DOCUMENT RESUME

ED 327 581 TM 016 033

AUTHOR Gerald, Debra E.; Hussar, William J.
TITLE Projections of Education Statistics to 2001: An Update.
INSTITUTION National Center for Education Statistics (ED), Washington, DC.
REPORT NO NCES-91-683
PUB DATE Dec 90
NOTE 201p.; This volume is the 20th report in a series begun in 1964; for prior year's report, see ED 312 793.
PUB TYPE Statistical Data (110) -- Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC09 Plus Postage.
DESCRIPTORS Degrees (Academic); Educational Finance; Educational Trends; Elementary Secondary Education; Enrollment; Expenditure per Student; Higher Education; High School Graduates; *National Surveys; *Predictive Measurement; *Public Schools; *School Statistics; *State Surveys; Statistical Data; *Tables (Data); Teacher Characteristics

ABSTRACT

Statistical projections for elementary and secondary schools and institutions of higher education are provided at the national and state levels through the year 2001. National projection tables cover enrollment, high school graduates, earned degrees conferred, classroom teachers, and expenditures of public elementary and secondary schools. State-level projections cover public elementary and secondary school enrollment, and public high school graduates. Data are generally shown by calendar or school year for various years from 1976 through 2001. The report also contains a methodology section describing models and assumptions used to develop the national-level and state-level projections. Projections are based on an age-specific enrollment rate model, exponential smoothing models, and econometric models. The enrollment model uses population estimates and projections from the Bureau of the Census. The exponential smoothing models are based on the mathematical projection of past data patterns into the future. The econometric models use projections of exogenous variables from the Macroeconomic Model of the U.S. Economy, developed by Data Resources, Inc. Most of the projections have three or four alternative sets of assumptions regarding various growth paths. Although the first set of projections is deemed to represent the most likely projections, the other alternatives provide a reasonable range of outcomes. In all, 110 data tables are provided. (Author/TJH)

TM

PROJECTIONS OF EDUCATION STATISTICS TO 2001

AN UPDATE

Debra E. Gerald
William J. Hussar

National Center for
Education Statistics

U.S. Department of Education
Lauro F. Cavazos
Secretary

Office of Educational Research and Improvement
Christopher T. Cross
Assistant Secretary

National Center for Education Statistics
Emerson J. Elliott
Acting Commissioner

Information Services
Sharon K. Horn
Director

National Center for Education Statistics

"The purpose of the Center shall be to collect, and analyze, and disseminate statistics and other data related to education in the United States and in other nations."—Section 406(b) of the General Education Provisions Act, as amended (20 U.S.C. 1221e–1).

December 1990

Preface

This edition of *Projections of Education Statistics to 2001: An Update* is the 20th report in a series begun in 1964. This report provides updates of projections shown in *Projections of Education Statistics to 2000* and includes statistics on elementary and secondary schools and institutions of higher education at the national level. Included are projections for enrollments, graduates, instructional staff, and expenditures to the year 2001., In addition, this report includes selected projections of education statistics for public elementary and secondary schools at the state level to the year 2000—elementary and secondary enrollment and high school graduates. These are updates of state projections shown in *State Projections to 1993 for Public Elementary and Secondary Enrollment, Graduates, and Teachers.*

The report also contains a methodology section describing models and assumptions used to develop the national and state-level projections. The projections are based on an age-specific enrollment rate model, exponential smoothing models, and econometric models. The enrollment model uses population estimates and projections from the Bureau of the Census. The exponential smoothing models are based on the mathematical projection of past data patterns into the future. The econometric models use projections of exogenous variables from Data Resources, Inc.'s Macroeconomic Model of the U.S. Economy.

Most of the projections have three or four alternative sets of assumptions regarding various growth paths. Although the first set of projections is deemed to represent the most likely projections, the other alternatives provide a reasonable range of outcomes.

A summary of these projections is available in a pocket-sized folder, *Pocket Projections 2001.*

Acknowledgments

Projections of Education Statistics to 2001: An Update was produced by the National Center for Education Statistics in the Statistical Standards and Methodology Division. The report was prepared by Debra E. Gerald, Mathematical Statistician, and William J. Hussar, Financial Economist.

Debra E. Gerald developed the projections of enrollments, high school graduates, earned degrees conferred, and classroom teachers. William J. Hussar prepared the projections of expenditures of public elementary and secondary schools, including public school teacher salaries.

Valuable assistance was provided by the following reviewers: Daniel Hecker of the Bureau of Labor Statistics; Vance Grant of Information Services, Office of Educational Research and Improvement; and Susan Ahmed, Sharon Bobbitt, JoAnn Davis, Emmett L. Fleming, William Fowler, Mary Frase, William Freund, Frank Johnson, and Jeffrey Williams of the National Center for Education Statistics.

The manuscript was edited by Gerard Devlin and the cover was designed by Philip Carr, Information Services, Office of Educational Research and Improvement.

Highlights

National

Enrollment

- **Total public and private elementary and secondary enrollment is expected to increase over the projection period.** From 1976 to 1984, total enrollment in public and private elementary and secondary schools decreased from 49.5 million to 44.9 million. After 1984, total enrollment reversed its decline and increased to 46.0 million in 1989. Enrollment is projected to continue to increase and reach 50.1 million in 1998. By the year 2001, it will be 49.8 million. Past and projected trends in enrollment reflect changes in the school-age population (table 1).

- **Enrollment in grades K–8 and 9–12 is projected to increase over the projection period.** From a low of 31.2 million in 1984, enrollment in grades K–8 increased to 33.3 million in 1989 and is projected to increase to 35.5 million in 1996. By the year 2001, this number will be 34.9 million. From a peak of 15.7 million in 1976, enrollment in grades 9–12 decreased to 12.7 million in 1989. After reaching a low of 12.4 million in 1990, enrollment in grades 9–12 is expected to rise to 14.9 million by the year 2001 (table 1).

- **Increases are expected in both public and private schools over the projection period.** Enrollment in public elementary and secondary schools decreased from 44.3 million in 1976 to 39.2 million in 1984. Enrollment in public schools is projected to continue to increase to 44.3 million in 1998. By the year 2001, this number will be 44.0 million. In 1989, an estimated 5.4 million students were enrolled in private elementary and secondary schools. Enrollment in private schools is projected to be 5.8 million by the year 2001 (table 1).

- **Enrollments aggregated by organizational level of school show trends similar to projections of enrollment by grade level.** From a low of 28.0 million in 1982, enrollment in elementary schools, excluding enrollment in grades 7 and 8 in junior high schools, increased to 29.2 million in 1989. The increase is expected to continue through 1996, when enrollment will reach 30.8 million. By the year 2001, this number will be 30.0 million. Enrollment in secondary schools, including 7th and 8th graders in junior high schools, decreased from 20.2 million in 1976 to 16.8 million in 1989. This number is projected to rise to 19.8 million by the year 2001 (table 2).

- **Total higher education enrollment is projected to reach 14.4 million by 2001.** Since 1985, higher education enrollment has increased from 12.5 million to an estimated 13.4 million in 1989. Between 1990 and 1994, enrollment will fluctuate around 13.6 million before increasing to 14.4 million by the year 2001 (table 3).

- **Women will continue to outpace men in higher education enrollment.** Enrollment of women increased from 5.2 million in 1976 to an estimated 7.2 million in 1989. By the year 2001, they will number 7.9 million. From 1976 to 1988, enrollment of men has fluctuated between 5.6 million and 6.0 million. In 1989, it was estimated at 6.3 million. By the year 2001, this number is projected to be 6.5 million (table 3).

- **Part-time enrollment is projected to continue to increase over the projection period.** Part-time enrollment increased from 4.3 million in 1976 to an estimated 5.8 million in 1989. By the year 2001, this number is projected to increase to 6.4 million. Full-time enrollment increased from 6.7 million in 1976 to an estimated 7.6 million in 1989. This number is projected to be 8.1 million by the year 2001 (table 3).

- **While enrollment in public institutions of higher education is projected to increase over the projection period, enrollment in private institutions is expected to remain stable.** Public enrollment increased from 8.7 million in 1976 to an estimated 10.4 million in 1989. This number is expected to be 11.3 million by the year 2001. Private enrollment, which grew from 2.4 million in

1976 to an estimated 3.0 million in 1989, is projected to fluctuate between 3.0 million and 3.2 million over the projection period (table 3).

- **Increases are expected in both 4-year and 2-year institutions over the projection period.** Enrollment in 4-year institutions increased from 7.1 million in 1976 to an estimated 8.5 million in 1989. By the year 2001, this number is projected to be 9.0 million. Enrollment in 2-year institutions grew from 3.9 million in 1976 to an estimated 5.0 million in 1989. This number is expected to be 5.4 million by the year 2001 (tables 4 and 5).

- **The growth of enrollment of 18- to 24-year-olds will exceed the rate of growth for students age 25 years and over.** The enrollment of 18- to 24-year-olds increased from 7.3 million in 1981 to an estimated 7.5 million in 1989. By the year 2001, this number is expected to rise to 8.1 million, a 9 percent increase from 1989. The enrollment of students age 25 years and over increased from 4.8 million in 1981 to an estimated 5.7 million in 1989. By the year 2001, this number is projected to increase to 6.1 million, an increase of 6 percent from 1989 (table 6).

High School Graduates

- **High school graduates are projected to increase by 2000–2001.** The number of high school graduates from public and private high schools decreased from 3.2 million in 1976–77 to 2.6 million in 1985–86. It then rose to 2.8 million in 1988–89. Over the projection period, the number of graduates is expected to decrease to 2.5 million by 1993–94. Thereafter it will rise to 3.2 million by 2000–2001 (table 26).

- **Increases are expected for graduates of both public and private high schools by 2000–2001.** Public high school graduates are projected to decrease from 2.5 million in 1988–89 to 2.2 million by 1993–94. By 2000–2001, the number will rise to 2.9 million. Private high school graduates, which were estimated to be 324,000 in 1988–89, are projected to be 372,000 by 2000–2001 (table 26).

Earned Degrees Conferred

- **The number of associate degrees is projected to increase over the projection period as women continue to receive more associate degrees.** Between 1975–76 and 1982–83, the number of associate degrees increased from 391,000 to 456,000 and then decreased to 436,000 in 1988–89. By the year 2000–2001, this number is expected to increase to 489,000. This increase is due to the growth of degrees awarded to women. While the number of associate degrees awarded to men will remain around 200,000 for most of the 1990s and then increase to 211,000 by 2000–2001, the number awarded to women is projected to increase from 246,000 in 1988–89 to 278,000 by 2000–2001 (table 27).

- **The number of bachelor's degrees is projected to remain above 1 million over the projection period.** Between 1976–77 and 1988–89, the number of bachelor's degrees has increased from 919,000 to 1,017,000. This number is expected to increase to 1,060,000 in 1992–93 and remain above 1,000,000 for the remainder of the projection period. The number of bachelor's degrees awarded to men declined from 505,000 in 1975–76 to 484,000 in 1988–89. This number is expected to fluctuate over most of the projection period and then increase to 522,000 by 2000–2001. On the other hand, the number of bachelor's degrees awarded to women has increased from 421,000 in 1975–76 to 533,000 in 1988–89. Following projected increases to 557,000 in 1992–93, this number is expected to decrease over the projection period to 515,000 by 2000–2001 (table 28).

- **Master's degrees awarded are projected to rise over the projection period.** The number of master's degrees peaked at 317,000 in 1976–77 and then fell to 284,000 in 1983–84. Since then, master's degrees have increased to 308,000 in 1988–89. This trend is projected to continue, reaching 327,000 by 2000–2001. The number of degrees awarded to men is projected to increase from 148,000 in 1988–89 to 156,000 in 1991–92, before decreasing gradually to 149,000 by 2000–2001. In contrast, the number of master's degrees awarded to women is expected to increase, from 160,000 in 1988–89 to 178,000 by 2000–2001 (table 29).

- **By 2000–2001, the number of doctor's degrees awarded to women is projected to surpass the number awarded to men.** The number of doctor's degrees decreased slightly between 1975–76 and 1983–84, from 34,100 to 33,200. Since then, this number has increased to 35,400. Over the projection period, doctor's degrees are expected to remain around 36,000. This is due to opposing trends in projected doctor's degrees conferred on men and women. Between 1988–89 and 2000–2001,

the number of doctor's degrees awarded to men is projected to decrease from 22,600 to 17,300, while those awarded to women are expected to increase from 12,800 to 18,900 over the same period (table 30).

Classroom Teachers

- **Classroom teachers are projected to increase over the projection period.** Since 1981, classroom teachers in public and private elementary and secondary schools have increased from 2.4 million to 2.7 million in 1989. This number is expected to increase over the projection period to 3.2 million by the year 2001 (table 32).

- **Both elementary and secondary teachers are projected to increase over the projection period.** Elementary classroom teachers increased from 1.4 million in 1981 to 1.6 million in 1989. This number is projected to increase to 1.9 million by the year 2001. Secondary classroom teachers increased from 1.0 million in 1982 to 1.1 million in 1989. By the year 2001, secondary classroom teachers will rise to 1.4 million (table 32).

- **Both public and private classroom teachers are projected to increase over the projection period.** Classroom teachers in public schools are projected to increase from 2.4 million in 1989 to 2.8 million by the year 2001. Classroom teachers in private schools numbered 377,000 in 1989. By the year 2001, this number will be 443,000 (table 32).

- **Pupil-teacher ratios in elementary and secondary schools are projected to fall slightly over the projection period.** Since 1976, the pupil-teacher ratio in elementary schools has decreased from 21.7 to 18.1 in 1989. This ratio is projected to continue to decline to 16.1 by the year 2001. For secondary schools, the pupil-teacher ratio decreased from 18.3 in 1976 to 14.9 in 1989. Over the projection period, this ratio will fluctuate and fall slightly to 14.3 by the year 2001 (table 33).

- **Total demand for new hiring of teachers in public schools is projected to fluctuate and then rise over the projection period.** The total demand for new hiring of classroom teachers is projected to fluctuate through 1995, ranging from 187,000 to 209,000. After 1995, it is expected to increase to 227,000 by the year 2000, before leveling off at 225,000 in 2001 (table 34).

Expenditures of Public Elementary and Secondary Schools

- **Current expenditures are forecast to continue increasing through to 2000–2001.** Between 1975–76 and 1989–90, current expenditures are estimated to have increased 28.5 percent in constant dollars. Current expenditures are seen continuing this trend, increasing 36.3 percent between 1989–90 and 2000–2001 (table 37).

- **Increases in current expenditures per pupil are also forecast for the period 1989–90 to 2000–2001.** The period from 1975–76 until 1989–90 saw current expenditures per pupil in average daily attendance (ADA) increase an estimated 41.1 percent in constant dollars. Current expenditures per pupil are forecast to increase another 25.3 percent between 1989–90 and 2000–2001. Current expenditures per pupil are forecast to increase less rapidly than total current expenditures due to the increase forecast for the number of pupils (table 37).

- **Further increases in teacher salaries forecast.** Continuing the trend which began in 1982, teacher salaries in constant dollars are forecast to increase throughout the period from 1989–90 to 2000–2001. After a period of declining salaries (teacher salaries in constant dollars fell 10.4 percent from 1975–76 to 1980–81), teacher salaries have risen constantly. Between 1981–82 and 1989–90, teacher salaries in constant dollars grew an estimated 22.0 percent. This trend is forecast to continue, with teacher salaries forecast to increase 17.9 percent between 1989–90 and 2000–2001 (table 39).

State-Level

Public Elementary and Secondary Enrollment

- **Public elementary and secondary school enrollment (kindergarten through grade 12) is expected to increase between 1989 and 2000, but these increases will vary across the Nation.** Enrollment will increase most rapidly in the Western States, where total enrollment is expected to rise 13 percent. Enrollment in the Southern region is projected to increase by 10 percent. The Northeastern region is expected to rise 8 percent, while the Midwestern region is projected to increase by 3 percent (table 40).

- **Three states in the Western region are projected to show sizable increases in public school enrollment between 1989 and 2000.** Sizable increases are expected in Arizona (33 percent), Colorado (24 percent), and New Mexico (39 percent). Many states in the Southern region are expected to show large increases in public school enrollment between 1989 and 2000. Increases are expected in Florida (24 percent), Georgia (22 percent), Maryland (20 percent), and Virginia (18 percent). Decreases are expected in the District of Columbia (10 percent) and West Virginia (13 percent) over the projection period. In the Northeastern region, enrollment in New Hampshire is projected to rise by 33 percent, and New Jersey is expected to increase by 22 percent over the same period. In the Midwestern region, Minnesota is projected to grow by 15 percent (table 40).

- **Changes in elementary enrollment are projected to vary across the Nation.** Public school elementary enrollment in kindergarten through grade 8 is expected to increase 6 percent between 1989 and 2000. Enrollment is projected to rise 8 percent in the Southern States, 7 percent in the Western States, 5 percent in the Northeastern States, and remain relatively unchanged for the Midwestern States. Increases in elementary enrollment are expected to occur in the majority of states across the Nation. Sizable increases in elementary enrollment are projected for Arizona (26 percent), Colorado (16 percent), Florida (20 percent), Maryland (15 percent), New Hampshire (30 percent), New Jersey (21 percent), and New Mexico (35 percent) over the projection period (table 41).

- **Increases in high school enrollment are projected across the Nation.** Public high school enrollment in grades 9 through 12 is projected to increase 17 percent between 1989 and 2000. Increases are expected in all regions of the Nation. The Western region is projected to rise by 29 percent. An 18-percent increase is expected for the Southern region. The Northeastern and Midwestern regions are expected to increase 13 and 9 percent, respectively. Sizable increases are expected in Arizona (52 percent), California (27 percent), Colorado (44 percent), Florida (33 percent), Georgia (29 percent), Hawaii (48 percent), Maryland (33 percent), Minnesota (27 percent), Nevada (33 percent), New Hampshire (41 percent), New Jersey (24 percent), New Mexico (47 percent), South Dakota (25 percent), Utah (27 percent), and Virginia (26 percent) over the projection period (table 42).

Public High School Graduates

- **Growth in the number of graduates from public schools will vary by region.** The number of public nigh school graduates is projected to increase 5 percent between 1988–89 and 1999–2000. Across regions, the West is expected to rise by 22 percent. The South is projected to grow by 5 percent. The Northeast and Midwest are expected to have slight decreases over the projection period (table 43).

- **Western States are projected to show the largest increases over the projection period.** Between 1988–89 and 1999–2000, most of the States in the Western region are projected to show increases in the number of public high school graduates. Sizable increases are expected in Arizona (25 percent), California (25 percent), Nevada (70 percent), and Washington (26 percent). In the Southern region, Florida is projected to rise by 35 percent. Smaller increases are projected for Delaware (15 percent), Maryland (13 percent), and Texas (12 percent). In the Midwest, growth is expected in Kansas (14 percent), Minnesota (17 percent), and South Dakota (13 percent). New Hampshire in the Northeast is projected to increase 16 percent over the projection period, while most of the remaining Northeastern States are expected to show decreases (table 43).

Contents

Figure

Tables

National Projections

Enrollment

Elementary and Secondary Schools

Institutions of Higher Education

High School Graduates

Earned Degrees Conferred

Classroom Teachers

Elementary and Secondary Schools

Expenditures

Public Elementary and Secondary Schools

State-Level Projections

Public Elementary and Secondary School Enrollment

Public High School Graduates

Appendix A

Methodological Tables

Enrollment

Earned Degrees Conferred

Public Classroom Teachers

Public Elementary and Secondary School Expenditures

Appendix B

Supplementary Tables

Appendix C

Tables of Statistical Confidence Limits and Standard Errors for Selected Projections

Appendix D

Table of Mean Absolute Percentage Errors (MAPEs)

Introduction

Guide to This Edition

This edition of *Projections of Education Statistics to 2001: An Update* provides projections for key education statistics. This edition includes updated tables of projections on enrollment, graduates, instructional staff, and expenditures in elementary and secondary schools and institutions of higher education. The tables contain data on enrollment, teachers, graduates, and expenditures for the past 15 years and projections to the year 2001 for the Nation. Tables are also provided for projections of public school elementary and secondary enrollment and high school graduates to the year 2000 by State. They represent a uniform set of projections using similar methodologies for the 50 States and District of Columbia. These projections are further adjusted to agree with the national projections of public elementary and secondary school enrollment and high school graduates appearing in this report. Appendix A describes the methodology and assumptions used to develop the projections. Tables of supplementary data are in appendix B. Appendix C contains tables of statistical confidence limits and standard errors. A table of mean absolute percentage errors of selected state projections is provided in appendix D. Data sources are in appendix E. Appendix F is a glossary of terms.

