682.0	†
High school completers[2] as percentage of all students	5.6	4.6	†	4.9	†

† Not applicable.

[1]The universe for this table includes outlying areas, Bureau of Indian Affairs, and Department of Defense schools. The 500 largest school districts include 23 school districts that are some other configuration besides prekindergarten (PK)– or K–12, although all of the 100 largest school districts are PK– or K–12.

[2]Includes high school diploma recipients as well as other high school completers (e.g., certificates of attendance).

[3]Includes only schools where student membership was greater than zero.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Local Education Agency Universe Survey," 2001–02, Version 1a, and "State Nonfiscal Survey of Public Elementary/Secondary Education," 2001–02, Version 1a.

precede the basic tables in the full report and provide national data and data for the 100 and 500 largest school districts. Appendix A in the complete report lists the 500 largest school districts, with some identifying information. Appendix B is an alphabetical list of the 500 largest districts ranked by membership size. Appendix C provides a count of the number of 100 largest districts by state. Appendix D provides selected data for the 100 largest school districts in the 1991–92 school year for comparison. In all basic tables and appendixes, with the exception of appendixes B and C, districts are presented in decreasing order of membership size.

Overview of the 100 Largest Districts

In the 2001–02 school year, there were 17,140 public school districts,[1] 96,193 public schools, and 48.5 million students in public schools in the United States and jurisdictions (table A). There were over 3.1 million full-time-equivalent (FTE) teachers in the 2001–02 school year and 2.7 million high school completers in the 2000–01 school year. The 100 largest school districts comprised less than 1 percent of all public school districts but served 23 percent of all public elementary and secondary students. The 100 largest school districts contained 16 percent of public schools and employed 22 percent of FTE teachers. The 500 largest school districts comprised 3 percent of all public school districts and 32 percent of public schools; they served 43 percent (20.9 million) of all public elementary and secondary students in the United States and jurisdictions.

The 100 largest school districts ranged in size from 44,859 to 1,049,831 students in 2001–02. Twenty-six of the 100 largest districts served over 100,000 students. The largest public school district was New York City Public Schools, New York, with 1,049,831 students enrolled in 1,218 schools. Following the New York City Public Schools district was the Los Angeles Unified district, California, with 735,058 students in 663 schools. The enrollment of each of these 2 largest districts was greater than enrollment for 27 states and the District of Columbia, each of the 5 outlying areas, the Bureau of Indian Affairs schools, and the Department of Defense schools.[2]

Where Were the 100 Largest School Districts?

There were 33 states and jurisdictions that had at least 1 of the 100 largest school districts (figure 1) in the 2001–02 school year. Texas had 15 districts among the 100 largest, and California and Florida had 13 each. Several other states had more than 1 district represented in the 100 largest: Georgia and Maryland each had 6; North Carolina had 5; Louisiana, Utah, and Virginia each had 4; Tennessee had 3; and Arizona, Colorado, Nevada, and Ohio each had 2. The following states each had 1 school district among the 100 largest: Alabama, Alaska, the District of Columbia, Hawaii, Illinois, Kansas, Kentucky, Massachusetts, Michigan, Minnesota, Nebraska, New Mexico, New York, Oregon, Pennsylvania, Puerto Rico, South Carolina, Washington, and Wisconsin. (The District of Columbia, Hawaii, and Puerto Rico have only one school district each for their entire jurisdiction.)

The 100 largest school districts tended to be in cities and counties with large populations, with administrative offices typically located in large cities and their environs. Many of the districts were in states where the school districts have the same boundaries as counties. However, caution should be used when interpreting the areas that these school districts cover. School district boundaries are not necessarily the same as county, city, or town boundaries. Finally, 73 percent of these districts were located in coastal and gulf coast states (see appendix C of the full report for the number of the 100 largest districts by state).

How Did These Districts Compare With the Average School District?

General characteristics

In the 2001–02 school year, each of the 100 largest school districts had at least 44,000 students, whereas 73 percent of regular school districts had fewer than 2,500 students (table B). Although 13 percent of regular school districts had 5,000 or more students, 68 percent of all students were served by these districts.

