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## 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

Peggy G. Carr, Associate Commissioner, Assessment Division

## **Evaluating the Performance of Urban Students**

One of the leading issues in American education today is how well students in the nation's large urban areas are performing. Many large urban school districts are located in states in which they are the only such district. When their students are tested using a state test, these districts can be compared with the rest of the state's population, but not with large urban districts in other states. The National Assessment of Educational Progress (NAEP) is the only assessment system that can provide comparable statistics across state boundaries. To examine the feasibility and value of using NAEP to compare large urban districts in various states, the National Center for Education Statistics (NCES) inaugurated the Trial Urban District Assessment (TUDA). TUDA provides results for fourth- and eighth-graders in selected urban districts using the same NAEP assessment questions administered at the national and state levels. In 2002, TUDA was conducted for the first time, with assessments in reading and writing. Results from 2002 are featured in this issue of the *Quarterly*. In 2003, TUDA was conducted again, with assessments in reading and mathematics.

## **Characteristics of TUDA Districts**

In 2002, NCES invited five large urban districts to participate in TUDA: New York City Public Schools, Los Angeles Unified, Chicago School District 299, Houston Independent School District, and Atlanta City. In 2003, four more districts were added: Boston School District, Charlotte-Mecklenburg Schools (in North Carolina), Cleveland Municipal School District, and San Diego City Schools. TUDA required NCES to work closely with school district administrators, as well as with school principals and staff. I appreciate the help that the Council of the Great City Schools provided in working with these large school districts. (In addition to results for the nine selected districts, results for the District of Columbia, which has participated in many NAEP state assessments, are included in TUDA reports.)

The nine districts were chosen to provide variation in characteristics such as student population size, demographic and socioeconomic composition, and geographic location. The size of these districts ranged from about 55,000 students in Atlanta to over one million in New York City. Data from the 2003 TUDA in mathematics at grade 4 show the largest proportion of Black students in Atlanta (87 percent), the largest proportion of Hispanic students in Los Angeles (73 percent), and the largest proportion of White students in Charlotte-Mecklenburg (41 percent). The proportion of limited-English-proficient (LEP) fourth-graders ranged from 2 percent in Atlanta to 56 percent in Los Angeles. All of the fourth-graders in Cleveland were eligible for free or reduced-price school lunch—an indicator of poverty status—while 45 percent of those in Charlotte-Mecklenburg were eligible. The large urban districts were distributed across all four regions of the United States. While most of the districts were located entirely within large cities, two districts, Charlotte-Mecklenburg and Los Angeles Unified, also included schools located in suburban areas.



Not only did the large urban districts differ from each other, but they also tended to differ from the nation as a whole and from the states. For example, all of the participating districts had lower proportions of White students than did the nation. And all of the districts except Charlotte-Mecklenburg had considerably higher proportions of students eligible for free or reduced-price school lunch than did the nation. The dramatic differences between the characteristics of a given urban school district and those of the nation, the states, and other districts create special challenges in analyzing and reporting the data.

### **Challenges in Analyzing and Reporting TUDA Data**

Because of differences in characteristics, it can be difficult to make meaningful comparisons between TUDA districts and the nation or the states. To provide a more appropriate frame of reference, NCES also compared the 2002 results for TUDA districts with the average for all students in central cities across the nation. The term “central city” does not mean the central part of a city or the “inner city,” but rather a city that is central. A central city is defined by the Census Bureau as a city of 50,000 people or more that is the largest in its metropolitan area, or can otherwise be regarded as central, taking into account such characteristics as commuting patterns. However, many central cities—for example, Lawton, Oklahoma, or Parkersburg, West Virginia—do not resemble the TUDA districts to any great degree. In 2003, therefore, NCES refined its comparison group for the TUDA districts to include only *large* central cities (defined as central cities with populations of at least 250,000). About 15 percent of the nation’s students live in large central cities. In terms of student population characteristics, TUDA districts are often more similar to the large central cities than to the nation or the states.

Another way in which NCES addresses the issue of widely varying characteristics is by comparing the performance of individual subgroups in a given TUDA district with the performance of the same subgroups elsewhere. For example, the performance of Black fourth-graders in Atlanta can be compared with that of Black fourth-graders in the nation, in the large central cities, in Georgia, and in other TUDA districts. Similarly, the performance of students eligible for free or reduced-price lunch can be compared with the performance of other eligible students. Such comparisons frequently demonstrate that subgroup members in TUDA districts are performing at or above the national average for their peers (though of course subgroup members in some TUDA districts are performing below this average).

An additional issue concerns differences in the proportions of students that TUDA districts excluded from the assessments, either because those students had disabilities that prevented their participation, or because their knowledge of English was not sufficient for them to participate meaningfully. In the 2003 TUDA assessment in reading, for example, 33 percent of Houston’s fourth-grade sample was identified as LEP and 20 percent of the sample was excluded. (Houston typically assesses the reading skills of LEP students in

Spanish, while NAEP assesses reading skills only in English.) In Los Angeles, 56 percent of the sample was identified as LEP, but only 5 percent of the sample was excluded. (In California, state law requires testing of nearly all students.) Variability in the proportion of students excluded should be taken into consideration when interpreting the results and making comparisons.

### **Available Results and Future Plans for TUDA**

One of the primary values of NAEP to the public is the ability to compare performance in various jurisdictions with performance in other jurisdictions and in the nation. While NCES has always administered NAEP assessments to students in urban areas, TUDA for the first time allows comparisons of students in individual large urban districts to students in the nation, in large central cities (taken as a whole), in the states, and in other participating districts. Such comparative data appear in NCES reports on the 2002 and 2003 TUDA, and one can also make one's own comparisons using the NAEP Data Tool available on the NCES web site (<http://nces.ed.gov/nationsreportcard/naepdata>).

I am excited about the opportunity to provide the public with comparative information about student performance in large urban districts. Additional information will be available after TUDA is conducted again in 2005. However, the program retains its trial status. The decision whether to make urban district assessments a permanent part of NAEP will be made only after NCES and the National Assessment Governing Board (NAGB) further evaluate the results.

# FEATURED TOPIC: NAEP TRIAL URBAN DISTRICT ASSESSMENT

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## District Assessment: Reading

### The Nation's Report Card: Reading 2002, Trial Urban District Assessment

—Anthony D. Lutkus, Arlene W. Weiner, Mary C. Daane, and Ying Jin

***This article was originally published as the Executive Summary of the Statistical Analysis Report of the same name. The sample survey data are from the National Assessment of Educational Progress (NAEP) 2002 Trial Urban District Reading Assessment and 2002 Reading Assessment.***

The National Assessment of Educational Progress (NAEP) is the nation's ongoing representative sample survey of student achievement in core subject areas. NAEP, known as the Nation's Report Card, is authorized by Congress and administered by the National Center for Education Statistics (NCES) of the Institute of Education Sciences in the U.S. Department of Education. NAEP regularly reports to the public on the educational progress of students in grades 4, 8, and 12.

In 2002, NAEP assessed the reading and writing performance of the nation's fourth-, eighth-, and twelfth-grade students. NAEP also conducted assessments of fourth- and eighth-graders' reading and writing in most of the states.

In 2001, after discussion among NCES, the National Assessment Governing Board (NAGB), and the leadership of the Council of the Great City Schools, Congress appropriated funds for a trial district-level assessment and NAGB passed a resolution approving the selection of five large urban districts for participation in the Trial Urban District Assessment, a special project within NAEP. Thus, this report presents, for the first time, district-level results of NAEP reading assessments in five urban public school districts: Atlanta City, Chicago School District 299, Houston Independent School District, Los Angeles Unified, and New York City Public Schools. Throughout this report, the districts are referred to simply as Atlanta, Chicago, Houston, Los Angeles, and New York City. The five districts participated

voluntarily in the NAEP 2002 Trial Urban District Assessment in reading at grades 4 and 8. Results are also included in this report for the District of Columbia, which, in 2002 and past years, has been included in the main assessments with states and other jurisdictions. Data for public schools across the nation and for central city public schools are provided for comparison purposes.\* The public schools also included charter schools, which in some cases were not managed by the urban school district.

NAEP does not provide scores for individual students or schools. It reports results for groups of students (e.g., fourth-graders). For each group in each table in the report, assessment results are described in one of two ways: the group's average reading score on a scale from 0 to 500 or the percentage of students in the group who reached each of three achievement levels: *Basic*, *Proficient*, and *Advanced*. The *Proficient* level for each grade is defined by NAGB as representing "solid academic performance," which demonstrates "competency over challenging subject matter" for the grade assessed. *Basic* indicates partial mastery of skills that are fundamental for proficient work. *Advanced* denotes superior performance.

The achievement levels are performance standards adopted by NAGB as part of its statutory responsibilities. The achievement levels are a collective judgment of what students should know and be able to do for each grade tested. As provided by law, NCES, upon review of a congressionally mandated evaluation of NAEP, determined that the achievement levels are to be used on a trial basis and should be interpreted with caution. However, both NCES and NAGB believe that the performance standards are useful for understanding trends in student achievement. They have been widely used by national and state officials and others as a common yardstick of academic performance.

The results are based on representative samples of students for the nation, for schools in central cities, and for participating districts. In order to obtain reliable and representative data, a large proportion of the selected schools and students must participate. All six districts met the NCES statistical participation criteria for NAEP samples at grade 4, but New York City data are not reported for grade 8 because eighth-grade participation did not meet the criteria.

\*"Central city" includes a nationally representative sample of public schools located in central cities within metropolitan statistical areas as defined by the federal Office of Management and Budget. A central city is a city of 50,000 or more that is the largest in its metropolitan area, or can otherwise be regarded as "central." The term means "a city that is central," not "the central part of a city" or the "inner city." Note that central cities encompass wider areas than what is commonly referred to as "the inner city."

Some students are identified by the school districts as students with disabilities or limited-English-proficient students. Some of these students are excluded from the assessment, and others are tested with accommodations related to their status. Because the percentages of students identified, excluded, and assessed with accommodations vary across the urban districts, that variability should be taken into consideration in interpreting the results and making comparisons.

For example, in the case of fourth-grade students, the percentages of students identified as having disabilities or limited English proficiency ranged from 8 to 51 percent, the percentages of fourth-grade students excluded for these reasons ranged from 2 to 17 percent, and the percentages assessed with accommodations ranged from 1 to 8 percent. At the eighth grade, the percentages of students identified with disabilities or limited English proficiency ranged from 6 to 35 percent, the percentages of eighth-grade students excluded for these reasons ranged from 2 to 7 percent, and the percentages assessed with accommodations ranged from 0 to 8 percent.

## Overall Reading Results for the Urban Districts

### Average scale scores

#### Results for grade 4

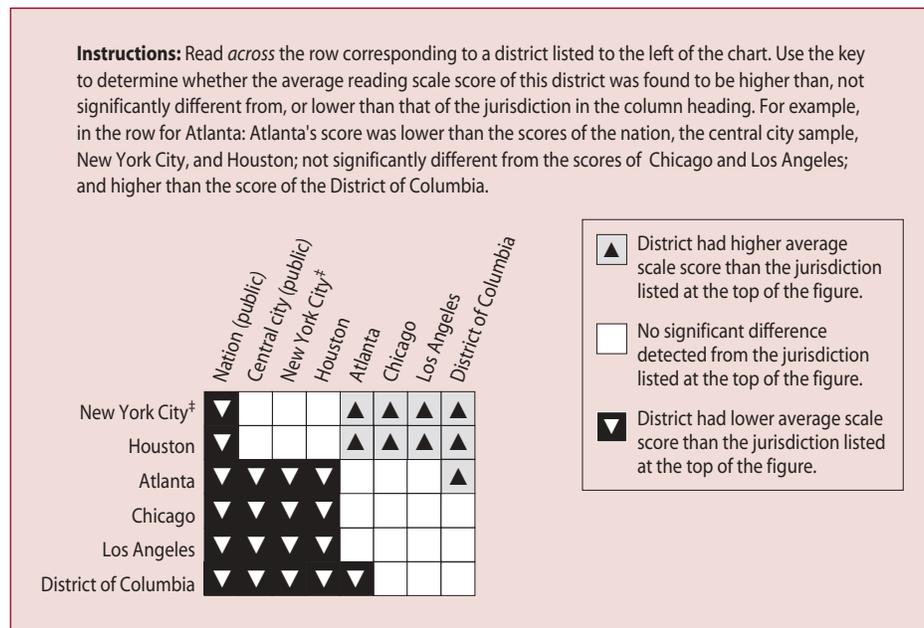
- The average scale scores for fourth-graders ranged from 191 in the District of Columbia and Los Angeles to 206 in Houston and New York City.
- The average score for public school students in the nation as a whole was higher than the average score in each of the urban districts, and the national average score in central city public schools was higher than the average score in each of the urban districts except Houston and New York City (figure A).
- The average scale scores in Houston and New York City were higher than those of the other urban districts and were not found to differ significantly from each other.

#### Results for grade 8

Results for New York City schools at grade 8 are not reported because they did not meet participation rates.

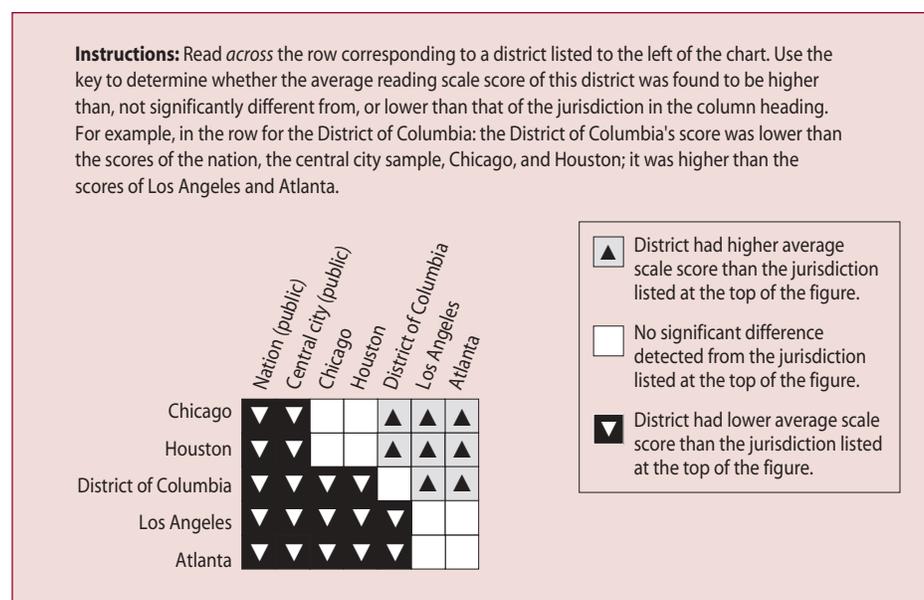
- The average scale scores for eighth-graders ranged from 236 in Atlanta to 249 in Chicago.
- The national average scores for public school students and for students in the central city public schools were higher than the average score in any of the urban districts (figure B).

**Figure A. Cross-district comparisons of average reading scale scores, grade 4 public schools: By urban district, 2002**



<sup>‡</sup>Although deemed sufficient for reporting, the target response rate specified in the NAEP guidelines was not met.  
 NOTE: The between-district comparisons take into account sampling and measurement error and that each district is being compared with every other district shown. Significance is determined by an application of a multiple-comparison procedure.  
 SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 2002 Trial Urban District Reading Assessment and 2002 Reading Assessment. (Originally published as figure 2.1 on p. 14 of the complete report from which this article is excerpted.)

**Figure B. Cross-district comparisons of average reading scale scores, grade 8 public schools: By urban district, 2002**



NOTE: The between-district comparisons take into account sampling and measurement error and that each district is being compared with every other district shown. Significance is determined by an application of a multiple-comparison procedure.  
 SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 2002 Trial Urban District Reading Assessment and 2002 Reading Assessment. (Originally published as figure 2.2 on p. 15 of the complete report from which this article is excerpted.)

- The average scale scores in Chicago and Houston were higher than those of the other urban districts and were not found to differ significantly from each other.

### Reading achievement levels

#### Results for grade 4

- The percentages of fourth-graders performing at or above *Proficient* ranged from 10 percent in the District of Columbia to 19 percent in New York City. The percentage of students performing at or above *Proficient* in public schools in the nation was 30 percent, and for students in central city public schools it was 21 percent.
- Any apparent differences between the percentages of students performing at or above *Proficient* in the urban districts were not found to be statistically significant.
- The percentages of students performing at or above *Basic* ranged from 31 percent in the District of Columbia to 48 percent in Houston. In public schools across the nation, 62 percent of students performed at or above *Basic*. In central city schools in the national sample, 51 percent performed at or above *Basic*.
- The percentages of students performing at or above *Basic* were higher in Houston and New York City than in the other urban districts.

#### Results for grade 8

- The percentages of eighth-graders performing at or above *Proficient* ranged from 8 percent in Atlanta to 17 percent in Houston. Thirty-one percent of students in public schools in the nation and 23 percent in central city public schools performed at or above *Proficient*.
- The percentages of students performing at or above *Proficient* in national public schools and central city public schools were higher than the percentages in each of the urban districts.
- The percentages of students performing at or above *Basic* ranged from 42 percent in Atlanta to 62 percent in Chicago. Seventy-four percent of public school students in the nation and 64 percent in central cities performed at or above *Basic*.
- The percentages of students performing at or above *Basic* in Chicago and Houston did not differ signifi-

cantly from each other and both were higher than the comparable percentages in Atlanta, the District of Columbia, and Los Angeles.

### Results for Student Subgroups

In addition to providing average scores and achievement levels for the nation, for states, and, in this report, for urban districts, NAEP reports provide results for subgroups of students defined by various background and contextual characteristics (e.g., gender, eligibility for free or reduced-price lunch, and level of parents' education).

#### Gender

##### Results for grade 4

- Both male and female fourth-grade students in Atlanta, Chicago, the District of Columbia, and Los Angeles had average scores that were below the national average score for their counterparts in central city public schools.
- Female students in the urban districts outscored male students, on average. The exception was Houston, where the apparent difference was not statistically significant.

##### Results for grade 8

- The average score for male eighth-graders in central city public schools across the nation was higher than the average for male eighth-graders in each of the urban districts. The average score for female students in all urban districts except Chicago was below the national average for female students in central city public schools.
- In all urban districts, female students had higher average scores than male students.

#### Race/ethnicity

Whereas White students constituted 60 percent of the national public sample at grade 4 and 64 percent at grade 8, in the urban districts, White students made up a maximum of 15 percent of the samples at grade 4 (New York City) and 11 percent of the samples at grade 8 (Chicago). Black or Hispanic students constituted majorities in the urban districts in the trial assessment. Hispanic students made up half or more of the sample in Houston and Los Angeles at both grades 4 and 8. Black fourth- and eighth-grade students made up more than 80 percent of the sample in both Atlanta and the District of Columbia.

**Results for grade 4**

- In the five urban districts in which a reliable comparison could be made, White fourth-graders had higher average scores than their Black and Hispanic peers. In Chicago, Hispanic students had higher average scores than Black students.
- The average scores for Black students in Chicago, the District of Columbia, and Los Angeles were lower than the national average for Black students in central city public schools.
- The average scores for Hispanic students in Chicago, Houston, and Los Angeles were lower than the national average for Hispanic students in central city public schools.
- The average score for Asian/Pacific Islander students in New York City was higher than the national average for Asian/Pacific Islander students in central city public schools.

**Results for grade 8**

- White eighth-graders had higher average scores than Black eighth-graders in Atlanta, Houston, and Los Angeles. The apparent difference in Chicago was not found to be statistically significant, and the sample size in the District of Columbia was insufficient to permit a reliable comparison.
- The average scores for Black students in Atlanta, the District of Columbia, and Los Angeles were lower than the national average for Black students in central city public schools.
- The average score for Hispanic students in Los Angeles was lower than the national average for Hispanic students in central city public schools.
- The average score for White students in Houston was higher than the national average for White students in central city public schools.

**Eligibility for free/reduced-price lunch**

The federal program providing free/reduced-price school lunch is administered by the U.S. Department of Agriculture (USDA) for children near or below the poverty line. Eligibility is determined by the USDA's Income Eligibility Guidelines (<http://www.fns.usda.gov/cnd/governance/notices/IEGs/IEGs.htm>). At grade 4, the percentages of students in the urban districts eligible for free/reduced-price lunch ranged from 72 percent in Houston to 88 percent in Chicago. By comparison, 43 percent of fourth-graders in public schools nationally were eligible. At grade 8, the percent-

ages of students eligible for free/reduced-price lunch in four of the urban districts ranged from 68 percent to 84 percent. By comparison, 34 percent of eighth-graders in public schools nationally were eligible. (Information on the free/reduced-price lunch data for eighth-graders in Los Angeles is not reported because these data did not meet reporting standards.)

**Results for grade 4**

- In each of the urban districts, fourth-grade students not eligible for free/reduced-price lunch had higher average scores than students who were eligible.
- The average scores for eligible students in Atlanta, Chicago, the District of Columbia, and Los Angeles were lower than the national average for eligible students in central city public schools.
- The average scores for students in Atlanta, the District of Columbia, and Los Angeles who were not eligible for the program were lower than the national average for students in central city public schools who were not eligible.

**Results for grade 8**

- Eighth-grade students not eligible for free/reduced-price lunch had higher average scores than eligible students in each of the urban districts except Chicago, where the apparent difference was not statistically significant.
- The average scores for eligible students in Atlanta and the District of Columbia were lower than the national average for eligible students in central city public schools.
- The average scores for students in Atlanta, the District of Columbia, and Houston who were not eligible for the program were lower than the national average for students in central city public schools who were not eligible.

**Parents' highest level of education**

Eighth-grade students who participated in the Trial Urban District Assessment were asked to indicate the highest level of education they thought that their parents had completed. Five response options were offered: did not finish high school, graduated from high school, some education after high school, graduated from college, and "I don't know."

- In comparison with the other urban districts, the District of Columbia had the highest percentage of eighth-graders (40 percent) who reported that at least one parent had graduated from college.

- In each of the urban districts, the percentage of students who reported that at least one parent had graduated from college was lower than that of public schools nationally.
- For students who reported that at least one parent had graduated from college, the average scores for students in Atlanta, Chicago, the District of Columbia, and Los Angeles were lower than the national average for students in central city public schools.

**Data source:** The National Assessment of Educational Progress (NAEP) 2002 Trial Urban District Reading Assessment and 2002 Reading Assessment.

**For technical information,** see the complete report:

Lutkus, A.D., Weiner, A.W., Daane, M.C., and Jin, Y. (2003). *The Nation's Report Card: Reading 2002, Trial Urban District Assessment* (NCES 2003-523).

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# District Assessment: Writing

## The Nation's Report Card: Writing 2002, Trial Urban District Assessment

Anthony D. Lutkus, Mary C. Daane, Arlene W. Weiner, and Ying Jin

**This article was originally published as the Executive Summary of the Statistical Analysis Report of the same name. The sample survey data are from the National Assessment of Educational Progress (NAEP) 2002 Trial Urban District Writing Assessment and 2002 Writing Assessment.**

The National Assessment of Educational Progress (NAEP) is the nation's ongoing representative sample survey of student achievement in core subject areas. NAEP, known as the Nation's Report Card, is authorized by Congress and administered by the National Center for Education Statistics (NCES) of the Institute of Education Sciences in the U.S. Department of Education. NAEP regularly reports to the public on the educational progress of students in grades 4, 8, and 12.

In 2002, NAEP assessed the reading and writing performance of the nation's fourth-, eighth-, and twelfth-grade students. NAEP also conducted assessments of fourth- and eighth-graders' reading and writing in most of the states.

In 2001, after discussion among NCES, the National Assessment Governing Board (NAGB), and the leadership of the Council of the Great City Schools, Congress appropriated funds for a trial district-level assessment and NAGB passed a resolution approving the selection of five large urban districts for participation in the Trial Urban District Assessment, a special project within NAEP. This report presents, for the first time, results of NAEP's Trial Urban District Assessment in writing for public school students in the following participating urban school districts: Atlanta City, Chicago School District 299, Houston Independent School District, Los Angeles Unified, and New York City Public Schools. This represents NAEP's first assessment of urban districts based on samples specially designed to allow reporting of subgroup data. The five districts participated voluntarily in the NAEP 2002 Trial Urban District Assessment in writing at grades 4 and 8. Results for the District of Columbia, which in this and past NAEP assessments has been sampled and assessed along with states and other jurisdictions, are also included in this report. Data for public schools across the nation and for central city public schools are provided for comparison purposes.\* The public schools sampled also included charter schools, which in some cases were not managed by the urban school districts.

\*"Central city" includes a nationally representative sample of public schools located in central cities within metropolitan statistical areas as defined by the federal Office of Management and Budget. A central city is a city of 50,000 or more that is the largest in its metropolitan area, or can otherwise be regarded as "central." The term means "a city that is central," not "the central part of a city" or the "inner city." Note that central cities encompass wider areas than what is commonly referred to as "the inner city."

NAEP does not provide scores for individual students or schools. It reports results for groups of students (e.g., fourth-graders). For each group in each table in the report, assessment results are described in one of two ways. First, the group's average writing score is reported on a scale from 0 to 300. Performance for each grade is scaled separately; therefore, average scale scores cannot be compared across grades. The term "average score" is used throughout this report to refer to the average scale score on the NAEP writing scale. Second, student writing performance is reported in terms of the percentage of students in the group who reached each of three achievement levels: *Basic*, *Proficient*, and *Advanced*. The *Proficient* level for each grade is defined by NAGB as representing "solid academic performance," which demonstrates "competency over challenging subject matter" for the grade assessed. *Basic* indicates partial mastery of skills that are fundamental for proficient work. *Advanced* denotes superior performance.

The achievement levels are performance standards adopted by NAGB as part of its statutory responsibilities. The achievement levels are a collective judgment of what students should know and be able to do for each grade tested. As provided by law, NCES, upon review of a congressionally mandated evaluation of NAEP, determined that the achievement levels are to be used on a trial basis and should be interpreted with caution. However, both NCES and NAGB believe that the performance standards are useful for understanding trends in student achievement. They have been widely used by national and state officials and others as a common yardstick of academic performance.

The results are based on representative samples of students for the nation, for participating districts, and for schools in central cities. In order to obtain reliable data, sufficient numbers of the selected schools and students must participate in the assessment. All six districts met the NCES participation criteria for NAEP samples at grade 4, but results for New York City schools at grade 8 are not reported because they did not meet the participation criteria.

Some students are identified by the school districts as students with disabilities or limited-English-proficient students. Some of these students are excluded from the assessment, and others are tested with accommodations

related to their status. Three of the six districts identified between 30 and 52 percent of their students as either students with disabilities or limited-English-proficient students. Because the percentages of students identified, excluded, and assessed with accommodations vary across the districts, that variability should be taken into consideration in interpreting the results and making comparisons.

### Overall Writing Results for the Urban Districts

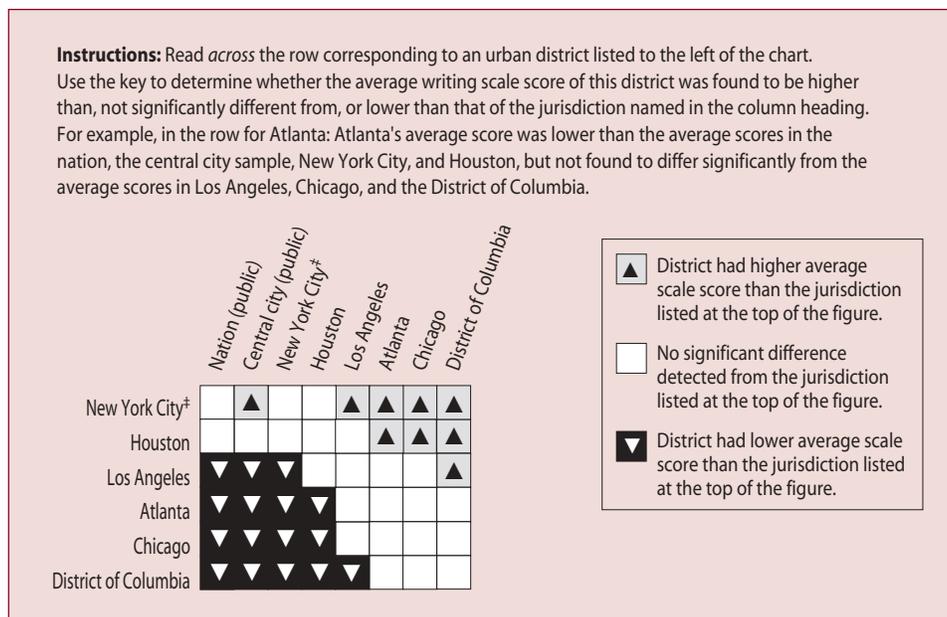
The following summary describes results first in terms of average scale scores and then in terms of achievement levels. Average results for public schools in the districts participating in the Trial Urban District Assessment are compared, at grades 4 and 8, with public schools in the nation, with public schools in central cities, and with each other.

### Average scale scores

#### Results for grade 4

- The average scores for fourth-graders in public schools ranged from 135 in the District of Columbia to 153 in New York City and the nation.
- At grade 4, no statistically significant differences were detected between the average scores for students in Houston and New York City and the average score for students in public schools in the nation, while students in Atlanta, Chicago, the District of Columbia, and Los Angeles had average scores lower than the average score in the nation (figure A).
- At grade 4, the average score for students in New York City was higher than the national average score for students in central city public schools. The average score for fourth-graders in Houston was not

**Figure A. Cross-district comparisons of average writing scale scores, grade 4 public schools: By urban district, 2002**



<sup>‡</sup>Although deemed sufficient for reporting, the target response rate specified in the NAEP guidelines was not met.

NOTE: The between-district comparisons take into account sampling and measurement error and that each district is being compared with every district shown. Significance is determined by an application of a multiple-comparison procedure.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 2002 Trial Urban District Writing Assessment and 2002 Writing Assessment. (Originally published as figure 2.1 on p. 19 of the complete report from which this article is excerpted.)

found to differ significantly from that for central cities, while the average score for students in each of the other districts was lower than the national average score for central cities.

- The average score for students in New York City was higher than those in all the other participating districts except Houston. The average score in Houston was higher than the scores in Atlanta, Chicago, and the District of Columbia, but was not found to differ significantly from the average scores in Los Angeles and New York City.

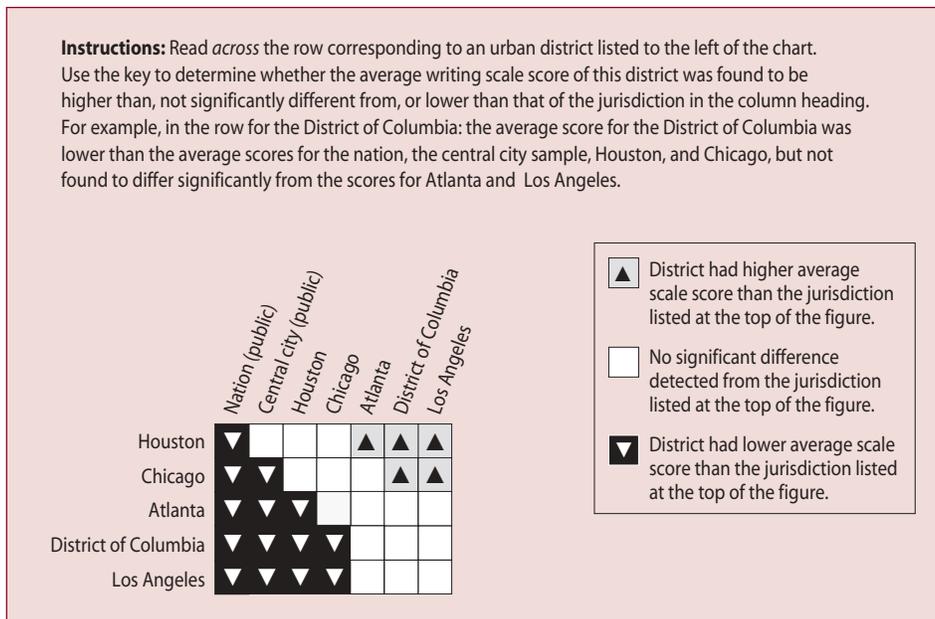
**Results for grade 8**

Results for New York City schools at grade 8 are not reported because they did not meet participation criteria.

- The average district scores for eighth-graders ranged from 128 in the District of Columbia and Los Angeles to 138 in Houston.

- In each of the reported districts, the average score of eighth-grade students was lower than the average score for eighth-grade students in public schools in the nation (figure B).
- At grade 8, no significant difference was detected between the average score for students in Houston and the average score for students in the central city public schools. The average score in the central city schools was higher than the average scores in Atlanta, Chicago, the District of Columbia, and Los Angeles.
- The average score for students in Houston was higher than the average scores in Atlanta, the District of Columbia, and Los Angeles. The average score in Chicago was not found to differ significantly from those in Houston and Atlanta, and was higher than the average scores in the District of Columbia and Los Angeles.

**Figure B. Cross-district comparisons of average writing scale scores, grade 8 public schools: By urban district, 2002**



NOTE: The between-district comparisons take into account sampling and measurement error and that each district is being compared with every other district shown. Significance is determined by an application of a multiple-comparison procedure.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP) 2002 Trial Urban District Writing Assessment and 2002 Writing Assessment. (Originally published as figure 2.2 on p. 20 of the complete report from which this article is excerpted.)

## Writing achievement levels

### Results for grade 4

- At grade 4, the percentages of students performing at or above *Proficient* ranged from 11 percent in the District of Columbia to 27 percent in New York City.
- The percentages of fourth-grade students performing at or above *Proficient* in Houston and New York City were not found to be significantly different from the percentages in public schools in the nation or in central cities. Atlanta, Chicago, the District of Columbia, and Los Angeles had lower percentages of students at or above *Proficient* than the nation and central cities.
- At grade 4, the percentage of students performing at or above *Proficient* in New York City was higher than the percentages in four other districts and not found to differ significantly from the percentage in Houston.
- The percentages of fourth-grade students performing at or above *Basic* ranged from 73 percent in the District of Columbia to 85 percent in New York City. In public schools across the nation, 85 percent of students performed at or above the *Basic* level. In central city schools, 81 percent performed at or above the *Basic* level.

### Results for grade 8

- At grade 8, the percentages of students performing at or above *Proficient* ranged from 10 percent in Atlanta and the District of Columbia to 19 percent in Houston. Thirty percent of eighth-graders in public schools in the nation and 22 percent in central city schools performed at or above the *Proficient* level.
- The percentage of students performing at or above *Proficient* was higher for the nation than for any of the five urban districts reported, and higher for central cities than for all urban districts except Houston, where no significant difference was detected. The percentages of eighth-graders performing at or above *Proficient* in Chicago and Houston were not found to differ significantly from each other, and both were higher than the comparable percentages in the District of Columbia and Atlanta.
- The percentages of eighth-graders performing at or above *Basic* ranged from 64 percent in Los Angeles to 74 percent in Houston. Eighty-four percent of eighth-graders in public schools in the nation and 77 percent in central city public schools performed at or above the *Basic* level.

## Results for Student Subgroups

In addition to providing average scores and achievement levels for the nation, for states, and, in this report, for districts, NAEP reports provide results for subgroups of students defined by various background and contextual characteristics (e.g., gender, eligibility for free/reduced-price lunch, and level of parents' education). In this report, performance results for subgroups are reported primarily as comparisons of district average scores with the comparable average scores in central cities.

### Gender

#### Results for grade 4

- No statistically significant difference was detected between the average scores of male or female fourth-grade students in Houston and New York City and the average scores of their counterparts in the central city public schools. Average scores for fourth-grade male and female students in Atlanta, Chicago, the District of Columbia, and Los Angeles were lower than the average scores for their counterparts in central city schools.
- Female fourth-graders had higher average scores than male fourth-graders in each of the urban districts.