Changes from Past Editions

This edition includes principally tables of projections of education statistics and methodologies used to develop the projections. Unlike its predecessors, this report does not contain analytical chapters or charts. Also excluded from this edition are projections of instructional faculty and expenditures of institutions of higher education. Data were not available to prepare these projections to meet the publication schedule. These projections will appear in subsequent reports.

Limitations of Projections

Projections of time series usually differ from the reported data due to errors from many sources. This is because of the inherent nature of the statistical universe from which the basic data are obtained and the properties of projection methodologies, which depend on the validity of many assumptions. Therefore, alternative projections are shown for some statistical series to denote the uncertainty involved in making projections. These alternatives are not statistical confidence limits, but instead represent judgments made by the authors as to reasonable upper and lower bounds. To measure projection reliability, upper and lower statistical confidence limits are presented for projections of elementary and secondary enrollment, classroom teachers, high school graduates, earned degrees conferred, and expenditures in public elementary and secondary schools. Statistical confidence limits are not provided for projections of enrollment in institutions of higher education. Because of the complex methodologies used for projecting higher education enrollment, procedures still need to be developed to calculate statistical confidence limits. Instead, only alternative projections are presented for higher education enrollment.

National Projection Tables

Table 1.—Enrollment in grades K–8[1] and 9–12 of elementary and secondary schools, by control of institution, with projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total			Public			Private		
	K–12[1]	K–8[1]	9–12	K–12[1]	K–8[1]	9–12	K–12[1]	K–8[1]	9–12
1976	49,484	33,831	15,653	44,317	30,006	14,311	5,167	3,825	1,342
1977.	48,717	33,133	15,583	43,577	29,336	14,240	5,140	3,797	1,343
1978	47,636	32,060	15,576	42,550	28,328	14,223	5,086	3,732	1,353
1979	46,645	31,631	15,014	41,646	27,931	13,714	[2] 5,000	3,700	1,300
1980.. ...	46,249	31,669	14,581	40,918	27,677	13,242	5,331	3,992	1,339
1981 .. .	45,522	31,370	14,152	40,022	27,270	12,752	[2] 5,500	4,100	1,400
1982. ...	45,166	31,358	13,807	39,566	27,158	12,407	[2] 5,600	4,200	1,400
1983... ..	44,967	31,294	13,674	39,252	26,979	12,274	5,715	4,315	1,400
1984	44,908	31,201	13,708	39,208	26,901	12,308	[2] 5,700	4,300	1,400
1985. . .	44,979	31,225	13,754	39,422	27,030	12,392	5,557	4,195	1,362
1986..	45,205	31,535	13,670	39,753	27,419	12,334	[2] 5,452	4,116	1,336
1987	45,487	32,048	13,307	40,008	27,930	12,078	[3] 5,479	4,232	1,247
1988..... .	45,434	32,537	12,898	40,192	28,501	11,692	[3] 5,241	4,036	1,206
1989 [3].	45,963	33,309	12,654	40,608	29,147	11,461	5,355	4,162	1,193
				Projected					
1990.	46,192	33,765	12,427	40,801	29,546	11,255	5,391	4,219	1,172
1991..... ..	46,856	34,291	12,566	41,387	30,006	11,381	5,469	4,285	1,185
1992 .. .	47,546	34,767	12,779	41,997	30,423	11,574	5,549	4,344	1,205
1993.....	48,226	35,120	13,106	42,602	30,732	11,870	5,624	4,388	1,236
1994.... ..	48,909	35,347	13,563	43,214	30,930	12,284	5,695	4,417	1,279
1995... . .	49,431	35,496	13,935	43,682	31,061	12,621	5,749	4,435	1,314
1996... ..	49,843	35,545	14,298	44,054	31,104	12,950	5,789	4,441	1,348
1997.... ...	50,080	35,534	14,546	44,269	31,094	13,175	5,811	4,440	1,371
1998.....	50,136	35,539	14,597	44,319	31,098	13,221	5,817	4,441	1,376
1999	50,108	35,357	14,751	44,299	30,939	13,360	5,809	4,418	1,391
2000.... . .	49,976	35,145	14,830	44,186	30,754	13,432	5,790	4,391	1,398
2001... ...	49,786	34,887	14,899	44,022	30,528	13,494	5,764	4,359	1,405

[1]Includes most kindergarten and some nursery school enrollment
[2]Estimated by NCES
[3]Estimate.

NOTE: Some data have been revised from previously published figures Projections are based on data through 1988. Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Public Elementary and Secondary Education: School Year 1989-90," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; and "Key Statistics for Private Elementary and Secondary Education:School Year 1989–90," *Early Estimates* (This table was prepared March 1990.)

Table 2.—Enrollment in elementary and secondary schools, by organizational level and control of institution, with projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total			Public			Private		
	K–12[1]	Elementary	Secondary	K–12[1]	Elementary	Secondary	K–12[1]	Elementary	Secondary
1976	49,484	29,255	20,229	44,317	25,430	18,887	5,167	3,825	1,342
1977	48,717	28,751	19,966	43,577	24,954	18,623	5,140	3,797	1,343
1978	47,636	28,749	18,887	42,550	25,017	17,534	5,086	3,732	1,353
1979	46,646	28,244	18,402	41,645	24,544	17,102	[2] 5,000	3,700	1,300
1980	46,249	28,212	18,037	40,918	24,220	16,698	5,331	3,992	1,339
1981	45,522	28,174	17,348	40,022	24,074	15,948	[2] 5,500	4,100	1,400
1982	45,166	28,023	17,142	39,566	23,823	15,742	[2] 5,600	4,200	1,400
1983	44,967	28,264	16,703	39,252	23,949	15,303	5,715	4,315	1,400
1984	44,908	28,395	16,513	39,208	24,095	15,113	[2] 5,700	4,300	1,400
1985	44,979	28,424	16,555	39,422	24,229	15,193	5,557	4,195	1,362
1986	45,205	28,266	16,939	39,753	24,150	15,603	[2] 5,452	4,116	1,336
1987	45,487	28,537	16,950	40,008	24,305	15,703	[3] 5,479	4,232	1,247
1988	45,434	28,453	16,981	40,192	24,417	15,775	[3] 5,241	4,036	1,206
1989 [3]	45,963	29,160	16,803	40,608	24,998	15,610	5,355	4,162	1,193
				Projected					
1990	46,192	29,522	16,670	40,801	25,303	15,498	5,391	4,219	1,172
1991	46,856	29,932	16,925	41,387	25,647	15,740	5,470	4,285	1,185
1992	47,546	30,237	17,309	41,997	25,893	16,104	5,549	4,344	1,205
1993	48,226	30,465	17,761	42,602	26,077	16,525	5,624	4,388	1,236
1994	48,909	30,618	18,292	43,214	26,201	17,013	5,696	4,417	1,279
1995	49,431	30,720	18,711	43,682	26,285	17,397	5,749	4,435	1,314
1996	49,843	30,799	19,044	44,054	26,358	17,696	5,789	4,441	1,348
1997	50,080	30,738	19,342	44,269	26,298	17,971	5,811	4,440	1,371
1998	50,136	30,665	19,471	44,319	26,224	18,095	5,817	4,441	1,376
1999	50,108	30,489	19,619	44,299	26,071	18,228	5,809	4,418	1,391
2000	49,975	30,267	19,708	44,186	25,876	18,310	5,789	4,391	1,398
2001	49,786	29,995	19,791	44,022	25,636	18,386	5,764	4,359	1,405

[1]Includes most kindergarten and some nursery school enrollment.
[2]Estimated by NCES.
[3]Estimate.

NOTE: Some data have been revised from previously published figures. Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Public Elementary and Secondary Education School Year 1989-90," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1988-89," *Early Estimates*; and "Key Statistics for Private Elementary and Secondary Education: School Year 1989-90," *Early Estimates*. (This table was prepared March 1990.)

Table 3.—Total enrollment in all institutions of higher education, by sex and attendance status of student and control of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
1976	11,012	5,811	5,201	6,717	4,295	8,653	2,359
1977	11,?86	5,789	5,497	6,793	4,493	8,847	2,439
1978	11,260	5,641	5,619	6,668	4,592	8,786	2,474
1979	11,570	5,683	5,887	6,794	4,776	9,037	2,533
1980	12,097	5,874	6,223	7,098	4,999	9,457	2,640
1981	12,372	5,975	6,397	7,181	5,190	9,647	2,725
1982	12,426	6,031	6,394	7,221	5,205	9,696	2,730
1983	12,465	6,024	6,441	7,261	5,204	9,683	2,782
1984	12,242	5,864	6,378	7,098	5,144	9,477	2,765
1985	12,247	5,818	6,429	7,075	5,172	9,479	2,768
1986	12,504	5,885	6,619	7,120	5,384	9,714	2,790
1987	12,767	5,932	6,835	7,231	5,536	9,973	2,793
1988	13,043	5,998	7,045	7,430	5,613	10,156	2,887
1989 *	13,419	6,260	7,159	7,596	5,823	10,430	2,989
Middle alternative projections							
1990	13,558	6,292	7,266	7,640	5,918	10,539	3,019
1991	13,643	6,309	7,334	7,627	6,016	10,608	3,035
1992	13,613	6,276	7,337	7,569	6,044	10,587	3,026
1993	13,597	6,254	7,343	7,508	6,089	10,579	3,018
1994	13,579	6,228	7,351	7,456	6,123	10,571	3,008
1995	13,657	6,247	7,410	7,490	6,167	10,637	3,020
1996	13,747	6,271	7,476	7,542	6,205	10,710	3,037
1997	13,906	6,331	7,575	7,654	6,252	10,834	3,072
1998	14,089	6,412	7,677	7,801	6,288	10,977	3,112
1999	14,165	6,395	7,770	7,841	6,324	11,047	3,118
2000	14,326	6,468	7,858	7,970	6,356	11,171	3,155
2001	14,447	6,522	7,925	8,067	6,380	11,264	3,183
Low alternative projections							
1990	13,153	6,069	7,084	7,364	5,789	10,231	2,922
1991	13,067	6,020	7,047	7,237	5,830	10 67	2,900
1992	12,884	5,929	6,955	7,078	5,806	10,028	2,856
1993	12,748	5,857	6,891	6,951	5,797	9,925	2,823
1994	12,626	5,787	6,839	6,851	5,775	9,834	2,792
1995	12,597	5,760	6,837	6,834	5,763	9,816	2,781
1996	12,598	5,752	6,846	6,847	5,751	9,817	2,781
1997	12,656	5,777	6,879	6,909	5,747	9,862	2,794
1998	12,753	5,820	6,933	7,015	5,738	9,935	2,818
1999	12,845	5,865	6,980	7,116	5,729	10,006	2,839
2000	12,928	5,909	7,019	7,211	5,717	10,067	2,861
2001	12,979	5,938	7,041	7,283	5,696	10,104	2,875

Table 3.—Total enrollment in all institutions of higher education, by sex and attendance status of student and control of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
				High alternative projections			
1990	13,839	6,412	7,427	7,786	6,053	10,757	3,082
1991	13,982	6,446	7,536	7,819	6,163	10,869	3,113
1992	14,023	6,434	7,589	7,811	6,212	10,902	3,121
1993	14,075	6,452	7,623	7,803	6,272	10,944	3,131
1994	14,127	6,462	7,665	7,799	6,328	10,990	3,137
1995	14,271	6,515	7,756	7,885	6,386	11,108	3,163
1996	14,427	6,582	7,845	7,981	6,446	11,230	3,197
1997	14,632	6,671	7,961	8,120	6,512	11,390	3,242
1998	14,874	6,770	8,104	8,304	6,570	11,578	3,296
1999	15,116	6,875	8,241	8,488	6,628	11,766	3,350
2000	15,334	6,970	8,364	8,660	6,674	11,935	3,399
2001	15,516	7,055	8,461	8,808	6,708	12,074	3,442

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 4.—Total enrollment in 4-year institutions of higher education, by sex and attendance status of student and control of institution, with alternative projections: 50 States and D.C., fall 1976 to 2001

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
1976	7,129	3,831	3,298	5,053	2,076	4,902	2,227
1977	7,243	3,823	3,419	5,138	2,104	4,945	2,298
1978	7,232	3,755	3,476	5,109	2,122	4,912	2,320
1979	7,353	3,762	3,591	5,202	2,151	4,980	2,373
1980	7,571	3,827	3,743	5,344	2,226	5,129	2,442
1981	7,655	3,852	3,805	5,386	2,270	5,166	2,489
1982	7,654	3,862	3,793	5,381	2,273	5,176	2,478
1983	7,741	3,892	3,848	5,434	2,307	5,223	2,518
1984	7,711	3,845	3,863	5,395	2,317	5,198	2,513
1985	7,716	3,814	3,898	5,385	2,331	5,210	2,506
1986	7,824	3,824	4,001	5,423	2,401	5,300	2,524
1987	7,990	3,859	4,131	5,522	2,468	5,432	2,558
1988	8,175	3,912	4,263	5,688	2,487	5,544	2,631
1989*	8,466	4,125	4,341	5,804	2,662	5,737	2,729
Middle alternative projections							
1990	8,548	4,145	4,403	5,841	2,707	5,792	2,756
1991	8,599	4,160	4,439	5,845	2,754	5,826	2,773
1992	8,572	4,138	4,434	5,802	2,770	5,806	2,766
1993	8,540	4,119	4,421	5,747	2,793	5,783	2,757
1994	8,507	4,095	4,412	5,697	2,810	5,760	2,747
1995	8,542	4,103	4,439	5,714	2,828	5,785	2,757
1996	8,588	4,115	4,473	5,744	2,844	5,816	2,772
1997	8,685	4,154	4,531	5,824	2,861	5,883	2,802
1998	8,803	4,209	4,594	5,931	2,872	5,965	2,838
1999	8,837	4,185	4,652	5,954	2,883	5,994	2,843
2000	8,945	4,236	4,709	6,054	2,891	6,070	2,875
2001	9,026	4,274	4,752	6,130	2,896	6,126	2,900
Low alternative projections							
1990	8,281	3,996	4,285	5,630	2,651	5,613	2,668
1991	8,224	3,966	4,258	5,548	2,676	5,573	2,651
1992	8,099	3,905	4,194	5,429	2,670	5,488	2,611
1993	7,997	3,854	4,143	5,325	2,672	5,417	2,580
1994	7,905	3,803	4,102	5,240	2,665	5,353	2,552
1995	7,881	3,782	4,099	5,220	2,661	5,339	2,542
1996	7,876	3,773	4,103	5,220	2,656	5,336	2,540
1997	7,915	3,789	4,126	5,264	2,651	5,364	2,551
1998	7,985	3,819	4,166	5,341	2,644	5,413	2,572
1999	8,050	3,849	4,201	5,415	2,635	5,459	2,591
2000	8,115	3,882	4,233	5,490	2,625	5,504	2,611
2001	8,157	3,903	4,254	5,547	2,610	5,534	2,623

Table 4.—Total enrollment in 4-year institutions of higher education, by sex and attendance status of student and control of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
				High alternative projections			
1990	8,728	4,222	4,506	5,957	2,771	5,914	2,814
1991	8,821	4,249	4,572	5,999	2,822	5,976	2,845
1992	8,844	4,243	4,601	5,997	2,847	5,990	2,854
1993	8,859	4,256	4,603	5,982	2,877	5,997	2,862
1994	8,870	4,258	4,612	5,969	2,901	6,004	2,866
1995	8,951	4,293	4,658	6,027	2,924	6,061	2,890
1996	9,039	4,336	4,703	6,091	2,948	6,120	2,919
1997	9,164	4,393	4,771	6,192	2,972	6,206	2,958
1998	9,318	4,460	4,858	6,326	2,992	6,311	3,007
1999	9,475	4,533	4,942	6,463	3,012	6,419	3,056
2000	9,620	4,600	5,020	6,595	3,025	6,520	3,100
2001	9,744	4,661	5,083	6,710	3,034	6,605	3,139

*Projected

NOTE Projections are based on data through 1988 Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys (This table was prepared April 1990.)

Table 5.—Total enrollment in 2-year institutions of higher education, by sex and attendance status of student and control of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Part-time	Public	Private
1976	3,883	1,980	1,904	1,665	2,219	3,752	132
1977	4,043	1,965	2,077	1,654	2,388	3,902	141
1978	4,028	1,885	2,143	1,558	170	3,874	154
1979	4,217	1,924	2,294	1,591	2,627	4,057	160
1980	4,526	2,047	2,479	1,754	2,772	4,329	198
1981	4,716	2,124	2,591	1,796	2,919	4,481	236
1982	4,772	2,170	2,602	1,840	2,932	4,520	252
1983	4,723	2,132	2,592	1,827	2,897	4,459	264
1984	4,531	2,018	2,514	1,704	2,827	4,279	252
1985	4,531	2,005	2,530	1,691	2,840	4,270	261
1986	4,680	2,061	2,619	1,696	2,983	4,414	266
1987	4,776	2,073	2,703	1,709	3,068	4,541	235
1988	4,868	2,086	2,782	1,742	3,126	4,612	256
1989 *	4,953	2,135	2,818	1,792	3,161	4,693	260
Middle alternative projections							
1990	5,010	2,147	2,863	1,799	3,211	4,747	263
1991	5,044	2,149	2,895	1,782	3,262	4,782	262
1992	5,041	2,138	2,903	1,767	3,274	4,781	260
1993	5,057	2,135	2,922	1,761	3,296	4,796	261
1994	5,072	2,133	2,939	1,759	3,313	4,811	261
1995	5,115	2,144	2,971	1,776	3,339	4,852	263
1996	5,159	2,156	3,003	1,798	3,361	4,894	265
1997	5,221	2,177	3,044	1,830	3,391	4,951	270
1998	5,286	2,203	3,083	1,870	3,416	5,012	274
1999	5,328	2,210	3,118	1,887	3,441	5,053	275
2000	5,381	2,232	3,149	1,916	3,465	5,101	280
2001	5,421	2,248	3,173	1,937	3,484	5,138	283
Low alternative projections							
1990	4,872	2,073	2,799	1,734	3,138	4,618	254
1991	4,843	2,054	2,789	1,689	3,154	4,594	249
1992	4,785	2,024	2,761	1,649	3,136	4,540	245
1993	4,751	2,003	2,748	1,626	3,125	4,508	243
1994	4,721	1,984	2,737	1,611	3,110	4,481	240
1995	4,716	1,978	2,738	1,614	3,102	4,477	239
1996	4,722	1,979	2,743	1,627	3,095	4,481	241
1997	4,741	1,988	2,753	1,645	3,096	4,498	243
1998	4,768	2,001	2,767	1,674	3,094	4,522	246
1999	4,795	2,016	2,779	1,701	3,094	4,547	248
2000	4,813	2,027	2,786	1,721	3,092	4,563	250
2001	4,822	2,035	2,787	1,736	3,086	4,570	252

Table 5.—Total enrollment in 2-year institutions of higher education, by sex and attendance status of student and control of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Sex		Attendance status		Control	
		Men	Women	Full-time	Full-time	Public	Private
				High alternative projections			
1990	5,111	2,190	2,921	1,829	3,282	4,843	268
1991	5,161	2,197	2,964	1,820	3,341	4,893	268
1992	5,179	2,191	2,988	1,814	3,365	4,912	267
1993	5,216	2,196	3,020	1,821	3,395	4,947	269
1994	5,257	2,204	3,053	1,830	3,427	4,986	271
1995	5,320	2,222	3,098	1,858	3,462	5,047	273
1996	5,388	2,246	3,142	1,890	3,498	5,110	278
1997	5,468	2,278	3,190	1,928	3,540	5,184	284
1998	5,556	2,310	3,246	1,978	3,578	5,267	289
1999	5,641	2,342	3,299	2,025	3,616	5,347	294
2000	5,714	2,370	3,344	2,065	3,649	5,415	299
2001	5,772	2,394	3,378	2,098	3,674	5,469	303

