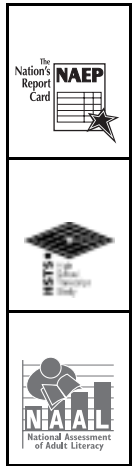


## CHAPTER 5



# Educational Assessment



## Introduction

The National Center for Education Statistics (NCES) collects and reports information on the academic performance of our nation's students and the literacy skills of the adult population. In the National Assessment of Educational Progress (NAEP), NCES assesses the knowledge and skills of students in elementary and secondary schools. In the National Assessment of Adult Literacy (NAAL), NCES periodically assesses the literacy level of the adult population. In addition to conducting these assessments, NCES coordinates a number of related studies. For example, the NAEP High School Transcript Study (HSTS) relates information on the coursework and grade point average of students to their performance on NAEP.

## Data Uses

Results from NAEP assessments are a public resource for parents, teachers, political and education leaders, researchers, policymakers, curriculum specialists, the media, and the American public. At the national level, NAEP and NAAL results are reported in a variety of formats. Brief reports provide summaries of the data. Extended reports closely examine assessment results and provide insight into the assessments' design and administration. At the state level, NAEP results are printed alongside the results for the nation. In addition, NAEP produces a report for each participating state in the form of a one-page "snapshot" available only online. Tools and resources are also made available to states to develop their own comprehensive state reports. For the NAEP Trial Urban District Assessment (TUDA), a printed report is produced for each participating urban district, as well as an online snapshot report.

## Studies

### National Assessment of Educational Progress

Known as the Nation's Report Card, NAEP is a nationally representative and continuing assessment of what America's students know and can do in various subject areas. Since 1969, assessments have been conducted periodically in reading, mathematics, science, writing, history, geography, and other fields. By making objective information on student performance available to policymakers at the national, state, and local levels, NAEP has become an integral part of our nation's evaluation of the condition and progress of education. In addition to conducting student assessments, NAEP collects background information on students, teachers, and schools, but only if it is related to academic achievement. NAEP guarantees the privacy of individual students, their families, and their schools.



NAEP is a congressionally mandated project. The Commissioner of Education Statistics is responsible, by law, for carrying out the NAEP project through competitive awards to qualified organizations. In 1988, Congress established the National Assessment Governing Board (NAGB) to oversee and set policy for NAEP. The Board is responsible for selecting the subject areas to be assessed; setting appropriate student achievement levels; developing assessment objectives and test specifications; developing a process for the review of the assessment; developing guidelines for reporting and disseminating NAEP results; developing standards and procedures for interstate, regional, and national comparisons; determining the appropriateness of all assessment items and ensuring that they are free from bias and are secular, neutral, and nonideological; taking actions to improve the form, content, use, and reporting of assessment results; and planning and executing the initial public release of NAEP reports.

## **Design**

### **National NAEP**

National NAEP reports information for the nation and for specific geographic regions of the nation. It includes students drawn from both public and nonpublic schools. There are two separate national NAEP assessment programs: long-term-trend NAEP and main NAEP.

*Long-term-trend NAEP.* NAEP long-term-trend assessments are designed to give information on changes in the basic achievement of America's youth. They are administered nationally and report student performance at ages 9, 13, and 17 in mathematics and reading. Measuring trends of student achievement or change over time requires the precise replication of past procedures. Therefore, the long-term-trend instrument does not evolve based on changes in curricula or in educational practices. These assessments, which originated in the late 1960s, were modernized in 2004 to eliminate outdated material and improve their efficiency. Research has been conducted to ensure that the changes in test format do not disrupt the measurement of trends from previous assessments.

*Main NAEP.* Main NAEP began in 1988, and results of student achievement are reported at grades 4, 8, and 12. The content of these assessments is determined by frameworks developed by NAGB, and the assessments use the latest advances in assessment methodology. For example, main NAEP assessments include a large percentage of constructed-response questions and questions that require the use of materials, such as science kits. Innovative types of questions have been used in assessments for the arts (theatre, music, and visual arts) and science to measure students' ability to perform hands-on tasks.

Some main assessments are conducted at the national level only, in such subjects as geography, history, and the arts. For these assessments, schools are randomly selected to represent the nation. Students are randomly selected from the assessed grades in those schools. Since 1990, main NAEP results have also been available in selected

years for participating states and other jurisdictions (such as the District of Columbia) in reading, mathematics, science, and writing. States that participate receive assessment results that report on the performance of students in that state. State and national assessments are identical in content. A separate representative sample of students is selected for each participating state and jurisdiction.

Prior to 2002, separate national and state samples were selected for those assessments. For the 2002 assessments, and for subsequent assessment years in which there has been a state component (2003 and 2005), a combined sample of public schools is selected for both state and national NAEP. Combining the state samples of schools to produce national estimates has reduced respondent burden by decreasing the total number of participating schools. Therefore, the national sample in these assessments comprises the combined sample of public school students assessed in each participating state, an additional sample of public school students from the states that did not participate in the state assessment, and a national sample of private schools. The full dataset is analyzed together, allowing all data to contribute to the final results and setting a single scale for the assessment. All results are then reported in the scale score metric used for the specific assessment.

In 2002, 51 states and jurisdictions participated in state reading and writing assessments at grades 4 and 8. In 2003, 53 states and jurisdictions participated in state mathematics and reading assessments at grades 4 and 8. In 2005, state assessments are being conducted in reading, mathematics, and science.

### **Trial Urban District Assessment**

Federal appropriations authorized by the No Child Left Behind Act of 2001 are supporting a multiyear study of the feasibility of conducting NAEP in large urban school districts. Termed the Trial Urban District Assessment (TUDA), the first such assessments were conducted in reading and writing in 2002 in five urban districts—Atlanta City, Chicago School District 299, Houston Independent School District, Los Angeles Unified, and New York City Public Schools—as well as the District of Columbia. In 2003, TUDA was conducted in reading and mathematics in the same jurisdictions tested in 2002 as well as in Boston, Charlotte, Cleveland, and San Diego. Austin was added for the 2005 assessments in mathematics, reading, and science. Results are available for the 2002 TUDA in reading and writing as well as for the 2003 TUDA in reading and mathematics.

### **Participation in NAEP**

In all NAEP assessments, students are randomly selected to participate from schools selected to be representative of states, the nation, or other jurisdictions as appropriate. NAEP does not provide scores for individual students or schools. Any one student takes only a small portion of the whole assessment; responses are combined and results reported for *groups* of students by characteristics such as gender and racial/ethnic membership. Participation in NAEP is voluntary for students who are selected and has no effect on a student's grades. NAEP has been able to provide uniquely valuable information

on the performance of American students, thanks to the participation of selected schools and students.

## Components

In addition to the cognitive questions assessing achievement in the content areas, responses to a variety of contextual items at the student and school levels are collected from students, teachers, and school administrators. Data are collected on such student characteristics as gender, race and ethnicity, level of parents' education, eligibility for the National School Lunch Program, participation in Title I to assist at-risk students, attendance at public or private schools, limited English proficiency, and disabilities. Data are also collected on characteristics of teachers—including academic preparation and classroom practices—as well as on school characteristics, such as courses offered, availability of computers, participation of parents, and the existence of problems such as tardiness or violence. For the long-term-trend assessments, background information is collected from students and school administrators only.

Student, school, and teacher data are collected using the following questionnaires:

- *Elementary and Secondary Student Questionnaire*—Data are collected from students on demographic characteristics; various background variables, including educational resources in the home, exposure to languages other than English in the home, attendance, and pages read per day; and perceived difficulty of assessment, effort on assessment, and importance of assessment.
- *School Characteristics and Policies Questionnaire*—Supplemental data are collected from school administrators on school characteristics and policies as well as characteristics of the study body, including grade span of school, school enrollment, instructional time, eligibility for the National School Lunch Program, percentage of students receiving Title I services, special education, limited English proficiency, participation in the gifted/talented program, and Advanced Placement (AP)/International Baccalaureate (IB) course enrollment.
- *Teacher Questionnaire*—Supplemental data are collected from teachers whose students are respondents to the assessment surveys. Teacher data include race/ethnicity, teaching certification, years of experience, highest academic degree, undergraduate and graduate coursework, professional development activities, and leadership responsibilities in subject area. Teachers are also asked to provide information on instructional practices.

## Major Publications

*The High School Transcript Study: A Decade of Change in Curricula and Achievement, 1990–2000* (March 2004)

*The Nation's Report Card: Trial Urban District Assessment, Reading Highlights 2003* (December 2003)

*The Nation's Report Card: Trial Urban District Assessment, Mathematics Highlights, 2003* (December 2003)

*The Nation's Report Card: Reading Highlights 2003* (November 2003)

*The Nation's Report Card: Mathematics Highlights 2003* (November 2003)

*The Nation's Report Card: Writing 2002 Trial Urban District Assessment* (July 2003)

*The Nation's Report Card: Writing 2002* (July 2003)

*The Nation's Report Card: Geography 2001* (June 2002)

*The Nation's Report Card: U.S. History 2001* (May 2002)

*The Nation's Report Card: State Science 2000 Reports*  
(November 2001)

## Data Products

NAEP data are released on the Web concurrently with the public release of reports and can be accessed with the NAEP Data Tool (<http://nces.ed.gov/nationsreportcard/naepdata>). Public-use data files are available for each NAEP assessment prior to 1990. Restricted-use data files are available beginning with 1990.

## For Further Information

NAEP is available on the Web (<http://nces.ed.gov/nationsreportcard>). For further information on NAEP, contact

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## NAEP High School Transcript Study

The NAEP High School Transcript Study (HSTS) periodically surveys the curricula being offered in our nation's high schools and the coursetaking patterns of high school students through a collection of transcripts. NCES's first high school transcript study was conducted in 1982 in conjunction with the High School and Beyond Longitudinal Study, and it captured baseline information on high school students' coursetaking patterns at a time when major curriculum changes were being implemented. Conducted in conjunction with NAEP, transcript studies offer information on the relationship of student coursetaking patterns to achievement at grade 12 as measured by NAEP.\* The most recently completed NAEP HSTS was conducted in 2000 and provides a decade of valuable findings to the education community.



The NAEP 2000 HSTS was conducted from May through October 2000, after the administration of NAEP assessments. Transcripts were collected for 12th-grade students who

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\*Non-NAEP transcript studies were conducted in 1982 (in conjunction with the High School and Beyond Longitudinal Study), in 1992 (in conjunction with the National Education Longitudinal Study of 1988), and in 2004 (in conjunction with the Education Longitudinal Study of 2002).

had graduated high school by the end of the collection period. Most students had also participated in the NAEP assessments earlier that same year.

NAEP-related transcript studies were also conducted in previous years—transcripts were collected from seniors who graduated in 1987, 1990, 1994, 1998, and 2000. Another NAEP-related transcript study is being conducted in 2005.

### **Design of the NAEP HSTS**

The NAEP HSTS is conducted with a nationally representative sample of students and high schools. Beginning in the summer and continuing through the fall of the year, high school transcripts are collected for students who graduated from public and nonpublic high schools that were sampled for the NAEP assessments. The sample of schools is nationally representative of all schools in the United States, and the sample of students is representative of graduating seniors from each school. The transcript study includes only those students whose transcripts indicate that they graduated in the year that the study was conducted. Most of the students sampled in the transcript study are in schools that participated in NAEP. The data collected from those students who participated in NAEP make it possible to link coursetaking patterns to academic performance as measured by NAEP.

The data collected from transcript studies are typically reported as follows:

- distribution of graduates by school and student demographic categories;
- mean number of credits (Carnegie units) that graduates earned in major subject field and by student demographic categories; and
- correlations of NAEP scores with various school and student demographic categories.

The HSTS database contains a variety of information on student and course-level characteristics. Some key student variables include gender, race/ethnicity, type of high school program, days absent, grade point average, standardized test scores (e.g., SAT, ACT), and class rank. Key course-level variables include grade earned, credits earned, grade in which course was taken, and course type (e.g., honors, exceptional, special education).

The data collected through the transcript studies and other NCES surveys are protected by NCES confidentiality legislation. In order to maximize the use of statistical information while protecting individually identifiable information from disclosure, NCES provides licenses for the use of micro-data files. Restricted-use data files can be made available to organizations interested in conducting custom research studies using the transcript study data. Apply for a restricted-use data license to obtain access to the restricted-use data file for research purposes.

### **Major Publications**

*Trends in High School Academic Coursetaking: Mathematics, Science, English, and Foreign Language Course Completion, 1982 to 1998* (April 2005)

*Trends in Educational Equity of Girls & Women: 2004* (November 2004)



*The High School Transcript Study: A Decade of Change in Curricula and Achievement, 1990–2000* (March 2004)

### For Further Information

For further information on the NAEP HSTS (conducted in 1987, 1990, 1994, 1998, 2000, and 2005), contact

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For further information on the non-NAEP transcript studies (conducted in 1982, 1992, and 2004), contact

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## National Assessment of Adult Literacy

Literacy assessments inform policymakers about the extent of skills in using printed information that adults need to function in society, achieve their goals, and develop their knowledge and potential. Recently, concern has mounted that inadequacies in literacy are preventing some Americans from exercising the rights and responsibilities of citizenship. The 2003 National Assessment of Adult Literacy (NAAL) provides an accurate benchmark for measuring the literacy capabilities of adults. NAAL builds upon the 1992 National Adult Literacy Survey (NALS).



There has been serious concern about the literacy level of the American workforce, as described in a number of national reports published since 1980, including *A Nation at Risk*, *Toward a More Perfect Union*, *The Subtle Danger*, *Workforce 2000*, *The Bottom Line*, and *Literacy: Profiles of America's Young Adults*. These reports have emphasized the need to increase our nation's standard of literacy in order to maintain our standard of living and to compete in the global market. The role of NAAL is to provide the information needed to begin understanding our nation's literacy capabilities.

## Design

The 1992 NALS was administered in the summer of 1992 in person by trained interviewers to a nationally representative probability sample of about 13,000 individuals age 16 and older and to 1,100 adults incarcerated in federal and state prisons. In addition, 12 states funded sample supplements of 1,000 adults in order to obtain literacy estimates for their state populations. This was the first national study of literacy for all adults since the Adult Performance Level surveys, which were conducted in the early 1970s.

The 2003 NAAL is a nationally representative assessment of the English language literacy skills of American adults age 16 and older. NAAL continues to use the definition of literacy underlying the 1992 NALS: *using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential*. Like the 1992 assessment, the 2003 NAAL focuses on a broad range of tasks that adults perform in order to function at work, at home, and in the community.

The main data collection took place in 2003. Approximately 19,000 adults representing the household population from the 50 states and the District of Columbia were sampled. Six states also participated: Kentucky, Maryland, Massachusetts, Missouri, New York, and Oklahoma. Black and Hispanic households were oversampled to ensure reliable estimates of their literacy proficiencies. In addition, about 1,200 inmates of federal and state prisons from across the country were assessed in early 2004 in order to provide separate estimates of literacy levels for the incarcerated population.

## Components

In addition to describing the status and progress of literacy in the nation and in each of the participating states, the 2003 NAAL will provide information about background characteristics associated with literacy, the skill levels of the least literate adults, and the application of literacy skills to health-related materials. The 2003 NAAL features two new components that enhance its ability to measure the literacy of the least literate adults: the Fluency Addition to NAAL (FAN) and the Adult Literacy Supplemental Assessment (ALSA). These components will provide important new data on the literacy skills of those adults with the poorest text comprehension skills. Other enhancements to NAAL include a more extensive background questionnaire and the ability to provide a health literacy score.

**Fluency Addition to NAAL (FAN).** FAN is completed by all NAAL participants. FAN uses speech-recognition software to assess the ability of adults to decode and recognize words and to read with fluency. FAN tasks include reading lists of words and numbers as well as text passages. Oral directions and questions are provided in English or Spanish, depending on each participant's choice. Words per minute and reading accuracy are recorded for analysis and scoring. Adult education providers, in particular, may use this information to offer appropriate instruction and courseware for literacy and professional training.

**Adult Literacy Supplemental Assessment (ALSA).** ALSA participants are identified based on their performance on a set of core screening items; they complete ALSA instead of the main NAAL. ALSA assesses the ability of the least literate adults to identify letters and numbers and to comprehend simple prose and documents. A unique feature of ALSA is its use of highly familiar stimulus materials that can be manipulated (e.g., packaged food products) and contextualized (i.e., supported by visual information, logos, and sight words). As with FAN, oral directions and questions are provided in either English or Spanish. Unlike FAN, ALSA also allows participants to answer in either English or Spanish. Policymakers may use information about the skill levels of the least literate adults to create or improve programs that help their employment, health status, self-esteem, and ability to participate in a free society.

**Enhanced background questionnaire.** The new background questionnaire developed for NAAL provides more information about the demographic and other characteristics associated with literacy. Federal and state policymakers may use this information to improve literacy services that close the gap between low- and high-performing groups, to inform workplace literacy programs, and to encourage further research on the factors associated with low literacy.

**NAAL health literacy score.** The health literacy score is derived from 28 health-related questions embedded in the main NAAL assessment, plus 10 health-related questions included in the enhanced background questionnaire. The health questions assess the ability of adults to apply literacy skills to understand health-related materials and forms. Health organizations can use the health literacy information to identify target audiences for specific types of health information, the literacy level at which materials for these audiences should be written, and the best ways of reaching these audiences.

The 2003 NAAL data will be used to produce a comprehensive survey report and a “popular” report designed for a more general audience, both of which will address the status of literacy among adults in the United States and literacy trends over time. In addition, NCES will produce data tables for reporting statewide results for each of the six participating states (Kentucky, Maryland, Massachusetts, Missouri, New York, and Oklahoma).

## **Major Publications**

*The 2003 National Assessment of Adult Literacy* (March 2003)

*Literacy of Older Adults in America: Results From the National Adult Literacy Survey*  
(November 1996)

*Literacy Behind Prison Walls: Profiles of the Prison Population From the National Adult Literacy Survey* (October 1994)

*Adult Literacy in America: A First Look at the Results of the National Adult Literacy Survey* (September 1993)

## For Further Information

Information about NAAL can be found on the Web (<http://nces.ed.gov/naal>). For further information on NAAL, contact

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## Special Studies

### NAEP studies

In addition to conducting its regular assessments, NAEP coordinates a number of related studies to address issues of special interest. These studies focus on particular demographic or educational sectors of the student population or on topics of special interest. Examples of ongoing special studies are the National Indian Education Study, the Oral Reading Study, and the Technology-Based Assessment Project.