The average school district in the United States and jurisdictions had 5.6 schools; in comparison, the 100 largest school districts averaged 158.4 schools per district (derived from table A). Two of the three largest districts, New York

[1] In this report, the terms "public school districts," "school districts," and "regular school districts" are used. "Public school districts," also known as "school districts," include regular school districts; local supervisory unions that provide management services for a group of associated school districts; regional education service agencies that typically provide school districts with research, testing, and data processing services; state and federally operated school districts; and other agencies that do not fall into these groupings (e.g., charter schools reported as "placeholder" agencies). A "regular school district" is an agency responsible for providing free public education for school-age children residing within its jurisdiction, and is a subset of the category "public school districts/school districts."

[2] State enrollment can be found in *Public School Student, Staff, and Graduate Counts by State: School Year 2001–02* (Young 2003).

Figure 1. The 100 largest school districts in the United States and jurisdictions: School year 2001–02

NOTE: The universe for this figure includes outlying areas, Bureau of Indian Affairs, and Department of Defense (overseas) schools. The markings on the map denote the approximate location of the school district. The District of Columbia, Hawaii, and Puerto Rico are all one-district jurisdictions.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Local Education Agency Universe Survey," 2001–02, Version 1a.

City Public Schools, New York, and the Puerto Rico Department of Education, Puerto Rico, each had over 1,200 schools. The 100 largest school districts, on average, served more students (111,686 vs. 2,831) and employed more teachers (6,622 vs. 178) than the average school district in the United States and jurisdictions (derived from table A).

School characteristics

The 100 largest school districts had more students per school than the average school district, 705 compared with 504 students (table A). Eleven of the 100 largest school districts had an average regular school[3] size of over 1,000 students. In addition to larger average school sizes, the 100 largest school districts also had a higher median[4] pupil/teacher ratio, 16.9 to 1 compared with 15.9 to 1 for the average school district (table A). Among the 100 largest public school districts, Jefferson County, Kentucky, had the largest median pupil/teacher ratio at 27.6 to 1 and Forsyth County Schools, North Carolina, had the smallest at 12.7 to 1.

High school completers. The number of high school completers (diploma recipients and other high school completers) as a percentage of all students was lower in the 100 largest school districts than in the average school district (table A).

School staff. At the national level, 51 percent of staff were teachers,[5] and in the 100 largest districts, 52 percent of staff were teachers. Sixty-two districts reported that 50 percent or more of their staff were teachers, 5 districts had over 60

[3]A regular school is a public elementary/secondary school that does not focus primarily on vocational, special, or alternative education.

[4]If all the pupil/teacher ratios were listed in order of size, the midpoint on the list would be the median.

[5]Staff data can be found in *Public School Student, Staff, and Graduate Counts by State: School Year 2001–02* (Young 2003). The national staff ratio does not include the Bureau of Indian Affairs schools and the Virgin Islands.

Table B. Number and percentage of districts and students by district membership size for regular public elementary and secondary school districts in the United States and jurisdictions: School year 2001–02

District size (number of students)	Districts			Students			Cumulative totals	
	Number	Percentage	Cumulative percentage	Number	Percentage	Cumulative percentage	Districts	Students
Total[1]	14,564	100.0	†	47,587,932	100.0	†	†	†
100,000 or more	26	0.2	0.2	6,483,998	13.6	13.6	26	6,483,998
25,000 to 99,999	219	1.5	1.7	9,509,038	20.0	33.6	245	15,993,036
10,000 to 24,999	576	4.0	5.6	8,801,933	18.5	52.1	821	24,794,969
7,500 to 9,999	342	2.3	8.0	2,967,975	6.2	58.3	1,163	27,762,944
5,000 to 7,499	725	5.0	13.0	4,425,262	9.3	67.6	1,888	32,188,206
2,500 to 4,999	2,031	13.9	26.9	7,129,358	15.0	82.6	3,919	39,317,564
2,000 to 2,499	801	5.5	32.4	1,793,708	3.8	86.4	4,720	41,111,272
1,500 to 1,999	1,071	7.4	39.8	1,861,142	3.9	90.3	5,791	42,972,414
1,000 to 1,499	1,557	10.7	50.5	1,921,658	4.0	94.3	7,348	44,894,072
800 to 999	790	5.4	55.9	709,648	1.5	95.8	8,138	45,603,720
600 to 799	954	6.6	62.4	665,923	1.4	97.2	9,092	46,269,643
450 to 599	897	6.2	68.6	469,837	1.0	98.2	9,989	46,739,480
300 to 449	1,118	7.7	76.3	415,224	0.9	99.1	11,107	47,154,704
150 to 299	1,435	9.9	86.1	316,819	0.7	99.8	12,542	47,471,523
1 to 149	1,692	11.6	97.7	116,409	0.2	100.0	14,234	47,587,932
Zero[2]	102	0.7	98.4	0	0	100.0	14,336	47,587,932
Not applicable	228	1.6	—	†	†	100.0	14,336	47,587,932

† Not applicable.

