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ABSTRACT

The National Center for Education Statistics (NCES) collects statistics on the condition of education in the United States, analyzes and reports the meaning and significance of those statistics, and assists state and local education agencies in improving their statistical systems. This report discusses the center's work in some detail, including its plans in maintaining five databases on public and private elementary-secondary, postsecondary, vocational, and adult education. These efforts monitor trends in enrollment, staffing, and finance, and form the core sources for the center's most widely used publications. The center's two longitudinal studies (one covering the high school senior class of 1972 and one on the sophomore and senior classes of 1980) are detailed, as is the center's statistical information about learning resources (libraries, broadcast programs, and museums). The report also discusses the information services NCES offers, its state technical assistance program, and the methodology it uses in its work. (Author/IRT)

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# The Condition of Education

1981 Edition

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National  
Center for  
Education  
Statistics

**The  
Condition of  
Education  
Part 2**

**1981  
Edition**

**NCES  
Programs and Plans**

by  
O. Jean Brandes

NCES Project Clearance Officer  
Office of the Administrator

U.S. Department of Education  
T.H. Bell  
Secretary

Office of Educational Research and Improvement  
Dick W. Hays  
Acting Assistant Secretary

National Center for Education Statistics  
Marie D. Eldridge  
Administrator

## National Center for Education Statistics

"The purpose of the Center shall be to collect and disseminate statistics and other data related to education in the United States and in other nations. The Center shall . . . collect, collate, and from time to time, report full and complete statistics on the conditions of education in the United States; conduct and publish reports on specialized analyses of the meaning and significance of such statistics; . . . and review and report on education activities in foreign countries."—Section 406 (b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e—1).

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# Administrator's Statement

This seventh edition of *The Condition of Education* continues the mandate set by Congress in 1974 to report on the state of education in the United States. With each edition I am intrigued anew at the complexity of our education system. The report reflects how the varying aspects of education intermesh as a student progresses through the formative years into a world of widening opportunities. This complexity—and the greater challenges that await in the larger world—can be awesome, even to those who have made education their life's work. It is reassuring, then, to be involved in a series of information networks that continuously provide a long and steady perspective on all that is vital to educating a nation.

The NCES program this year is as pertinent as ever. The growing responsibilities of State and local governments have enhanced the need for solid information on which officials can base their decisions. All along it has been the Center's role to provide such information. In that sense we've been partners with those who use our data. Between us there flows a constant exchange of data as well as a running dialogue on where we can improve our information systems. As these governments take on more responsibility for the Nation's education, this exchange will continue as actively as before.

Apart from our mandate, *The Condition of Education* serves another purpose, closer to home. In our daily dealings with education officials around the country, we occasionally forget the valuable help they provide. Frequently they don't see the results of their efforts for months at a time. *The Condition* gives us a chance to show them the product of their efforts. In the midst of a busy time for everyone in education, it's one good way we can say "thanks."

*Maria S. Eldridge*

Administrator  
National Center for Education Statistics

## Acknowledgments

*The Condition of Education, 1981 Edition, Part 2*, was prepared by the National Center for Education Statistics in the Office of the Administrator.

Valuable input to this report was contributed by many persons throughout the Center, in particular Curtis Baker, Robert Calvert, Jeanette Goor, Evelyn Kay, Roslyn Korb, Andrew Kolstad, Paul Mertins, Stafford Metz, David Orr, and Leslie Silverman.

In addition, Phil Carr designed the format and graphics; Loretta Wright provided editorial and photographic services; Lance Ferderer assisted editorially, and other NCES staff gave advice and guidance.

Photographs in this report are compliments of the University of Maryland at College Park, Northwestern High School, Hyattsville, Md., Caroline High and Bowling Green Elementary Schools, Caroline County, Va., and the Division of Statistical Services, NCES.

# Contents

Page

iii	Administrator's Statement
1	<b>1</b> Introduction
3	<b>2</b> Elementary/Secondary Education
9	<b>3</b> Higher Education
13	<b>4</b> Adult and Vocational Education
19	<b>5</b> National Longitudinal Studies
25	<b>6</b> Learning Resources
31	<b>7</b> Information Dissemination Services
35	<b>8</b> State Technical Assistance
37	<b>9</b> Statistical Methodology

## Introduction

The National Center for Education Statistics (NCES) collects statistics on the condition of education in the United States, analyzes and reports the meaning and significance of these statistics, and assists State and local education agencies in improving their statistical systems. In recent years, NCES' responsibilities have been increased by mandated studies from the Congress. These studies include developing and implementing a national vocational education data system, conducting a continuing survey of the supply and demand for educational personnel, and producing profiles on the degree to which States are achieving equalization of resources for elementary and secondary education.

NCES supports a wide range of activities: to provide policy-relevant data on such issues as access of minorities to postsecondary education, impact of enrollment changes on institutions, and the outcomes of education; to assist State and local education agencies in improving information systems; and to provide comprehensive information services to the education community and the public.

The Center's fiscal year 1982 program, based on a budget request of \$9,947,000—level funding since fiscal year 1980—will be directed toward:

- Maintaining five data bases on public and private elementary/secondary, postsecondary, vocational, and adult education to

monitor trends on enrollments, staff, and finances. The data bases are the core source of the Center's most widely used publications—*The Condition of Education*, *The Digest of Education Statistics*, and *Projections of Education Statistics*.

- Analyzing data from the Center's longitudinal studies that address differences in student achievement, effects of financial aid on access to postsecondary education, youth employment, high school dropouts, discipline and order, and the quality of education in public and private schools.
- Administering surveys through the Fast Response Survey System that provide data within 6 months on current policy issues from six major education areas: State education agencies; local education agencies; public elementary/secondary schools; private elementary/secondary schools; institutions of higher education; and postsecondary schools with occupational programs.
- Operating the Statistical Information Office that provides comprehensive information services to some 30,000 users, including the Congress, the States, and the general public.





# Elementary/Secondary Education

At a time when school systems are experiencing strong pressures for curtailing budgets, they are also faced with rising operating costs and demands for cost-of-living salary increases. There is also the persistent question of how well the public schools, especially the secondary schools, are serving the needs of children.

The focus of the Center's statistical program at the elementary/secondary level is to provide information and analyses on the condition of public and private education in the United States. The basic program includes annual national and State data-collection systems on public elementary/secondary school systems and private schools. An important recent addition to the data-collection system is the compilation of financial, pupil, and teacher data for each public school district in the United States. These and other school district data provide the basis for such study areas as the equitable financing among school districts and the effects of declining enrollments on staffing patterns and expenditures.

## Data Sources

Elementary/secondary education statistics are collected from several sources. A major program of compiling statistics on public elementary/secondary schools, students, staff, and financial characteristics is conducted each year in cooperation with each State education agency. This program provides information about fall school membership, the number of school staff positions, revenues from Federal, State, or local government sources, and expenditures for administration, instruction, and other purposes. Summary statistics for each State and the 20 largest cities are published on an annual basis. Similar data are collected for each of the 16,000 school systems in the United States. Since 1977, the enrollment, number of teachers, location, and grade span of the 90,000 public schools have also been collected annually.

For the private sector, a new census of private elementary/secondary schools, carried out for the school year 1980-81, will update the 1978 listing of schools, and will provide measures of private school

openings and closings. Other information collected in the 1980 survey include the public school district in which the school is located, the number of students and high school graduates, and the grade span of the school. These data will indicate the magnitude of enrollment changes in private schools throughout the United States and whether enrollments have been impacted to the same extent as public schools by the decline in school-age population.

NCES also conducts special surveys periodically to provide comparable general statistics on the characteristics of students, graduates, and staff that cannot be easily obtained from information collected by State education agencies. Statistics on preprimary enrollment are collected in October through the Bureau of the Census Current Population Survey, supported by NCES, and published biennially. A survey of school district demand for teachers is conducted periodically to complement the data on the supply of new teachers among all recent college graduates.

## Surveys and Studies

Statistical surveys and studies are conducted on the characteristics of students, schools, school districts, and staff members of the school system.