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 6.—Enrollment in all institutions of higher education, by age, sex, and attendance status, with middle alternative projections: 50 States and D.C., fall 1981, 1986, 1989, 1996, and 2001

(In thousands)

Age	1981 (Estimated)			1986 (Estimated)			1989 (Projected)			1996 (Projected)			2001 (Projected)	
	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time
Total	12,372	7,181	5,190	12,505	7,120	5,384	13,419	7,596	5,823	13,747	7,542	6,205	14,447	8,067	6,380
14 to 17 years	217	193	24	200	182	18	193	150	43	210	153	57	231	161	71
18 to 19 years	2,869	2,539	330	2,727	2,415	312	2,965	2,611	355	2,911	2,553	358	3,248	2,842	406
20 to 21 years	2,436	2,003	433	2,206	1,813	392	2,521	2,070	451	2,497	2,012	485	2,861	2,296	565
22 to 24 years	2,016	1,234	782	2,100	1,323	777	1,991	1,238	753	1,904	1,182	723	2,018	1,245	773
25 to 29 years	1,868	666	1,202	1,941	699	1,242	1,935	747	1,188	1,699	665	1,034	1,545	610	936
30 to 34 years	1,365	307	1,057	1,301	333	968	1,371	356	1,015	1,344	367	978	1,142	252	889
35 years and over	1,601	240	1,361	2,030	355	1,675	2,443	423	2,019	3,180	611	2,569	3,400	662	2,738
Men	5,975	3,714	2,262	5,885	3,599	2,286	6,260	3,781	2,479	6,271	3,735	2,535	6,522	3,980	2,542
14 to 17 years	91	81	10	84	78	6	78	61	17	83	62	21	89	65	25
18 to 19 years	1,389	1,222	167	1,312	1,181	131	1,382	1,230	152	1,370	1,217	153	1,549	1,369	180
20 to 21 years	1,200	1,006	194	1,090	923	167	1,248	1,030	218	1,254	1,016	239	1,446	1,176	270
22 to 24 years	1,155	784	370	1,085	720	366	1,058	700	357	1,008	666	342	1,067	706	361
25 to 29 years	999	382	617	1,026	410	616	993	439	554	863	382	481	781	346	436
30 to 34 years	607	160	447	605	167	438	624	167	457	602	161	440	449	49	400
35 years and over	535	78	457	683	121	562	878	154	724	1,091	232	859	1,140	270	870
Women	6,397	3,469	2,927	6,620	3,521	3,099	7,159	3,815	3,344	7,476	3,806	3,670	7,925	4,087	3,838
14 to 17 years	126	112	14	116	104	12	115	90	26	128	91	36	142	96	46
18 to 19 years	1,480	1,317	163	1,415	1,234	181	1,583	1,381	203	1,541	1,335	206	1,699	1,473	227
20 to 21 years	1,236	997	239	1,115	890	225	1,273	1,041	232	1,243	997	247	1,415	1,120	295
22 to 24 years	861	449	412	1,014	604	411	934	538	396	896	516	381	952	539	413
25 to 29 years	869	284	586	916	289	626	943	308	635	836	283	553	764	264	500
30 to 34 years	758	147	611	696	166	530	747	189	558	743	205	537	692	203	489
35 years and over	1,066	162	904	1,347	233	1,114	1,565	269	1,296	2,090	380	1,710	2,260	392	1,868

NOTE: Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys, Integrated Postsecondary Education Data System (IPEDS) surveys, and U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-25, No. 1018. (This table was prepared April 1990.)

Table 7.—Enrollment in all institutions of higher education, by age, sex, and attendance status, with low alternative projections: 50 States and D.C., fall 1981, 1986, 1989, 1996, and 2001

(In thousands)

Age	1981 (Estimated)			1986 (Estimated)			1989 (Projected)			1996 (Projected)			2001 (Projected)	
	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time
Total	**12,372**	**7,181**	**5,190**	**12,505**	**7,120**	**5,384**	**13,419**	**7,596**	**5,823**	**12,598**	**6,847**	**5,751**	**12,979**	**7,283**	**5,696**
14 to 17 years	217	193	24	200	182	18	193	150	43	191	152	39	200	160	41
18 to 19 years	2,869	2,539	330	2,727	2,415	312	2,965	2,611	355	2,637	2,324	312	2,907	2,562	344
20 to 21 years	2,436	2,003	433	2,206	1,813	392	2,521	2,070	451	2,270	1,871	398	2,548	2,101	447
22 to 24 years	2,016	1,234	782	2,100	1,323	777	1,991	1,238	753	1,730	1,068	662	1,801	1,113	688
25 to 29 years	1,868	666	1,202	1,941	699	1,242	1,935	747	1,188	1,640	607	1,033	1,483	549	935
30 to 34 years	1,365	307	1,057	1,301	333	968	1,371	356	1,015	1,320	345	975	1,201	314	887
35 years and over	1,601	240	1,361	2,030	355	1,675	2,443	423	2,019	2,812	480	2,332	2,843	485	2,357
Men	5,975	3,714	2,262	5,885	3,599	2,286	6,260	3,781	2,479	5,752	3,376	2,376	5,938	3,586	2,352
14 to 17 years	91	81	10	84	78	6	78	61	17	77	62	16	81	65	17
18 to 19 years	1,389	1,222	167	1,312	1,181	131	1,382	1,230	152	1,221	1,089	133	1,346	1,200	146
20 to 21 years	1,200	1,006	194	1,090	923	167	1,248	1,030	218	1,125	929	196	1,263	1,043	220
22 to 24 years	1,155	784	370	1,085	720	366	1,058	700	357	929	613	316	969	640	329
25 to 29 years	999	382	617	1,026	410	616	993	439	554	825	344	481	747	311	436
30 to 34 years	607	160	447	605	167	438	624	167	457	598	160	438	544	146	398
35 years and over	535	78	457	683	121	562	878	154	724	977	180	797	990	183	807
Women	6,397	3,469	2,927	6,620	3,521	3,099	7,159	3,815	3,344	6,846	3,471	3,375	7,041	3,697	3,344
14 to 17 years	126	112	14	116	104	12	115	90	26	113	90	23	119	952	24
18 to 19 years	1,480	1,317	163	1,415	1,234	181	1,583	1,381	203	1,415	1,236	180	1,561	1,363	198
20 to 21 years	1,236	997	239	1,115	890	225	1,273	1,041	232	1,144	942	202	1,285	1,058	227
22 to 24 years	861	449	412	1,014	604	411	934	538	396	801	455	346	832	473	359
25 to 29 years	869	284	586	916	289	626	943	308	635	815	263	552	737	238	499
30 to 34 years	758	147	611	696	166	530	747	189	558	722	185	536	657	169	488
35 years and over	1,066	162	904	1,347	233	1,114	1,565	269	1,296	1,835	300	1,535	1,853	303	1,550

NOTE. Because of rounding, details may not add to totals

SOURCE U S Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys, Integrated Postsecondary Education Data System (IPEDS) surveys, and U S Department of Commerce, Bureau of the Census, *Current Populati . Reports*, Series P-25, No 1018 (This table was prepared April 1990)

Table 8.—Enrollment in all institutions of higher education, by age, sex, and attendance status, with high alternative projections: 50 States and D.C., fall 1981, 1986, 1989, 1996, and 2001

(In thousands)

Age	1981 (Estimated)			1986 (Estimated)			1989 (Projected)			1996 (Projected)			2001 (Projected)		
	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time
Total	12,372	7,181	5,190	12,505	7,120	5,384	13,419	7,596	5,823	14,427	7,981	6,446	15,516	8,808	6,708
14 to 17 years	217	193	24	200	182	18	193	150	43	213	154	59	235	161	73
18 to 19 years	2,869	2,539	330	2,727	2,415	312	2,965	2,611	355	3,049	2,664	385	3,486	3,034	452
20 to 21 years	2,436	2,003	433	2,206	1,813	392	2,521	2,070	451	2,666	2,156	510	3,058	2,450	607
22 to 24 years	2,016	1,234	782	2,100	1,323	777	1,991	1,238	753	1,997	1,244	753	2,197	1,388	809
25 to 29 years	1,868	666	1,202	1,941	699	1,242	1,935	747	1,188	1,819	765	1,054	1,654	700	954
30 to 34 years	1,365	307	1,057	1,301	333	968	1,371	356	1,015	1,371	373	998	1,262	358	904
35 years and over	1,601	240	1,361	2,030	355	1,675	2,443	423	2,019	3,312	624	2,687	3,624	716	2,908
Men	5,975	3,714	2,262	5,885	3,599	2,286	6,260	3,781	2,479	6,582	3,963	2,619	7,055	4,417	2,638
14 to 17 years	91	81	10	84	78	6	78	61	17	84	63	22	91	66	26
18 to 19 years	1,389	1,222	167	1,312	1,181	131	1,382	1,230	152	1,401	1,243	157	1,654	1,467	187
20 to 21 years	1,200	1,006	194	1,090	923	167	1,248	1,030	218	1,337	1,075	262	1,538	1,236	302
22 to 24 years	1,155	784	370	1,085	720	366	1,058	700	357	1,057	701	356	1,162	782	380
25 to 29 years	999	382	617	1,026	410	616	993	439	554	964	477	487	873	432	441
30 to 34 years	607	160	447	605	167	438	624	167	457	617	161	455	557	147	410
35 years and over	535	78	457	683	121	562	878	154	7244	1,123	243	880	1,179	287	892
Women	6,397	3,469	2,927	6,620	3,521	3,099	7,159	3,815	3,3447	7,845	4,018	3,827	8,461	4,391	4,070
14 to 17 years	126	112	14	116	104	12	115	90	26	129	91	37	144	96	48
18 to 19 years	1,480	1,317	163	1,415	1,234	181	1,583	1,381	203	1,648	1,421	228	1,831	1,567	264
20 to 21 years	1,236	997	239	1,115	890	225	1,273	1,041	232	1,329	1,081	248	1,520	1,214	306
22 to 24 years	861	449	412	1,014	604	411	934	538	396	940	543	396	1,035	606	429
25 to 29 years	869	284	586	916	289	626	943	308	635	855	287	567	781	268	513
30 to 34 years	758	147	611	696	166	530	747	189	558	755	212	543	705	211	494
35 years and over	1,066	162	904	1,347	233	1,114	1,565	269	1,296	2,189	382	1,807	2,445	429	2,016

NOTE: Because of rounding, details may not add to totals

SOURCE: U S Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys, Integrated Postsecondary Education Data System (IPEDS) surveys, and U S Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-25, No 1018 (This table was prepared April 1990)

Detailed Enrollment Tables

Table 9.—Total enrollment in all institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	11,012	3,704	2,107	3,014	2,188
1977	11,286	3,650	2,138	3,142	2,354
1978	11,260	3,527	2,113	3,140	2,479
1979	11,570	3,544	2,142	3,249	2,636
1980	12,097	3,689	2,185	3,409	2,814
1981	12,372	3,714	2,262	3,469	2,927
1982	12,426	3,753	2,278	3,468	2,927
1983	12,465	3,760	2,264	3,501	2,940
1984	12,242	3,648	2,216	3,451	2,927
1985	12,247	3,608	2,211	3,468	2,961
1986	12,505	3,599	2,285	3,521	3,098
1987	12,767	3,611	2,321	3,620	3,214
1988	13,043	3,660	2,338	3,770	3,275
1989*	13,419	3,781	2,479	3,815	3,344
		Middle alternative projections			
1990	13,558	3,788	2,504	3,852	3,414
1991	13,643	3,779	2,530	3,848	3,486
1992	13,613	3,746	2,530	3,823	3,514
1993	13,597	3,721	2,533	3,787	3,556
1994	13,579	3,696	2,532	3,760	3,591
1995	13,657	3,712	2,535	3,778	3,632
1996	13,747	3,736	2,535	3,806	3,670
1997	13,906	3,792	2,539	3,862	3,713
1998	14,089	3,872	2,540	3,929	3,748
1999	14,165	3,854	2,541	3,987	3,783
2000	14,326	3,926	2,542	4,044	3,814
2001	14,447	3,980	2,542	4,087	3,838
		Low alternative projections			
1990	13,153	3,646	2,423	3,718	3,366
1991	13,067	3,586	2,434	3,651	3,396
1992	12,884	3,508	2,421	3,570	3,385
1993	12,748	3,445	2,412	3,506	3,385
1994	12,626	3,391	2,396	3,460	3,379
1995	12,597	3,375	2,385	3,459	3,378
1996	12,598	3,376	2,376	3,471	3,375
1997	12,656	3,404	2,373	3,505	3,374
1998	12,753	3,452	2,368	3,563	3,370
1999	12,845	3,502	2,363	3,614	3,366
2000	12,928	3,550	2,359	3,661	3,358
2001	12,979	3,586	2,352	3,697	3,344

Table 9.—Total enrollment in all institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	13,839	3,842	2,570	3,944	3,483
1991	13,982	3,847	2,599	3,972	3,564
1992	14,023	3,832	2,602	3,979	3,610
1993	14,075	3,844	2,608	3,959	3,664
1994	14,127	3,850	2,612	3,949	3,716
1995	14,271	3,901	2,614	3,984	3,772
1996	14,427	3,963	2,619	4,018	3,827
1997	14,632	4,040	2,631	4,080	3,881
1998	14,874	4,137	2,632	4,167	3,937
1999	15,116	4,237	2,638	4,251	3,990
2000	15,334	4,332	2,638	4,328	4,036
2001	15,516	4,417	2,638	4,391	4,070

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 10.—Total enrollment in public 4-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	4,902	1,879	709	1,554	759
1977	4,945	1,873	696	1,606	770
1978	4,912	1,822	687	1,613	789
1979	4,980	1,833	676	1,661	810
1980	5,129	1,873	685	1,719	851
1981	5,166	1,877	692	1,741	858
1982	5,176	1,889	698	1,734	855
1983	5,223	1,910	698	1,755	860
1984	5,198	1,880	695	1,749	874
1985	5,210	1,864	693	1,760	893
1986	5,300	1,865	706	1,792	937
1987	5,432	1,882	723	1,854	973
1988	5,544	1,909	723	1,929	982
1989 *	5,737	1,968	804	1,947	1,018
		Middle alternative projections			
1990	5,792	1,974	812	1,966	1,040
1991	5,826	1,974	821	1,968	1,063
1992	5,806	1,957	822	1,954	1,073
1993	5,783	1,941	824	1,931	1,087
1994	5,760	1,925	824	1,913	1,098
1995	5,785	1,931	824	1,919	1,111
1996	5,816	1,940	823	1,931	1,122
1997	5,883	1,968	822	1,958	1,135
1998	5,965	2,008	820	1,992	1,145
1999	5,994	2,000	818	2,022	1,154
2000	6,070	2,038	816	2,053	1,163
2001	6,126	2,067	813	2,077	1,169
		Low alternative projections			
1990	5,613	1,900	787	1,898	1,028
1991	5,573	1,874	792	1,868	1,039
1992	5,488	1,834	790	1,827	1,037
1993	5,417	1,799	789	1,790	1,039
1994	5,353	1,768	785	1,763	1,037
1995	5,339	1,758	782	1,761	1,038
1996	5,336	1,755	779	1,765	1,037
1997	5,364	1,769	777	1,782	1,036
1998	5,413	1,793	774	1,812	1,034
1999	5,459	1,818	770	1,839	1,032
2000	5,504	1,844	767	1,865	1,028
2001	5,534	1,864	763	1,885	1,022

Table 10.—Total enrollment in public 4-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	5,914	2,003	834	2,015	1,062
1991	5,976	2,011	843	2,035	1,087
1992	5,990	2,004	845	2,038	1,103
1993	5,997	2,007	848	2,022	1,120
1994	6,004	2,008	848	2,012	1,136
1995	6,061	2,033	848	2,027	1,153
1996	6,120	2,062	847	2,041	1,170
1997	6,206	2,100	848	2,072	1,186
1998	6,311	2,148	846	2,116	1,201
1999	6,419	2,199	845	2,159	1,216
2000	6,520	2,249	842	2,200	1,229
2001	6,605	2,294	839	2,234	1,238

*Projected

NOTE Projections are based on data through 1988. Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 11.—Total enrollment in public 2-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C, fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	3,752	858	1,0[illegible]	704	1,129
1977	3,902	805	1,09[illegible]	739	1,259
1978	3,874	738	1,084	700	1,351
1979	4,057	739	1,123	72[illegible]	1,468
1980	4,329	812	1,152	784	1,581
1981	4,481	827	1,192	803	1,658
1982	4,520	850	1,195	810	1,664
1983	4,459	827	1,175	807	1,650
1984	4,279	762	1,138	756	1,622
1985	4,270	743	1,138	754	1,635
1986	4,414	742	1,193	764	1,715
1987	4,541	744	1,225	787	1,785
1988	4,612	746	1,228	824	1,814
1989	4,693	773	1,247	836	1,837
		Middle alternative projections			
1990	4,747	772	1,259	843	1,873
1991	4,782	763	1,271	837	1,911
1992	4,781	755	1,269	832	1,925
1993	4,796	752	1,269	829	1,946
1994	4,811	751	1,268	828	1,964
1995	4,852	759	1,271	836	1,986
1996	4,894	769	1,272	846	2,007
1997	4,951	783	1,277	860	2,031
1998	5,012	803	1,281	876	2,052
1999	5,053	806	1,285	889	2,073
2000	5,101	821	1,290	899	2,091
2001	5,138	832	1,293	907	2,106
		Low alternative projections			
1990	4,618	744	1,218	813	1,843
1991	4,594	724	1,221	793	1,856
1992	4,540	706	1,211	775	1,848
1993	4,503	693	1,202	765	1,846
1994	4,481	688	1,192	759	1,842
1995	4,477	688	,186	762	1,841
1996	4,481	693	1,181	768	1,839
1997	4,498	701	1,181	776	1,840
1998	4,522	714	1,180	789	1,839
1999	4,547	727	1,181	801	1,838
2000	4,563	737	1,181	809	1,836
2001	4,570	744	1,181	815	1,830

Table 11.—Total enrollment in public 2-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C, fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	4,843	781	1,291	861	1,910
1991	4,893	774	1,306	860	1,953
1992	4,912	768	1,307	861	1,976
1993	4,947	771	1,308	864	2,004
1994	4,986	776	1,311	867	2,032
1995	5,047	790	1,314	879	2,064
1996	5,110	807	1,319	890	2,094
1997	5,184	826	1,329	905	2,124
1998	5,267	850	1,334	926	2,157
1999	5,347	874	1,340	945	2,188
2000	5,415	895	1,345	960	2,215
2001	5,469	913	1,349	971	2,236

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 12.—Total enrollment in private 4-year institutions of higher education, by sex and attendance status, with alternatve projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	2,227	921	322	699	286
1977	2,298	925	329	734	309
1978	2,320	919	327	755	319
1979	2,373	924	329	784	336
1980	2,442	936	333	816	357
1981	2,489	939	344	830	376
1982	2,478	933	341	824	380
1983	2,518	935	350	834	399
1984	2,513	926	346	839	401
1985	2,506	918	342	844	403
1986	2,524	910	343	856	414
1987	2,558	909	346	878	426
1988	2,631	933	346	916	435
1989 *	2,729	963	390	926	450
		Middle alternative projections			
1990	2,756	965	394	936	461
1991	2,773	966	399	937	471
1992	2,766	959	400	932	475
1993	2,757	953	401	922	481
1994	2,747	945	401	914	487
1995	2,757	947	401	917	492
1996	2,772	951	401	922	498
1997	2,802	963	401	935	503
1998	2,838	981	400	950	507
1999	2,843	968	399	964	512
2000	2,875	985	397	978	515
2001	2,900	998	396	988	518
		Low alternative projections			
1990	2,668	928	381	904	455
1991	2,651	916	384	890	461
1992	2,611	898	383	870	460
1993	2,580	882	384	854	460
1994	2,552	867	383	842	460
1995	2,542	861	381	840	460
1996	2,540	859	380	841	460
1997	2,551	864	379	849	459
1998	2,572	874	378	862	458
1999	2,591	885	376	873	457
2000	2,611	896	375	885	455
2001	2,623	904	372	894	453