[1]Not included in this table are local supervisory unions, regional education service agencies, and state and federally operated agencies.

[2]Membership may be 0 in two situations: (1) where the school district does not operate schools but pays tuition for its students in a neighboring district, and (2) where the district provides services for students who are accounted for in some other district(s). The number of regular districts represented in this table differs from the number of districts in table A, which represents all types of districts.

NOTE: The universe for this table includes outlying areas, Bureau of Indian Affairs, and Department of Defense schools. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Local Education Agency Universe Survey," 2001–02, Version 1a.

percent teachers, and 2 districts had less than 40 percent. In 3 of the 100 largest school districts (Clark County School District, Nevada; San Francisco Unified, California; and Alpine School District, Utah), 60 percent or more of all staff were teachers. (This does not include the City of Chicago, Illinois, or Greenville County, South Carolina, school districts, where nonteaching staff categories may be underrepresented due to nonresponse for these categories.) Twenty-five percent of the 100 largest school districts had 1 percent or more of their staff assigned to district administration.

Title I participation. Ninety-five of the 100 largest school districts reported data for Title I eligible schools and programs for the 2001–02 school year. The percentage of Title I eligible schools in the 95 districts ranged from 10.9 percent in the Charlotte-Mecklenburg, North Carolina, district to 98.9 percent in the Philadelphia City School District, Pennsylvania. Of the 95 of the 100 largest districts that reported Title I data, an average of 51 percent of students attended a Title I eligible school. In contrast, 47 percent of all students, nationally, attended a Title I eligible school.[6] In the 95 of the 100 largest school districts with Title I data, the percentages of students in Title I eligible schools ranged from 6.7 percent in the Charlotte-Mecklenburg, North Carolina, district to 99.9 percent in the Aldine Independent School District, Texas.

Charter schools. There were 422 charter schools administered by the 100 largest school districts in the 2001–02 school year. A little over 1 percent of students in the 100 largest school districts attended 1 of these 422 charter schools. There were 2,348 charter schools attended by

[6]National Title I school data can be found in *Overview of Public Elementary and Secondary Schools and Districts: School Year 2001–02* (Hoffman 2003).

3 percent of students in the 50 states and District of Columbia in 2001–02.[7] The largest number of charter schools (83) was in the Puerto Rico Department of Education, Puerto Rico, up from 36 charter schools in 2000–01.[8]

Student body

The 100 largest school districts were not homogeneous, and certain student characteristics, such as race/ethnicity, poverty level, and disability status, varied across the districts.

Race/ethnicity. American Indians/Alaska Natives, Asians/Pacific Islanders, Hispanics, and Black, non-Hispanics make up the groups other than White, non-Hispanic when assessing race at the national level. In some of the 100 largest districts, these four groups comprise the majority of student membership. The 100 largest school districts, with 23 percent of the United States and jurisdictions' public school students, served 38 percent of the 19.6 million public school students other than White, non-Hispanic (derived partially from tables A, C, and other sources; see footnote).[9]

In the 100 largest school districts, 69 percent of students were from groups other than White, non-Hispanic, compared with 41 percent of students in all school districts (table C).[10] More than one-third (37) of the 97 districts where membership information was available for groups other than White, non-Hispanic had over 75 percent other than White, non-Hispanic membership, and 8 of the 10 largest school districts had an other than White, non-Hispanic student membership percentage of this size.

Even with the relatively high other than White, non-Hispanic membership in the 100 largest school districts, 36 of the 97 districts reported 50 percent or more of their students as White, non-Hispanic. Of these 36 districts, 6 reported other than White, non-Hispanic membership of less than 25 percent of their student body. In 16 of the 100 largest districts, half or more of the membership was Black,

[7]National charter school data can be found in *Overview of Public Elementary and Secondary Schools and Districts: School Year 2001–02* (Hoffman 2003).

[8]Charter school data for the 100 largest school districts in 2000–01 can be found in *Characteristics of the 100 Largest Public Elementary and Secondary School Districts in the United States: 2000–01* (Young 2002).