### Preprimary school enrollment:

sample of children 3 to 5 years old, enrolled and not enrolled, by age, sex, race, Hispanic origin, region, educational levels of parent, employment status of mother, and household income. For children enrolled, level (nursery school or kindergarten), public and private, and full- or part-day attendance. (Annual)

### Fall survey of public school education:

number of school districts, students, staff, high school graduates, financial receipts, expenditures and teachers salaries. The 20 largest cities and outlying areas are included. (Annual)

**Census of private elementary/secondary schools:**

number of schools, school openings and closings, students, teachers, and graduates, by affiliation of school. (Periodic)

**Offering and enrollments in secondary schools:**

courses offered in a sample of high schools and number of students enrolled in each. (Occasional)

**Revenues and expenditures:**

Current expenditures of school districts for major functional categories. Revenues, capital outlay, and debt service figures of school districts are included for each State. (Annual)

**Census of local school districts:**

name, county, state, principal administrator, number of schools, grade span, and enrollment of each district. (Annual)

**Local school district-student and staff characteristics:**

survey of local education agencies conducted jointly by NCES and the U.S. Bureau of the Census. Data are collected on receipts by source and on expenditures by purpose. Data for school districts are collected from State education agencies by the Bureau of the Census on a report form developed jointly by the two agencies. Depending on needs, data may be collected for the entire universe of school districts or for a sample of districts. Universe data are available for fiscal year 1978-79. (Periodic)

**State education agency officials:**

names, titles, and phone numbers of education officials for each State. (Annual)

**Teacher supply and demand:**

estimate of the numbers of college graduates added to the teacher supply, employed as teachers and employed in fields other than teaching, local education agency sample of numbers of teachers employed, teachers laid off, teacher openings, current and anticipated teachers shortages, by level and field of instruction. (Annual)

## Congressionally Mandated Reporting

A persistent concern in education is the disparity in resources among public elementary/secondary school districts and among States. To ascertain the extent and significance of these disparities, Congress, in the 1978 Education Amendments, required NCES to collect uniform data from the States on financing elementary and secondary education and to produce an analytic report to Congress every other year. These reports are to show the degree to which equalization of resources among the school districts has been achieved in each State and among the States and the extent to which differences in resources are due to differences in community wealth.

NCES also reports annually to Congress on teacher supply and demand. This report is based on a survey of teacher demand in local education agencies, a survey of college graduates newly qualified to teach, and NCES projections of teacher supply and demand. The report covers changes in the balance of the supply of and the demand for newly qualified teachers, and in the need for teachers in particular fields of study. It also examines how graduates who are newly qualified to teach fared in the labor market compared with other college graduates. Future reports will also examine the ability of schools to find qualified candidates for teaching positions, and the numbers of teachers laid off for budgetary reasons.

## Data Uses

The statistics NCES collects from State education agencies and special surveys are used in many ways.

They are used extensively for testimony before Congressional Committees, for planning in various Federal executive departments, for planning by professional organizations, by various businesses that market with educational institutions, by State legislative staffs in making interstate comparisons on educational issues, by associations of local school systems, by researchers in colleges and universities and in State and local education agencies, and by the media in reporting on educational issues and events. The following are some examples of current uses.

The U.S. Department of Defense uses information on the number of high school graduates for planning recruiting. The Office of Business Economics uses financial data for national income account. The U.S. Department of Education's Office of Vocational and Adult Education and the ED Art Coordinator uses NCES fast response survey system data on vocational education instruction preparing students for the arts and related careers. A second fast response survey examined the interactive use of computers for instruction for a Department of Education task force on educational technology.

Data on teacher supply and demand have been used by the American Association of Colleges for Teacher Education to assist its membership in making policy decisions.

Data were requested by firms rating school district bonds, firms producing or publishing education materials, school management firms, and many other commercial organizations.

Special analysis data on State and local school finance matters were provided for Governors' offices of two Western States, and staffs of legislative committees in at least five States.

Data from several Federal data bases have been merged to respond to needs for research and policy analysis. The data were used by the Legislative Reference Service of the Library of Congress to examine the effects of several Federal programs, the President's Advisory Committee on Impact Aid for impact-aid analysis, the National Conference of State Legislators for State reports on school finance; and the Education Commission of the States for studies of school financial equity.

## Plans

NCES plans to continue publishing reports on enrollment changes and characteristics of schools. A major effort is being made to produce statistical data about each of the State education agencies and 16,000 local school systems useful for description, research, and policy analysis. For example, NCES is planning to transform decennial census data to a school district base if funds are made available for this purpose. These data will be used to conduct studies of youth employment, high school dropouts, desegregation and school finance. In addition, the total data base on school district financial information for 1979-80 will be merged with the demographic information from the decennial census as soon as the latter becomes available. All NCES State-aggregate education statistics are being automated to increase timeliness of reporting and analytic utility.

NCES will initiate in 1982 a new survey of high schools to provide data on course offerings and enrollments in secondary education. Detailed studies on the amount and kind of education received by preprimary children will be made. In addition, NCES will attempt to make maximum use of statistics on school enrollment, language, and educational attainment from the 1980 Census of Population.

Private schools are surveyed periodically to find out their numbers and enrollment. Various methodological approaches will be evaluated to determine better ways to improve the completeness of the coverage of private schools and to collect more complete statistics. Meanwhile, a study will lead to the production of estimates of the participation of private school students in federally titled programs.

To improve its planning process, NCES meets regularly with Federal and non-Federal users and potential users of each of the statistical programs in elementary/secondary education and with the suppliers and users of the major institutional data bases. In these conferences the utility of the work to date is discussed, and suggestions for improvements are solicited from all interested groups.

## **Selected Publications**

Public and Private Elementary and Secondary  
Pupils, Teachers, and Schools (One time)  
The American High School: A Statistical Overview  
(One time)  
Revenues and Expenditures for Public Elementary  
and Secondary Education (Annual)  
Statistics of Public Elementary and Secondary Day  
Schools (Annual)  
Characteristics of Public School Districts (One time)  
New Teachers in the Job Market (Periodic)

Private Schools in American Education (One time)  
Projections of Non-English Language Background  
and Limited English Proficient Persons in the  
United States to the Year 2000, Executive Sum-  
mary (One time)  
The Retention of Minority Languages in the United  
States (One time)  
The Role of Language Characteristics in the Socio-  
economic Attainment Process of Hispanic Origin  
—Men and Women (One time)  
Directory of Local Education Agencies (Annual)

## Elementary and Secondary Education

Surveys	Year of reporting				
	1981	1982	1983	1984	1985
Preprimary school enrollment		<input type="checkbox"/>		<input type="checkbox"/>	
Public elementary and secondary schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Private elementary and secondary schools	<input type="checkbox"/>				<input type="checkbox"/>
Offerings and enrollments in secondary schools			<input type="checkbox"/>		<input type="checkbox"/>
Revenues and expenditures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Public school finance: profiles of the States	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Local school districts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State education agencies officials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Teacher supply and demand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Higher Education

Social, demographic, educational, and economic issues challenge higher education today. Among the most critical are questions pertaining to access to higher education for various populations, the effects of shifting enrollment patterns, the long-range financial outlook for colleges and universities, and the uncertainty of job opportunities for graduates.

The NCES program in higher education provides statistical information used by planners, policymakers, and educators in addressing these issues. The primary source of this information is the Higher Education General Information Survey (HEGIS), an annual series of surveys initiated by NCES, that provides a variety of data on the Nation's 3,200 public and private institutions of higher education. Complementing HEGIS are special studies of recent college graduates and adult education participants.

### Higher Education General Information Survey (HEGIS)

The HEGIS data base provides a census of public and private universities, including community and 2-year colleges, their enrollments, degrees awarded, faculty salaries, finances, and other characteristics.

#### Surveys

##### Institutional characteristics:

name, address, Congressional district, county, telephone number, year established, sex of student body, tuition, control or affiliation, calendar system, highest degrees offered, type of program, accreditation, and name and title of principal administrative officers. (Annual)

##### Fall enrollment:

full- and part-time enrollment for men and women undergraduates, first professional degree students, and unclassified students. Racial/ethnic data by major field of study are collected in even-numbered years. (Annual)

##### Degrees and other awards conferred:

first professional degrees by field; bachelor's,

master's, and doctor's degrees by disciplines; and degrees and awards based on less than 4 years of work beyond high school. Racial/ethnic data are collected in odd-numbered years. (Annual)

##### Residence and migration of college students:

first-time student enrollment classified by residence status (in-state/out-of-state/foreign), by sex, attendance status, level of enrollment, and program of study. (Biennial)

##### Salaries, tenure, and fringe benefits of full-time instructional faculty:

number of faculty by rank, sex, tenure status, and length of contract; salaries and fringe benefits of full-time instructional faculty. (Annual/Biennial)

##### Financial statistics:

current funds revenues by source (e.g., tuition and fees, government, private gifts); current funds expenditures by function, (e.g., instruction, research, plant maintenance and operation); physical plant assets and indebtedness, and endowment investments and performance. Since fiscal year 1975, data are collected on changes in fund balances. (Annual/Biennial)

HEGIS surveys on noncredit adult education and academic libraries are described elsewhere in this report.

### Data Uses

The regular NCES higher education data file provides such information as trends in the enrollment of women and minorities; their employment as faculty members and administrators; and the relationship between rising faculty salaries and college and university tuition charges. The Office for Civil Rights uses these data to monitor compliance with Federal legislation. These data are also used to distribute student aid funds to colleges and universities and to determine institutional eligibility for Federal assistance. Through special studies, the cost of redesigning collegiate facilities to permit full access to the handicapped has been estimated, characteristics of black institutions have been examined, and

the educational participation and achievement of Hispanic Americans have been analyzed.