Table 12.—Total enrollment in private 4-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	2,814	980	405	959	470
1991	2,845	985	410	968	482
1992	2,854	984	410	971	489
1993	2,862	989	412	964	497
1994	2,866	989	413	960	504
1995	2,890	1,000	4[illegible]	967	511
1996	2,919	1,014	413	974	518
1997	2,958	1,032	413	988	525
1998	3,007	1,054	412	1,008	533
1999	3,056	1,077	412	1,028	539
2000	3,100	1,099	410	1 047	544
2001	3,139	1,119	409	1,063	548

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 13.—Total enrollment in private 2-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	132	46	15	57	14
1977	141	47	14	63	16
1978	154	48	15	72	20
1979	160	48	14	76	22
1980	198	68	15	90	24
1981	236	71	34	95	35
1982	252	80	45	99	28
1983	264	88	41	105	30
1984	252	79	37	106	29
1985	261	84	38	110	30
1986	266	83	43	108	32
1987	235	76	28	102	29
1988	256	71	40	100	44
1989 *	260	77	38	106	39
		Middle alternative projections			
1990	263	77	39	107	40
1991	262	76	39	106	41
1992	260	75	39	105	41
1993	261	75	39	105	42
1994	261	75	39	105	42
1995	263	75	39	106	43
1996	265	76	39	107	43
1997	270	78	39	109	44
1998	274	80	39	111	44
1999	275	80	39	112	44
2000	280	82	39	114	45
2001	283	83	40	115	45
		Low alternative projections			
1990	254	74	37	103	40
1991	249	72	37	100	40
1992	245	70	37	98	40
1993	243	69	37	97	40
1994	240	68	36	96	40
1995	239	68	36	96	39
1996	241	69	36	97	39
1997	243	70	36	98	39
1998	246	71	36	100	39
1999	248	72	36	101	39
2000	250	73	36	102	39
2001	252	74	36	103	39

Table 13.—Total enrollment in private 2-year institutions of higher education, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	268	78	40	109	41
1991	268	77	40	109	42
1992	267	76	40	109	42
1993	269	77	40	109	43
1994	271	77	40	110	44
1995	273	78	40	111	44
1996	278	80	40	113	45
1997	284	82	41	115	46
1998	289	85	41	117	46
1999	294	87	41	119	47
2000	299	89	41	121	48
2001	303	91	41	123	48

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education. National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 14.—Undergraduate enrollment in all institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	9,429	3,242	1,660	2,788	1,739
1977	9,717	3,188	1,709	2,906	1,914
1978	9,691	3,072	1,694	2,895	2,030
1979	9,998	3,087	1,734	2,993	2,185
1980	10,475	3,227	1,773	3,135	2,340
1981	10,755	3,261	1,848	3,188	2,458
1982	10,825	3,299	1,871	3,194	2,470
1983	10,846	3,304	1,854	3,210	2,478
1984	10,618	3,195	1,812	3,153	2,459
1985	10,597	3,156	1,806	3,163	2,471
1986	10,798	3,146	1,871	3,206	2,575
1987	11,046	3,164	1,905	3,299	2,679
1988	11,304	3,205	1,929	3,431	2,739
1989	11,538	3,295	2,000	3,469	2,774
		Middle alternative projections			
1990	11,651	3,301	2,019	3,501	2,830
1991	11,706	3,288	2,038	3,492	2,888
1992	11,661	3,253	2,036	3,462	2,910
1993	11,625	3,224	2,037	3,421	2,943
1994	11,598	3,201	2,035	3,392	2,970
1995	11,668	3,219	2,036	3,410	3,003
1996	11,753	3,245	2,036	3,438	3,034
1997	11,903	3,301	2,040	3,492	3,070
1998	12,084	3,381	2,042	3,560	3,101
1999	12,208	3,413	2,045	3,619	3,131
2000	12,365	3,483	2,048	3,676	3,158
2001	12,487	3,537	2,051	3,719	3,180
		Low alternative projections			
1990	11,310	3,185	1,955	3,383	2,787
1991	11,211	3,125	1,961	3,316	2,809
1992	11,031	3,049	1,948	3,236	2,798
1993	10,894	2,988	1,938	3,172	2,796
1994	10,782	2,941	1,922	3,130	2,789
1995	10,763	2,932	1,911	3,133	2,787
1996	10,774	2,938	1,902	3,150	2,784
1997	10,841	2,970	1,900	3,187	2,784
1998	10,947	3,022	1,896	3,247	2,782
1999	11,049	3,075	1,894	3,300	2,780
2000	11,142	3,125	1,892	3,349	2,776
2001	11,205	3,164	1,889	3,386	2,766

Table 14.—Undergraduate enrollment in all institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	11,886	3,341	2,071	3,588	2,886
1991	11,993	3,337	2,093	3,611	2,952
1992	12,008	3,314	2,095	3,611	2,988
1993	12,028	3,313	2,099	3,585	3,031
1994	12,063	3,316	2,101	3,573	3,073
1995	12,193	3,366	2,102	3,606	3,119
1996	12,329	3,419	2,106	3,640	3,164
1997	12,520	3,494	2,118	3,699	3,209
1998	12,751	3,589	2,121	3,784	3,257
1999	12,980	3,687	2,127	3,863	3,303
2000	13,190	3,780	2,130	3,937	3,343
2001	13,364	3,862	2,133	3,995	3,374

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 15.—Undergraduate enrollment in public institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	7,617	2,471	1,478	2,115	1,553
1977	7,842	2,413	1,524	2,197	1,708
1978	7,786	2 302	1,510	2,161	1,813
1979	8,046	2,316	1,551	2,229	1,952
1980	8,441	2,426	1,588	2,334	2,093
1981	8,648	2,452	1,639	2,373	2,185
1982	8,713	2,487	1,653	2,373	2,201
1983	8,697	2,482	1,635	2,385	2,195
1984	8,494	2,390	1,600	2,325	2,179
1985	8,478	2,357	1,596	2,331	2,193
1986	8,661	2,351	1,652	2,367	2,291
1987	8,919	2,375	1,701	2,449	2,393
1988	9,099	2,399	1,713	2,550	2,437
1989 *	9,283	2,468	1,770	2,576	2,469
		Middle alternative projections			
1990	9,375	2,472	1,786	2,599	2,518
1991	9,425	2,461	1,803	2,592	2,569
1992	9,395	2,435	1,801	2,570	2,589
1993	9,375	2,414	1,802	2,541	2,618
1994	9,361	2,398	1,800	2,521	2,642
1995	9,421	2,413	1,802	2,535	2,671
1996	9,491	2,433	1,802	2,557	2,699
1997	9,509	2,475	1,806	2,597	2,731
1998	9,730	2,535	1,809	2,647	2,759
1999	9,847	2,558	1,812	2,691	2,786
2000	9,968	2,610	1,816	2,732	2,810
2001	10,062	2,650	1,818	2,764	2,830
		Low alternative projections			
1990	9,105	2,385	1,730	2,511	2,479
1991	9,033	2,339	1,735	2,461	2,498
1992	8,895	2,282	1,723	2,402	2,488
1993	8,791	2,237	1,713	2,355	2,486
1994	8,707	2,203	1,699	2,325	2,480
1995	8,694	2,197	1,690	2,328	2,479
1996	8,701	2,202	1,682	2,341	2,476
1997	8,751	2,226	1,680	2,368	2,477
1998	8,829	2,265	1,677	2,412	2,475
1999	8,906	2,305	1,676	2,452	2,473
2000	8,973	2,342	1,674	2,487	2,470
2001	9,018	2,371	1,672	2,514	2,461

Table 15.—Undergraduate enrollment in public institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	9,565	2,502	1,832	2,663	2,568
1991	9,655	2,498	1,852	2,679	2,626
1992	9,672	2,481	1,854	2,679	2,658
1993	9,695	2,480	1,857	2,662	2,696
1994	9,730	2,484	1,859	2,654	2,733
1995	9,838	2,522	1,861	2,680	2,775
1996	9,948	2,563	1,865	2,705	2,815
1997	10,099	2,619	1,876	2,749	2,855
1998	10,280	2,690	1,879	2,813	2,898
1999	10,460	2,764	1,885	2,872	2,939
2000	10,624	2,834	1,889	2,926	2,975
2001	10,758	2,895	1,892	2,968	3,003

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 16.—Undergraduate enrollment in private institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	1,812	771	182	673	186
1977	1,872	775	184	708	205
1978	1,905	770	184	734	217
1979	1,951	772	184	762	233
1980	2,033	800	185	801	246
1981	2,106	809	209	816	272
1982	2,112	812	219	811	270
1983	2,149	823	219	824	283
1984	2,124	805	212	827	280
1985	2,120	800	210	832	278
1986	2,137	796	219	839	284
1987	2,128	788	204	849	286
1988	2,205	806	216	881	302
1989*	2,255	827	230	893	305
Middle alternative projections					
1990	2,276	829	233	902	312
1991	2,281	827	235	900	319
1992	2,266	818	235	892	321
1993	2,250	810	235	880	325
1994	2,237	805	235	871	328
1995	2,247	806	234	875	332
1996	2,262	812	234	881	335
1997	2,294	826	234	895	339
1998	2,334	846	233	913	342
1999	2,361	855	233	928	345
2000	2,397	873	232	944	348
2001	2,425	887	233	955	350
Low alternative projections					
1990	2,205	800	225	872	308
1991	2,178	786	226	855	311
1992	2,136	767	225	834	310
1993	2,103	751	225	817	310
1994	2,075	738	223	805	309
1995	2,069	735	221	805	308
1996	2,073	736	220	809	308
1997	2,090	744	220	819	307
1998	2,118	757	219	835	307
1999	2,143	770	218	848	307
2000	2,162	783	218	862	306
2001	2,187	793	217	872	305

Table 16.—Undergraduate enrollment in private institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	2,321	839	239	925	318
1991	2,338	839	241	932	326
1992	2,336	833	241	932	330
1993	2,333	833	242	923	335
1994	2,333	832	242	919	340
1995	2,355	844	241	926	344
1996	2,381	856	241	935	349
1997	2,421	875	242	950	354
1998	2,471	899	242	971	359
1999	2,520	923	242	991	364
2000	2,566	946	241	1,011	368
2001	2,606	967	241	1,027	371

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys, Integrated Postsecondary Education Data System (IPEDS) surveys, and "National Higher Education Statistics: Fall 1989," Early Estimates. (This table was prepared April 1990.)

Table 17.—Graduate enrollment in all institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	1,333	287	427	176	443
1977	1,319	289	411	183	434
1978	1,312	280	402	188	442
1979	1,309	280	389	196	444
1980	1,343	281	394	204	466
1981	1,343	277	397	207	462
1982	1,322	280	390	205	447
1983	1,340	286	391	211	452
1984	1,345	286	386	215	459
1985	1,376	289	388	220	479
1986	1,435	294	399	228	514
1987	1,452	294	400	233	525
1988	1,472	304	394	248	526
1989	1,595	321	461	253	560
Middle alternative projections					
1990	1,617	322	466	256	573
1991	1,644	324	473	260	587
1992	1,657	326	475	263	593
1993	1,674	328	477	267	602
1994	1,684	328	478	268	610
1995	1,691	326	480	268	617
1996	1,696	324	480	268	624
1997	1,704	324	480	270	630
1998	1,706	324	479	269	634
1999	1,675	291	477	268	639
2000	1,679	293	475	268	643
2001	1,678	293	472	268	645
Low alternative projections					
1990	1,567	305	450	244	568
1991	1,580	305	455	244	576
1992	1,579	304	455	244	576
1993	1,580	302	456	244	578
1994	1,573	297	456	241	579
1995	1,567	293	456	238	580
1996	1,560	290	456	234	580
1997	1,553	287	455	232	579
1998	1,546	284	454	231	577
1999	1,537	282	451	229	575
2000	1,529	281	449	228	571
2001	1,518	279	445	227	567

Table 17.—Graduate enrollment in all institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	1,658	332	480	260	586
1991	1,688	337	487	263	601
1992	1,709	342	488	268	611
1993	1,735	351	490	273	621
1994	1,749	353	492	274	630
1995	1,763	354	493	276	640
1996	1,779	360	493	276	650
1997	1,792	361	493	279	659
1998	1,801	362	493	279	667
1999	1,813	364	492	283	674
2000	1,819	365	489	285	680
2001	1,825	367	486	289	683

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 18.—Graduate enrollment in public institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	931	190	287	1	334
1977	900	190	267	1	319
1978	894	183	258	127	326
1979	884	182	246	133	325
1980	900	180	245	137	337
1981	887	177	242	138	329
1982	870	180	237	136	317
1983	872	184	235	140	313
1984	870	182	229	142	317
1985	891	181	232	144	333
1986	941	188	244	150	358
1987	945	185	244	152	364
1988	949	192	236	162	357
1989	1,030	203	278	165	384
Middle alternative projections					
1990	1,046	204	282	167	393
1991	1,064	205	286	170	403
1992	1,072	206	287	172	407
1993	1,082	207	288	174	413
1994	1,089	207	289	175	418
1995	1,094	206	290	175	423
1996	1,097	205	290	175	427
1997	1,103	205	290	176	432
1998	1,105	205	289	176	435
1999	1,085	184	288	175	438
2000	1,088	185	287	175	441
2001	1,087	185	285	175	442
Low alternative projections					
1990	1,014	193	272	159	390
1991	1,02_	193	275	15[illegible]	395
1992	1,021	192	275	159	395
1993	1,022	191	275	159	397
1994	1,017	188	275	157	397
1995	1,013	185	275	155	398
1996	1,009	183	275	153	398
1997	1,004	181	275	151	397
1998	1,001	180	274	151	396
1999	995	178	272	150	395
2000	990	178	271	149	392
2001	982	176	269	148	389

Table 18.—Graduate enrollment in public institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	1,072	210	290	170	402
1991	1,091	213	294	172	412
1992	1,105	216	295	175	419
1993	1,121	222	296	178	425
1994	1,131	223	297	179	432
1995	1,141	224	298	180	[illegible]
1996	1,152	228	298	180	
1997	1,160	228	298	182	
1998	1,166	229	298	182	
1999	1,174	230	297	185	
2000	1,178	231	295	186	[illegible]
2001	1,182	232	293	189	468

*Projected.

NOTE. Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 19.—Graduate enrollment in private institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	402	97	140	56	109
1977	416	98	144	59	115
1978	418	97	144	61	116
1979	424	98	144	63	119
1980	442	100	147	67	128
1981	456	100	155	69	132
1982	453	100	153	69	131
1983	468	103	156	71	138
1984	476	104	156	75	142
1985	486	108	156	76	147
1986	494	106	155	78	156
1987	507	108	156	82	161
1988	523	112	157	86	168
1989 *	565	118	183	88	176
Middle alternative projections					
1990	571	118	184	89	180
1991	580	119	187	90	184
1992	585	120	188	91	186
1993	592	121	189	93	189
1994	595	121	189	93	192
1995	597	120	190	93	194
1996	599	119	190	93	197
1997	601	119	190	94	198
1998	601	119	190	93	199
1999	590	107	189	93	201
2000	591	108	188	93	202
2001	591	108	187	93	203
Low alternative projections					
1990	553	112	178	85	178
1991	558	112	180	85	181
1992	558	112	180	85	181
1993	558	111	181	85	181
1994	556	109	181	84	182
1995	554	108	181	83	182
1996	551	107	181	81	182
1997	549	106	180	81	182
1998	545	104	180	80	181
1999	542	104	179	79	180
2000	539	103	178	79	179
2001	536	103	176	79	178

Table 19.—Graduate enrollment in private institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	586	122	190	90	184
1991	597	124	193	91	189
1992	604	126	193	93	192
1993	614	129	194	95	196
1994	618	130	195	95	198
1995	622	130	195	96	201
1996	627	132	195	96	204
1997	632	133	195	97	207
1998	635	133	195	97	210
1999	639	134	195	98	212
2000	641	134	194	99	214
2001	643	135	193	100	215

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 20.—First-professional enrollment in all institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	244	172	18	48	6
1977	251	173	18	53	7
1978	257	175	17	58	7
1979	263	176	17	63	7
1980	278	181	18	70	9
1981	275	175	18	73	9
1982	278	174	17	78	9
1983	279	169	19	81	10
1984	279	166	19	83	10
1985	274	162	17	84	10
1986	270	159	15	87	9
1987	268	154	16	88	10
1988	267	151	16	91	10
1989 *	286	165	18	93	10
		Middle alternative projections			
1990	290	165	19	95	11
1991	293	167	19	96	11
1992	295	167	19	98	11
1993	298	169	19	99	11
1994	297	167	19	100	11
1995	298	167	19	100	12
1996	298	167	19	100	12
1997	299	167	19	100	13
1998	299	167	19	100	13
1999	282	150	19	100	13
2000	282	150	19	100	13
2001	282	150	19	100	13
		Low alternative projections			
1990	276	156	18	91	11
1991	276	156	18	91	11
1992	274	155	18	90	11
1993	274	155	18	90	11
1994	271	153	18	89	11
1995	267	150	18	88	11
1996	264	148	18	87	11
1997	262	147	18	86	11
1998	260	146	18	85	11
1999	259	145	18	85	11
2000	257	144	18	84	11
2001	256	143	18	84	11

Table 20.—First-professional enrollment in all institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	295	169	19	96	11
1991	301	173	19	98	11
1992	306	176	19	100	11
1993	312	180	19	101	12
1994	315	181	19	102	13
1995	315	181	19	102	13
1996	319	184	20	102	13
1997	320	185	20	102	13
1998	322	186	19	104	13
1999	323	186	19	105	13
2000	325	187	19	106	13
2001	327	188	19	107	13

*Projected.

NOTE: Projections are based on data through 1988 Because of rounding, details may not add to totals

SOURCE. U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys (This table was prepared April 1990.)

Table 21.—First-professional enrollment in public institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	101	76	5	23	1
1977	103	75	4	24	2
1978	105	75	3	25	1
1979	106	74	2	27	1
1980	114	79	4	32	2
1981	112	75	3	33	2
1982	113	73	3	35	2
1983	113	71	3	37	2
1984	114	70	3	38	2
1985	111	69	3	38	2
1986	112	67	3	39	2
1987	110	65	3	40	2
1988	109	64	2	41	2
1989 *	117	70	3	42	2
		Middle alternative projections			
1990	118	70	3	43	2
1991	119	71	3	43	2
1992	120	71	3	44	2
1993	122	72	3	45	2
1994	121	71	3	45	2
1995	122	71	3	45	3
1996	122	71	3	45	3
1997	122	71	3	45	3
1998	122	71	3	45	3
1999	115	64	3	45	3
2000	115	64	3	45	3
2001	115	64	3	45	3
		Low alternative projections			
1990	112	66	3	41	2
1991	112	66	3	41	2
1992	112	66	3	41	2
1993	112	66	3	41	2
1994	110	65	3	40	2
1995	109	64	3	40	2
1996	107	63	3	39	2
1997	107	63	3	39	2
1998	105	62	3	38	2
1999	105	62	3	38	2
2000	104	61	3	38	2
2001	104	61	3	38	2

Table 21.—First-professional enrollment in public institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	120	72	3	43	2
1991	123	74	3	44	2
1992	125	75	3	45	2
1993	128	76	3	46	3
1994	129	77	3	46	3
1995	129	77	3	46	3
1996	130	78	3	46	3
1997	131	79	3	46	3
1998	132	79	3	47	3
1999	132	79	3	47	3
2000	133	79	3	48	3
2001	134	80	3	48	3

*Projected.