The National Indian Education Study is a collaboration among Indian tribes and organizations, the Bureau of Indian Affairs, and state and local education agencies. This study, conducted for the Office of Indian Education, involves the NAEP assessment as well as specially constructed questionnaires for students, teachers, and principals. The goal of the study is to describe the condition of education of American Indian/Alaska Native students by focusing on both their academic achievement and educational experiences in the fourth and eighth grades. The National Indian Education Study is being conducted in 2005.

The Oral Reading Study was a special feature of the 2002 NAEP Reading Assessment. Its purpose was to examine aspects of oral reading performance—accuracy, rate, and fluency—and how they relate to overall reading ability. The 2002 study was a follow-up to a similar study undertaken in 1992.

The Technology-Based Assessment Project (TBA) explores the measurement, equity, cost, and operational implications of technology-based assessments for NAEP. It also addresses the question of how best to incorporate computer technology into NAEP in both the short and long term. TBA focuses primarily on three empirical studies: Mathematics Online, Writing Online, and Problem Solving in Technology-Rich Environments. A related activity is concerned with computer-adaptive testing. Mathematics Online and Writing Online are available on the NCES website at <http://nces.ed.gov>.

## NAAL studies

Special NAAL probes are under way that investigate methods for assessing the vocabulary knowledge, functional writing skills, and computer literacy that adults in our nation need for effective communication in the home, workplace, and community. Results from the vocabulary study should inform how many and which words are known by different segments of the adult population. Results from the functional writing skills probe will provide information about the kinds of writing skills, both handwritten and digital, adults need to fill out forms and write letters, bulletins, and newsletters. The computer literacy study measures adults' ability to use digital technologies to access, manage, integrate, evaluate, generate, and communicate information. These studies are contingent on available funds.

## Plans for Educational Assessment

After enactment of the No Child Left Behind Act of 2001, the National Assessment Governing Board reexamined NAEP's assessment schedule for 2003 and beyond to address the Act's requirements. These requirements are as follows:

- NAEP must administer reading and mathematics assessments for grades 4 and 8 every other year in all states.
- In addition, NAEP must test reading and mathematics on a nationally representative basis at grade 12 at least as often as it has done in the past, or every 4 years.
- NAEP is required to administer long-term-trend assessments in reading and mathematics at ages 9, 13, and 17.
- Provided funds are available, the legislation provides that NAEP may conduct national and state assessments at grades 4, 8, and 12 in "additional subject matter, including writing, science, history, geography, civics, economics, foreign languages, and arts."

Assessment schedules for NAEP and NAAL are listed in the table below. NAEP's current assessment schedule assumes continuing legislative authority; also, the schedule may be augmented, with advance public notice, as resources permit. A chronology of the NAEP assessments that have been conducted since 1969 is available at <http://nces.ed.gov/nationsreportcard/about/assesshistory.asp>.

**Table 4. Data collection calendar for educational assessment**

NAEP National Assessment	Years of data collection														
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Reading	✓		✓		✓	✓		✓		✓		✓ <sup>1</sup>		✓	
Mathematics			✓			✓		✓ <sup>1</sup>		✓		✓		✓	
Science			✓					✓				✓			
Writing	✓				✓					✓					✓ <sup>2</sup>
U.S. history				✓					✓						
Geography				✓									✓ <sup>2</sup>		
Civics	✓									✓					✓ <sup>2</sup>
Economics									✓ <sup>1</sup>						
Arts											✓				
World history													✓ <sup>2</sup>		
Foreign language															✓

NAEP State Assessment	Years of data collection														
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Mathematics			✓			✓		✓ <sup>1</sup>		✓		✓		✓	
Reading	✓				✓	✓		✓		✓		✓ <sup>1</sup>		✓	
Science			✓					✓				✓			
Writing	✓				✓					✓					✓ <sup>2</sup>

NAEP District Assessment	Years of data collection														
	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Mathematics						✓		✓							
Reading					✓	✓		✓							
Science								✓							
Writing					✓										

<sup>1</sup> A new or updated framework is planned for implementation for this subject. The framework for foreign language was approved by the National Assessment Governing Board (NAGB) in May 2000; updates to the mathematics framework were approved in November 2001; the economics framework was approved in August 2002.

<sup>2</sup> NAGB will decide whether a new or updated framework is needed for this year.

**Table 4. Data collection calendar for educational assessment—Continued**

		Years of data collection														
NAEP Long-Term-Trend Assessment		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	Reading			✓					✓				✓			
Mathematics			✓					✓				✓				✓
Science			✓													

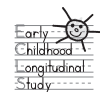
		Years of data collection														
NAEP High School Transcript Study		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
			✓		✓					✓						

		Years of data collection															
National Adult Literacy Survey/ National Assessment of Adult Literacy		1992	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
			✓						✓								







## CHAPTER 6

# National Longitudinal Studies



## **Introduction**

The Longitudinal Studies Program at the National Center for Education Statistics (NCES) was established to provide ongoing, descriptive information about what is occurring at the various levels of education and the major transition phases of students' lives. In this way, intervening processes can be studied. The program is made up of three study areas: early childhood/elementary, secondary, and postsecondary education. Together, these studies capture critical information across the lifespan of individuals' development and education.

The early childhood/elementary longitudinal studies examine children's early home, child care, and learning experiences prior to formal schooling—that is, birth through age five—as well as during the elementary years. These studies help researchers examine the influence of early experiences on children's later success in school. The secondary and postsecondary longitudinal studies help researchers examine transitions and education experiences and their relationship with educational and occupational attainment. These studies provide for periodic examination of such attainment, as well as students' aspirations, attitudes, and motivations during the pivotal years before, during, and after middle school or junior high school, high school, and college.

With extensive questioning over succeeding years, the longitudinal studies make it possible to conduct long-range comparisons between early learning environments and children's preparation for school, between early school experiences and later school success, and between what individuals expect and what actually occurs. Consequently, such studies are critical to understanding the processes by which early experiences influence education and, in turn, the processes by which education leads individuals to develop their abilities and roles in society.

The National Longitudinal Study of the High School Class of 1972 (NLS:72) began with that year's high school senior class and followed it through 1986. The High School and Beyond Longitudinal Study (HS&B) began with both the sophomore and senior classes of 1980. Six other longitudinal studies have also been conducted:

- the National Education Longitudinal Study of 1988 (NELS:88), which began with the eighth-grade class of 1988 and followed it through 2000;
- the Education Longitudinal Study of 2002 (ELS:2002), which began with a cohort of high school sophomores in 2002 who were followed in 2004 and will be followed in 2006 and again in 2012;
- the Beginning Postsecondary Students Longitudinal Study (BPS) of 1990, 1996, and 2004 (the first cohort of students began postsecondary education in 1989–90 and was followed in 1992 and 1994; the second cohort began in 1995–96 and was followed in 1998 and 2001; the third cohort began in 2003–04 and will be followed in 2006 and 2009);
- the Baccalaureate and Beyond Longitudinal Study (B&B), which began with a cohort of college seniors in 1992–93 who were followed in 1994, 1997, and 2003, with a second cohort that graduated from college in 1999–2000 with a one-time follow-up in 2001;
- the Early Childhood Longitudinal Study-Kindergarten Class of 1998–99 (ECLS-K), which began following a cohort of kindergarten children in 1998–99 and plans to follow the cohort into later grades (with six waves of data collection completed through 2004); and

- the Early Childhood Longitudinal Study-Birth Cohort of 2001 (ECLS-B), which began with a group of children born in 2001 and will follow these children as they enter formal schooling. To date, two waves of data collection have been completed: at 9 months and at 2 years of age. The preschool-year national data collection will take place in fall 2005.

## Data Uses

NLS:72 data have been widely used for investigating education policy issues. For example, in the early 1980s, a congressional committee turned to these data to develop a model for estimating the costs of tuition tax credits. Capsule descriptions of this cohort have been produced and attrition rates from college have been studied, as have transitions from high school and college into the workplace. Postsecondary attainment, access, and financial aid studies have all used NLS:72.

The enlarged scope of HS&B provided even more data than NLS:72 for examining a wide variety of education policy issues. Like NLS:72, HS&B yielded a number of capsule descriptions of high school students. Additionally, HS&B data have been used to study the achievement of Hispanic students; discipline and order in high schools; economic issues, such as students working while in school; comparisons of public and private schools; the continuity of early employment of high school sophomores; and coursetaking patterns of American high school students. Because similar items were used in ELS:2002, HS&B, NELS:88, and NLS:72, it will be possible to compare the high school seniors of 1980, 1982, 1992, and 2004 with those of 1972.

NELS:88 completed the fourth follow-up data collection in 2000. Data from this survey are being used to study transition patterns of eighth-grade students as they move through school (e.g., moving from public to private school, dropping out of school, and moving into and out of high school and college). Other research issues that can be addressed include

- students' academic growth over time and the family, community, and classroom factors that promote or inhibit such growth;
- the tracking of coursetaking patterns during high school;
- the education outcomes and generational status of Asian and Hispanic eighth-graders;
- at-risk students' successful navigation of the pipeline to college enrollment;
- the role of the school in helping the disadvantaged;
- the school experiences and academic performance of language-minority students;
- the process of attracting students to the study of mathematics and science;
- the transition to postsecondary education and the workforce;
- students' employment and postsecondary persistence histories;
- family formation, including marital status and children; and
- trend analyses with previous longitudinal studies.

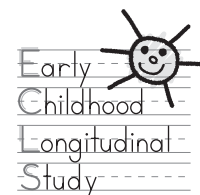
ECLS-K and ECLS-B focus on the early childhood years and the influence of the home, child care, the classroom, and school on children's development. To date, ECLS-K has completed a baseline and five follow-up data collections. ECLS-B has completed two data collections, and the preschool data collection will take place during fall 2005. ECLS-K data have been used to produce descriptions of kindergartners as they enter school for the first time and describe their achievement gains in kindergarten, first grade, and third grade. Data from ECLS-K are being used to examine the differences in children (e.g., their backgrounds, skills, and knowledge) at school entry and over time and to describe teacher, classroom, and school characteristics. ECLS-B data have been used to describe the perinatal and early developmental characteristics of children at 9 months of age. Analyses from ECLS-B will describe differences in child health, family and nonparental care-giving practices, and fathers' involvement in child rearing as they relate to early childhood development and school readiness. The research issues being addressed by these two studies fall into the following four broad areas:

- children's growth and development in critical cognitive and noncognitive domains;
- children's transitions to child care and education programs, kindergarten, and beyond;
- school readiness; and
- the relationship between early experiences and later school performance.

BPS has provided new information on traditional as well as nontraditional entrants to postsecondary education. These data have included such topics as high school preparation and persistence, differences in receipt and use of financial aid, patterns of transfer and completion, family difficulties and formation, education debt, and posteducation employment. The complementary B&B study has provided information on bachelor's degree graduates. These data have included such topics as entry into and progress through graduate school, employment after degree completion, family formation, methods of financing graduate education, both undergraduate and graduate debt, and the resulting education debt burden. In addition, B&B has a special component concerning those entering the elementary/secondary teacher pipeline, and has begun tracking entry into and exit from the pipeline as well as career paths among teachers.

## Early Childhood Longitudinal Studies

NCES and several federal health, education, and human services agencies are sponsoring an ambitious program to provide comprehensive and reliable datasets that can be used to inform policy regarding children, their families, early care, and education. The data collected by the ECLS program, and the information that is disseminated through reports prepared by NCES and others, will inform decisionmakers, education practitioners, researchers, and parents about the experiences of young children.

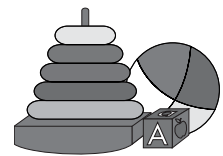


The ECLS program consists of two cohort studies—a birth cohort study and a kindergarten cohort study. Together, these studies provide the range and breadth of data required to more

fully describe children's early learning and education experiences. The birth cohort study (ECLS-B) is designed to study children's early learning and development from birth through first grade. It focuses on those characteristics of children, their families, and out-of-home experiences that influence children's first experiences with the demands of formal schooling (e.g., kindergarten and first grade) and provides important information about the way America raises, nurtures, cares for, and prepares its children for school. The kindergarten cohort (ECLS-K) measures aspects of children's development and their home, classroom, and school environments as they enter school for the first time, and examines how factors from these environments influence their academic achievement, social development, and school experiences through 12th grade.

## Early Childhood Longitudinal Study-Birth Cohort of 2001

Parents, educators, health practitioners, and policymakers are seeking effective ways for caring for and educating children throughout early childhood. Researchers and practitioners searching for answers are turning to the critical years before formal schooling as a source of information and a place to start. Several factors have contributed to this research and policy focus on children's early care and education experiences before entering school, including



- new research, such as that on early brain development, highlighting the significant growth and development occurring in the first 3 years;
- public awareness of the importance of children's early experiences for later school success;
- large numbers of working mothers and dual-employed families, resulting in more children entering child care at earlier ages; and
- the increasingly diverse population of children entering school.

Vital to any effort to improve the health, early care, and education for all of the nation's children is a research and data collection program that increases primary understanding of the dynamics that lead to differential school success. NCES, in collaboration with several federal health, education, and human services agencies, has embarked upon an ambitious new study of the early years before formal schooling. The Early Childhood Longitudinal Study-Birth Cohort of 2001 (ECLS-B) follows a national sample of children, born in 2001, from birth through first grade.

The four key areas addressed by ECLS-B are children's health status at birth and various points thereafter; children's growth and development in critical cognitive and noncognitive domains; children's transitions to child care and early childhood education programs; and children's preparation for formal schooling at kindergarten and first-grade entry.

First, the relationship of children's early health to their later growth and development is of special interest to ECLS-B. The study provides information on prenatal and perinatal care and on children's health status at birth and across the early childhood years, covering basic topics such as nutrition, access to medical care, special health needs, and medical service receipt. Oversamples of moderately low and very low birth-weight infants allow analyses of potential connections

between young children's health and their cognitive, physical, and emotional development over time.

Second, ECLS-B follows children's growth and development during the critical years before school. In these early years, children are quickly achieving developmental milestones that build upon one another. ECLS-B seeks to accurately describe children's physical, social, emotional, cognitive, and language development in relation to important influences in their lives prior to school entry. It then follows their progress during the first 2 years of school—kindergarten and first grade.

Third, children and adults are continually making transitions from one status to another—for example, from home to child care and to school. Most notable is the transition that occurs as young children first receive care on a regular basis from persons other than their parents. For some children, this transition may occur shortly after birth; for others, their first significant experience with adults other than their parents in a regular care and educational setting may be when they enter formal schooling for the first time. ECLS-B is especially focused on looking at these transitions and their impact on different groups of children and families as defined by race/ethnicity, socioeconomic status, birth weight, language minority status, plurality (i.e., twins), and family structure (i.e., single-parent families and teenage mothers). Oversamples of Asian/Pacific Islander children, Chinese children, American Indian and Native Alaskan children, moderately low and very low birth-weight children, and twins support detailed analyses of early childhood transitions as experienced by these groups.

Fourth, most children attend kindergarten before entering first grade. However, the nature of children's early experiences in and before kindergarten is quite variable, and the demands placed on children differ across programs. ECLS-B examines children's preparation for school by prospectively studying the different characteristics of children, their families, and their out-of-home care and educational experiences leading up to and at school entry.

## **Design**

The design of ECLS-B is based on the assumption that children's preparation for school begins at (or before) birth and continues upon school entry. It is guided by a framework of children's development, care, and schooling that emphasizes the interaction among the child; the family; health care, child care, and education programs; and the community. ECLS-B recognizes the importance and interrelatedness of factors that represent a child's health status and socioemotional and intellectual development.

A nationally representative sample of approximately 13,500 children born during calendar year 2001 was selected for participation in the study. The sample consists of children from different racial/ethnic and socioeconomic backgrounds. The following groups were oversampled: Asian/Pacific Islander, Chinese, and American Indian and Native Alaskan children; moderately low birth-weight (1,500–2,500 grams) and very low birth-weight (under 1,500 grams) children; and twins.

Children were selected at birth from birth certificates, the best and most affordable way of sampling newborns. The first data collection occurred when the children were approximately 9 months of age. Capturing data this soon after birth is important because much of the data collected at this time pertains to prenatal care and the health care of the mother and child during the first months of life. Data were collected again when the sampled children reached 2 years of age. The preschool data collection is scheduled to take place in fall 2005—when the sampled children will be about 4 years of age. Data will also be collected when the children enter kindergarten and first grade.

## **Components**

The emphasis that is being placed on the different aspects of children's development and the different environments in which learning occurs is critically important for the design of ECLS-B. While children's parents are the primary reporters throughout the life of the study, important information is also gathered at varying time points from children's birth records, their early care and education providers, their schools and teachers, and from the children themselves.

**Children's Birth Certificates**—A variety of useful data is captured in birth certificates. They provide information on the date of birth and children's gender. Information is also available on parents' education, parents' race and ethnicity (including Hispanic origin), and mother's marital status. Birth certificates provide information on the mother's pregnancy history, prenatal care, medical and other risk factors during this pregnancy, and complications during labor and birth. Health characteristics of children, such as congenital anomalies and abnormal conditions of the baby and the baby's APGAR score, are also provided.

**Parent-Guardian Interviews**—Parents and guardians are an important source of information about themselves, their children, and the home environment. A parent-guardian interview is conducted in the child's home at each data collection point using a computer-assisted personal interview (CAPI) and a self-administered questionnaire. Parent-guardian interviews capture information about children's early health and development and their experiences with family members and others. Parents report on children's development in such areas as children's temperament and developmental milestones (e.g., crawling). Parent-guardian interviews also capture detailed information on children's health (e.g., developmental difficulties, illness, ear infections) and access to health care (e.g., health insurance). Parents and guardians provide key information about themselves as caregivers, the home environment, and the neighborhood in which they live. Several aspects of the economic stability of the home environment are tracked (e.g., welfare receipt, household food sufficiency, employment situation). The parent or guardian interviewed is the individual who is the primary caregiver and the most knowledgeable about the care and education of the child. In most cases, this is the child's mother or female guardian.