Thousands of informal requests for specific information on the Higher Education General Information Surveys are received annually by either telephone or letter. Over a 6-week period in early 1981, for example, a few of the responses to requesters included at the Federal level 1969 to 1979 trends on the number of college closings; comparison of first-time freshmen with bachelor-degree awardees 4 years later, and higher education enrollment data that were sent to U.S. Congressmen representing Ohio, Indiana, and Wisconsin. The Department of Agriculture requested information on college students majoring in agriculture and natural resources. Among private associations, the National Science Foundation used survey data to solve problems in developing long-range tables on higher education enrollment; the American Council on Education were sent data on tuition and fees by type and control of institution for 1979-80 and 1980-81; Exxon Education Foundation requested data on basic charges for graduate students at selected universities. At the State level, the California State Auditor General's Office asked for a listing of institutions of higher education with the highest level of offerings and control of institution; Maryland State Department of Economic and Community Development requested the number of degrees conferred by Maryland University and Johns Hopkins University in engineering, mathematics, and science and the enrollment in these schools. Data on nuclear engineering enrollment and graduates from 1965 to 1979 were requested by the Atomic Nuclear Forum. The number of institutions that conferred the most doctorates in selected fields were requested by the Harvard Business School. United Nations asked for the percent of female college students and all full-time and part-time students. The income of higher education institutions, by source of funds and by State, were requested by the University of Washington at Seattle.

## Plans

NCES will continue to work closely with the higher education community to establish priorities for data collection. The American Council on Education (ACE) chairs a panel of representatives from institutions, and professional and education associations. The panel meets periodically to assess the performance of NCES, to review plans for current projects, and to suggest priorities and schedules for future studies. The State Higher Education Executive Officers Organization (SHEEO) also provides valuable

feedback and input to the higher education data program. Other higher education organizations such as the National Association of College and University Business Officers (NACUBO), the Association of College Registrars and Admission Officers, and the Association of Physical Plant Administrators recommend improvements to specific areas of data collection such as higher education finances, enrollments, and facilities, often with NCES' financial support.

At the recommendation of ACE, SHEEO, NACUBO, and others, NCES will hold regional conferences with State higher education administrators in fiscal year 1981. These conferences will provide a forum for discussion on new developments, schedules, reporting problems, and future plans.

## Recent College Graduates Study

The huge investment in a college education by students, parents, and institutions raises a key question: how valuable is a college education today in helping to secure a suitable job? The question concerns not only the immediate economic return for the years spent learning, but also—and perhaps more importantly—the opportunity for a challenging career.

An answer to this question comes from the NCES survey of recent college graduates, based upon a representative sample of graduates who received a bachelor's or master's degree the preceding year. The following summary specifies the data collected.

### Recent college graduates:

date of graduation, field of study, graduates newly qualified to teach, further enrollment, financial aid, employment status (especially teacher employment characteristics), job characteristics and earnings, city and State of residence, age, marital status, sex and racial/ethnic origins. (Periodic)

## Plans

The 1981 survey, the third in the series, will provide data on the employment status of college graduates over a 6-year period. The data also address the demand component of teacher supply-demand by reporting the fields in which newly qualified teachers obtain employment. Reports will be prepared to address such issues as the economic returns of a college education; the supply and demand of professional personnel; the underemployment of college graduates; the access to professional opportunities for women and minorities; and the relationship of Federal assistance to employment and postbaccalaureate education.



## Selected Publications

Education Directory: Colleges and Universities (Annual)  
 Fall Enrollment in Higher Education (Annual)  
 Enrollment Declines Foreseen for Colleges in the 1980's (Early release)  
 College Enrollment Patterns Differ for Handicapped Students (Bulletin)  
 Profiles for Women's Colleges: Enrollment Statistics (Bulletin)  
 Nonresident Alien Enrollments and Degrees are Increasing (Bulletin)  
 Record Tuition Increases Expected for Academic

Year 1980-81\* (Bulletin)  
 Earned Degrees Conferred (Annual)  
 First Professional Degrees Awarded to Women Up Ten-Fold (Early release)  
 Associate Degrees and Other Formal Awards Below the Baccalaureate (Annual)  
 Favorable Job Market Foreseen for Teacher Graduates in the Late 1980's (Early release)  
 Faculty Salaries, Tenure, and Benefits (Annual)  
 Women Faculty Still Lag in Salary and Tenure for the 1979-80 Academic Year (Early release)  
 Financial Statistics of Institutions of Higher Education (Annual)

### Higher Education Surveys

Surveys	Year of data collection				
	1981	1982	1983	1984	1985
<b>Colleges and Universities</b>					
Institutional characteristics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fall enrollment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Racial/ethnic data collected		<input type="checkbox"/>		<input type="checkbox"/>	
Degrees and other awards conferred	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Racial/ethnic data collected	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Residence and migration of college students	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Faculty salaries	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>
Financial statistics	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	
Noncredit adult education			<input type="checkbox"/> <sup>S</sup>		
College and university libraries	<input type="checkbox"/>		<input type="checkbox"/>		
<b>Recent College Graduates</b>		<input type="checkbox"/> <sup>S</sup>		<input type="checkbox"/> <sup>S</sup>	

S = Sample Survey

# Adult and Vocational Education

A number of issues have heightened interest in adult and vocational education. Teenage unemployment persists, for example, and leisure time is increasing. More women are entering or returning to the work force. Age populations are shifting, and new technology is changing job requirements or creating new jobs.

NCES studies provide information to people who deal with these issues. The studies offer data on job training for persons seeking employment or career advancement. They also cover continuing education programs offered by schools, colleges and other organizations. The results of these studies provide planners and policymakers at all levels of government with both basic information and trend data.

## Adult Education

The changing socioeconomic composition of the population has provided the impetus for the steadily growing demand for adult education courses. People are living longer, are in better health in their later years, and have the economic resources to participate in a wide range of educational activities. Other factors encouraging the growth of adult education have been the demands for retraining by women entering or re-entering the labor force; the needs of new immigrants; State licensing programs which require occupational updating activities; new job technologies; and the expanding base of persons with college or other advanced education whose interest in lifelong learning is clear. Colleges and universities, seeking new sources of students, have also contributed to the growth of adult education by offering attractive courses at times convenient for workers and retirees. In addition, secondary school systems, converting unused classrooms and available teachers, have extended programs to adults in the community.

NCES data provide education planners and policymakers with needed information on the types of courses taken by adult students and who provides them, the impact of adult education on traditional and nontraditional education institutions, financial sources used for this training, and the extent to which employers offer educational programs.

## Data Sources

To provide these data, NCES developed a program combining reports from individual participants with surveys of institutions sponsoring adult education activities. These surveys are repeated on a regular cycle to provide trend data on changes in students and courses.

NCES sponsors a triennial supplement to the Current Population Survey conducted by the Bureau of the Census, which has queried the 56,000 households in the sample on their participation in adult education. The study provides demographic data on participants in adult education; on full-time adult students in high school, colleges and universities, and vocational schools; and on adult nonstudents. It also offers data on the courses and activities taken in adult education.

Complementing this study of individuals are studies of organizations offering adult education. To reduce the burden upon respondents, most of these studies use nationally representative samples of institutions and are conducted periodically in intervals of 2 years or longer. They include studies of adult education offered by colleges and universities, community agencies, home study schools, and free universities and learning referral centers.

A schedule of adult education surveys is presented in the table at the end of this chapter.

### Surveys

#### Participation in adult education:

demographic characteristics of students—age, sex, race/ethnic origin, income, education, employment; course characteristics—subject areas, reasons for taking courses, completion, method of instruction; duration, credit, sources of payment; and types of administering institutions or agencies. (Triennial)

#### Adult basic and secondary education:

participants, by sex, race-ethnic origin, instructional level, and completions; program goals and impact; classes; and staff (national and State data). (Annual)

**Noncredit adult education in colleges and universities:**

name and address of sponsoring unit or college; field of instruction; policies regarding GED and fee remission for the elderly; registrations. (Biennial)

**Adult education through home study:**

name and address of sponsoring school, control, programs, enrollments and completions. (Periodic)

**Adult education in community organizations:**

type of organization (health, service, welfare, civic, religious); courses; tuition and fees; enrollments; completions; and methods of instruction (television, radio, telephone, kits). (Periodic)

**Adult education in free universities and learning centers:**

name, address, and telephone number; type of organization; year founded; affiliation; activities offered; participants by sex, race/ethnic origin; paid and unpaid full- and part-time staff; fees; sources of income; and expenditures. (Periodic)

In developing its priorities for adult education surveys, NCES consults with educational researchers, Federal and State education planners, and concerned organizations in the field. Planning sessions involve representatives of these groups to establish priorities, avoid overlap with other studies or existing data files, identifying the most-needed data elements, and establish the optimum periodicity. Priorities are also established by reviewing user response to previous studies. The keen interest, for example, in the first survey of free universities and learning referral centers sparked plans to repeat it in 1981.

## Data Uses and Plans

Information from studies in adult education provides the basis for establishing eligibility for various Federal financial aid programs. It also helps determine the extent to which adult education is helping compensate for the decrease in the number of students of traditional college age. In addition, these studies expand the scope of data available to postsecondary education planners.

Future plans for data collection on adult education include surveys on participation in adult education, adult education through home study, adult education

in free universities and learning referral centers in 1981, noncredit adult education in colleges and universities, and adult education in nonschool organizations in 1982.