#### Results for grade 8

- The average score for eighth-grade female students in Houston was not found to be significantly different from that of their counterparts in the central city public schools. In Atlanta, Chicago, the District of Columbia, and Los Angeles, the average scores for both male and female eighth-graders were lower than the average scores for their counterparts in central city schools.
- In all reported districts, female students had higher average writing scores than male students.

### Race/ethnicity

In each of the urban districts assessed, Black or Hispanic students constituted the majority or the largest racial/ethnic group. This distribution differs from that for the national writing assessment, in which White students constituted a majority—60 percent of the fourth-grade sample and 64 percent of the eighth-grade sample. Black students made up more than four-fifths of the samples at both grades in Atlanta and the District of Columbia and nearly half at both grades in Chicago. Hispanic students made up about two-thirds of the Los Angeles samples at both grades and about half of the fourth-graders and more than half of the eighth-

graders in Houston. In New York City, more than two-fifths of the fourth-graders were Hispanic and just under a third were Black.

#### **Results for grade 4**

- In the five urban districts in which a reliable comparison could be made, White fourth-graders had higher average scores than their Black and Hispanic counterparts.
- Black students in grade 4 in Houston and New York City had higher average scores than their counterparts in the central city public schools. Black fourth-grade students in Atlanta, Chicago, and Los Angeles had average scores not found to differ significantly from their counterparts in central cities. In the District of Columbia, Black fourth-graders had an average score lower than that of their counterparts in central cities.
- No significant difference was detected between the average score for Hispanic fourth-graders in four of the five districts in which a reliable comparison could be made and Hispanic fourth-graders' average score in central cities. The average score for Hispanic fourth-graders in Los Angeles was lower than that in central cities taken as a whole.
- Average scores for White fourth-grade students in Atlanta, the District of Columbia, and New York City were higher than the average score for White fourth-grade students in central cities.
- Average scores for Asian/Pacific Islander students in Los Angeles and New York City were not found to be significantly different from the average score for their counterparts in central cities.

#### **Results for grade 8**

- White eighth-graders had higher average scores than Black eighth-graders in every reported district except the District of Columbia, where the sample size was insufficient to permit a reliable comparison. White students at grade 8 also had higher average scores than Hispanic students in Chicago, Houston, and Los Angeles.
- The average score for Black eighth-grade students in the District of Columbia was lower than that for Black eighth-grade students in the central city public schools, and no significant difference was detected between the average score for Black students in any

of the other four districts and the national average score for Black students in central cities.

- Average scores for Hispanic students were not found to differ significantly between the districts and the national average for central cities, except in Los Angeles, where Hispanic students had a lower average score than their counterparts in central cities.
- The average score for White eighth-grade students in Houston was higher than that of White students in the central city schools, while the average score in Los Angeles was lower.

#### **Eligibility for free/reduced-price lunch**

The National School Lunch Program providing free/reduced-price lunch is administered by the U.S. Department of Agriculture (USDA) for children near or below the poverty line. Eligibility is determined by the USDA's Income Eligibility Guidelines (<http://www.fns.usda.gov/cnd/governance/notices/IEGs/IEGs.htm>).

#### **Results for grade 4**

- At grade 4, rates of student eligibility for free/reduced-price lunch ranged from 70 percent in New York City to 89 percent in Chicago.
- Fourth-grade students eligible for free/reduced-price lunch had lower average scores than those not eligible in every district except Los Angeles and New York City, where no significant difference between the two eligibility categories was detected.
- Fourth-grade students eligible for free/reduced-price lunch in New York City had a higher average score than the national average score for their counterparts in central city public schools, while students in Chicago and the District of Columbia had lower average scores than their eligible counterparts in central city schools.
- The average scale score for ineligible students at grade 4 in the District of Columbia was lower than the national average score for ineligible students in central city schools.

#### **Results for grade 8**

Because the available data for eligibility for eighth-graders in Los Angeles did not meet reporting standards, no information related to eligibility is reported for this segment of the sample.

- At grade 8, the percentages of eligible students ranged from 67 percent in the District of Columbia to 84 percent in Chicago.
- Students at grade 8 who were not eligible for free/reduced-price lunch had a higher average score than eligible students in every district where the data were sufficiently reliable for significance testing.
- At grade 8, both those students eligible for free/reduced-price lunch and those not eligible in Atlanta and the District of Columbia had lower average scores than their counterparts in the central city public schools.

### Parents' highest level of education

Eighth-grade students who participated in the Trial Urban District Assessment were asked to indicate the highest level of education their parents had completed. Five response options—did not finish high school, graduated from high school, some education after high school, graduated from college, or “I don’t know”—were offered.

- In all five districts, lower percentages of students reported that their parents had graduated from college than in the national public school sample. The percentages of students who reported that their parents did not graduate from high school were higher in Chicago, Houston, and Los Angeles than in the nation.
- Atlanta and the District of Columbia had the highest percentages of students who reported that at least one parent had graduated from college (35 and 37 percent, respectively). These percentages were

significantly higher than those in Houston and Los Angeles. Atlanta also had a higher percentage of students reporting parents with some education after high school than all the other districts. Houston and Los Angeles had the highest percentages of students reporting parents who did not finish high school (22 and 18 percent, respectively).

- Average scores in all districts except Houston were lower for students who reported a college graduate parent than the national average score for their counterparts in the central city public schools.
- In Chicago and Houston, no statistically significant difference was detected between the average score of students with parents who did not finish high school and the average score of their counterparts in the central city schools, while the average score of these students in Atlanta, the District of Columbia, and Los Angeles was lower than the national average score of their counterparts in the central city schools.

**Data source:** The National Assessment of Educational Progress (NAEP) 2002 Trial Urban District Writing Assessment and 2002 Writing Assessment.

**For technical information,** see the complete report:

Lutkus, A.D., Daane, M.C., Weiner, A.W., and Jin, Y. (2003). *The Nation's Report Card: Writing 2002, Trial Urban District Assessment* (NCES 2003-530).

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**To obtain the complete report (NCES 2003-530),** call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

# District Snapshot Reports

## Trial Urban District Assessment Snapshot Reports: Reading 2002 and Writing 2002

**This article describes the Statistics in Brief reports of the same name. The sample survey data are from the National Assessment of Educational Progress (NAEP) 2002 Trial Urban District Reading Assessment and 2002 Trial Urban District Writing Assessment, as well as the national 2002 Reading Assessment and 2002 Writing Assessment.**

In 2002, the National Assessment of Educational Progress (NAEP) conducted assessments of the reading and writing performance of public school students in several urban school districts. The NAEP 2002 Trial Urban District Assessment provided, for the first time, district-level results for Atlanta City, Chicago School District 299, Houston Independent School District, Los Angeles Unified, and New York City Public Schools. Results for the District of Columbia, which in 2002 and previous years participated in the NAEP state-level assessments, are reported along with results for the other urban districts. All the urban districts participated voluntarily in the assessments.

In addition to the main reports on the Trial Urban District Assessment in reading and in writing (summarized earlier in this issue of the *Quarterly*), each district receives customized overviews of its results. For each subject at each grade level, a one-page *Trial Urban District Assessment Snapshot Report* summarizes the performance of public school students in the district. Each snapshot report includes overall results (average scale scores and percentages of students at each NAEP achievement level), results for various subgroups and subgroup score gaps, and average scale scores at selected percentiles. By way of example, figure A shows the snapshot report on the reading performance of New York City fourth-graders (the report was reduced to 80 percent of actual size in order to fit into this article).

**Data source:** The National Assessment of Educational Progress (NAEP) 2002 Trial Urban District Reading Assessment and 2002 Trial Urban District Writing Assessment, as well as the national 2002 Reading Assessment and 2002 Writing Assessment.

**For technical information,** see the following reports:

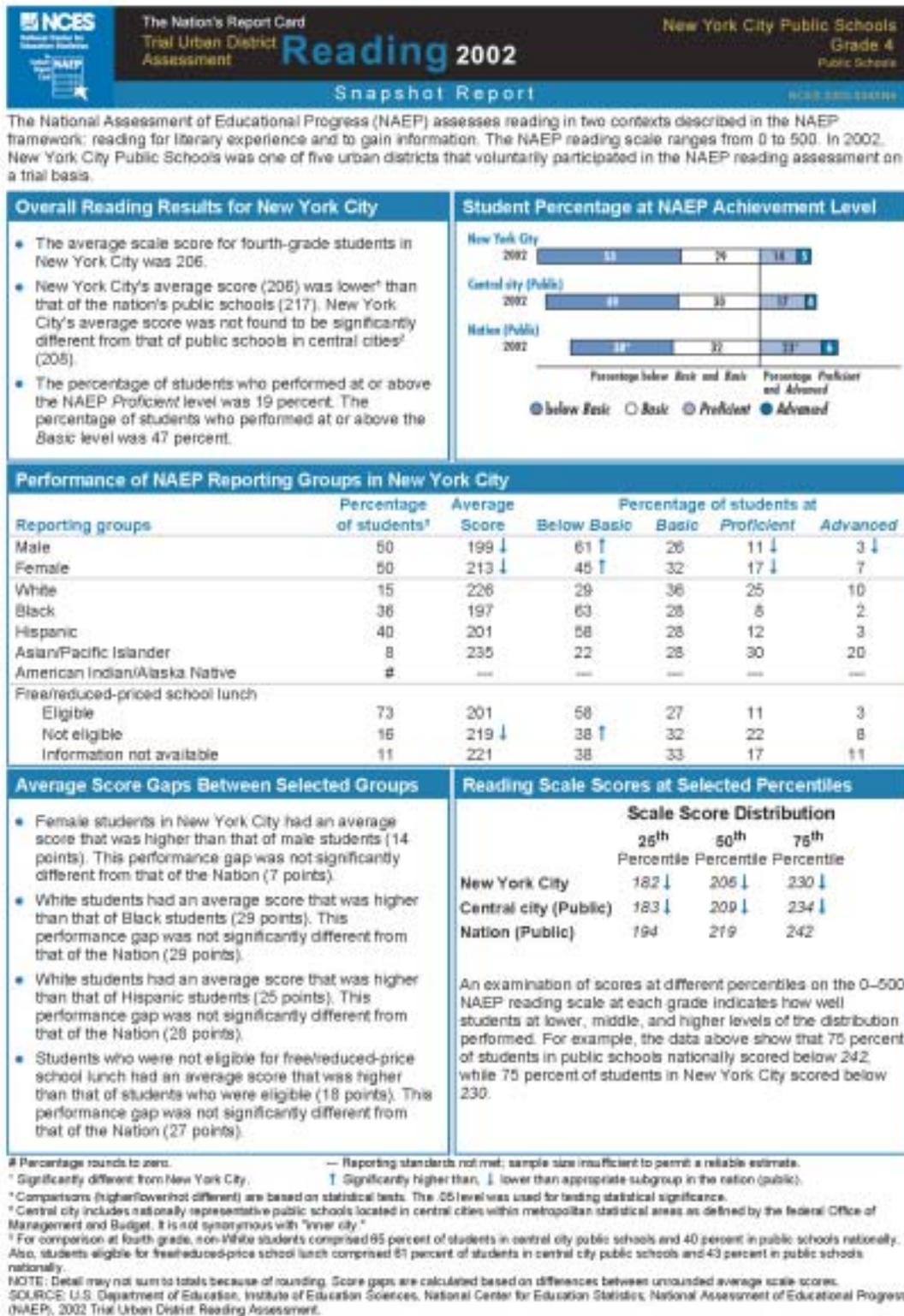
Lutkus, A.D., Weiner, A.W., Daane, M.C., and Jin, Y. (2003). *The Nation's Report Card: Reading 2002, Trial Urban District Assessment* (NCES 2003-523).

Lutkus, A.D., Daane, M.C., Weiner, A.W., and Jin, Y. (2003). *The Nation's Report Card: Writing 2002, Trial Urban District Assessment* (NCES 2003-530).

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**To obtain a district snapshot report (NCES 2003-534 for reading or NCES 2003-535 for writing),** call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

Figure A. Sample Trial Urban District Assessment Snapshot Report on reading performance at grade 4 (shown at 80 percent of actual size): New York City Public Schools, 2002



# A Worthwhile Experiment

## Invited Commentary: NAEP's Trial Urban District Assessment: An Experiment Worth the Effort

Michael Casserly, Executive Director, Council of the Great City Schools

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

### Background

Results from the 2002 Trial Urban District Assessment (TUDA) in reading and writing were released last summer, presenting the nation with its first look at how some of its largest urban public school systems fared on the National Assessment of Educational Progress (NAEP). Atlanta, Chicago, Houston, Los Angeles, and New York City volunteered for the district-level testing after the Council of the Great City Schools approached the National Assessment Governing Board in the fall of 2000 with a proposal to allow cities to get NAEP results similar to those that participating states have been receiving for many years. Results from the District of Columbia, which participates in NAEP's state-level assessments, were analyzed along with those from the other cities.

The bid for district-level results was a surprise to many, coming as it did from the nation's big-city school systems, but the Council made it for a number of reasons:

- First, the nation's urban school systems wanted to make it crystal clear once again that they are fully committed to the highest academic standards for their students.
- Second, they wanted a way of gauging their progress and evaluating their reforms in ways that the nation's current state-by-state testing system does not allow.
- Third, they wanted to be able to compare themselves against other school systems facing many of the same challenges.

### Establishing a Benchmark

There were realistic expectations, of course, about what the initial results would show. But the cities were determined to establish a benchmark by which they could measure their progress. That benchmark was set in the 2002 reading and writing TUDA.

### Overall results

The 2002 TUDA results did not present many major surprises. Reading performance in the participating cities was below the national public school average (table 1). The percentage of urban fourth-graders scoring at or above the *Basic* level of achievement ranged from 48 percent in

Houston to 31 percent in the District of Columbia, compared with 62 percent nationally. The percentage of eighth-graders scoring at or above the *Basic* level ranged from 62 percent in Chicago to 42 percent in Atlanta, compared with 74 percent nationally. (Data on eighth-graders in New York City were not available.)

Writing results indicated that the cities did somewhat better, with two districts having average fourth-grade scores that were statistically indistinguishable from the national average (table 2). The percentage of fourth-graders scoring at or above *Basic* ranged from 85 percent in New York City to 73 percent in the District of Columbia, compared with 85 percent nationally. The percentage of eighth-graders scoring at or above *Basic* ranged from 74 percent in Houston to 64 percent in Los Angeles, compared with 84 percent nationally. (Again, data on eighth-graders in New York City were not available.)

### Student characteristics

Background data collected as part of the assessment also showed how different demographically the TUDA cities are from the rest of the nation. Tables 1 and 2 indicate that the majority of students in these cities, unlike the nation as a whole, were eligible for free or reduced-price school lunch (intended for children near or below the poverty line). The proportion of limited-English-proficient (LEP) students in some of the cities was also considerably higher than the national average. Finally, each of the TUDA cities had enrollments that were predominantly Black or Hispanic, a situation that is significantly different from national averages (not shown in tables 1 and 2).

### Subgroup results

The initial TUDA results also provided data on achievement by race/ethnicity, eligibility for free or reduced-price school lunch, and other student characteristics, giving analysts and practitioners a better sense of how the performance of subgroups in the cities compares with that of the same subgroups nationally.

The reading results, for instance, indicated that White students, in general, scored at about the same level in TUDA cities as White students nationally. Black students

**Table 1. Percentage of students eligible for free/reduced-price lunch, percentage of limited-English-proficient (LEP) students, and NAEP reading results, grade 4 and grade 8 public schools: By urban district, 2002**

|                            | At grade 4               |     |                     |                      |                        |             |
|----------------------------|--------------------------|-----|---------------------|----------------------|------------------------|-------------|
|                            | Percent of students      |     | Average scale score | NAEP reading results |                        |             |
|                            | Free/reduced-price lunch | LEP |                     | At or above Basic    | At or above Proficient | At Advanced |
| Atlanta                    | 74                       | 4   | 195*                | 35*                  | 12*                    | 3*          |
| Chicago                    | 88                       | 19  | 193*                | 34*                  | 11*                    | 2*          |
| Houston                    | 72                       | 36  | 206*                | 48*                  | 18*                    | 3*          |
| Los Angeles                | 79                       | 46  | 191*                | 33*                  | 11*                    | 2*          |
| New York City <sup>‡</sup> | 73                       | 11  | 206*                | 47*                  | 19*                    | 5           |
| District of Columbia       | 78                       | 7   | 191*                | 31*                  | 10*                    | 2*          |
| National average           | 43                       | 9   | 217                 | 62                   | 30                     | 6           |

|                      | At grade 8               |     |                     |                      |                        |             |
|----------------------|--------------------------|-----|---------------------|----------------------|------------------------|-------------|
|                      | Percent of students      |     | Average scale score | NAEP reading results |                        |             |
|                      | Free/reduced-price lunch | LEP |                     | At or above Basic    | At or above Proficient | At Advanced |
| Atlanta              | 76                       | 1   | 236*                | 42*                  | 8*                     | ##          |
| Chicago              | 84                       | 8   | 249*                | 62*                  | 15*                    | 1           |
| Houston              | 68                       | 16  | 248*                | 59*                  | 17*                    | 1*          |
| Los Angeles          | ‡                        | 30  | 237*                | 44*                  | 10*                    | ##          |
| New York City        | ‡                        | ‡   | ‡                   | ‡                    | ‡                      | ‡           |
| District of Columbia | 68                       | 5   | 240*                | 48*                  | 10*                    | ##          |
| National average     | 34                       | 6   | 263                 | 74                   | 31                     | 2           |

#Rounds to zero.

<sup>‡</sup>Although the New York City response rate was deemed sufficient for reporting at grade 4, the target rate specified in the National Assessment of Educational Progress (NAEP) guidelines was not met. At grade 8, the New York City response rate did not meet reporting standards. At grade 8, Los Angeles data on free/reduced-price lunch did not meet reporting standards.

\*Significantly different from the national average for public schools.

SOURCE: Lutkus, A.D., Weiner, A.W., Daane, M.C., and Jin, Y. (2003). *The Nation's Report Card: Reading 2002, Trial Urban District Assessment* (NCES 2003-523). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

and students eligible for free or reduced-price lunch, on the other hand, generally had lower average scores in TUDA cities than nationally. And Hispanic students in TUDA cities had average scores about the same as or lower than the national average for Hispanic students.

In a number of cities, however, Black, Hispanic, and poor students had reading scores that equaled those of their racial/ethnic and income peers nationally. For example, Black fourth- and eighth-graders in Houston had average scores that did not differ significantly from those of their Black peers nationally. The same was true of Black fourth-graders in New York City and Black eighth-graders in Chicago. At both the fourth and the eighth grades, Hispanic students in three TUDA cities scored about the same as their Hispanic peers nationally. At the fourth grade in New

York City and Houston, and at the eighth grade in Chicago, students eligible for free or reduced-price school lunch posted average scores that were statistically indistinguishable from those of eligible students nationally.

A number of interesting results emerged from the writing assessment as well. White students in TUDA cities generally posted average scores that were about the same as or above the national average for White students. Black fourth- and eighth-graders in Houston and Black fourth-graders in New York City outscored their Black peers nationally, while Black students in other TUDA cities scored lower than or about the same as Black students nationally. In almost all cases, the average scores of Hispanic students in TUDA cities were about the same as the average for Hispanic students nationally. Students eligible for free or reduced-price lunch often

**Table 2. Percentage of students eligible for free/reduced-price lunch, percentage of limited-English-proficient (LEP) students, and NAEP writing results, grade 4 and grade 8 public schools: By urban district, 2002**

|                            | At grade 4               |     |                     |                      |                        |             |
|----------------------------|--------------------------|-----|---------------------|----------------------|------------------------|-------------|
|                            | Percent of students      |     | Average scale score | NAEP writing results |                        |             |
|                            | Free/reduced-price lunch | LEP |                     | Percent of students  |                        |             |
|                            |                          |     |                     | At or above Basic    | At or above Proficient | At Advanced |
| Atlanta                    | 73                       | 4   | 140*                | 77*                  | 13*                    | 1           |
| Chicago                    | 89                       | 19  | 138*                | 76*                  | 12*                    | #           |
| Houston                    | 72                       | 33  | 148                 | 81                   | 23                     | 2           |
| Los Angeles                | 78                       | 49  | 141*                | 77*                  | 16*                    | 1*          |
| New York City <sup>‡</sup> | 70                       | 13  | 153                 | 85                   | 27                     | 2           |
| District of Columbia       | 78                       | 7   | 135*                | 73*                  | 11*                    | 1*          |
| National average           | 43                       | 9   | 153                 | 85                   | 27                     | 2           |
|                            | At grade 8               |     |                     |                      |                        |             |
|                            | Percent of students      |     | Average scale score | NAEP writing results |                        |             |
|                            | Free/reduced-price lunch | LEP |                     | Percent of students  |                        |             |
|                            |                          |     |                     | At or above Basic    | At or above Proficient | At Advanced |
| Atlanta                    | 74                       | 1   | 130*                | 68*                  | 10*                    | #           |
| Chicago                    | 84                       | 8   | 136*                | 72*                  | 16*                    | 1           |
| Houston                    | 68                       | 18  | 138*                | 74*                  | 19*                    | 1           |
| Los Angeles                | ‡                        | 30  | 128*                | 64*                  | 11*                    | #           |
| New York City              | ‡                        | ‡   | ‡                   | ‡                    | ‡                      | ‡           |
| District of Columbia       | 67                       | 5   | 128*                | 66*                  | 10*                    | #           |
| National average           | 34                       | 6   | 152                 | 84                   | 30                     | 2           |

#Rounds to zero.

<sup>‡</sup>Although the New York City response rate was deemed sufficient for reporting at grade 4, the target rate specified in the National Assessment of Educational Progress (NAEP) guidelines was not met. At grade 8, the New York City response rate did not meet reporting standards. At grade 8, Los Angeles data on free/reduced-price lunch did not meet reporting standards.

\*Significantly different from the national average for public schools.

SOURCE: Lutkus, A.D., Daane, M.C., Weiner, A.W., and Jin, Y. (2003). *The Nation's Report Card: Writing 2002, Trial Urban District Assessment* (NCES 2003–530). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

scored lower in TUDA cities than nationally. In three cities, however, scores of eligible fourth-graders were about the same as the national average for eligible fourth-graders.

### Gaps between different subgroups

The 2002 TUDA results provided fresh data on the size of the achievement gaps within and across the participating cities and how they stack up to gaps nationwide. In some cities, gaps between the achievement of certain subgroups (e.g., White students and Black students) differed from the gaps in the nation as a whole. In other cities, the gaps reflected national averages. At grade 4, for example, the results showed that gaps between the average reading and writing scores of White and Black students in Atlanta and the District of Columbia were wider than the national gaps.

But in Houston, Los Angeles, and New York City, the fourth-grade reading and writing gaps between Black and White students were about the same as those nationally.

### Promoting Improvement in Big-City Schools

TUDA results are important to cities and to others interested in the reform and improvement of big-city schools. They provide much-needed data on urban school performance that allows comparisons in ways that the nation's state-by-state assessment system cannot (Council of the Great City Schools 2003). TUDA will also provide valuable insights into the performance of big-city schools over time.\*

\*After this commentary was written, results from the 2003 TUDA were released (Lutkus and Weiner 2003a and 2003b). Reading results for 2003 are now available for the cities that participated in the 2002 TUDA, as well as for four additional cities.

But the promise of TUDA stretches well beyond its ability to determine whether big-city schools are improving. Its real importance rests in its power to shed light eventually on which reforms are working and which ones are not. TUDA presents the cities and researchers interested in analyzing patterns in urban schools with a chance to establish a long-term, informal field experiment where each city's reforms can be gauged against others using a common benchmark.

This kind of research is not commonly done at present, however, in part because there is no common metric on which cities can be measured and in part because it is hard to do. The overwhelming majority of research on urban education is devoted to efforts to turn around individual schools or pockets of schools; efforts to assess the effects of discrete programs or program strategies; and efforts to measure student demographic and background characteristics and the effects of these characteristics on performance.

Some observers have argued that the way to bring about wide-scale improvement in urban education is to take what has been learned about each individual school or program and apply it systemwide. This approach has had limited success, however, because it does not help school practitioners sort through the numerous programs or leverage systemwide change. Very few reforms or research studies, in fact, have focused on how one improves an individual system or how one accelerates improvements across many cities.

Public impatience and No Child Left Behind will no longer allow the nation's major city school districts to improve themselves using a school-by-school strategy. Time will not allow such a piecemeal approach. Instead, the public and the new law are demanding improvements in city schools *writ large*. And city school leaders, for their part, need better research on strategies that will help improve student performance systemwide, not just in some schools or for some students.

The lack of solid research on how to turn around public school systems in big cities has been frustrating both for the urban school districts themselves and for others. There has been little way, for instance, to determine which big-city school systems were improving student achievement the most. Consequently, there has been little way to determine for sure what those faster improving school districts were doing to get their gains that others were not doing (Snipes, Doolittle, and Herlihy 2002).

If we had comparable data to tell us, for example, that Black students in Atlanta were improving faster in reading than Black students in other cities, then we would know where to look for promising practices about how to accelerate the reading skills of Black students. If city school systems with varying governance structures were improving at about the same rates, we might conclude that governance structure was not the critical ingredient in the gains. If academic progress in one set of cities extended beyond 3 years, then we might be able to say something about how to sustain the effects of reform. If cities of similar composition were making progress in some states but not in others, then we might be able to ask better questions about the role of states in boosting urban performance. If faster improving cities were using a single reading curriculum and slower moving cities were relying on individual-school reform models, then urban school leaders might have a better sense about how to structure their instructional programs. If faster improving cities had spending levels that were below their respective statewide averages, then researchers and advocates might have a better understanding about the role of money in improving urban schools.

Asking questions of this kind requires a more institutional, systemic, and organizational outlook about the behavior of urban school districts than many in the reform movement or the research community have hitherto shown. There are only a handful of people nationwide, in fact, who think in terms like these. Yet, answers to these and similar questions are critical if urban education is to give the public the results that it wants. Ultimately, urban school leaders will never be able to get gains "at scale" unless they think at scale. TUDA allows that to begin happening.

TUDA will not answer questions about improving big-city school systems on its own, of course. There are too many moving gears in urban schools for us to be certain about anything. But TUDA gives urban educators and others another tool with which to ask better questions.

The 2002 TUDA results are only a starting point. Over time and with a larger pool of participating cities, critical questions about how to leverage improvements in big-city school districts can be answered and acted upon. Urban school leaders are determined to raise student performance in their communities. TUDA will help let them know if they are succeeding. More importantly, TUDA can help them succeed faster. It is an experiment worth pursuing.

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# ELEMENTARY AND SECONDARY EDUCATION

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## NAEP Writing 2002

### The Nation's Report Card: Writing 2002

*Hilary R. Persky, Mary C. Daane, and Ying Jin*

***This article was originally published as the Executive Summary of the Statistical Analysis Report of the same name. The sample survey data are from the National Assessment of Educational Progress (NAEP) 1998 and 2002 Writing Assessments.***

The National Assessment of Educational Progress (NAEP) is an ongoing nationally representative sample survey of student achievement in core subject areas. Authorized by Congress and administered by the National Center for Education Statistics (NCES) within the Institute of Education Sciences of the U.S. Department of Education, NAEP regularly reports to the public on the educational progress of fourth-, eighth-, and twelfth-grade students.

This report presents the results of the NAEP 2002 Writing Assessment for the nation at grades 4, 8, and 12 and for participating states and other jurisdictions at grades 4

and 8. Assessment results are described in terms of average writing score on a 0–300 scale and in terms of the percentage of students attaining each of three achievement levels: *Basic*, *Proficient*, and *Advanced*.

The achievement levels are performance standards adopted by the National Assessment Governing Board (NAGB) as part of its statutory responsibilities. The achievement levels are a collective judgment of what students should know and be able to do for each grade tested. As provided by law, NCES, upon review of a congressionally mandated evaluation of NAEP, determined that the achievement levels are to

be considered developmental and should be interpreted with caution. However, both NCES and NAGB believe that these performance standards are useful for understanding trends in student achievement. They have been widely used by national and state officials as a common yardstick of academic performance.

The results presented in this report are based on representative samples of students for the nation and for participating states and other jurisdictions. Approximately 276,000 students from 11,000 schools were assessed. The national results reflect the performance of students attending both public and nonpublic schools, while the results for states and other jurisdictions reflect only the performance of students attending public schools. Information about writing achievement for students in selected urban school districts is presented in *The Nation's Report Card: Writing 2002, Trial Urban District Assessment* (Lutkus et al. 2003), summarized earlier in this issue of the *Quarterly*.

In addition to providing average scores and achievement-level performance in writing for the nation and states and other jurisdictions, this report provides results for subgroups of students defined by various background characteristics. A summary of major findings from the NAEP 2002 assessment is presented below. Comparisons are made to national results from the 1998 assessment. The NAEP 1998 Writing Assessment was not administered at the state level at grade 4; therefore, state-level comparisons are presented only for grade 8.

## Overall Writing Results for the Nation and the States

### Writing results for the nation

- Students' average scores on the NAEP writing assessment increased between 1998 and 2002 at grades 4 and 8 (figure A). However, no significant change was detected in the performance of twelfth-graders between the 2 assessment years.
- Fourth-grade writing scores at the 10th to the 90th percentiles increased between 1998 and 2002. This means that the performance of higher-, middle-, and lower-performing students improved between the 2 years. Gains were observed among the middle- and higher-performing students at grade 8. At grade 12, only the score at the 90th percentile increased between 1998 and 2002, while scores at the 10th and 25th percentiles were lower in 2002.

- In 2002, between 24 and 31 percent of the students in each of the three grades performed at or above the *Proficient* level. Fourth- and eighth-graders made overall gains between 1998 and 2002 in reaching the *Proficient* level. There was no significant change detected in the percentage of twelfth-graders at or above *Proficient*; however, the percentage of twelfth-graders at or above *Basic* decreased over the period.

### Writing results for the states and other jurisdictions

Results from the 2002 assessment are reported for 48 states and other jurisdictions at grade 4, and 47 states and other jurisdictions at grade 8. Results are reported only for public school students at the state level.

#### At grade 4

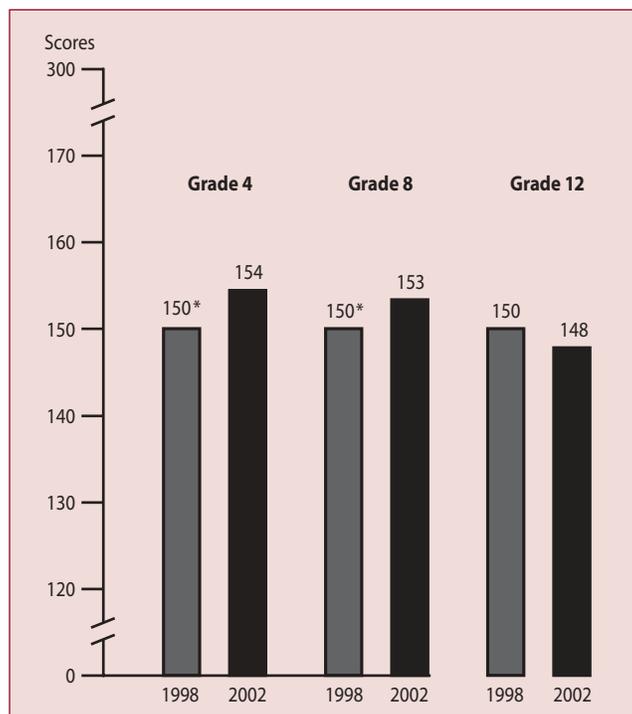
- In 2002, fourth-grade average scores were higher than the national average score in 17 jurisdictions, and lower than the national average in 22 jurisdictions (figure B).
- Connecticut, Massachusetts, and Delaware were among the highest performing jurisdictions at grade 4. The average writing scores in Connecticut and Massachusetts were higher than in any of the other participating jurisdictions. Massachusetts was only outperformed by Connecticut. Students in Delaware were only outperformed by students in Connecticut and Massachusetts and had higher scores than students in the other participating jurisdictions except New York.

#### At grade 8

- Of the 36 jurisdictions that participated in both the 1998 and 2002 eighth-grade writing assessment, 16 showed score increases in 2002 and none showed a significant decrease.
- The percentage of eighth-graders at or above *Proficient* increased in 17 jurisdictions and decreased in 1 jurisdiction between the 2 assessment years.
- Connecticut, Department of Defense domestic and overseas schools, Massachusetts, and Vermont were among the highest performing jurisdictions at grade 8.

### National and State Writing Results for Student Subgroups

In addition to overall results for the nation and for the states and other jurisdictions, NAEP reports on the performance of various subgroups of students. Observed differences between student subgroups in NAEP writing performance

**Figure A. Average writing scale scores, grades 4, 8, and 12: 1998 and 2000**

\*Significantly different from 2002.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 and 2002 Writing Assessments. (Based on figure 2.1 on p. 18 of the complete report from which this article is excerpted.)

most likely reflect the interaction of a range of socioeconomic and educational factors not addressed in this report or by NAEP.

## National results

### Gender

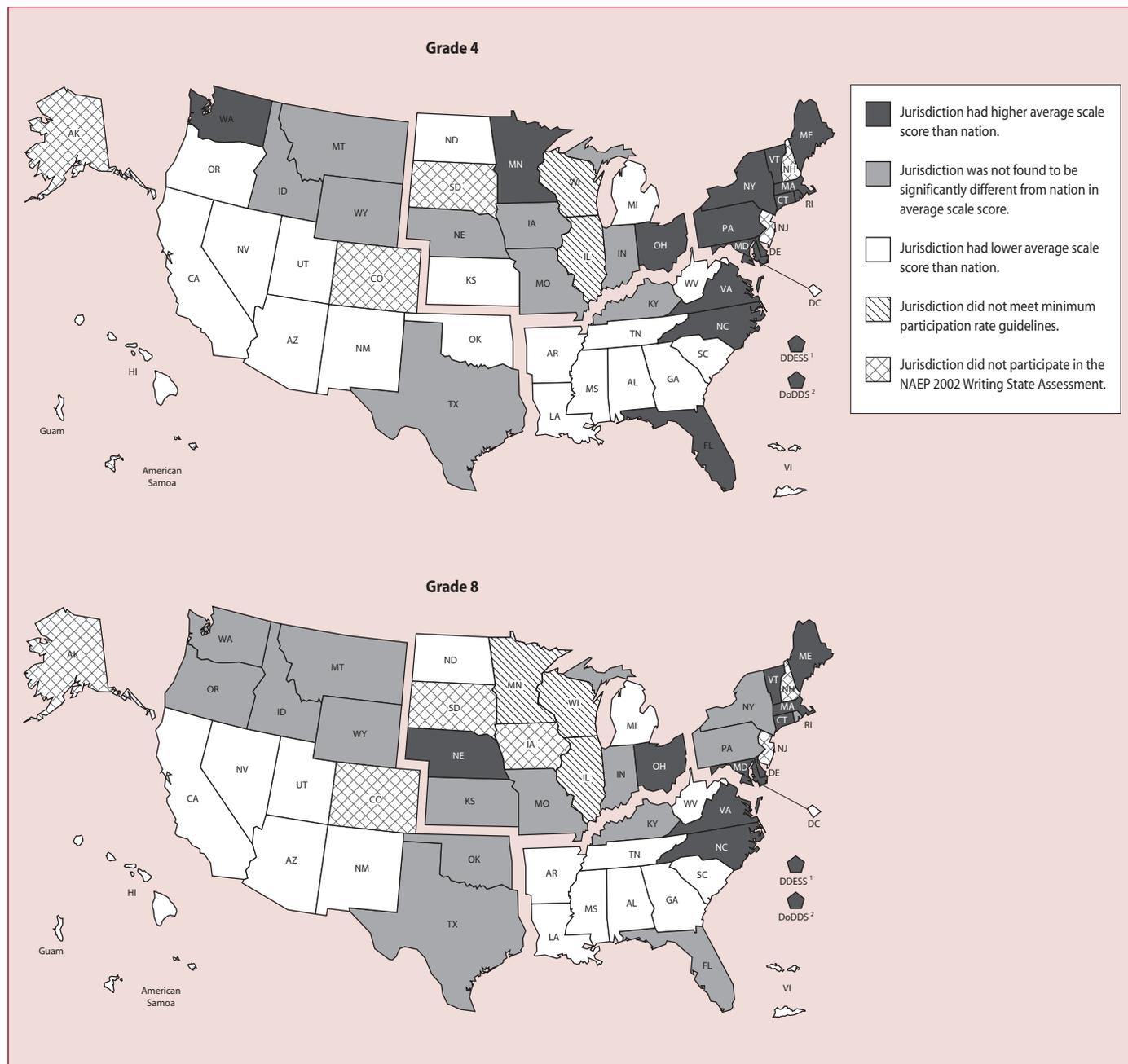
- The average scores of male and female fourth- and eighth-graders were higher in 2002 than in 1998; however, at grade 12, the average scores for male students declined.
- The percentages of female students performing at or above *Proficient* increased between 1998 and 2002 at all three grades, and the percentage of male students performing at or above *Proficient* increased at grades 4 and 8.
- In 2002, female students had higher average scores than male students at all three grades.
- In 2002, females outperformed males, on average, by 17 points at grade 4, 21 points at grade 8, and 25 points at grade 12. The decline in the average score for male twelfth-graders between 1998 and 2002 resulted in

an increase in the gap between male and female students.