**Father Questionnaires**—ECLS-B collects information from fathers as well. Fathers complete a self-administered questionnaire regarding the particular role they play in the development of their children. The father questionnaire captures information about children's well-being and the activities that fathers engage in with their children. Fathers also provide key information about themselves as caregivers. Both resident fathers and nonresident biological fathers complete



self-administered questionnaires designed to collect information about their roles in their children's lives.

**Direct Child Assessments**—Children's participation in the study occurs with the full permission of their parents or guardians. Beginning at 9 months, children participate in activities designed to directly measure important developmental skills in the cognitive, social, emotional, and physical domains. For the 9-month and 2-year data collections, ECLS-B used the Bayley Short Form-Research Edition. This instrument, designed specifically for ECLS-B, is based on a smaller set of items from the Bayley Scales for Infant Development (BSID-II). It assesses children's gross and fine motor skills as well as their receptive and expressive language skills and emotion regulation. The Nursing Child Assessment Teaching Scale (NCATS) was collected at 9 months to assess parent-child interactions for early precursors of cognitive and social skills. These interactions were videotaped and coded along several dimensions (e.g., mother responsiveness, cognitive growth fostering), providing rich information on early parent-child interactions. At the 2-year data collection, the Toddler Attachment Sort (TAS-45) was collected as a measure of parent-child interaction. The Infant/Toddler Symptom Checklist and the Minnesota-Child Development Index were used to measure child emotional and behavioral adjustment at 9 months and 2 years of age. At both of these data collections, height, weight, and middle upper arm circumference were measured for all children. Head circumference was measured for very low birth-weight infants as a measure of brain growth.

**Early Care and Education Providers**—With the permission of the child's parents, individuals and organizations that provide regular care and/or education for a child are interviewed. Care providers and preschool teachers, like parents, represent a significant source of information on themselves (their backgrounds, teaching practices, and experiences), the children in their care, and the children's learning environments. Much of the data needed to describe the structure of children's care arrangements and education programs, develop indicators of the quality of these arrangements and programs, and profile the background and experience of the persons caring for these children can only be reported accurately by the providers, teachers, and organizations themselves. Contacting children's care and education providers also opens up other data collection opportunities (e.g., collecting information about children's development from sources other than their parents). Children's care providers are interviewed using a computer-assisted telephone interview (CATI). This information was collected when the children were 2 years old and will be collected again at age 4. Observations of children's care settings are conducted in a sample of the arrangements attended by ECLS-B children.

**Teacher Questionnaires**—As the ECLS-B cohort enters kindergarten and first grade, their school teachers become valuable sources of information on one of children's most immediate learning environments—the classroom. Teachers also represent important sources of information about themselves (e.g., their backgrounds, teaching practices, and experiences) and children's development, both cognitive and social. A subset of the ECLS-K teacher questionnaires will be used to collect these data (see <http://nces.ed.gov/ecls>).

**School Questionnaires**—Once the children enter formal schooling, school administrators provide information on the physical, fiscal, and organizational characteristics of their schools and on the schools' learning environments, educational philosophies, and programs. A subset of the ECLS-K school questionnaires may be used to collect these data (see <http://nces.ed.gov/ecls>); alternatively, data may be gathered from existing databases, such as the Common Core of Data and the Private School Universe Survey.

### Major Publication

*Children Born in 2001: First Results From the Base Year of the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B)* (October 2004)

### Data Products

CD-ROM: ECLS-B 9-Month Public-Use Data File and Electronic Codebook (March 2005)

CD-ROM: ECLS-B 9-Month Restricted-Use Data File and Electronic Codebook (November 2004)

Restricted data are available to license holders. To apply for a data license, see <http://nces.ed.gov/pubsearch/licenses.asp>.

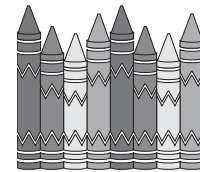
### For Further Information

ECLS-B can be found on the Web (<http://nces.ed.gov/ecls>). For further information on ECLS-B, contact

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## Early Childhood Longitudinal Study-Kindergarten Class of 1998–99

In recent years, parents, educators, and policymakers have been reconsidering the ways young children are taught in schools and have been looking for more effective approaches to education. Several factors that have contributed to this research and policy focus on children's early school experiences include



- an increased public awareness of the importance of children's early experiences;
- the changing nature of children's preschool and early school experiences;
- the increasingly diverse population of children entering school and the demands this places on schools; and
- the expanded role that schools are expected to play in supporting and nurturing development and learning.

NCES has embarked on an ambitious study to provide a comprehensive and reliable dataset that can be used to inform policies related to early and middle childhood education, defined as kindergarten through fifth grade. The Early Childhood Longitudinal Study-Kindergarten Class of 1998–99 (ECLS-K), in which a cohort of kindergarten children is sampled and studied intensively over time, responds directly to the concerns decisionmakers, education practitioners, researchers, and parents have about our nation's schools and American education.

The three key issues to be addressed by ECLS-K are children's transition to school, student performance in the early grades in literacy and numeracy, and the interaction of school, family, and community. First, ECLS-K examines children's transition to school. Of particular interest to the study are the transitions that occur as young children go from kindergarten to first grade and from first grade to the later elementary grades. These transitions are an ongoing process mutually influenced by a child's characteristics, the family and school environments, and the demands, resources, and responses within both family and school settings. Therefore, these transitions may be quite different for children depending upon the characteristics of the setting and their experience in each one.

Second, a major goal of ECLS-K is to describe student learning and academic progress during the early school years. It begins by focusing on children's characteristics and experiences as they enter school, and seeks to describe ways in which these are related to different aspects of children, their families, and the kindergarten programs they attend. Then, by closely chronicling the relationship between children's kindergarten experience and their school performance in grades 1 through 5, the study provides useful information on achievement differences between boys and girls, among minority groups, and among members of different socioeconomic groups as children pass through school. The study also provides useful data on when children begin to experience problems with their schoolwork and the circumstances surrounding these difficulties. It provides data on the longevity of these problems and on the responses of the children's families, schools, and teachers.

Third, numerous factors influence children's school and other life outcomes, including the school, family, and community. ECLS-K examines how the education system prepares for and responds to children. It gathers information on how schools and teachers respond to the diverse backgrounds and experiences that children bring with them as they enter school for the first time. ECLS-K also looks outward to the family and community in which children live by focusing on the resources of the family, the home environment, and the community that can have a profound impact on children's success in school and provide the context within which schools must operate. ECLS-K provides critical information on the roles that parents and families play in preparing for and supporting their children's education, and how families, schools, and communities interact to support children's education.

## **Design**

The design of ECLS-K is guided by a framework of children's development and schooling that emphasizes the interaction between the child and family, the child and school, the family and school, and the family, school, and community. Thus, ECLS-K recognizes the importance of

factors that represent the child's health status and socioemotional and intellectual development, and incorporates factors from the child's family, community, and school and classroom environments. The study is particularly focused on the role that parents and families play in helping children adjust to formal schooling and in supporting their education through the primary and middle elementary grades. It also gathers information necessary for understanding how schools prepare for and respond to the diverse backgrounds and experiences of the children and families they serve.

A nationally representative sample of approximately 22,000 children enrolled in about 1,000 kindergarten programs during the 1998–99 school year was selected for participation in ECLS-K. These children were selected from full-day and part-day programs in public and private schools. The sample consisted of children from different racial/ethnic and socioeconomic backgrounds. NCES oversampled private kindergartens and kindergartners, as well as Asian and Pacific Islander children. The ECLS-K sample will support separate analyses of public and private kindergartens, as well as White, Black, Hispanic, and Asian and Pacific Islander children's school experiences and outcomes.

To date, NCES has collected data on the sampled children and their environments in the fall and spring of the kindergarten year, the spring of first grade, the spring of third grade, and the spring of fifth grade. It also conducted child assessments and parent interviews in the fall of first grade for 30 percent of the sample. Current plans call for continuing to track the sample for a possible eighth-grade data collection.

## Components

Because numerous factors in schools, homes, and communities influence children's academic and social outcomes, data for ECLS-K are collected not only from children, but also from their parents or guardians, teachers, and school administrators.

**Student Assessments**—Sampled children participate in various activities that measure the extent to which they exhibit those abilities and skills deemed important for success in school. They are asked to participate in activities designed to measure important cognitive (e.g., general knowledge, literacy, and quantitative skills) and noncognitive (e.g., physical) outcomes. Measures of a child's cognitive skills are obtained through an untimed one-on-one assessment of the child. Measures of physical development include both height and weight measurements. Also, in the fall of kindergarten, a psychomotor assessment was administered to measure children's motor abilities, coordination, and visual motor skills. In the years when most of the children were in the third and fifth grades, they were asked to report on their perceptions of and interests in school and school subjects such as reading and mathematics. In the fifth grade, children were asked to report on the types of food and beverages they can purchase at school and that they consume at home.

**Parent-Guardian Interviews**—Parents and guardians are an important source of information about the families of the children selected for the study and about themselves. In telephone interviews (or in personal interviews for households without telephones), they provide key information about children's development and their experiences with family members, schools,

and others. The parent-guardian interviews of ECLS-K cover family background, demographics, and home environment. The content includes family structure; nativity (i.e., country of origin); primary language spoken in the home; parental involvement with the child's school; child care; child's health and well-being; parental values, beliefs, and expectations; home environment, activities, and cognitive stimulation; parental monitoring; parental perceptions of the residential neighborhood; parent education; parent employment; parent income and assets; receipt of welfare and other public transfers; discipline, warmth, and emotional supportiveness provided by parents; parents' psychological well-being and health; and critical family processes. In the kindergarten and first-grade data collections, parent-guardian interviews also included items asking parents and guardians to rate their child's social skills, problem behaviors, and approaches toward learning.

**Teacher Questionnaires**—Like parents, teachers represent a valuable source of information on themselves and the children's learning environment (i.e., the classroom). In self-administered questionnaires, teachers are asked to provide information about their own backgrounds, teaching practices, and experiences, along with information on the classroom setting for the sampled children they teach. The content covered in the teacher questionnaires of ECLS-K includes class type and composition, class organization, class activities, curricular focus and evaluation methods, parent involvement, views on readiness, professional development, and the teacher's professional background.

**Teacher Ratings**—Teachers are also asked to evaluate sampled children on a number of critical cognitive and behavioral dimensions. Teacher cognitive ratings measure teachers' perceptions of students' academic achievement and dispositions for learning in three domains—language/literacy, mathematics, and general knowledge (i.e., science and social studies). Ratings of children's socioemotional behaviors provide measures of children's prosocial and problem behaviors and their approaches toward learning. Teachers also complete checklists on the sampled children, reporting on such things as the children's language skills, special needs, program placements, attendance, and physical activity levels.

**Special Education Teacher Questionnaires**—Special education teachers represent a valuable source of information on themselves and on the children's experience with special education services. In a self-administered questionnaire, they are asked to provide information about their background and experience and the instructional approaches used for the sampled children who receive these services. They also provide information on sampled children's disabilities, Individualized Education Programs (IEPs), and receipt of related services.

**School Questionnaires**—In a self-administered questionnaire, school administrators, principals, and headmasters provide information on the physical and organizational characteristics of their schools and on the schools' learning environments and programs. Special attention is paid to the instructional philosophy of the school and its expectations for students. The content covered in the school questionnaires of ECLS-K includes school characteristics, student characteristics, teaching staff characteristics, school policies and programs, principal characteristics, and school governance and climate. Additionally, field staff conduct an independent survey of the schools'

physical facilities, atmosphere (e.g., fighting in hallways), and learning environments (e.g., displays of student work).

**Salary and Benefits Questionnaire**—In order to trace resources directly available to children, school district business offices or headmasters complete a self-administered questionnaire capturing information on salary, merit pay (e.g., education stipends), and benefits (e.g., payroll taxes, medical insurance) for sampled children’s teachers and school administrators. It represents one of the first times that specific teacher salary data can be linked to outcomes of specific children. This information was collected during the kindergarten year.

**Student Records Abstract Form**—For each sampled ECLS-K child, information is gathered from his or her school records. This form, completed by the school with information from its records, provides data on the child’s attendance, the child’s home language, whether the child has an IEP on record, and whether the child attended Head Start.

**Verification of Head Start Program Participation**—Head Start participation data, as reported by either parents or schools, have proven to be somewhat unreliable. Thus, ECLS-K contacts each Head Start site that a sampled child is reported to have attended. This report of participation comes from either the parent-guardian interview or the student record. The Head Start site completes a self-administered form for each child that verifies attendance and asks about attendance dates and program type (e.g., part vs. full day, center vs. home based).

## Major Publications

*From Kindergarten Through Third Grade: Children’s Beginning School Experiences* (July 2004)

*Full-day and Half-day Kindergarten in the United States: Findings from the Early Childhood Longitudinal Study, Kindergarten Class of 1998–99* (June 2004)

*Kindergarten Teachers: Public and Private School Teachers of the Kindergarten Class of 1998–99* (March 2004)

*Schools’ Use of Assessments for Kindergarten Entrance and Placement: 1998–99* (March 2003)

*Young Children’s Access to Computers in the Home and at School in 1999 and 2000* (March 2003)

*Children’s Reading and Mathematics Achievement in Kindergarten and First Grade* (March 2002)

*Entering Kindergarten: Findings From the Condition of Education* (January 2001)

*The Kindergarten Year* (December 2000)

*America’s Kindergartners* (February 2000)

## Data Files

ECLS-K Longitudinal Kindergarten-Third Grade Public-Use Data File and Electronic Code Book (September 2004)

ECLS-K Third Grade Public-Use Data File and Electronic Code Book (July 2004)

ECLS-K Third Grade Restricted-Use Child File (June 2004)

ECLS-K Longitudinal Kindergarten-First Grade Public-Use Data File and Electronic Code Book (April 2002)

ECLS-K First Grade Public-Use Data File and Electronic Code Book (February 2002)

ECLS-K First Grade Restricted-Use Child File (December 2001)

ECLS-K Base Year Restricted-Use Salary and Benefits Files (April 2001)

ECLS-K Base Year Restricted-Use Student Record Abstract File (April 2001)

ECLS-K Base Year Restricted-Use Special Education Child File (March 2001)

ECLS-K Base Year Restricted-Use Head Start File (March 2001)

ECLS-K Base Year Restricted-Use Child File, Teacher File, and School File (March 2001)

ECLS-K Base Year Public-Use Data File, Kindergarten Class of 1998–99: Data Files and Electronic Code Book (December 2000)

### **For Further Information**

ECLS-K can be found on the Web (<http://nces.ed.gov/ecls>). For further information on ECLS-K, contact

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## **Secondary Longitudinal Studies**

### **National Longitudinal Study of the High School Class of 1972**

Young people's success in making the transition from high school or college to the workforce varies enormously for reasons only partially understood. Some cling to dependency; others move into independence smoothly. The National Longitudinal Study of the High School Class of 1972 (NLS:72) base-year study and its five follow-up surveys provide data that allow researchers to study how these transitions evolve.



NLS:72 can provide information about quality, equity, and diversity of educational opportunity, and the relationship of those factors with individual development and educational outcomes. It can also provide information about changes in educational and career outcomes and other transitions over time. The NLS:72 data cover the sampled cohort from 1972 to 1986.

#### **Design**

NLS:72 was designed to produce representative data at the national level on the cohort of students who were in the 12th grade in 1972. The sample for the base year of NLS:72 was a stratified, two-stage probability sample of 12th-grade students from all schools (public and

private) in the 50 states and the District of Columbia during the 1971–72 school year. A sample of schools was selected in the first stage. In the second stage, a random sample of 18 high school seniors was selected within each participating school.

Data were collected by mail, telephone, and personal interviews. In addition, the survey obtained high school transcript data on high school curriculum, credit hours in major courses, grade point average, standardized test scores, and related information for each senior. To conduct intensive studies of disadvantaged students, NCES oversampled schools in low-income areas and schools with significant minority enrollments.

The size of the student sample was increased during the first follow-up survey because base-year nonrespondents were recontacted at that time. Those who provided base-year information during the first follow-up were retained and included in later follow-ups. Consequently, in 1972 there were 16,683 respondents, but in the first follow-up in 1973, the number increased to 21,350. The number of respondents in subsequent follow-ups in 1974, 1976, 1979, and 1986 was 20,872, 20,092, 18,630, and 12,841, respectively (only a subsample of 14,489 of the original sample was contacted in 1986).

In addition to the follow-ups, a number of supplemental data collection efforts were undertaken. For example, a Postsecondary Education Transcript Study was undertaken in 1984, and the fifth follow-up survey in 1986 included a supplement for those who became teachers.

## Components

**Base-Year Survey**—Provides information about age, sex, racial/ethnic background, physical handicap, socioeconomic status of family and community, school characteristics, future education and work plans, test scores, school experience, school performance, work status, and work performance and satisfaction.

**Follow-up Surveys (1973, 1974, 1976, 1979, and 1986)**—Provide information about marital status, community characteristics, education and work plans, educational attainment, work history, attitudes and opinions, postsecondary school characteristics, grade point average, credits earned, and financial assistance for postsecondary education.

## Major Publications

*Trends Among High School Seniors, 1972–1992* (July 1995)

*Statistics in Brief: High School Seniors Look to the Future, 1972 and 1992* (December 1993)

*Careers in Teaching: Following Members of the High School Class of 1972—In and Out of Teaching* (July 1991)

*Trends in Postsecondary Credit Production: 1972 and 1980 High School Graduates* (June 1990)

*Patterns and Consequences of Delay in Postsecondary Education* (February 1990)

## Data File

CD-ROM: National Longitudinal Study of the High School Class of 1972 (April 1994)



## For Further Information

NLS:72 can be found on the Web (<http://nces.ed.gov/surveys/nls72>). For further information on NLS:72, contact

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## High School and Beyond Longitudinal Study

New education issues arose after NCES began its longitudinal study of the 1972 senior class. For example, declining test scores and minimum competency testing caused concern among parents and educators alike. The rate at which many students dropped out of high school before graduation was also a concern. Anxiety over access to postsecondary and vocational education sharpened the focus on the educational experiences of Hispanic and other minority youth.