## Vocational Education

Education and employment are closely linked in American society; but nowhere are they more directly aligned than in vocational education. Beginning with the passage of the Smith-Hughes Act in 1916, Federal policy has stressed direct support for a variety of educational programs to enhance employment opportunities for young people. Through a series of amendments and new laws over the years, Federal funding now supports skills training for high school and post high school students, specialized job training for handicapped and disadvantaged students, as well as occupational training and retraining for adults unable to compete in today's labor market.

The NCES vocational education data collection and analysis program provides information on federally funded vocational training programs in secondary and postsecondary schools. Other studies provide information on students and job training programs offered by public and private noncollegiate postsecondary schools. In addition, NCES inventories training activities conducted by employers, associations, labor unions, and community agencies.

## Vocational Education Data System

The Education Amendments of 1976 (Public Law 94-482) required NCES to develop, implement, and operate a national Vocational Education Data System (VEDS). Congress required reliable data on vocational students, programs, program completers and leavers, staff, facilities, and expenditures with such queries as: "Who is being served in vocational education?" "What are they being served?" "What is being accomplished?" "What is the cost?" VEDS' purpose is to provide accurate, State-aggregate information on vocational education as it is conducted through State-plan programs (under the Vocational Education Act) in the public schools and various postsecondary institutions. VEDS is designed to offer improved and consistent information to Congress and the various States. This is accomplished through the use of uniform definitions and standard data elements to replace the heterogeneous information elements formerly employed by different States. Such standard procedures will help to facilitate program audits, comprehensive planning and evaluation activities.

The VEDS system will also provide information on the numbers of persons being prepared in various occupational fields and will be used by State occupational information coordinating committees and economic development councils. The resulting data base will be automated so that this information can be updated annually, and used for a wide range of special analyses.

## Surveys

### Enrollment:

instruction program, by sex, race/ethnic origin and level (secondary, postsecondary, adult); work-study; completions by instructional programs; leavers by program level; and number of students benefitting from Federal funds in the areas of handicapped, economically and academically disadvantaged, and limited English proficiency. (Annual)

### Staff:

total staff and full-time equivalents, by program assignment. (Annual)

### Finance:

expenditures by Federal and non-Federal sources, functions, and instructional areas (Annual)

### Employer followup:

evaluation of employee's technical knowledge, work attitude, and quality, by instructional program. (Annual)

### Student followup:

employment/education status of completers and leavers, by field of employment; instructional program, grade level, and earnings, by field of employment; instructional program and sex. (Annual—may be sample-based)

The schedule of surveys in the Vocational Education Data System program is presented in the table at the end of the chapter.

The VEDS system came into being with the collection of data for the school year 1978-79. These data were received June 1980. Data for 1979-80, the second year of the series, were received from the States by February 1, 1981. Followup data on students and their employers, for a sample of the 1978-79 students who left or completed their programs during that program year, were also reported to NCES; corresponding followup data for the 1979-80 school year will be collected December 1, 1981.

## Data Uses

Early in 1980, NCES set up the Data Editing and Interpretation Task Force to assist with the monitoring the process of editing the first year's data.

The Task Force, composed of 12 representatives from the secondary and postsecondary vocational

education community, is providing insights on the interpretation, and evaluation of the VEDS data. It will assist NCES in assuring that the VEDS data are disseminated with due caveats regarding their limitations, and that they reflect as accurately as possible the status of vocational education.

Analyses of the VEDS data were used in Congressional deliberations on the reauthorization of the Vocational Education Act. NCES presented testimony on this subject in September 1980 to the House Subcommittee on Elementary, Secondary and Vocational education. The data form the primary basis for the Secretary's Annual Reports on vocational education, which are scheduled for July 1 of each year. It is expected that data accumulated through the VEDS system, along with other NCES data bases, will permit NCES to prepare special ad hoc analyses and reports in response to inquiries and requests from a variety of decisionmakers in vocational education.

## Noncollegiate Postsecondary Schools with Occupational Programs

Nearly 8,000 public and private postsecondary career schools provide job training in hundreds of fields. Their significance is reflected in their enrollment of almost 2 million students a year. Almost 90 percent of the schools are proprietary (for profit) and enroll 75 percent of the students. In the early 1970's, NCES began a series of surveys to learn more about these schools, their programs, and their students. This series complements NCES survey programs for colleges and universities and for VEDS.

In alternate years, NCES surveys these schools to ascertain enrollments, programs, and other information. School-identifying information is published in a directory of noncollegiate postsecondary schools. A representative sample of schools is used to develop national estimates of average charges, length of program, and the number of completers and leavers, by occupational program.

Schools that offer correspondence programs are also surveyed to provide information on vocational training available to persons who, because of family responsibilities or geographic location, are homebound or who prefer to study on a more flexible schedule.

Paralleling the biennial school survey is a series of studies on students in these schools. A nationally representative sample of students is used to collect demographic information and to learn the students' education and work history, information on their current program, and plans for future education and work.

A schedule of these surveys of noncollegiate

schools and students is presented at the end of this chapter.

## Surveys

### Characteristics of Noncollegiate Postsecondary Schools:

name, address, county, telephone number; enrollment; control and type of school; programs offered; accreditation; and eligibility for Federal financial programs. (Biennial)

### Programs and Enrollments in Noncollegiate Postsecondary Schools:

full- and part-time enrollments of men and women; completions and early leavers, by sex; length of program; average charges; and full- and part-time staff, by sex and assignment. (Biennial)

### Vocational Education Through Home Study:

name and address; enrollments and completions; length of program; average charges; residential requirements; and full- and part-time staff, by sex and assignment. (Biennial)

### Characteristics of Students in Noncollegiate Postsecondary Schools:

age, sex, and race/ethnic group; highest educational level; high school and work experience; reasons for selecting program and school; education and work plans; and parents' occupation and educational level. (Biennial)

Documented computer tapes for the 1976, 1978, and 1980 survey of schools and for the 1977 and 1979 survey of students are available for sale.

## Plans

The National Occupational Information Coordinating Committee, and a number of agencies, organizations, and key individuals play important roles in developing the dimensions and characteristics of the NCES vocational education data program. They are involved in planning meetings on individual projects and participate in the extensive consultations that characterized the development of the VEDS program. In all of these contacts, emphasis is placed upon the need to develop better information on job training activities and participants. The purpose is to aid national employment planning and to improve career guidance given to students and other adults.

Plans call for conducting biennial noncollegiate postsecondary surveys of students for 1981 and 1983. The next survey of postsecondary schools is scheduled for 1982.

## Selected Publications

- Adult and Continuing Education in Colleges and Universities (Early Release)
- Participation in Adult Education (Early Release)
- Enrollments and Programs in Noncollegiate Postsecondary Schools (Biennial)
- Programs and Schools—A Supplement to the Directory of Postsecondary Schools With Occupational Programs (Biennial)
- Condition of Vocational Education (One time)
- Adult Basic and Secondary Education Trends (Annual)

## Adult and Vocational Education Surveys

Surveys	Year of data collection				
	1981	1982	1983	1984	1985
<b>Adult Education</b>					
Participation in adult education	<input type="checkbox"/>			<input type="checkbox"/>	
Noncredit adult education in colleges and universities		<input type="checkbox"/>		<input type="checkbox"/>	
Adult education through home study			<input type="checkbox"/>		
Adult education in free universities and learning centers		<input type="checkbox"/>			<input type="checkbox"/>
Adult education in nonschools		<input type="checkbox"/>			
<b>Vocational Education</b>					
Vocational education data system—Enrollment, staff, finances	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vocational education data system—Student followup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vocational education data system—Employer followup	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Characteristics of noncollegiate postsecondary schools		<input type="checkbox"/>		<input type="checkbox"/>	
Programs and enrollments in noncollegiate postsecondary schools		<input type="checkbox"/>		<input type="checkbox"/>	
Vocational education through home study		<input type="checkbox"/>		<input type="checkbox"/>	
Characteristics of students in noncollegiate postsecondary schools	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>



# 5

## National Longitudinal Studies

The 1970's ushered in a shift in Federal emphasis from the needs of institutions to the needs of students. The advent of programs to deal with these needs made it increasingly clear that data merely describing inputs to the educational process were not enough. To develop an understanding of the transition from school to work—and of the factors contributing to the demand for postsecondary education—education policy analysts needed to examine the process itself. Studies began to suggest that the economic value of a college education had declined. That finding alerted policymakers to the possibility that higher education enrollments might also decline and avenues of social mobility might narrow.

The National Longitudinal Studies program was launched to provide ongoing, descriptive information about what was happening so that intervening processes could be studied. To do so requires the periodic examination of educational and occupational attainment, aspirations, attitudes, and motivations during the pivotal years immediately following high school. With extensive questioning over succeeding years, longitudinal studies make long-range comparisons between what individuals expect and what actually occurs. In this way, the study is critical to understanding the processes by which education leads individuals to develop their abilities and their roles in society.

NCES is conducting two longitudinal surveys. The first covers the high school senior class of 1972. The second—known as High School and Beyond—covers both the sophomore and senior classes of 1980.