NOTE: Projections are based on data through 1988 Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 22.—First-professional enrollment in private institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
1976	143	99	15	27	5
1977	148	99	15	30	5
1978	152	100	14	32	6
1979	157	102	15	35	6
1980	163	104	16	38	7
1981	162	101	14	40	7
1982	165	101	14	43	7
1983	165	97	16	44	8
1984	164	96	16	43	8
1985	162	93	14	46	8
1986	158	91	12	48	7
1987	158	88	14	48	8
1988	158	87	13	50	8
1989 *	169	95	15	51	8
Middle alternative projections					
1990	172	95	16	52	9
1991	174	96	16	53	9
1992	175	96	16	54	9
1993	176	97	16	54	9
1994	176	96	16	55	9
1995	176	96	16	55	9
1996	176	96	16	55	9
1997	177	96	16	55	10
1998	177	96	16	55	10
1999	167	86	16	55	10
2000	167	86	16	55	10
2001	167	86	16	55	10
Low alternative projections					
1990	164	90	15	50	9
1991	164	90	15	50	9
1992	163	89	15	49	9
1993	162	89	15	49	9
1994	161	88	15	49	9
1995	158	86	15	48	9
1996	157	85	15	48	9
1997	155	84	15	47	9
1998	155	84	15	47	9
1999	154	83	15	47	9
2000	153	83	15	46	9
2001	152	82	15	46	9

Table 22.—First-professional enrollment in private institutions, by sex and attendance status, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Men		Women	
		Full-time	Part-time	Full-time	Part-time
		High alternative projections			
1990	175	97	16	53	9
1991	178	99	16	54	9
1992	181	101	16	55	9
1993	184	104	16	55	9
1994	186	104	16	56	10
1995	186	104	16	56	10
1996	189	106	17	56	10
1997	189	106	17	56	10
1998	190	107	16	57	10
1999	191	107	16	58	10
2000	192	108	16	58	10
2001	193	108	16	[illegible]	10

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 23.—Full-time-equivalent enrollment in all institutions of higher education, by level of student and type of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
1976	8,313	4,838	2,461	781	236
1977	8,415	4,919	2,479	776	240
1978	8,348	4,918	2,406	779	248
1979	8,487	4,989	2,469	778	249
1980	8,819	5,109	2,657	790	263
1981	9,015	5,188	2,765	801	262
1982	9,092	5,194	2,841	790	266
1983	9,166	5,254	2,841	805	266
1984	8,952	5,215	2,661	814	263
1985	8,943	5,204	2,649	829	261
1986	9,064	5,241	2,704	859	259
1987	9,230	5,360	2,743	868	256
1988	9,453	5,511	2,796	891	255
1989*	9,700	5,617	2,859	951	273
		Middle alternative projections			
1990	9,778	5,658	2,883	961	276
1991	9,801	5,664	2,883	975	279
1992	9,753	5,617	2,872	983	281
1993	9,708	5,558	2,873	993	284
1994	9,668	5,511	2,877	998	283
1995	9,718	5,533	2,903	999	283
1996	9,784	5,569	2,932	999	283
1997	9,913	5,651	2,974	1,004	284
1998	10,072	5,762	3,023	1,004	284
1999	10,125	5,839	3,048	971	267
2000	10,265	5,939	3,085	974	267
2001	10,371	6,018	3,113	973	267
		Low alternative projections			
1990	9,456	5,476	2,793	925	262
1991	9,344	5,398	2,753	929	262
1992	9,176	5,280	2,707	928	260
1993	9,046	5,178	2,681	928	260
1994	8,938	5,100	2,661	920	257
1995	8,917	5,089	2,661	913	253
1996	8,926	5,097	2,671	906	250
1997	8,986	5,147	2,690	901	248
1998	9,089	5,229	2,718	895	246
1999	9,186	5,306	2,745	890	245
2000	9,277	5,383	2,764	885	243
2001	9,341	5,442	2,777	879	242

Table 23.—Full-time-equivalent enrollment in all institutions of higher education, by level of student and type of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
			High alternative projections		
1990	9,973	5,770	2,937	985	281
1991	10,046	5,810	2,948	1,002	287
1992	10,055	5,798	2,950	1,016	292
1993	10,069	5,771	2,967	1,034	297
1994	10,085	5,758	2,987	1,041	300
1995	10,192	5,818	3,026	1,048	300
1996	10,310	5,878	3,070	1,058	304
1997	10,472	5,980	3,123	1,065	305
1998	10,677	6,115	3,185	1,069	307
1999	10,881	6,251	3,245	1,077	308
2000	11,069	6,382	3,296	1,081	310
2001	11,228	6,492	3,338	1,087	312

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 24.—Full-time-equivalent enrollment in public institutions of higher education, by level of student and type of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
1976	6,350	3,369	2,348	535	101
1977	6,396	3,416	2,356	523	101
1978	6,279	3,387	2,272	519	101
1979	6,393	3,438	2,332	519	103
1980	6,642	3,524	2,484	522	113
1981	6,781	3,576	2,573	524	110
1982	6,851	3,597	2,629	514	110
1983	6,881	3,635	2,616	520	111
1984	6,685	3,610	2,442	522	111
1985	6,668	3,601	2,428	529	110
1986	6,778	3,626	2,483	556	110
1987	6,938	3,727	2,542	557	108
1988	7,094	3,822	2,592	569	107
1989 *	7,265	3,897	2,645	608	115
		Middle alternative projections			
1990	7,324	3,925	2,667	616	116
1991	7,340	3,929	2,669	625	117
1992	7,304	3,897	2,660	629	118
1993	7,272	3,856	2,661	635	120
1994	7,246	3,824	2,665	638	119
1995	7,288	3,840	2,689	639	119
1996	7,340	3,864	2,717	640	119
1997	7,437	3,921	2,754	643	119
1998	7,559	3,997	2,799	643	119
1999	7,608	4,050	2,823	622	112
2000	7,712	4,120	2,856	624	112
2001	7,792	4,175	2,881	623	112
		Low alternative projections			
1990	7,086	3,799	2,585	592	110
1991	7,001	3,746	2,551	595	110
1992	6,876	3,664	2,509	594	110
1993	6,780	3,593	2,484	593	110
1994	6,702	3,539	2,466	588	108
1995	6,690	3,532	2,467	584	107
1996	6,698	3,538	2,476	580	105
1997	6,744	3,572	2,492	575	105
1998	6,821	3,628	2,517	574	103
1999	6,896	3,681	2,542	570	103
2000	6,963	3,734	2,560	567	102
2001	7,010	3,775	2,571	562	102

Table 24.—Full-time-equivalent enrollment in public institutions of higher education, by level of student and type of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2061—Continued

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
			High alternative projections		
1990	7,469	4,003	2,718	631	118
1991	7,521	4,031	2,729	641	121
1992	7,527	4,023	2,732	650	123
1993	7,538	4,004	2,748	661	125
1994	7,553	3,995	2,766	666	126
1995	7,638	4,037	2,804	671	126
1996	7,727	4,078	2,844	678	127
1997	7,850	4,149	2,891	682	128
1998	8,004	4,242	2,949	685	129
1999	8,159	4,336	3,004	690	129
2000	8,301	4,427	3,051	693	130
2001	8,420	4,504	3,089	697	131

*Projected.

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys, Integrated Postsecondary Education Data System (IPEDS) surveys, and "National Higher Education Statistics: Fall 1989," Early Estimates. (This table was prepared April 1990.)

Table 25.—Full-time-equivalent enrollment in private institutions of higher education, by level of student and type of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
1976	1,963	1,469	113	246	135
1977	2,019	1,503	123	253	139
1978	2,069	1,531	134	259	146
1979	2,095	1,551	137	259	146
1980	2,177	1,585	173	268	150
1981	2,233	1,612	192	277	152
1982	2,241	1,597	212	276	156
1983	2,285	1,619	225	285	155
1984	2,267	1,604	219	292	152
1985	2,276	1,603	221	300	151
1986	2,286	1,615	221	303	149
1987	2,292	1,633	201	311	148
1988	2,359	1,689	204	322	148
1989	2,435	1,720	214	343	158
Middle alternative projections					
1990	2,455	1,733	215	346	160
1991	2,461	1,734	214	351	162
1992	2,449	1,720	212	354	163
1993	2,436	1,701	212	358	164
1994	2,422	1,686	212	359	164
1995	2,431	1,693	214	360	164
1996	2,444	1,704	216	360	164
1997	2,475	1,730	220	361	165
1998	2,514	1,764	224	360	165
1999	2,517	1,789	225	349	155
2000	2,553	1,819	229	350	155
2001	2,579	1,843	232	350	155
Low alternative projections					
1990	2,370	1,677	208	333	153
1991	2,343	1,653	203	335	153
1992	2,300	1,616	199	335	151
1993	2,266	1,585	197	334	151
1994	2,237	1,561	194	332	150
1995	2,227	1,557	194	330	147
1996	2,228	1,560	196	327	146
1997	2,242	1,575	198	325	144
1998	2,267	1,601	201	322	144
1999	2,290	1,625	203	320	143
2000	2,314	1,649	205	318	142
2001	2,331	1,666	207	317	141

Table 25.—Full-time-equivalent enrollment in private institutions of higher education, by level of student and type of institution, with alternative projections: 50 States and D.C., fall 1976 to fall 2001—Continued

(In thousands)

Year	Total	Undergraduate		Graduate	First-professional
		4-year	2-year	4-year	4-year
			High alternative projections		
1990	2,504	1,767	219	355	163
1991	2,524	1,779	219	361	166
1992	2,528	1,775	218	366	169
1993	2,531	1,767	219	373	172
1994	2,532	1,763	220	375	174
1995	2,554	1,781	222	377	174
1996	2,583	1,800	22	380	176
1997	2,623	1,831	232	383	176
1998	2,672	1,873	237	385	178
1999	2,722	1,915	241	387	179
2000	2,768	1,955	245	389	180
2001	2,810	1,989	249	391	181

*Projected

NOTE Projections are based on data through 1988 Because of rounding, details may not add to totals

SOURCE U.S. Department of Education, National Center for Education Statistics, Fall Enrollment in Colleges and Universities surveys and Integrated Postsecondary Education Data System (IPEDS) surveys. (This table was prepared April 1990.)

Table 26.—High school graduates, by control of institution, with projections: 50 States and D.C., 1975–76 to 2000–2001

(In thousands)

Year ending	Total	Public	Private
1976	3,148	2,837	311
1977	3,155	2,840	315
1978	3,127	2,825	302
1979	3,117	2,817	300
1980	3,043	2,748	295
1981	3,020	2,725	295
1982	2,995	2,705	290
1983	2,888	2,598	290
1984	2,767	2,495	272
1985	2,677	2,414	263
1986	2,643	2,383	260
1987	2,699	2,434	265
1988 *	2,801	2,500	301
1989 *	2,820	2,496	324
		Projected	
1990	2,628	2,326	302
1991	2,522	2,232	290
1992	2,517	2,228	289
1993	2,518	2,229	289
1994	2,512	2,223	289
1995	2,631	2,329	302
1996	2,670	2,363	307
1997	2,770	2,452	318
1998	2,879	2,548	331
1999	2,923	2,587	336
2000	2,966	2,625	341
2001	3,237	2,865	372

*Estimate

NOTE: Prior to 1987–88, numbers for private high school graduates were estimated by NCES Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Public Elementary and Secondary Education: School Year 1989-90," *Early Estimates*; "Key Statistics fc Private Elementary and Secondary Education: School Year 1988–89,"; and "Key Statistics for Private Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared May 1990.)

Table 27.—Associate degrees, by sex of recipient, with projections: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Men	Women
1976	391,454	209,996	181,458
1977	406,377	210,842	195,535
1978	412,246	204,718	207,528
1979	402,702	192,091	210,611
1980	400,910	183,737	217,173
1981	416,377	188,638	227,739
1982	434,515	196,939	237,576
1983	456,441	207,141	249,300
1984	452,416	202,762	249,654
1985	454,712	202,932	251,780
1986	446,047	196,166	249,881
1987	437,137	191,525	245,612
1988	435,537	190,189	245,348
1989*	436,462	190,071	246,391
		Projected	
1990	458,000	201,000	257,000
1991	463,000	201,000	262,000
1992	465,000	201,000	264,000
1993	461,000	199,000	262,000
1994	459,000	199,000	260,000
1995	458,000	198,000	260,000
1996	459,000	200,000	259,000
1997	463,000	201,000	262,000
1998	469,000	204,000	265,000
1999	477,000	208,000	269,000
2000	482,000	208,000	274,000
2001	489,000	211,000	278,000

*Estimate.

NOTE Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table 28.—Bachelor's degrees, by sex of recipient, with projections: 50 States and D. C., 1975–76 to 2000–2001

Year ending	Total	Men	Women
1976	925,746	504,925	420,821
1977	919,549	495,545	424,004
1978	921,204	487,347	433,857
1979	921,390	477,344	444,046
1980	929,417	473,611	455,806
1981	935,140	469,883	465,257
1982	952,998	473,364	479,634
1983	969,510	479,140	490,370
1984	974,309	482,319	491,990
1985	979,477	482,528	496,949
1986	987,823	485,923	501,900
1987	991,339	480,854	510,485
1988	993,362	476,842	516,520
1989 *	1,016,728	483,613	533,115
		Projected	
1990	1,017,000	481,000	536,000
1991	1,024,000	469,000	555,000
1992	1,060,000	503,000	557,000
1993	1,063,000	506,000	557,000
1994	1,058,000	506,000	552,000
1995	1,047,000	502,000	545,000
1996	1,031,000	497,000	534,000
1997	1,015,000	493,000	522,000
1998	1,012,000	496,000	516,000
1999	1,010,000	499,000	511,000
2000	1,019,000	508,000	511,000
2001	1,037,000	522,000	515,000

*Estimate.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table 29.—Master's degrees, by sex of recipient, with projections: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Men	Women
1976	311,771	167,248	144,523
1977	317,164	167,783	149,381
1978	311,620	161,212	150,408
1979	301,079	153,370	147,709
1980	298,081	150,749	147,332
1981	295,739	147,043	148,696
1982	295,546	145,532	150,014
1983	289,921	144,697	145,224
1984	284,263	143,595	140,668
1985	286,251	143,390	142,861
1986	288,567	143,508	145,059
1987	289,557	141,363	148,194
1988	298,733	144,923	153,810
1989*	307,682	147,505	160,177
		Projected	
1990	319,000	156,000	163,000
1991	321,000	156,000	165,000
1992	322,000	156,000	166,000
1993	323,000	155,000	168,000
1994	323,000	154,000	169,000
1995	324,000	154,000	170,000
1996	324,000	153,000	171,000
1997	324,000	152,000	172,000
1998	324,000	151,000	173,000
1999	325,000	150,000	175,000
2000	326,000	150,000	176,000
2001	327,000	149,000	178,000

*Estimate

NOTE. Because of rounding, details may not add to totals.

SOURCE: U.S Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics, Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table 30.—Doctor's degrees, by sex of recipient, with projections: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Men	Women
1976	34,064	26,267	7,797
1977	33,232	25,142	8,090
1978	32,131	23,658	8,473
1979	32,730	23,541	9,189
1980	32,615	22,943	9,672
1981	32,958	22,711	10,247
1982	32,707	22,224	10,483
1983	32,775	21,902	10,873
1984	33,209	22,064	11,145
1985	32,943	21,700	11,243
1986	33,653	21,819	11,834
1987	34,120	22,099	12,021
1988	34,839	22,592	12,247
1989 *	35,379	22,627	12,752
		Projected	
1990	35,600	22,600	13,000
1991	35,900	22,600	13,300
1992	35,900	22,100	13,800
1993	36,100	21,800	14,300
1994	36,200	21,500	14,700
1995	36,300	21,100	15,200
1996	36,400	20,700	15,700
1997	36,400	20,200	16,200
1998	36,400	19,600	16,800
1999	36,400	19,000	17,400
2000	36,300	18,200	18,100
2001	36,200	17,300	18,900

*Estimate.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table 31.—First-professional degrees, by sex of recipient, with projections: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Men	Women
1976	62,649	52,892	9,757
1977	64,359	52,374	11,985
1978	66,581	52,270	14,311
1979	68,848	52,652	16,196
1980	70,131	52,716	17,415
1981	71,956	52,792	19,164
1982	72,032	52,223	19,809
1983	73,136	51,310	21,826
1984	74,407	51,334	23,073
1985	75,063	50,455	24,608
1986	73,910	49,261	24,649
1987	72,750	47,460	25,290
1988	70,415	45,288	25,127
1989 *	68,800	43,954	24,846
		Projected	
1990	74,100	47,600	26,500
1991	74,600	47,600	27,000
1992	75,800	48,500	27,300
1993	76,800	48,500	28,300
1994	77,900	49,300	28,600
1995	77,300	48,500	28,800
1996	77,300	48,500	28,800
1997	77,300	48,500	28,800
1998	77,800	48,500	29,300
1999	77,800	48,500	29,300
2000	71,300	41,400	29,900
2001	71,300	41,400	29,900

*Estimate.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table 32.—Classroom teachers in elementary and secondary schools, by control of institution and organizational level, with projections: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total			Public			Private		
	K-12	Elementary	Secondary	K-12	Elementary	Secondary	K-12	Elementary	Secondary
1976	2,454	1,349	1,105	2,186	1,166	1,020	268	183	85
1977	2,468	1,375	1,113	2,209	1,185	1,024	279	190	89
1978	2,478	1,375	1,103	2,206	1,190	1,016	272	185	87
1979	2,459	1,378	1,081	2,183	1,190	993	[1] 276	188	88
1980	2,485	1,401	1,084	2,184	1,189	995	301	212	89
1981	2,437	1,380	1,057	2,124	1,159	965	[1] 313	221	92
1982	2,446	1,402	1,044	2,121	1,171	950	[1] 325	231	94
1983	2,463	1,418	1,045	2,126	1,178	948	337	240	97
1984	2,508	1,448	1,060	2,168	1,205	963	[1] 340	243	97
1985	2,550	1,483	1,067	2,207	1,237	970	343	246	97
1986	2,592	1,517	1,075	2,244	1,267	977	[1] 348	250	98
1987	2,632	1,555	1,077	2,279	1,297	982	[2] 353	257	95
1988	2,661	1,588	1,073	2,316	1,337	979	[2] 345	251	94
1989 [2]	2,737	1,607	1,130	2,360	1,332	1,028	377	275	102
				Projected					
1990	2,785	1,642	1,142	2,401	1,361	1,039	384	281	103
1991	2,840	1,674	1,165	2,448	1,388	1,060	392	287	105
1992	2,877	1,691	1,185	2,480	1,402	1,078	396	289	107
1993	2,930	1,716	1,214	2,527	1,422	1,105	403	294	110
1994	2,975	1,733	1,242	2,566	1,437	1,130	409	297	112
1995	3,016	1,751	1,266	2,602	1,451	1,151	414	300	114
1996	3,061	1,772	1,289	2,642	1,469	1,173	420	303	116
1997	3,107	1,793	1,313	2,681	1,486	1,195	425	307	119
1998	3,143	1,812	1,330	2,712	1,502	1,210	430	310	120
1999	3,178	1,830	1,348	2,743	1,517	1,226	435	313	122
2000	3,212	1,848	1,364	2,772	1,532	1,241	439	316	123
2001	3,242	1,863	1,379	2,799	1,544	1,255	443	319	124

[1]Estimated by NCES
[2]Estimate.

NOTE: The numbers of elementary and secondary teachers reported separately by the National Education Association were prorated to the NCES totals for each year. Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89,"; and "Key Statistics for Private Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table 33.—Pupil-teacher ratios in elementary and secondary schools, by control of institution and organizational level, with projections: 50 States and D.C., fall 1976 to fall 2001

Year	Total		Public		Private	
	Elementary	Secondary	Elementary	Secondary	Elementary	Secondary
1976	21.7	18.3	21.8	18.5	20.9	15.8
1977	20.9	17.9	21.1	18.2	20.0	15.1
1978	20.9	17.1	21.0	17.3	20.2	15.6
1979	20.5	17.0	20.6	17.2	[1] 19.7	[1] 14.8
1980	20.1	16.6	20.4	16.8	18.8	15.0
1981	20.4	16.4	20.8	16.5	[1] 18.6	[1] 15.2
1982	20.0	16.4	20.3	16.6	[1] 18.2	[1] 14.9
1983	19.9	16.0	20.3	16.1	18.0	14.4
1984	19.6	15.6	20.0	15.7	[1] 17.7	[1] 14.4
1985	19.2	15.5	19.6	15.7	17.1	14.0
1986	18.6	15.8	19.1	16.0	[1] 16.5	[1] 13.6
1987	18.4	15.8	18.7	16.0	[2] 16.5	[2] 13.1
1988	17.9	15.8	18.3	16.1	[2] 16.1	[2] 12.8
1989 [2]	18.1	14.9	18.8	15.2	15.1	11.7
			Projected			
1990	18.0	14.6	18.6	14.9	15.0	11.4
1991	17.9	14.5	18.5	14.8	15.0	11.3
1992	17.9	14.6	18.5	14.9	15.0	11.3
1993	17.8	14.6	18.3	15.0	14.9	11.3
1994	17.7	14.7	18.2	15.1	14.9	11.4
1995	17.5	14.8	18.1	15.1	14.8	11.5
1996	17.4	14.8	17.9	15.1	14.6	11.6
1997	17.1	14.7	17.7	15.0	14.5	11.6
1998	16.9	14.6	17.5	15.0	14.3	11.5
1999	16.7	14.6	17.2	14.9	14.1	11.4
2000	16.4	14.4	16.9	14.8	13.9	11.4
2001	16.1	14.3	16.6	14.7	13.7	11.3

[1]Estimated by NCES.
[2]Estimate.