To examine these and other issues, NCES initiated a second longitudinal study, the High School and Beyond Longitudinal Study (HS&B), to complement NLS:72. HS&B studied the high school students of 1980, attempting to collect the same types of data gathered in NLS:72. However, the second study differed from the first in two significant ways. First, it addressed many newer issues of the educational process. Second, it included a sophomore cohort as well as a senior cohort. Adding the sophomore cohort made it possible to study high school dropouts and analyze changes and processes during high school.

The base-year survey of HS&B and the follow-up surveys have addressed the issues of educational attainment, employment, family formation, personal values, and community activities since 1980. For example, a major study on high school dropouts used HS&B data to demonstrate that a large number of dropouts return to school and earn a high school diploma or an equivalency certificate. Other examples of issues and questions that can be addressed with HS&B data are the following:

- How, when, and why do students enroll in postsecondary education institutions?
- Did those high school students who expected to complete a baccalaureate degree actually do so?
- How has the percentage of recent graduates from a given cohort who enter the workforce in their field changed over the past years?
- What are the medium-term outcomes of not completing high school in the traditional way?

- How do employment and earnings event histories of traditional high school graduates differ from those who do not finish high school in the traditional manner?
- Do individuals who attend college earn more than those who do not attend college?
- What is the effect of student financial aid on progress through school?
- What percentage of college graduates are eligible or qualified to enter a public service profession such as teaching?
- How many enter the workforce full time in the area for which they are qualified?
- In what ways do public and private schools differ?

## Design

The survey design provided for a highly stratified national probability sample of over 1,100 secondary schools as the first-stage units of selection. To make the study more useful for policy analyses, certain types of schools were oversampled: public schools with a high percentage of Hispanic students, Catholic schools with a high percentage of minority students, alternative public schools, and private schools with high-achieving students. The initial national sample for HS&B was considerably larger than that drawn in NLS:72. In this survey, 36 seniors and 36 sophomores were selected in each school. Parents of these students were also sampled. In schools with fewer than 36 students in either of these groups, all eligible students were selected. The base year of this survey, which was conducted early in 1980, collected data from over 28,000 sophomores and 30,000 seniors.

The longitudinal design of the study called for follow-up surveys of substantial subsets of the two cohorts at 2-year intervals. Data collection for the first follow-up was in spring 1982. Subsequent follow-ups were also undertaken in 1984 and 1986, and another follow-up of the sophomores was conducted in 1992. The first follow-up survey, conducted in 1982, sampled almost 40,000 students (12,000 seniors and 27,000 sophomores); the second, in 1984, sampled approximately 27,000 students (12,000 seniors and 15,000 sophomores); and the third, in 1986, sampled almost 27,000 students (also 12,000 seniors and 15,000 sophomores). The 1992 follow-up collected data from almost 15,000 sophomores. In 1993, a Postsecondary Education Transcript Study was conducted of the sophomore cohort.

Data collection instruments in the base-year survey included

- sophomore and senior student questionnaires with a series of cognitive tests;
- school questionnaires filled out by an official in each participating school;
- teacher comment checklists filled out by a teacher of the sampled student;
- second-language questionnaires; and
- parent questionnaires filled out by a sample of parents from both cohorts.

The student questionnaires focused on individual and family background, high school experiences, work experiences, and future plans. Cognitive tests administered to students measured both verbal and quantitative abilities. Sophomore tests included brief achievement measures in science, writing, and civics, while seniors were asked to respond to tests measuring abstract

and nonverbal abilities. The parent questionnaire elicited information about family attitudes, financial planning, and educational goals. The school questionnaire gathered information about enrollment, staff, educational programs, facilities and services, dropout rates, and special programs for handicapped and disadvantaged students. The teacher comment checklist provided teacher observations on students participating in the survey.

The first follow-up of sophomores, in 1982, provided insights into the school dropout problem and the influence of the last 2 years of high school on student attitudes and aspirations. The second follow-up, in 1984, included a Postsecondary Education Transcript Study of the senior cohort. The later follow-ups of the sophomore cohort made it possible to trace the consequences of dropping out and the extent to which dropouts later return and complete high school. In brief, HS&B provides information on the educational, career, and personal development of young people as they move from high school into postsecondary education or the workforce and then into adult life. The initial study (NLS:72) laid the groundwork for comparison with HS&B. It recorded the economic and social conditions surrounding high school seniors in 1971–72 and, within that context, their hopes and plans. It has since measured the outcomes, while also observing the intervening processes. HS&B allows researchers to monitor changes by retaining the same goals, measuring the economic returns of postsecondary education for minorities, and delineating the need for financial aid. By comparing the results of the two studies, researchers can determine how plans and outcomes differ in response to changing conditions or remain the same despite such changes.

Additional concerns of HS&B encompass issues that surfaced since NLS:72 began: How did the availability (or lack thereof) of student financial aid alter student plans for further education? Did middle-income families alter their attitudes toward postsecondary education? These questions, as well as concerns about declining test scores, youth employment, and bilingual education, are addressed, along with a host of others.

## **Components**

**Student Questionnaire**—Provided information on age, sex, racial/ethnic background, religion, socioeconomic status of family and community, school experiences, test scores, school performance, future educational plans, family status and orientations, work experience and satisfaction, future occupational goals, and plans for and ability to finance postsecondary education. Cognitive tests measured both verbal and nonverbal abilities.

**School Questionnaire**—Provided information on enrollment, staff, educational programs, facilities and services, dropout rates, and special programs for handicapped and disadvantaged students.

**Teacher Comment Checklist**—Provided teacher observations about the student.

**Parent Questionnaire**—Provided information on family attitudes, family income, employment, occupation, salary, financial planning, and postsecondary education goals.

**Follow-up Surveys (1982, 1984, 1986, and 1992)**—Provided the following information about sophomores: similar student information as collected in the base-year survey, school information

in the first follow-up, high school and postsecondary transcripts, and data on dropping out. Provided the following information about seniors (not surveyed in 1992 follow-up): marital status, community characteristics, work plans, educational attainment, work history, attitudes and opinions, postsecondary school and program characteristics, postsecondary transcripts and credits earned, and type of financial aid for postsecondary education.

### **Major Publications**

*Gender Differences in Earnings Among Young Adults Entering the Labor Market* (March 1998)

*Continuity of Early Employment Among 1980 High School Sophomores* (September 1997)

*Urban Schools: The Challenge of Location and Poverty* (August 1996)

*Trends Among High School Seniors, 1972–1992* (July 1995)

*Understanding Racial/Ethnic Differences in Secondary School Science and Mathematics Education* (March 1995)

*High School and Beyond: Educational Attainment of 1980 High School Sophomores by 1992* (March 1995)

*America's High School Sophomores: A Ten-Year Comparison, 1980–1990* (June 1993)

### **Data Files**

CD-ROM: High School & Beyond: 1992 (Restricted) Data File (June 1995)

CD-ROM: High School and Beyond Fourth Follow-up (Sophomore Cohort) HS&B: 1992 DAS (March 1995)

### **For Further Information**

HS&B can be found on the Web (<http://nces.ed.gov/surveys/hsb>). For further information on HS&B, contact

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## **National Education Longitudinal Study of 1988**

NELS:88 was the third major longitudinal study sponsored by NCES. The two studies that preceded NELS:88 (NLS:72 and HS&B) surveyed high school seniors (and sophomores in HS&B) through high school, postsecondary education, and work and family formation experiences. Taken together, the longitudinal studies provide not only measures of educational attainment, but also rich resources in exploring the reasons for and consequences of academic success and failure. NELS:88 sought to expand on this base of knowledge by following young adolescents from an earlier age (eighth grade) and updating information throughout the 1990s.



The longitudinal design of this study permits the examination of change in young people's lives and the role of schools in promoting growth and positive life outcomes. For example, NELS:88 data can be used to investigate the following:

- *Students' academic growth over time*—Family, community, school, and classroom factors that promote such growth can be studied. The goal is to identify school and classroom characteristics and practices that promote student learning. The changing composition of the family, which is evidenced by increasing numbers of working mothers and families headed by single parents, can also be studied.
- *The process of dropping out of school, as it occurs from eighth grade on*—NELS:88 provides the unprecedented opportunity to study young dropouts on a national scale, to examine the contextual factors associated with dropping out (especially those related to school), and to profile the movement of students in and out of school, including alternative high school programs.
- *The role of the school in helping the disadvantaged*—Given teenage pregnancy rates, poverty among children, and the growing proportion of language-minority students, there is a need for research on the school experiences of the disadvantaged and the approaches that hold the greatest potential for assisting them. By design, the NELS:88 sample contained an ample number of disadvantaged students in order to study this issue.
- *School experiences and academic performance of language-minority students*—NELS:88 oversampled Hispanics, Asians, and Pacific Islanders to allow meaningful analyses of these subpopulations. Specifically, the data provide information on variation in achievement levels and bilingual education needs and experiences.
- *Attracting students to the study of mathematics and science*—The data can be used to examine the math and science preparation students receive nationwide and the degree to which their interest in these subjects is captured. Information is also available on whether students were encouraged by their teachers and school to study advanced mathematics and science.
- *The transition from high school to college (postsecondary access and choice)*—NELS:88 examined the planning and postsecondary education application behaviors of the high school class of 1992, as well as subsequent enrollments in postsecondary institutions. The transition from high school and postsecondary education to the world of work and adult roles was also examined. During the fourth follow-up, NELS:88 respondents provided information on their current activities, including work and postsecondary education experiences.

## Design

The base-year sample of 1988 eighth-graders was designed to be representative at the national level. Two-stage probability sampling was used to select schools and students. The first stage involved stratified sampling of some 1,000 public and private schools from a universe of approximately 40,000 schools containing eighth-grade students. The second stage included random samples of approximately 24 to 26 students per school. Some 25,000 eighth-graders and their parents, teachers, and school principals were surveyed. When the student sample was selected, one parent and two teachers of each student were also selected. Hispanic, Asian, and Pacific Islander students were oversampled to permit analysis of the performance of language-minority students.

NELS:88 was designed to provide trend data about critical transitions experienced by young people as they develop, attend school, and embark on their careers. It can complement and strengthen state and local efforts by furnishing new information on how school policies, teacher practices, and family involvement are associated with student education outcomes (i.e., academic achievement, persistence in school, and participation in postsecondary education). In the base year, four cognitive tests (reading, science, history-government, and math) were administered in addition to the student questionnaire, a parent questionnaire, a teacher questionnaire, and a school administrator questionnaire.

The NELS:88 first follow-up survey included student, school administrator, teacher, and dropout questionnaires. Students took cognitive tests in reading, science, history-government, and math. The tests were designed to reflect 10th-grade coursework, but also had enough overlapping items with the 8th- and 12th-grade tests to permit measurement of academic growth. Selected teachers of each sampled student provided information about the student's study habits and performance, and about instructional practices in the student's classes. The NELS:88 first follow-up was conducted between February and May of 1990.

During the spring of 1992, NCES surveyed this eighth-grade cohort again as part of the second follow-up survey. This second follow-up included student, school administrator, parent, teacher, and dropout questionnaires. Students and dropouts also took cognitive tests in reading, science, social science, and math. High school transcripts were also collected from second follow-up participants.

During the spring of 1994, NCES surveyed this cohort again. The focus of the interviews was on employment, education, and family formation experiences. The sampled population was interviewed using CATI in order to determine whether they had completed high school and, if so, by what means (e.g., regular completion, GED, or some other method). The interview also collected information about other activities since the last interview in 1992 (e.g., working, number of jobs, periods worked, description of work and education, postsecondary activities, field of study, and periods of time in postsecondary activities).

Another follow-up was conducted in 2000, by which time many in this cohort had finished their postsecondary education and completed a transition into the labor force. Others had been in the labor force for about 8 years. Postsecondary transcripts were also collected in 2000.

## Components

### BASE YEAR (1988)

**Student Questionnaire**—Provided information about family background, interaction with parents regarding in- and out-of-school activities, educational and occupational goals, perceptions about self and school, participation in classes and activities, and self-reported grades. Four cognitive tests were administered: in reading, math, science, and history-government.

**Parent Questionnaire**—Provided information about sociodemographic characteristics, participation in student course selection, long-range educational planning, in- and out-of-school activi-

ties, establishing home discipline and interaction with the school, family educational expenses, and sources of income for children's education.

**School Administrator Questionnaire**—Provided information about the following school characteristics: grade span, school type, enrollment and major program orientation, policies and practices, admission procedures and tuition, grading, testing and minimum course credits, gifted and talented programs, extracurricular activities, and school climate. Provided information about the following student characteristics: average daily attendance, migration, race/ethnicity, single-parent households, limited-English-proficiency classes, and special student services, such as remedial classes and job training. Provided information about the following teacher staff characteristics: size, race/ethnicity, salary, and degree.

**Teacher Questionnaire**—Provided information about the following student characteristics: personal characteristics, behavior, academic performance, attitudes, problems, and handicaps. Provided information about the following class characteristics: homework assigned, use of instructional materials, choice of textbook-workbook, curriculum, and topical coverage. Provided information about the following teacher characteristics: sex, race/ethnicity, age, experience, certification, degree, foreign language proficiency, in-service education, classroom preparation, parent contact, perception of school climate, and experience teaching gifted and talented children.

#### FIRST FOLLOW-UP (1990)

**Student Questionnaire**—Provided information about school experiences and activities, plans for the future, language use, opinions about self, attitudes, religion, finances, and family composition. Four cognitive tests were administered: in reading, math, science, and history-government.

**Dropout Questionnaire**—Provided same information as Student Questionnaire, except school experiences and activities section included questions about leaving school, grades at the time, and whether the student returned to school.

**Teacher Questionnaire**—Provided information about the following student characteristics: academic performance, behavior, homework, absenteeism, parental involvement, and language-minority status. Provided information about the following class characteristics: enrollment, composition, homework assigned, class schedule, teaching materials, methods, and objectives. Provided information about the following teacher characteristics: sex, race/ethnicity, subjects taught, and degrees held. School climate information was provided on cooperation among staff, shared beliefs, and problems.

**School Administrator Questionnaire**—School characteristics covered were grade span, enrollment, control of school, community location, calendar system, programs, facilities and services, and absenteeism. Student characteristics covered were race/ethnicity, single-parent homes, limited English proficiency, free lunch programs, busing, and 10th-grade dropouts. Teaching staff characteristics covered were meetings, departmentalization, chairpersons, full-time teachers, salaries, race/ethnicity, and degrees. School admission policy and practice characteristics covered were grading structure, testing structure, or both; school programs; and school climate.

SECOND FOLLOW-UP (1992)

**Student Questionnaire**—Included information on school experiences and activities, age, social development, opinions about self, attitudes, occupational expectations and aspirations, money and work, language use, and school structure. Also included an early graduate supplement.

**Parent Questionnaire**—Included information on family background, child's school life, parental behavior concerning student course selection, student educational outcomes, long-range educational planning, contact with child's school, family life, friends, activity in the community, child's future plans, postsecondary education aspirations, parent involvement, in- and out-of-school activities, family educational expenses, and sources of income for child's education.

**School Administrator Questionnaire**—School characteristics covered were school environment and policies, total enrollment, grade span, school type, school activities, school programs and services, grading and testing structure, and school climate. Student characteristics covered were average daily attendance, race/ethnicity, single-parent households, limited-English-proficiency classes, and special student services, such as remedial classes and job training. Teacher staff characteristics covered were size, full or part time, salary, and degree.

**Teacher Questionnaire**—Student information covered was academic performance, behavior, homework, absenteeism, parent involvement, and language-minority status. Class information covered was enrollment, composition, homework assigned, class schedule, teaching materials, methods, and objectives. Teacher information covered was sex, race/ethnicity, experience, certification, degree, and in-service education. School climate information covered was cooperation among staff, shared beliefs, and problems.

**Dropout Questionnaire**—Included information on how time is spent, past educational activities, reasons for dropping out, family reactions, peer group support, and plans and aspirations for returning to school.

**High School Transcripts**—Included information on coursetaking, grades, and credits earned.

THIRD FOLLOW-UP (1994)

**Student CATI Interview**—Included information on high school completion and mode of completion, education and work plans, educational attainment, work history, marital status, family formation, personal values, community activities, postsecondary school and program characteristics, and type of financial aid for postsecondary education.

FOURTH FOLLOW-UP (2000)

**Student CATI Interview**—Included information on high school completion and mode of completion, education and work plans, professional development activities, educational attainment, work history, marital status, family formation, personal values, community activities, postsecondary school and program characteristics, and type of financial aid for postsecondary education.

**Postsecondary Transcripts**—Included information on coursetaking, grades, credits earned, and degrees awarded.



## Major Publications

*Adolescent Cigarette Smoking: A Longitudinal Analysis Through Young Adulthood* (April 2005)

*Coming of Age in the 1990's: The Eighth Grade Class of 1988 Twelve Years Later*  
(March 2002)

*Subsequent Educational Attainment of High School Dropouts* (June 1998)

*Confronting the Odds: Students at Risk and the Pipeline to Higher Education* (January 1998)

*Access to Postsecondary Education for the 1992 High School Graduates* (October 1997)

*Profiles of Students With Disabilities as Identified in NELS:88* (June 1997)

*Science Proficiency and Course Taking in High School: The Relationship of Science Course-Taking Patterns to Increases in Science Proficiency Between 8th and 12th Grades* (April 1997)

*A Comparison of High School Dropout Rates in 1982 and 1992* (October 1996)

*NELS:88/94 Descriptive Summary Report, With an Essay on "Access and Choice in Postsecondary Education"* (May 1996)

*NELS:88 High School Seniors' Instructional Experiences in Science and Math* (March 1996)

*Two Years Later: Cognitive Gains and School Transitions of NELS:88 Eighth Graders*  
(September 1995)

*A Profile of the American High School Senior in 1992* (July 1995)

*NELS:88 Students' School Transition Patterns Between 8th and 10th Grades* (April 1995)

*A Profile of the American High School Sophomore in 1990* (March 1995)

*School Engagement and Students at Risk* (August 1993)

*America's High School Sophomores: A Ten-Year Comparison, 1980–1990* (June 1993)

## Data Files

CD-ROM: NELS:88/2000 Public-Use Data Files and Electronic Codebook—Base Year Through Fourth Follow-up (August 2002)

CD-ROM: NELS:88/94 Public-Use Data Files and Electronic Codebook—Base Year Through Third Follow-up (April 2000)

## For Further Information

NELS:88 can be found on the Web (<http://nces.ed.gov/surveys/nels88>). For further information on NELS:88, contact

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## Education Longitudinal Study of 2002

The Education Longitudinal Study of 2002 (ELS:2002) is the fourth in a series of NCES-sponsored secondary school-based longitudinal studies. All four studies describe the transition of American youth from secondary schooling to subsequent education and work roles. The three studies that preceded ELS:2002 are NLS:72, HS&B, and NELS:88. ELS:2002 is designed to monitor the transition of a national sample of young people as they progress from 10th grade through high school and on to postsecondary education and/or the work world.