### The High School Class of 1972 (NLS)

This study began in spring 1972. A random sample of 18 seniors was selected from each sample school agreeing to participate. To conduct intensive studies of disadvantaged students, NCES over-sampled schools in low-income areas and schools with significant minority enrollments. From school records, the survey obtained data for each senior on high school

curriculum, credit hours in major courses, grade-point average, standardized test scores and related information. In all, over 21,000 seniors in 1,200 public and private schools took tests and completed questionnaires about themselves and their plans for the future.

Young people's success in making the transition from high school varies enormously for reasons only partially understood. Some cling to dependency; others move into self-determination smoothly and completely. The followup surveys—conducted in 1973, 1974, 1976, and 1979—were designed to outline the various paths taken by young people who were attempting the transition. These surveys charted work and postsecondary school experiences, marriage and family events, community activities, attitudes and aspirations by way of questionnaires and personal interviews.

### Data Uses and Plans

The use of NLS data to investigate policy issues has steadily grown. The Congressional Budget Office, for example, turned to these data to develop a model for tax credit costs and costs of other financial aid sources. During the conduct of several vocational education studies, NLS data were used in Congressional hearings leading to the reauthorization of the Vocational Education Act. A Harvard study used NLS data to simulate the likely effect of the Basic Educational Opportunity Grant program on minority college enrollments. A study is currently in progress to survey all research reports that have used NLS data.

Plans for further NLS followup surveys are currently under consideration. Large-scale surveys such as these are quite expensive, and the arguments for collecting these data must be balanced against arguments for alternative uses of the funds. During the next decade, NLS followup surveys could collect data in two major areas of importance to the educational community: Continuing educational enrollments and long-term consequences of education.

The class of 1972 cohort will pass through the



25-to 34-year-old age range beginning in 1979. This age range is not normally considered a time of school enrollments, yet other data sources indicate that in this age group one person in twenty will be enrolled in higher education, and one in five will be enrolled in adult education. Earlier long-term studies of college students found that nearly half of the college dropouts at one State university went on to graduate 10 or more years after initial registration. Among those who delayed college entry, those who dropped out and later returned, and those who attend part-time, a period of more than a decade may be required to assess the final educational attainments of the 1972 cohort.

Studies in the human capital literature have shown that educational attainments have very long-term effects on an individual's earning capacity. In the early years of work experience, before college and professional school graduates have been working very long, the work experience of those with lesser educational attainments provides a salary benefit that obscures the economic returns to education. It may take a decade of earnings after college graduation to assess fully the economic advantages conferred by higher education.

## Surveys

### Base-year survey (spring 1972):

age, sex, racial/ethnic background, religion, physical handicap; socioeconomic status of family and community; school characteristics; future educational and work plans; test scores; school experience; school performance; work status; work performance and satisfaction.

### Followup surveys (fall 1973, 1974, 1976, and 1979):

age, sex, marital status, community characteristics; educational and work plans; educational attainment; work history; attitudes and opinions; postsecondary school and program characteristics; grade average; credits earned; type of financial assistance for postsecondary education. The fall 1976 survey collected information on opinions relating to sex and race bias. It also included student rating of high school and postsecondary school attainment. Overall response to each of the first four followups was 90 percent.

## High School and Beyond (HS&B)

New education issues have arisen since NCES began its longitudinal study of the 1972 senior class. Declining test scores and minimum competency testing, for example, are causing concern among parents and educators alike. So is the rate at which many students drop out before graduation. Increased opportunities in vocational education are opening new vistas for youths concerned about their futures. And, concern over access to postsecondary and vocational education has brought a sharper focus on the education experience of Hispanic youths.

To examine these issues, NCES initiated a second longitudinal study, High School and Beyond, to complement the first. The new survey, in part, covers the high school class of 1980. By seeking the same types of data gathered in the first study, the second allows a detailed comparison of the two senior classes and an assessment of the changes and problems that have arisen since 1972. However, the second study differs from the first in two significant ways. First, it addresses many new elements in the educational process. And second, it extends to the sophomores of 1980 as well as the seniors.

Presently, the initial study is laying the groundwork for comparison. It recorded the economic and social conditions surrounding high school seniors in 1972 and, within that context, their hopes and plans. It has since been measuring the outcomes while also observing the intervening processes. High School and Beyond will allow researchers to monitor changes by retaining the same goals: measuring the economic returns of postsecondary education, examining access to postsecondary education for minorities, delineating the need for financial aid, etc. By ultimately comparing the results of the two studies, researchers can determine how hopes, plans, and outcomes differ in response to changing conditions—or remain the same despite such changes.

The additional concerns of the new study encompass issues that have surfaced since the original study began: How has the increased availability of student financial aid altered student plans for further education? How are these plans affected by parents' income and education? Has the financial squeeze on

middle-income families altered their attitude toward postsecondary education? These questions, as well as concern about declining test scores, youth employment, and bilingual education will be addressed, along with a host of others.

The presence of sophomores in the new study will open up fresh areas of inquiry. For example, researchers can study more completely the process by which students choose and work toward their goals. Attempts can be made to discover the shortcomings of the educational process and perhaps formulate ways to overcome the resulting dropout problem. Ultimately, there will emerge a more comprehensive picture of the high school experience and its impact on students.

## Data Sources

The initial national sample required for the study design of High School and Beyond was considerably larger than that required for the class of 1972. The base year of this sample survey conducted early in 1980, collected data from over 58,000 students enrolled in over 1,000 public and private schools across the Nation. To permit separate analyses, several student subpopulations were oversampled, notably Hispanic students in alternative and Catholic or other private schools.

Included in the base-year survey were 1) sophomore and senior questionnaires with a series of cognitive tests, 2) school questionnaires, 3) teacher comment checklists, 4) second language questionnaires, and 5) parent questionnaires (sample of parents from both sophomore and senior cohorts). The student questionnaire 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. In addition, 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 how family attitudes and financial planning affect educational goals. Each school in the survey was asked to provide 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 longitudinal design of the study calls for followup surveys of substantial subsets of the two cohorts at 2-year intervals. This will permit analysts to determine how student plans and aspirations have changed or worked with time. The first followup of sophomores will also provide insights into the school dropout problems and to the influence of the last 2 years of high school on student attitudes and aspirations. In brief, HS&B will provide current information throughout the 1980's on the educational, vocational, and personal development of young people as they move from high school into adult life. The following information was collected in the base-year survey:

1980 sophomores  
and seniors (base-  
year survey,  
February 1980):

age, sex, racial/ethnic background, religion;  
socioeconomic status of family and community;  
school experiences; test scores; school perfor-  
mance; school characteristics and teacher observa-  
tions; future educational plans; family status and  
orientations; work experience and satisfaction;  
future occupational goals; plans for and ability  
to finance postsecondary education.

## Data Uses

The widened scope of High School and Beyond is expected to generate even more interest than its predecessor, particularly in the areas of State and local policy. The survey is designed to enable State planners to obtain State estimates by agreeing to augment and finance expansion of the sample. In addition, States may add their own questions to provide specific information that is particularly relevant to their policy, program and budget needs. So far, three States have selected from these options to supplement the study for their own purposes.

Design of the High School and Beyond study has been greatly enhanced by government and nongovernment policy analysts who have used data from the 1972 study. As part of the conceptual design activity in preparation for the base year, a large number of groups with interest in secondary and

postsecondary education were consulted. Users of HS&B data files will have the opportunity to analyze data and report findings that can assist decision-makers in developing educational policy at the Federal, State, and local levels, and will be able to compare HS&B findings with base-year data from the class of 1972 study.

### **Selected Publications**

- Attrition From College: The Class of 1972 Two and One-Half Years After High School Graduation
- A Capsule Description of Young Adults Four and One-Half Years After High School
- Distribution and Packaging of Student Financial Aid
- The Influence of High School Racial Composition on Black College Attendance and Achievement Test Performance

- The Relationship Between Participation in Mathematics at the High School Level and Entry Into Quantitative Fields—Results From the National Longitudinal Study (Bulletin)
- Transfer Students in Institutions of Higher Education
- Withdrawal From Institutions of Higher Education
- Women Who Enter Male-Dominated Fields of Study in Higher Education
- Third Followup Survey Composite Variables
- An Empirical Investigation of Alternate Item Nonresponse Adjustment Procedures
- Concept of the Quality of Life, and Changing Attitudes Two and One-Half Years After High School Graduation
- Experiences of Recent High School Graduates: The Transition to Work and Postsecondary Education (Published by Lexington Books)
- College Attainment Four Years After High School
- Highly Able Student Who Did Not Go to College
- Constructed Education Variables

**National Longitudinal Studies**

Surveys	Year of data collection								
	Spring	Fall					Spring		Fall
	1972	1973	1974	1976	1979	1980	1982	1984	1985

**High School Class of 1972—Seniors**

Base year

Followup years:

First

Second

Fourth

Seventh

Thirteenth

**High School and Beyond—1980  
Sophomores and Seniors**

Base year

Followup years:

Second

Fourth

## Learning Resources

Libraries, museums, and educational television are three valuable learning resources publicly recognized and supported for their contributions to the educational and cultural advancement of this Nation. Societal and economic changes, together with an information explosion and rapid technology advancements, have presented all three learning resources with new problems and tasks that have led to dependence on national sources to supplement their budgets.