[9]For the 100 largest school districts, the numbers of students in different racial/ethnic categories are reported at the school level and are aggregated up to the district level. The total number of students other than White, non-Hispanic in the 100 largest school districts is 7,503,151. The figure for the United States and jurisdictions is from the state-level survey and can be found in *Public School Student, Staff, and Graduate Counts by State: School Year 2001–02* (Young 2003).

[10]See table C for the percentages of districts for which data were reported.

Table C. Percentage of students eligible for free or reduced-price lunch and percentage enrollment that is other than White in the 100 and 500 largest school districts, and in the United States and jurisdictions: School year 2001–02

	All school districts	100 largest school districts	500 largest school districts
Percentage of schools reporting free and reduced-price lunch	91.8	94.8	94.2
Membership eligible for free or reduced-price lunch of those who reported free and reduced-price lunch	39.7[1]	54.3[1]	48.0[1]
Percentage of schools reporting other than White membership	98.2	97.6	97.8
Percentage groups other than White, other non-Hispanic enrollment	41.1	68.7	59.2
American Indian/Alaska Native	1.3	0.6	0.7
Asian/Pacific Islander	4.4	7.0	6.3
Hispanic	18.5	32.5	27.7
Black, non-Hispanic	16.9	28.7	24.5
Percentage White, non-Hispanic enrollment	58.9	31.3	40.8

[1]These percentages should be interpreted with caution; four states (Arizona, Connecticut, Tennessee, and Wyoming), the Department of Defense (overseas), the Department of Defense (domestic), Bureau of Indian Affairs, and the Virgin Islands did not report free and reduced-price lunch eligibility and are not included in the national total. Also, states may not have reported students eligible for reduced-price meals, and a number of states reported participation instead of eligibility data, which may not be strictly comparable. See the Methodology section of the full report for further description. Percentages are based on those schools that reported.

NOTE: The universe for this table includes outlying areas, Bureau of Indian Affairs, and Department of Defense schools. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Public Elementary/Secondary School Universe Survey," 2001–02, Version 1a, and "Local Education Agency Universe Survey," 2001–02, Version 1a.

non-Hispanic. Sixteen districts reported that the majority of students were Hispanic; 4 of these are among the 10 largest districts. In Hawaii, a one-district state, and the San Francisco Unified District, California, the majority of students were Asian/Pacific Islander.

Data from the 2000 Decennial Census are presented in tables 9 and 10 in the full report. These data provide racial and ethnic breakouts of the population less than 18 years old residing within the school district boundaries for the 100 largest school districts. These data are presented in the report for comparison purposes; see the descriptions there under the Basic Tables heading for more detailed information.

Free and reduced-price lunch participation. The 100 largest school districts had a disproportionate percentage of students eligible for the free and reduced-price lunch program relative to all public school districts. Among schools that reported free and reduced-price lunch eligibility, 54 percent of students in the 100 largest school districts were eligible, compared with 40 percent of students in all districts (table C). Among the 95 of the 100 largest school districts that reported data on free and reduced-price lunch, 42 districts reported over 50 percent of their students eligible for the free and reduced-price lunch program.

Students with disabilities. Approximately 1.4 million students had individualized education programs (IEPs) in the 100 largest school districts. They made up 13 percent of all students in these districts, the same as the percentage for the United States and jurisdictions.[11] These 1.4 million students comprised 22 percent of the 6.3 million students in the 50 states and District of Columbia that had IEPs. In the largest school district, New York City Public Schools, New York, 14 percent, or 146,328 students, had IEPs. About 2 percent of the schools in the 100 largest school districts were special education schools.

High school dropouts. In the 1999–2000 school year, 60 of the 100 largest school districts were in states that could report dropouts using the NCES definition of dropouts (see the Methodology section of the full report for more information). The 9th- through 12th-grade dropout rate in those 60 districts ranged from less than 1 to 26 percent. Thirty-seven of the 60 districts that had dropout data had a 9th- through 12th-grade dropout rate between 3 and 10 percent, while 14 were higher and 9 were lower.

[11]IEP data for the United States and jurisdictions can be found in *Overview of Public Elementary and Secondary Schools and Districts: School Year 2001–02* (Hoffman 2003).