In 2002, the base year of data collection, ELS:2002 measured students' tested achievement and obtained information from students about their in-school and out-of-school experiences. These same students were surveyed again in the first follow-up, in 2004. Under current plans, cohort members will be followed through 2012 so that later outcomes, including access to and persistence in higher education or success in the labor market, can be examined in terms of students' earlier aspirations, achievement, and high school experiences.

ELS:2002 gathers information at multiple levels. It obtains information from students and their school records as well as from students' parents, their teachers, and the administrators (principals and library media center directors) of their schools. Data from teachers provide direct information not only about the student, but also about the specific mathematics and English classes in which the teachers and student interact. Additionally, teacher reports provide information about the school as seen from the teacher's perspective. This multilevel focus provides researchers with a comprehensive picture of the home, community, and school environments and their influences on students.

Using this multilevel and longitudinal information from the base year and first follow-up of ELS:2002 can help researchers and policymakers at all governmental levels, and inform decision-makers, education practitioners, and parents about the changes in the education system over time and the impact that these changes may have on students. The policy issues that can be studied include school attributes associated with achievement; the influence of parent and community involvement on students' achievement and development; the dynamics and determinants of dropping out of the education system; the transition of different groups; cognitive outcomes and the influence of different curriculum paths and special programs; and the effectiveness of different high schools and whether their effectiveness varies with school size, organization, climate, curriculum, academic press, and other characteristics. These data can facilitate an understanding of the potential impact of various instructional methods and curriculum content in bringing about educational growth and achievement.

After the high school years, ELS:2002 will continue to follow its sample of students into postsecondary education or the labor market. For students who continue on to postsecondary education, ELS:2002 will collect information on their access to postsecondary institutions, choices of institutions and programs, postsecondary persistence, attainment, and eventual entry into the labor force and adult roles. For students who go directly into the workforce either as dropouts or

high school graduates, ELS:2002 will be able to help determine how well high schools have prepared these students for the labor market and how they fare within it.

Basic elements that are encompassed in the ELS:2002 survey instruments can be classified into three broad categories: background information (normally collected in the base year only), process information (about dynamic influences on students, in the home, school, and community environments as they move through secondary school and beyond into the world of post-secondary education and the adult workforce), and outcome information (the eventual outcomes of the transition process). Below are examples of the content of the ELS:2002 survey instruments:

- social background variables, including sex, race, family income, family structure and composition, parent education and employment, languages spoken, parental aspirations for child, health history, and prior school experience;
- home educational support system process variables, including involvement in education, cognitive stimulation, discipline, and monitoring; and
- outcome variables, including tested achievement in math and reading; achievement growth over time in mathematics; grades; retention/promotion; high school persistence/dropout status; socioemotional development; engagement in school; postsecondary access and entry, progress, and attainment; labor market outcomes; family formation; and citizenship.

## Design and Sample Sizes

### BASE YEAR (2002)

- The baseline survey of high school sophomores was conducted in spring 2002.
- The baseline survey included cognitive tests in reading and mathematics.
- In the base year, one parent was surveyed for each student. Each student's English and math teachers were surveyed, as well. For each school, the principal or chief administrator completed a questionnaire. The head of the library media center also completed a questionnaire. The survey administrator completed a facilities checklist that described the physical plant and circumstances of the school.
- The sample sizes were 750 schools, over 15,000 students and their parents, and 10,000 teachers.
- Schools were selected first; then, 10th-grade students were randomly selected within each school.
- Because nonpublic schools are comparatively more rare than public schools, such schools (specifically, Catholic and other private schools) were sampled at a higher rate. This ensured larger numbers of these schools to support comparisons with public schools.
- Some types of students from less numerous population groups (e.g., Asian Americans) were selected at a higher rate to increase their numbers so that the study can validly compare the experiences of Blacks, Asians, Hispanics, and Whites.

#### FIRST FOLLOW-UP (2004)

The first follow-up was conducted during the spring of 2004, when most sample members were seniors; some sample members were dropouts or in other grades. The follow-up included student questionnaires, dropout questionnaires, cognitive test in mathematics, and school administrator questionnaires.

The follow-up returned to the same 750 school records. Information regarding courses completed, credits earned, and grades was collected for sample members' academic careers from 9th through 12th grades as part of the High School Transcript Study.

#### SECOND FOLLOW-UP (2006)

The second follow-up will be conducted in 2006. This, as well as other post-high school follow-ups, will be conducted by CATI.

#### THIRD FOLLOW-UP (2012)

The third follow-up will be conducted in 2012, when most of the respondents will be 8 years out of high school. A postsecondary transcript component is also planned for this cohort of 2002 10th-graders.

### Major Publications

*A Profile of the American High School Sophomore in 2002: Initial Results From the Base Year of the Longitudinal Study of 2002* (March 2005)

*School Library Media Centers: Selected Results From the Education Longitudinal Study of 2002 (ELS:2002)* (January 2005)

*ED TAB: The High School Sophomore Class of 2002: A Demographic Description. First Results From the Base Year of the Educational Longitudinal Study of 2002* (April 2004)

Additional reports on selected topics will be prepared under government sponsorship; it is anticipated that nongovernment researchers will also make extensive use of the released data and publicly publish or report their results.

### Data Products

ELS:2002 Base Year Data File User's Manual (April 2004)

Education Longitudinal Study: 2002 Data Files and Electronic Codebook System (April 2004)

### For Further Information

ELS:2002 can be found on the Web (<http://nces.ed.gov/surveys/els2002>). For further information on ELS:2002, contact

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## Postsecondary Longitudinal Studies

### Beginning Postsecondary Students Longitudinal Study

The Beginning Postsecondary Students Longitudinal Study (BPS) was started to complement the high school cohort longitudinal studies and to improve data on participants in postsecondary education. Because older students, in addition to recent high school graduates, are increasingly included in postsecondary education, high school cohort studies are not representative of all postsecondary participants at a given point in time. BPS includes these “nontraditional” as well as “traditional” students and thus is more representative of all beginning students in postsecondary education.



BPS includes information regarding persistence, progress, and attainment from initial entry into postsecondary education through entering and leaving the workforce. By following a postsecondary education cohort (rather than a single-age elementary or secondary school cohort), BPS describes to what extent, if any, students who start postsecondary education later differ in their persistence, progress, and attainment. Because students who delay entry into postsecondary education have different experiences prior to entry than students who enter immediately after high school, their transitions between levels of education and work may also be different. In addition to issues related to persistence, progress, and attainment, BPS also directly addresses issues concerning entry into the workforce. Its unique contribution is the inclusion of nontraditional (or older) students. This provides the ability to analyze the differences between traditional students (recent high school graduates) and nontraditional students in aspirations, persistence, progress, and attainment. With three cohorts of beginning students, differences and changes over time can begin to be tracked.

Among the questions BPS addresses are the following: Do students who are part-time or discontinuous attendees have the same educational goals as full-time, consistent attendees? Are they as likely to attain similar educational goals? Are students who change majors more or less likely to persist? The report *Descriptive Summary of 1989–90 Beginning Postsecondary Students: 5 Years Later* presents rates of persistence and degree attainment; *Nontraditional Undergraduates* presents differences in persistence for traditional and nontraditional students; and *Descriptive Summary of 1995–96 Beginning Postsecondary Students: Six Years Later* describes the attendance patterns and completion rates of the second BPS cohort.

## Design

BPS is based on the National Postsecondary Student Aid Study (NPSAS). NPSAS is a large, nationally representative sample of institutions, students, and parents (see NPSAS description in chapter 4 for more information). As such, it provides a highly efficient and cost-effective way of identifying a nationally representative sample of beginning students attending postsecondary institutions. Data from all components of NPSAS (the Student Record Abstract, Student Interview, and Parent Survey) are available as base-year data for the BPS sample. For the second BPS cohort (BPS:96/98/01), annual matches with U.S. Department of Education financial aid records and SAT/ACT scores are also available. About 8,000 students who began their postsecondary education in the 1989–90 academic year responded to NPSAS:90 and were included in the first follow-up of the first BPS cohort in 1992 (BPS:90/92) and in the second follow-up in 1994 (BPS:90/94). NPSAS:90 collected data for over 6,000 parents of these students. The second BPS cohort followed NPSAS:96 students beginning their postsecondary education in the 1995–96 academic year. Over 10,000 students responded to the first follow-up of this cohort in 1998 (BPS:96/98), and over 9,100 responded to the second follow-up of this cohort in 2001 (BPS:96/01). NPSAS:04 identified a third cohort of approximately 22,000 students who began their postsecondary education in the 2003–04 academic year. These students will be followed up and surveyed in 2006 (BPS:04/06) and again in 2009 (BPS:04/09).

New BPS cohorts will alternate with the Baccalaureate and Beyond Longitudinal Study (B&B) in using NPSAS as their base.

## Components

**NPSAS Base-Year Data**—Provide information on major field of study; type and control of institution; financial aid; cost of attendance; age, sex; race/ethnicity; reasons for school selection; current marital status; employment and income; community service; background and preparation for college; college experience; future expectations; and parents' level of education, income, and occupation.

**BPS Follow-up Surveys**—Provide information on year in school; persistence in enrollment; academic progress; degree attainment; change in field of study; institution transfer; and education-related experiences, including early entry into graduate school, expenses and financial aid, employment and income, employment after completion, employment-related training, current family status, community service, political participation, and future expectations.

## Major Publications

*Community College Students: Goals, Academic Preparation, and Outcomes* (June 2003)

*Descriptive Summary of 1995–96 Beginning Postsecondary Students: Six Years Later*  
(December 2002)

*Short-Term Enrollment in Postsecondary Education: Student Background and Institutional Differences in Reasons for Early Departure, 1996–98* (November 2002)

*Persistence and Attainment of Beginning Students With Pell Grants* (May 2002)

*High School Academic Curriculum and the Persistence Path Through College: Persistence and Transfer Behavior of Undergraduates 3 Years After Entering 4-Year Institutions* (September 2001)

*Community College Transfer Rates to 4-Year Institutions Using Alternative Definitions of Transfer* (July 2001)

*Bridging the Gap: Academic Preparation and Postsecondary Success of First-Generation Students* (May 2001)

*Descriptive Summary of 1995–96 Beginning Postsecondary Students: Three Years Later, With an Essay on Students Who Started at Less-Than-4-Year Institutions* (March 2000)

## Data Products

Public-use data from BPS are available on the Web and on CD-ROM. The public-use online Data Analysis System (DAS) is available on the Web at <http://nces.ed.gov/dasol>. Information on public-use data available on CD-ROM may be found on the Web at <http://nces.ed.gov/surveys/bps>.

Restricted data files (containing student-level data) are also available. To obtain a restricted CD-ROM with data files, you must first apply and receive approval for licensure. More information may be found on the Web at <http://nces.ed.gov/pubsearch/licenses.asp>.

## For Further Information

BPS may be found on the Web (<http://nces.ed.gov/surveys/bps>). For further information on BPS, contact

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## Baccalaureate and Beyond Longitudinal Study

The Baccalaureate and Beyond Longitudinal Study (B&B) provides information concerning education and work experiences after completion of the bachelor's degree. It provides both cross-sectional information 1 year after bachelor's degree completion and longitudinal data concerning entry into and progress through graduate-level education and the workforce. A special emphasis of B&B is on those entering teaching.



B&B provides information on entry into, persistence and progress through, and completion of graduate-level education. This information has not been available through follow-ups involving high school cohorts or even college-entry cohorts, both of which are restricted in the number who actually complete the bachelor's degree and continue their education. B&B:93/97 provided

a unique opportunity to gather information concerning delayed entry into graduate education, time to completion of graduate education, and the interaction between work and education beyond the bachelor's degree. B&B:93/03 expands this opportunity and provides information concerning graduate study and long-term employment experiences after degree completion.

B&B is an expansion of the former RCG Study (RCG). RCG focused on the immediate post-degree employment and education experiences of people who completed a bachelor's or master's degree, and also estimated the potential supply of newly qualified teachers at the elementary and secondary levels. B&B builds upon and expands that effort to provide unique information on education and employment experiences at the undergraduate level, as well as extensive information on financing undergraduate education. In addition, B&B:93 provides that information over a longer period of time and addresses issues concerning delayed entry into graduate school, progress and completion of graduate-level education, and undergraduate and graduate debt and their impact on choices related to career and family. In addition, it provides new information on the career paths of new teachers and movement into and outside the education system. B&B:2000/01 is comparable to RCG, with the addition of information about the undergraduate education (from NPSAS) of those who complete their bachelor's degrees. B&B covers a number of topics of interest to policymakers, educators, and researchers. For example, B&B allows analysis of the participation and progress of recent bachelor's degree completers in the workforce; the relationship of employment to degree, income, and the ability to repay debt; and willingness to enter public service-related fields. B&B also allows analysis of issues related to access to and choice in graduate education programs. Here, the emphasis is on the ease and timing of entrance into graduate school, and attendance-employment patterns, progress, and completion timing once entered.

The unique features of B&B allow it to be used to address issues related to undergraduate education as well as postbaccalaureate experiences. For instance, B&B allows the investigation of issues related to undergraduate coursetaking patterns, progress, and time to degree. This can involve such things as coursetaking in the major area of study as well as in areas other than the academic major; stopout and transfer behavior; credits and grades earned; financial aid and work experiences as an undergraduate and their relationship to postbaccalaureate education; and financial experiences. This information has been used to investigate the relationship between undergraduate debt burden and early labor force experiences and between undergraduate academic experiences and entry into teaching. These and other relationships can be investigated both in the short term and the longer term.

Because B&B has a special emphasis on new teachers at the elementary and secondary levels, it can be used to address many issues related to teacher preparation, entry into the profession (e.g., timing and ease of entry), persistence in or defection from teaching, and career movement within the education system.

Employment and enrollment patterns can also be examined for special baccalaureate degree populations. These populations include students with disabilities, racial and ethnic minorities, students from families with low incomes, and older students. B&B also allows investigation of the experiences of students by major field of study at both the undergraduate and graduate



levels. Major fields of particular interest include mathematics, science, engineering, teacher preparation, and health studies.

## Design

B&B is based on NPSAS (described separately in chapter 4). NPSAS is a large, nationally representative sample of institutions, students, and parents. As such, it provides a highly efficient and cost-effective way of identifying a nationally representative sample of baccalaureate degree completers. For each NPSAS that serves as the base year for a B&B cohort, the sample is structured to provide an optimum sample of graduating seniors in all majors. This allows the accurate identification of baccalaureate degree completers, and provides additional information concerning both past education experiences and future education employment expectations. Data from all components of NPSAS are available as base-year data for the B&B sample.

B&B follows baccalaureate degree completers identified in alternating NPSAS surveys, beginning with NPSAS:93. About 11,000 students who completed their degree in the 1992–93 academic year were included in the first B&B cohort and were followed up in 1994, 1997, and 2003 (B&B:93/94/97/03). NPSAS:93 also provided data for over 8,000 of their parents. In addition to the student interview data, the first B&B follow-up (B&B:93/94) collected postsecondary transcripts covering the undergraduate period. These transcripts provide information on progress and persistence at the undergraduate level. The second B&B follow-up took place in spring 1997 (B&B:93/97) and provided new information on employment, entry into graduate school, and progress in the teacher pipeline. The third follow-up took place in the spring of 2003 (B&B:93/03) and provided additional information on graduate degrees started; completed; and, if completed, time to completion, longer term workforce experiences, entry into and continued progress through the teacher pipeline, and family experiences. The B&B:93/03 data files contain all information collected for this cohort. A second B&B cohort began with the 2000 NPSAS and involved only a 1-year follow-up in 2001 (B&B:2000/01). This included education and work experiences in the year after bachelor's degree completion. The next NPSAS, in 2008 (NPSAS:08), is scheduled to support a third B&B cohort.

Future B&B cohorts will alternate with BPS in using NPSAS as their base.

## Components

### BASE YEAR

**NPSAS Data**—Provide information on year in school; major field of study; type and control of institution; attendance status; tuition and fees; admission test scores; financial aid awards; cost of attendance; student budget information and expected family contribution for aided students; grade point average; date first enrolled; level; financial aid at other schools attended during year; other sources of financial support; monthly expenses; reasons for selecting school attended; current marital status; age, race/ethnicity; sex; highest degree expected; employment and income; community service; expectations for employment after graduation; expectations for graduate school; plans to enter the teaching profession; and parents' level of education, income, and occupation.

## FIRST FOLLOW-UPS

**B&B:93/94 and B&B:2000/01**—Provided information on employment after degree completion, job search activities, expectations for and entry into teaching, teacher certification status, job training and responsibilities, expectations/entry into graduate school, enrollment after degree, financial aid, loan repayment/status, income, family formation and responsibilities, community service, undergraduate coursework, institutions attended, grades, credits attempted and earned, and academic honors earned. In addition, B&B:93/94 contains undergraduate transcript records.