NOTE: The pupil-teacher ratios were derived from tables 2 and 32. Some data have been revised from previously published figures. Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Public Elementary and Secondary Education: School Year 1989-90," *Early Estimates*, "Key Statistics for Private Elementary and Secondary Education: School Year 1988-89," and "Key Statistics for Private Elementary and Secondary Education: School Year 1989-90," *Early Estimates*. (This table was prepared March 1990.)

Table 34.—Demand for new-hiring of classroom teachers in public elementary and secondary schools, with alternative projections: 50 States and D.C., fall 1989 to fall 2001

(In thousands)

Year	Total	For enrollment changes	For turnover	For other factors
1989 *	185	20	141	24
		Middle alternative projections		
1990	187	6	147	34
1991	200	35	152	13
1992	190	40	158	-8
1993	209	39	162	8
1994	208	39	168	1
1995	209	29	174	6
1996	217	26	177	14
1997	220	17	181	22
1998	218	7	187	24
1999	223	-7	192	38
2000	227	-10	197	40
2001	225	-14	199	40
		Low alternative projections		
1990	181	6	141	34
1991	192	35	144	13
1992	180	40	148	-8
1993	198	39	151	8
1994	194	39	154	1
1995	194	29	159	6
1996	202	26	162	14
1997	206	17	167	22
1998	201	7	170	24
1999	205	-7	174	38
2000	206	-10	176	40
2001	204	-14	178	40
		High alternative projections		
1990	200	6	160	34
1991	216	35	168	13
1992	208	40	176	-8
1993	230	39	183	8
1994	232	39	192	1
1995	234	29	199	6
1996	246	26	206	14
1997	255	17	216	22
1998	254	7	223	24
1999	261	-7	230	38
2000	268	-10	238	40
2001	266	-14	240	40

*Estimated.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table 35.—Demand for new-hiring of classroom teachers in public elementary schools, with alternative projections: 50 States and D.C., fall 1989 to fall 2001

(In thousands)

Year	Total	For enrollment changes	For turnover	For other factors
1989 *	69	29	74	-34
		Middle alternative projections		
1990	104	14	75	15
1991	105	18	78	9
1992	95	12	81	2
1993	103	8	83	12
1994	100	10	85	5
1995	112	7	88	17
1996	108	5	90	13
1997	108	0	91	17
1998	110	-4	94	20
1999	111	-12	96	27
2000	114	-13	99	28
2001	112	-15	100	27
		Low alternative projections		
1990	101	14	72	15
1991	100	18	73	9
1992	90	12	76	2
1993	97	8	77	12
1994	93	10	78	5
1995	104	7	80	17
1996	99	5	81	13
1997	101	0	84	17
1998	101	-4	85	20
1999	102	-12	87	27
2000	103	-13	88	28
2001	101	-15	89	27
		High alternative projections		
1990	110	14	81	15
1991	113	18	86	9
1992	104	12	90	2
1993	114	8	94	12
1994	113	10	98	5
1995	125	7	101	17
1996	122	5	104	13
1997	126	0	109	17
1998	129	-4	113	20
1999	131	-12	116	27
2000	135	-13	120	28
2001	133	-15	121	27

*Estimated.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table 36.—Demand for new-hiring of classroom teachers in public secondary schools, with alternative projections: 50 States and D.C., fall 1989 to fall 2001

(In thousands)

Year	Total	For enrollment changes	For turnover	For other factors
1989 *	117	-9	68	58
		Middle alternative projections		
1990	83	-8	72	19
1991	96	17	75	4
1992	95	28	77	-10
1993	107	31	80	-4
1994	108	29	83	-4
1995	107	22	86	-1
1996	109	21	87	1
1997	112	17	90	5
1998	108	11	93	4
1999	112	5	96	11
2000	113	3	98	12
2001	113	1	99	13
		Low alternative projections		
1990	80	-8	69	19
1991	92	17	71	4
1992	90	28	72	-10
1993	101	31	74	-4
1994	101	29	76	-4
1995	100	22	79	-1
1996	103	21	81	1
1997	105	17	83	5
1998	100	11	85	4
1999	103	5	87	11
2000	103	3	88	12
2001	103	1	89	13

Table 36.—Demand for new-hiring of classroom teachers in public secondary schools, with alternative projections: 50 States and D.C., fall 1989 to fall 2001—Continued

(In thousands)

Year	Total	For enrollment changes	For turnover	For other factors
		High alternative projections		
1990	90	-8	79	19
1991	103	17	82	4
1992	104	28	86	-10
1993	116	31	89	-4
1994	119	29	94	-4
1995	119	22	98	-1
1996	124	21	102	1
1997	129	17	107	5
1998	125	11	110	4
1999	130	5	114	11
2000	133	3	118	12
2001	133	1	119	13

'Estimated

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table 37.—Current expenditures and current expenditures per pupil in average daily attendance in public elementary and secondary schools, with alternative projections: 50 States and D.C. 1975–76 to 2000–2001

Year ending	Average daily attendance (in thousands)	Constant 1988–89 dollars[1]		Current dollars	
		Total (in billions)	Per pupil in average daily attendance	Total (in billions)	Per pupil in average daily attendance
1976	41,270	$135.7	$3,288	$62.1	$1,504
1977	40,832	138.1	3,382	66.9	1,638
1978	40,080	141.5	3,530	73.1	1,823
1979	39,076	139.8	3,576	79.0	2,020
1980	38,289	135.9	3,550	87.0	2,272
1981	37,704	132.1	3,503	94.3	2,502
1982	37,095	130.2	3,511	101.1	2,726
1983	36,636	133.8	3,653	108.3	2,955
1984	36,363	137.5	3,781	115.4	3,173
1985	36,404	144.8		126.3	3,470
1986	36,523	152.8	[illegible]	137.2	3,756
1987	36,864	159.4	4,325	146.4	3,970
1988	37,051	164.5	4,440	157.2	4,243
1989[2]	37,241	168.6	4,526	168.6	4,526
1990[3]	37,583	174.4	4,641	182.0	4,841
Middle-high alternative projections					
1991	37,761	178.3	4,723	194.1	5,140
1992	38,303	184.4	4,815	210.7	5,500
1993	38,868	190.1	4,890	228.1	5,869
1994	39,428	195.9	4,968	246.7	6,257
1995	39,994	202.4	5,060	268.2	6,707
1996	40,428	209.0	5,169	—	—
1997	40,772	215.2	5,278	—	—
1998	40,971	221.1	5,397	—	—
1999	41,017	226.8	5,530	—	—
2000	40,999	232.4	5,668	—	—
2001	40,894	237.7	5,814	—	—
Low alternative projections					
1991	37,761	174.0	4,607	189.3	5,014
1992	38,303	176.1	4,599	201.2	5,253
1993	38,868	178.9	4,602	214.7	5,524
1994	39,428	183.1	4,643	230.6	5,848
1995	39,994	187.1	4,677	247.9	6,199
1996	40,428	190.6	4,714	—	—
1997	40,772	194.1	4,751	—	—
1998	40,971	197.2	4,813	—	—
1999	41,017	199.9	4,873	—	—
2000	40,999	202.5	4,939	—	—
2001	40,894	204.9	5,010	—	—

Table 37.—Current expenditures and current expenditures per pupil in average daily attendance in public elementary and secondary schools, with alternative projections: 50 States and D.C 1975–76 to 2000–2001—Continued

Year ending	Average daily attendance (in thousands)	Constant 1988–89 dollars[1]		Current dollars	
		Total (in billions)	Per pupil in average daily attendance	Total (in billions)	Per pupil in average daily attendance
		Middle-low alternative projections			
1991	37,761	$175 9	$4,659	$191.5	$5,070
1992	38,303	180 7	4,718	206.4	5,389
1993	38,868	185.0	4,759	222.0	5,712
1994	39,428	189.3	4,802	238.5	6,049
1995	39,994	194.3	4,859	257.6	6,440
1996	40,428	199.3	4,929	—	—
1997	40,772	203.8	4,999	—	—
1998	40,971	208 0	5,078	—	—
1999	41,017	212.0	5,168	—	—
2000	40,999	215.7	5,261	—	—
2001	40,894	219.2	5,360	—	—
		High alternative projections			
1991	37,761	182.7	4,837	198.8	5,264
1992	38,303	190.6	4,976	217.7	5,684
1993	38,868	199.1	5,12?	239.0	6,148
1994	39,428	208.2	5,280	262.2	6,651
1995	39,994	217.8	5,445	288.6	7,216
1996	40,428	227.1	5,617	—	—
1997	40,772	236.2	5,794	—	—
1998	40,971	245.4	5,989	—	—
1999	41,017	254.7	6,210	—	—
2000	4[illegible]9	264.3	6,448	—	—
2001	40,894	274.0	6,700	—	—

[1]Based on the Consumer Price Index for all urban consumers, Bureau of L or Statistics, U.S Department of Labor.

[2]Current expenditures is an Early Estimate. Average daily attendance is from the National Education Association.

[3]Estimated on the basis of past data.

—Projections in current dollars are not shown after 1995 due to the uncertain behavior of inflation over the long term

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems; Revenues and Expenditures for Public Elementary and Secondary Education*; Common Core of Data survey; and "K[illegible] Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*' and National Education Association, annual *Estimates of State School Statistics*. (Latest edition 1988–89. Copyright © '989 by the National Education Association. All rights reserved.) (This table was prepared April 1990.)

Table 38—Current expenditures and current expenditures per pupil in fall enrollment in public elementary and secondary schools, with alternative projections: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Fall enrollment[2] (in thousands)	Constant 1988–89 dollars[1]		Current dollars	
		Total (in billions)	Per pupil in fall enrollment	Total (in billions)	Per pupil in fall enrollment
1976	44,791	$135.7	$3,030	$62.1	$1,385
1977	44,317	138.1	3,116	66.9	1,509
1978	43,577	141.5	3,246	73.1	1,677
1979	42,550	139.8	3,284	79.0	1,855
1980	41,645	135.9	3,264	87.0	2,089
1981	40,918	132.1	3,227	94.3	2,305
1982	40,022	130.2	3,254	101.1	2,526
1983	39,566	133.8	3,381	108.3	2,736
1984	39,252	137.5	3,502	115.4	2,940
1985	39,208	144.8	3,693	126.3	3,222
1986	39,422	152.8	3,875	137.2	3,479
1987	39,753	159.4	4,011	146.4	3,682
1988	40,608	164.5	4,112	157.2	3,930
1989[3]	40,192	168.6	4,194	168.6	4,194
1990[4]	40,608	174.4	4,295	182.0	4,481
Middle-high alternative projections					
1991	40,801	178.3	4,371	194.1	4,757
1992	41,387	184.4	4,456	210.7	5,090
1993	41,997	190.1	4,525	233.1	5,432
1994	42,602	195.9	4,598	246.7	5,791
1995	43,214	202.4	4,683	268.2	6,207
1996	43,682	209.0	4,784	—	—
1997	44,054	215.2	4,884	—	—
1998	44,269	221.1	4,995	—	—
1999	44,319	226.8	5,118	—	—
2000	44,299	232.4	5,245	—	—
2001	44,186	237.7	5,381	—	—
Low alternative projections					
1991	40,801	174.0	4,264	189.3	4,640
1992	41,387	176.1	4,256	201.2	4,862
1993	41,997	178.9	4,259	214.7	5,112
1994	42,602	183.1	4,297	230.6	5,413
1995	43,214	187.1	4,328	247.9	5,737
1996	43,682	190.6	4,363	—	—
1997	44,054	194.1	4,406	—	—
1998	44,269	197.2	4,454	—	—
1999	44,319	199.9	4,509	—	—
2000	44,299	202.5	4,571	—	—
2001	44,186	204.9	4,637	—	—

Table 38.—Current expenditures and current expenditures per pupil in fall enrollment in public elementary and secondary schools, with alternative projections: 50 States and D.C., 1975–76 to 2000–2001 —Continued

Year ending	Fall enrollment[3] (in thousands)	Constant 1988–89 dollars[1]		Current dollars	
		Total (in billions)	Per pupil in fall enrollment	Total (in billions)	Per pupil in fall enrollment
		Middle-low alternative projections			
1991	40,801	$175.9	$4,312	$191 5	$4,693
1992	41.387	180 7	4.366	206 4	4,988
1993	41,997	185 0	4.405	222 0	5,287
1994	42.602	189 3	4,444	238.5	5,598
1995	43,214	194 3	4.497	257.6	5,960
1996	43.682	199 3	4,562	—	—
1997	44,054	203 8	4,627	—	—
1998	44,269	208.0	4,699	—	—
1999	44,319	212 0	4.783	—	—
2000	44,299	215 7	4,869	—	—
2001	44,186	219.2	4,960	—	—
		High alternative projections			
1991	40,801	182 7	4,477	198 8	4,872
1992	41.387	190 6	4,605	217.7	5,260
1993	41,997	199 1	4,741	239.0	5,690
1994	42.602	208 2	4,887	262 2	6,155
1995	43,214	217 8	5.039	288 6	6.679
1996	43.682	227 1	5,199	—	—
1997	44.054	236 2	5.362	—	—
1998	44,269	245.4	5.543	—	—
1999	44,319	254.7	5.747	—	—
2000	44,299	264.3	5,967	—	—
2001	44,186	274 0	6,201	—	—

[1]Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U S Department of Labor

[2]Each enrollment number refers to fall in which the school year ends Hence, the enrollment number listed for 1976 is for fall 1976

[3]Current expenditures is an Early Estimate.

[4]Estimated on the basis of past data

—Projections in current dollars are not shown after 1995 due to the uncertain behavior of inflation over the long term

SOURCE: U.S. Department of Education, National Center for Education Statistics. *Statistics of State School Systems: Revenues and Expenditures for Public Elementary and Secondary Education. Statistics of Public Elementary and Secondary Schools*: "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979, Common Core of Data survey; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*; and National Education Association, annual *Estimates of State School Statistics* (Latest edition 1988–89. Copyright © 1989 by the National Education Association. All rights reserved.) (This table was prepared May 1990)

Table 39.—Average annual salaries of classroom teachers in public elementary and secondary schools, with alternative projections: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Constant 1988–89 dollars[1]	Current dollars
1976	$27,555	$12,600
1977	27,584	13,354
1978	27,493	14,198
1979	26,609	15,032
1980	24,955	15,970
1981	24,703	17,644
1982	24,829	19,274
1983	25,566	20,695
1984	26,114	21,921
1985	27,044	23,593
1986	28,061	25,194
1987	28,938	26,566
1988	29,305	28,008
1989	29,567	29,567
1990[2]	30,145	31,451
	Middle-high alternative projections	
1991	30,629	33,332
1992	31,106	35,532
1993	31,821	38,195
1994	32,513	40,954
1995	33,076	43,838
1996	33,654	—
1997	34,079	—
1998	34,462	—
1999	34,822	—
2000	35,142	—
2001	35,541	—
	Low alternative projections	
1991	30,092	32,748
1992	30,102	34,385
1993	30,485	36,591
1994	31,004	39,054
1995	31,295	41,477
1996	31,542	—
1997	31,677	—
1998	31,746	—
1999	31,766	—
2000	31,755	—
2001	31,807	—

Table 39.—Average annual salaries of classroom teachers in public elementary and secondary schools, with alternative projections: 50 States and D.C., 1975–76 to 2000–2001—Continued

Year ending	Constant 1988–89 dollars[1]	Current dollars
	Middle-low alternative projections	
1991	$30,334	$33,011
1992	30,656	35,018
1993	31,214	37,466
1994	31,744	39,986
1995	32,140	42,597
1996	32,541	—
1997	32,785	—
1998	32,979	—
1999	33,139	—
2000	33,251	—
2001	33,432	—
	High alternative projections	
1991	31,089	33,910
1992	31,854	36,386
1993	32,902	39,492
1994	33,964	42,782
1995	34,863	46,206
1996	35,736	—
1997	36,477	—
1998	37,213	—
1999	37,978	—
2000	38,765	—
2001	39,661	—

[1]Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S Department of Labor.

[2]Estimated on the basis of past data.

—Projections in current dollars are not shown after 1995 due to the uncertain behavior of inflation over the long term.

SOURCE: National Education Association, annual *Estimates of State School Statistics*. (Latest edition 1988–89 Copyright © 1989 by the National Education Association All rights reserved.) (This table was prepared April 1990.)