Revenues and Expenditures for Fiscal Year 2000

In the 1999–2000 school year (FY 2000), $373 billion were collected for public elementary and secondary education in the United States and jurisdictions; 23 percent ($85 billion) of this revenue was collected by the 100 largest school districts.[12] Of the $85 billion in revenue to the 100 largest school districts, 30 percent ($25 billion) was received by the 5 largest school districts (New York City Public Schools, New York; Los Angeles Unified, California; Puerto Rico Department of Education, Puerto Rico; City of Chicago School District, Illinois; and Dade County School District, Florida). The revenues from the federal government received by the 100 largest school districts comprised between 2 percent (Plano Independent School District, Texas) and 28 percent (Puerto Rico Department of Education, Puerto Rico) of all revenues to the district.

The 100 largest school districts spent $72 billion (22 percent) of the $324 billion in current expenditures spent in the United States and jurisdictions in 1999–2000.[13] The two largest school districts, New York City Public Schools, New York, and Los Angeles Unified, California, spent a little more than 1 out of every 5 of the current expenditure dollars expended by the 100 largest school districts. The percentage of total current expenditures spent on instruction ranged from 41 percent (District of Columbia Public Schools, District of Columbia) to 74 percent (New York City Public Schools, New York) in the 100 largest school districts.

The current expenditures per pupil were $6,911 in the United States and jurisdictions,[14] higher than the $6,606 in the 100 largest school districts. Of the 100 largest school districts, 11 spent more than $8,000 per pupil (with the Boston School District, Massachusetts, spending $11,503 per pupil) and 6 spent less than $5,000 per pupil (with the Puerto Rico Department of Education, Puerto Rico, spending $3,404 per pupil). (See the Methodology section of the full report for a definition of specific revenues and expenditures.)

[12]National revenue and expenditure data were calculated from the state-level "National Public Education Financial Survey" (NPEFS) and can be found in *Revenues and Expenditures for Public Elementary and Secondary Education: School Year 1999–2000* (Johnson 2002). The percentage distribution is based on school district-level data found on the U.S. Census Bureau's Annual Survey of Government Finances (F-33 survey). The Department of Defense and Bureau of Indian Affairs are not included in these national totals.

[13]Data on current expenditures can be found in *Revenues and Expenditures for Public Elementary and Secondary Education: School Year 1999–2000* (Johnson 2002).

[14]Data on current expenditures per pupil can be found in *Revenues and Expenditures for Public Elementary and Secondary Education: School Year 1999–2000* (Johnson 2002).

Changes in the 100 Largest School Districts Between 1991 and 2001

While there has been a lot of movement within the 100 largest school districts over time, between the 1991–92 and 2001–02 school years, the 100 largest school districts remained very similar. Only 11 of the 100 largest school districts in 1991–92 were not among the 100 largest school districts by 2001–02 (see appendix D of the full report for a list of the 100 largest school districts in 1991–92).[15]

The number of students in the 100 largest school districts increased by 14 percent between 1991–92 and 2001–02, the number of teachers increased by 27 percent, and the number of schools increased by 11 percent. However, while the numbers of students, teachers, and schools in the 100 largest school districts increased between these years, the proportion of the national total these numbers represent was essentially unchanged. For example, the number of students in the 100 largest school districts was 23 percent of all districts in both 1991–92 and 2001–02 (table D).

Household and Population Characteristics of the 100 Largest School Districts

Household poverty

The percentages of households living in poverty varied widely among the 100 largest school districts. In 1999, the percentages of all households with incomes below the poverty line ranged from about 4 to 47 percent in the 100 largest school districts. The Puerto Rico Department of Education, Puerto Rico, had the largest percentage of households in poverty—47 percent.

The percentages of family households with incomes below the poverty line in the 100 largest school districts ranged from 3 to 45 percent, with the Puerto Rico Department of Education, Puerto Rico, again having the largest percentage of family households with incomes below the poverty line.

Educational attainment

In 2000, the percentage of adults ages 25 and older with less than a high school diploma[16] in the 100 largest school districts ranged from 7 to 59 percent. The percentage of adults ages 25 and older with a high school education only ranged from 12 to 37 percent. The percentage of adults with some college or higher[17] ranged from 32 to 78 percent in the 100 largest school districts. When looking at the upper end of education attainment (a master's degree or higher), the percentages of adults in the 100 largest school districts ranged from 3 to 28 percent, with Montgomery County Public Schools, Maryland, having the highest percentage of adults ages 25 and older with a master's degree or higher.

English language proficiency

The percentages of children ages 5–17 who spoke English and no other language ranged from 13 percent (Santa Ana

[15]Please note that between 1991–92 and 2001–02, 1 of the 100 largest school districts that was present in both years changed its district name. This district was Mecklenburg County, North Carolina (1991–92)/Charlotte-Mecklenburg Schools, North Carolina (2001–02).