NCES provides statistical information about learning resources to Federal, State, and local governments and various other education agencies and associations to aid in their decisionmaking, planning and administration.

### Libraries

The vital role of libraries in providing knowledge and information was underscored by the 1979 White House Conference on Libraries and Information Services. The conference called for the development of a national information policy to ensure broad provision of information through shared resources. It also sought to assure access to libraries and information services to children, the aged, the homebound, minorities and the handicapped. NCES provided relevant data collected by its surveys to the conference participants, using Data Information Display System (DIDS), for this purpose.

### Library General Information Survey

The Federal Government has collected and reported statistics on academic and public libraries for more than a century; on school libraries for a near half century. In the early 1970's NCES applied the use of standard terminology (identical terms and concepts) to describe all libraries so that a systematic

survey system providing comparable data for all libraries could be established. The Library General Information Survey was initiated to acquire data at irregular intervals on staff, collections and holdings, services, cooperative interlibrary arrangements, facilities, and expenditures for the various types of libraries. The inventories have for the most part been completed and are periodically updated. A handbook on terminology and concepts will be published in 1981.

#### Surveys

##### Library human resources:

staffing patterns for all types of libraries; number, full-time equivalent, sex and distribution of professional, paraprofessional, clerical and other staff categories in staff positions; job functions, education and training; entry level requirements, changes in manpower requirements and hiring patterns (educational, experience, related fields), emerging occupations, job supply, positions filled and vacant personnel sources; factors effecting employment changes; and projections of staffing needs for a decade. (Occasional)  
State: Initiated in 1981

##### Public libraries:

name, address and telephone number; number and type of units (central, branches, bookmobiles); number of full- and part-time professional staff by sex and earned degree; number of full- and part-time nonprofessional staff; number of unfilled budgeted positions; library revenues and expenditures by source; book and media collections; circulation and interlibrary loans; hours and days of service; and facilities. (Quadrennial)  
State: 1978 survey completed

##### School library media centers (public and private):

name; address and telephone number; enrollment; number of classroom teachers; grade span; number of library/media staff; by sex and earned degree; book and media collections; circulation and interlibrary loan transactions; hours and days of service; facilities; and expenditures, by source. (Occasional)  
Public Schools: State: 1978 survey completed  
Private Schools: State: 1980 survey near completion

**College and university libraries:**

name, address, and telephone number; number and salaries of full- and part-time staff, by sex and position; circulation and interlibrary loan transactions; book and media collections; hours and days of service; operating expenditures by purpose.

State: 1979 survey completed

**Special libraries—selected research libraries:**

name, address, and telephone number; name and address of company/organization primarily served; reference, interlibrary loans and other transactions; hours and days of service; public access; operating expenditures; revenue from Federal grants; full- and part-time professional staff; library materials, by field; number and type of items in collection; collection catalogs; and cooperative arrangements with other organizations. (Occasional)

State: Survey initiated

**Special libraries—Federal Government:**

name, address, and telephone number, type of library, number and type of units (central, branches, bookmobiles), classification system; book and media collections; circulation, and interlibrary loan transaction; hours and days of service; other services (documents depository, bibliographies, transactions); automated functions; expenditures; staff by GS rating and sex; unfilled budgeted positions; facilities; and consortia, networks and/or cooperative arrangements. (Occasional)

State: 1978 survey completed; jointly funded and conducted with Library of Congress, Federal Library Committee.

**Special libraries—State government:**

name, address, person to contact; number and types of units (central, branches); type of library; name of agency of which this library is a part; public access; number of full- and part-time staff, by sex and position; library revenues and expenditures, by source; library collection; loan transactions and use; circulation, reference and directional transactions; hours and days of service; facilities; classification system used for new acquisitions; and participation in cooperative arrangements and/or networks. (Occasional)

State: 1977 survey completed

**Special libraries—State agencies:**

name, address, person to contact, principal administrator of State library agency; State library agency governance; State library agency's administration; receipts by sources; number of full- and part-time staff, by sex and position and type of service; unfilled budgeted positions; total collection; use of collection; interlibrary loans; hours and days of service; public service outlets; facilities. Statewide specialized services, activities and functions. (Occasional)

State: 1977 survey published

**Library networks and cooperative library organizations:**

name, address, organizational structure; number of full- and part-time paid and nonpaid staff; source of funds; types of expenditures; major services and activities; computer and other automated support activities. (Occasional)

State: 1978 directory published  
1978 survey report completed

## Data Uses

New demands placed on libraries for various types of information tend to shift their role as depositories to the more complex role of information centers. At a time when circulation continues to grow, urgency for other services are rising. Withstanding the impact of inflation, library expenditures do not keep pace with increasing needs, and the outlook for libraries appears uncertain.

The NCES library data files are needed to allocate resources, accredit institutions, and support policy analyses; to establish standards for facilities and services at the State and local levels; and to determine needs for Federal assistance among public, school, academic, and research libraries by the Office of Libraries and Learning Technologies (OLLT). Library statistics also are used to plan and develop new facilities by accrediting academic institutions; and to determine directions and demands for new materials and market potentials by the private sector. The library human resources survey to be sponsored by NCES and OLLT in 1981-82 will provide data to project the trends of future supply and demand for library personnel into the 1990's.

# Technology/ Educational Broadcasting

In the last decade, television sets, computers, video-tape machines and other technologies have emerged as dominant forces in education. Since 1970, NCES and the Corporation for Public Broadcasting (CPB) have jointly sponsored a statistical program to collect, analyze, and disseminate information relating to television, radio, and related educational technologies. Included in NCES/CPB data base are studies on the availability and use of television and other communication technologies in elementary, secondary, and higher education.

## Surveys

### Educational technology broadcasting—elementary and secondary

district, school and teacher background characteristics; preparation and training in use of instructional television (ITV); availability, utilization, administrative and financial support for ITV; conditions affecting use of ITV; and attitudes towards ITV. (Quadrennial)

### Educational technology/broadcasting—higher education:

instruction, faculty and background characteristics; conditions under which ITV and other technologies are utilized; available equipment and materials; faculty and student use of ITV and radio; percentage of course hours using ITV; institutional arrangements for ITV use; administration, faculty and student attitudes towards ITV and radio; and perceived barriers toward ITV and radio use. (Quadrennial)

## Data Uses and Plans

The elementary and secondary study, initially conducted in 1977, was based upon a representative sam-

ple of school districts, schools and teachers. The survey will be conducted again in 1982. The first-phase survey of the higher education study completed in 1979 was a census of colleges and universities. A second, more comprehensive survey, based on a representative sample of institutions, faculty, and students, will be completed in 1983. The study is planned to be repeated in 1986.

The data collected from these studies are used in varying degrees by the Office of Libraries and Learning Technologies, the National Institute for Education, the Corporation for Public Broadcasting, and the public broadcasting community to aid in planning, implementing, and administering television and radio budgets and programming.

To establish priorities for data collection, NCES and CPB work closely with key leaders and associations in the fields of elementary, secondary, and higher education. Each study requires endorsements from such major organizations as the Council of Chief State School Officers, the National Education Association, the Association of American Colleges and Universities, the American Association of Community and Junior Colleges, and similar groups. NCES and CPB are advised and helped by these associations, as well as key Federal agencies, in the development of their data-collection and analyses activities. (See table at end of chapter describing the planned program.)

## Museums

Museum attendance has been climbing steadily over the past decade. With the addition of new kinds of exhibits and diverse educational programs, museums have come of age as teaching centers for adults and children. However, with increasing demands have come escalating costs.

In 1976, the Congress established the Institute for Museum Services (IMS) to provide assistance to museums. Subsequently, NCES began to conduct basic surveys to assist IMS in program planning.

## Data Uses

The museum surveys conducted by NCES reflect the needs of the National Museum Services Board that established the basic program policies and regulations for IMS.

To establish the universe of museums, the first step for NCES was to survey the varieties of museums—those for art, children, history, and natural history, as well as botanical gardens, nature centers, planetariums, aquariums, science-technology centers and zoological parks. The universe survey was used to determine which institutions are eligible for IMS funds. Information of greater depth was provided through a subsequent survey of a sample of museums.