### Race/ethnicity

- At grades 4 and 8, White, Black, and Hispanic students had higher average writing scores in 2002 than in 1998 (figure C).
- The percentages of students performing at or above *Proficient* increased between 1998 and 2002 among White, Black, Hispanic, and Asian/Pacific Islander students at grade 4 and among White, Black, and Hispanic students at grade 8.
- At grade 4, Asian/Pacific Islander students outperformed all other groups in 2002, and White students outperformed Black, Hispanic, and American Indian/Alaska Native students. At grade 8, White and Asian/Pacific Islander students scored higher, on average, than Black, Hispanic, and American Indian/Alaska Native students. At grade 12, White and Asian/Pacific Islander students scored higher, on average, than

**Figure B. Comparison of state and national public school average writing scores, grades 4 and 8:2002**



<sup>1</sup>Department of Defense Domestic Dependent Elementary and Secondary Schools.

<sup>2</sup>Department of Defense Dependents Schools (overseas).

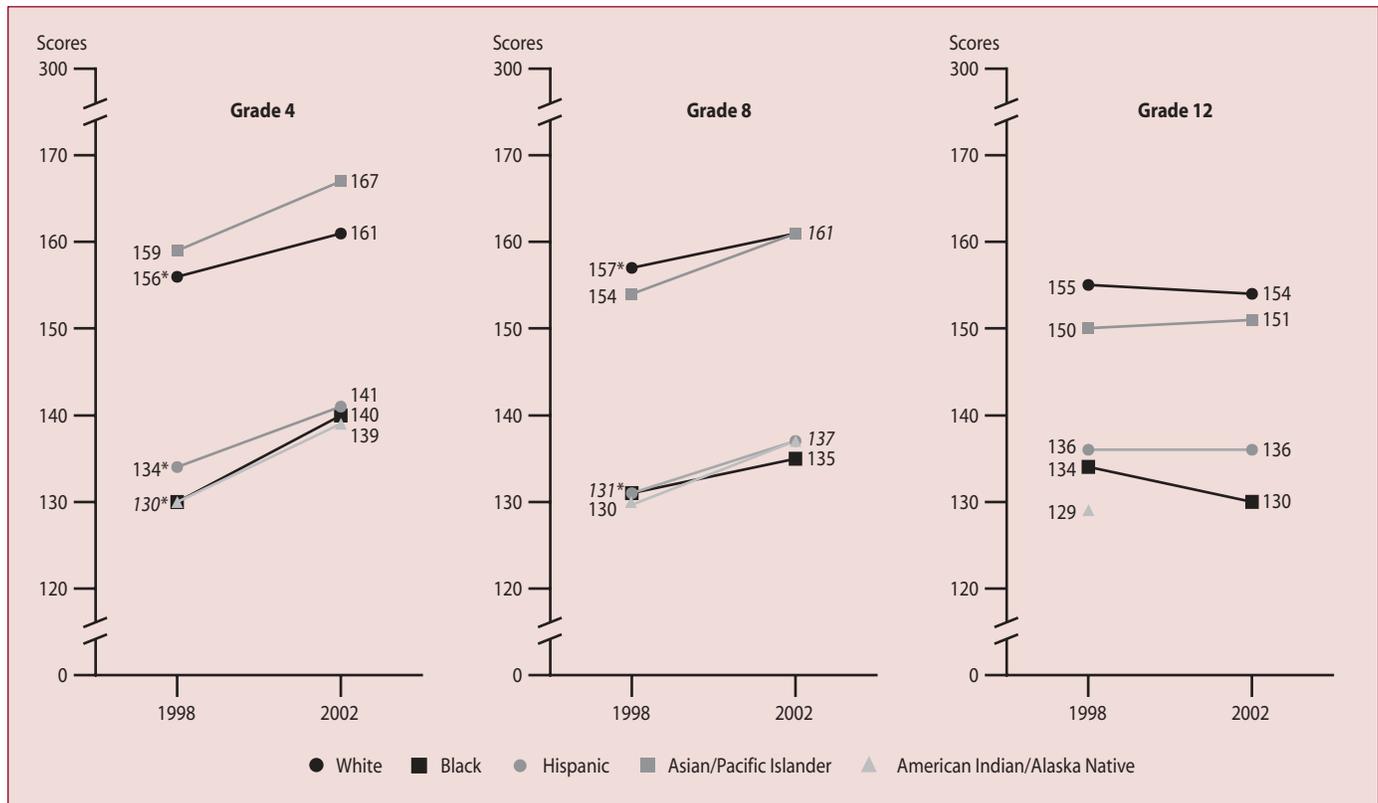
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2002 Writing Assessment. (Originally published as figures 2.4 and 2.5 on pp.25 and 26 of the complete report from which this article is excerpted.)

Black and Hispanic students, and Hispanic students had higher scores than Black students.

- In 2002, the score gap between White and Black fourth-graders was smaller than in 1998.

**Eligibility for free/reduced-price lunch**

The program providing free/reduced-price lunch is administered by the U.S. Department of Agriculture (USDA) for children near or below the poverty line. Eligibility is

**Figure C. Average writing scale scores, by race/ethnicity, grades 4, 8, and 12: 1998 and 2002**

\*Significantly different from 2002.

NOTE: Italicized scale score values indicate that two or more groups had the same average scale score when rounded: Grade 4, 1998: Black and American Indian/Alaska Native students (the 1998 score was significantly different from 2002 only for Black students); Grade 8, 1998: Black and Hispanic students (the 1998 scores were significantly different from 2002 for both Black and Hispanic students); Grade 8, 2002: White and Asian/Pacific Islander students, and Hispanic and American Indian/Alaska Native students. Quality control activities and special analysis raised concerns about the accuracy and precision of grade 12 American Indian/Alaska Native data in 2002. As a result, they are omitted from this report.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 1998 and 2002 Writing Assessments. (Taken from figure 3.3 on p. 46 of the complete report from which this article is excerpted.)

determined by the USDA's Income Eligibility Guidelines (<http://www.fns.usda.gov/cnd/governance/notices/IEGs/IEGs.htm>).

- Average fourth- and eighth-grade writing scores in 2002 were higher than in 1998 for students who were eligible for free/reduced-price lunch, as well as for those who were not eligible.
- The percentages of fourth- and eighth-graders at or above *Proficient* were higher in 2002 than in 1998 for students who were eligible and those who were not eligible for free/reduced-price lunch.
- In 2002, the average writing score for students who were eligible for free/reduced-price lunch was lower than that of students who were not eligible at all three grades.

#### **Title I participation**

Title I is a federally funded program that provides educational services to children who live in areas with high

concentrations of low-income families. Due to recent changes in how the program is administered, comparisons to previous assessment year results are not available.

- In 2002, students at all three grades who attended schools that participated in Title I had lower average writing scores than students who attended schools that did not participate in Title I.

#### **Parents' level of education**

- There was a positive relationship between higher levels of parental education as reported by students and student achievement: for both eighth- and twelfth-graders, the higher the parental education level, the higher the average writing score. (Information about parental education was not collected at grade 4.)

#### **Type of school**

- The average writing scores for fourth- and eighth-grade public school students were higher in 2002 than in 1998.

- In 2002, at all three grades, students who attended nonpublic schools had higher average writing scores than students who attended public schools. At grade 8, students who attended Catholic schools had higher scores than those attending other nonpublic schools.

#### **Type of school location**

- Students in urban fringe schools had higher average writing scores than their peers in central city schools and rural schools at all three grades. Fourth- and eighth-grade students in rural schools had higher scores than their peers in central city schools, while the reverse was true at grade 12.

#### **State and other jurisdiction results**

##### **Gender**

- At grade 8, average scores were higher in 2002 than in 1998 for both male and female students in 12 jurisdictions, for female students only in 1 jurisdiction, and for male students only in 2 jurisdictions.
- In 2002, females had higher average scores than males in all the participating jurisdictions at both grades 4 and 8.

##### **Race/ethnicity**

- At grade 8, average scores increased between 1998 and 2002 for White students in 15 jurisdictions, for Black students in 9 jurisdictions, for Hispanic students in 4 jurisdictions, and for students classified as Other in 1 jurisdiction.

- Score increases were observed for two or more racial/ethnic subgroups of eighth-graders in the following jurisdictions: Arkansas, Delaware, Florida, Louisiana, Maryland, Missouri, North Carolina, South Carolina, and Washington.

#### **Eligibility for free/reduced-price lunch**

- At grade 8, average scores increased between 1998 and 2002 for both those students who were eligible for free/reduced-price lunch and those who were not eligible in 11 jurisdictions, only for eligible students in 1 jurisdiction, and only for students who were not eligible in 4 jurisdictions.

#### **Reference**

Lutkus, A.D., Daane, M.C., Weiner, A.W., and Jin, Y. (2003). *The Nation's Report Card: Writing 2002, Trial Urban District Assessment*. U.S. Department of Education, Institute of Education Sciences. Washington, DC: National Center for Education Statistics.

**Data source:** The NCES National Assessment of Educational Progress (NAEP) 1998 and 2002 Writing Assessments.

**For technical information,** see the complete report:

Persky, H.R., Daane, M.C., and Jin, Y. (2003). *The Nation's Report Card: Writing 2002* (NCES 2003-529).

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**To obtain the complete report (NCES 2003-529),** call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

# Vocational/Technical Education

## Public High School Graduates Who Participated in Vocational/Technical Education: 1982–1998

Karen Levesque

**This article was originally published as the Executive Summary of the E.D. Tabs report of the same name. The sample survey data are from the High School and Beyond Longitudinal Study of 1980 Sophomores (HS&B), the National Education Longitudinal Study of 1988 (NELS), and the High School Transcript Studies (HSTS).**

This report examines patterns and trends in the vocational/technical coursetaking of public high school graduates between 1982 and 1998. It updates and expands upon trends that were published in the National Center for Education Statistics (NCES) report *Vocational Education in the United States: Toward the Year 2000* (Levesque et al. 2000). Specifically, the current report includes trends in the participation of graduates based on their special and protected population status, including race/ethnicity, sex, disability status, English proficiency, and several measures of student academic achievement, as well as school urbanicity and school poverty level. The report analyzes these trends by examining high school transcripts for the graduating classes of 1982, 1990, 1992, 1994, and 1998.<sup>1</sup> The analysis samples and variables used in the report are comparable across the survey years. The analysis focuses on public high school graduates who earned regular or honors diplomas.<sup>2</sup>

Transcripts provide information on the courses that public high school graduates took in grades 9 through 12. For simplicity's sake, the report refers to this information as "high school coursetaking." With the exception of a few tables that examine coursetaking in each grade (9 through 12) separately, the report describes the cumulative coursework that graduates took in high school. The report is intended to accompany the NCES report *Trends in High School Vocational/Technical Coursetaking: 1982–1998* (Levesque 2003), which provides an in-depth examination of the vocational/technical coursetaking patterns of public high school graduates in general.

<sup>1</sup>These transcript studies were conducted as part of the High School and Beyond Longitudinal Study of 1980 Sophomores, "High School Transcript Study" (HS&B-So:80/82) regarding 1982 graduates; the National Education Longitudinal Study of 1988 (NELS:88/92), "Second Follow-up, Transcript Survey, 1992" regarding 1992 graduates; and the High School Transcript Studies (HSTS) of 1990, 1994, and 1998 regarding 1990, 1994, and 1998 graduates, respectively.

<sup>2</sup>The HS&B and NELS studies excluded students with the most severe disabilities, where it was determined by school staff that these students were unable to complete the lengthy student questionnaires that were a part of these studies. In order to ensure comparability across the data sets, graduates with special education diplomas were excluded from the HSTS samples (Gifford et al. 1989; Tuma 1996). Thus, the samples used for this trend analysis were consistent with the population of public high school graduates, including students with disabilities, who earned regular or honors diplomas in each of the study years. In addition, there may be some minor coding differences between NELS and the other transcript data that may affect the data for 1992. See appendix C of the full report for more information.

### Terms Used in the Report

#### The vocational/technical curriculum

The NCES Secondary School Taxonomy (SST) classifies high school vocational/technical education into three different curricula: specific labor market preparation, or "occupational education"; general labor market preparation; and family and consumer sciences education. Occupational education consists of courses that teach skills and knowledge required in a particular occupation or set of related occupations. General labor market preparation consists of courses that teach general employment skills that are not specific to one occupational area, such as basic typewriting/keyboarding, introductory technology education, and career preparation and general work experience courses. Family and consumer sciences education consists of courses intended to prepare students for family and consumer roles outside the paid labor market.<sup>3</sup> For purposes of this report, trends focus on vocational/technical coursetaking overall and on occupational coursetaking.

Although vocational/technical coursetaking is prevalent in high schools, students take varying amounts and types of these courses and take them for different purposes. This report emphasizes the coursetaking patterns of occupational concentrators because this group is a common focus of federal and state accountability and research efforts for vocational/technical education (U.S. Department of Education 2002; Silverberg et al. 2002). Occupational concentrators are graduates who earned 3.0 or more credits during high school in one of the following 10 broad occupational program areas: agriculture, business, marketing, health care, protective services, trade and industry, technology, food service and hospitality, child care and education, and personal and other services. In some cases, the report also examines trends in concentrating (earning 3.0 or more credits) in 18 narrow occupational program areas.<sup>4</sup>

<sup>3</sup>Home economics–related courses that prepare students for the paid labor market are included under occupational education.

<sup>4</sup>These include agriculture, business services, business management, marketing, health care, protective services, construction, mechanics and repair, print production, materials production, other precision production, transportation, computer technology, communications technology, other technology, food service and hospitality, child care and education, and personal and other services.

### Key population variables

The Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1998 (1998 Perkins Act) defines “special populations” as follows:

- individuals with disabilities;
- individuals from economically disadvantaged families, including foster children;
- individuals preparing for occupations that are nontraditional for their gender;
- single parents, including single pregnant women;
- displaced homemakers; and
- individuals with other barriers to educational achievement, including individuals with limited English proficiency.

The 1990 Perkins Act, which governed the second half of the period covered in this report (1990–1998), defined “special populations” fairly similarly, including individuals with handicaps, educationally and economically disadvantaged individuals (including foster children), individuals of limited English proficiency, individuals who participate in programs designed to eliminate sex bias, and individuals in correctional institutions.

In addition, the Office for Civil Rights (2001) in the U.S. Department of Education enforces federal statutes that prohibit discrimination in education programs and activities receiving federal financial assistance (such as Perkins Act funds) on the following bases: race, color, national origin, sex, disability, and age.

To the extent possible, this report provides information on trends in the vocational/technical coursetaking of these special and protected populations, as well as their peers who were not members of these groups. To do so, the report uses the following categories. Measures were selected based on federal definitions, previous related research, and data availability. Data were provided only for those years and surveys that contained comparable variables. For the sake of readability when summarizing findings, the report uses the terms *disadvantaged* and *advantaged* to describe student groups on some of the key variables, as indicated below.<sup>5</sup>

**Race/ethnicity.** Includes the five categories of American Indian/Alaska Native; Asian/Pacific Islander; Hispanic; non-Hispanic Black; and non-Hispanic White. For simplicity’s

<sup>5</sup>In a few cases, *advantaged* students were further classified as *moderately advantaged* and *highly advantaged*. The race/ethnicity and sex categories were not classified according to advantage, because the Perkins legislation did not make this distinction for these variables.

sake, the text refers to Black and White graduates, although students in both of these groups were also non-Hispanic.

**Sex.** Includes the two categories of male and female.

**Disability status (grade 12).** Includes students who were reported to have a disability and students who were reported to have no disability as of grade 12. It should be remembered, however, that graduates with the most severe disabilities were excluded from the analysis due to survey constraints. Consequently, the disability status variable identifies students with and without disabilities among the population of public high school graduates who earned regular or honors diplomas.<sup>6</sup> For purposes of this analysis, students with disabilities were considered to be “disadvantaged,” while students without disabilities were considered to be more “advantaged.”

**English proficiency (grade 12).** Includes the two categories of limited English proficiency and English proficient. It is important to note that this variable describes students’ English language proficiency as of grade 12. For purposes of this analysis, graduates who had limited English proficiency in grade 12 were considered to be “disadvantaged,” while graduates who were English proficient in grade 12 were considered to be more “advantaged.”

The report uses the following three measures of academic achievement:<sup>7</sup>

**Grade point average (GPA).** Calculated from grades recorded in the transcript files, this variable has a range of 0.0 to 4.0. It was not possible in some of the surveys to calculate GPA for academic courses only (a preferable measure of academic achievement), so overall GPA was used. GPA was collapsed into three categories: high GPA (greater than 3.5); mid-level GPA (2.0 to 3.5); and low GPA (less than 2.0). For purposes of this analysis, students with a GPA of less than 2.0 were considered to be “disadvantaged”; students with a GPA of 2.0 to 3.5 were considered to be “moderately advantaged”; and students with a GPA of greater than 3.5 were considered to be “highly advantaged.”

<sup>6</sup>As of 1998, about 31 percent of students with disabilities held special education diplomas and were excluded from the study.

<sup>7</sup>The final federal regulations to the 1990 Perkins Act used grade point average to define academically disadvantaged individuals. The other two measures were suggested by previous research on whether vocational education has been a “dumping ground” for low academically achieving students (Boesel et al. 1994). The 1998 Perkins Act offered no additional guidance for identifying students with barriers to educational achievement, other than limited English proficiency.

**Academic coursework completed.** This variable describes whether students completed all low or all high mathematics, science, and English courses, or some other combination of mathematics, science, and English courses (mid-level or mixed academic coursetaking). Low and high mathematics, science, and English courses are defined in the glossary (appendix B) and technical appendix (appendix C) of the full report. For purposes of this analysis, students completing all low-level academic coursework were considered to be “disadvantaged”; students completing all high-level academic coursework were considered to be “highly advantaged”; and students completing mid-level or mixed academic coursework were considered to be “moderately advantaged.”

**Grade 9 mathematics.** This variable identifies the mathematics course a student took in grade 9. It includes the three categories of high-level grade 9 mathematics (geometry or higher), mid-level grade 9 mathematics (pre-algebra or algebra 1), and low-level mathematics (no mathematics or mathematics courses below pre-algebra). It provides a measure of academic achievement before most of graduates’ coursework in vocational/technical education was taken and is therefore less confounded with that coursetaking than either GPA or academic coursework completed. For purposes of this analysis, students who took low-level mathematics in grade 9 were considered to be “disadvantaged”; students who took mid-level grade 9 mathematics were considered to be “moderately advantaged”; and students who took high-level grade 9 mathematics were considered to be “highly advantaged.”

Although a student-level measure of socioeconomic status would have been preferable for this analysis, such a variable was not available from the 1990, 1994, and 1998 High School Transcript Studies (HSTS). Instead, the report uses the following two school-level variables as measures of economic status:<sup>8</sup>

**School urbanicity.** This variable describes the location of the school a graduate attended in the 12th grade and includes the three categories of urban, suburban, and rural. These categories are defined further in appendixes B and C of the full report.

**School poverty level.** This variable describes the proportion of students in the school a graduate attended in the 12th grade who participated in the National School Lunch Program (NSLP). It includes the categories of high poverty (greater than 50 percent in NSLP) and low poverty (5 percent or less in NSLP), with a middle group having greater than 5 percent but no greater than 50 percent of students in NSLP. This variable also includes a category for students whose schools did not report their participation in NSLP. For purposes of this analysis, students in high-poverty schools were considered to be “disadvantaged,” while students in low-poverty schools were considered to be “highly advantaged.” The middle group was considered to be of mixed advantage. The variable is defined further in appendixes B and C of the full report.

It should be remembered that there may be a fairly high correlation among some of these population variables. The report does not attempt to isolate the unique contribution of each factor to participation in vocational/technical education. Instead, the report describes bivariate relationships according to NCES standards for this type of analysis. See appendix C of the full report for additional information on the technical methodology used.

## Vocational/Technical Coursetaking in 1998

### Overall patterns among 1998 graduates

Although most 1998 public high school graduates took at least some vocational/technical and occupational coursework, graduates who were members of disadvantaged groups generally took more vocational/technical and occupational coursework and were more likely to concentrate in occupational education than their counterparts who were members of more advantaged groups. These differences were apparent with regard to disability status in grade 12, GPA, academic coursework completed, grade 9 mathematics, and school poverty. One exception was that students who had limited English proficiency in grade 12 generally took less vocational/technical and occupational coursework and were less likely to concentrate in occupational education than their English-proficient peers.

In addition, male graduates took more vocational/technical and occupational coursework than female graduates, and students in rural schools took more such coursework than students in either urban or suburban schools. In contrast, Asians/Pacific Islanders generally took less vocational/technical and occupational coursework than graduates in other racial/ethnic groups, particularly Black and White graduates.

<sup>8</sup>Section 421 of the 1990 Perkins Act included information on students in rural and urban areas in its identification of economically disadvantaged students. The final regulations to the 1990 Perkins Act also included eligibility for the National School Lunch Program in the definition of this group. The 1998 Perkins Act provided no additional guidance on defining economically disadvantaged students.

### Characteristics of occupational concentrators from the class of 1998

Although disadvantaged students were more likely to participate in vocational/technical education in general, and to concentrate in occupational education in particular, these students represented a minority of all occupational concentrators. In fact, when students were classified into three groups (low-, moderate- or middle-, and high-advantage), the majority of occupational concentrators (about 60 percent or more) came from the middle groups. This pattern was apparent with regard to GPA, academic coursework completed, grade 9 mathematics, and school poverty. In each case, either occupational concentrators were more likely to be from the middle groups than was the 1998 public high school class as a whole, or no significant difference was detected in the proportion of occupational concentrators and all graduates who were from these groups. Moreover, no significant difference was detected in the proportion of occupational concentrators and all graduates who were from the lowest academic achievement groups. However, occupational concentrators were less likely than the 1998 graduating class as a whole to be from the highest academic achievement groups.

In the cases of disability status and English proficiency in grade 12, most occupational concentrators (more than 95 percent) came from advantaged (rather than disadvantaged) groups. While a larger proportion of occupational concentrators than of the 1998 graduating class as a whole were disabled in grade 12, the proportion of occupational concentrators who had limited English proficiency in grade 12 was lower than that for all 1998 graduates.

The majority of occupational concentrators (more than 50 percent) were White and were male. In fact, occupational concentrators were more likely to be male than the 1998 graduating class as a whole.<sup>9</sup> With regard to school urbanicity, no school type enrolled a majority of occupational concentrators. However, occupational concentrators were more likely to attend rural schools than urban schools.<sup>10</sup>

While academically disadvantaged graduates were more likely than their more advantaged peers to concentrate in

occupational education generally, this pattern was reversed to some extent in certain occupational program areas. Notably, higher achieving students were somewhat more likely than their lower achieving peers to concentrate in communications technology.

### Trends in Vocational/Technical Coursetaking: 1982 to 1998<sup>11</sup>

The average number of credits graduates earned in vocational/technical education declined from 1982 to 1990, after which no significant changes were detected. One question of interest to policymakers is whether these declines occurred across the board or only among certain subgroups of students.

Most often, vocational/technical coursetaking declines occurred among groups earning numbers of vocational/technical credits that were not statistically different from the average for all 1982 graduates. In comparison, there were few significant changes detected in the average number of vocational/technical credits earned by several groups that earned *above-average* numbers of vocational/technical credits in 1982. At the same time, there were no significant changes detected between 1982 and 1998 in the average number of vocational/technical credits earned by several groups that earned *below-average* numbers of vocational/technical credits in 1982 compared with all 1982 graduates.

As a consequence of these changes, there were few shifts among subgroups of graduates with regard to their relative vocational/technical coursetaking patterns over the period studied. That is, most groups that earned above-average numbers of vocational/technical credits in 1982 still earned above-average numbers of such credits as of 1998 (including low academic achievers and students attending rural schools). In addition, all groups that earned below-average numbers of vocational/technical credits in 1982 still earned below-average numbers of such credits as of 1998 (including Asians/Pacific Islanders and high academic achievers). Finally, despite the coursetaking declines noted above, most groups that earned numbers of vocational/technical credits in 1982 that were not statistically different from the average for all 1982 graduates were also in this middle coursetaking group as of 1998.

In contrast to declines in vocational/technical coursetaking, there was no statistically significant change between 1982 and 1998 in the average number of occupational credits that

<sup>9</sup>No significant difference was detected in the proportions of occupational concentrators and all 1998 graduates who were White.

<sup>10</sup>No significant difference was detected in the proportion of occupational concentrators who attended suburban schools and those who attended schools in other locales. In addition, no significant difference was detected between occupational concentrators and all 1998 graduates based on school urbanicity.

<sup>11</sup>Because data for 1982 were not available, trends between 1982 and 1998 could not be determined with regard to English proficiency in grade 12 and school poverty.

graduates earned in high school. However, trends varied somewhat among student groups. For example, students with disabilities as of grade 12 took the equivalent of about one additional full-year occupational course, while Hispanic graduates took about one-half fewer occupational courses, by the end of the period.

### **Trends in occupational concentrating**

The percentage of public high school graduates who concentrated in occupational education declined from 33.7 percent in 1982 to 27.8 percent in 1990, after which no significant changes were detected. However, trends varied among student groups. Similar to the vocational/technical coursetaking changes noted above, declines in occupational concentration rates occurred most often among groups with concentration rates in 1982 that were not statistically different from the average for all 1982 graduates. In addition, there were few significant changes detected between 1982 and 1998 in the concentration rates for several groups that exhibited *below*-average occupational concentration rates in 1982 compared with all 1982 graduates.

As a consequence of these changes, most subgroups of graduates kept their relative occupational concentration status over the period studied. That is, most groups that exhibited *above*-average occupational concentration rates in 1982 still concentrated in occupational education at above-average rates as of 1998 (including males and students completing all low academic coursework in high school). In addition, most groups that exhibited *below*-average occupational concentration rates in 1982 still concentrated in occupational education at below-average rates as of 1998 (including females and high academic achievers). Finally, most groups that exhibited occupational concentration rates in 1982 that were not statistically different from the average for all 1982 graduates were also in this middle occupational concentrating group as of 1998.

Trends in occupational concentrating also varied by program area. For example, while most student groups were more likely to concentrate in communications technology in 1998 than in 1982, no significant changes in concentration rates in this program area were detected over this period among Blacks, Hispanics, students with disabilities as of grade 12, students taking low-level mathematics in grade 9, and students in urban schools. In addition, while no differences were detected between 1982 and 1998 in overall rates of concentrating in marketing, print production, and computer technology, these program areas

attracted somewhat higher academically achieving students over the period.

### **Gaps in occupational concentration rates**

Occupational concentration rates in specific program areas often varied by student race/ethnicity, sex, and disability status. Most differences in occupational concentration rates among racial/ethnic groups in 1982 were no longer detected by 1998. In contrast, most 1982 differences between males and females persisted as of 1998. However, some of these gender gaps decreased, particularly in business services, where male graduates increased their concentration rate over the period. With regard to disability status in grade 12, in no program areas were students with disabilities more likely to concentrate than students without disabilities in 1982.<sup>12</sup> However, by 1998, students with disabilities as of grade 12 were more likely than those without to concentrate in agriculture, construction, mechanics and repair, and materials production.

### **Trends in the characteristics of occupational concentrators**

Some changes in the characteristics of occupational concentrators were consistent with changes in the student body in general between 1982 and 1998. For example, both graduates in general and occupational concentrators in particular became more academically advantaged by 1998. However, the shift toward moderate academic achievement was greater for occupational concentrators than for the larger group of graduates.

### **Computer-Related Coursetaking**

The SST currently includes all computer-related courses (including those taught in mathematics and computer science departments) under the vocational/technical curriculum. The report focuses on overall computer-related coursetaking for the period 1990 to 1998, as well as on coursetaking in the typewriting/keyboarding, computer-related business services, and computer technology areas.

### **Computer-related coursetaking among 1998 graduates**

The 1998 public high school graduates took the equivalent of about one full-year computer-related course, on average, during high school. Graduates with disabilities as of grade 12 took *less* computer-related coursework overall than their 1998 counterparts without such disabilities. In addition, graduates in low-poverty schools took less computer-related

<sup>12</sup>In fact, students with disabilities were *less* likely than those without to concentrate in business services and in communications technology in 1982. However, these gaps were no longer detected as of 1998.

coursework than their counterparts in higher poverty schools. In contrast, graduates who were moderate academic achievers, who attended rural schools, or who were Black took *more* computer-related coursework overall than their 1998 peers who were lower academic achievers, who attended urban or suburban schools, or who were Asian/Pacific Islander, respectively. Generally, there was mixed evidence about the relationship between student advantage and the amount of computer-related coursework taken by 1998 graduates.

### **Trends in computer-related coursetaking**

There were no significant changes in overall computer-related coursetaking between 1990 and 1998, although coursetaking declined in typewriting/keyboarding over the same period. In addition, trends varied somewhat among student groups. Compared to their 1990 peers, 1998 graduates who had disabilities in grade 12 or who were male took *more* computer-related coursework overall and in business services. In addition, 1998 graduates with disabilities in grade 12 took more computer technology coursework than their 1990 peers. In contrast, 1998 graduates who were female took *less* computer-related coursework overall than their 1990 peers.

### **Combining Vocational/Technical and Academic Coursetaking**

Several pieces of federal legislation in the 1990s focused attention on increasing the academic achievement of participants in vocational/technical education, including the Carl D. Perkins Vocational and Applied Technology Education Act Amendments of 1990 and 1998 and the School-to-Work Opportunities Act of 1994. Consequently, the report examines some of the ways that public high school graduates combined academic and vocational/technical education between 1982 and 1998, focusing primarily on the academic coursetaking of occupational concentrators.

### **Core academic coursetaking among 1998 graduates**

For most identified student groups, 1998 graduates in general earned more credits in core academic subjects (English, mathematics, science, and social studies) than occupational concentrators. However, there were no significant differences between occupational concentrators and the larger group of 1998 graduates in the numbers of core academic credits earned by the subsets of students who were from racial/ethnic minorities, who had disabilities as of grade 12, who completed either all low- or all high-level academic coursework in high school, who took high-level mathematics coursework in grade 9, or who attended urban or high-poverty schools.

Among the class of 1998, occupational concentrators who were members of more advantaged groups generally earned more core academic credits than occupational concentrators who were less advantaged. This was true with regard to disability status in grade 12, GPA, academic coursework completed, and grade 9 mathematics. However, no significant differences were detected among occupational concentrators with regard to school poverty level or school urbanicity. In addition, occupational concentrators who were Asian/Pacific Islander or who were female earned more core academic credits than occupational concentrators who were members of other racial/ethnic groups or who were male, respectively. All of these 1998 patterns for occupational concentrators held as well for the larger group of public high school graduates.

### **Trends in core academic coursetaking**

Both the larger group of 1998 public high school graduates and the subset of these graduates who were occupational concentrators earned more core academic credits than their 1982 counterparts, regardless of their special or protected population status. For every identified student group, there was no significant difference in the rates of increase over the period in the number of core academic credits earned by all graduates compared with occupational concentrators.

Among both the larger group of public high school graduates and the subset of these graduates who were occupational concentrators, increases between 1982 and 1998 in core academic credits earned were smaller for students with disabilities in grade 12, American Indians/Alaska Natives, and males than for students without disabilities in grade 12, Hispanics, and females, respectively.

### **Conclusion**

Various pieces of federal legislation are concerned with the participation of special and protected populations in education programs. This report examines the participation of public high school graduates in vocational/technical education between 1982 and 1998, focusing on the participation of graduates based on their special and protected population status.

Trends in participation for most subgroups reflected overall trends for graduates. Generally, graduates decreased their vocational/technical coursetaking between 1982 and 1998, although their occupational coursetaking was relatively steady. The percentage of graduates concentrating in occupational education (earning 3.0 or more credits in one of the 10 broad occupational program areas cited in the report) also declined over the period.

A few groups of graduates exhibited exceptions to these general trends, however. In particular, graduates with disabilities as of grade 12 took more vocational and occupational coursework by the end of the period studied. In addition, Asians/Pacific Islanders and high academic achievers earned numbers of vocational credits and exhibited occupational concentration rates at the end of the period that were not statistically different from corresponding figures for 1982. Thus, these latter groups did not exhibit the usual declines. Both Asians/Pacific Islanders and high academic achievers participated in vocational/technical education at below-average rates at the beginning of the period.

As of 1998, there were differences in participation in vocational/technical education on all of the variables examined in the report: race/ethnicity, sex, disability status, English proficiency, academic achievement, and school urbanicity and poverty level. In particular, groups exhibiting relatively high levels of participation in vocational/technical education in comparison with their peers included males, graduates with disabilities as of grade 12, low academic achievers, and graduates in rural and in high-poverty schools. In contrast, females, Asians/Pacific Islanders, and graduates who had limited English proficiency as of grade 12 exhibited relatively low levels of such participation.

With regard to computer-related coursetaking, groups exhibiting relatively low levels of participation in comparison with their 1998 peers included students with disabilities as of grade 12, low academic achievers, Asians/Pacific Islanders, and students in low-poverty and in urban and suburban schools. Among these groups, 1998 graduates who had disabilities as of grade 12 and graduates who were low academic achievers also earned fewer core academic credits than their more advantaged counterparts. However, 1998 graduates who were Asian/Pacific Islander as well as female graduates earned relatively large numbers of core academic credits in comparison with their peers. All of these core academic coursetaking patterns also held for the subset of graduates who were occupational concentrators.

On measures that classified students into three levels of advantage (low-, moderate- or middle-, and high-advantage), most occupational concentrators were from the middle groups. In some cases, occupational concentrators were more likely to be from the middle groups than was the 1998 public high school class as a whole. Although no significant difference was detected in the proportion of occupational concentrators and all graduates who were

from the lowest academic achievement groups, occupational concentrators were less likely than the 1998 graduating class as a whole to be from the highest academic achievement groups.