[16]Includes adults with the following levels of reported educational attainment: less than 9th grade; 9th grade; 10th grade; 11th grade; and 12th grade, no diploma.

[17]Includes adults with the following levels of reported educational attainment: some college, no degree; associate's degree; bachelor's degree; and master's degree or higher.

Table D. Number of students, teachers, and schools in the United States and jurisdictions in the 100 largest school districts: School years 1991–92 and 2001–02

	1991–92[1]			2001–02[1]			Percentage change (1991–92 to 2001–02)	
	All districts	100 largest districts	100 largest districts as a percentage of national total	All districts	100 largest districts	100 largest districts as a percentage of national total	All districts	100 largest districts
Students	42,800,693	9,823,729	23.0	48,520,706	11,168,631	23.0	13.4	13.7
Teachers (full-time-equivalent)	2,297,463	521,628	22.7	3,051,583	662,162	21.7	32.8	26.9
Schools	86,287	14,235	16.5	96,193	15,838	16.5	11.5	11.3

[1]Data for 2001–02 include outlying areas, Bureau of Indian Affairs, and Department of Defense schools. In 1991–92, these jurisdictions were not collected, and therefore not included. The addition of Bureau of Indian Affairs and Department of Defense schools accounts for 0.3 percent more students, 0.3 percent more teachers, and 0.4 percent more schools.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Local Education Agency Universe Survey," 1991–92 and 2001–02, Version 1a, and "State Nonfiscal Survey of Public Elementary/Secondary Education," 1991–92, Revised, and 2001–02, Version 1a.

Unified, California) to 97 percent (Knox County School District, Tennessee) in the 100 largest school districts in 2000. The Puerto Rico Department of Education, Puerto Rico, and Santa Ana Unified, California, had the lowest percentages of children ages 5–17 who spoke English and no other language in the 100 largest school districts. Looking at English-language proficiency, 51 percent of children ages 5–17 in the Puerto Rico Department of Education, Puerto Rico, did not speak English at all. Among other of the 100 largest school districts, the percentage of children who spoke no English at all was 2 percent or higher in the following districts: Los Angeles Unified, California; Houston Independent School District, Texas; Dallas Independent School District, Texas; Austin ISD, Texas; Denver County, Colorado; and Santa Ana Unified, California.

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Data sources: The following components of the NCES Common Core of Data (CCD): "Local Education Agency Universe Survey," 1991–92 and 2001–02; "Public Elementary/Secondary School Universe Survey," 2001–02; and "State Nonfiscal Survey of Public Elementary/Secondary Education," 1991–92 and 2001–02.

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School District Expenditures

School District Expenditures for Elementary and Secondary Education: 1997–98

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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 "School District Financial Survey" (Form F-33), part of the NCES Common Core of Data (CCD), and from the U.S. Census Bureau and Bureau of Economic Analysis, U.S. Department of Commerce.

Introduction

The "School District Financial Survey" (Form F-33) is an annual survey of school district financial data that is part of the Common Core of Data (CCD). The F-33 collects data on revenues and expenditures for prekindergarten through grade 12 in public schools in approximately 15,500 local education agencies (LEAs) in the 50 states and the District of Columbia.

This report presents analyses of school district expenditures for the 1997–98 school year. The F-33 data form the core of these analyses, but information is supplemented by data on selected school district demographic and fiscal characteristics from the *1990 School District Data Book*, prepared by the U.S. Census Bureau.*

Analyses of school district expenditures are presented for the nation and the states. The national analyses focus on expenditures in school districts in different geographical regions, of different size, with different fiscal capacity to support education (measured by median household income and median housing value), with different proportions of minority enrollment and with different poverty rates. The state analyses focus on interdistrict variation in expenditures per pupil, and the relationship between expenditures per pupil and the school district fiscal and demographic characteristics cited in the national analyses.

The analyses of expenditures presented in this report are based on both actual dollars and cost-adjusted dollars. Cost adjustments are designed to take into account differences in the cost of education across school districts in a state. The cost adjustment used in these analyses is the Geographic Cost of Education Index (GCEI), which uses school districts as the geographic area (Fowler and Monk 2001; Chambers 1998). The GCEI was developed using data from the 1993–94 Schools and Staffing Survey and works with three categories of school inputs: certified school personnel, noncertified school personnel, and nonpersonnel school items. The index reflects how much more or less it costs in different geographic locations to recruit and employ comparable school personnel, as well as the varying cost of nonpersonnel items such as purchased services, supplies and materials, furnishings and equipment, travel, utilities, and facilities.