## SECOND AND THIRD FOLLOW-UPS

**B&B:93/97/03**—Provided information on employment history; enrollment history; job search strategies at degree completion (each new degree completed); career progress; current status in graduate school; federal and nonfederal aid received; additional job training; entry into, persistence in, and resignation from teaching career; teacher certification status; teacher career paths; income; family formation and responsibilities; community service; types and amounts of federal financial aid received; total federal debt accrued; and loan repayment status.

**Major Publications**

*Debt Burden: A Comparison of 1992–93 and 1999–2000 Bachelor's Degree Recipients, a Year After Graduating* (March 2005)

*Baccalaureate and Beyond: A Descriptive Summary of 1999–2000 Bachelor's Degree Recipients, 1 Year Later—With an Analysis of Time to Degree* (August 2003)

*Beyond 9 to 5: The Diversity of Employment Among 1992–93 College Graduates in 1997* (October 2002)

*Competing Choices: Men's and Women's Paths After Earning a Bachelor's Degree* (June 2001)

*From Bachelor's Degree To Work: Major Field of Study and Employment Outcomes of 1992–93 Bachelor's Degree Recipients Who Did Not Enroll in Graduate Education by 1997* (May 2001)

*Progress Through the Teacher Pipeline: 1992–93 College Graduates and Elementary/Secondary School Teaching as of 1997* (December 1999)

*Life After College: A Descriptive Summary of 1992–93 Bachelor's Degree Recipients in 1997, With an Essay on Participation in Graduate and First-Professional Education* (July 1999)

*Early Labor Force Experiences and Debt Burden* (September 1997)

*America's Teachers: Profile of a Profession, 1993–94* (July 1997)

**Data Products**

Public-use data from B&B are available on the Web and on CD-ROM. The public-use online Data Analysis System (DAS) is available on the Web at <http://nces.ed.gov/dasol>. Information on public-use data available on CD-ROM may be found on the Web at <http://nces.ed.gov/surveys/B&B>.

Restricted data files (containing student-level data) are also available. To obtain a restricted CD-ROM with data files, you must first apply and receive approval for licensure. More information may be found on the Web at <http://nces.ed.gov/pubsearch/licenses.asp>.

## **For Further Information**

B&B can be found on the Web (<http://nces.ed.gov/surveys/B&B>). For further information on B&B, contact

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## **Plans for Longitudinal Studies**

Data collection began in the spring of 2002 for the longitudinal study of 10th-graders (ELS:2002). The first follow-up to the base-year data collection was conducted in 2004; a second follow-up will be conducted in 2006 and a third follow-up in 2012.

ECLS-K data was collected in the spring of 2002, when children were in the third grade. NCES collected more data in 2004, when children were in the fifth grade. Current plans call for an eighth-grade data collection. In 2002, ECLS-B collected data on the sample of children at 9 months of age; the second wave of data collection was started as children in the study reached age 2. The next data point is at age 4.

The BPS sample of students who began their postsecondary education in 1995–96 were interviewed again in 2001. Another BPS sample of students who began their postsecondary education in 2003–04 will be interviewed in 2006 and again in 2009. As part of B&B, a sample of students who received their bachelor's degrees in 1999–2000 were interviewed again in 2001, and the sample of 1992–93 bachelor's degree recipients were interviewed again in 2003.

**Table 5. Data collection calendar for longitudinal studies**

	Base year and years of follow-up studies									
<b>Early Childhood Longitudinal Study</b>	1998	1999	2000	2001	2002	2003	2004			
Kindergarten Class of 1998–99	B	B, F	F		F		F			
Birth Cohort of 2001				B	B, F	F	F			
<b>National Longitudinal Study of the High School Class of 1972</b>		1972	1973	1974	1976	1979	1986			
		B	F	F	F	F	F			
<b>High School and Beyond Longitudinal Study</b>			1980	1982	1984	1986	1992			
Seniors			B	F	F	F				
Sophomores			B	F	F	F	F			
<b>National Education Longitudinal Study of 1988</b>			1988	1990	1992	1994	2000			
			B	F	F	F	F			
<b>Education Longitudinal Study of 2002</b>				2002	2004	2006	2012			
				B	F	F	F			
<b>Beginning Postsecondary Students Longitudinal Study</b>	1990	1992	1994	1996	1998	2001	2004	2006	2009	
1989–90		B	F	F						
1995–96				B	F	F				
2003–04							B	F	F	
<b>Baccalaureate and Beyond Longitudinal Study</b>		1993	1994	1997	2000	2001	2003	2008		
1992–93		B	F	F			F			
1999–2000					B	F				
2007–08										B

B = base year  
F = follow-up

## CHAPTER 7

# International Statistics





## **Introduction**

Insights into the educational practices and outcomes of the United States are obtained by comparing them with those of other countries. Congress, in authorizing the National Center for Education Statistics (NCES), recognized the importance of cross-national information by including it in the agency's mission. NCES carries out a variety of activities to provide statistical information comparing the educational experiences and trends in other countries to those in the United States. Through comparisons with other countries, it is possible to learn more about the status of education in the United States and to generate new ideas for improving American education.

NCES plays a central role among organizations involved in collecting and interpreting international data and has created an International Activities Program within the Early Childhood, International, and Crosscutting Studies Division to coordinate NCES efforts in international education studies. NCES is actively involved with the Organization for Economic Cooperation and Development (OECD), based in Paris, France, and with the International Association for the Evaluation of Educational Achievement (IEA), based in Amsterdam, Netherlands. In addition, NCES is working with the Office of the Secretary, U.S. Department of Education, on the Regional Education Indicators Project, to develop comparable education indicators throughout the Americas.

There is a great deal of interest in the findings of international student assessment studies and in the development of education indicators that facilitate comparisons among national systems of education. This interest has been spurred by increased concern about global economic competition and the role that education plays in the economy.

International assessment studies provide answers to questions of how other countries educate their children and with what success. Such comparisons can lead to reexamination of our own education policies and practices and challenge the conventional wisdom underlying them. The assessments not only compare the performance of American students with that of their peers in other nations, but can also provide insights into the factors that may influence performance.

The work that NCES conducts within the International Activities Program is designed to provide comparable indicator data about the activities and outcomes of education systems and institutions in other nations. Such data can lead to improvements in accountability and policymaking. These data are increasingly relevant to policy formulation as the political, economic, and cultural ties among countries grow.

## **Data Uses**

NCES receives many requests for information about education in other countries, for instance, about school achievement levels, school completion rates, school expenditure

levels, and higher education enrollment rates. Policymakers, such as chief state school officers, governors, and local school officials, also want to know the average level of achievement in various subject matters in other countries.

NCES also provides international data on instructional practices. These data are gathered through two vehicles: surveys conducted at the same time as assessments are conducted and videotape studies. Both vehicles allow researchers to examine and illustrate instructional practices from around the world.

Data from these international activities appear prominently in numerous publications produced not only in the United States, but also by international organizations. For example, the OECD publication *Education at a Glance* relies heavily on data gathered through NCES. United Nations Educational, Scientific, and Cultural Organization (UNESCO) reports on literacy have begun to follow the conventions developed by the International Adult Literacy Survey, which NCES helped to underwrite.

## Studies and Activities

### Trends in International Mathematics and Science Study

The Trends in International Mathematics and Science Study (TIMSS), sponsored by the International Association for the Evaluation of Educational Achievement (IEA), is a study of students' mathematics and science achievement in the United States and other participating nations. Previously known as the Third International Mathematics and Science Study, the study is on a 4-year cycle, with data collection having occurred at three points in time thus far: 1995, 1999, and 2003. Results from all three data collections have been released.



In 1995, 42 nations, including the United States, participated in the study. Assessments were administered to students in both grades 4 and 8 and to students at the end of secondary school (grade 12 in the United States). In 1999, 38 nations participated. Unlike the 1995 data collection, in 1999 the assessments were administered to students in grade 8 only. In 2003, 50 nations and jurisdictions collected data from students in grades 4 and/or 8. The TIMSS assessments allow the United States to compare the achievement of its students to their peers around the world. In addition, TIMSS allows for comparisons among nations on education-related contextual information collected from schools, teachers, and students.

The United States has sponsored additional components of TIMSS to enhance the information gained through the assessments and questionnaires. These components are as follows:

- **TIMSS 1995 Videotape Classroom Study**—This first-ever large-scale international study of teaching in eighth-grade mathematics classrooms involved three



nations: Germany, Japan, and the United States. The study videotaped nationally representative samples of eighth-grade mathematics teaching to provide detailed information on the practices that may contribute to the achievement of students in the three participating nations.

- **TIMSS 1995 Curriculum Study**—Fifty nations provided information on their official curriculum and submitted representative samples of mathematics and science textbooks for this study. Through analyses of the data, the original TIMSS curricular frameworks were developed and curricular factors that may influence student achievement were investigated.
- **TIMSS 1995 Case Studies**—The project provided in-depth information on education in three nations: Germany, Japan, and the United States. Through interviews with administrators, teachers, parents, and students, the project investigated education standards, dealing with differences in ability; the place of school in adolescents' lives; and the working conditions and training of teachers.
- **TIMSS 1995 Benchmarking Project**—Five states and one consortium of school districts in the United States voluntarily participated as their own “nations,” following the same guidelines as the participating nations. Participants were able to assess their comparative international standing and evaluate their mathematics and science programs in an international context.
- **TIMSS 1999 Benchmarking Project**—Modeled on the 1995 project, 13 states and 14 districts or consortia of districts throughout the United States voluntarily participated in the second administration of this project.
- **TIMSS 1999 Videotape Classroom Study**—Building on the work of the first TIMSS videotape study of mathematics teaching, the TIMSS 1999 Videotape Classroom Study examined national samples of eighth-grade mathematics and science instructional practices in seven nations. The study was designed to reveal national-level portraits of mathematics and science teaching practices that can provide a more detailed context for understanding mathematics and science teaching and learning in the classroom.

The Benchmarking Projects provide reliable data on how state and district students compare to “world-class” levels in mathematics and science. Results from the Videotape Classroom Studies also add to our understanding of mathematics and science instructional practices in nations with high student achievement levels on assessments such as TIMSS. The Curriculum Study and Case Studies detail how decisions about curriculum and some education policies may contribute to student achievement. Taken together, these components of TIMSS provide a rich source of data for better understanding the educational context in which mathematics and science teaching and learning take place.

Through TIMSS, the following questions, among others, about mathematics and science learning can be addressed:

- How does the mathematics and science knowledge of U.S. students compare to that of students in other nations?
- Has the mathematics and science knowledge level of students changed since the original TIMSS in 1995, and has the relative international standing of U.S. students changed since then?
- How do nations compare on the education-related background factors studied in TIMSS?

- How do U.S. mathematics and science teachers compare to their international colleagues in their preparation for teaching?
- What instructional techniques do mathematics and science teachers in other nations employ in the classroom? How do the teaching skills of U.S. teachers compare to those of their international peers?

## Design

Depending on the year of data collection, TIMSS focuses on students at three different stages in their academic careers. TIMSS 1995 was designed to focus on students in the two adjacent grades containing the largest numbers of 9- and 13-year-olds, as well as students who were completing the compulsory portion of their education. In the United States and most nations, these students were in grades 3/4, 7/8, and 12. TIMSS 1999 focused only on those students in the upper of the two grades that contained the largest number of 13-year-olds. This corresponded to grade 8 in the United States and most nations. In 2003, TIMSS focused on students in grades 4 and 8. With the completion of data collection in 2003, TIMSS provides comparisons of the achievement of fourth-graders across two points in time (1995 and 2003) and eighth-graders across three points in time (1995, 1999, and 2003). The TIMSS assessment includes two parts: mathematics and science. Each part contains items in multiple-choice and free-response formats. In addition, TIMSS administers school, teacher, and student questionnaires that collect information to help provide a context for the performance scores. An international panel of assessment and content experts developed the original assessment framework in 1995. For the 2003 administration of TIMSS, the framework was revised to include the latest developments in mathematics and science education and assessment. The 2003 framework provided the basis for the collection of data on the problem-solving and inquiry skills of students in mathematics and science, which is new to TIMSS.

All participating nations were required to draw nationally representative samples of students and schools for TIMSS. Both public and nonpublic school students in all participating nations received the TIMSS assessments and questionnaires, unless otherwise noted in the reports. Most nations, including the United States, conducted the assessment 2 to 3 months before the end of the school year. Students with special needs and disabilities that would make taking the test difficult were excused from the assessment. Such exclusions were documented by each participating nation, including the United States. In each nation, the assessments and questionnaires were translated into the primary language or languages of instruction. In the United States, all testing was done in English. The student assessment portion required approximately 1½ hours to complete.

## Major Publications

TIMSS 2003

*Highlights From the Trends in International Mathematics and Science Study (TIMSS) 2003* (December 2004)

TIMSS 1999

*Highlights From the TIMSS 1999 Video Study of Eighth-Grade Mathematics Teaching*  
(April 2003)

*Teaching Mathematics in Seven Countries: Results From the TIMSS 1999 Video Study*  
(April 2003)

*Highlights From TIMSS-R* (December 2000)

*Pursuing Excellence: Comparisons of International Eighth-Grade Mathematics and Science Achievement From a U.S. Perspective, 1995 and 1999* (December 2000)

TIMSS 1995

*Mathematics and Science in the Eighth Grade: Findings From Comparisons of the Third International Mathematics and Science Study* (June 2000)

*The TIMSS Videotape Classroom Study: Methods and Findings From an Exploratory Research Project on Eighth-Grade Mathematics Instruction in Germany, Japan, and the United States* (February 1999)

*Pursuing Excellence: A Study of U.S. Twelfth-Grade Mathematics and Science Achievement in International Context* (February 1998)

*Pursuing Excellence: A Study of U.S. Fourth-Grade Mathematics and Science Achievement in International Context* (June 1997)

*Pursuing Excellence: A Study of U.S. Eighth-Grade Mathematics and Science Teaching, Learning, Curriculum, and Achievement in International Context* (November 1996)

### Data Files

Third International Mathematics and Science Study (TIMSS) 1999 U.S. National Restricted-Use Data and User's Guide [also contains rescaled U.S. 1995 data] (October 2003)

TIMSS 1995, 1999, and 2003 data files (available from the International Study Center at Boston College)

### For Further Information

Additional details and publications on TIMSS can be found on the Web (<http://nces.ed.gov/timss>). For further information about TIMSS, contact

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### Civic Education Study

The 1999 Civic Education Study (CivEd) is sponsored by the International Association for the Evaluation of Educational Achievement (IEA). CivEd, which was conducted in 1999, focuses on what ninth-graders in 28 countries, including the United States, know about democratic practices and



institutions. CivEd also provides invaluable data to measure U.S. ninth-grade students' knowledge in three domains: democracy, national identity and international relations, and social cohesion and diversity.

Questions that CivEd can help inform include the following:

- How does the civic achievement of U.S. ninth-grade students compare to achievement in other countries?
- What are the strengths and weaknesses of U.S. ninth-grade students in civic education?
- Are U.S. ninth-grade students more proficient in civic content or in the civic-related skills needed in daily life?
- Are there significant differences across race, sex, and socioeconomic background in the civic achievement of U.S. ninth-grade students?
- What is the school and classroom context for the civic achievement of U.S. ninth-grade students?

### **Design/Components**

CivEd is the result of a major consensus-building effort across the participating 28 countries. Experts in civic education as well as authorities in educational measurement were involved in developing the study framework and assessment instruments. In addition, a preliminary phase of the study conducted case-study research in each participating country to inform the development of the framework and assessment instruments. CivEd includes the following two components:

- **Student Questionnaire**—Consists of three parts and contains cognitive items related to knowledge across the three domains of civic education, questions intended to provide background data on students used to interpret the assessment results, and questions intended to determine students' understandings and perceptions of issues in the three domains.
- **School Questionnaire**—Designed to gather information on the school's general environment, how civic education is integrated into the school curriculum, how the civic education curriculum is structured, and how many staff members are involved in civic education.

### **Major Publications**

*What Democracy Means to Ninth-Graders: U.S. Results From the International IEA Civic Education Study* (April 2001)

*Citizenship and Education in Twenty-Eight Countries: Civic Knowledge and Engagement at Age Fourteen* (released by IEA in March 2001)

### **Data Product**

Civic Education Study 1999 (CD-ROM) (August 2003)

## For Further Information

Additional details about CivEd can be found on the Web (<http://nces.ed.gov/surveys/cived>).

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## Program for International Student Assessment

The Program for International Student Assessment (PISA) is sponsored by the Organization for Economic Cooperation and Development (OECD). PISA is designed to monitor, on a regular 3-year cycle, the achievement of 15-year-old students in three subject areas: reading literacy, mathematical literacy, and scientific literacy. PISA assesses some of the knowledge and skills that enable students to participate fully in society and the economy, and to become lifelong learners.

While some elements covered by PISA are likely to be part of the school curriculum, PISA goes beyond mastery of a defined body of school-based knowledge to include knowledge and experiences gained outside of school and students' ability to apply their knowledge and skills to problems with a real-life context.

In each assessment cycle (assessment cycles began in 2000), PISA focuses on one of the three subject areas, devoting approximately two-thirds of testing time to an in-depth assessment of the major domain and the remaining one-third of testing time to the two minor domains. The subject areas are as follows:

- **Reading literacy**—This subject area requires students to perform a range of tasks with different kinds of texts. The tasks range from retrieving specific information to demonstrating a broad understanding of, interpreting, and reflecting on a text's content and features. Reading literacy was the major domain of focus in 2000.
- **Mathematical literacy**—This subject area entails the use of mathematical competencies at several levels, ranging from performance of standard mathematical operations to mathematical thinking and reflection. Mathematical literacy was the major domain of focus in 2003.
- **Scientific literacy**—This subject area involves the use of key scientific concepts in order to understand and help make decisions about the natural world. It involves being able to recognize scientific questions, use evidence, draw scientific conclusions, and communicate these conclusions. Scientific literacy will be the major domain of focus in 2006.