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**Data sources:** The NCES High School and Beyond Longitudinal Study of 1980 Sophomores, “High School Transcript Study” (HS&B-So:80/82); National Education Longitudinal Study of 1988 (NELS:88/92), “Second Follow-up, Transcript Survey, 1992”; and 1990, 1994, and 1998 High School Transcript Study (HSTS).

**For technical information,** see the complete report:

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# Cost of College Tuition

## Getting Ready to Pay for College: What Students and Their Parents Know About the Cost of College Tuition and What They Are Doing to Find Out

— Laura J. Horn, Xianglei Chen, and Chris Chapman

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

Findings from surveys of adults in general (Ikenberry and Hartle 1998) and of parents of college-age children (Miller 1997) suggest that Americans place a high value on obtaining a college education, but that they have difficulty estimating college costs. This study uses data from the Parent and Youth Surveys of the 1999 National Household Education Surveys Program (NHES:1999) to investigate how much “college-bound”<sup>1</sup> students in grades 6 through 12 and their parents know about the cost of attending college, and the relationships between their knowledge of college costs and how they go about preparing for college.<sup>2</sup> It examines whether parents had started to save for their children’s education, gathered information on financial aid, and knew about various tax credits to help offset costs. Students were asked about discussions they had with parents or teachers/counselors to learn about college costs, academic requirements, and financial aid availability.

The base sample of this report consists of 7,910 6th- through 12th-grade students who participated in the Youth Survey of NHES:1999. Parent data used in this report were collected through the Parent Survey of NHES:1999 from the parents of these students. Because of this sample design, the data can be used to analyze both students’ own plans and their parents’ plans for students’ postsecondary education. Findings can be generalized to all 6th- through 12th-graders, but not to all parents of 6th- through 12th-graders. Student and parent cost estimates are compared against price data collected directly from postsecondary institutions.

### Almost All Plan to Attend College

In 1999, the vast majority of 6th- through 12th-graders (94 percent) and their parents (96 percent) responded “yes” to the question “Do you think (you/your child) will attend school after high school?” Ninety-one percent of *both* students and their parents agreed that the students would attend college or some other type of postsecondary institution. Among students and parents who reported such plans, 45 percent of students and roughly one-half of parents

thought the students would attend a 4-year college, while 17 percent of students and one-quarter of parents reported plans for students to attend a 2-year institution. The remainder (39 percent of students and 25 percent of parents) were undecided about the kind of postsecondary institution the students would attend.<sup>3</sup>

### Acquiring Cost Information

High school students (in 9th through 12th grades) with plans to attend college and parents of 6th- through 12th-graders who also reported postsecondary plans for their children were asked if they had obtained information about what it would cost to attend. Eighteen percent of students and 30 percent of parents had done so. While students in 11th and 12th grades were more likely to have acquired cost information than their 9th- and 10th-grade counterparts, just 52 percent of 11th- and 12th-graders had acquired such information (figure A). A similar picture emerges when looking at the responses of their parents, with students in 11th and 12th grades more likely to have parents who had acquired cost information than students in 9th and 10th grades. An additional 11 percent of students in grades 11 and 12 thought they could accurately estimate tuition and fees, and an additional 17 percent of 11th- and 12th-graders had parents who thought they could accurately estimate tuition and fees. Considering both students and their parents jointly, about 38 percent of 11th- and 12th-grade students had either acquired information about college prices or thought they could estimate costs, and had parents who reported the same.

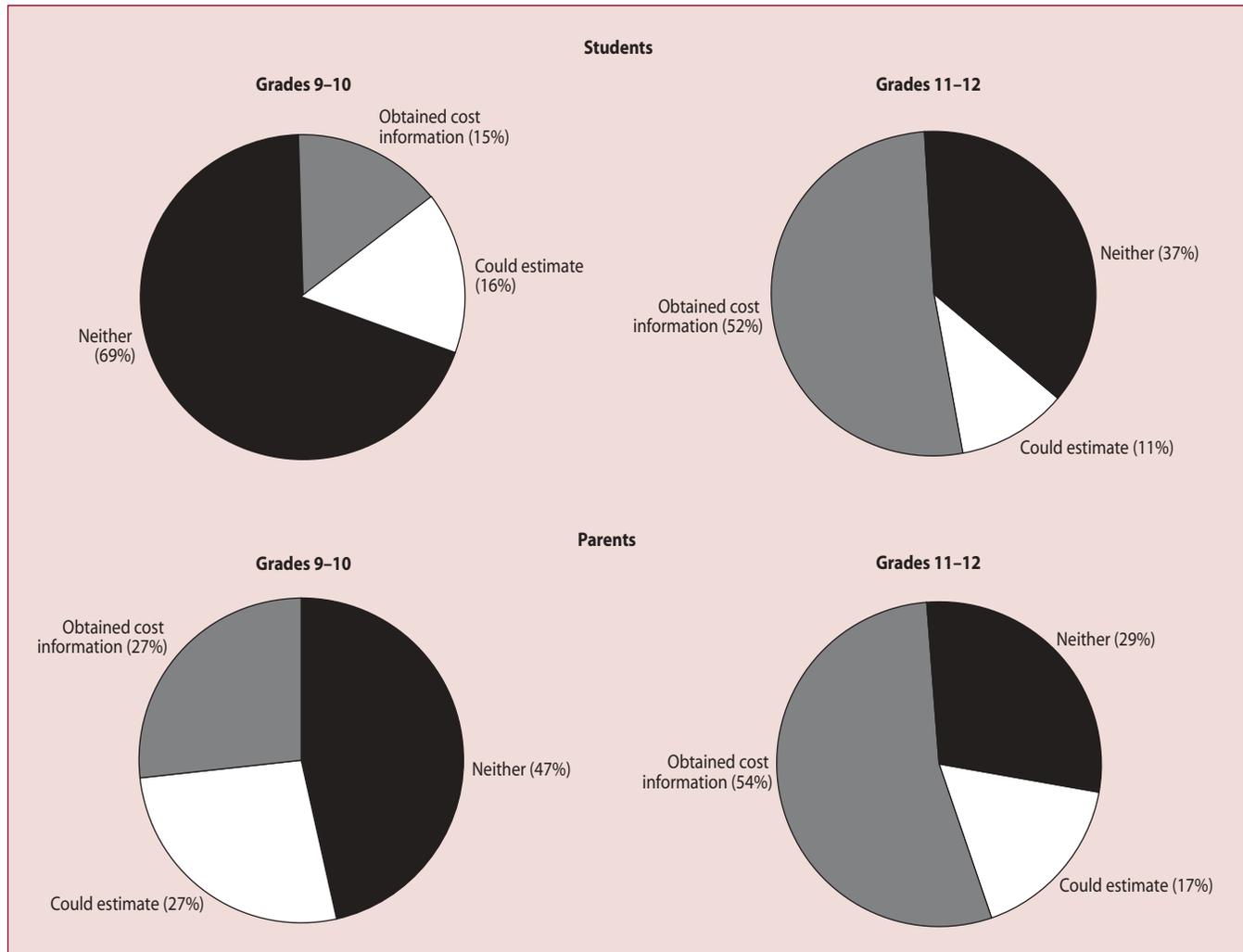
The likelihood of having knowledge of college prices increased with household income and parents’ education for both students and parents. In addition, parents of White students were more likely than parents of either Black or Hispanic students, and White students more likely than Hispanic students, to report knowledge of college costs. Those individuals who are potentially least able to afford college were also most likely to lack information about the cost of attending.

<sup>1</sup>This term is applied to all students who reported plans to attend any type of postsecondary institution.

<sup>2</sup>Parent reports are limited to information provided by parents of the sampled 6th- through 12th-grade students interviewed for the survey.

<sup>3</sup>Readers should keep in mind that the data collected from parents are representative of parents of the sampled students and not of all parents.

**Figure A. Among 9th- through 12th-graders and their parents who reported plans for the student to attend postsecondary education, the percentage distributions according to whether they had obtained college cost information, could estimate the costs, or could do neither: 1999**



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

SOURCE: U.S. Department of Education, National Center for Education Statistics, Youth Survey and Parent Survey of the 1999 National Household Education Surveys Program (NHES:1999).

### How Well Students and Parents Estimate 1 Year's College Tuition

Students and parents who reported either that they had obtained college cost information or that they could accurately estimate the cost of tuition were then asked to provide an estimate of "1 year's tuition and mandatory fees" at the type of college the students planned to attend.<sup>4</sup> Overall, both students and parents substantially overesti-

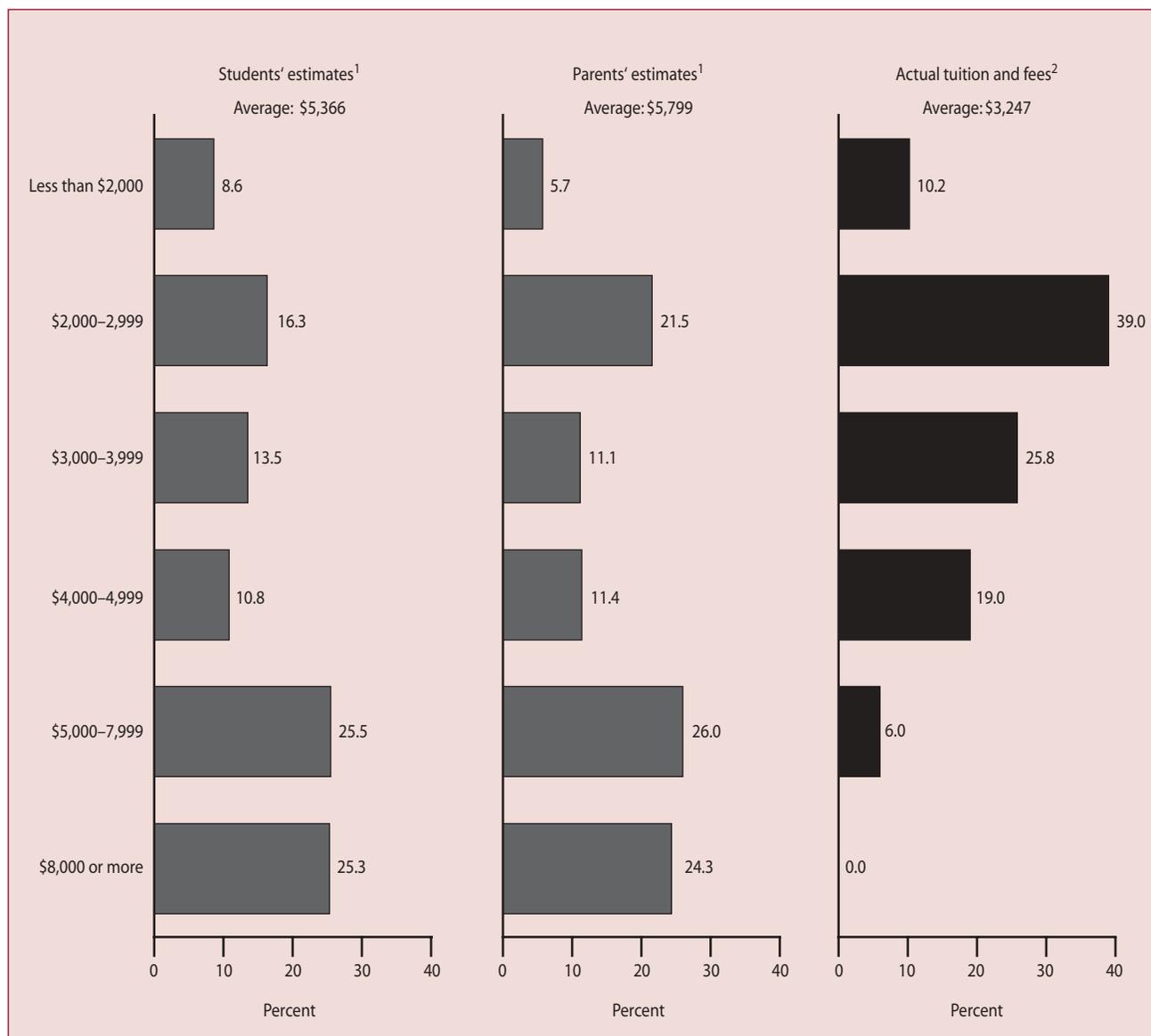
mated tuition amounts, especially for public institutions.<sup>5</sup> For example, the average yearly tuition that in-state undergraduates were charged at public 4-year institutions in 1998-99 was \$3,247 (The College Board 1999).<sup>6</sup> On average, students close to the age of enrollment (i.e., 11th-

<sup>5</sup>If undecided about 2- or 4-year institutions (about 39 percent of students and 25 percent of parents), estimates of public 4-year institutions were requested. If undecided about attending a public or private institution (about 14 percent of students and 10 percent of parents), estimates of public institutions were requested. If undecided about in-state or out-of-state attendance (about 4 percent of students and 3 percent of parents), estimates of in-state tuition were requested.

<sup>6</sup>The average yearly tuition reported does not take into account any financial aid students may have received that offset tuition. At the time the analyses were done for this report, data were not available from the 1998 Integrated Postsecondary Education Data System (IPEDS). Data from IPEDS are typically used for analysis of college costs. The equivalent estimate from the 1998 IPEDS is \$3,229.

<sup>4</sup>The use of the terms "tuition" or "fees" is arbitrary. Some institutions only charge tuition, some only fees, and some both. For simplicity, the term "tuition" is used in the text to refer to tuition and/or fees.

**Figure B. Among 11th- and 12th-graders and their parents who reported plans for the student to attend a public in-state 4-year institution, and who provided an estimate of tuition and fees, the percentage distributions of estimated tuition and fees for 1 year and the actual tuition and fees paid by undergraduates in 1998–99**



<sup>1</sup>Does not include those who reported room and board in their estimates. Includes respondents who were undecided about where to attend but estimated tuition and fees for public 4-year institutions in their state.

<sup>2</sup>Does not include room and board costs.

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

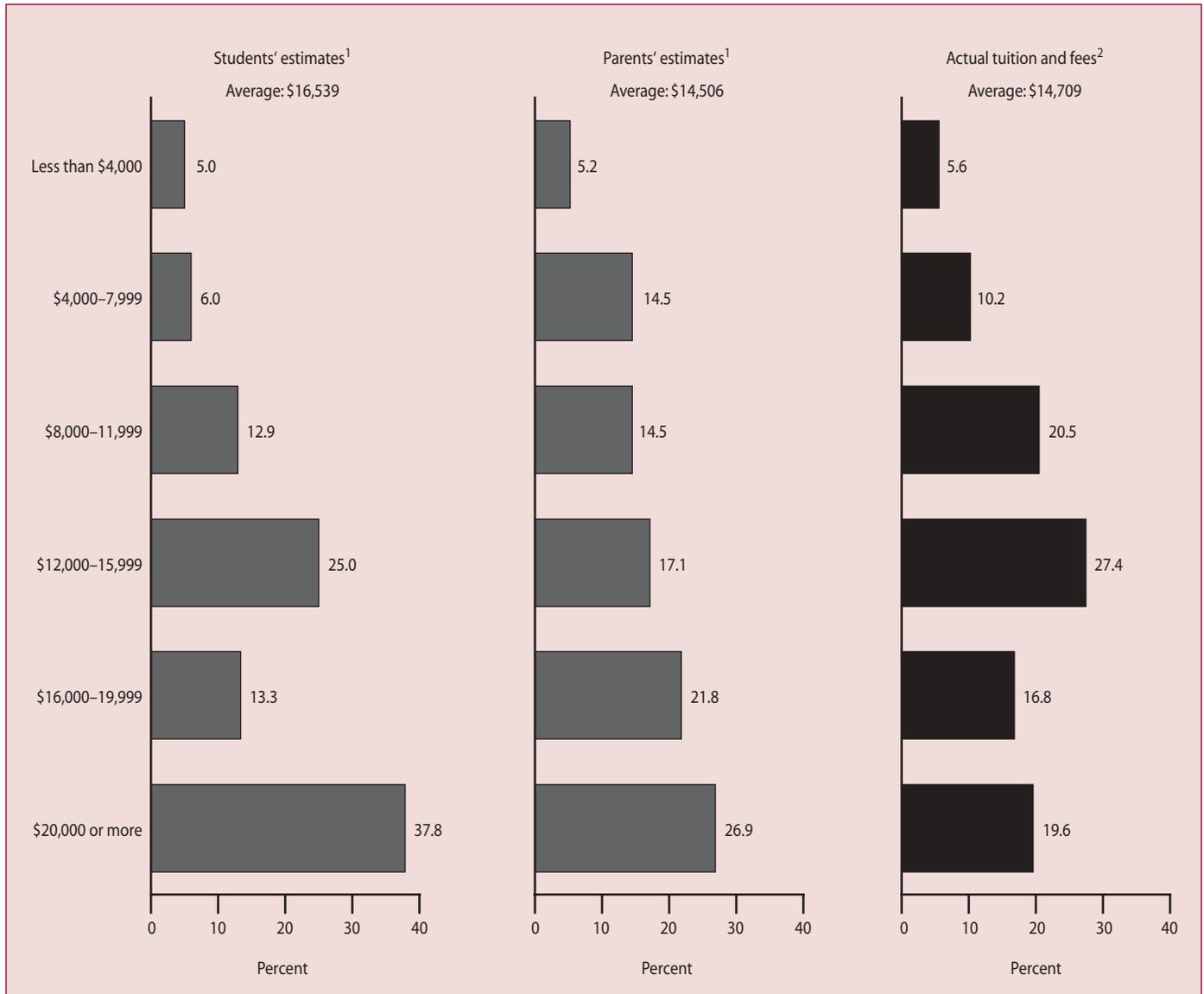
SOURCE: U.S. Department of Education, National Center for Education Statistics, Youth Survey and Parent Survey of the 1999 National Household Education Surveys Program (NHES:1999). Actual tuition and fees published in The College Board (1999), *Trends in College Pricing 1999*.

and 12th-graders) who planned to attend public 4-year institutions in-state and their parents estimated the yearly tuition to be between \$5,000 and \$6,000 (\$5,366 for students and \$5,799 for their parents) (figure B).

The distribution of tuition levels (also shown in figure B) illustrates how students and their parents overestimate tuition costs. While less than one-tenth of 1 percent of all

students enrolled in public 4-year institutions (in-state) were charged \$8,000 per year or more in tuition, approximately one-quarter of 11th- and 12th-grade students and their parents expected they would have to pay this much for a college education at 4-year in-state public institutions. The vast majority of students attending such institutions paid less than \$5,000 in tuition per year. Similar patterns, but more modest differences, were found for private 4-year

**Figure C. Among 11th- and 12th-graders and their parents who reported plans for the student to attend a private 4-year institution, and who provided an estimate of tuition and fees, the percentage distributions of estimated tuition and fees for 1 year and the actual tuition and fees paid by undergraduates in 1998–99**



<sup>1</sup>Does not include those who reported room and board in their estimates.

<sup>2</sup>Does not include room and board costs.

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, Youth Survey and Parent Survey of the 1999 National Household Education Surveys Program (NHES:1999). Actual tuition and fees published in The College Board (1999), *Trends in College Pricing 1999*.

institutions (figure C). While 20 percent of undergraduates were charged \$20,000 or more in annual tuition, 38 percent of 11th- and 12th-graders and 27 percent of their parents thought it would cost at least \$20,000 annually to attend. However, when looking only at the overall average, no difference could be detected between parents' estimates (\$14,506) and the actual average tuition for private 4-year colleges (\$14,709). Thus, parents of children who planned

to attend private 4-year institutions appeared to be more aware of the costs at these institutions than their counterparts whose children planned to attend comparable public colleges.

Because college tuition varies substantially from state to state (Snyder and Hoffman 2002), further analyses were conducted to determine how accurately students and their

parents could estimate tuition for the type of institution students planned to attend within their state of residence. Accurate estimates were defined as those within 25 percent of the actual state average.<sup>7</sup> As shown in figure D, one-quarter of 11th- and 12th-graders and about one-third (31 percent) of their parents were able to provide accurate estimates. Moreover, both students and their parents were much more likely to overestimate than to underestimate tuition. Finally, 37 percent of 11th- and 12th-graders and 29 percent of their parents could not estimate yearly tuition for the type of college the students hoped to attend.

In looking at all students included in the survey (i.e., 6th- through 12th-graders) who were planning to attend postsecondary education, the likelihood of being able to estimate tuition accurately increased with household income. For their parents, both household income and parents' education level (i.e., the higher the level, the more likely they were to estimate accurately) were associated with the ability to estimate tuition.

### Getting Ready for College

Students and parents were asked separate questions in NHES:1999 about their preparations for college. Their responses provide information about parents' plans for paying for their children's college education and how actively students acquired information about the academic and financial requirements for attending college.

#### Parents' plans to pay for their children's college education

Parents were asked if they had started saving for their child's postsecondary education or making other financial plans, if they had gathered information about financial aid, and whether they knew about the Lifetime Learning and/or HOPE Scholarship tax credits. The likelihood of parents reporting that they had begun saving or making other financial preparations to pay for their child's college education increased with household income. Parental planning was also related to students' academic standing in school: as grade point average increased, so did the likelihood that parents reported saving money, gathering information about financial aid, and knowing about college tax credits. No relationship was detected between the proximity of students starting postsecondary education and their parents' plans to pay for it. Focusing on students who intended to go to college, 63 percent of 11th- and 12th-graders and 59 per-

cent of 9th- and 10th-graders had parents who had made some financial preparations. The apparent difference was not statistically significant. Similarly, there was not a detectable difference between the percentage of college-bound 9th- and 10th-graders (59 percent) and the percentage of college-bound 6th- through 8th-graders (57 percent) with parents who had made financial preparations.

A similar percentage (58 percent) of college-bound 11th- and 12th-graders' parents had sought information about financial aid availability, and about one-third (34 percent) were aware of the Lifetime Learning and/or HOPE Scholarship tax credits. Awareness of at least one of the tax credits increased with household income and parents' education levels.

#### Students' discussions with parents and teachers/counselors<sup>8</sup>

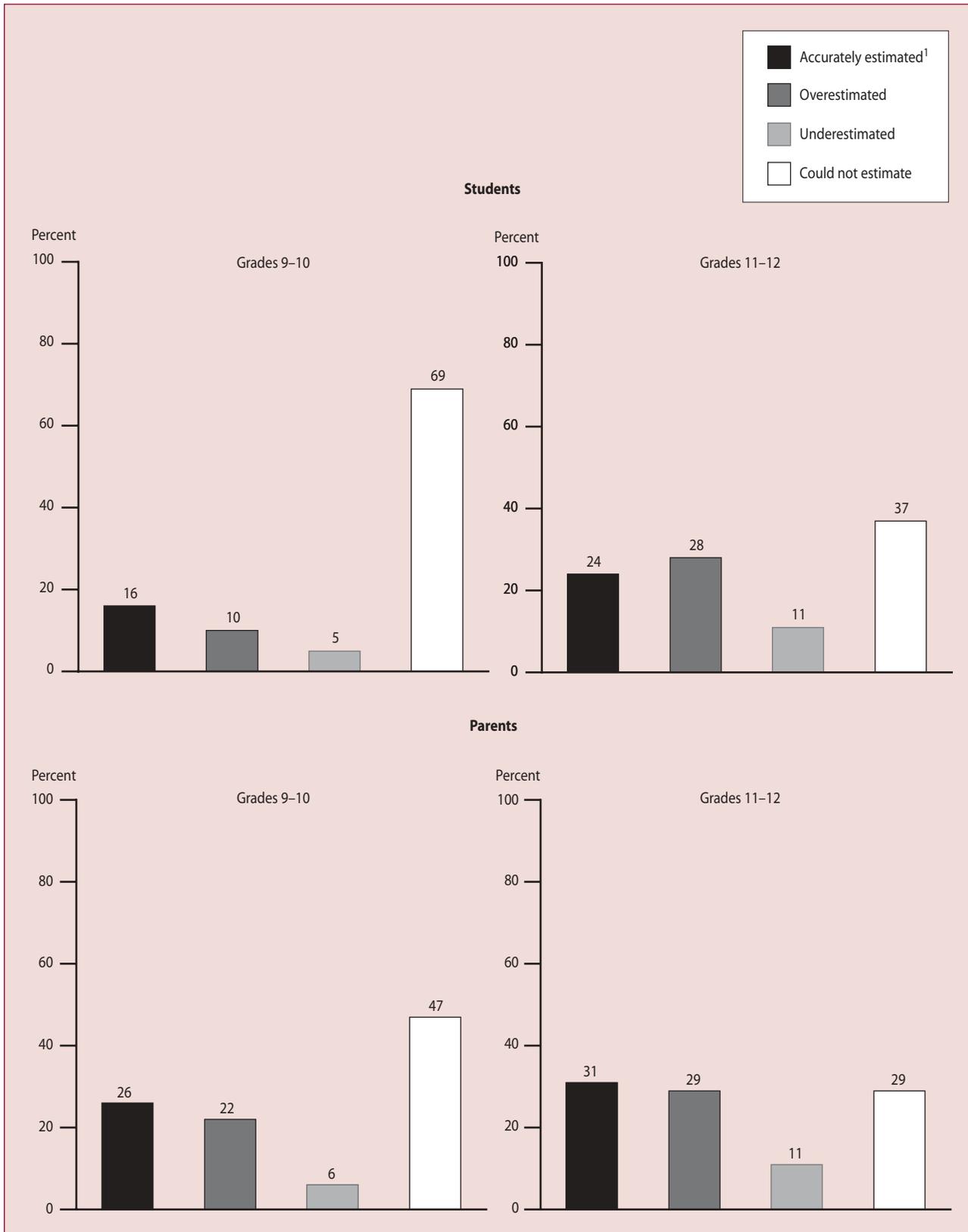
Students were asked if they had discussed with their parents or teachers (including counselors) the type of college to attend and the academic and cost requirements of that college. Students were also asked if they had sought information about the availability of financial aid. Nearly three-quarters of students (74 percent) reported that they had discussed the academic requirements of attending college with parents or teachers/counselors. And just over two-thirds (69 percent) reported having conversations about the type of college they expected to attend. However, half or fewer reported discussing college costs or financial aid with parents or teachers/counselors. As might be expected, the likelihood of reporting such discussions increased as students approached college age. By 11th and 12th grades, over 90 percent of students reported having discussions about academic requirements or the type of college to attend, and about three-quarters (71 to 75 percent) reported discussions about college costs and financial aid.

Students' discussions about aspects of college had little relationship to either household income or parents' education levels. However, there was a positive relationship between students knowing what type of institution they wanted to attend and the likelihood of students discussing college cost requirements with their parents or their teachers/counselors. A positive relationship was also found between students assuming a role in family decisionmaking and the likelihood of students discussing college cost requirements

<sup>7</sup>The analysis also included accuracy levels at 15 percent and 50 percent of actual amounts with similar results (see appendix C in the full report).

<sup>8</sup>Students were asked if these discussions had occurred during the 1998-99 school year.

**Figure D. Among 9th- through 12th-graders and their parents who reported plans for the student to attend postsecondary education, the percentage distributions according to the accuracy of tuition estimates for 1 year's tuition and fees at the type of college the student planned to attend: 1999**



<sup>1</sup>An accurate estimate was defined as one within 25 percent of the average for the type of institution the student planned to attend in the state of residence.

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, Youth Survey and Parent Survey of the 1999 National Household Education Surveys Program (NHES:1999). Actual tuition amounts from the 1998 Integrated Postsecondary Education Data System (IPEDS).

with their parents or their teachers/counselors. In other words, as the likelihood of students knowing where they wanted to attend college or how involved they were in family decisionmaking increased, so did their likelihood of discussing college cost requirements. On the other hand, no association between student discussions of college cost requirements and either their household income or their parents' education was detected.

### **Factors Related to Information Gathering and College Cost Awareness and Estimates**

To determine what factors independently related to students' and parents' awareness of college costs, a multivariate analysis was conducted. "Cost awareness" used in the context of this report means students or parents had either obtained college cost information or reported that they thought they could estimate the cost of tuition.

The multivariate analysis of students' and parents' cost awareness controlled for interrelated variables that reflected student characteristics, family background, students' high school experiences (including GPA), and parents' involvement in their children's school. After applying such controls, a number of variables remained significantly related to cost awareness (figure E).

For instance, there were positive relationships between students' and parents' cost awareness and students' grade level (11th- and 12th-graders and their parents were more aware than 9th- and 10th-graders and their parents); parents' education levels (college graduates were more aware than others); and reporting plans to attend private 4-year colleges or universities (compared with public 4-year institutions).

In some cases, results differed for students and parents. For example, Black students were more likely than White students to report cost awareness, while for parents the opposite was true: parents of Black students were less likely to be knowledgeable about costs than parents of White students. Although cost awareness among students was not associated with household income, there was a positive relationship between cost awareness and household income among their parents: those with household incomes over \$75,000 were more likely to be knowledgeable about the costs than those with household incomes of \$50,000 or less. In addition, male students were more cost aware than female students, but students' sex was not associated with parents' cost awareness. Parents' level of involvement in the

schools was associated with their cost awareness, but not with students' awareness.

Finally, some variables pertained only to students or parents. If students had talked with their parents or with teachers/counselors about college cost requirements or about financial aid, they were more likely to be aware of college costs. Similarly, if parents had talked to someone or read financial aid materials, or if they knew about the availability of either the Lifetime Learning or HOPE Scholarships, they were more likely to be aware of college costs.

If cost awareness were high, one would expect a corresponding ability to accurately estimate tuition for the type of institution the student planned to attend. In fact, nearly identical results were found for students' and parents' cost awareness and ability to estimate the costs. That is, most variables related to cost awareness also were related to the ability to estimate 1 year's tuition accurately.

In the end, even after applying statistical controls, the results indicate that the level of awareness students and parents possess about the costs of attending college is positively related to either household income or parents' education levels (or both). However, it is important to note that, regardless of family background, if parents had sought information about financial aid availability or if they knew about other means of offsetting costs (through tax credits), they were much more likely to know what it would cost to send their child to the college the child planned to attend. Similarly, if students had talked to parents or teachers/counselors about college costs, they too were better able to estimate the tuition of the college they planned to attend.

### **Conclusions**

The public places a high premium on getting a college education (Ikenberry and Hartle 1998; Miller 1997). However, recent media attention on rising college costs (Neusner 2002), combined with a general lack of knowledge about the affordability of many colleges (e.g., the average tuition at public 4-year colleges was \$3,000 a year in 1998), may unnecessarily discourage some students and their parents from preparing for college.

The results of this analysis reveal that many middle and high school students and, to a lesser extent, their parents do not have an accurate idea of what it costs to attend college. Even among 11th- and 12th-graders who intended to enroll in college, roughly half of both students and their parents

**Figure E. Among 6th- through 12th-graders and their parents, factors associated with increased cost awareness or the ability to estimate accurately tuition and fees: 1999**

|   | Cost awareness <sup>1</sup> |        | Accurate estimates of tuition <sup>2</sup> |        |
|---|-----------------------------|--------|--|--------|
|   | Student                     | Parent | Student                                    | Parent |
| Grade in school   |                             |        |  |        |
| 11th- and 12th-graders (vs. lower grades)                               | √                           | √      | √  | √      |
| Students' gender  |                             |        |  |        |
| Males (vs. females)   | √                           |        | √  |        |
| Students' race/ethnicity  |                             |        |  |        |
| Blacks (vs. Whites)   | √                           |        | √  |        |
| Whites (vs. Blacks)   |                             | √      |  | √      |
| Whites (vs. Hispanics)  |                             |        |  | √      |
| Parents' education  |                             |        |  |        |
| Bachelor's degree (vs. less education)                                  | √                           | √      |  | √      |
| Household income  |                             |        |  |        |
| \$75,000+ (vs. ≤\$50,000)   |                             | √      |  | √      |
| \$75,000+ (vs. ≤\$25,000)   |                             |        | √  |        |
| Type of institution planning for  |                             |        |  |        |
| 4-year private (vs. 4-year public)                                      | √                           | √      | √  | √      |
| Parent involvement in school  |                             |        |  |        |
| High (vs. low)  |                             | √      |  |        |
| Student talked with parents or teachers about college cost requirements | √                           | †      | √  | †      |
| Student talked with parents or teachers about financial aid             | √                           | †      |  | †      |
| Parents talked to someone/read information about financial aid          | †                           | √      | †  | √      |
| Parents knew of Lifetime Learning or HOPE Scholarship tax credits       | †                           | √      | †  | √      |

†Not applicable.

<sup>1</sup>Had either obtained college cost information or reported they could estimate tuition and fees.

<sup>2</sup>An accurate estimate was defined as one within 25 percent of average for the type of institution the student planned to attend in the state of residence.

NOTE: Sample includes students and their parents who reported plans for the student to attend postsecondary education. Each check indicates an attribute associated with increased cost awareness or the ability to accurately estimate tuition. For example, in the first line under "Students' race/ethnicity," Black students were more cost aware and were more likely than White students to provide an accurate tuition estimate. The opposite was found for parents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Youth Survey and Parent Survey of the 1999 National Household Education Surveys Program (NHES:1999). Actual tuition amounts from the 1998 Integrated Postsecondary Education Data System (IPEDS).

reported having knowledge of college costs. When asked to estimate 1 year's tuition, more students and their parents overestimated than underestimated the average amount. Furthermore, nearly 40 percent of 11th- and 12th-graders and nearly 30 percent of their parents could not estimate the cost of 1 year's tuition.

Not surprisingly, the younger the students were, the less aware they or their parents were of college costs. At a time when students still have the opportunity to plan for college and take requisite college preparatory courses (i.e., 9th and 10th grades), 69 percent of 9th- and 10th-graders and 47 percent of their parents could not estimate what it would cost to attend. It is possible that many students, with the

encouragement of their parents, plan to attend no matter what the cost. However, the findings of this study also demonstrated a significant knowledge gap between lower and higher income families and between parents who ended their education at high school graduation and those who were college graduates.<sup>9</sup> Thus, the students and parents who can least afford college and who would be most affected by the financial burden were also the least aware of how much it costs to attend.

On the other hand, regardless of parents' education and household income, students who were involved in family decisionmaking were more likely to seek out information about college academic requirements and financial aid through discussions with parents and teachers/counselors.

Similarly, regardless of income and education levels, parents who were involved in their children's school were more likely to have begun saving for their college education. In addition, compared with parents who reported low involvement in their children's school, highly involved parents were more aware of college costs.

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<sup>9</sup>Parents' education levels and household income are often highly correlated, and families where neither parent attended college are disproportionately represented among lower income groups. For example, in NHES:1999, 89 percent of students whose parents did not attend college were from families where the household income was \$25,000 or less, whereas 69 percent of students with college-educated parents were from families where the household income was above \$75,000.

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**Data source:** The Parent Survey and Youth Survey of the NCES 1999 National Household Education Surveys Program (NHES:1999).

**For technical information,** see the complete report:

Horn, L.J., Chen, X., and Chapman, C. (2003). *Getting Ready to Pay for College: What Students and Their Parents Know About the Cost of College Tuition and What They Are Doing to Find Out* (NCES 2003–030).