### Surveys

#### Museum programs:

name, address, and telephone number; purpose and governing authority; collections and exhibits; conservation/protection; education and public programs; accessibility and attendance; number of full- and part-time staff; salary ranges of full-time employees; operating income by sources; range of assets in endowment fund; total capital,

expenditures; estimation of percentage of operating expenditures distributed among various areas of institution; security; facilities; and impact of inflation. (Occasional)  
State: Completed in 1981

## Selected Publications

- Availability and Use of Television and Radio in Colleges and Universities (Jointly with CPB)
- College and University Libraries (One time)
- College and University Libraries—Trend Data (One time)
- Federal Library Survey (Jointly with the Library of Congress) (One time)
- Library Data Collection Handbook (One time)
- Directory of Library Networks and Cooperative/Library Organizations (One time)
- Survey of Museum Programs (One time)
- Survey of Public Libraries (One time)
- Survey of Public School Libraries/Media Centers (Quadrennial)
- Survey of Special Libraries Serving State Governments (Quadrennial)
- Survey of State Library Agencies (Paper)
- Uses of Television for Instruction in Elementary and Secondary Education (Jointly with CPB)



## Learning Resources Surveys

Surveys	Year of data collection				
	1981	1982	1983	1984	1985
<b>Libraries</b>					
Library human resources (every 10 years)					
Public libraries	<input type="checkbox"/>				<input type="checkbox"/>
Public library users				<input type="checkbox"/>	
Public school library media centers		<input type="checkbox"/>			
Private school library media centers					<input type="checkbox"/>
Special libraries:					
Selected research	<input type="checkbox"/>			<input type="checkbox"/>	
Federal Government			<input type="checkbox"/>		
State government and State agencies				<input type="checkbox"/>	
Commerce and industry (every 8 years)					
Library networks and cooperative library organizations			<input type="checkbox"/>		
<b>Educational Technology/Broadcasting</b>					
Elementary and secondary				<input type="checkbox"/>	
Higher education			<input type="checkbox"/>		
<b>Museums</b>					
Universe update and programs				<input type="checkbox"/>	

## Information Services

Problems in education often require quick solutions. Planners can rarely spend long periods of time searching for appropriate data when preparing schedules and budgets and planning curricula. The ready availability of data is therefore vital to them for decisionmaking.

Aware of this need, NCES has developed an information program allowing easy access to a wide range of data. The program centers on the Statistical Information Office (SIO), computer services, and publications.

The Statistical Information Office has access to an exhaustive store of education data—data that are continually expanded and updated. This information is drawn from NCES' own data bases as well as those of related agencies and organizations. Such depth of resources is necessary to enable SIO to respond to a growing variety of requests for education information requests that now number over 30,000 yearly. Users of this information represent a wide range of institutions and organizations. They include members of Congress and Congressional committees, government agencies, educational institutions and organizations, the press, business firms and private citizens. The SIO frequently answers unique requests which require special tabulations, analyses and reports.

The SIO also compiles data used to allocate funds for a number of Federal formula-grant education programs. While the formula grant process is currently being reviewed, these programs have traditionally provided about \$8 billion in support of a variety of educational objectives.

The computer services program complements the SIO with a variety of products. Through computer tapes, special tabulations, microfiche and on-line computer capacity, the Center offers a range of data unavailable in printed form. Over 3,000 requests for these services were filled last year, coming from all types of public and private users. Computer tapes are especially in demand. To allow the widest use of these, NCES modifies its data sets, making them compatible with the unique specifications of the user's computer facility. Special tabulations from these tapes can also be produced, again tailored to the specific needs of the user. NCES adds approx-

imately 20 new tapes to its data base each year as data become available from NCES surveys and those of other government agencies. All available tapes are for sale.

Another essential element of the Center's reference capacity is its publications program. Annually, NCES publishes approximately 60 documents that detail particular aspects of education for planners and researchers. They are published in a variety of forms: early releases that present preliminary data, reports and bulletins, analyses, directories, and handbooks of standard terminology. Of these publications, the most widely used are *The Condition of Education*, the *Digest for Education Statistics*, and *Projections of Education Statistics*. *The Condition* offers statistics on American education within a framework of social indicators, using tables and graphs supported by interpretive text. The *Digest* is a compendium of statistical information covering American education from preprimary to graduate school. *Projections* presents historical trends and projections for 10 years on enrollments, instructional staff, graduates, and expenditures for elementary, secondary, and postsecondary education. All three publications present data collected by NCES and other agencies.

## Fast Response Survey System

Policy-oriented data are not always available to Federal education decisionmakers when needed. To fill this gap, NCES established the Fast Response Survey System (FRSS) in 1976 to conduct on request fast response surveys in six major education sectors: 1) State education agencies (SEA's); 2) local education agencies (LEA's); 3) public elementary and secondary schools; 4) private elementary and secondary schools; 5) institutions of higher education; and 6) postsecondary schools with occupational programs. The SEA's are canvassed as a universe and small, national samples are pre-established to survey the remaining five.

Some recent surveys conducted by FRSS include:

- Training Needs of Public School Administrators, a summer 1978 survey of public school districts, used primarily to stimulate and facilitate cooperation among users and providers of training.
- Arts Education: Policies and Programs, a winter 1978-79 survey of State Education Agencies used for policy direction.
- School Districts Participating in Multiple Federal Programs, a winter 1978-79 survey, used to identify problems and develop options for resolution.
- ESEA Title I Evaluation: School District Needs for Technical Assistance, a 1979 survey used for program direction.
- ESEA Title I Schoolwide Projects: Eligibility and Participation, a 1979 survey of State education agencies, used to provide a better understanding of the Title I legislative amendment making schoolwide projects eligible for ESEA funding under certain conditions.
- Availability of Evening or Weekend Baccalaureate Degree-Credit Courses, a 1980 survey of institutions of higher education used as policy recommendations to improve access to higher education.
- Preparation for Arts and Related Careers under Vocational Education, a 1980 survey of State education agencies, used for program management.
- Interactive Use of Computers for Instruction, a 1980 survey of public school districts, used to provide information on the extent or nature of student computer instruction, and to investigate the need for Federal assistance in the planning of such a program.

An additional mini-survey was conducted by NCES, using some of the techniques developed in FRSS. Nine States with large concentrations of Indo-Chinese refugee children were requested to furnish data on these children enrolled in the State and in each of five heavily impacted districts. The findings were used to determine the most effective funding option that would assist districts and States in coping with the increasing influx of the refugee children.

## Liaison with Outside Groups

Dissemination of educational statistics is also facilitated through cooperative activities with outside organizations, including participation in professional meetings, exhibit programs, and cooperative projects representing State education officials at the elementary/secondary and higher education levels.

"What Do We Know About Private Schools?" was the subject of a seminar in April 1981, that attracted more than 400 attendees from all areas of the education community, as well as the media. The seminar provided a forum for discussion and review of NCES data from the High School and Beyond survey. Other professional presentations during the past year included "Selected Issues in Education—New Insights from Longitudinal Studies" presented at the American Association for the Advancement of Science; "Projections of the Supply of College Graduates by Discipline" at a U.S. Department of Labor seminar; a summary of information on nonpublic schools provided for the U.S. Catholic Conference; and a review of trends of postsecondary education at a working session of the Association of American Publishers. Five staff members presented papers at the meeting of the Association for Institutional Research and seven at the annual conference of the American Educational Research Association.

The NCES Exhibit program features a display booth, containing examples of pertinent NCES publications, and manned by staff who respond to specific inquiries about the total program or specific surveys. This has proved popular and productive at annual meetings of such groups as the National Association of Secondary School Principals, School Administrators, the American Association for Higher Education, the American Personnel and Guidance Association, and the American Vocational Association. A valuable byproduct of the exhibit program is the opportunity for face-to-face interaction with educational researchers and administrators.

Another highly important link is the communication with the education community provided as a byproduct of the activity of the Advisory Council on Education Statistics. The council, mandated by Public Law 93-380, consists of seven public members appointed by the Secretary as well as ex-officio members from several Federal agencies concerned with educational statistics. The Council was established to review the standards and procedures used by NCES and to make specific recommendations for their improvement. The Council also helps insure that NCES products are free from bias or political influence.

The Council met five times during the past year and is planning during the coming to focus on priorities for program planning and NCES outputs and services.

## Congressional Presentations

Two special data analyses were prepared at the specific request of Congressional committees. A summary of the status of American secondary educa-

tion was presented in January 1980 by Marie Eldredge, NCES Administrator, at the request of the House Subcommittee on Elementary, Secondary, and Vocational Education. In September, the House hearings on the new vocational education amendments began with a presentation by Rolf Wulfsberg, Assistant Administrator for Research and Analysis, on the condition of vocational education. Interest expressed in both of these presentations induced NCES subsequently to publish the presentations in printed form.

In February 1980, the Advisory Council on Education Statistics, top NCES staff, and key members of Congressional committee staffs met to review the NCES program and to highlight areas for additional action.

In the course of the year, NCES processed over 350 requests for information from Congressional staff members during the year. The annual *Condition of Education*, required by Public Law 93-380, was submitted to Congress in June.

# 8

## State Technical Assistance

NCES provides technical assistance to the States through the Capacity-Building Grants Program for Statistical Activities, and through two contracts that provide State postsecondary and elementary/secondary representatives with networks for the exchange of personnel and information. These exchanges result in the sharing of expertise and information concerning educational data collection and information systems among the States. The two networks also contribute to the reduction of the States' burden by collectively recommending improvement of modifications to the Center's plans for surveys before plans are finalized.