All analyses presented in this report are for the 1997–98 school year. Although most school finance relationships tend to be relatively stable over time, changes often occur as a result of changes in state funding formulas. The relationships observed for the 1997–98 school year may therefore differ from those observed in earlier or later years.

In the next section, the major findings of the report are presented using cost-adjusted expenditures. Findings based on actual expenditures are included in the body of the report.

National Findings

The national findings focus on three areas: total expenditures and expenditures in different geographic regions, expenditures in school districts of different size, and the relationship between expenditures and selected school district fiscal and demographic characteristics.

Total expenditures and expenditures in different geographic regions

Cost-adjusted school district expenditures for elementary and secondary education totaled $324.7 billion in the 1997–98 school year, or about $7,138 per pupil. The largest share of total school expenditures was for current expenditures—$273.1 billion, or about 84 percent of the total. Capital expenditures of $35.3 billion made up almost 11 percent of the total. The remaining $16.4 billion was used for nonelementary and nonsecondary programs and expenditures by LEAs (NCES 1998).

Cost-adjusted expenditures per pupil for education were highest in the Northeast for seven of the eight expenditure measures. Expenditures for administration were highest in

*While more current census data on district characteristics are now available, the 1990 census data were used in these analyses because they were the most current data available at the time the report was planned and written. The national analyses include districts in all states, even when the percentage of districts with demographic and fiscal data was less than 50 percent of the total districts in the state. The state analyses, however, only included the 40 states in which at least 50 percent of the districts had demographic and fiscal data.

the Midwest. With the exception of expenditures for plant maintenance and operation, which were lowest in the South, expenditures per pupil for all other education functions were consistently lowest in the West.

Expenditures in school districts of different size

Cost-adjusted expenditures per pupil for most school functions were generally highest in small school districts and lowest in large districts. Per pupil expenditures were highest in districts with fewer than 1,000 students for all functions except student and instructional staff support. This was the one function for which expenditures per pupil were highest in the largest districts (with 10,000 or more students) and lowest in the smallest districts (with fewer than 1,000 students). The other expenditure measure for which expenditures per pupil were not lowest in the largest districts, administration expenditures per pupil, was lowest in districts with between 5,000 and 9,999 students.

Relationship between expenditures and school districts' fiscal capacity

For the nation as a whole, there was a weak relationship between school districts' fiscal capacity (measured by median household income and median value of owner-occupied housing) and cost-adjusted expenditures per pupil. The correlation between median household income and cost-adjusted current expenditures per pupil was +0.03; the correlation between median housing value and current expenditures per pupil was statistically insignificant. Correlations between these two measures of district fiscal capacity and all other measures of cost-adjusted expenditures per pupil were also weak or statistically insignificant.

Relationship between expenditures and school districts' demographic characteristics

Minority enrollment in a school district and the district poverty rate also showed weak relationships with cost-adjusted expenditures per pupil. Correlations between these two school district demographic characteristics and all measures of cost-adjusted expenditures per pupil were either weak or statistically insignificant.

State Findings

The state findings focus on two areas: interdistrict variation in expenditures per pupil, and the relationship between expenditures and selected school district fiscal and demographic characteristics.

Interdistrict variation in expenditures per pupil

States differ substantially in the amount of interdistrict variation in expenditures per pupil. Using the synthesized measure of variation, 12 states had the largest overall variation in cost-adjusted expenditures per pupil. Of these 12 states, 4 (Alaska, Idaho, Montana, and Wyoming) were in the West, 2 (Massachusetts and New Hampshire) were in the Northeast, and 6 (Illinois, Kansas, Missouri, Nebraska, North Dakota, and South Dakota) were in the Midwest. No state in this group was from the South.

Illinois, Montana, and North Dakota were in the quartile of states with the greatest interdistrict variation on all components of expenditures per pupil, while Alaska was in this quartile for six measures of expenditures per pupil.

At the other end of the spectrum were 12 states with the weakest interdistrict variation in cost-adjusted current expenditures per pupil. Of these 12 states, 9 (Alabama, Delaware, Florida, Kentucky, Louisiana, Maryland, North Carolina, South Carolina, and West Virginia) were in the South, 2 (Iowa and Wisconsin) were in the Midwest, and 1 (Nevada) was in the West.