State-Level Projection Tables

Table 40.—Enrollment in grades K–12 in public elementary and secondary schools, by region and State: Fall 1980 to fall 2000

(In thousands)

Region and State	Actual									Estimate
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
United States	40,918	40,022	39,566	39,252	39,208	39,422	39,753	40,008	40,192	40,608
Northeast	8,212	7,868	7,673	7,513	7,395	7,316	7,295	7,253	7,210	7,193
Connecticut	531	505	486	478	468	462	469	465	463	464
Maine	222	216	212	210	208	206	212	212	213	213
Massachusetts	1,022	947	909	879	859	844	834	825	823	818
New Hampshire	167	164	160	159	159	161	164	166	169	167
New Jersey	1,246	1,200	1,173	1,148	1,129	1,116	1,107	1,093	1,081	1,076
New York	2,871	2,761	2,719	2,675	2,646	2,621	2,608	2,595	2,574	2,572
Pennsylvania	1,909	1,839	1,784	1,738	1,702	1,683	1,674	1,669	1,660	1,654
Rhode Island	148	143	139	136	134	133	135	135	134	135
Vermont	96	93	91	90	90	90	92	93	93	94
Midwest	10,697	10,373	10,140	9,984	9,889	9,861	9,871	9,868	9,947	9,670
Illinois	1,983	1,924	1,880	1,853	1,834	1,826	1,825	1,811	1,795	1,746
Indiana	1,056	1,025	1,000	984	973	966	967	964	961	958
Iowa	534	516	505	497	491	485	481	481	478	479
Kansas	415	410	407	405	405	410	416	421	427	431
Michigan	1,797	1,725	1,675	1,636	1,609	1,603	1,597	1,589	1,583	1,500
Minnesota	754	734	715	705	702	705	711	721	727	692
Missouri	845	819	803	795	794	795	801	802	807	808
Nebraska	280	273	269	267	266	266	267	268	269	270
North Dakota	117	118	117	117	119	119	119	119	119	117
Ohio	1,957	1,899	1,860	1,827	1,805	1,794	1,794	1,793	1,779	1,765
South Dakota	129	126	124	123	123	124	125	127	127	127
Wisconsin	830	804	785	77	768	768	768	772	775	777
South	14,135	13,991	13,947	13,914	13,963	14,117	14,312	14,420	14,492	14,611
Alabama	759	743	724	722	713	730	734	729	725	728
Arkansas	448	437	433	432	433	433	437	437	436	449
Delaware	99	95	93	91	92	93	94	96	97	98
District of Columbia	100	95	91	89	87	87	86	86	85	88
Florida	1,510	1,488	1,485	1,496	1,524	1,562	1,607	1,665	1,721	1,773
Georgia	1,069	1,056	1,054	1,051	1,062	1,080	1,096	1,111	1,108	1,126
Kentucky	670	658	651	647	644	644	643	643	638	631
Louisiana	778	782	784	800	801	788	795	790	787	780
Maryland	751	722	699	683	674	672	676	684	689	699
Mississippi	477	472	468	468	466	471	499	506	503	502
North Carolina	1,129	1,109	1,097	1,090	1,089	1,086	1,085	1,086	1,083	1,078
Oklahoma	578	583	594	591	590	592	593	584	580	580
South Carolina	619	609	609	605	603	607	612	615	616	616
Tennessee	854	838	828	822	817	814	818	824	822	840
Texas	2,900	2,936	2,986	2,990	3,040	3,132	3,210	3,238	3,284	3,309
Virginia	1,010	990	976	966	965	968	975	979	982	986
West Virginia	384	378	375	371	363	358	352	344	336	328
West	7,873	7,791	7,805	7,838	7,960	8,126	8,275	8,465	8,643	9,131
Alaska	87	91	89	98	105	107	108	106	106	109
Arizona	514	507	510	507	530	548	535	572	575	597
California	4,118	4,046	4,065	4,089	4,151	4,256	4,378	4,489	4,618	5,079
Colorado	546	544	545	542	545	551	558	560	560	527
Hawaii	165	163	162	162	164	164	165	166	167	169
Idaho	203	205	203	206	208	209	208	212	215	213
Montana	155	153	152	154	154	154	153	152	152	151
Nevada	149	151	151	150	152	155	161	168	176	187
New Mexico	271	268	269	270	272	278	282	287	292	284
Oregon	465	457	448	447	447	448	449	456	462	472
Utah	344	356	370	378	390	403	416	423	431	436
Washington	758	750	739	736	741	750	761	776	791	810
Wyoming	98	100	102	99	101	103	101	98	98	97

Table 40.—Enrollment in grades K-12 in public elementary and secondary schools, by region and State: Fall 1980 to fall 2000—Continued

(In thousands)

Region and State	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
					Projected						
United States	40,801	41,387	41,997	42,602	43,214	43,682	44,054	44,269	44,319	44,299	44,186
Northeast	7,248	7,335	7,417	7,503	7,595	7,665	7,722	7,756	7,764	7,767	7,747
Connecticut	476	485	491	499	507	513	518	520	520	522	520
Maine	213	216	218	221	225	227	228	230	229	230	230
Massachusetts	829	841	853	865	879	892	903	912	918	921	920
New Hampshire	177	184	191	198	205	209	213	217	218	220	222
New Jersey	1,096	1,118	1,141	1,167	1,195	1,223	1,249	1,270	1,289	1,300	1,308
New York	2,571	2,594	2,609	2,624	2,643	2,656	2,666	2,671	2,668	2,664	2,655
Pennsylvania	1,654	1,664	1,675	1,685	1,694	1,695	1,692	1,682	1,667	1,656	1,639
Rhode Island	136	139	141	143	146	147	149	149	150	150	150
Vermont	94	95	98	99	101	103	104	104	104	106	105
Midwest	9,850	9,915	10,015	10,099	10,180	10,217	10,225	10,194	10,126	10,061	9,986
Illinois	1,800	1,811	1,832	1,850	1,868	1,880	1,890	1,894	1,890	1,880	1,868
Indiana	955	957	964	968	973	973	969	964	954	949	944
Iowa	467	466	468	468	467	463	459	453	444	437	430
Kansas	432	437	442	446	450	451	452	451	448	444	440
Michigan	1,572	1,583	1,596	1,610	1,624	1,631	1,633	1,629	1,619	1,611	1,602
Minnesota	743	755	770	783	794	802	805	803	799	795	791
Missouri	816	824	837	850	862	871	877	879	879	875	871
Nebraska	271	271	274	276	278	277	277	276	273	272	268
North Dakota	118	117	118	118	118	117	116	115	115	112	110
Ohio	1,766	1,771	1,781	1,789	1,798	1,799	1,796	1,787	1,771	1,758	1,744
South Dakota	129	131	132	133	135	136	137	136	136	134	133
Wisconsin	783	791	801	808	814	816	814	807	798	793	787
South	14,664	14,862	15,073	15,302	15,544	15,741	15,914	16,041	16,111	16,132	16,123
Alabama	722	726	733	740	749	755	761	765	766	765	762
Arkansas	434	435	438	441	445	446	448	448	447	444	441
Delaware	99	101	104	105	107	109	110	110	111	111	112
District of Columbia	84	83	82	81	80	80	81	82	82	81	79
Florida	1,817	1,878	1,933	1,987	2,042	2,088	2,123	2,147	2,160	2,178	2,191
Georgia	1,145	1,173	1,202	1,231	1,261	1,288	1,313	1,334	1,350	1,363	1,375
Kentucky	623	621	622	623	624	622	619	614	609	605	599
Louisiana	791	795	799	804	807	809	809	807	804	794	784
Maryland	717	740	758	777	794	809	821	829	834	838	839
Mississippi	496	498	503	508	513	515	518	520	520	518	515
North Carolina	1,084	1,097	1,110	1,127	1,147	1,164	1,179	1,194	1,204	1,210	1,212
Oklahoma	575	577	580	585	590	595	599	603	604	600	594
South Carolina	620	627	634	642	650	656	661	663	664	664	664
Tennessee	818	821	824	830	836	838	841	839	836	832	829
Texas	3,315	3,354	3,397	3,446	3,501	3,551	3,600	3,640	3,668	3,676	3,675
Virginia	1,005	1,026	1,048	1,071	1,095	1,117	1,135	1,150	1,160	1,166	1,167
West Virginia	318	310	307	304	303	300	298	295	292	288	285
West	9,039	9,275	9,491	9,699	9,895	10,058	10,192	10,278	10,319	10,338	10,330
Alaska	112	115	118	121	125	128	132	135	138	139	139
Arizona	615	641	665	691	715	737	756	772	782	789	793
California	4,890	5,043	5,170	5,293	5,410	5,506	5,584	5,637	5,660	5,682	5,691
Colorado	573	584	596	608	620	634	642	650	656	655	652
Hawaii	174	179	180	183	184	187	191	192	195	194	192
Idaho	214	215	215	216	217	216	216	215	213	210	208
Montana	151	152	152	151	152	151	151	150	148	147	144
Nevada	187	194	199	204	208	210	212	212	211	211	211
New Mexico	308	316	327	337	349	361	371	380	387	392	394
Oregon	464	469	475	480	483	486	487	487	484	481	477
Utah	441	445	456	467	475	482	488	493	495	496	496
Washington	812	826	839	850	858	862	861	857	848	843	836
Wyoming	96	96	98	98	99	100	100	100	100	98	96

NOTE Includes most kindergarten and some nursery school enrollment

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data Surveys and "Key Statistics for Public Elementary and Secondary Education School Year 1989–90," *Early Estimates* (This table was prepared May 1990.)

Table 41.—Enrollment in grades K-8 in public schools, by region and State: Fall 1980 to fall 2000

(In thousands)

Region and State	Actual									Estimate
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
United States	**27,677**	**27,270**	**27,158**	**26,979**	**26,901**	**27,030**	**27,419**	**27,930**	**28,581**	**29,147**
Northeast	5,355	5,137	5,038	4,941	4,852	4,816	4,810	4,903	4,989	5,057
Connecticut	364	347	336	329	323	321	322	326	331	338
Maine	153	149	147	146	142	140	144	145	149	151
Massachusetts	676	621	597	578	566	559	559	565	578	586
New Hampshire	112	110	107	106	106	107	110	114	120	121
New Jersey	820	788	777	761	747	740	742	747	755	768
New York	1,838	1,778	1,761	1,736	1,712	1,703	1,713	1,736	1,761	1,780
Pennsylvania	1,231	1,187	1,157	1,131	1,103	1,093	1,065	1,111	1,133	1,148
Rhode Island	95	92	92	91	90	90	92	94	95	98
Vermont	66	65	64	63	63	63	63	65	67	68
Midwest	7,145	6,976	6,863	6,779	6,699	6,671	6,713	6,794	6,894	6,854
Illinois	1,335	1,304	1,287	1,272	1,254	1,246	1,249	1,252	1,259	1,240
Indiana	708	691	679	670	662	654	654	659	668	671
Iowa	351	341	338	333	329	324	324	328	334	337
Kansas	283	282	283	282	282	286	292	299	307	313
Michigan	1,227	1,182	1,141	1,114	1,090	1,080	1,090	1,097	1,114	1,070
Minnesota	482	480	472	467	464	468	479	497	511	494
Missouri	567	553	547	546	545	544	549	557	568	576
Nebraska	189	187	186	186	185	184	185	188	191	193
North Dakota	77	80	81	82	84	84	84	84	85	84
Ohio	1,312	1,277	1,259	1,240	1,220	1,206	1,208	1,220	1,229	1,237
South Dakota	86	86	86	86	87	88	89	91	93	94
Wisconsin	528	513	504	501	497	501	510	522	535	544
South	9,821	9,779	9,833	9,818	9,839	9,924	10,096	10,246	10,414	10,614
Alabama	528	519	510	511	514	517	519	521	522	529
Arkansas	310	305	304	305	305	304	307	307	309	321
Delaware	62	60	61	61	62	63	65	67	69	71
District of Columbia	71	68	65	63	63	62	62	63	62	66
Florida	1,042	1,035	1,039	1,044	1,062	1,086	1,121	1,172	1,232	1,286
Georgia	742	737	739	738	746	757	778	795	808	829
Kentucky	464	459	458	455	451	449	447	449	452	452
Louisiana	544	543	561	577	579	573	581	583	581	580
Maryland	493	472	462	452	446	446	456	473	489	508
Mississippi	330	328	327	328	325	330	356	364	368	368
North Carolina	786	773	769	761	755	749	748	754	761	767
Oklahoma	399	409	423	421	417	414	417	411	414	421
South Carolina	426	421	424	423	422	424	428	432	438	444
Tennessee	602	594	591	587	581	575	577	582	586	605
Texas	2,049	2,098	2,150	2,155	2,189	2,261	2,317	2,351	2,392	2,426
Virginia	703	691	683	674	667	665	673	685	699	714
West Virginia	270	267	267	263	255	249	244	237	232	227
West	5,353	5,378	5,425	5,439	5,510	5,617	5,801	5,988	6,205	6,622
Alaska	60	64	63	70	75	77	78	77	79	82
Arizona	357	355	359	354	373	386	407	413	418	442
California	2,761	2,770	2,802	2,814	2,846	2,927	3,045	3,172	3,317	3,684
Colorado	374	376	380	377	376	379	386	392	400	382
Hawaii	110	109	110	110	112	112	113	116	119	121
Idaho	144	146	145	148	149	149	150	153	155	154
Montana	106	106	107	108	109	108	108	108	110	110
Nevada	101	103	103	102	105	107	112	119	127	137
New Mexico	186	187	190	192	195	197	191	195	200	197
Oregon	319	315	309	307	306	305	309	318	328	338
Utah	250	262	275	281	289	299	308	314	319	322
Washington	515	513	508	504	502	507	521	541	563	584
Wyoming	70	72	74	72	73	74	72	70	70	70

Table 41.—Enrollment in grades K-8 in public schools, by region and State: Fall 1980 to fall 2000—Continued

(In thousands)

Region and State	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
					Projected						
United States.....	29,546	30,006	30,423	30,732	30,930	31,061	31,104	31,094	31,098	30,939	30,754
Northeast	5,164	5,249	5,311	5,358	5,394	5,424	5,434	5,428	5,421	5,384	5,334
Connecticut	352	360	367	372	375	379	380	381	380	377	373
Maine	154	156	158	161	162	163	163	164	164	163	162
Massachusetts	604	618	628	636	644	650	654	656	657	653	647
New Hampshire	131	137	142	146	150	152	154	155	157	157	157
New Jersey	793	815	836	856	875	894	909	919	928	928	926
New York	1,799	1,819	1,825	1,829	1,832	1,834	1,831	1,823	1,817	1,801	1,783
Pennsylvania	1,162	1,172	1,179	1,180	1,177	1,171	1,160	1,149	1,138	1,124	1,107
Rhode Island	100	102	104	105	105	106	107	107	106	106	105
Vermont	69	70	72	73	74	75	75	75	75	75	75
Midwest	7,038	7,084	7,143	7,164	7,158	7,140	7,108	7,075	7,045	6,983	6,914
Illinois	1,287	1,295	1,310	1,318	1,321	1,324	1,326	1,324	1,325	1,314	1,[illegible]
Indiana	674	674	678	680	678	676	672	669	667	663	658
Iowa	330	327	326	323	318	313	307	304	300	296	291
Kansas	314	317	320	320	320	317	314	312	309	306	303
Michigan	1,135	1,147	1,158	1,163	1,165	1,165	1,162	1,159	1,155	1,144	1,132
Minnesota	535	544	552	556	557	556	554	551	549	545	540
Missouri	586	592	600	605	608	611	612	611	611	607	603
Nebraska	195	195	[illegible]7	197	196	195	193	191	189	187	185
North Dakota	85	85	[illegible]5	83	82	80	79	77	76	74	73
Ohio	1,248	1,255	1,262	[illegible]262	1,258	1,252	1,244	1,236	1,229	1,218	1,205
South Dakota	95	96	96	96	96	95	94	93	94	93	92
Wisconsin	552	557	562	[illegible]61	559	556	551	546	541	536	529
South	10,755	10,914	11,071	11,200	11,290	11,365	11,413	11,439	11,474	11,448	11,411
Alabama	528	531	536	541	543	546	548	549	551	549	546
Arkansas	312	313	315	315	315	314	313	312	311	309	306
Delaware	72	73	75	76	77	77	78	78	78	79	79
District of Columbia	63	62	60	60	59	58	57	56	55	54	53
Florida	1,339	1,394	1,439	1,475	1,503	1,523	1,534	1,540	1,544	1,545	1,543
Georgia	849	871	891	910	926	940	955	969	981	988	994
Kentucky	448	443	443	440	437	435	432	430	428	426	424
Louisiana	591	582	593	592	590	587	582	577	572	564	556
Maryland	531	549	563	574	583	590	592	593	592	589	585
Mississippi	366	365	367	369	368	368	368	368	369	368	367
North Carolina	782	794	805	816	825	835	843	849	855	854	852
Oklahoma	420	421	421	422	421	419	416	412	411	407	403
South Carolina	452	456	462	465	466	468	469	468	470	469	468
Tennessee	594	596	600	601	600	599	597	595	595	592	589
Texas	2,449	2,482	2,514	2,545	2,568	2,587	2,601	2,611	2,626	2,623	2,620
Virginia	738	758	775	790	802	814	823	828	832	829	825
West Virginia	221	214	213	211	208	207	205	204	203	202	200
West	6,590	6,759	6,898	7,010	7,087	7,131	7,149	7,152	7,157	7,125	7,095
Alaska	84	88	89	91	92	94	95	96	98	97	97
Arizona	460	480	498	514	527	538	546	550	555	556	556
California	3,569	3,684	3,773	3,848	3,901	3,932	3,945	3,948	3,949	3,934	3,917
Colorado	419	428	434	440	445	448	449	449	449	446	443
Hawaii	126	129	129	128	128	128	128	127	126	123	121
Idaho	155	153	152	151	150	149	147	146	145	144	144
Montana	110	110	109	108	107	105	103	103	101	99	98
Nevada	138	142	145	146	148	147	146	145	145	144	144
New Mexico	216	223	232	239	246	251	257	260	264	264	265
Oregon	332	334	337	338	339	337	336	334	332	329	326
Utah	321	320	326	329	331	334	337	340	345	348	352
Washington	590	599	605	606	603	599	591	585	579	572	564
Wyoming	70	69	70	70	70	69	69	68	68	67	66

NOTE Includes most kindergarten and some nursery school enrollment

SOURCE U S Department of Education, National Center for Education Statistics, Common Core of Data Surveys and "Key Statistics for Public Elementary and Secondary Education School Year 1989–90," *Early Estimates* (This table was prepared May 1990)

Table 42.—Enrollment in grades 9-12 in public schools, by region and State: Fall 1980 to fall 2000

(In thousands)

Region and State	Actual									Estimate
	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
United States.....	13,242	12,752	12,407	12,274	12,308	12,392	12,334	12,078	11,692	11,461
Northeast	2,857	2,731	2,635	2,572	2,543	2,500	2,485	2,350	2,224	2,136
Connecticut	167	158	150	149	145	141	147	139	132	126
Maine	69	67	65	64	66	66	68	67	64	62
Massachusetts	346	326	312	301	293	285	275	260	246	232
New Hampshire	55	54	53	53	53	54	54	52	50	46
New Jersey	426	412	396	387	382	376	365	346	326	308
New York	1,033	983	958	939	934	918	895	859	813	792
Pennsylvania	678	652	627	607	599	590	609	558	527	506
Rhode Island	53	51	47	45	44	43	43	41	39	37
Vermont	30	28	27	27	27	27	29	28	27	26
Midwest	3,552	3,397	3,277	3,205	3,190	3,190	3,158	3,074	2,951	2,816
Illinois	648	620	593	581	580	580	576	559	536	506
Indiana	348	334	321	314	311	312	313	30[illegible]	293	287
Iowa	183	175	167	164	162	161	157	1[illegible]3	14[illegible]	142
Kansas	132	128	124	123	123	124	124	122	120	118
Michigan	570	543	534	522	519	517	507	492	469	430
Minnesota	272	254	243	238	238	237	232	224	216	198
Missouri	278	266	256	249	249	251	252	245	239	232
Nebraska	91	86	83	81	81	82	82	80	78	77
North Dakota	40	38	36	35	35	35	35	35	33	33
Ohio	645	622	601	587	585	588	586	573	549	528
South Dakota	43	40	38	37	36	36	36	36	34	33
Wisconsin	302	291	281	274	271	267	258	250	240	233
South	4,314	4,212	4,114	4,096	4,124	4,193	4,216	4,174	4,079	3,997
Alabama	231	224	214	211	199	213	215	208	203	199
Arkansas	138	132	129	127	128	129	130	130	127	128
Delaware	37	35	32	30	30	30	29	29	28	27
District of Columbia	29	27	26	26	24	25	24	23	22	22
Florida	468	453	446	452	462	476	486	493	489	487
Georgia	327	319	315	313	316	323	318	316	300	297
Kentucky	206	199	193	192	193	195	196	194	186	179
Louisiana	234	239	223	223	222	215	214	210	206	200
Maryland	258	250	237	231	228	226	220	211	200	191
Mississippi	147	144	141	140	141	141	143	142	136	134
North Carolina	3[illegible]3	336	328	329	334	337	337	332	322	311
Oklahoma	179	174	171	170	[illegible]	178	176	173	167	159
South Carolina	193	188	185	182	1[illegible]1	183	184	183	178	172
Tennessee	252	244	237	235	236	239	241	242	236	235
Texas	851	838	836	835	851	871	893	887	892	883
Virginia	307	299	293	292	298	303	302	294	283	272
West Virginia	114	111	108	108	108	109	108	107	104	101
West	2,520	2,413	2,380	2,399	2,450	2,509	2,474	2,477	2,439	2,509
Alaska	27	27	26	28	30	30	[illegible]0	29	28	27
Arizona	157	152	151	[illegible]53	157	162	128	159	157	155
California	1,357	1,276	1,263	1,275	1,305	1,329	1,332	1,317	1,301	1,395
Colorado	172	168	165	165	169	172	172	168	160	145
Hawaii	55	54	52	52	52	52	52	50	49	48
Idaho	59	59	58	58	59	60	58	59	59	59
Montana	49	47	45	46	45	46	45	44	43	41
Nevada	48	48	48	48	47	48	49	49	49	50
New Mexico	85	81	79	78	77	91	91	92	92	87
Oregon	146	142	139	140	141	143	140	138	134	134
Utah	94	94	95	97	101	10[illegible]	108	109	1[illegible]2	114
Washington	243	237	231	232	239	243	240	235	228	226
Wyoming	28	28	28	27	28	29	29	28	27	27

Table 42.—Enrollment in grades 9-12 in public schools, by region and State: Fall 1980 to fall 2000— Continued

(In thousands)