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# High School Counseling

## High School Guidance Counseling

Basmat Parsad, Debbie Alexander, Elizabeth Farris, and Lisa Hudson

*This article was originally published as the Executive Summary of the E.D. Tabs report of the same name. The sample survey data are from the Fast Response Survey System (FRSS) and a supplement to the High School and Beyond Longitudinal Study (HS&B).*

### Introduction

Recent literature on school counseling has focused on the need for new directions for school counseling and redefined roles for school counselors (Baker 1996; Fitch, Newby, and Ballestero 2001; Perusse, Goodnough, and Noel 2001; Schmidt 1999). However, since the 1984 supplement to the High School and Beyond Longitudinal Study (HS&B),<sup>1</sup> no national data have been collected to describe guidance counseling programs and activities. To help address this lack of current information, the National Center for Education Statistics (NCES) conducted a survey on high school guidance counseling in spring 2002 for the Office of Vocational and Adult Education, U.S. Department of Education. The survey, conducted through the NCES Fast Response Survey System (FRSS), provides a description of public high school guidance programs, activities, and staff in 2002.<sup>2</sup>

### Key Findings

This E.D. Tabs report summarizes findings for all public high schools in the 2002 FRSS survey and the 1984 supplement to HS&B. Findings for schools in the FRSS survey are also presented by the following school characteristics: enrollment size, locale, percentage of college-bound students, and number of vocational courses offered per 100 students.<sup>3</sup> This summary presents highlights of findings for all public high schools and compares results from the FRSS survey and the supplement to HS&B concerning program goals, written plans, and selected guidance activities.

### Program goals and written plans

Of the four program goals examined in the 2002 FRSS survey, helping students with their academic achievement in high school was the most emphasized goal of high school guidance programs; 48 percent of all public high schools emphasized this goal the most (table A). Fewer schools

reported that the most emphasized goal of their guidance programs was helping students plan and prepare for post-secondary schooling (26 percent) or helping students with personal growth and development (17 percent). Schools were least likely to report that the most emphasized goal of their guidance programs was helping students plan and prepare for their work roles after high school (8 percent). Between 1984 and 2002, the proportion of public high schools indicating that helping students with their academic achievement in high school was the most emphasized guidance goal increased from 35 percent to 48 percent.

Fifty-six percent of public high schools in 1984 and 61 percent of public high schools in 2002 had written plans for their guidance programs. One-half (50 percent) of all public high schools had guidance plans with written standards in 2002.<sup>4</sup>

### School programs and features

The FRSS survey gathered information about six school programs and features. Three of the six were found in a majority of public high schools: required state academic assessment for high school graduation (70 percent), school-to-work programs (65 percent), and a team approach to career development (56 percent). Fewer schools had a curriculum aligned around career clusters/paths (45 percent) or block scheduling (42 percent). The schools were least likely to have small learning communities such as houses or academies (15 percent). Public high schools also reported their perceptions of the overall effect of the programs or features on their ability to deliver guidance services; for every school program or feature examined, the schools reported mostly positive effects more often than no effects or mostly negative effects.

### Selected guidance activities: Availability and student participation

The 2002 FRSS survey asked about 15 of the 16 guidance activities examined in the 1984 supplement to HS&B.<sup>5</sup> In

<sup>1</sup>The 1984 supplement to HS&B surveyed staff in about half of the original sample of 1,015 schools that participated in the base-year (1980) HS&B. The supplemental survey collected data on high school guidance counseling activities in 1984.

<sup>2</sup>To retain comparability with the 1984 survey, this study used a working definition of high schools as schools with a highest grade of 11 or 12. Most (90 percent) of the respondents were guidance counselors, 7 percent were principals, and 3 percent were some other staff member (see appendix A, methodology, in the full report for details on the sample and definitions).

<sup>3</sup>The tables in the report also summarize findings for public high schools by region of the country, minority enrollment, and access to an area or regional vocational school.

<sup>4</sup>Plans for guidance programs include program description, program schedule, staff roles and responsibilities, program resources, budget, and management schedule. Standards are statements that provide a description of what students should know and be able to do at the highest level of expectation.

<sup>5</sup>"Simulations" was not included in the 2002 FRSS survey because pretesting suggested that this activity is hardly ever used in schools and respondents might have difficulty answering the question.

**Table A. Percentage distribution of public high schools indicating the extent to which their guidance programs emphasize selected goals: 1984 and 2002**

| Goal  | Most emphasis | Second most emphasis | Third most emphasis | Fourth most emphasis |
|---|---------------|----------------------|---------------------|----------------------|
| <b>2002</b>   |               |                      |                     |                      |
| Help students plan and prepare for their work roles after high school | 8             | 12                   | 30                  | 51                   |
| Help students with personal growth and development                    | 17            | 21                   | 31                  | 31                   |
| Help students plan and prepare for postsecondary schooling            | 26            | 39                   | 26                  | 9                    |
| Help students with their academic achievement in high school          | 48            | 29                   | 14                  | 9                    |
| <b>1984</b>   |               |                      |                     |                      |
| Help students plan and prepare for their work roles after high school | 11            | 17                   | 33                  | 39                   |
| Help students with personal growth and development                    | 27            | 28                   | 16                  | 29                   |
| Help students plan and prepare for postsecondary schooling            | 27            | 32                   | 29                  | 12                   |
| Help students with their academic achievement in high school          | 35            | 23                   | 22                  | 20                   |

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, Supplement to the High School and Beyond Longitudinal Study (HS&B), "Administrator and Teacher Survey," 1984; Fast Response Survey System, "High School Guidance Counseling: 2001," FRSS 80, 2002. (Originally published as table 1 on p. 20 of the complete report from which this article is excerpted.)

both surveys, schools indicated whether each activity was available to students and the percentage of students in grades 11 and 12 who participated in the activity.

Among the guidance activities examined in the survey, the following were the most commonly available at public high schools in 2002: use of college catalogs, individual counseling sessions, use of computerized career information sources, testing and having tests interpreted for career planning purposes, and use of noncomputerized career information sources. These activities were offered by 92 to 100 percent of the schools (table B). In addition, between 73 percent and 87 percent offered occupational information units in subject-matter courses, exploratory work experience programs, career days/nights, vocationally oriented assemblies and speakers in class, job-site tours, tours of postsecondary institutions, job shadowing, group guidance/counseling sessions, and training in job seeking skills. School courses in career decisionmaking were the least available activity, although this activity was available in 57 percent of all public high schools. Between 1984 and 2002, the proportion of schools offering a guidance activity declined for 3 of the 15 activities—career days/nights, tours of postsecondary institutions, and training in job seeking skills. During this time period, no differences were detected in the proportion of schools indicating that the remaining guidance activities were available.

Student participation (regardless of whether an activity is offered) provides a second indicator of the prevalence of

guidance activities.<sup>6</sup> The guidance activity in which public high school students participated most often in 2002 was individual counseling sessions (78 percent of students; table C). Fewer students (44 to 61 percent) participated in 8 of the remaining 14 activities—career days/nights, vocationally oriented assemblies and speakers in class, testing and having tests interpreted for career planning purposes, group guidance/counseling sessions, occupational information units in subject-matter courses, the use of noncomputerized career information sources, the use of computerized career information sources, and the use of college catalogs. The activity in which students participated least often was job shadowing (17 percent).

As in 2002, the activity in which students participated most often in 1984 was individual counseling sessions (79 percent), and the activity in which they participated least often was job shadowing (5 percent; table C). Between 1984 and 2002, the proportion of students who participated in a guidance activity increased for 5 of the 15 activities: occupational information units in subject-matter courses, exploratory work experience programs, job-site tours, job shadowing, and the use of computerized career information sources. No significant differences were detected between these years in the proportion of students who participated in the remaining guidance activities.

<sup>6</sup>For these analyses, schools that did not offer an activity were coded as having zero students participating in that activity.

**Table B. Percent of public high schools indicating that various guidance activities are available at the school: 1984 and 2002**

| Activity   | 1984 | 2002             |
|--|------|------------------|
| School courses in career decisionmaking  | 69   | 57               |
| Occupational information units in subject-matter courses   | 88   | 79               |
| Exploratory work experience programs (for example, co-op, work study, internship)  | 87   | 85               |
| Career days/nights   | 90   | 73               |
| Vocationally oriented assemblies and speakers in class   | 92   | 87               |
| Job-site tours or visits (field trips)   | 87   | 78               |
| Tours of postsecondary institutions  | 93   | 79               |
| Job shadowing (extended observations of a worker)  | 72   | 74               |
| Testing and having tests interpreted for career planning purposes (for example, interest inventories, vocational aptitude tests) | 92   | 93               |
| Individual counseling sessions   | 100  | 98               |
| Group guidance/counseling sessions   | 93   | 85               |
| Training in job seeking skills   | 91   | 80               |
| Use of noncomputerized career information sources  | 98   | 92               |
| Use of computerized career information sources   | 89   | 96               |
| Use of college catalogs  | 100  | 100 <sup>1</sup> |

<sup>1</sup>Rounds to 100 percent for presentation in table.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Supplement to the High School and Beyond Longitudinal Study (HS&B), "Administrator and Teacher Survey," 1984; Fast Response Survey System, "High School Guidance Counseling: 2001," FRSS 80, 2002. (Originally published as table 6 on p. 36 of the complete report from which this article is excerpted.)

**Table C. Percent of public high school students who participate in various activities at least once during the time period beginning when they start 11th grade and ending when they leave high school: 1984 and 2002**

| Activity   | 1984 | 2002 |
|--|------|------|
| School courses in career decisionmaking  | 22   | 27   |
| Occupational information units in subject-matter courses   | 37   | 49   |
| Exploratory work experience programs (for example, co-op, work study, internship)  | 15   | 23   |
| Career days/nights   | 39   | 45   |
| Vocationally oriented assemblies and speakers in class   | 44   | 44   |
| Job-site tours or visits (field trips)   | 17   | 22   |
| Tours of postsecondary institutions  | 22   | 26   |
| Job shadowing (extended observations of a worker)  | 5    | 17   |
| Testing and having tests interpreted for career planning purposes (for example, interest inventories, vocational aptitude tests) | 53   | 56   |
| Individual counseling sessions   | 79   | 78   |
| Group guidance/counseling sessions   | 55   | 61   |
| Training in job seeking skills   | 32   | 36   |
| Use of noncomputerized career information sources  | 50   | 47   |
| Use of computerized career information sources   | 27   | 57   |
| Use of college catalogs  | 51   | 55   |

NOTE: Percentages are based on information provided by public high schools about their students' participation in each activity. Student participation in a guidance activity is reported for all public high schools, regardless of whether the activity was offered by the school. Thus, for these analyses, schools that did not offer an activity were coded as having zero students participating in that activity. In the 1984 supplement to HS&B and the 2002 FRSS survey, schools reported the percentage of 11th- and 12th-grade students who participated in each of the 15 guidance activities. This information was used with enrollment data for grades 11 and 12 to calculate the number of students who participated in an activity at each public high school, and the percentage across all public high schools. Enrollment data for the 2002 FRSS survey items were obtained from the 1999–2000 Common Core of Data (CCD) School Universe file, and enrollment data for the 1984 supplement to HS&B items were taken from the 1980 HS&B data. Thus, national estimates for the percentage of 11th- and 12th-grade students who participated in an activity were calculated by dividing the sum of 11th- and 12th-grade students who participated in the activity by the sum of students enrolled in those grades.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Supplement to the High School and Beyond Longitudinal Study (HS&B), "Administrator and Teacher Survey," 1984; Fast Response Survey System, "High School Guidance Counseling: 2001," FRSS 80, 2002. (Originally published as table 8 on p. 44 of the complete report from which this article is excerpted.)

### Other school activities

In the FRSS survey, public high schools were asked about four school activities that had not been included in the 1984 supplement to HS&B: regularly scheduled group guidance sessions led by teachers or other school staff, a written career plan, a senior project based on the student's career of interest, and the selection of a career major or path to guide the student's selection of courses. Schools indicated whether each activity was available and whether it was required of all, some, or no students.

In 2002, 77 percent of public high schools indicated that selection of a career major or path was available, and 50 percent of all public high schools required all students to participate in the activity. Sixty-four percent of public high schools indicated that written career plans were available, and 47 percent required all students to participate in the activity. Sixty-three percent of public high schools reported that regularly scheduled group guidance sessions led by teachers or other school staff were available, and 35 percent required all students to participate in the activity. Finally, 31 percent of public high schools reported that senior projects based on the student's career of interest were available, and 14 percent required all students to participate in that activity.

### Guidance staff

In the 2002 FRSS survey, public high schools reported the number of full- and part-time guidance counselors assigned to high school students, the number of counselors who were certified, the number of guidance paraprofessionals, and the percentage of time that the school's guidance counselors spent delivering selected services to high school students during the school year. Schools also indicated whether their state or school district provided in-service training or professional development in selected topics for high school guidance counselors during the 12 months preceding the survey. In addition, the survey respondent (typically a lead guidance counselor) was asked to report the number of hours he or she spent on professional development in each topic.

In 2002, about 49,500 guidance staff (counselors and paraprofessionals) were assigned to public high school students; this represents an average of 249 students for every guidance staff member and 284 students for every

guidance counselor, including full- and part-time counselors.<sup>7</sup> The ratio of high school students to full-time guidance counselors was 315:1. Most guidance counselors (90 percent) were employed full time, and most (94 percent) were certified, with full-time counselors being more likely than part-time counselors to be certified (96 vs. 79 percent).

*Time spent delivering services.* The two listed services at which guidance counselors spent the most time in 2002 were the choice and scheduling of high school courses, and postsecondary education admissions and selections; 49 percent of public high schools reported that more than 20 percent of their guidance staff's time was spent on the choice and scheduling of courses, and 43 percent indicated that more than 20 percent of their guidance staff's time was spent on postsecondary education admissions and selections. The third activity at which guidance counselors spent the most time was students' attendance, discipline, and other school and personal problems; one-third of public high schools reported that more than 20 percent of their guidance staff's time was spent on this activity. Fewer public high schools (13 to 19 percent) indicated that more than 20 percent of their guidance staff's time was spent on academic testing, occupational choice and career planning, and other guidance activities. Schools were least likely to report that more than 20 percent of their guidance staff's time was spent on job placement and employability skill development (2 percent) and on nonguidance activities such as hall or lunch duty, substitute teaching, and bus duty (5 percent).

*Professional development for guidance counselors.* About two-thirds (64 percent) of all public high schools indicated that their state or school district provided professional development on academic curriculum standards/frameworks or assessments for guidance counselors during the 12 months preceding the survey. Fewer schools (51 to 53 percent) reported the availability of professional development on career guidance standards/frameworks/models, how to interpret test scores and assess student achievement,

<sup>7</sup>It is important to note that the number of counselors and the student-counselor ratios from the FRSS survey are not strictly comparable to estimates from the Common Core of Data (CCD). The CCD estimates are based on a definition of secondary schools as schools comprising any span of grades beginning with the next grade following an elementary or middle school (usually 7, 8, or 9) and ending with or below grade 12 (Snyder 2001). In contrast, the 2002 FRSS study defined secondary schools as schools with a highest grade of 11 or 12. Thus, the CCD definition encompasses a broader range of schools than does the FRSS definition. Because the CCD data are reported at the district level rather than the school level (i.e., the counts reflect all guidance counselors in the district assigned to secondary grades regardless of whether the school is a middle school, a senior high school, or a combined school), the CCD data cannot be disaggregated to reflect a definition of secondary schools that is comparable to the definition used by the FRSS study.

and how to work with students with special needs. Of the five listed topics, the least available was training on occupational/vocational curriculum standards/frameworks or assessments (43 percent). Thirty-eight to 51 percent of respondents spent 4 or fewer hours, or the equivalent of one-half of a day or less, on professional development for a listed topic over the 12 months preceding the survey. The proportion of respondents who spent more than 8 hours on professional development for a listed topic during the preceding 12 months ranged from 18 percent for training on how to interpret test scores and assess student achievement to 30 percent for training on state or local career guidance standards/ frameworks/models and for training on state or local academic curriculum standards/frameworks or assessments.

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**Data sources:** The NCES Fast Response Survey System, "High School Guidance Counseling: 2001," FRSS 80, 2002; and a supplement to the High School and Beyond Longitudinal Study (HS&B), "Administrator and Teacher Survey," 1984.

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# State Education Reforms

## Overview and Inventory of State Education Reforms: 1990 to 2000

David Hurst, Alexandra Tan, Anne Meek, and Jason Sellers

**This article was originally published as the Executive Summary of the Compendium of the same name. The data are primarily from reports published by a number of organizations, listed at the end of this article.**

State governments play a critical role in providing public elementary and secondary education. State constitutional, statutory, and regulatory frameworks provide the legal authority for state governments, local governments, and school districts to raise revenues for education; they also set conditions for spending these funds. State policies are associated with nearly every facet of education, typically defining, for instance, when children must be in school, who may teach them, and what they are expected to learn.

The purpose of this report is to describe developments in state-level education policies that occurred during the 1990s and to use a wide range of sources to characterize these reform efforts at the state level. In doing so, this report extends an earlier National Center for Education Statistics (NCES) report, *Overview and Inventory of State Requirements for School Coursework and Attendance* (Medrich et al. 1992), which examined state-level reform efforts during the 1980s. Similar to the first report's mandate to discuss reform in the 1980s, this report examines education policy developments of the 1990s.

### State Education Reforms in the 1990s

Although public education has long been the subject of debate and reform efforts, the past decade is notable for the type and volume of state-level education policy activity. In particular, the 1990s continued a trend from the 1980s in which states shifted their focus from educational inputs, such as per-student expenditures on instructional materials, to educational outcomes, such as the percentage of students attaining a score of “proficient” on a statewide assessment. State governments passed legislation, adopted new procedures and standards, and pursued policies in a number of areas that reflected a new emphasis on outcomes over inputs. To facilitate discussion of the diverse set of education policies states adopted during the past decade, this report groups these reform efforts into four broad categories:

- standards, assessment, and accountability;
- school finance reforms;
- teacher training and school resources; and
- school choice options.

These categories reflect the primary ways in which states have sought to change the provision of education. The first category—standards, assessments, and accountability—includes those policies that attempt to directly affect the achievement levels of students by specifying what students should learn and be able to do. The second category—school finance reforms—reflects a long-standing capacity of states to affect education by modifying the way in which revenues for public education are raised, distributed, and spent. The third category—teacher training and school resources—includes policies that may have an indirect effect on student achievement by changing, for example, the way in which teachers are trained. Finally, the fourth category—school choice options—includes efforts to give parents more choices in where they send their children to school. The following section provides a more detailed description of these reform areas.

### Standards, Assessment, and Accountability

Much of the legislative activity related to education in the 1990s focused on raising academic standards and holding schools accountable for student performance. This report describes four components of these efforts: content standards, performance standards, assessments, and accountability systems. *Content standards* define what students should know and be able to do, while *performance standards* indicate how well students must perform to be considered proficient in a given subject area. Statewide *assessments* measure student progress toward attaining the goals defined by content and performance standards, and *accountability systems* are intended to collect the information necessary to hold schools and school districts responsible for the performance of students.

Surveys conducted by organizations such as the Council of Chief State School Officers (CCSSO) revealed that by the late 1990s most states had one or more of these components in place. Between 1995 and 2000, for example, the number of states that had developed English/language arts standards increased from 20 to 49 (CCSSO 2000a). Increases were found in other subjects as well. The number of states that had developed mathematics standards grew from 25 to 49, science standards from 23 to 46, and social studies/history standards from 20 to 46. States also typically specify a set of

performance standards that correspond to content standards. These performance standards often indicate the scores a student must make on a statewide assessment to be considered proficient in a given area.

Measuring student progress toward attaining the goals defined by content and performance standards is central to standards-based reform efforts, and statewide testing programs were the focus of much attention during the 1990s. One area of concern has been the degree to which the subject matter and skill level of statewide assessments are consistent with state content standards. In an effort to align assessments with standards, some states have diversified their testing programs by adding items or assessments designed to mirror the material covered in the state's content standards and by adding performance-based assessment items, such as short answers and open-ended tasks. As reported in *Education Week's Quality Counts 2001*, most states assessed students a number of times between 1st and 12th grade—48 states administered at least one exam in 8th grade and 43 states did so in 4th grade. While English/language arts and mathematics were the most frequently tested subjects, many states also regularly assessed student performance in history/social studies and science as well. Nearly all states included multiple-choice tests in their assessment programs, 38 states included short answer items, 46 used extended-response items in English exams, and 7 states used extended-response questions in assessments of other subjects.

States have also conveyed the results of assessments and other indicators of student performance to parents and the public through institutional “report cards.” Institutional report cards generally are issued annually and may be issued at the state, district, and/or school levels. Publishing these report cards is one way in which states have sought to hold schools and districts accountable for student performance. In 2000, the CCSSO collected information on the type of reporting conducted by each state. All state education agencies reported having at least one annual accountability or indicator report as of September 2000: 46 states issued at least one report providing statistics at the district level, and 40 states and the District of Columbia did so at the school level (CCSSO 2000b).

### School Finance Reforms

In order to provide the instruction necessary for students to obtain the high levels of achievement envisioned by the standards-based reform efforts of the 1990s, schools must have adequate financial resources. This report examines a

number of reforms implemented by states that affect the way they raise revenues, allocate funds among districts, and allow funds to be used. Three key areas of state education finance reforms are examined: moving from equity to adequacy, general revenue reforms, and special education financing reforms.

One of the aims of state education finance systems has been to foster equity among the resources available to school districts within the state (Ladd and Hansen 1999). Recent legal challenges to state financing systems have shifted to focus on *adequacy*, seeking to compel states to define and provide a high-quality education for all children, rather than focusing primarily on reducing resource inequalities across school districts (Ladd and Hansen 1999). States have faced a number of challenges as they have sought to define and provide an adequate education. Included among these challenges are defining adequacy; determining the cost of obtaining adequacy; inflation; and adjusting for school, student, and geographic cost differences. The various ways that states have responded to these challenges are discussed in this report.

A second type of finance reform discussed in this report concerns efforts to make state revenue systems more fair, efficient, or balanced. Shifts away from local property taxes have had impacts on the mix of revenues used for financing schools in particular states (Ladd and Hansen 1999). Michigan, for example, passed legislation in 1993 that abolished local school property taxes, despite the state's traditional heavy reliance on local property taxes as revenue for education (Courant, Gramlich, and Loeb 1995). These revenues were replaced by an increase in the state sales tax and the adoption of a statewide property tax, along with other revenue sources.

Finally, reforms in special education finance include changes in the way states distribute funds to districts and new policies to finance special education services using revenues from multiple sources. Since 1988, Medicaid funds must be used to reimburse Individuals with Disabilities Education Act (IDEA)–related medically necessary services before IDEA funds are used (U.S. General Accounting Office 1999).

### Teacher Training and School Resources

The standards-based reform efforts described in this report are intended to ensure that all students attain high levels of competence in all subject areas. Attaining these goals, however, depends in part on the resources in schools,

including the effectiveness of teachers. During the 1990s, a number of states reexamined the process by which teachers are trained and certified. Concerns over the academic rigor of teacher training programs, the strength of the certification process, the match between training programs and teaching assignments, and the type and availability of professional development opportunities have led many states to consider applying a similar model of reform to teacher training as they have to student achievement. This model is centered on standards, testing, and accountability.

This report outlines the general process by which teachers are traditionally certified, which typically includes taking a prescribed course of study in college, passing one or more competency tests, completing student teaching requirements, and, once certified, maintaining certification by participating in professional development activities or taking additional coursework. A nontraditional, alternative certification model, which is intended to move highly qualified subject matter experts not currently in the teaching profession through preparation and certification more quickly than traditional routes, is outlined as well.

A number of states either established or revised standards for obtaining a teaching license during the 1990s (CCSSO 2000a). According to the CCSSO, “standards for teachers define the knowledge and skills teachers should have to provide quality instruction to students at given age or grade levels and specific content areas” (CCSSO 1998, p. 26). A CCSSO survey conducted in 2000 found that a majority of states licensed or certified teachers based on state standards and that most of these states had either developed or revised their statewide teaching standards since 1990 (CCSSO 2000a). Most state teaching standards specify the type of coursework that a prospective teacher should complete while in college. While most prospective teachers are expected to complete a core set of education classes, including classes such as teaching methods, child development, and supervised teaching experience, those wishing to earn a certificate to teach secondary school students may also be required to take a certain number of hours in the subject they plan on teaching, such as mathematics or English. In 1999, according to *Education Week* (2000), nearly all states set minimum subject-area coursework requirements for high school teachers and about half had established such requirements for middle school teachers. Of the few states without standards, most indicated that they were soon to be in effect or were being developed. In addition to developing new standards for teacher education and certification, states implemented other measures in the

1990s to modify school resources, such as funding prekindergarten programs and increasing the number of required high school credits in core academic subjects. A number of states have adopted policies that are intended to ensure that key instructional resources such as textbooks are aligned with the state’s content standards. Class size reduction—including its potentially negative financial implications and effects on teacher supply and quality—also received attention during the 1990s. The Education Commission of the States (ECS) reported that as of June 1999, 20 states had some sort of initiative to limit the student/teacher ratio to 20 or fewer students per teacher (ECS 1999).

### School Choice Options

While states focused attention during the 1990s on reforming education finance systems and increasing the learning resources and academic standards of traditional public schools, they also adopted legislation intended to provide more parents with choice in where their children attend school. The report discusses four approaches states have taken toward meeting this goal. *Public school choice* allows students to attend the public school that they and their families select, while *charter schools* give parents the option of sending their children to a public school that operates largely independently of the local school district. In addition, some states have adopted policies that provide *public support for private education* in the form of tax credits, vouchers, or other resources for parents who send their children to private schools. *Homeschooling* is now an option in all states (Lines 2001), although states do not necessarily provide financial or other support for parents who homeschool.

The ECS reports that as of February 2001, 32 states had passed legislation permitting or requiring some form of public school choice. Throughout the 1990s, the number of states that adopted charter school legislation also increased, from 1 state (Minnesota) in 1991 to 36 states and the District of Columbia in September 1999. Similarly, the number of charter schools in operation increased during the 1990s. Almost 1,500 charter schools were in operation as of September 1999, about twice the number of charter schools operating in September 1997 (Nelson et al. 2000; Berman et al. 1998). Enrollment in charter schools represented about 0.8 percent of all public school students in the 26 states and the District of Columbia that had charter schools in operation in 1998–99 (Nelson et al. 2000).

Allowing open enrollment in public schools and enabling the creation of charter schools are both ways in which states have sought to provide greater choice in public education. Proposals have also been made to increase private school choice by using public funds to subsidize the cost of private school attendance (Moffit, Garrett, and Smith 2001). Several states, for example, permitted the limited use of public funds to support private education in the form of transportation, textbooks, and various auxiliary services. Less common were programs that used public funds to cover part or all of private school tuition. In Vermont and Maine, public funds have been used for many years to help cover tuition costs at nonsectarian schools for students living in areas in which a public school is not readily accessible. Since 1989, three states—Wisconsin, Ohio, and Florida—have passed legislation enabling the creation of voucher programs. Another education option available to parents in all 50 states and the District of Columbia is to homeschool their children. The 1999 National Household Education Surveys Program (NHES) found that 850,000 students nationwide, or 1.7 percent of U.S. students ages 5 to 17, were homeschooled in spring 1999 (Bielick, Chandler, and Broughman 2001).

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**Data sources:** Reports published by the Center for Special Education Finance, Council of Chief State School Officers, Education Commission of the States, Education Week, Families and Work Institute, National Association of State Directors of Teacher Education & Certification, and National Conference of State Legislators, as well as NCES, the Office of Educational Research and Improvement, and the Office of the Under Secretary, U.S. Department of Education.

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# POSTSECONDARY EDUCATION

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## Working Adult Undergraduates

### Work First, Study Second: Adult Undergraduates Who Combine Employment and Postsecondary Enrollment

—Ali Berker and Laura Horn

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

#### Introduction

About 43 percent of undergraduates who were enrolled in postsecondary education during the 1999–2000 academic year were age 24 or older. Most of these older undergraduates (82 percent) worked while enrolled in postsecondary education (Horn, Peter, and Rooney 2002). In total, these working adults made up roughly one-third of the undergraduate population. This study examines the characteristics and educational experiences of working adult undergraduates, focusing on those who considered employment

their primary activity. The analysis compares two groups of working adults according to the emphasis or importance they placed on work and postsecondary enrollment when they were asked: “While you were enrolled and working would you say you were primarily: 1) a student working to meet expenses or 2) an employee who decided to enroll in school?” Throughout this report, students who identified themselves as employees who decided to enroll in school are referred to as “employees who study,” while those who identified themselves as students working to meet expenses are referred to as “students who work.”

## Data

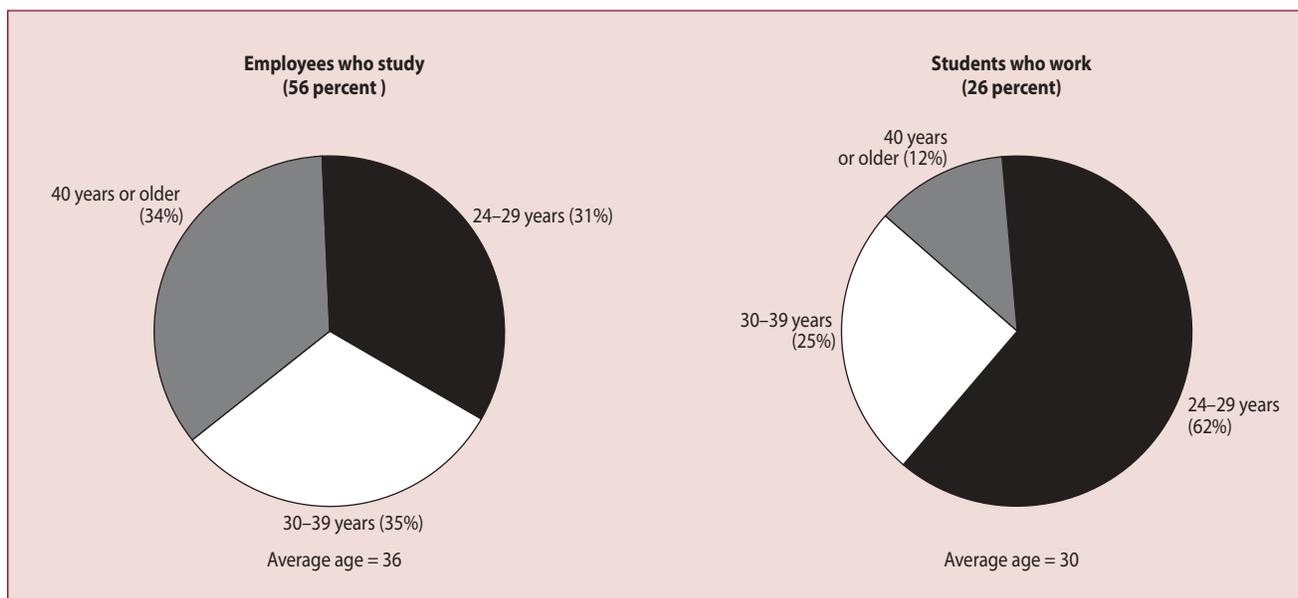
The profile of working adults is based on the 1999–2000 National Postsecondary Student Aid Study (NPSAS:2000), a representative sample of all students enrolled in postsecondary education in the 1999–2000 academic year. The analysis of postsecondary completion is based on the 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01), a longitudinal cohort of all students who began postsecondary education in 1995–96 and who were last surveyed in 2001, about 6 years after their initial enrollment. The NPSAS sample is limited to undergraduates age 24 or older. The age of 24 was used to identify adult undergraduates because this is the age that students are recognized as financially independent of their parents for financial aid purposes. The NPSAS analysis focuses entirely on working undergraduates, but the totals presented in the tables include the 18 percent of nonworking adult undergraduates. The BPS sample is limited to students age 24 or older who worked while enrolled in 1995–96 (i.e., they were working while enrolled in their first term), regardless of their working status in subsequent years. The BPS survey sample has proportionally fewer older students than the NPSAS survey sample because to be eligible for BPS, students must be enrolling in postsecondary education for the first time. Therefore, returning students are not included.

## A Profile of Working Adult Undergraduates

In 1999–2000, about two-thirds of working adult undergraduates (those age 24 or older) considered employment their main activity—employees who study—while the remaining one-third characterized themselves primarily as students who worked to pay their education expenses—students who work. Employees who study were older on average than students who work (36 vs. 30 years old). As shown in figure A, roughly two-thirds of employees who study were age 30 or older, compared with just over one-third of students who work. Employees who study were also more likely to be married (52 percent vs. 31 percent), and to have children and other dependents (57 percent vs. 43 percent) (figure B).

A fundamental difference between employees who study and students who work is how they combined work and attendance. As might be expected, employees who study devoted more time to work and less to attending classes, while students who work did the opposite (figure C). At least three-quarters of employees who study worked full time (87 percent) or attended part time (76 percent), and roughly two-thirds (68 percent) did both. In contrast, at least 6 in 10 students who work attended school full time (68 percent) or worked part time (60 percent), while roughly half (46 percent) did both. Thus, employees who

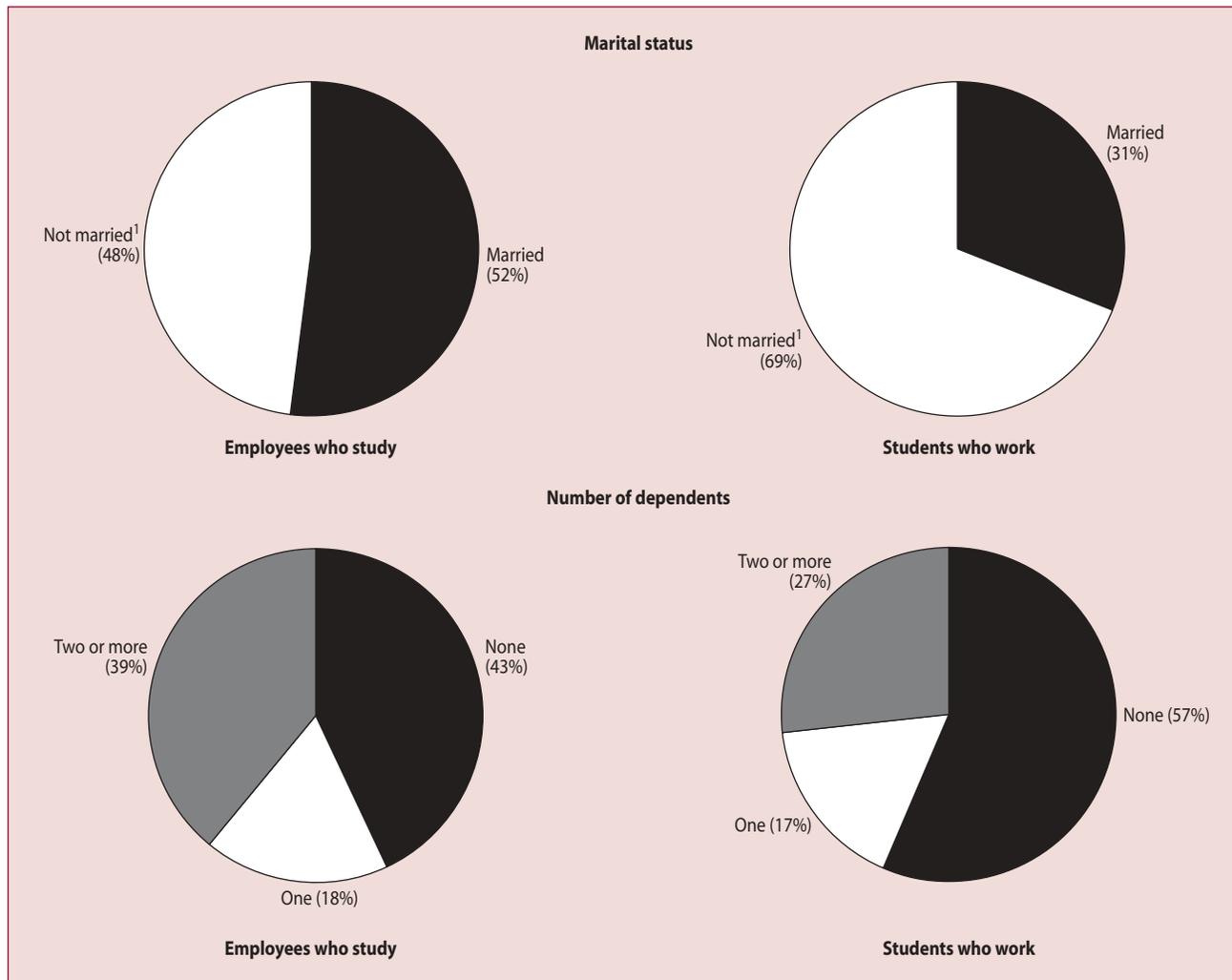
**Figure A. Percentage distribution by age and the average age for undergraduates age 24 or older, by student/employee role: 1999–2000**



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

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000 National Postsecondary Student Aid Study (NPSAS:2000).