Four states (Delaware, Florida, Nevada, and North Carolina) were in the quartile of states with the weakest overall variation on all measures of expenditures per pupil, and two other states (Alabama and West Virginia) were in this quartile for six components of expenditures per pupil.

Relationship between expenditures and school districts' fiscal capacity

Median household income. Among the 40 states with adequate data for analysis, 5 states (Illinois, Louisiana, New York, Pennsylvania, and Virginia) showed a moderate positive correlation between median household income and cost-adjusted current expenditures per pupil; no state had a strong positive correlation between income and current expenditures. On the other hand, median household income was negatively related to cost-adjusted current expenditures per pupil in 24 states, with 5 states (Alaska, Arizona, Iowa, Utah, and Washington) having a strong negative correlation between these variables.

In cost-adjusted dollars, 11 states showed a positive relationship between median household income and at least one measure of expenditure. Household income was related to all eight expenditure measures in one state (New York) and to seven of the eight expenditure measures in four other states (Illinois, Louisiana, Pennsylvania, and Virginia). In contrast, there was a negative relationship between median household income and at least one expenditure measure in 27 states. Five states (Arizona, Indiana, Missouri, Montana, and Nebraska) showed a

negative relationship between household income and all eight measures of expenditure. Another 13 states (Alaska, California, Florida, Iowa, Kansas, Maine, Minnesota, North Dakota, Oregon, Texas, Utah, Washington, and West Virginia) showed a negative relationship between household income and at least six expenditure measures.

Median housing value. District property values, as measured by median housing value, were positively related to cost-adjusted current expenditures per pupil in more states than median household income. For the 40 states with adequate data, 5 states (Illinois, Massachusetts, Ohio, Pennsylvania, and Vermont) had a moderate positive correlation between median housing value and current expenditures per pupil, and 1 state (Virginia) had a strong positive correlation. On the other hand, median housing value was negatively related to current expenditures per pupil in 17 states, with 5 states (Alaska, Iowa, Montana, Nebraska, and West Virginia) having a strong negative correlation between these variables.

Twenty-three states showed a positive relationship between median housing value and at least one measure of expenditure. Median housing value was positively related to all eight expenditure measures in one state (Virginia) and to at least six of the eight expenditure measures in four other states (Illinois, Maryland, Ohio, and Pennsylvania). In contrast, there was a negative relationship between median household income and at least one expenditure measure in 25 states. One state (Arizona) had a negative relationship between median housing value and all eight measures of expenditure. Another 13 states (Alaska, California, Indiana, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, North Dakota, Texas, Utah, and Washington) showed a negative relationship between household income and at least six expenditure measures.

Relationship between expenditures and school districts' demographic characteristics

Minority enrollment. For the 40 states with adequate data, 19 states had a positive correlation between minority enrollment and cost-adjusted current expenditures per pupil. Five states (Kansas, Nebraska, New Hampshire, New York, and Pennsylvania) had a moderate negative correlation between minority enrollment and cost-adjusted current expenditures.

In cost-adjusted dollars, 35 states showed a positive relationship between minority enrollment and at least one measure of expenditure. Minority enrollment was positively related to all eight measures of expenditure in seven states (Arizona, Indiana, Massachusetts, Minnesota, Missouri, Montana, and Ohio) and to at least six of the eight expenditure measures in another six states (Alaska, Michigan, North Dakota, Oregon, South Carolina, and Wisconsin).

District poverty rate. For the 40 states with adequate data, 27 states had a positive correlation between the district poverty rate and cost-adjusted current expenditures per pupil. Three states had a negative correlation between the district poverty rate and cost-adjusted current expenditures per pupil.

Thirty-three states showed a positive relationship between the district poverty rate and at least one cost-adjusted measure of expenditure per pupil. The district poverty rate was positively related to all 8 expenditure measures in 10 states (Arizona, Indiana, Kansas, Massachusetts, Minnesota, Missouri, Montana, North Dakota, Utah, and Washington) and to at least 6 of the 8 expenditure measures in another 11 states (Alaska, California, Florida, Michigan, Nebraska, Oregon, South Carolina, Tennessee, Texas, Wisconsin, and Wyoming). Eight states (Illinois, Louisiana, Maryland, Michigan, New York, Pennsylvania, Rhode Island, and West Virginia) had a negative relationship between the district poverty rate and at least one measure of expenditure.

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