On its regular 3-year cycle, PISA is planned to provide trend data in a major subject area every 9 years. As PISA develops, it is expected that additional areas of cross-curricular or



general competencies will be assessed. For example, in 2003 an assessment of problem solving was conducted. Questions that PISA helps address include the following:

- How do U.S. 15-year-olds perform in the subject areas covered by PISA in comparison to their international counterparts?
- What are the strengths and weaknesses of U.S. 15-year-olds in reading literacy, mathematical literacy, and scientific literacy?
- Are there significant differences across race, sex, or socioeconomic background in reading literacy, mathematical literacy, and scientific literacy, as measured by PISA?

### Design/Components

PISA is designed to focus on 15-year-old students. In the United States, these are largely 9th- and 10th-graders. In each participating country, a nationally representative sample of 15-year-old students is asked to complete the PISA assessment and student questionnaire. To assess the performance of students and to provide education-related contextual information to understand their performance, PISA includes the following three components:

- **Assessment**—Students are required to read passages and interpret charts, graphs, diagrams, or other documents, and then answer related questions. Question types range from multiple choice to extended response. The objective of the assessment is to determine the extent to which students can reflect upon the domain being assessed and apply their knowledge and skills to solving problems in a real-world context. The focus of the assessment will change with each cycle of PISA.
- **Student Questionnaire**—The student questionnaire was developed to collect information on students' experiences both in and out of school, students' attitudes toward learning, and other basic information considered important to interpreting the assessment results.
- **School Questionnaire**—A school administrator or someone knowledgeable about the school is asked to complete a questionnaire about the staff and its policies.

PISA was designed through an intensive, collaborative process involving all participating nations. PISA brought together content and testing experts to develop the framework from which all PISA assessments are developed. Data collection for PISA 2003 in the United States took place in spring and fall 2003, and results for the 2003 data collection were released in late 2004. Each participating nation was required to draw a nationally representative sample of 15-year-olds.

### Major Publications

*International Outcomes of Learning in Mathematics Literacy and Problem Solving: PISA 2003 Results From the U.S. Perspective* (December 2004)

*Outcomes of Learning: Results From the 2000 Program for International Student Assessment of 15-Year-Olds in Reading, Mathematics, and Science Literacy* (December 2001)

## For Further Information

Additional details about PISA can be found on the Web (<http://nces.ed.gov/surveys/pisa>). The international database is available from the OECD at <http://www.pisa.oecd.org>. For further information about PISA, contact

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## Progress in International Reading Literacy Study

The Progress in International Reading Literacy Study (PIRLS) is sponsored by the International Association for the Evaluation of Educational Achievement (IEA). PIRLS was first administered in 2001 and focused on the reading literacy of fourth-graders and the experiences they had at home and school in learning to read. PIRLS is designed to allow for the measurement of changes in reading literacy over time. The assessment is planned on a 5-year cycle, with the next data collection scheduled for spring 2006.



PIRLS offers the possibility of making comparisons of student reading performance across nations and provides international benchmarks by focusing on the following three aspects of reading literacy:

- processes of comprehension,
- purposes for reading, and
- reading behaviors and attitudes.

PIRLS helps measure progress toward the national goal of promoting reading literacy for all students and allows for comparisons among nations on important education policy issues. PIRLS addresses the following questions about reading literacy:

- How well do U.S. fourth-grade students read literary texts compared to students in other countries?
- How well do U.S. fourth-grade students read informational texts compared to students in other countries?
- What are students' reading habits and attitudes?
- What school characteristics relate to students' reading literacy achievement?

## Design/Components

PIRLS is designed to focus on students in the fourth year of formal instruction (fourth-graders in most countries, including the United States). A nationally representative sample

of students is asked to demonstrate how well they read and how well they understand what they read. To assess the reading performance of students and to provide education-related contextual information to understand their performance, PIRLS includes the following components:

- **Reading Assessment**—Developed for fourth-graders, this assessment represents a range of text types that students would likely have encountered by this grade. The assessment items that accompany the texts require students to demonstrate a range of skills related to reading literacy.
- **Student, Teacher, and School Questionnaires**—These questionnaires were developed to collect information on the school reading experiences of students, teacher expectations and beliefs, reading instruction practices, school reading programs, and students' reading habits and experiences both in and out of school.

An international panel of assessment and content experts developed the PIRLS framework, from which the reading assessment and questionnaires were designed. The framework is updated for each assessment cycle. Data collection in the United States was first conducted in spring 2001, and international and national reports were released in spring 2003. The next full-scale assessment is scheduled for spring 2006.

### **Major Publications**

*PIRLS 2001 International Report: IEA's Study of Reading Literacy Achievement in Primary Schools in 35 Countries* (released by IEA in April 2003)

*International Comparisons in Fourth-Grade Reading Literacy: Findings From the Progress in International Reading Literacy Study (PIRLS) of 2001* (April 2003)

### **Data Product**

Progress in International Reading Literacy Study (PIRLS) 2001 National Data File (CD-ROM) (August 2004)

### **For Further Information**

Information about PIRLS can be found on the Web (<http://nces.ed.gov/surveys/pirls>).

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## Adult Literacy and Lifeskills

Adult Literacy and Lifeskills (ALL) is an international comparative study designed to provide the participating countries, including the United States, with information about the skills of their adult populations (ages 16–65).



ALL measures the literacy and numeracy skills of a nationally representative sample of adults from each participating country. Literacy skills encompass prose and document literacy, including the knowledge and skills to understand and use information from texts such as editorials, news stories, poems, and fiction, and the knowledge and skills required to locate and use information contained in various formats such as tables, forms, graphs, and diagrams. Numeracy refers to the ability to interpret, apply, and communicate mathematical information.

ALL builds upon the success of the 1994 International Adult Literacy Survey (IALS) in the direct measure of literacy skills. For countries that participated in the IALS, such as the United States, ALL provides data to monitor changes in adult skill levels since 1994.

Questions that ALL will address include the following:

- How do the skills of the U.S. adult population, as measured in ALL, compare to the skills of adults in other countries?
- How do the skills measured in ALL relate to one another?
- What is the relationship between the skills measured in ALL and individuals' economic and social status?
- Are there significant differences across race, sex, and socioeconomic background in the skills demonstrated by U.S. adults?

### Design

ALL consists of the following two components:

- **Background Questionnaire.** The background questionnaire is designed to collect general participant information and examine attitudes toward teamwork and familiarity with information and communication technology; and
- **Skills Assessment.** The skills assessment is designed to assess the skills of participants in prose and document literacy and numeracy.

ALL is a household survey. In the 2003 assessment, participants completed approximately 45 minutes of background questions and 60 minutes of paper-and-pencil assessment items in their homes. In the United States, a nationally representative sample of approximately 4,000 adults was selected. Each participating country provided a sample that is representative of their adult population (ages 16–65) as a whole. The main data collection for ALL took place from January to May 2003 with the participation of six countries, including the United States. Recruitment of a number of other countries to add to the original six participating countries is continuing for a second administration of the survey. A report on the U.S. results for the 2003 data collection has recently been released.

## Major Publication

*Highlights From the 2003 International Adult Literacy and Lifeskills Survey (ALL)* (May 2005)

## For Further Information

Additional details on ALL can be found on the Web (<http://nces.ed.gov/surveys/all>).

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## OECD International Indicators of Education Systems Project

NCES has been working cooperatively with the member countries of the Organization for Economic Cooperation and Development (OECD) since 1988 to develop an international education indicator reporting system. The goal of the International Indicators of Education Systems Project (INES) is to improve the comparability of education data across OECD countries and to develop, collect, and report on a key set of indicators of the condition of education in these countries. The work of INES is carried out by three networks and a technical group. NCES chairs Network A, which develops indicators for student outcomes, and participates in the two other networks and the technical group, which develop indicators in other areas.



The set of indicators includes measures of student enrollment and achievement, labor force and economic outcomes, school and school system features, and costs and resources. The primary vehicle for reporting on these indicators is an OECD report entitled *Education at a Glance (EAG)*. *EAG* was first released in September 1992 and continues to be released annually. The indicators reported in *EAG* are under continuous refinement, and additional indicators are being developed for future editions of the report.

## Major Publications

*Comparative Indicators of Education in the United States and Other G8 Countries: 2004*  
(February 2005)

*Education at a Glance: OECD Indicators 2004* (released by OECD in September 2004)

*Comparative Indicators of Education in the United States and Other G8 Countries: 2002*  
(April 2003)

*Elementary and Secondary Education: An International Perspective* (April 2000)

*International Education Indicators: A Time Series Perspective, 1985–1995*  
(February 2000)

## For Further Information

For further information about INES, contact

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## Plans for International Statistics

NCES has worked with its international partners to develop and implement a set of regular international assessments and surveys in different subject areas at different grade or age levels. Under the auspices of the IEA and OECD, current NCES plans include the following international education studies:

- *PIRLS*: PIRLS data in the United States were collected in spring 2001, with the next international data collection to take place in 2006. PIRLS focuses on the reading literacy of fourth-graders.
- *TIMSS*: A continuation of the assessment series is planned for 2007. Findings from the TIMSS 2003 assessment were released in December 2004.
- *PISA*: In the United States, PISA data were collected from 15-year-olds in spring and fall 2003. PISA is scheduled to collect data every 3 years, with a different subject-area focus each time. In 2006, the focus will be on scientific literacy. The 2003 data that focused on mathematics literacy and problem solving were reported in December 2004.

In addition, NCES will continue its collaboration with foreign governments and agencies on the development of international education indicators. In addition to the World Education Indicators Project—a joint program of OECD and UNESCO that gathers INES data from non-OECD countries—and INES, NCES is working with governments, organizations, and universities in the Western Hemisphere to develop the Regional Education Indicators Project.

**Table 6. Data collection calendar for international statistics**

Years of data collection		
Trends in International Mathematics and Science Study	2003	2007
	✓	✓
Years of data collection		
Program for International Student Assessment	2003	2006
	✓	✓
Years of data collection		
Progress in International Reading Literacy Study	2001	2006
	✓	✓
Years of data collection		
Adult Literacy and Lifeskills	2003	
	✓	

## **CHAPTER 8**



# **Data on Vocational Education**



## Introduction

The National Center for Education Statistics (NCES) Data on Vocational Education (DOVE) system derives data about vocational education primarily from existing NCES surveys. Some of the most informative data in the DOVE system are high school student transcript data. In comparison to reports from states that categorize students as vocational using different definitions, high school transcripts provide consistent information on how many vocational education credits students earn. These data allow researchers to identify students who take different amounts and types of vocational education courses and to examine the relationship between academic and vocational coursetaking. The DOVE system also uses data from NCES longitudinal studies to examine the economic and educational outcomes associated with participation in vocational education, and data from other NCES surveys to examine the characteristics of vocational teachers, programs, and students at the secondary and postsecondary levels. DOVE is supplemented with data from other federal sources, including the Bureau of Labor Statistics (National Longitudinal Survey of Youth) and the Census Bureau (Current Population Survey).



## Data Uses

The primary use of the DOVE system is to report on the status of vocational education. NCES has published several reports on vocational education topics, including trends in student participation over time, characteristics of vocational students, and vocational staff characteristics. These publications include *Vocational Education in the United States*, a periodic report that synthesizes vocational education data across educational levels; the last edition was published in 2000 and the next edition is being prepared. In addition, the DOVE system is a key data source for the National Assessment of Vocational Education (NAVE), a periodic, congressionally mandated study of vocational education. For example, the most recent NAVE used NCES student transcript data collected between 1982 and 1998 to examine changes in the nature of the vocational and academic curricula that students pursue.

Listed below are the primary databases and components that are used by NCES for the analysis of vocational education issues. For a complete description of a survey or component, refer to the appropriate chapter within this publication. The surveys are grouped by category: secondary, postsecondary and adult, and longitudinal studies.

## Components

### SECONDARY STUDIES

**High School Transcript Studies**—Provide information from students' high school transcripts, including courses taken, grades, and credits earned, in addition to information about student characteristics. The 1987, 1990, 1994, 1998, 2000, and 2005 studies are linked to the National Assessment of Educational Progress (NAEP). The 1982 study is linked to the High School and Beyond Longitudinal Study (HS&B); the 1992 study is linked to the National Education Longitudinal Study of 1988 (NELS:88); and the 2004 study is linked to the Education Longitudinal Study of 2002 (ELS:2002).

**Schools and Staffing Survey**—Data from the 1987–88, 1990–91, 1993–94, 1999–2000, and 2003–04 Teacher Questionnaire, School Principal Questionnaire, School Questionnaire, and School District Questionnaire.

### POSTSECONDARY AND ADULT STUDIES

**National Postsecondary Student Aid Study (NPSAS)**—Data from the 1986–87, 1989–90, 1992–93, 1995–96, 1999–2000, and 2003–04 Student Records and Student Telephone Interviews.

**National Household Education Surveys Program (NHES)**—Data from the 1991, 1995, 1999, 2001, and 2003 Adult Education Surveys.

**National Study of Postsecondary Faculty (NSOPF)**—Data from the 1988, 1993, 1999, and 2004 Faculty Surveys.

### LONGITUDINAL STUDIES

**High School and Beyond Longitudinal Study (HS&B)**—Data from the 1980 base-year Student, School, and Parent Questionnaires and follow-ups in 1982, 1984, 1986, and 1992.

**National Education Longitudinal Study of 1988 (NELS:88)**—Data from the 1988 base-year questionnaires and follow-ups in 1990, 1992, 1994, and 2000, including high school transcript data in 1992 and postsecondary transcript data in 2000.

**Education Longitudinal Study of 2002 (ELS:2002)**—Data from the 2002 base-year survey, the 2004 follow-up survey, and, in future years, the 2006 and 2012 follow-up surveys.

**Beginning Postsecondary Students Longitudinal Study (BPS)**—Data from the 1989–90 base-year NPSAS and its BPS follow-up surveys in 1992 and 1994, and from the 1995–96 base-year NPSAS and its BPS follow-up surveys in 1998 and 2001.



## **Major Publications**

*Public High School Graduates Who Participated in Vocational/Technical Education: 1982–1998* (July 2003)

*Trends in High School Vocational/Technical Coursetaking: 1982–1998* (June 2003)

*Vocational Education in the United States: Toward the Year 2000* (January 2000)

*Vocational Education in the United States: The Early 1990s* (November 1996)

*Vocational Education in the United States: 1969–1990* (April 1992)

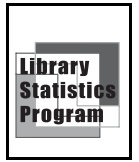
## **For Further Information**

Information about vocational education can be found on the Web (<http://nces.ed.gov/surveys/dove>). For further information on vocational education, contact

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## **CHAPTER 9**



# **Libraries**



## Introduction

Libraries represent an educational resource that is available to individuals regardless of age, social status, or educational background. In an effort to provide more complete information on this aspect of the education spectrum, the National Center for Education Statistics (NCES) initiated a formal Library Statistics Program in 1989. The first library survey was begun in 1966 with the fielding of the Academic Libraries Survey as part of the Higher Education General Information Survey. This survey was initiated because an academic library was considered an essential component of a higher education institution.



The first survey under the auspices of the NCES Library Statistics Program, the Public Libraries Survey, focused on public libraries in response to a congressional mandate for NCES to establish a cooperative system for public library data. This survey is the product of the Federal-State Cooperative System for Public Library Data, a cooperative effort among state library agencies, NCES, the U.S. Census Bureau, and the U.S. National Commission on Libraries and Information Science. In addition to the Academic Libraries Survey, the Public Libraries Survey, and the School Library Media Centers Survey, the Library Statistics Program developed one additional library survey, the State Library Agencies (StLA) Survey, in 1994.

## Data Uses

Descriptive information provided by the library surveys includes staffing levels, size and content of the collections in libraries, the number of items per year that libraries circulate, library expenditures, and the extent of library services.

The four library surveys provide current, national descriptive data on libraries. They are used by professional associations; local practitioners; and federal, state, and local officials for planning, evaluation, and policymaking. These data are also available to researchers and educators to analyze the state of the art of librarianship and to improve its practice.

Except for the School Library Media Centers Survey, each of the library surveys is a universe survey. Because the respondents include all known libraries of the type being surveyed, the resulting data files can be used to develop frames for sample surveys by NCES, other agencies, or researchers.

NCES has conducted sample surveys related to public libraries both to assess the feasibility of incorporating certain items into its universe surveys and to obtain information that addresses more specific issues. For example, in 1993, NCES conducted a survey of public library services to children and young adults using the Fast Response Survey System (FRSS). Several items on the extent of children's services were added to the Public Libraries Survey in 1995 based on the results of this FRSS survey. NCES also collected

information from households about frequency of use and the purposes for which households use public libraries through the National Household Education Survey (NHES) in 1996. NCES updated these data and added some additional survey questions in fall 2002 as part of a supplement to the Current Population Survey. This usage information can be extremely helpful for policymakers setting priorities for libraries in relation to demands for other public services. It can also provide practitioners with important insights into ways in which to serve their customers better.

## **Studies**

### **Public Libraries Survey**

Nationwide public library statistics are collected and disseminated annually through the Federal-State Cooperative System (FSCS) for Public Library Data. Preparing for its 16th year of electronic data collection, FSCS is an example of the synergy that can result from combining federal-state cooperation with state-of-the-art technology. FSCS was the first national NCES data collection in which respondents supplied information electronically and in which data were also edited and tabulated completely in machine-readable form. The software used for this data collection has been cost effective and has improved data quality.

#### **Design**

Data are collected annually for over 9,000 public libraries identified by state library agencies in the 50 states and the District of Columbia. Beginning in 1993, Puerto Rico as well as the following outlying areas joined FSCS: Guam, the Northern Marianas, and the Virgin Islands. At the state level and in the outlying areas, FSCS is administered by State Data Coordinators appointed by each state's or outlying area's chief officer of the state library agency. The State Data Coordinators collect the requested data from local public libraries and submit these data to NCES. Data are available for individual public libraries and are also aggregated to state and national levels. NCES also developed the first comprehensive public library universe file. This automated file is updated annually and includes identifying information on all known public libraries (including their service outlets). This resource is now available for use in drawing samples for special surveys on such topics as literacy, access for the disabled, and library construction.

An annual professional development conference, sponsored by NCES, is provided for State Data Coordinators. A steering committee representing State Data Coordinators and other professional organizations is active in the development of new data elements and software for the Public Libraries Survey. Technical assistance to states and outlying areas is provided by the FSCS Steering Committee and NCES staff and contractors.