**Figure B. Percentage distribution of undergraduates age 24 or older according to marital status and number of dependents other than spouse, by student/employee role: 1999–2000**



<sup>1</sup>Includes single, separated, divorced, or widowed.

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000 National Postsecondary Student Aid Study (NPSAS:2000).

study most often worked full time and attended part time, while students who work most often attended full time and worked part time.

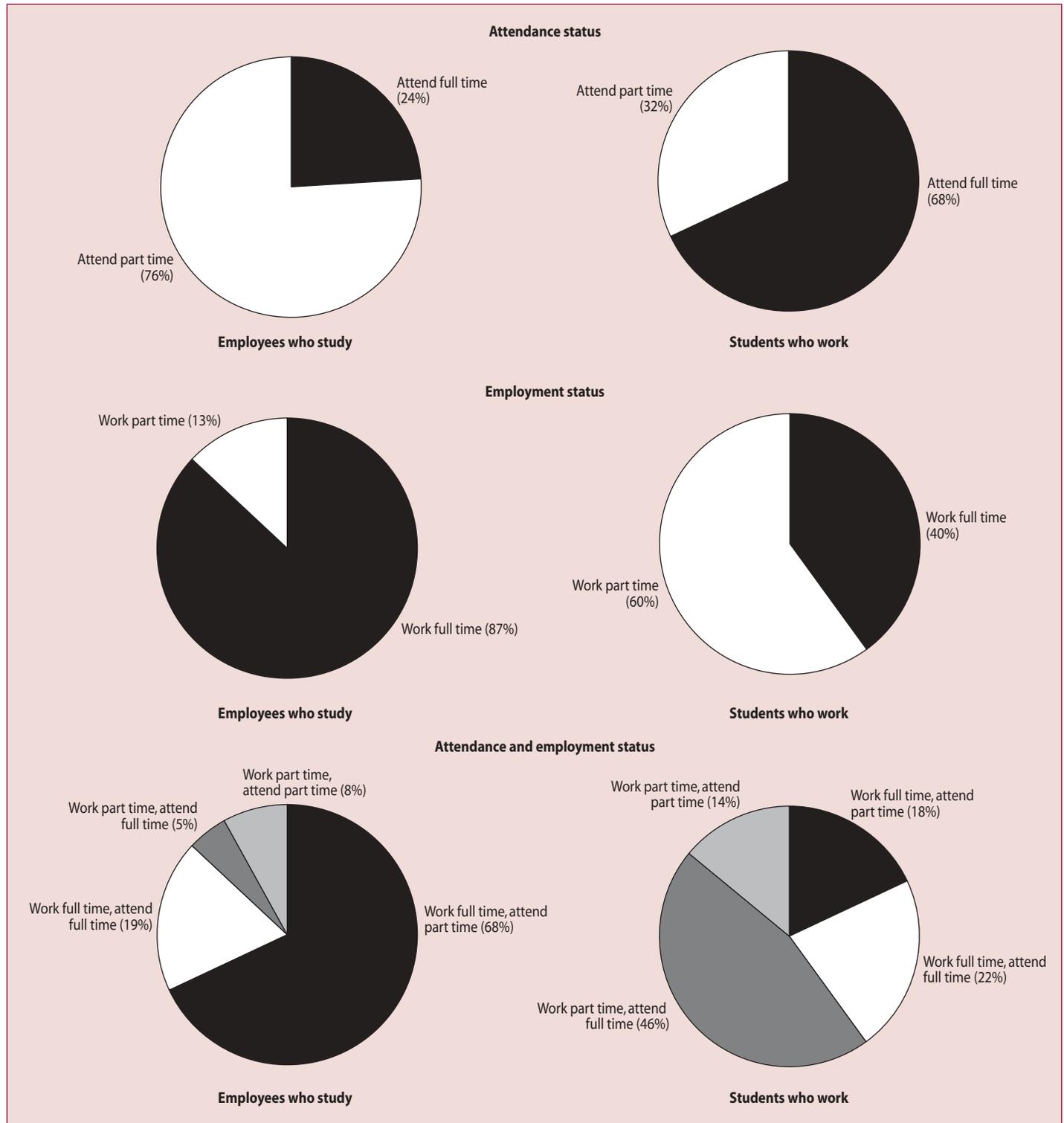
In summary, among undergraduates age 24 or older, those who characterized their primary activity as employment were older, worked more, attended school less, and were more likely to have family responsibilities than their peers whose primary activity was being a student.

### Enrollment, Degree Program, and Field of Study

Even though work and attendance patterns clearly distinguished employees who study from students who work,

there were some exceptions. For example, roughly one-fifth of each group combined full-time work and full-time attendance (19 percent of employees who study and 22 percent of students who work). In previous studies, attendance status was strongly linked with postsecondary completion: part-time students were much less likely to complete a postsecondary credential than full-time students (see, for example, Berkner, Cuccaro-Alamin, and McCormick 1996). Therefore, when examining the educational characteristics of each group of students in the current analysis, full-time and part-time students were examined separately in order to compare the two groups while controlling for attendance status.

**Figure C. Percentage distribution of working undergraduates age 24 or older according to separate and combined work and attendance intensity, by student/employee role: 1999–2000**



NOTE: Detail may not sum to totals because of rounding. Full-time attendance includes those who also had mixed full-time and part-time enrollment.  
 SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000 National Postsecondary Student Aid Study (NPSAS:2000).

Consistent with differences in the time they spent in the classroom, employees who study and students who work differed in where they enrolled and what they studied. Employees who study attended community colleges more often than students who work (61 percent vs. 39 percent) and public 4-year colleges and universities less often (17 percent vs. 34 percent) (table A). Even among students who attended exclusively part time, these differences prevailed. Among full-time students, employees who study were more likely than students who work to be enrolled in private for-profit institutions (14 percent vs. 10 percent).

Corresponding to their predominance in community colleges, employees who study were more likely than students who work to be in programs leading to an associate's degree (45 percent vs. 37 percent) and were less likely to be in bachelor's degree programs (23 percent vs. 45 percent). In addition, among full-time students, employees who study were more likely than students who work to be enrolled in certificate programs. The same was not observed for part-time students. Employees who study were also more likely than students who work to be taking courses not leading to any degree (10 percent vs. 2 percent).

Along with differences in their rates of participation in degree programs, the two groups of working adults also differed in their fields of study. Employees who study

majored in computer science, business, vocational, and technical fields more often, and majored in social/behavioral sciences, life sciences, and health fields less often than students who work.

In summary, among working adult undergraduates, employees who study were more likely than students who work to attend community colleges and to be working toward associate's degrees (among both full-time and part-time students) and vocational certificates (among full-time students only). They were also more likely than students who work to major in occupational fields of study such as computer science and were less likely to major in behavioral sciences.

### Reasons Employees Who Study Enrolled

Given their focus on work, employees who study were asked several questions about their reasons for enrolling in postsecondary education. It is likely that students who emphasize the importance of their employment over enrollment would be interested in enhancing their position in the labor market. This was found to be the case for 85 percent of adult employees who study, who reported that gaining skills to advance in their current job or future career was an important consideration in their postsecondary education. However, 89 percent also reported that personal enrichment was an important factor. While personal enrichment and obtaining additional job skills

**Table A. Percentage distribution of institution attended for undergraduates age 24 or older, by student/employee role and attendance intensity: 1999–2000**

|                        | Public 4-year | Private not-for-profit 4-year | Public 2-year | Private for-profit | More than one institution and other |
|------------------------|---------------|-------------------------------|---------------|--------------------|-------------------------------------|
| Total                  |               |                               |               |                    |                                     |
| Total                  | 22.5          | 10.3                          | 53.9          | 6.5                | 6.9                                 |
| Students who work      | 34.5          | 10.6                          | 39.4          | 7.6                | 8.0                                 |
| Employees who study    | 16.8          | 11.3                          | 61.2          | 4.8                | 6.0                                 |
| Full-time <sup>1</sup> |               |                               |               |                    |                                     |
| All full-time students | 27.7          | 12.8                          | 36.8          | 12.6               | 10.0                                |
| Students who work      | 37.6          | 12.0                          | 31.9          | 9.9                | 8.6                                 |
| Employees who study    | 16.4          | 17.7                          | 39.4          | 14.5               | 12.0                                |
| Part-time              |               |                               |               |                    |                                     |
| All part-time students | 18.6          | 8.5                           | 66.4          | 2.0                | 4.5                                 |
| Students who work      | 27.8          | 7.6                           | 55.1          | 2.8                | 6.7                                 |
| Employees who study    | 16.9          | 9.3                           | 68.1          | 1.7                | 4.0                                 |

<sup>1</sup>Based on full-year attendance. Full-time attendance includes those who also had mixed full-time and part-time enrollment.

NOTE: Detail may not sum to totals because of rounding. Total and "All" rows for each subgroup also include students who did not work while enrolled.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1999–2000 National Postsecondary Student Aid Study (NPSAS:2000).

were important reasons for enrolling for most employees who study, so was completing a degree or credential: 80 percent reported enrolling for this latter reason. In addition, roughly one-third (36 percent) of employees who study had enrolled to obtain additional education required by their job.

### Financial Aid

Because employees who study are more likely than students who work to attend postsecondary education on a part-time basis, their tuition expenses are lower.<sup>1</sup> In addition, employees who study are more likely than students who work to be employed full time. Lower tuition combined with full-time employment means that employees who study have less need for financial aid than students who work. Employees who study, therefore, were less likely than students who work to apply for and receive financial aid in 1999–2000. Nevertheless, roughly half (48 percent) of employees who study received some type of financial aid, averaging about \$3,000 per recipient. About 40 percent of employees who study received grants, averaging about \$1,500, and 12 percent received loans, averaging about \$5,600. In addition, about one-quarter (23 percent) of employees who study received aid from their employers, averaging about \$1,200. Employer aid was the only type of financial aid that employees who study received more often than students who work (23 percent vs. 5 percent). The difference between the percentages of employees who study and students who work who received different types of aid held among both full-time and part-time students with one exception: among part-time students, no difference in the percentages receiving grant aid could be detected.

Among employees who study, those who were enrolled in bachelor's degree programs were the most likely to receive employer aid (33 percent received an average of \$2,200 in employer aid). In addition, 24 percent of employees who study who were not enrolled in any degree program also received employer aid (averaging about \$400). Presumably employers encouraged such students to take certain courses rather than earn a formal credential.

### Persistence and Degree Completion

In previous studies examining factors related to students' risk of not completing their postsecondary education, working full time and attending classes part time were both

independently associated with lower rates of persistence and degree attainment (Berkner, Cuccaro-Alamin, and McCormick 1996; Horn 1996). Given these findings, 68 percent of working adults who identified themselves as employees who study in 1999–2000 carried a substantial risk of not completing their postsecondary program: they were both employed full time and attended part time (figure C). In contrast, 18 percent of students who work combined full-time work with part-time attendance. Based on these differences, it might be expected that the two groups of working adult undergraduates would have different outcomes when examining their completion rates. Indeed, among those who first began their postsecondary education in 1995–96, differences in outcomes were evident.

Six years after students had begun their postsecondary education, 62 percent of employees who study had not completed a degree or certificate and were no longer enrolled, compared with 39 percent of students who work. Even among those who intended to obtain a degree or certificate, 55 percent of employees who study had not completed a degree or certificate and were no longer enrolled, compared with 38 percent of students who work (figure D).

Among employees who study with reported degree or certificate intentions, the total percentage who had attained any credential was 37 percent, most often a vocational certificate (28 percent). Among students who work, 44 percent had attained a postsecondary credential, and they, too, were most likely to have obtained a certificate (22 percent). However, 10 percent of students who work had completed a bachelor's degree, compared with 2 percent of employees who study.<sup>2</sup>

Employees who study were at particular risk of leaving postsecondary education in their first year. Among students with a degree goal, 32 percent of employees who study left in their first year with no credential, compared with 7 percent of students who work. These students had not returned after 6 years. After the first year, however, no difference could be detected between employees who study and students who work in their rates of attrition.

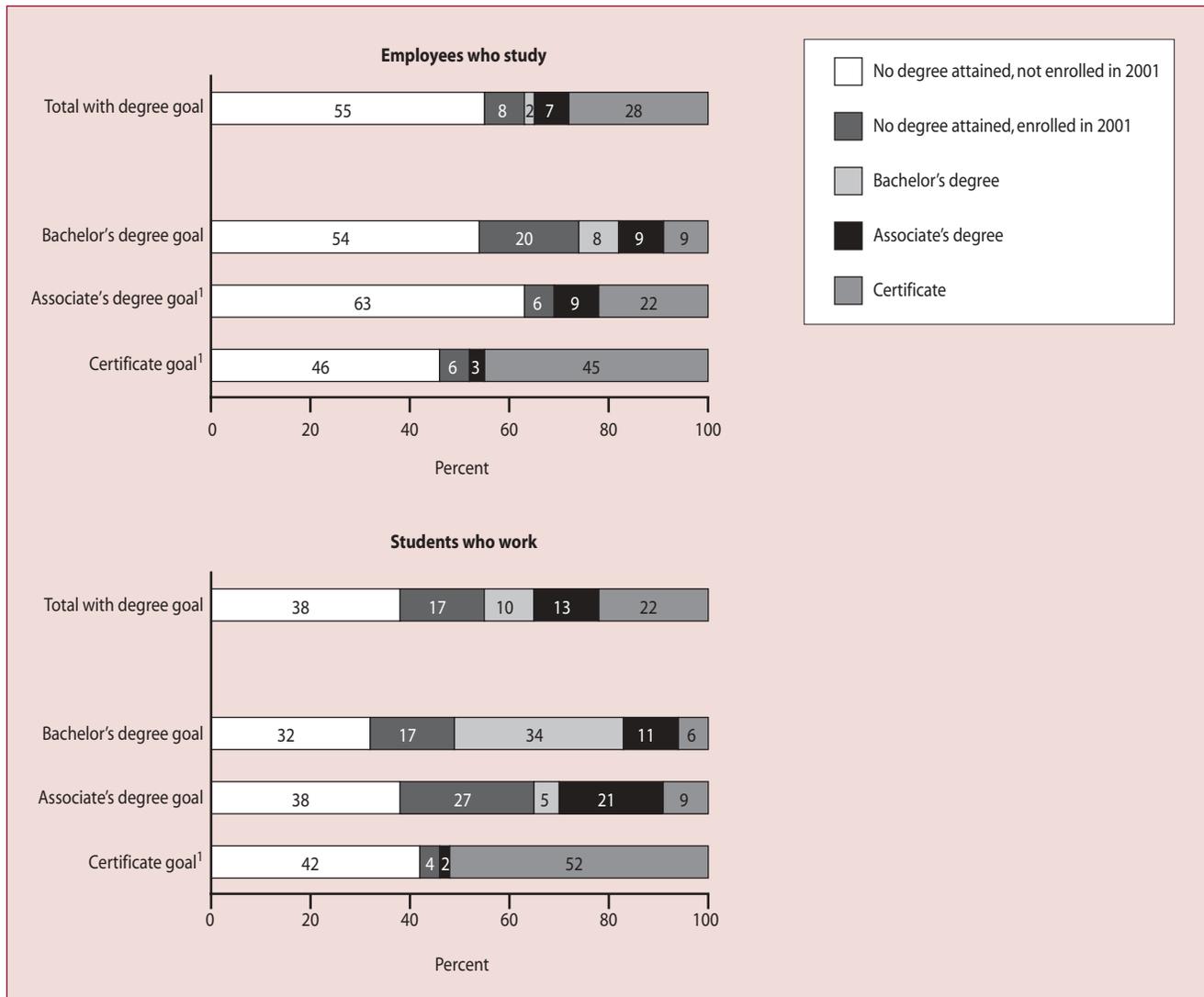
### Conclusions

In 1999–2000, roughly two-thirds of working undergraduates age 24 or older reported that work was their primary

<sup>1</sup>For example, undergraduates attending a community college full time for a full year paid, on average, about \$1,600 in tuition, compared with about \$700 for those attending part time for a full year (Berkner et al. 2002).

<sup>2</sup>It also appeared as though students who work were more likely to have earned an associate's degree, but due to small sample sizes, there was not enough statistical evidence to conclude such a difference.

**Figure D. Percentage distribution of 6-year persistence and of highest degree attained in June 2001 for 1995–96 beginning postsecondary students age 24 or older with a degree goal, by degree goal and student/employee role when they first enrolled**



<sup>1</sup>The percentage who attained a bachelor's degree rounded to zero and is, therefore, not shown on bar.

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

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

activity. Among these employees who study, nearly 70 percent combined full-time work with part-time attendance. These working adults make up a large percentage of the undergraduate population and most of them pursue postsecondary education to obtain skills necessary to advance in their careers. Nearly one-half of employees who study received some sort of financial aid, including one-quarter who received aid from their employers. However, full-time work and part-time attendance combined with family responsibilities appeared to be barriers to completing a cre-

denial. Despite the fact that most employees who study thought it was important to earn a formal credential, 62 percent had not done so within 6 years. Moreover, among those who left, most did so in their first year. In contrast, their counterparts whose focus was on postsecondary enrollment—students who work—experienced more positive educational outcomes. These students, who were more likely to attend full time, work part time, and have fewer family responsibilities, were more likely to earn postsecondary credentials, especially bachelor's degrees.

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**Data sources:** The NCES 1999–2000 National Postsecondary Student Aid Study (NPSAS:2000) and the 1996/01 Beginning Postsecondary Students Longitudinal Study (BPS:96/01).

**For technical information,** see the complete report:

Berker, A., and Horn, L. (2003). *Work First, Study Second: Adult Undergraduates Who Combine Employment and Postsecondary Enrollment* (NCES 2003–167).

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# Postsecondary Transcript Data

## Postsecondary Attainment, Attendance, Curriculum, and Performance: Selected Results From the NELS:88/2000 Postsecondary Education Transcript Study (PETS), 2000

Clifford Adelman, Bruce Daniel, and Ilona Berkovits

*This article was originally published as the Introduction and Highlights of the E.D. Tabs report of the same name. The sample survey data are from the National Education Longitudinal Study of 1988 (NELS:88).*

### Introduction

This report uses postsecondary transcript data collected as part of the National Education Longitudinal Study of 1988 (NELS:88/2000) to examine aspects of the (1) postsecondary attainment, (2) postsecondary attendance patterns, (3) postsecondary curriculum, and (4) postsecondary performance of a cohort of approximately 9,500<sup>1</sup> individuals (ages 26–27) who were in the 12th grade in 1992 and attended institutions of postsecondary education<sup>2</sup> during the period 1992–2000. Most of these individuals were eighth-graders in 1988 and graduated from high school in 1992.<sup>3</sup> All tables in this report follow their histories through December 31, 2000.

In addition to the postsecondary variables that were built from data recorded from postsecondary transcripts, this report uses data collected from previous waves of NELS:88, including high school transcript data. Thus, it is possible to examine the relationship between postsecondary histories and outcomes and earlier high school experiences, attainment, and coursetaking.

The evidence of student records as set forth in postsecondary transcript information offers cogent documentation of precisely what college students study, when and where they study it, and how well they perform in each course. It is

important to note that transcript records do not do anything more than that. They do not tell us how much students have learned, whether the learning is retained, or what classroom experiences, teaching methods, or delivery systems produced the best results. For any one student, they provide only an outline of educational history, but an outline that suggests productive paths to analysis.

### Highlights

The collection of tables in the full report is designed to illustrate some of the range and analytical promise of the NELS:88/2000 Postsecondary Transcript Files. Highlights include the following:

#### Attainment

- Of all likely postsecondary participants, 45 percent earned a bachelor's degree or higher by age 26 or 27 (table A).
- Of those who earned more than 10 college credits, 51 percent earned a bachelor's degree or higher by age 26 or 27.
- Of those who earned more than 10 college credits and attended a 4-year college at any time, 67 percent earned a bachelor's degree or higher by age 26 or 27.
- Eleven percent of postsecondary participants earned 10 or fewer credits by age 26 or 27.

#### Attendance

- Of all undergraduates who earned more than 10 credits, 20 percent attended institutions in more than one state as undergraduates. Also, 24 percent of bachelor's degree recipients attended institutions in more than one state as undergraduates.
- More than half of Hispanic/Latino students (vs. 37 percent of White students and 41 percent of Black students)<sup>4</sup> began their postsecondary careers in community colleges (table B).
- A majority of undergraduates attended school during summer terms.

<sup>1</sup>Of the approximately 12,100 students in the NELS:88/2000 panel, about 9,600 (75.2 percent, weighted) reported having attended at least one postsecondary institution. Based on received in-scope transcripts and, when transcripts were not received, other corroborating information (from National Student Loan Data Systems files, Advanced Placement and College Entrance Examination Board tests, and other student responses), about 9,400 (71.2 percent, weighted) were judged as "likely participants." Based only on received in-scope transcripts, about 8,900 (66.8 percent, weighted) were "known participants." See discussion of the determination of likely participation in section I and appendix B of the full report.

<sup>2</sup>"Postsecondary institutions" include not only 4-year colleges and universities, 2-year colleges, and other degree-granting institutions but also noncollegiate institutions awarding less-than-2-year certificates.

<sup>3</sup>Of the high school graduates in the NELS cohort, 3.3 percent had received a diploma or GED by December of 1991, and 1 percent of those who entered postsecondary education had done so by the same date. The tables in this report use the bracketing dates of 1992–2000 to mark the modal year of high school graduation and date of postsecondary entry (1992). By confining the universe to those survey participants who were in the 12th grade in 1992, early high school graduates, dropouts, students who had been retained in grade, and those who were not in school in 1992 are excluded. The populations under study are thus skewed toward higher levels of academic preparation and performance.

<sup>4</sup>Race categories exclude Hispanic origin unless specified.

**Table A. Percentage distribution of the highest postsecondary attainment of 1992 12th-graders who were likely postsecondary participants, by race/ethnicity, sex, and socioeconomic status: 1992–2000**

| Selected characteristics      | Highest postsecondary attainment |             |             |            |   |                       |
|-------------------------------|----------------------------------|-------------|-------------|------------|---|-----------------------|
|                               | None                             | Certificate | Associate's | Bachelor's | Some post-baccalaureate enrollment <sup>1</sup> | Graduate <sup>2</sup> |
| Total                         | 42.1                             | 4.9         | 8.1         | 31.0       | 8.2   | 5.7                   |
| Race/ethnicity <sup>3</sup>   |                                  |             |             |            |   |                       |
| White                         | 37.3                             | 4.9         | 8.5         | 33.8       | 9.0   | 6.4                   |
| Black                         | 59.2                             | 5.3         | 4.9         | 24.1       | 4.4   | 2.1                   |
| Hispanic/Latino               | 63.1                             | 5.0         | 8.2         | 15.1       | 6.0   | 2.5                   |
| Asian/Pacific Islander        | 36.5                             | 4.5         | 7.6         | 33.6       | 9.7   | 8.1                   |
| American Indian/Alaska Native | 77.4                             | 1.2         | 6.1         | 10.5       | 3.1   | 1.7                   |
| Sex                           |                                  |             |             |            |   |                       |
| Male                          | 47.6                             | 3.8         | 7.4         | 29.3       | 7.3   | 4.6                   |
| Female                        | 37.2                             | 5.9         | 8.7         | 32.5       | 9.1   | 6.7                   |
| Socioeconomic status quintile |                                  |             |             |            |   |                       |
| 81st–100th percentile (high)  | 22.6                             | 1.5         | 3.7         | 46.2       | 14.1  | 11.9                  |
| 61st–80th percentile          | 44.6                             | 3.9         | 7.0         | 33.0       | 6.8   | 4.6                   |
| 41st–60th percentile          | 48.6                             | 5.5         | 12.0        | 24.6       | 6.3   | 3.0                   |
| 21st–40th percentile          | 54.3                             | 6.8         | 11.5        | 20.2       | 4.9   | 2.4                   |
| 1st–20th percentile (low)     | 59.5                             | 12.9        | 11.4        | 11.9       | 3.7   | 0.6                   |

<sup>1</sup>“Some postbaccalaureate enrollment” includes both incomplete graduate degrees and nondegree postbaccalaureate coursework.

<sup>2</sup>“Graduate” includes master’s, first-professional, and doctoral degrees.

<sup>3</sup>Race categories exclude Hispanic origin unless specified.

NOTE: “All likely postsecondary participants” include (1) those for whom transcripts were received; and (2) those for whom transcripts were requested but not received, and for whom other evidence in the NELS files supports the student’s report of postsecondary attendance (see expanded description in appendix B, section 5.1, of the full report). Weighted N=1.9 million. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988 (NELS:88/2000), “Fourth Follow-up, Postsecondary Education Transcript Study (PETS), 2000.” (Taken from table 1 on p. 5 of the complete report from which this article is excerpted.)

### Curriculum

- Students whose highest level of mathematics in high school was at the trigonometry, precalculus, or calculus level had bachelor’s degree completion rates above 60 percent; for students who completed a calculus course in high school, the bachelor’s degree completion rate was 83 percent (derived from table C).
- Bachelor’s degree majors in business fields earned a higher mean number of credits in computer-related coursework than those in any other fields except mathematics/computer science and engineering; bachelor’s degree majors in engineering earned a higher mean number of credits in computer science than bachelor’s degree majors in any other fields except mathematics/computer science.
- Bachelor’s degree majors in the social sciences earned a higher mean number of credits in foreign language and international studies combined than bachelor’s degree majors in any other fields except the humanities.

### Performance

- Students whose true institution of first attendance<sup>5</sup> was “selective” or “highly selective” had higher undergraduate grade point averages than those who attended less selective institutions (except for institutions that were not ratable).
- A majority of students who started out in community colleges took one or more remedial courses, compared with 19 percent of students who started in doctoral degree-granting institutions and 30 percent of those who started in other types of 4-year institutions.

<sup>5</sup>True institution of first attendance excludes postsecondary institutions attended while the student was still in high school, institutions attended in the summer between high school graduation and fall semester entry (unless the institution was the same for both periods), and “false starts” (i.e., when the student withdraws without earning any additive credits from the ostensible first postsecondary institution in the first term of attendance but enrolls in another institution and earns credits at that institution at a later date).

**Table B. Percentage distribution of the type of postsecondary institution first attended by 1992 12th-graders, by selected student characteristics: 1992–2000**

| Selected student characteristics | Type of institution first attended |              |                   |                                      |
|----------------------------------|------------------------------------|--------------|-------------------|--------------------------------------|
|                                  | Doctoral                           | Other 4-year | Community college | Other sub-baccalaureate <sup>1</sup> |
| Total                            | 24.5                               | 31.3         | 39.6              | 4.5                                  |
| Sex                              |                                    |              |                   |                                      |
| Male                             | 24.5                               | 29.8         | 42.3              | 3.5                                  |
| Female                           | 24.6                               | 32.7         | 37.2              | 5.4                                  |
| Race/ethnicity <sup>2</sup>      |                                    |              |                   |                                      |
| White                            | 26.0                               | 32.3         | 37.4              | 4.2                                  |
| Black                            | 17.6                               | 36.0         | 40.8              | 5.6                                  |
| Hispanic/Latino                  | 16.3                               | 22.7         | 54.8              | 6.2                                  |
| Asian/Pacific Islander           | 33.1                               | 26.0         | 37.1              | 3.7                                  |
| American Indian/Alaska Native    | 15.7                               | 20.3         | 57.5              | 6.5                                  |
| Socioeconomic status quintile    |                                    |              |                   |                                      |
| 81st–100th percentile (high)     | 43.3                               | 34.9         | 20.0              | 1.7                                  |
| 61st–80th percentile             | 22.1                               | 33.5         | 41.1              | 3.3                                  |
| 41st–60th percentile             | 15.5                               | 31.3         | 48.7              | 4.6                                  |
| 21st–40th percentile             | 13.9                               | 26.0         | 52.9              | 7.2                                  |
| 1st–20th percentile (low)        | 9.8                                | 24.1         | 54.7              | 11.4                                 |
| Highest math in high school      |                                    |              |                   |                                      |
| Calculus                         | 56.4                               | 36.5         | 6.3               | 0.8                                  |
| Precalculus                      | 41.9                               | 41.7         | 15.2              | 1.2                                  |
| Trigonometry                     | 30.3                               | 36.1         | 32.1              | 1.5                                  |
| Algebra 2                        | 17.7                               | 34.7         | 43.3              | 4.3                                  |
| Geometry                         | 10.0                               | 22.8         | 60.5              | 6.8                                  |
| Algebra 1                        | 3.5                                | 18.0         | 64.3              | 14.3                                 |
| Less than algebra 1              | 0.4                                | 8.4          | 73.6              | 17.5                                 |

<sup>1</sup>“Other sub-baccalaureate” includes 2-year institutions other than community colleges and nondegree-granting schools.

<sup>2</sup>Race categories exclude Hispanic origin unless specified.

NOTE: Data refer to individuals’ true institution of first attendance, which excludes postsecondary institutions attended while the student was still in high school, institutions attended in the summer between high school graduation and fall semester entry (unless the institution was the same for both periods), and “false starts” (i.e., when the student withdraws without earning any additive credits from the ostensible first postsecondary institution in the first term of attendance but enrolls in another institution and earns credits at that institution at a later date). Universe consists of all for whom a true postsecondary institution of first attendance could be determined. Weighted N=2.0 million. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988 (NELS:88/92/2000): “Second Follow-up, High School Transcript Study, 1992,” and “Fourth Follow-up, Postsecondary Education Transcript Study (PETS), 2000.” (Taken from table 8 on p. 14 of the complete report from which this article is excerpted.)

**Table C. Percentage distribution of the highest postsecondary degree, by highest level of mathematics completed in high school: 1992–2000**

| Highest high school math course | Highest postsecondary degree |             |             |            |                            |                 |
|---------------------------------|------------------------------|-------------|-------------|------------|----------------------------|-----------------|
|                                 | None                         | Certificate | Associate's | Bachelor's | Incomplete graduate degree | Graduate degree |
| Calculus                        | 13.3                         | 0.3         | 3.7         | 49.3       | 16.6                       | 16.8            |
| Precalculus                     | 19.0                         | 0.9         | 5.2         | 51.5       | 12.9                       | 10.5            |
| Trigonometry                    | 29.7                         | 2.6         | 5.6         | 45.7       | 9.2                        | 7.2             |
| Algebra 2                       | 42.5                         | 6.1         | 11.1        | 31.5       | 5.7                        | 3.1             |
| Geometry                        | 55.0                         | 9.0         | 13.8        | 17.1       | 3.9                        | 1.2             |
| Algebra 1                       | 67.0                         | 11.8        | 11.0        | 8.3        | 1.2                        | 0.7             |
| Less than algebra 1             | 68.9                         | 18.1        | 8.9         | 3.8        | 0.3                        | #               |

#Rounds to zero.

NOTE: The universe consists of all known postsecondary participants for whom the highest level of mathematics completed in high school could be determined. Weighted N=2.0 million. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988 (NELS:88/92/2000): "Second Follow-up, High School Transcript Study, 1992," and "Fourth Follow-up, Postsecondary Education Transcript Study (PETS), 2000." (Taken from table 11 on p.19 of the complete report from which this article is excerpted.)

**Data source:** The NCES National Education Longitudinal Study of 1988 (NELS:88/92/2000), "Second Follow-up, High School Transcript Study, 1992," and "Fourth Follow-up, Postsecondary Education Transcript Study (PETS), 2000."

**For technical information,** see the complete report:

Adelman, C., Daniel, B., and Berkovits, I. (2003). *Postsecondary Attainment, Attendance, Curriculum, and Performance: Selected Results From the NELS:88/2000 Postsecondary Education Transcript Study (PETS), 2000* (NCES 2003–394).

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# Bachelor's Degree Recipients

## A Descriptive Summary of 1999–2000 Bachelor's Degree Recipients 1 Year Later: With an Analysis of Time to Degree

—Ellen M. Bradburn, Rachael Berger, Xiaojie Li, Katharin Peter,  
and Kathryn Rooney

*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 Baccalaureate and Beyond Longitudinal Study (B&B).*

The number of bachelor's degrees awarded annually has increased over the past few decades, reaching 1.2 million in 1999–2000 (Snyder and Hoffman 2002).<sup>1</sup> In addition, the length of time students took to complete a bachelor's degree after high school completion increased from the 1970s to the early 1990s (McCormick and Horn 1996; Tinto 1993). Did this trend in the time between high school and bachelor's degree completion continue throughout the 1990s? The 2000/01 Baccalaureate and Beyond Longitudinal Study (B&B:2000/01), which surveys a nationally representative sample of undergraduates who completed a bachelor's degree between July 1, 1999, and June 30, 2000, affords the opportunity to address this question.

This report provides a basic demographic profile of 1999–2000 bachelor's degree recipients and examines the institutional paths they took to complete the baccalaureate. It also describes the amount of time it took them to do so, assessed from both the time they completed high school and the time they entered postsecondary education. Estimates of time to degree are also compared with those for 1992–93 bachelor's degree recipients. A table compendium in the full report provides more detailed information about the demographic characteristics, undergraduate experiences, and current activities of these college graduates as of 2001.

### Profile of 1999–2000 Bachelor's Degree Recipients

The percentage of bachelor's degrees awarded to women increased steadily from the mid-1980s (U.S. Department of Education 2001). A majority of 1999–2000 college graduates were women (57 percent). The bachelor's degree recipients came from diverse racial/ethnic backgrounds. About three-quarters (74 percent) were White; 8 percent were Black or African American; 9 percent were Hispanic or Latino; and 6 percent were Asian. One percent or fewer were Native Hawaiian or other Pacific Islander, American Indian or Alaska Native, some other race, or more than one race.

About half (49 percent) of the students who completed a bachelor's degree in 1999–2000 did so by age 22. However, 9 percent were ages 30–39 during their last year of college, and 7 percent were age 40 or older.

Among 1999–2000 college graduates, 28 percent had parents who did not attend college, including 4 percent whose parents did not complete high school and 24 percent whose parents completed high school but did not attend college. In addition, one-quarter (25 percent) had at least one parent who completed a bachelor's degree, 16 percent had a parent with a master's degree, and 11 percent had a parent with a doctoral or professional degree.