### State Capacity-Building Grants

Initiated in 1978, the program now provides grants to States in elementary/secondary, vocational, and postsecondary education. The grants are used for activities proposed by States to improve their statistical and data processing activities. Grants are intended to develop the long-term capability of the State agencies to collect, process, analyze, or report education data. Grants also provide useful models for other States with similar needs. Grants may focus on reducing data burden; improving the timeliness of data reporting; improving the quality, comparability, or utility of data; increasing a State's analytical capability; improving the flow of information to local or other educational agencies; and similar objectives. Because of limited funds, not every State that applies can receive a grant. Grants are expected to be awarded based on the following criteria:

- Quality of the plan of operation
- Quality of the key personnel to be assigned
- Adequacy of the budget and cost effectiveness
- Quality of the evaluation plan
- Adequacy of the resources to be used
- Significance of the project in improving long-term statistical capability of the State agency
- Adequacy of the State's commitment to ensure a long-term effect of the grant

In 1978, grants were awarded to eight States to improve statistical activities at the elementary/secondary level. In 1979, following a change in the authorizing law to permit the awarding of grants to postsecondary and vocational education agencies, 37 grants were made. Ten grants were awarded in elementary/secondary education, 6 in postsecondary education, and 21 in vocational education. In 1980, 31 grants were awarded: 10 in elementary/secondary, 8 in postsecondary, and 13 in vocational education.

Funded projects have included: designing and implementing accounting systems in finance, staff, and curriculum; developing school district profiles for planning purposes; developing a new teacher certification system; designing, testing, and implementing new forms to collect improved data for the Vocational Education Data System (VEDS); development of a computer-supported student enrollment module using Higher Education General Information Survey (HEGIS) data; purchase of a computer graphics terminal for preparing displays to support higher education planning.

### State Personnel Exchange

The State personnel exchange is a federally funded program that encourages States to help one another. In many situations, a problem in one State has already been solved in another. The personnel exchange supports travel costs for State employees to review the methods or solutions used by other States. This enables State agencies to seek advice from their peers rather than consultants who may be less familiar with State-operating procedures and operations in a particular area. In another use of the personnel exchange, a State may request personnel from one or more States to conduct a review of its management information system. In this situation, a team of experts from several States visits the State agency, reviews operations, and makes recommendations to the chief executive officer of the education agency involved. Approximately 30 personnel exchanges and team reviews occur during a one-year period.

$$-1 + X_{i+1} + X_{i+2})$$

$$+ t_{i+1} + t_{i+2})$$

# Statistical Methodology

## Quality Assurance

Two conflicting forces, the need for statistical information, and the increasing concern with respondent burden, have given renewed impetus to NCES' movement toward more efficient and effective methods of gathering and utilizing data for education. Moreover, as one of five general purpose statistical agencies in the U.S. Government, NCES has the principal responsibility within the Department of Education for advising on all statistical matters pertaining to present and proposed policies of the Department, and has a vital interest in assuring the quality and timeliness of education data. In response to these concerns, NCES established the Office of Research and Analysis (ORA) in 1979, and continues to work closely with its counterparts in other Federal agencies to develop and implement state-of-the-art statistical techniques.

Specific individuals within the divisions form the core for the Center's activities concerning the development of efficient and effective statistical techniques that have general applicability. These individuals are also charged with assuring the quality of NCES data, and providing technical consultation to each of the Center's programs, and to the various program offices of the Department that request such services. Additionally, NCES maintains liaison with other collectors of social statistics to keep informed of methodological progress in the field, and to disseminate the result of work performed by NCES.

Although quality assurance, methodological research and development, and technical consultation may be considered separate programs, often times activities undertaken in one program lead to activities that are also needed in one or more of the other program areas. For example, the analytic potential of survey data is greatly reduced if there is a relatively high nonresponse rate on critical items. To assure both greater utility of such data and to enhance their analytic potential, methods were developed for the micro-imputation of missing item responses. Software that could be incorporated into SAS, a general file management and analytic system, was also written to facilitate cross-survey implementation. This development, in turn, led to the need to provide technical consultation and instruction in the imputation technique and its attendant software.

Quality assurance is both a backward and forward-looking activity. Its backward-looking component provides data users with an indication of the reliability and limitations of data produced by NCES. Validation and quality assessment studies have been undertaken by NCES as one approach. Validation studies of the Higher Education Fall Enrollment, Earned Degrees, Finance, and Faculty surveys have been completed, followed by a study of the survey of Residence and Migration of College Students, underway in fiscal year 1981. Future validation studies will focus on the Common Core of Data of public elementary and secondary education. A quality assessment of the National Vocational Education Data System has been undertaken in fiscal years 1980 and 1981.

The development of error profiles of NCES statistics, constitutes a second approach to quality assurance that NCES has taken. An error profile is a method for describing and, to the extent possible, estimating sampling and non-sampling errors inherent in published statistics. In fiscal year 1981 this effort will reach fruition when prototypic profiles of Opening Fall Enrollment statistics and statistics from the Recent College Graduates Survey are completed.

The forward-looking component of the quality assurance program takes the form of technical planning of NCES surveys, and of the technical review of the drafts of NCES reports. In fiscal year 1981 technical planning for a periodic survey of students in postsecondary education was begun. If this survey is conducted in fiscal year 1982, it will provide recurrent data on Federal financial assistance to students in postsecondary education, as well as data that can be used to investigate such critical issues as access to, and retention in, postsecondary education. Another forward-looking activity to assure the quality of NCES reports is the work being done on technical standards. Once established, the standards will assist NCES' efforts to provide the education community and others with information that has more uniformly good technical merit.

## Methodological Research and Development

This program centers on identifying, developing, and implementing state-of-the-art solutions to persistent technical problems that inhibit effective use of NCES data, or impede efficient statistical program operations. It encompasses such diverse activities as developing statistical techniques that have general applicability, generating data bases that have maximal analytic utility, creating education indicators that provide meaningful descriptions of the education enterprise, and carrying out taxonomic research.

The procedures for the micro-imputation of missing item responses provided some resolution to the problem of missing item responses. In fiscal year 1981 the very crucial problem of analyzing data from complex surveys is being investigated. A problem exists here because most standard analytic techniques are based upon simple random sampling assumptions. NCES samples, however, are generally multistage, cluster samples. The data generated from such samples do not meet simple random sampling assumptions. Analytic techniques that can be appropriately applied to NCES data are urgently needed if technically defensible, more complex analyses are to be undertaken.

NCES is also exploring ways to link data bases that pertain to the same content area, but for various reasons have suffered discontinuities. If such discontinuities can be resolved, then it will be feasible to initiate vital trend analyses that heretofore have not been possible. A specific instance of the utility of this approach is the recently completed longitudinal file of HEGIS enrollment, finance, and faculty surveys. To create this file, discontinuities in institutional codes had to be resolved over the entire frame of the data (1974-1978). In addition to making extant data more useful, it is expected that data based linkage activities will result in standard techniques for avoiding data discontinuities in the future.

Another important technical consideration is the generation of high quality data bases. In sample surveys, the quality of the data and the extent of bias are highly dependent upon having a complete universe that can serve as a sampling frame. In fiscal year 1981, NCES is developing methods for validating a universe that will be applied immediately to NCES' universe of private elementary and secondary schools.

Studies in school finance for elementary and secondary education have been hampered by an inability to adjust for such critical parameters as price

differentials due to local circumstances, costs associated with varying degrees of need, and the ability for a local area to pay for education. These parameters are being investigated as part of NCES' indicator development effort in elementary/secondary education. The effort to study education indicators has also led to the development of indicators that project educational attainment levels for minorities and women, as well as of indicators of the financial status of higher education institutions. This latter effort has been expanded to include indicators of the viability of higher education institutions, particularly as these institutions are related to Federal goals for higher education. Additional work in indicators of equality of education will focus on both the pecuniary and nonpecuniary benefits of formal education for minority groups and women.

Taxonomic research undertaken by the Center has thus far resulted in a new classification structure for institutions of higher education. The advantage of this new structure is that it leads to greater homogeneity among institutions within a specific category. Research is underway to study the longitudinal effects of reclassifying the institutions accordingly. Future efforts will focus on the classification of elementary and secondary schools. In general, this work will increase the analytic utility of existing data bases and will permit more efficiency in sampling stratification. Using efficient samples, in turn, will enable NCES to publish data on a more timely basis, will result in a decrease in respondent burden, and will make focused sample surveys of institutions more feasible.

## Technical Consultation

Technical consultation, the third program within Statistical Methodology, includes both service activities and outreach to the education and statistical communities. The service activities provide technical support to the various parts of NCES by interacting with individual project officers in all phases of their project and by developing training plans for professional staff development. NCES also provides technical consultation to program offices in the Department of Education, particularly with respect to survey sampling methodology and data analysis. In reaching out to the education and statistical communities, NCES sponsors statistical seminars, promotes presentations of technical papers at major professional meetings, and reviews technical advances that might have application in the NCES programs.



## Selected Publications

An Improved Taxonomy of Postsecondary Institutions  
Concepts Related to Indicators of College and University Financial Health  
Development of Longitudinal File on Financial, Faculty, Enrollment, and Institutional Characteristics Data  
Guidebook for the Imputation of Missing Data

## Seminars

Log-Linear Analysis—A Practical Approach  
Cost of Education Index  
Educational Indicators for Colleges and Universities  
Weighted Least Squares Methods for the Analysis of Cross-Classified Arrays From Survey Data