## Components

**Identifying Data About Individual Public Libraries and Their Outlets**—Identifying data are collected for each public library and public service outlet. These data include street address, mailing address, city, county, zip code, web address, telephone number, fax number of director, and e-mail address of director.

**Data About Public Libraries**—Data are collected on service measures such as reference transactions, public service hours, interlibrary loans, circulation, library visits, children’s program attendance, and circulation of children’s materials. The survey also collects information about size of collection, staffing, operating revenue and expenditures, number of web terminals used by the general public, type of legal basis, type of interlibrary relationship, type of geographic boundary, type of administrative structure, and number and types of public library service outlets. Electronic technology data items collected include operating expenditures for library materials in electronic format, operating expenditures for electronic access, number of library materials in electronic format, access to electronic services, access to the Web, and number of users of electronic resources in a typical week. A question—“Does this public library meet all the criteria of the FSCS public library definition?”—is also included.

**Data About Public Library Service Outlets**—Data are collected on number and types of outlets, location of public library service outlets relative to a metropolitan area, number of books-by-mail outlets, number of bookmobiles by bookmobile outlet, and square footage of outlet.

**Web Data Search Tools**—The Public Library Locator tool is available on the Library Statistics Program website (<http://nces.ed.gov/surveys/libraries/liblocator>). This tool enables users to locate the most recently available data about a library or public library service outlet in instances where only some of the identifying information about the library is known. For example, if you know the city the library is in, but not its name, you can still locate the library and obtain most of the available FSCS data about it, including identifying information, organizational characteristics, services, staffing, size of collection, and income and expenditures.

Compare Public Libraries is a web-based peer comparison tool that is also available on the Library Statistics Program website (<http://nces.ed.gov/surveys/libraries/publicpeer>). Using this tool, a user can first select a library of interest. Next, the user can search for a comparison group by selecting key characteristics with which to define the library, such as total operating expenditures, circulation per capita, etc. Finally, the user can view customized reports comparing the library of interest to its comparison group. In addition, FSCS data can be viewed for individual public libraries.

## Major Publications

*Public Libraries in the United States: Fiscal Year 2002* (March 2005)

*Public Libraries in the United States: Fiscal Year 2001* (June 2003)

*Programs for Adults in Public Library Outlets: 2000* (November 2002)  
*Public Libraries in the United States: Fiscal Year 2000* (July 2002)  
*Public Libraries in the United States: FY 1999* (February 2002)  
*Public Libraries in the United States: FY 1998* (June 2001)  
*Public Libraries in the United States: FY 1997* (June 2000)  
*Public Libraries in the United States: FY 1996* (February 1999)  
*How Does Your Public Library Compare? Service Performance of Peer Groups*  
(September 1998)  
*Statistics in Brief: Use of Public Library Services by Households in the United States:*  
*1996* (March 1997)  
*Public Library Structure and Organization in the United States* (March 1996)  
*Statistical Analysis Report: Services and Resources for Children and Young Adults in*  
*Public Libraries* (September 1995)  
*Staffing Data in the Public Library Statistics Program: Definitions, Internal Consistency,*  
*and Comparisons to Secondary Sources* (August 1995)  
*Finance Data in the Public Library Statistics Program: Definitions, Internal Consistency,*  
*and Comparisons to Secondary Sources* (April 1995)

### **Data Files**

Data File, Restricted Use: Public Libraries Survey: Fiscal Year 2002 (July 2004)  
Data File, Public Use: Public Libraries Survey: Fiscal Year 2002 (June 2004)  
Data File, Public Use: Public Libraries Survey: Fiscal Year 2001 (June 2003)  
Data File, Restricted Use: Public Libraries Survey: Fiscal Year 2001 (June 2003)

### **For Further Information**

Information on the Public Libraries Survey may be found on the Web  
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## **Academic Libraries Survey**

NCES surveys academic libraries through the Academic Libraries Survey (ALS). The ALS was conducted on a 3-year cycle between 1966 and 1988; since 1988, it has been on a 2-year cycle. ALS collects data on about 3,500 academic libraries. In aggregate, these data provide an overview of the status of academic libraries nationally and by state.



ALS data provide information for policymakers and researchers on trends in total operating expenditures on academic libraries, services available to students, and adoption of new technologies, such as giving students and researchers electronic access to bibliographic information. The survey also provides information on the staffing of academic libraries.

## Design

ALS collects data and produces descriptive statistics on the academic libraries in the entire universe of degree-granting, Title IV–eligible postsecondary education institutions in the 50 states, the District of Columbia, and outlying areas. In 2000 and 2002, ALS data were collected using a web-based data collection application.

## Component

**Academic Libraries Survey**—Data are collected on total operating expenditures, full-time-equivalent library staff, service outlets, total volumes held at the end of the fiscal year, circulation, interlibrary loans, public service hours, patron count, and reference transactions per typical week.

## Major Publications

*Academic Libraries: 2000* (November 2003)

*Academic Libraries: 1998* (July 2001)

*The Status of Academic Libraries in the United States: Results From the 1996 Academic Libraries Survey With Historical Comparisons* (May 2001)

## Data File

Data File, Public Use: 1998 Academic Library (July 2002)

## For Further Information

Information on the Academic Libraries Survey may be found on the Web (<http://nces.ed.gov/surveys/libraries/academic.asp>). For further information, contact

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## School Library Media Centers Survey

The last national survey exclusively of school library media centers was conducted in school year 1985–86. NCES now asks questions about libraries in elementary and secondary schools as part of the Schools and Staffing Survey (SASS) (see chapter 3). The data collected provide a national picture of school library collections, expenditures,

technology, and services. The data can be used by federal, state, and local policymakers and practitioners in assessing the status of school library media centers in the United States.

## Design

Information on school libraries is collected from a sample of elementary and secondary schools through the School Library Media Centers Survey (a component of SASS). The survey was administered to a sample of 10,000 public schools most recently in school year 2003–2004.

## Component

***School Library Media Centers Survey (a component of SASS)***—Data are collected on library media center facilities, collections, equipment, technology, staffing, income, expenditures, and services.

## Major Publications

*The Status of Public and Private School Library Media Centers in the United States: 1999–2000* (March 2004)

*Schools and Staffing Survey, 1999–2000: Overview of the Data for Public, Private, Public Charter, and Bureau of Indian Affairs Elementary and Secondary Schools* (May 2002)

*Evaluation of Definitions and Analysis of Comparative Data for the School Library Statistics Program* (September 1998)

*School Library Media Centers: 1993–94* (August 1998)

## For Further Information

Information on the School Library Media Centers Survey may be found on the Web (<http://nces.ed.gov/surveys/libraries/school.asp>) or by contacting

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## State Library Agencies Survey

NCES surveys state library agencies annually. The first year of data collection was for fiscal year 1994. The State Library Agencies (StLA) Survey is the product of a cooperative effort among the Chief Officers of State Library Agencies (COSLA), the U.S. National Commission on Libraries and Information Science (NCLIS), the U.S. Census Bureau, and NCES.

StLAs are the official agencies designated in federal and state law with the administration of funds authorized by the Library Services and Technology Act (P.L. 104-208). The StLA Survey provides policymakers and researchers with descriptive information on StLAs. In particular, the public library data collected by the StLA Survey, when added to the data collected by the NCES Public Libraries Survey, helps complete the national picture of public library service.

## **Design**

The survey collects data on StLAs in the 50 states and the District of Columbia. The data are collected via a web-based reporting system to reduce respondent burden and improve data quality. NCES releases the final data file, an annual E.D. TAB report, and supplemental tables to the report.

## **Component**

**StLA Survey**—Data are collected on direct library services; library development services; resources assigned to allied operations, such as archive and records management; organizational and governance structure within which the agency operates; electronic networking; staffing; collections; services to libraries and systems; and revenues and expenditures.

## **Major Publications**

*State Library Agencies, Fiscal Year 2003* (December 2004)  
*State Library Agencies, Fiscal Year 2002* (March 2004)  
*State Library Agencies, Fiscal Year 2001* (October 2002)  
*State Library Agencies, Fiscal Year 2000* (November 2001)  
*State Library Agencies, Fiscal Year 1999* (September 2000)  
*State Library Agencies, Fiscal Year 1998* (February 2000)  
*Evaluation of the NCES State Library Agencies Survey* (September 1999)  
*State Library Agencies, Fiscal Year 1997* (March 1999)

## **Data Files**

State Library Agencies, Fiscal Year 2003 (September 2004)  
State Library Agencies, Fiscal Year 2002 (March 2004)  
State Library Agencies, Fiscal Year 2001 (October 2002)  
State Library Agencies, Fiscal Year 2000 (November 2001)  
State Library Agencies, Fiscal Year 1999 (September 2000)  
State Library Agencies, Fiscal Year 1998 (February 2000)  
State Library Agencies, Fiscal Year 1997 (March 1999)  
State Library Agencies, Fiscal Year 1996 (June 1998)

### **For Further Information**

Information on the State Library Agencies Survey may be found on the Web (<http://nces.ed.gov/surveys/libraries/state.asp>). For further information, contact

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## **Plans for the Public Libraries Survey**

NCES has fostered the use and analysis of FSCS data. A Data Use Subcommittee of the FSCS Steering Committee has been addressing the analysis, dissemination, and use of FSCS data. Several analytical projects have been completed or are under way.

In the fall of 2002, NCES fielded a supplement to the Current Population Survey. The survey results will update the information on public library use from the 1996 NHES as well as provide additional data.

## **Plans for Crosscutting Activities**

The Library Statistics Program also sponsors activities that cut across all types of libraries. For example, NCES sponsors the attendance of librarians from all sectors at NCES training opportunities, such as the annual Cooperative System Fellows Program.

**Table 7. Data collection calendar for library statistics**

Years of data collection													
<b>Public Libraries Survey</b>	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Years of data collection													
<b>Academic Libraries Survey</b>	1992		1994		1996		1998		2000		2002		2004
	✓		✓		✓		✓		✓		✓		✓
Years of data collection													
<b>School Library Media Centers Survey (SASS)</b>			1994						2000				2004
			✓						✓				✓
Years of data collection													
<b>State Library Agencies Survey</b>		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓



## **CHAPTER 10**

The  
Annual  
Reports  
Program

# **General Publications of NCES**





## Introduction

The National Center for Education Statistics (NCES) annually produces three major publications designed for general audiences: *The Condition of Education*, *Digest of Education Statistics*, and *Projections of Education Statistics*. These publications present statistics on a wide array of education topics. They are used in diverse ways by policymakers, researchers, and the general public. NCES produces other publications that draw upon a variety of data sources, such as *Trends in Educational Equity of Girls & Women*, a series on the educational status and progress of racial/ethnic minorities, and annual indicators of school crime and safety.

The logo for 'The Annual Reports Program' is displayed in a vertical stack of four dark grey rectangular boxes. The text 'The' is in the top box, 'Annual' in the second, 'Reports' in the third, and 'Program' in the bottom box. All text is white and centered within each box.

## The Condition of Education

Efforts to improve education in America require reliable data on the condition and progress of education. When the original Department of Education was created in 1867, the law stated that it should “gather statistics and facts on the condition and progress of education in the United States and Territories.” NCES currently carries out this mission for the Department of Education and, since 1975, has done so by publishing *The Condition of Education*, a mandated annual report submitted to Congress on June 1 every year.

*The Condition of Education* presents statistical information, drawn from numerous data sources, in an indicator format that is designed to make such information meaningful and accessible to a general audience. An indicator format presents quantitative data graphically and in short narrative form to convey summary information (about conditions, functioning, performance, or trends) and to serve as diagnostic tools for policymakers. Similar to leading economic indicators that track economic trends and signal weak or strong economic performance (e.g., the gross national product or consumer price index), *The Condition of Education's* indicators focus national attention on important aspects of the U.S. education system.

The print version of *The Condition of Education* presents approximately 40 such indicators annually, organized into six areas of measurement:

- Participation in Education;
- Learner Outcomes;
- Student Effort and Academic Progress;
- Contexts of Elementary and Secondary Education;
- Contexts of Postsecondary Education; and
- Societal Support for Learning.

The web version of *The Condition of Education* allows readers to access all indicators published since 2000. Both versions include supplemental information (e.g., statistical

tables, standard error tables, and supplemental notes) where needed for the indicators. In addition, both versions include a summary statement by the Commissioner and a special-focus analysis. The 2005 special-focus analysis describes the teacher workforce and the movement of teachers into and out of this workforce. *The Condition of Education's* indicators represent the most current and valid data available to quantify those aspects of the U.S. education system that a consensus of professional judgment deems to be the most significant national measures of the condition and progress of education. Although a core set of indicators is repeated with information that is updated annually, new indicators are developed regularly as more and better data become available. Moreover, some indicators, based on one-time studies, appear only for a few years. Other indicators, based on periodic surveys, are updated every few years as new data become available.

The web version of *The Condition of Education* is available at <http://nces.ed.gov/programs/coe>. The most recent print version of *The Condition of Education* can be ordered from ED Pubs at 1-877-4ED-PUBS or downloaded (along with any print version since 1992) from the NCES website (search for The Condition of Education at <http://nces.ed.gov/pubsearch>). *The Condition of Education's* special-focus essays are also published as separate topical reports and have covered such issues as entering kindergarten, the social context of education, women in mathematics and science, and first-generation students in postsecondary education.

### **Major Publications**

*The Condition of Education 2005* (June 2005)

*The Condition of Education 2005 in Brief* (June 2005)

### **For Further Information**

For further information on *The Condition of Education*, contact

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## **Digest of Education Statistics**

The *Digest of Education Statistics* is NCES's primary resource publication on education statistics. It contains a wealth of information on all levels of education, from preprimary through graduate education. This reference volume is intended for use by researchers, policy analysts, businesses, students, educators, the media, and the general public. The *Digest of Education Statistics* has expanded its information base through its long history as

NCES has pursued a policy of continuous development while maintaining important trend information.

The development of the *Digest of Education Statistics* occurred over an extended period of time. For 40 years, from 1916–18 to 1956–58, the statistical component of the Office of Education (the predecessor of the U.S. Department of Education) prepared and published the *Biennial Survey of Education in the United States*. Most of the important data collected by the Office of Education was placed in this report, which was a resource used by researchers, planners, and others interested in the field of education statistics. The publication was discontinued in 1958, but the need for a document summarizing the various types of data collected by the Office of Education continued. Thus, in 1962, the first edition of the *Digest of Education Statistics* was issued.

The 2003 *Digest of Education Statistics* is the 38th in this series of publications. (The *Digest of Education Statistics* has been issued annually except for combined editions for the years 1977–78, 1983–84, and 1985–86.) Its primary purpose is to provide a compilation of statistical information covering the broad field of American education from preprimary through graduate education. The *Digest of Education Statistics* includes a selection of data from many sources, both government and private, and draws especially on the results of surveys and activities carried out by NCES. It contains a considerable amount of material tabulated exclusively for the publication, such as summaries of federal funds for education and detailed tabulations on degrees conferred by colleges and universities. The publication contains information on schools, teachers, enrollments, graduates, educational attainment, finances, federal funds for education, employment and income of graduates, libraries, and international comparisons of education. Supplemental information on population trends, attitudes on education, education characteristics of the labor force, government finances, and economic trends provides the background for evaluating education data. To qualify for inclusion in this publication, material must be nationwide in scope, of high quality, and of current interest and value.

The *Digest of Education Statistics* is divided into seven chapters:

- All Levels of Education;
- Elementary and Secondary Education;
- Postsecondary Education;
- Federal Programs for Education and Related Activities;
- Outcomes of Education;
- International Comparisons of Education; and
- Libraries and Educational Technology.

To make data analysis more convenient, a web version has been developed. The data are also available through ED Stats at a Glance (<http://nces.ed.gov/edstats>), which enables users to search for and retrieve specific data. NCES also produces the *Mini-Digest* to make basic education statistics available in a pocket-sized booklet. The *Mini-Digest*, which has

also been published in Spanish, includes statistics on enrollments, expenditures, faculty, degrees, and population characteristics in an abbreviated form.

The *Digest of Education Statistics* is designed for clarity, consistency, and comparability. High value is placed on the major recurring surveys with the objective of providing national- and state-level data that researchers and policymakers can use to measure changes over time. The *Digest* is intended to preserve the major series of education statistics originating with NCES and elsewhere, and to make them readily available to a wide audience of users.

### **Major Publications**

*Digest of Education Statistics, 2003* (December 2004)

*Mini-Digest of Education Statistics, 2003* (October 2004)

### **For Further Information**

Recent editions of the *Digest of Education Statistics* can be found on the Web (<http://nces.ed.gov/programs/digest>). For further information on the *Digest of Education Statistics*, contact

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## **Projections of Education Statistics**

NCES is the official federal source of education projections in the areas of enrollments, graduates and earned degrees conferred, teachers, and expenditures in elementary and secondary schools and degree-granting institutions. As the principal publication dealing with projections, *Projections of Education Statistics* provides national statistics about elementary and secondary schools and degree-granting institutions. Included are data on enrollments, graduates, degrees, teachers, expenditures for the past 14 years, and projections for the next 12 years. The report features state-level projections of public school enrollment and high school graduates. It also contains a methodology section that describes the models and assumptions used to develop these projections. Most of the projections are based on three alternative sets of assumptions. Although the middle alternative is the preferred set of projections, the other (high and low) alternatives provide a range of possible outcomes.

The information provided in the report is used by researchers and policy planners in education and related areas. Projections are targeted to individuals in business, industry, government, the media, and education whose work requires information on future developments and trends affecting American education. A summary of these projections is available

in a pocket-sized publication called *Pocket Projections*. It is a quick reference for projections of key education statistics.

### **Major Publications**

*Pocket Projections of Education Statistics to 2013* (May 2004)

*Projections of Education Statistics to 2013* (November 2003)

### **For Further Information**

Recent editions of *Projections of Education Statistics* can be found on the Web (<http://nces.ed.gov/surveys/AnnualReports/reports.asp?type=projections>). For further information on *Projections of Education Statistics* and projection methodology, contact

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