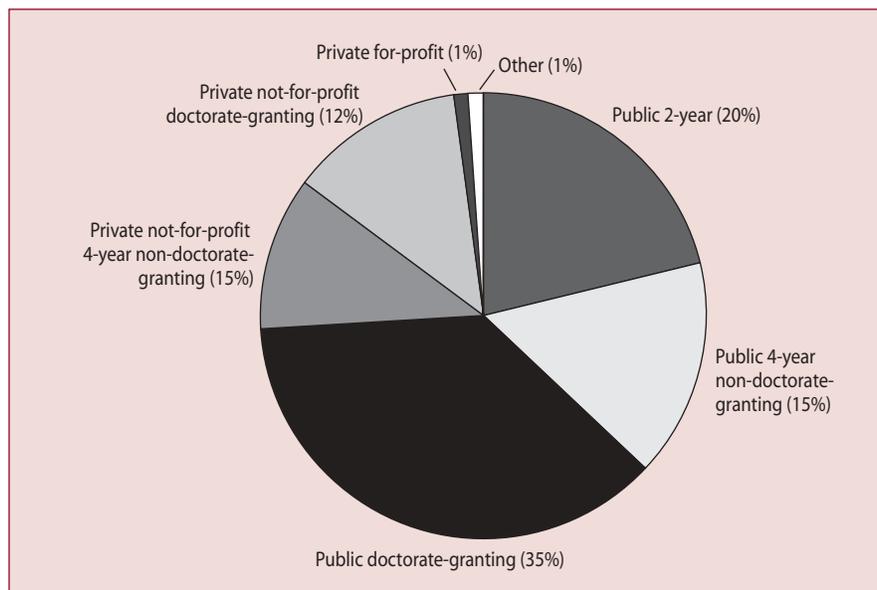
### The Institutional Path to a Bachelor's Degree

The undergraduate enrollment path that students follow is an important precursor to examine when investigating time to degree. Many factors influence students' first entry into postsecondary education, and some students do not expect or plan to complete a bachelor's degree when they first attend college (Berkner, He, and Cataldi 2002). Students who begin at certain types of institutions, such as community colleges, have to transfer to complete the bachelor's degree; as a result, their path to completion may take longer. This section and subsequent sections of the report are restricted to first-time bachelor's degree recipients—those who had not already completed a bachelor's degree before earning one in 1999–2000.

Among 1999–2000 first-time bachelor's degree recipients, one-half began postsecondary enrollment at public 4-year institutions: 15 percent at non-doctorate-granting institutions, and 35 percent at doctorate-granting institutions (figure A). An additional one-fifth (20 percent) began at public 2-year colleges. Fifteen percent began college at private not-for-profit 4-year non-doctorate-granting institutions, and 12 percent at private not-for-profit doctorate-granting institutions. Relatively few students began at private for-profit institutions or other institutions (1 percent each).

<sup>1</sup>This number includes multiple degrees awarded to the same students.

**Figure A. Percentage distribution of 1999–2000 first-time bachelor's degree recipients according to first institution type**



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

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2000/01 Baccalaureate and Beyond Longitudinal Study (B&B:2000/01).

College graduates whose parents had more education were more likely than those whose parents had less education to have begun at private not-for-profit 4-year institutions. On the other hand, parents' educational attainment was inversely related to the likelihood of beginning at a public 2-year institution or a private for-profit institution. In addition, younger students were more likely than older students to have first enrolled at public or private not-for-profit doctorate-granting 4-year institutions and were less likely to have begun at public 2-year institutions.

The majority of bachelor's degree recipients in 1999–2000 completed the degree at public institutions (figure B). Overall, 65 percent graduated from public institutions, and one-third (33 percent) graduated from private not-for-profit institutions. The remainder, 2 percent, received a bachelor's degree from private for-profit institutions. A larger proportion completed a degree at public doctorate-granting institutions than at public non-doctorate-granting institutions, but the reverse was true among graduates of private not-for-profit institutions.

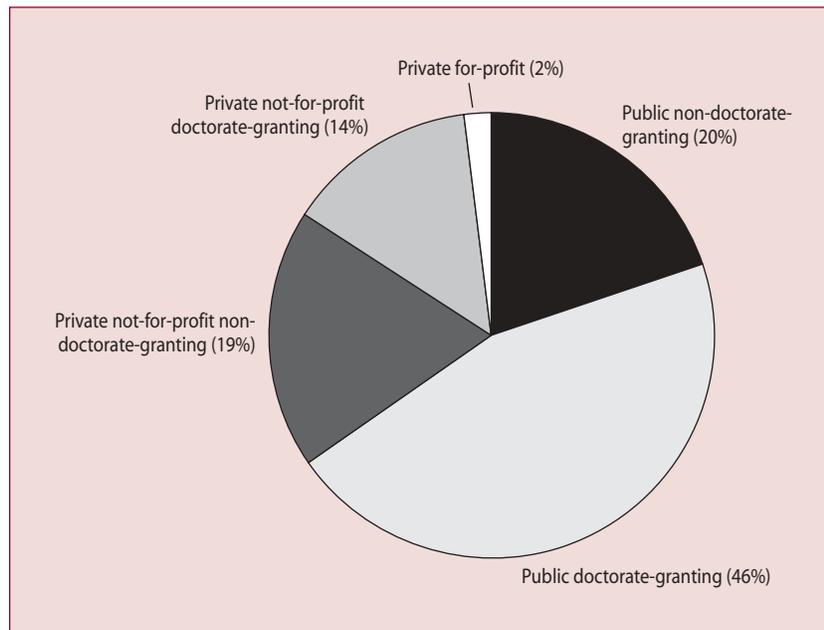
### Time to Degree

Some students' paths to the bachelor's degree involved more stops along the way than those of other students. Forty-one

percent of first-time bachelor's degree recipients in 1999–2000 reported having enrolled in only one undergraduate institution. An additional 35 percent of all graduates attended two institutions, 16 percent attended three institutions, and 8 percent attended at least four institutions during their undergraduate years. About one-fifth of 1999–2000 first-time bachelor's degree recipients had obtained a certificate or an associate's degree prior to completing the bachelor's degree (2 percent had a certificate, and 17 percent had an associate's degree). In addition, many students took at least 4 months off from postsecondary enrollment before completing the degree. While a majority (64 percent) of 1999–2000 first-time bachelor's degree recipients did not stop out, 11 percent took off 4–11 months, 6 percent took off 12–23 months, 4 percent took off 24–35 months, and 16 percent interrupted their enrollment for at least 36 months.

Most students who decide to enroll in college do so within 1 year of completing high school (U.S. Department of Education 2001). For those who delay entering college, however, the time to bachelor's degree completion might be reflected more accurately in the time between entering postsecondary education and completing a bachelor's degree. This report examines three time periods: the time

**Figure B. Percentage distribution of 1999–2000 first-time bachelor’s degree recipients according to degree-granting institution type**



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

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2000/01 Baccalaureate and Beyond Longitudinal Study (B&B:2000/01).

between high school completion and postsecondary entry, the time between high school completion and bachelor’s degree completion, and the time between postsecondary entry and bachelor’s degree completion.

A majority (83 percent) of first-time bachelor’s degree recipients in 1999–2000 enrolled in college less than 1 year after they had completed high school.<sup>2</sup> Six percent took 1–2 years to enroll in college, and another 5 percent took 2–5 years to do so. Another 6 percent did not enroll in postsecondary education until at least 5 years after they had completed high school. Compared with 1992–93 bachelor’s degree recipients, 1999–2000 college graduates were less likely to enroll in college within 1 year of finishing high school (83 vs. 90 percent).

When considering the total time that elapsed between completing high school and finishing the bachelor’s degree, one-third (33 percent) of first-time bachelor’s degree recipients in 1999–2000 completed a bachelor’s degree

within 4 years of their high school graduation.<sup>3</sup> Another 23 percent took 4–5 years, 11 percent took 5–6 years, and 15 percent took 6–10 years to do so. About one-fifth (19 percent) took even longer after high school to finish college.

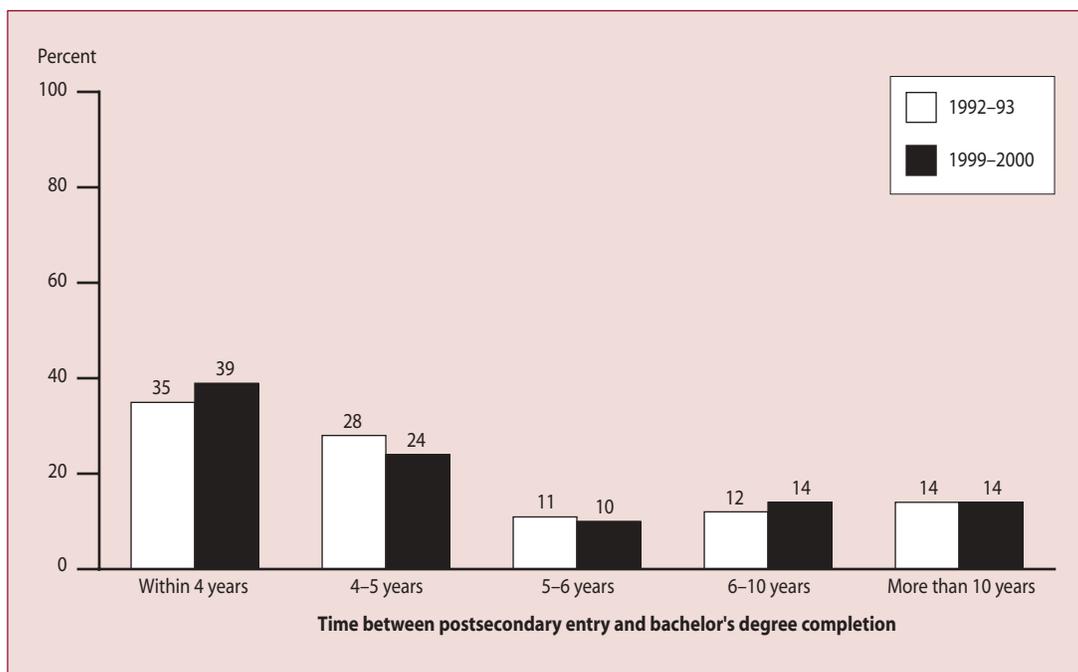
Taking into account the delayed entry of many students and examining only the time between postsecondary entry and bachelor’s degree completion, about two-fifths (39 percent) of 1999–2000 first-time bachelor’s degree recipients took 4 years or less to complete a bachelor’s degree, and 72 percent finished in 6 years or less (figure C).<sup>4</sup> Fourteen percent took more than 10 years to do so. However, compared with 1992–93 bachelor’s degree completers, the 1999–2000 cohort was more likely to complete the degree in 4 years or less (39 vs. 35 percent) and less likely to take 4–5 years between postsecondary entry and graduation (24 vs. 28 percent).

<sup>2</sup>For ease of reading, “less than 1 year” refers to postsecondary enrollment in 11 months or less; “1–2 years” refers to enrollment in 12–23 months; “2–5 years” refers to enrollment in 24–59 months; and “at least 5 years” refers to enrollment in 60 months or more after high school completion.

<sup>3</sup>“Within 4 years” refers to completion of the bachelor’s degree in 48 months or less after high school completion; “4–5 years” refers to 49–60 months; “5–6 years” refers to 61–72 months; and “6–10 years” refers to 73–120 months.

<sup>4</sup>The phrase “4 years or less” refers to completion of the bachelor’s degree in 48 months or less from postsecondary entry; “4–5 years” refers to completion in 49–60 months; “up to 6 years” or “6 years or less” refers to completion in 72 months or less; and “more than 10 years” refers to completion in more than 120 months.

**Figure C. Percentage distribution of 1992–93 and 1999–2000 first-time bachelor's degree recipients according to time between postsecondary entry and bachelor's degree completion**



NOTE: "Within 4 years" refers to 48 months or less between postsecondary entry and bachelor's degree completion; "4–5 years" refers to 49–60 months; "5–6 years" refers to 61–72 months; "6–10 years" refers to 73–120 months; and "more than 10 years" refers to more than 120 months after postsecondary entry. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2000/01 Baccalaureate and Beyond Longitudinal Study (B&B:2000/01).

A final component of the analysis was restricted to first-time bachelor's degree recipients who had not interrupted their postsecondary enrollment longer than 6 months. The average time between postsecondary entry and bachelor's degree completion for these graduates was 4 years and 7 months (55 months),<sup>5</sup> and it was longer for graduates of public institutions (57 months) than for graduates of private not-for-profit institutions (51 months).

A number of other factors were related to the average amount of time between postsecondary entry and degree completion. Parents' educational attainment was inversely related to students' time to degree: as parents' education increased, students' average time to complete a degree decreased. In addition, there was an inverse relationship between students' cumulative grade-point average and the time it took them to finish a degree. This relationship was found both overall and for graduates of public institutions, but no difference was detected for graduates of private not-for-profit institutions. Delaying enrollment in postsecond-

ary education after completing high school was also associated with the time it took students to complete a bachelor's degree once they enrolled: students who delayed entry took longer to complete a degree once enrolled. Finally, those who enrolled in more institutions took longer to complete a degree, even when graduates who had extended enrollment interruptions between institutions were excluded. For example, graduates who attended only one institution completed the degree in an average of 4 years and 3 months (51 months), while those who attended two institutions took about 8 months longer, on average (59 months).

### Postbaccalaureate Activities

The table compendium of the full report provides information about many other aspects of the lives of 1999–2000 graduates after college. Many graduates had families and independent households by spring of 2001. While about two-thirds (66 percent) had never been married, 30 percent were married as of 2001. In addition, 9 percent had one child, and another 10 percent had two or more children. Approximately one-quarter (24 percent) owned their own

<sup>5</sup>The mean for all 1999–2000 bachelor's degree recipients was 6 years and 9 months (81 months), with a median of 4 years and 7 months (55 months).

homes, and 16 percent were living with their parents. Most graduates (69 percent) resided in the same state where they had received a bachelor's degree. While 57 percent lived less than 50 miles from the high schools they had attended, 15 percent lived 500 miles or more away.

A majority (87 percent) of 1999–2000 bachelor's degree recipients were working in 2001: about three-quarters (77 percent) were working full time and another 11 percent were working part time. Five percent were unemployed. Among those who were employed, business and education were the most common occupations: one-quarter (25 percent) worked in business and management, while 18 percent were educators (including K–12 teachers and other instructors). Overall, graduates earned, on average, \$33,100, with a median annual salary of \$29,800. A majority (71 percent) of those who were employed considered their current job to be the start of their career. Twenty-two percent of graduates had an occupational license, and 11 percent had a professional certification.

Some 1999–2000 graduates carried debt burden from their undergraduate education. Sixty-two percent of graduates had borrowed to help pay for their undergraduate education. Among these, the average amount borrowed was \$17,800, of which an average of \$15,100 was still owed as of 2001.

About one-fifth (22 percent) of all bachelor's degree recipients had enrolled in a graduate or advanced degree program since completing the bachelor's degree. As of 2001, 14 percent were currently enrolled full time in some kind of degree or certificate program, including both undergraduate and graduate programs. Of those who had enrolled in graduate school, 74 percent were enrolled in a master's degree program. One-half (50 percent) of 1999–2000 college graduates had not yet applied to graduate school but planned to attend in the future.

Beyond employment and enrollment, 1999–2000 bachelor's degree recipients were also active members of their communities. Forty-three percent reported doing community service in the year since completing college, with 8 percent reporting tutoring or educational work with kids and 11 percent reporting other volunteering with kids.

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**Data source:** The NCES 2000/01 Baccalaureate and Beyond Longitudinal Study (B&B:2000/01).

**For technical information,** see the complete report:

Bradburn, E.M., Berger, R., Li, X., Peter, K., and Rooney, K. (2003). *A Descriptive Summary of 1999–2000 Bachelor's Degree Recipients 1 Year Later: With an Analysis of Time to Degree* (NCES 2003–165).

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# Distance Education

## Distance Education at Degree-Granting Postsecondary Institutions: 2000–2001

Tiffany Waits and Laurie Lewis

*This article was originally published as the Executive Summary of the E.D. Tabs report of the same name. The sample survey data are from the Postsecondary Education Quick Information System (PEQIS).*

### Introduction

This study, conducted through the National Center for Education Statistics (NCES) Postsecondary Education Quick Information System (PEQIS), was designed to provide current national estimates on distance education at 2-year and 4-year Title IV<sup>1</sup> degree-granting institutions. Distance education was defined for this study as education or training courses delivered to remote (off-campus) sites via audio, video (live or prerecorded), or computer technologies, including both synchronous (i.e., simultaneous) and asynchronous (i.e., not simultaneous) instruction.

### Key Findings

The PEQIS survey provides national estimates for the 2000–01 academic year on the number and proportion of institutions offering distance education courses, distance education enrollments and course offerings, degree and certificate programs, distance education technologies, participation in distance education consortia, accommodations for students with disabilities, distance education program goals, and factors institutions identify as keeping them from starting or expanding distance education offerings.

#### Institutions offering distance education courses

During the 12-month 2000–01 academic year, 56 percent (2,320) of all 2-year and 4-year Title IV degree-granting institutions offered distance education courses for any level or audience (i.e., courses designed for all types of students, including elementary and secondary, college, adult education, continuing and professional education, etc.) (table A). Twelve percent of all institutions indicated that they planned to start offering distance education courses in the next 3 years; 31 percent did not offer distance education courses in 2000–01 and did not plan to offer these types of courses in the next 3 years.

Public institutions were more likely to offer distance education courses than were private institutions. In 2000–01, 90 percent of public 2-year and 89 percent of public 4-year

institutions offered distance education courses, compared with 16 percent of private 2-year and 40 percent of private 4-year institutions (table A).

College-level, credit-granting distance education courses at either the undergraduate or graduate/first-professional level were offered by 55 percent of all 2-year and 4-year institutions. College-level, credit-granting distance education courses were offered at the undergraduate level by 48 percent of all institutions, and at the graduate level by 22 percent of all institutions.

Fifty-two percent of institutions that had undergraduate programs offered credit-granting distance education courses at the undergraduate level.<sup>2</sup> Further, college-level, credit-granting distance education courses were offered at the graduate/first-professional level by 52 percent of institutions that had graduate/first-professional programs.

#### Distance education enrollments and course offerings

In the 12-month 2000–01 academic year, there were an estimated 3,077,000 enrollments in all distance education courses offered by 2-year and 4-year institutions. There were an estimated 2,876,000 enrollments in college-level, credit-granting distance education courses, with 82 percent of these at the undergraduate level.

Consistent with the distributions of the percentage of institutions that offered distance education courses, most of the distance education course enrollments were in public 2-year and public 4-year institutions. Public 2-year institutions had the greatest number of enrollments in distance education courses, with 1,472,000 out of 3,077,000, or 48 percent of the total enrollments in distance education (figure A). Public 4-year institutions had 945,000 enrollments

<sup>1</sup>Institutions participating in Title IV federal student financial aid programs are accredited by an agency or organization recognized by the U.S. Department of Education, have a program of over 300 clock hours or 8 credit hours, have been in business for at least 2 years, and have a signed Program Participation Agreement (PPA) with the Office of Postsecondary Education (OPE), U.S. Department of Education.

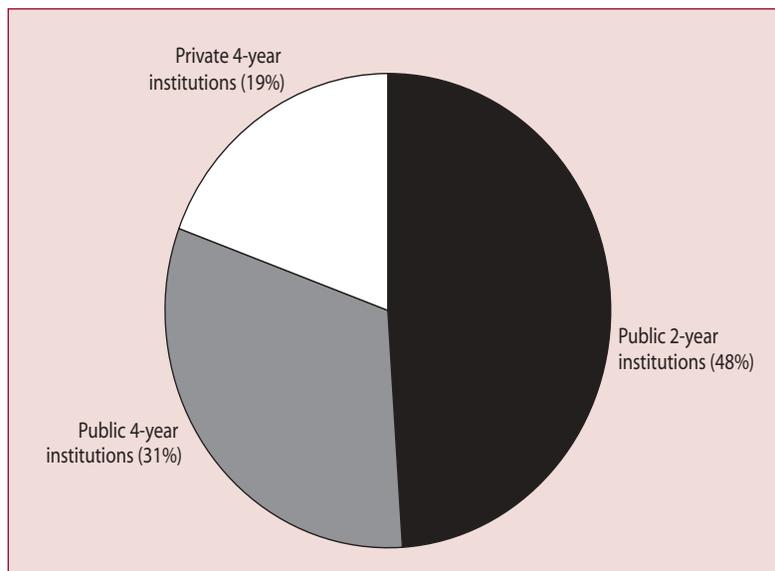
<sup>2</sup>Institutions can be characterized by whether they have any undergraduate programs or graduate/first-professional programs (either on campus or distance education). These programs are identified by the 2000 Integrated Postsecondary Education Data System, "Institutional Characteristics Survey" (IPEDS-IC:2000). These programs, as identified by IPEDS, should not be confused with the level of distance education course offerings. Of the estimated 4,130 Title IV degree-granting institutions at the 2-year or 4-year level, 3,810 institutions have undergraduate programs, and 1,700 have graduate/first-professional programs; 1,380 of the institutions have programs at both levels.

**Table A. Number and percentage distribution of 2-year and 4-year Title IV degree-granting institutions, by distance education program status and institution type and size: 2000–01**

| Institution type and size | Total number of institutions | Distance education program status     |         |   |         |  |         |
|---------------------------|------------------------------|---------------------------------------|---------|---|---------|--|---------|
|                           |                              | Offered distance education in 2000–01 |         | Planned to offer distance education in the next 3 years |         | Did not offer in 2000–01 and did not plan to offer in the next 3 years |         |
|                           |                              | Number                                | Percent | Number  | Percent | Number   | Percent |
| All institutions          | 4,130                        | 2,320                                 | 56      | 510   | 12      | 1,290  | 31      |
| Institution type          |                              |                                       |         |   |         |  |         |
| Public 2-year             | 1,070                        | 960                                   | 90      | 50  | 5       | 50   | 5       |
| Private 2-year            | 640                          | 100                                   | 16      | 150   | 23      | 400  | 62      |
| Public 4-year             | 620                          | 550                                   | 89      | 20  | 3       | 50   | 8       |
| Private 4-year            | 1,800                        | 710                                   | 40      | 290   | 16      | 790  | 44      |
| Size of institution       |                              |                                       |         |   |         |  |         |
| Less than 3,000           | 2,840                        | 1,160                                 | 41      | 460   | 16      | 1,220  | 43      |
| 3,000 to 9,999            | 870                          | 770                                   | 88      | 50  | 5       | 60   | 7       |
| 10,000 or more            | 420                          | 400                                   | 95      | 10  | 2       | 10   | 2       |

NOTE: Percentages are based on the estimated 4,130 2-year and 4-year Title IV degree-granting institutions in the nation. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System (PEQIS), survey on "Distance Education at Higher Education Institutions, 2000–2001," 2002. (Originally published as table 1 on p. 22 of the complete report from which this article is excerpted.)

**Figure A. Percentage distribution of enrollment in all distance education courses in 2-year and 4-year Title IV degree-granting institutions, by institution type:<sup>1</sup> 2000–01**

<sup>1</sup>Data for private 2-year institutions are not reported in a separate category because too few private 2-year institutions in the sample offered distance education courses in 2000–01 to make reliable estimates.

NOTE: Enrollments may include duplicated counts of students, since institutions were instructed to count a student enrolled in multiple courses for each course in which he or she was enrolled. Detail may not sum to totals because of rounding, missing data, or because too few cases were reported for a reliable estimate for private 2-year institutions. (See appendix A of the full report for details.)

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System (PEQIS), survey on "Distance Education at Higher Education Institutions, 2000–2001," 2002. (Originally published as figure 3 on p. 7 of the complete report from which this article is excerpted.)

(31 percent of the total), and private 4-year institutions had 589,000 enrollments (19 percent of the total).<sup>3</sup>

About a quarter (22 percent) of institutions that offered distance education in 2000–01 had 100 or fewer distance education enrollments, and 30 percent had 101 to 500 enrollments. In addition, 16 percent had 501 to 1,000 enrollments, 17 percent reported enrollments of 1,001 to 2,500, and 15 percent reported more than 2,500 enrollments for the 2000–01 academic year.

An estimated 127,400 different distance education courses for any level or audience were offered by 2- and 4-year institutions during the 12-month 2000–01 academic year. An estimated 118,100 different college-level, credit-granting distance education courses were offered, with 76 percent at the undergraduate level.

Of the institutions that offered distance education courses in 2000–01, about a quarter (27 percent) offered 10 or fewer courses, and 25 percent offered 11 to 30 courses. In addition, 15 percent of the institutions offered 31 to 50 courses, 19 percent offered 51 to 100 courses, and 15 percent offered more than 100 distance education courses.

### Degree and certificate programs

Among all 2- and 4-year institutions in 2000–01, 19 percent had degree or certificate programs designed to be completed totally through distance education. Among the 56 percent of institutions that offered distance education courses, 34 percent had degree or certificate programs designed to be completed totally through distance education. Institutions were more likely to offer distance education degree programs than certificate programs. Among the institutions that offered distance education courses in 2000–01, 30 percent offered degree programs and 16 percent offered certificate programs.

Among institutions that offered distance education courses, public 4-year institutions were most likely (48 percent) to offer degree programs designed to be completed totally through distance education, followed by private 4-year institutions (33 percent) and public 2-year institutions (20 percent). With regard to certificate programs, 25 percent of public 4-year institutions that offered distance education courses had certificate programs designed to be completed totally through distance education, compared

with 15 percent of public 2-year and 14 percent of private 4-year institutions.

### Distance education technologies

The Internet and two video technologies were most often used as primary modes of instructional delivery for distance education courses by institutions during the 12-month 2000–01 academic year. Among institutions offering distance education courses, the majority (90 percent) reported that they offered Internet courses using asynchronous computer-based instruction (table B). In addition, 43 percent of institutions that offered distance education courses offered Internet courses using synchronous computer-based instruction, 51 percent used two-way video with two-way audio, and 41 percent used one-way prerecorded video as a primary mode of instructional delivery for distance education courses.<sup>4</sup> Further, of the institutions offering distance education courses, 29 percent used CD-ROM as a primary mode of instructional delivery and 19 percent used multi-mode packages.

Of the institutions that offered distance education courses in 2000–01 or that planned to offer distance education courses in the next 3 years, 88 percent indicated plans to start using or increase the number of Internet courses using asynchronous computer-based instruction as a primary mode of instructional delivery for distance education courses. In addition, 62 percent of institutions indicated that they planned to start using or increase the number of Internet courses using synchronous computer-based instruction as a primary mode of instructional delivery, 40 percent planned to start using or increase the number of courses using two-way video with two-way audio, 39 percent planned to start using or increase the number of courses using CD-ROMs, and 31 percent planned to start using or increase the number of courses using multi-mode packages. About a quarter (23 percent) planned to start using or increase the number of courses using one-way prerecorded video.

### Participation in distance education consortia

Among the institutions that offered distance education in 2000–01, 60 percent participated in some type of distance education consortium. Of those institutions that participated in a distance education consortium, 75 percent indicated that they participated in a state consortium,

<sup>3</sup>Data for private 2-year institutions are not reported in a separate category because too few private 2-year institutions in the sample offered distance education courses in 2000–01 to make reliable estimates. Data for private 2-year institutions are included in the totals and in analyses by other institutional characteristics.

<sup>4</sup>Percentages sum to more than 100 because institutions could use different types of technologies as primary modes of instructional delivery for different distance education courses.

**Table B. Percent of 2-year and 4-year Title IV degree-granting institutions offering any distance education courses, by primary technology for instructional delivery for distance education courses, and by institution type and size: 2000–01**

| Institution type and size     | Primary technology for instructional delivery |                                  |                    |                            |                            |                            |   |  |        |                     |                    |
|-------------------------------|---|----------------------------------|--------------------|----------------------------|----------------------------|----------------------------|---|--|--------|---------------------|--------------------|
|                               | Two-way video with two-way audio <sup>1</sup> | One-way video with two-way audio | One-way live video | One-way pre-recorded video | Two-way audio transmission | One-way audio transmission | Synchronous Internet courses <sup>2</sup> | Asynchronous Internet courses <sup>3</sup> | CD-ROM | Multi-mode packages | Other technologies |
| All institutions              | 51  | 11                               | 8                  | 41                         | 9                          | 11                         | 43  | 90   | 29     | 19                  | 3                  |
| Institution type <sup>4</sup> |   |                                  |                    |                            |                            |                            |   |  |        |                     |                    |
| Public 2-year                 | 60  | 13                               | 9                  | 57                         | 7                          | 11                         | 40  | 95   | 30     | 21                  | 2                  |
| Public 4-year                 | 80  | 15                               | 13                 | 40                         | 11                         | 10                         | 55  | 87   | 29     | 29                  | 5                  |
| Private 4-year                | 22  | 6                                | 4                  | 24                         | 11                         | 12                         | 35  | 86   | 23     | 11                  | 3                  |
| Size of institution           |   |                                  |                    |                            |                            |                            |   |  |        |                     |                    |
| Less than 3,000               | 39  | 6                                | 4                  | 29                         | 8                          | 9                          | 36  | 87   | 22     | 11                  | 2                  |
| 3,000 to 9,999                | 57  | 10                               | 10                 | 49                         | 10                         | 10                         | 46  | 92   | 31     | 22                  | 3                  |
| 10,000 or more                | 70  | 26                               | 17                 | 61                         | 12                         | 18                         | 56  | 95   | 43     | 36                  | 5                  |

<sup>1</sup>The wording in the questionnaire was "Two-way video with two-way audio (i.e., two-way interactive video)."

<sup>2</sup>The wording in the questionnaire was "Internet courses using synchronous (i.e., simultaneous or "real time") computer-based instruction."

<sup>3</sup>The wording in the questionnaire was "Internet courses using asynchronous (i.e., not simultaneous) computer-based instruction."

<sup>4</sup>Data for private 2-year institutions are not reported in a separate category because too few private 2-year institutions in the sample offered distance education courses in 2000–01 to make reliable estimates. Data for private 2-year institutions are included in the totals and in analyses by other institutional characteristics.

NOTE: Percentages are based on the estimated 2,320 institutions that offered any distance education courses in 2000–01. Percentages sum to more than 100 because institutions could use different types of technologies as primary modes of instructional delivery for different distance education courses.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System (PEQIS), survey on "Distance Education at Higher Education Institutions, 2000–2001," 2002. (Originally published as table 10 on p. 40 of the complete report from which this article is excerpted.)

50 percent in a system consortium (a consortium within a single university system or community college district), 27 percent in a regional consortium, 14 percent in a national consortium, and 4 percent in an international consortium.

Public 2-year institutions were more likely than either public or private 4-year institutions to participate in some type of distance education consortium. Eighty-three percent of public 2-year institutions reported that they participated in a consortium, compared with 68 percent of public 4-year institutions and 25 percent of private 4-year institutions.

### Accommodations for students with disabilities

Of the 2- and 4-year institutions that offered distance education courses in 2000–01, 45 percent had occasionally received requests in the last 3 years to provide accommodations in distance education courses for students with disabilities, 37 percent reported never receiving this type of request, 15 percent did not know if they had received requests for accommodations in the last 3 years, and 3 percent received requests frequently.

Almost all (95 percent) 2- and 4-year institutions that offered distance education courses in 2000–01 indicated

that they had used web sites for their distance education courses. Of the institutions that had used web sites for distance education courses, 18 percent indicated that they followed established accessibility guidelines or recommendations for users with disabilities to a major extent, 28 percent followed the guidelines to a moderate extent, 18 percent followed the guidelines to a minor extent, 3 percent did not follow the guidelines at all, and 33 percent did not know if the web sites followed accessibility guidelines.

### Distance education program goals

Of those institutions that offered distance education courses in 2000–01, a majority reported that increasing student access in various ways was a very important goal of their institution's distance education program. Sixty-nine percent of the institutions indicated that increasing student access by making courses available at convenient locations was very important, and 67 percent reported that increasing student access by reducing time constraints for course-taking was very important (table C). In addition, 36 percent reported that making educational opportunities more affordable for students, another aspect of student access, was a very important goal of their distance education program.

**Table C. Percentage distribution of 2-year and 4-year Title IV degree-granting institutions that offered distance education courses in 2000–01, by the level of importance in meeting various goals for distance education programs, and the percentage distribution of those institutions by the extent to which the institution is meeting those goals: 2002**

| Distance education program goal   | Importance <sup>1</sup> |                    |                | Extent goal met <sup>2</sup> |              |                 |              |
|---|-------------------------|--------------------|----------------|------------------------------|--------------|-----------------|--------------|
|   | Not important           | Somewhat important | Very important | Not at all                   | Minor extent | Moderate extent | Major extent |
| Reducing institution's per-student costs                                      | 38                      | 47                 | 15             | 16                           | 45           | 35              | 4            |
| Making educational opportunities more affordable for students                 | 23                      | 40                 | 36             | 7                            | 34           | 45              | 14           |
| Increasing institution enrollments  | 6                       | 35                 | 60             | 4                            | 30           | 44              | 22           |
| Increasing student access by reducing time constraints for coursetaking       | 6                       | 27                 | 67             | 1                            | 23           | 43              | 32           |
| Increasing student access by making courses available at convenient locations | 8                       | 23                 | 69             | 2                            | 18           | 43              | 37           |
| Increasing the institution's access to new audiences                          | 5                       | 30                 | 65             | 4                            | 33           | 44              | 19           |
| Improving the quality of course offerings                                     | 15                      | 28                 | 57             | 2                            | 29           | 51              | 18           |
| Meeting the needs of local employers  | 25                      | 38                 | 37             | 6                            | 40           | 42              | 12           |

<sup>1</sup>Percentages are based on the estimated 2,320 institutions that offered any distance education courses in 2000–01.

<sup>2</sup>Percentages are based on institutions that rated a given goal as somewhat or very important.

NOTE: This question was asked in the present tense rather than referring to 2000–01, and thus the estimates reflect the responses of the institutions at the time the data were collected in spring 2002. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Postsecondary Education Quick Information System (PEQIS), survey on "Distance Education at Higher Education Institutions, 2000–2001," 2002. (Originally published as table 16 on p. 52 of the complete report from which this article is excerpted.)

On issues related to institutional enrollment and cost, 65 percent of institutions offering distance education indicated that increasing the institution's access to new audiences was very important, 60 percent reported that increasing institution enrollments was very important, and 15 percent reported that reducing the institution's per-student costs was very important (table C). In addition, improving the quality of course offerings was considered to be a very important goal for 57 percent of the institutions, and meeting the needs of local employers was rated as very important by 37 percent of the institutions.

In general, institutions reported that most of the goals they considered to be important for their distance education programs were being met to a moderate or major extent. Increasing student access by making courses available at convenient locations was reported to have been met to a major extent by 37 percent of institutions that considered it an important goal, and increasing student access by reducing time constraints for coursetaking was reported to have been met to a major extent by 32 percent of institutions that considered it an important goal (table C).

Institutions that reported that a particular goal was very important to their distance education program more often indicated that the goal had been met to a major extent

compared with institutions that reported the goal as somewhat important, while institutions that reported a goal as somewhat important more frequently indicated that the goal had been met to a minor extent compared with institutions that rated the goal as very important.

#### **Factors that keep institutions from starting or expanding distance education offerings**

All institutions, including those with no future plans to offer distance education courses, were asked to rate the extent to which each of 15 factors was keeping them from starting or expanding their distance education course offerings. The response categories were "not at all," "minor extent," "moderate extent," and "major extent." Institutions did not consider most of the factors listed to be keeping them from starting or expanding their distance education course offerings. However, 26 percent of institutions reported that program development costs kept their institution from starting or expanding their distance education course offerings to a major extent.

Whether an institution offered distance education courses, or whether the institution planned to offer these courses in the next 3 years, was related to whether some factors were perceived to be keeping institutions from starting or expanding their distance education course offerings to a major

extent. For institutions that did not plan to offer distance education in the next 3 years, factors perceived as keeping these institutions from starting distance education to a major extent included lack of fit with the institution's mission (44 percent), program development costs (33 percent), concerns about course quality (26 percent), limited technological infrastructure to support distance education (24 percent), and lack of perceived need (22 percent). Except for program development costs, these factors were generally not perceived to be limiting the expansion of distance education courses to a major extent for institutions that offered distance education in 2000–01.

**Data source:** The NCES Postsecondary Education Quick Information System (PEQIS), survey on "Distance Education at Higher Education Institutions, 2000–2001," 2002.

**For technical information,** see the complete report:

Waits, T., and Lewis, L. (2003). *Distance Education at Degree-Granting Postsecondary Institutions: 2000–2001* (NCES 2003–017).

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# METHODOLOGY

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|--|----|
| Third International Mathematics and Science Study 1999 Video Study<br>Technical Report, Volume 1: Mathematics<br><i>Jennifer Jacobs, Helen Garnier, Ronald Gallimore, Hilary Hollingsworth,<br/>Karen Bogard Givvin, Keith Rust, Takako Kawanaka, Margaret Smith,<br/>Diana Wearne, Alfred Manaster, Wallace Etterbeek, James Hiebert,<br/>and James Stigler</i> ..... | 83 |
| Baccalaureate and Beyond Longitudinal Study: 2000–01 (B&B:2000/01)<br>Methodology Report<br><i>Stephanie Charleston, John Riccobono, Paul Mosquin, and Michael Link</i> .....  | 86 |

## TIMSS 1999 Video Study

### Third International Mathematics and Science Study 1999 Video Study Technical Report, Volume 1: Mathematics

*Jennifer Jacobs, Helen Garnier, Ronald Gallimore, Hilary Hollingsworth, Karen Bogard Givvin, Keith Rust, Takako Kawanaka, Margaret Smith, Diana Wearne, Alfred Manaster, Wallace Etterbeek, James Hiebert, and James Stigler*

***This article was excerpted from the Technical Report of the same name, which describes the methodology used in the mathematics component of the Third International Mathematics and Science Study (TIMSS) 1999 Video Study.***

#### **Introduction**

The Third International Mathematics and Science Study (TIMSS) 1999 Video Study was conducted under the auspices of the International Association for the Evaluation of Educational Achievement (IEA) and managed by the U.S. Department of Education's National Center for Education Statistics in cooperation with its study partner, the National Science Foundation. This complex and ambitious study examined classroom teaching practices through in-depth

analysis of videotapes of eighth-grade mathematics and science lessons. Over a period of 4 years, researchers collected, transcribed, translated, coded, and analyzed hundreds of hours of videotapes of eighth-grade mathematics and science lessons in the seven participating countries.

The design of the TIMSS 1999 Video Study built on the foundations established by the TIMSS 1995 Video Study, but was improved and carried out through a collaborative

process that involved individuals around the globe. Both of the TIMSS video studies investigated nationally representative samples of classroom lessons from relatively high achieving countries. The video studies were designed to supplement the information obtained through the TIMSS 1995 and 1999 mathematics and science assessments.

### **Purpose and Content of This Report**

This first volume of the *Third International Mathematics and Science Study 1999 Video Study Technical Report* provides details about every aspect of the planning, implementation, processing, analysis, and reporting of the mathematics component of the TIMSS 1999 Video Study. The report is a record of actions and documentation of outcomes that can be used as a reference for interpreting results and planning future studies. Results of the mathematics component of the study are detailed in Hiebert et al. (2003).

Individual chapters of the report cover the field test process, sampling strategies and participation rates in each participating country, data collection and processing, questionnaire development and coding, coding of video data by an international team of coders as well as several specialist groups, and weights and variance estimates used in analyzing the data. Ten appendixes present study materials and additional details on study personnel and procedures.

### **Field Test**

The field test for the TIMSS 1999 Video Study helped to generate improvements in data collection, processing, and analysis. Some of the most important modifications involved creating videotaping procedures for two cameras, updating data storage software to include two video tracks, generating transcription/translation protocols to incorporate five languages, and generating hypotheses and coding ideas to describe teaching in a wide range of countries.

The field test analysis team consisted of representatives from each of the countries participating in the field test study. These representatives spent several months in 1998 studying the data from all the countries. As one task, they selected a “typical lesson” from their own country and then viewed the “typical lessons” from all the other countries. Structured group discussions about these lessons led to preliminary theories about the characteristics of instruction within each country as well as important differences in teaching across countries. These theories paved the way for more intensive work on code development.

### **Sampling**

The TIMSS 1999 Video Study aimed to expand on the TIMSS 1995 Video Study by examining instruction in more countries—in particular, in a larger selection of countries that outperformed the United States on the TIMSS 1995 assessments. Besides the United States, the countries for which mathematics lessons were analyzed in the TIMSS 1999 Video Study included Australia, the Czech Republic, Hong Kong SAR,\* Japan, the Netherlands, and Switzerland. All these countries outperformed the United States on the TIMSS 1995 mathematics assessment administered to eighth-grade students.

The TIMSS 1999 Video Study was designed to provide comparable information about nationally representative samples of mathematics and science lessons in participating countries. To make the comparisons valid, it was necessary to devise a sampling design for each country that called for uniformity in sampling procedures but also allowed participating countries to account for differences in their education systems, as well as implementation limitations.

The samples of classrooms for the study were selected using two-stage probability sampling methods. The first stage of selection was the sample of schools. All participating countries were required to include at least 100 schools in their initial selection of schools. For each subject area (mathematics and science), the second stage involved the random selection of one eighth-grade classroom. The full report presents details about sampling strategies, participation rates, and the nature of participating schools in each country.

### **Data Collection and Processing**

Videotapes, questionnaire responses, and other supplementary materials were processed using a sophisticated database management and tracking system. Both videographers and transcribers followed well-defined protocols in order for videotaping and transcription/translation procedures to be standardized across countries. Specific quality control measures were in place to carefully monitor both groups. Video data and corresponding English transcripts were entered into vPrism, a multimedia database software developed for the TIMSS 1995 Video Study and enhanced

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\*For convenience, Hong Kong SAR is referred to as a country. Hong Kong is a Special Administrative Region (SAR) of the People's Republic of China.

especially for the TIMSS 1999 Video Study. Coders used this software to watch the teacher and student tapes, see running English translations, access supplementary materials, and enter codes into the database.

### Questionnaire Data

To help understand and interpret the videotaped lessons, questionnaires were collected from teachers and students in each lesson. The teacher questionnaire was designed to elicit information about the professional background of the teacher, the nature of the mathematics course in which the lesson was filmed, the context and goal of the filmed lesson, and the teacher's perceptions of its typicality. The questionnaire included a number of open-ended items, for which a coding scheme was developed and applied. The full report presents justifications for each item on the teacher questionnaire, along with reliability statistics for the open-ended items.

The student questionnaire was designed to elicit information about the demographic characteristics of the students, their home environment, and their educational expectations. Both the teacher and student questionnaires were approved by a review panel, and then country-appropriate versions were created under the direction of the national research coordinators in each country.

### Coding of the Video Data

Most codes were developed by an international code development team and applied by an international coding team. Drawn from all participating countries, members of these teams were cultural insiders and fluent in the language of the countries they represented. However, not all of them were experts in mathematics or teaching. Therefore, several specialist groups were employed to create and apply codes regarding the mathematical nature of the content, the pedagogy, and the discourse.

### International code development team and international coding team

The international code development team, with the aid of the national research coordinators and a steering committee, created 45 codes that were applied to the video data in seven passes by the international coding team. For each code, the percent correct procedure (described in Bakeman and Gottman [1997]) was used to compute initial and midpoint reliability statistics, which in all cases exceed 85 percent.

### Specialist groups

Four specialist groups were enlisted to analyze portions of the TIMSS 1999 Video Study mathematics data. The mathematics problem analysis group and the problem implementation analysis group studied the mathematical problems in the lessons, and the mathematics quality analysis group made judgments about the nature of the mathematics presented in the lessons. Each of these three groups consisted of individuals with particular expertise in mathematics, mathematics education, and teaching. A fourth group, the text analysis group, created and implemented specially designed software to study the nature of the classroom talk (or discourse) in the lessons.

### Weighting and Variance Estimation

Analyses of the TIMSS 1999 Video Study data were conducted using data weighted with survey weights. These weights were calculated specifically for the classrooms in this study. The full report presents details about calculation of classroom base weights to reflect the probability of selection, rates of nonresponse among selected schools, and adjustments made to the weights in order to account for nonresponse. In addition, an explanation of the jackknife technique is provided, along with a description of how to use the weights when conducting analyses using these data.

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- Bakeman, R., and Gottman, J.M. (1997). *Observing Interaction: An Introduction to Sequential Analysis*. Second Edition. Cambridge: Cambridge University Press.
- Hiebert, J., Gallimore, R., Garnier, H., Givvin, K.B., Hollingsworth, H., Jacobs, J., Chui, A.M.-Y., Wearne, D., Smith, M., Kersting, N., Manaster, A., Tseng, E., Etterbeek, W., Manaster, C., Gonzales, P., and Stigler, J. (2003). *Teaching Mathematics in Seven Countries: Results From the TIMSS 1999 Video Study* (NCES 2003–013). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

**Data source:** The Third International Mathematics and Science Study (TIMSS) 1999 Video Study.

**For technical information,** see the complete report:

Jacobs, J., Garnier, H., Gallimore, R., Hollingsworth, H., Givvin, K.B., Rust, K., Kawanaka, T., Smith, M., Wearne, D., Manaster, A., Etterbeek, W., Hiebert, J., and Stigler, J. (2003). *Third International Mathematics and Science Study 1999 Video Study Technical Report, Volume 1: Mathematics* (NCES 2003–012).

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**For questions about content,** contact Patrick Gonzales ([patrick.gonzales@ed.gov](mailto:patrick.gonzales@ed.gov)).

**To obtain the complete report (NCES 2003–012),** visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

# Baccalaureate and Beyond

## Baccalaureate and Beyond Longitudinal Study: 2000–01 (B&B:2000/01) Methodology Report

Stephanie Charleston, John Riccobono, Paul Mosquin, and Michael Link

*This article was originally published as the Executive Summary of the Technical Report of the same name. The sample survey data are from the Baccalaureate and Beyond Longitudinal Study (B&B).*

### Introduction

The 2000/01 Baccalaureate and Beyond Longitudinal Study (B&B:2000/01), sponsored by the U.S. Department of Education's National Center for Education Statistics (NCES), follows a cohort of students who were identified as recipients of a bachelor's degree during the 1999–2000 academic year. This cohort of students was first interviewed in the 1999–2000 cycle of the National Postsecondary Student Aid Study (NPSAS:2000), the base-year study for B&B:2000/01. B&B:2000/01, the first and only planned follow-up survey of this cohort, was conducted in 2001. The survey focused on time to degree completion, participation in postbaccalaureate education and employment, and the activities of newly qualified teachers.

### Sample Design

The respondent universe for the B&B:2000/01 follow-up survey consisted of all students who attended postsecondary education institutions between July 1, 1999, and June 30, 2000, in the United States and Puerto Rico, and who received or expected to receive bachelor's degrees during this time frame. Approximately 11,700 confirmed and potentially eligible bachelor's degree recipients were selected for participation in B&B:2000/01. Of these, about 70 were determined during the follow-up survey to be ineligible. From the remaining nearly 11,630 eligible sample members, about 10,030 were located and interviewed in the follow-up survey.

### Instrumentation

The B&B:2000/01 follow-up interview focused primarily on the activities of respondents since receiving their bachelor's degree. The first section of the survey collected information on nonrespondents to the base-year survey (NPSAS:2000) and included items to verify eligibility. The second section dealt with undergraduate enrollment history and loan burden. The third section gathered background and demographic information about respondents and their families. The fourth section focused on postbaccalaureate enrollment, including graduate and doctoral/first-professional programs, as well as technical and vocational programs. The fifth section collected extensive information on post-baccalaureate employment. The next section gathered data

on professional licensure, certification, and job-related training. The final section specifically pertained to teaching experiences for newly qualified teachers.

### Data Collection Design and Outcomes

#### Training

Training programs on successfully locating and interviewing sample members were developed for telephone staff. Topics covered included administrative procedures required for case management; quality control of interactions with sample members, parents, and other contacts; the purpose of B&B:2000/01 and the uses of the data to be collected; and the organization and operation of the computer-assisted telephone interview (CATI) program to be used in data collection. Tracing staff received additional training specific to the locating needs of the study (see discussion below).

#### Interviewing

Using CATI, with telephone locating, interviewing began in July 2001. The overall unweighted response rate was 86 percent, after eliminating ineligible from the original sample of about 11,700. The weighted overall response rate was 75 percent. Of those eligible sample members who were successfully located, the unweighted response rate was 94 percent. On average, it took about 19 minutes to complete the interview.

Sample members for whom no locating information was available were sent directly to the tracing unit for specialized tracing. The tracing unit was also used for intensive tracing, once all contact information was exhausted during attempts to conduct the telephone interview. About 630 cases in total were sent to the unit for intensive tracing; of these, nearly 400 sample members completed the interview, resulting in a 64 percent unweighted response rate for intensive tracing cases.

#### Refusal conversion

The ability of interviewers to gain the cooperation of sample members, and thus avoid refusals, is important to successful interviewing. Refusal conversion specialists have received specialized training and are experienced in attempting to convert (interview) sample members who refuse to

complete interviews. In B&B:2000/01, approximately 1,520 sample members refused at least once to participate in the interview. Of those, 70 percent were successfully converted and interviewed.

### Indeterminate responses

Efforts were made to encourage responses to all interview questions and to limit indeterminates, defined as a “don’t know” response or a refusal to answer a question. As a result of these efforts, item nonresponse throughout the interview was low, with only 6 of 556 items having indeterminate response rates above 10 percent.

### Online coding

The B&B instrument allowed computer-assisted online coding of literal responses for postsecondary institution, major field of study, occupation, and industry. These online coding systems were designed to improve data quality by capitalizing on the ability of respondents to clarify information at the time the coding was performed. Of those responses requiring online coding, the highest rates of uncodable responses were for elementary/secondary school and for postsecondary institutional coding (about 14 and 5 percent, respectively), most likely because the coding system included only U.S. institutions and some respondents attended foreign institutions. Major field of study, occupation, and industry codes all had less than 2 percent uncodable responses.

### Analysis Weights

Analysis weights were developed for the approximately 10,030 final respondents to the B&B:2000/01 interview. This was done by first testing for potential nonresponse bias; then adjusting for the effects of bias; and finally, post-stratifying to known population totals. The quality of final weights was evaluated by a variety of methods. Overall institutional response rates were computed, as were illustrative design effects. An item nonresponse analysis was performed for selected variables. Variance estimations were

calculated by either the Taylor series or balanced repeated replications (BRR) method.

### Data Files

The B&B:2000/01 restricted data file, documented by the electronic codebook (ECB), contains derived variable and interview data for the base-year and B&B follow-up studies. Data collected from institutional records, government databases, and admission test vendors are also contained on the restricted file. The restricted file is available to researchers who have applied for, and received, authorization from NCES to access restricted research files. A separate public-use Data Analysis System (DAS), containing the derived variables and associated documentation, enables users to create summary tables with design-correct standard errors. The DAS is available online at <http://nces.ed.gov/das>.

### Products

The major products of B&B:2000/01 include the restricted research files with associated ECB, a public-use DAS, and this methodology report. In addition, a descriptive report provides an overview of data topics, such as time to degree, labor market experiences, entry to graduate school, and household demographics. A second descriptive report summarizes the experiences of newly qualified teachers.

**Data source:** The NCES 2000/01 Baccalaureate and Beyond Longitudinal Study (B&B:2000/01).

**For technical information,** see the complete report:

Charleston, S., Riccobono, J., Mosquin, P., and Link, M. (2003). *Baccalaureate and Beyond Longitudinal Study: 2000–01 (B&B:2000/01) Methodology Report* (NCES 2003–156).

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**To obtain the complete report (NCES 2003–156),** call the toll-free ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).



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## Data Products

### Data File: Postsecondary Education in the United States: Fall 2000, Spring 2001, and Degrees Conferred 1999–2000

This data file was constructed from data collected through the 2000–01 Integrated Postsecondary Education Data System (IPEDS). The file includes data on institutional characteristics for academic year 2000–01, enrollment for fall 2000, financial statistics for fiscal year 2000, student financial aid for academic year 1999–2000, and degrees conferred during the period July 1, 1999, through June 30, 2000.

IPEDS is the core of the NCES postsecondary education data collection program. IPEDS is a single, comprehensive system of interrelated surveys to collect institution-level data in such areas as enrollments, program completions, faculty, staff, and finances.

**For questions about this data product**, contact Samuel F. Barbett ([samuel.barbett@ed.gov](mailto:samuel.barbett@ed.gov)).

**To obtain this data product (NCES 2003–168)**, visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

### Data File: Baccalaureate and Beyond Longitudinal Study 2000/01 Data Analysis System (DAS) On-Line

This data file contains data from the 2000/01 Baccalaureate and Beyond Longitudinal Study (B&B:2000/01). The 2000/01 survey is a 1-year follow-up of a national sample of students who completed bachelor's degrees in academic year 1999–2000 and were first surveyed as part of the 1999–2000 National Postsecondary Student Aid Study (NPSAS:2000). B&B:2000/01 focused on time to degree completion, participation in post-baccalaureate education and employment, and the activities of newly qualified teachers.

The DAS allows users to conduct analyses of data gathered in B&B:2000/01 on-line via the web. The DAS software enables users to produce custom-made tables and correlation matrices by selecting variables of interest from lists.

**For questions about this data product**, contact James Griffith ([james.griffith@ed.gov](mailto:james.griffith@ed.gov)).

**To obtain this data product (NCES 2003–174)**, visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

## Other Publications

### NAEP Writing 2002 State Snapshot Reports

*National Center for Education Statistics*

The 2002 National Assessment of Educational Progress (NAEP) included state-level writing assessments of public school student performance at grades 4 and 8. This on-line document provides, for each participating state or other jurisdiction, a one-page report on writing assessment results at the selected grade level (4 or 8). Each report provides the overall scale score and achievement-level results, as well as results by student subgroup.

NAEP, known as “The Nation’s Report Card,” is authorized by Congress, administered by NCES, and overseen by the National Assessment Governing Board (NAGB). For over 30 years, NAEP has been the only ongoing national indicator of what American students know and can do in major academic subjects.

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**To obtain this publication (NCES 2003–532)**, visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

### The Nation’s Report Card: Writing Highlights 2002

*Hilary Persky, Mary Daane, and Ying Jin*

In 2002, the National Assessment of Educational Progress (NAEP) conducted a national assessment of student writing at grades 4, 8, and 12. NAEP also conducted a state-level writing performance assessment of public school students at grades 4 and 8. This full-color publication uses a tabloid format to present highlights from the NAEP 2002 writing assessment. It describes assessment content; presents major findings at grades 4, 8, and 12 as average scale scores and as percentages of students scoring at or above achievement levels for the nation; shows results at grades 4 and 8 for participating states and other jurisdictions; and discusses the performance of selected subgroups defined by gender and race/ethnicity. This publication also includes sample assessment writing tasks and student responses in narrative, informative, and persuasive writing modes.

NAEP, known as “The Nation’s Report Card,” is authorized by Congress, administered by NCES, and overseen by the National Assessment Governing Board (NAGB). For over 30 years, NAEP has been the only ongoing national indicator of what American students know and can do in major academic subjects.

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**To obtain this publication (NCES 2003–531),** call the toll-free ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

## Reading—Young Children’s Achievement and Classroom Experiences

*Kristin Denton, Jerry West, and Jill Walston*

This brochure presents a special analysis from *The Condition of Education 2003* that examines children’s reading achievement and classroom experiences in kindergarten and first grade. The analysis uses data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99 (ECLS-K) to describe children’s home and classroom literacy environments and discuss how factors such as the home literacy environment and length of school day relate to children’s reading achievement.

While the National Assessment of Educational Progress (NAEP) has regularly assessed the reading skills of U.S. fourth-graders since the early 1970s, few national studies have assessed the reading skills of children when they enter kindergarten and have documented the development of these skills through fifth grade. ECLS-K strives to help fill this gap in knowledge by following a nationally representative sample of children from kindergarten through fifth grade.

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**To obtain this publication (NCES 2003–070),** call the toll-free ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

## A Brief Profile of America’s Private Schools

*National Center for Education Statistics*

This brochure summarizes important findings from the 1999–2000 Schools and Staffing Survey (SASS). It examines how private schools differ by type (Catholic, other religious, and nonsectarian) and how they differ from public schools. The document looks at private school location and level, school size, demographic characteristics of students, teachers’ influence on school policies, teachers’ ratings of school climate and management, and principals and school leadership.

SASS is an integrated set of surveys that collects information on a wide range of topics about the characteristics of the school, staff, and student population; school climate; and staff perceptions. For more information about the survey, go to the SASS web site (<http://nces.ed.gov/surveys/sass>).

**For questions about content,** contact Stephen P. Broughman ([stephen.broughman@ed.gov](mailto:stephen.broughman@ed.gov)).

**To obtain this publication (NCES 2003–417),** call the toll-free ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

## A Brief Profile of America’s Public Schools

*National Center for Education Statistics*

This brochure summarizes important findings from the 1999–2000 Schools and Staffing Survey (SASS). It examines how public schools differ by community type (urban, suburban, and rural) and by school level (elementary, secondary, and combined). It examines public school staff and students, programs, security measures, principal characteristics, teacher working conditions, and library media centers. It also looks at differences between public and private schools.

SASS is an integrated set of surveys that collects information on a wide range of topics about the characteristics of the school, staff, and student population; school climate; and staff perceptions. For more information about the survey, go to the SASS web site (<http://nces.ed.gov/surveys/sass>).

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**To obtain this publication (NCES 2003–418),** call the toll-free ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

## Directory of Public Elementary and Secondary Education Agencies 2001–02

Lena McDowell and John Sietsema

This directory provides a complete listing of agencies responsible for providing free public elementary/secondary instruction or education support services in the 50 states, District of Columbia, five outlying areas, Department of Defense dependents schools, and Bureau of Indian Affairs schools. The agencies are organized by state or jurisdiction and, within each state or jurisdiction, by agency type. Seven types of agencies are listed: regular school districts, supervisory union components, supervisory union administrative centers, regional educational service agencies (RESAs), state-operated agencies, federally operated agencies, and other agencies.

The entry for each listed agency (if complete) includes the following information: agency name, mailing address, and phone number; name of county; metropolitan status code; grade span; student membership (number of students enrolled); number of regular high school graduates; number of students with Individualized Education Programs (IEPs); number of teachers; and number of schools. The information presented comes primarily from the NCES Common Core Of Data (CCD), “Local Education Agency Universe Survey,” 2001–02. Preceding the information on individual agencies are several tables providing summary information, such as numbers and percentages of agencies by type, size, and state.

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**To obtain this publication (NCES 2003–351),** call the toll-free ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

## Congressionally Mandated Studies of College Costs and Prices

National Center for Education Statistics

This brochure summarizes the findings of three studies commissioned by NCES in response to the 1998 Amendments to the Higher Education Act: *Study of College Costs and Prices, 1988–89 to 1997–98* (NCES 2002–157); *What Students Pay for College: Changes in Net Price of College Attendance Between 1992–93 and*

*1999–2000* (NCES 2002–174); and *A Study of Higher Education Instructional Expenditures: The Delaware Study of Instructional Costs and Productivity* (NCES 2003–161).

The *Study of College Costs and Prices* examines the relationship between costs and prices and attempts to determine the extent to which spending (expenditure) patterns contribute to tuition increases in higher education. Since this first study showed a weak relationship between price and cost, NCES commissioned two follow-up studies: *What Students Pay for College* examines increases in financial aid and the relationship between price and various forms of student financial aid in order to consider “affordability” for low- and middle-income students. *A Study of Higher Education Instructional Expenditures* focuses exclusively on instructional costs, which, on average, account for 80 percent of institutional expenditures.

**For questions about this publication,** contact C. Dennis Carroll ([dennis.carroll@ed.gov](mailto:dennis.carroll@ed.gov)).

**To obtain this publication (NCES 2003–171),** call the toll-free ED Pubs number (877–433–7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

## Assessing the Arts: Selected NAEP Tasks and Scoring Guides for Grades 4 and 12 1997 Field Test. Dance, Music, Theatre, and Visual Arts

Hilary Persky, Brent A. Sandene, and Jamie Askew

This CD-ROM complements the original National Assessment of Educational Progress (NAEP) arts assessment report for 1997 by including tasks for 4th- and 12th-graders in dance, music, theatre, and the visual arts. The actual 1997 arts assessment, because of cost limitations and sampling problems, was administered only at grade 8 and did not include dance. This CD-ROM also contains 16 arts tasks for dance, music, theatre, and the visual arts at grades 8 and 12 that were developed but never used for the 1997 NAEP arts assessment. Included are the complete instructions for students, along with any audio or visual components used as stimuli; the actual tasks given to students, whether written questions or creating or performing tasks; and the scoring guides used to evaluate student performance.

NAEP is known as “The Nation’s Report Card.” It is authorized by Congress, administered by NCES, and

overseen by the National Assessment Governing Board (NAGB). For over 30 years, NAEP has been the only ongoing national indicator of what American students know and can do in major academic subjects.

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**To obtain this CD-ROM (NCES 2003-452),** call the toll-free ED Pubs number (877-433-7827).

## National Household Education Surveys Program of 2001: Data File User's Manual, Volumes I-IV

Mary Hagedorn, Jill Montaquila, Mary Jo Nolin, Kwang Kim, Brian Kleiner, Tiffany Waits, Christopher Chapman, and Kathryn Chandler

The National Household Education Surveys Program (NHES) encompasses a number of household telephone surveys designed to address a wide range of education-related issues. This data file user's manual provides documentation and guidance for users of the following three public-use data files of the 2001 NHES surveys: the Early Childhood Program Participation (ECPP-NHES:2001) data file, the Before- and After-School Programs and Activities (ASPANHES:2001) data file, and the Adult Education and Lifelong Learning (AELL-NHES:2001) data file.

This manual is composed of four volumes. Volume I includes information about the purpose of the study, the data collection instruments, the sample design, and data collection and data processing procedures. Appendixes to volume I contain the data collection instruments and a chart summarizing weighting and sample variance estimation variables for all NHES surveys. Each of volumes II, III, and IV of this user's manual addresses one data file, the ECPP, ASPA, or AELL file, respectively. They each contain a guide to the data file; a discussion of data considerations and anomalies; and, in appendixes, the file layout, derived variable specifications, codebook for the file, and directions and sample code for linking the files.

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**To obtain volumes I-IV of this user's manual (NCES 2003-079, 2003-080, 2003-081, and 2003-082, respectively),** call the toll-free ED Pubs number (877-433-7827) or visit the NCES Electronic Catalog (<http://nces.ed.gov/pubsearch>).

## Training and Funding Opportunities

### Training

This summer, NCES will be offering a series of advanced-studies seminars on the analysis of the following NCES databases:

- Education finance data from the Common Core of Data (CCD) (May 24-26)
- National Education Longitudinal Study of 1988 (NELS:88) and Education Longitudinal Study of 2002 (ELS:2002) (May 26-28)
- Progress in International Reading Literacy Study (PIRLS) (June 28-30)
- Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K) (July 6-9)
- National Household Education Surveys Program (NHES) (July 14-16)
- National Assessment of Educational Progress (NAEP) (July 20-23)
- Schools and Staffing Survey (SASS) (August 4-6)

These seminars are designed for researchers in academic communities and other research communities (e.g., federal agencies, research organizations, and think tanks that are interested in quantitative studies). Each multiday seminar is held in the Washington, DC, metropolitan area and covers several topics, including the nature and content of the database, computer software for accessing and analyzing the data, and funding opportunities. Seminar activities include lectures, illustrations, demonstrations, and hands-on practice. At the end of each seminar, participants are expected to make a brief presentation describing their analyses and findings.

**For more information,** contact Beverly Coleman ([beverly.coleman@ed.gov](mailto:beverly.coleman@ed.gov)).

### The AERA Grants Program

Jointly funded by the National Science Foundation (NSF), NCES, and the Institute of Education Sciences, this training and research program is administered by the American Educational Research Association (AERA). The program has four major elements: a research grants program, a dissertation grants program, a fellows program, and a training institute. The program is intended to enhance the capability of the U.S.

research community to use large-scale data sets, specifically those of the NSF and NCES, to conduct studies that are relevant to educational policy and practice, and to strengthen communications between the educational research community and government staff.

Applications for this program may be submitted at any time. The application review board meets three times per year. The following are examples of grants recently awarded under the program:

### Research Grants

- Marigee Bacolod, University of California, Irvine—Equalizing Educational Opportunities: Who Teaches and Where They Choose to Teach
- William Carbonaro, University of Notre Dame—Racial/Ethnic Differences in College Graduation: The Lasting Effects of Students' High School Experiences
- David Figlio, University of Florida—Inside the “Black Box”: School Responses to Accountability Pressure
- Janet Holt, Northern Illinois University—Racial and Gender Gaps in Math and Science Educational and Occupational Persistence: Exploring Critical Transitions Using Growth Mixture Modeling
- Kim Lloyd, Princeton University/Washington State University—Affirmative Action and the Texas Top 10% Policy: Minority Representation and Success in Selective Public and Private Universities Under Alternative Policy Regimes
- John Logan, University at Albany, SUNY—Brown v. Board of Education at 50: Desegregation Orders and Public School Integration
- Sean Reardon, Pennsylvania State University—Understanding the Growth of Achievement Inequality in the Early Years of Schooling
- Catherine Weinberger, University of California, Santa Barbara—High School Leadership Skills and Adult Labor Market Outcomes

### Dissertation Grants

- Gayle Christensen, Stanford University—What Matters for Immigrant Achievement Cross-Nationally? A Structural Equation Model Comparing Immigrant and Non-Immigrant Student Achievement

- Claudia Galindo, Pennsylvania State University—Hispanic Immigrants' Learning Trajectories: The Role of English Ability, Parental Involvement, and Language Support Programs in the First Years of Schooling
- Michal Kurlaender, Harvard University—Reinforcing Disadvantage or Increasing Opportunity? Alternative Routes to Educational Attainment
- Megan Kurlychek, Pennsylvania State University—The Multilevel Context of School Crime: Assessing the Relative Contributions of Student, School and Community Characteristics
- Yan Lee, University of California, Los Angeles—Are There Competitive Effects of School Choice on Traditional Public Schools? The Case of Michigan Charter Schools
- John Luczak, Stanford University—Who Will Teach in the 21st Century? Beginning Teacher Training Routes and Attrition Rates
- Byron Lutz, Massachusetts Institute of Technology—The Effects of the End of Court-Ordered Desegregation
- Liang Zhang, University of Arizona and Cornell University—How College Affects Students: Toward the Reconciliation of Theory with Empirical Evidence

**For more information**, contact Edith McArthur ([edith.mcarthur@ed.gov](mailto:edith.mcarthur@ed.gov)) or visit the AERA Grants Program web site (<http://www.aera.net/grantsprogram>).

## The NAEP Secondary Analysis Grant Program

The NAEP Secondary Analysis Grant Program was developed to encourage education researchers to conduct secondary analysis studies using data from the National Assessment of Educational Progress (NAEP) and the NAEP High School Transcript Studies. This program is open to all public or private organizations and consortia of organizations. The program is typically announced annually, in the late fall, in the *Federal Register*. Grants awarded under this program run from 12 to 18 months and awards range from \$15,000 to \$100,000. The following grants were awarded for fiscal year 2003:

- Dr. Duncan Chaplin, Urban Institute—Estimating Relationships in NAEP
- Linda Cook, Educational Testing Service—Are the Inclusion Policies and Practices for State

Assessment Systems and NAEP State Assessments Aligned?

- Dr. Louis DiBello, Educational Testing Service—Skill Profiles for Groups of Students at a Given NAEP Scale Level—Development and Demonstration
- David Grissmer, RAND—Analysis of Central City NAEP
- Andrew Houtenville, Cornell University—Monitoring Students With Disabilities Using NAEP Data
- Brian A. Jacob, Harvard College—Test-Based Accountability and Student Achievement: An Investigation of Differential Performance Trends on NAEP and State Assessments
- Akihito Kamata, Florida State University—Differential Item Functioning Analyses for Students With Test Accommodations on NAEP Test Items
- Donald J. Leu, University of Connecticut—The Impact of Computer Access and Use on Student Reading Achievement
- Christopher Swanson, Urban Institute—Measuring Classroom Instruction Using NAEP

**For more information**, contact Alex Sedlacek ([alex.sedlacek@ed.gov](mailto:alex.sedlacek@ed.gov)).

## AIR Grants Program

The Association for Institutional Research (AIR), with support from NCES and the National Science Foundation (NSF), has developed a grants program titled Improving Institutional Research in Postsecondary Educational Institutions. The goals of this program are to provide professional development opportunities to doctoral students, institutional researchers, educators, and administrators, and to foster the use of federal databases for institutional research in postsecondary education. The program has the following four major components:

- dissertation research fellowships for doctoral students;
- research grants for institutional researchers and faculty;
- a Summer Data Policy Institute in the Washington, DC, area to study the national databases of the NSF and NCES; and
- a senior fellowship program.

Calls for proposals go out in spring, and proposals are normally accepted through June 30 for work starting no later than September 1 of each year. The following are examples of grants awarded for fiscal year 2003:

- Lamont A. Flowers, University of Florida—Labor Market Outcomes of African American College Graduates
- Heidi Grunwald, University of Michigan—Factors Affecting Faculty Use of Instructional Technology in Traditional Classrooms: A Hierarchical Linear Model Approach
- Aruna Lakshmanan, Louisiana State University—A Longitudinal Study of Adolescent Educational Aspirations and Their Relation to College Choice Using Hierarchical Linear Modeling and Group-Based Mixture Modeling
- Sang Min Lee, University of Florida—Identifying Longitudinal Causal Model for Postsecondary Educational Attainment for Low Socioeconomic Status Students
- Susan Carol Losh, Florida State University—It's in the Details: Dimensions of Education, Gender, and Relations Among Basic Science Knowledge, Attitudes, Understanding Scientific Inquiry, and Pseudoscience Support in the American General Public
- Stephen R. Porter, Wesleyan University—Educating Future Scientists: Understanding the Impact of Baccalaureate Institutions on the Decision to Pursue Graduate Studies in Science and Engineering
- Jim S. Settle, University of Missouri-St. Louis—The Effect of Socioeconomic Status on Year-to-Year Persistence of First-Generation and Continuing-Generation College Students at Two-Year and Four-Year Institutions
- Leslie Stratton, Virginia Commonwealth University—The Sensitivity of Attrition Models to the Timing and Duration of Withdrawal: Analysis Using Beginning Postsecondary Longitudinal Data From 1990–1994

**For more information**, contact Susan Broyles ([susan.broyles@ed.gov](mailto:susan.broyles@ed.gov)) or visit the AIR web site (<http://www.airweb.org>).

## NPEC/AIR Focused Grants

The National Postsecondary Education Cooperative (NPEC) and the Association for Institutional Research (AIR) are pleased to announce the inaugural year of a focused grant program that will fund research and studies to increase understanding and knowledge in a specific issue area that has been identified by the NPEC Executive Committee as critically important to the postsecondary education community. This year the focus is on student success. Proposals may suggest undertaking a variety of activities that focus on student success. Proposals are due January 15 of each year and the grant award period is June 1, 2004, through May 31, 2005.

In 2004, NPEC and AIR plan to make 5 to 10 one-year grant awards ranging up to \$15,000 for dissertation work and up to \$30,000 for other activities. Grant recipients should plan on making a presentation of their work at NPEC's national conference in 2006. Travel to the conference will be paid by NPEC.

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**For more information**, contact Roz Korb ([roslyn.korb@ed.gov](mailto:roslyn.korb@ed.gov)) or visit the AIR web site (<http://www.airweb.org>) for more information and instructions for writing and submitting proposals.