Region and State	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
					Projected						
United States.....	11,255	11,381	11,574	11,870	12,284	12,621	12,950	13,175	13 221	13,360	13,432
Northeast	2.084	2.086	2,107	2,145	2.200	2.241	2.289	2,327	2,342	2,384	2,413
Connecticut	124	125	124	127	131	134	138	139	140	144	147
Maine	60	60	60	61	63	64	65	66	66	67	68
Massachusetts	225	224	225	229	235	242	249	256	261	268	273
New Hampshire	47	47	49	51	55	57	59	61	62	64	65
New Jersey	303	302	306	311	320	329	340	351	361	371	382
New York	772	775	784	799	811	822	835	848	851	863	872
Pennsylvania	492	491	495	505	516	524	532	534	530	532	532
Rhode Island	36	37	37	38	41	41	42	43	44	44	45
Vermont	25	25	26	26	27	28	29	29	29	30	29
Midwest	2.813	2.831	2.872	2,934	3.022	3.077	3,117	3,120	3,080	3.078	3,072
Illinois	513	516	522	532	547	556	564	570	565	566	565
Indiana	281	283	286	289	295	297	297	295	287	286	286
Iowa	137	139	142	144	149	150	151	149	145	141	139
Kansas	118	120	122	126	130	134	137	139	138	138	137
Michigan	437	435	438	446	459	466	471	470	464	467	470
Minnesota	207	211	218	226	237	246	252	252	250	250	251
Missouri . .	230	233	238	245	254	260	265	268	268	268	268
Nebraska...	76	76	77	79	81	83	85	85	84	85	83
North Dakota	33	33	34	35	36	37	37	38	38	38	37
Ohio . . .	517	516	518	527	540	547	553	551	541	540	538
South Dakota	34	35	36	37	39	41	42	43	43	42	42
Wisconsin	230	235	240	246	255	260	263	261	257	258	258
South.	3.909	3,948	4,003	4.102	4,254	4,376	4,501	4,602	4,636	4,685	4,712
Alabama.	194	195	196	199	205	209	213	215	215	216	216
Arkansas	122	122	123	126	130	132	134	136	135	135	135
Delaware	27	28	29	29	31	32	32	32	32	31	31
District of Columbia	21	21	21	21	21	23	24	26	27	27	26
Florida	478	484	494	512	539	565	590	608	615	634	648
Georgia	297	302	311	321	336	348	358	365	369	375	382
Kentucky	175	178	180	183	187	187	187	185	181	179	175
Louisiana.	200	204	206	212	218	222	227	231	231	230	227
Maryland	186	191	195	203	212	219	228	236	242	249	254
Mississippi	130	133	136	139	144	148	150	153	151	150	148
North Carolina	302	302	305	311	321	329	337	345	349	355	360
Oklahoma	155	157	158	163	169	175	184	191	193	193	191
South Carolina	168	171	172	178	184	187	192	195	194	195	196
Tennessee	224	226	225	229	236	240	244	244	241	241	240
Texas	866	872	883	902	933	964	999	1,029	1,042	1,053	1,055
Virginia	267	268	273	282	293	303	312	322	329	337	342
West Virginia	97	96	94	93	95	93	93	91	89	86	85
West	2,449	2.516	2.593	2.689	2,809	2,927	3,043	3,126	3.162	3,214	3,235
Alaska	28	28	29	30	33	34	36	38	41	43	43
Arizona	155	161	167	177	188	199	211	221	227	233	237
California	1,321	1,358	1,396	1,445	1,508	1,574	1,640	1,689	1,711	1,749	1,774
Colorado	154	157	161	168	175	184	193	201	207	209	209
Hawaii .	49	50	51	55	56	59	63	65	69	71	71
Idaho	60	62	63	65	67	68	69	68	68	66	64
Montana	41	42	43	43	45	46	47	48	48	48	46
Nevada	50	52	54	58	60	63	66	66	66	67	67
New Mexico	92	93	95	98	104	110	114	120	123	127	128
Oregon	132	135	138	141	144	148	152	152	152	151	150
Utah	120	125	130	137	144	147	152	152	150	148	145
Washington .	222	228	235	244	255	263	270	272	269	271	271
Wyoming	26	27	28	28	29	31	31	32	32	31	30

SOURCE U S Department of Education, National Center for Education Statistics, Common Core of Data Surveys and "Key Statistics for Public Elementary and Secondary Education School Year 1989-90," *Early Estimates* (This table was prepared May 1990)

Table 43.—Number of high school graduates in public schools, by region and State: 1984–85 to 1999–2000

Region and State	Actual				Estimate	Projected		
	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92
United States	**2,414,201**	**2,382,616**	**2,433,803**	**2,500,374**	**2,495,965**	**2,326,050**	**2,232,480**	**2,228,040**
Northeast	511,189	496,104	495,738	503,037	475,612	446,700	414,830	406,590
Connecticut	32,126	33,571	31,141	32,383	32,000	27,380	26,420	26,470
Maine	13,924	13,006	13,692	13,808	14,837	13,180	12,640	12,340
Massachusetts	63,411	60,360	61,010	59,515	54,147	51,290	48,120	46,800
New Hampshire	11,052	10,648	10,796	11,685	11,757	10,610	9,690	9,770
New Jersey	81,547	78,781	79,376	80,863	75,513	68,860	64,740	62,940
New York	166,752	162,165	163,765	165,379	154,600	150,720	136,590	134,800
Pennsylvania	127,226	122,871	121,219	124,376	118,200	111,380	104,030	100,980
Rhode Island	9,382	8,908	8,771	8,855	8,558	7,750	7,370	7,280
Vermont	5,769	5,794	5,968	6,173	6,000	5,530	5,230	5,210
Midwest	668,475	647,462	662,067	675,571	674,412	620,640	591,400	585,580
Illinois	117,027	114,319	116,075	119,090	116,660	107,770	103,370	101,300
Indiana	63,308	59,817	60,364	64,037	64,861	59,650	57,340	55,920
Iowa	36,087	34,279	34,580	35,218	35,461	31,880	29,050	29,160
Kansas	25,983	25,587	26,933	27,036	27,025	25,950	24,920	25,020
Michigan	105,908	101,042	107,725	106,151	106,000	95,530	90,390	89,480
Minnesota	53,352	51,988	53,533	54,645	52,623	48,880	46,570	46,490
Missouri	51,290	49,204	50,840	51,316	51,968	49,030	47,480	47,070
Nebraska	18,036	17,845	18,129	18,300	19,612	17,680	16,490	16,850
North Dakota	8,146	7,610	7,821	8,432	8,072	7,690	7,650	7,490
Ohio	122,281	119,561	121,121	124,503	125,931	117,030	110,890	109,920
South Dakota	8,206	7,870	8,074	8,415	8,100	7,950	7,390	7,480
Wisconsin	58,851	58,340	56,872	58,428	58,099	51,600	49,860	49,400
South	789,445	780,924	807,348	833,719	843,436	802,760	777,330	774,340
Alabama	40,002	39,620	42,463	43,799	43,437	41,160	39,650	39,460
Arkansas	26,342	26,227	27,101	27,776	28,162	27,120	26,170	25,930
Delaware	5,893	5,791	5,895	5,963	6,104	5,560	5,210	5,310
District of Columbia	3,940	3,875	3,842	3,882	3,565	3,480	3,560	3,290
Florida	81,140	83,029	82,184	89,206	92,404	89,140	86,930	89,380
Georgia	58,654	59,082	60,018	61,765	61,937	56,450	56,950	56,390
Kentucky	37,999	37,288	36,943	39,484	40,341	38,120	35,580	33,670
Louisiana	39,742	39,965	39,084	39,058	38,442	37,520	36,240	36,150
Maryland	48,299	46,700	46,107	47,175	45,791	41,930	38,740	38,630
Mississippi	25,315	25,134	26,201	27,896	26,835	25,570	24,470	24,010
North Carolina	67,245	65,865	65,421	67,836	69,709	65,210	62,450	61,200
Oklahoma	34,626	34,452	35,514	36,145	36,773	34,270	32,570	31,980
South Carolina	34,500	34,500	36,000	36,300	36,900	35,720	34,720	34,650
Tennessee	43,293	43,263	44,731	47,904	47,610	45,760	44,360	44,390
Texas	159,234	161,150	168,430	171,436	176,873	173,290	170,150	172,250
Virginia	60,959	63,113	65,008	65,688	65,667	60,520	58,590	57,530
West Virginia	22,262	21,870	22,401	22,406	22,886	21,940	20,990	20,120
West	445,092	448,126	468,650	488,047	502,505	455,950	448,920	461,530
Alaska	5,184	5,464	5,692	5,907	5,644	5,310	5,280	5,190
Arizona	27,877	27,533	29,549	29,777	31,688	28,630	28,310	28,450
California	225,448	229,026	237,414	249,617	266,422	235,080	230,580	241,070
Colorado	32,255	32,621	34,200	35,977	34,535	32,320	30,640	30,570
Hawaii	10,092	9,958	10,371	10,575	10,551	9,690	9,360	9,480
Idaho	12,148	12,059	12,243	12,425	13,370	12,180	12,070	12,600
Montana	10,016	9,761	10,073	10,311	10,351	9,400	8,960	8,920
Nevada	8,572	8,784	9,506	9,404	9,407	9,460	9,420	9,620
New Mexico	15,622	15,468	15,701	15,868	15,140	15,210	15,450	15,670
Oregon	26,870	26,286	27,165	28,058	26,903	25,670	24,700	24,780
Utah	19,890	19,774	20,930	22,226	23,016	22,130	23,140	23,840
Washington	45,431	45,805	49,873	51,754	49,425	47,120	45,430	45,880
Wyoming	5,687	5,587	5,933	6,148	6,053	5,750	5,580	5,460

Table 43.—Number of high school graduates in public schools, by region and State: 1984–85 to 1999–2000—Continued

Region and State	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-2000
				Projected				
United States.....	2,228,650	2,223,350	2,329,270	2,362,900	2,451,980	2,548,420	2,586,580	2,624,810
Northeast	405,000	400,250	414,840	421,010	433,070	444,000	452,840	461,820
Connecticut	25,900	25,730	26,860	27,580	28,710	29,550	30,480	31,290
Maine	12,180	11,820	12,220	12,640	12,990	13,090	13,670	14,150
Massachusetts	45,520	44,890	46,120	47,050	48,520	50,240	51,670	52,740
New Hampshire	9,480	9,510	10,250	10,730	11,390	12,260	13,310	13,630
New Jersey	62,370	61,210	63,470	63,750	65,480	66,250	66,540	68,200
New York	136,430	135,130	139,150	140,590	142,790	145,170	147,080	150,000
Pennsylvania	100,770	99,780	103,990	105,700	109,670	113,320	115,570	116,770
Rhode Island	7,090	6,980	7,430	7,490	7,800	8,220	8,450	8,820
Vermont	5,260	5,200	5,350	5,480	5,720	5,900	6,070	6,220
Midwest	590,860	584,400	610,020	6 9,530	641,790	665,400	664,270	662,060
Illinois	102,400	102,840	106,990	106,820	111,360	115,670	111,170	108,640
Indiana	57,340	56,020	58,520	59,310	60,200	62,120	61,840	62,380
Iowa	30,130	29,600	30,750	30,950	31,870	33,050	32,890	32,010
Kansas	25,340	25,800	27,170	27,370	28,400	29,970	30,710	30,820
Michigan	87,610	85,700	87,420	90,230	92,360	94,150	94,410	95,880
Minnesota	47,990	48,030	50,640	52,890	55,530	58,810	60,790	61,560
Missouri	47,310	46,960	49,960	51,370	53,020	54,450	53,640	53,450
Nebraska	17,180	16,630	17,390	17,660	18,130	19,070	19,310	19,070
North Dakota	7,460	7,520	7,840	7,850	7,860	7,960	8,140	8,080
Ohio	109,940	107,850	111,430	112,010	116,820	120,640	121,060	119,600
South Dakota	7,810	8,060	8,280	8,270	8,720	9,060	9,050	9,140
Wisconsin	50,350	49,390	53,630	54,800	57,520	60,450	61,260	61,430
South	766,180	759,180	798,750	805,900	834,570	866,960	877,570	888,660
Alabama	38,670	37,810	39,800	40,000	40,390	42,010	41,020	40,040
Arkansas	25,760	25,590	26,190	26,100	27,040	27,790	27,450	26,950
Delaware	5,350	5,410	5,770	6,000	6,560	6,880	7,120	7,010
District of Columbia	3,080	3,110	3,230	3,110	3,230	3,210	3,200	3,160
Florida	88,230	87,160	92,790	95,330	103,530	110,180	118,460	125,030
Georgia	57,290	58,050	60,580	62,190	65,200	69,450	70,310	68,600
Kentucky	34,560	34,800	36,350	36,340	36,800	37,550	36,580	35,840
Louisiana	35,750	36,250	37,680	37,850	38,910	39,200	38,140	37,640
Maryland	38,370	38,180	41,910	42,430	44,710	47,350	49,410	51,560
Mississippi	24,140	24,160	25,940	25,570	26,020	26,940	27,120	26,200
North Carolina	60,690	58,000	61,320	61,020	62,210	63,660	63,360	64,630
Oklahoma	29,840	30,870	31,990	31,710	31,980	32,810	32,720	34,420
South Carolina	33,690	33,160	35,310	35,420	36,820	38,190	38,360	39,210
Tennessee	43,100	42,260	44,420	44,340	45,670	45,840	46,220	47,460
Texas	172,200	169,770	176,810	179,950	185,570	193,010	195,510	198,080
Virginia	55,850	55,750	59,210	59,650	62,300	64,800	65,270	66,000
West Virginia	19,610	18,850	19,450	18,890	17,630	18,090	17,320	16,830
West	466,610	479,520	505,660	516,460	542,550	572,060	591,900	612,270
Alaska	5,150	5,330	5,490	5,600	5,740	5,920	6,160	6,140
Arizona	28,160	29,140	30,940	32,300	34,130	36,430	37,070	39,490
California	243,290	250,930	264,690	272,420	286,030	305,300	320,810	333,640
Colorado	30,850	30,890	31,860	32,230	33,820	35,060	35,980	36,630
Hawaii	9,480	9,920	10,250	10,220	10,590	11,040	11,170	11,370
Idaho	12,670	12,990	13,500	13,740	14,090	14,160	13,860	13,940
Montana	9,030	9,180	9,470	9,530	9,480	9,790	9,740	9,870
Nevada	9,850	10,470	11,510	12,000	13,080	14,400	15,350	16,030
New Mexico	15,750	15,550	16,440	16,940	17,200	18,350	18,690	19,060
Oregon	25,560	25,960	27,110	27,410	28,470	28,150	28,780	29,970
Utah	24,570	26,630	27,850	26,460	28,840	29,590	28,590	28,640
Washington	46,690	47,180	50,970	52,230	55,380	58,210	60,330	62,070
Wyoming	5,560	5,350	5,580	5,380	5,700	5,660	5,370	5,420

SOURCE: U S Department of Education, National Center for Education Statistics, Common Core of Data Surveys and "Key Statistics for Public Elementary and Secondary Education School Year 1989–90," *Early Estimates* (This table was prepared May 1990)

Technical Appendixes

Appendix A

Projection Methodology

The general procedure for *Projections* was to express the variable to be projected as a percent of a "base" variable. These percents were then projected and applied to projections of the "base" variable. For example, the number of 18-year-old college students was expressed as a percent of the 18-year-old population for each year from 1972 through 1988. This percent was then projected through the year 2001 and applied to projections of the 18-year-old population from the Bureau of the Census.

Enrollment projections are based primarily on population projections. Projections of classroom teachers, high school graduates, earned degrees conferred, and expenditures are based primarily on enrollment projections.

Single exponential smoothing, double exponential smoothing, and multiple linear regression are the three major projection techniques used in this publication. Single exponential smoothing is used when the historical data have basically a horizontal pattern. On the other hand, double exponential smoothing is used when the time series is expected to change linearly with time. In general, exponential smoothing places more weight on recent observations than on earlier ones. The weights for observations decrease exponentially as one moves further into the past. As a result, the older the data, the less their influence on projections. The rate at which the weights of older observations decrease is determined by the smoothing constant selected.

$$P = aX_t + a(1-a)X_{t-1} + a(1-a)^2X_{t-2} + a(1-a)^3X_{t-3} + \ldots$$

Where:

P = projected constant

a = smoothing constant ($0 < a < 1$)

X_t = observation for time t

This equation illustrates that the projection is a weighted average based on exponentially decreasing weights. For a high smoothing constant, weights for earlier observations decrease rapidly. For a low smoothing constant, decreases are more moderate. Projections of enrollments and public high school graduates are based on a range of smoothing constants (a = 0.1 to 0.9).

In general, the projections in this publication are based on fairly high smoothing constants. The further apart the observations are spaced in time, the more likely are changes in the underlying social, political, and economic structure. Since the observations are on an annual basis, major shifts in the underlying process are more likely in the time span of just a few observations than if the observations were available on a monthly or weekly basis. As a result, the underlying process tends to be unstable from one observation to the next. Another reason for using high smoothing constants for some time series is that most of the observations are fairly accurate, since most observations are population values rather than sample estimates. Therefore, large shifts tend to indicate actual changes in the process rather than noise in the data.

Multiple linear regression was also used in making projections, primarily in the areas of teachers, earned degrees, and expenditures. This technique was used when it was believed that a strong causal relationship existed between the variable being projected (dependent variables) and independent causal variables. However, this technique was used only when accurate data and reliable projections of the independent variables were available.

The functional form primarily used was the multiplicative model. When used with two independent variables, this model takes the form:

$$Y = aX_1^{b_1}X_2^{b_2}$$

This equation can easily be transformed into the linear form by taking the natural log(ln) of both sides of the equation:

$$\ln Y = \ln(a) + b_1 \ln X_1 + b_2 \ln X_2$$

The multiplicative model has a number of advantages: it is a reasonable way to represent human behavior. Constant elasticities are assumed; this says that a 1 percent change in ln X will lead to a given percent change in ln Y. This percent change is equal to b_1. And it lends itself easily to "a priori" analysis because the researcher does not have to worry about units of measurement when specifying relationships. In fact, the multiplicative model is considered the standard in economic problems. For additional information, see

Long-Range Forecasting: From Crystal Ball to Computer by J. Scott Armstrong (John Wiley and Sons, 1978, pp. 180-181).

Caveats

Since projections are subject to errors from many sources, alternative projections are shown for some statistical series. These alternatives are not statistical confidence intervals, but instead represent judgments made by the authors as to reasonable upper and lower bounds for each projected series. To measure projection reliability, upper and lower statistical confidence limits are presented for projections of elementary and secondary enrollment, classroom teachers, high school graduates, earned degrees conferred, and expenditures in public elementary and secondary schools.

Assumptions

All projections are based on underlying assumptions, and these assumptions determine projection results to a large extent. It is important that users of projections understand the assumptions to determine the acceptability of projected time series for their purposes. The tables of assumptions in each chapter describe the primary assumptions upon which the projections of time series are based. For each time series, the respective tables and the assumptions used for each alternative projection are shown.

For some projections, low, middle, and high alternatives are shown. These alternatives reveal the level of uncertainty involved in making projections, and they also point out the sensitivity of projections to the assumptions on which they are based.

Many of the projections in this publication are demographically based. Bureau of the Census middle series projections of the various age populations were used. The future fertility rate assumption, which determines projections of the number of births, is the key assumption in making population projections. The middle series population projections assume an ultimate complete cohort fertility rate of 1.8 births per woman by the year 2050. This assumption plays a major role in determining population projections for the age groups enrolled in nursery school, kindergarten, and elementary grades. The effects of the fertility rate assumption are more pronounced toward the end of the projection period.

For enrollments in secondary grades and college, the fertility assumption is of no consequence, since all students enrolled at these levels were already born when the population projections were made. For projections of enrollments in elementary schools, only middle series population projections were considered.

Projections of high school graduates are based on projections of the number of high school graduates expressed as a percent of grade 12 enrollment. Projections of associate, bachelor's, master's, doctor's, and first-professional degrees are based on projections of college-age populations and higher education enrollment, by sex, attendance status and level enrolled by student, and by type of institution. Many of the projections of classroom teachers and expenditures of public elementary and secondary schools are based on projections of disposable income per capita. Disposable income per capita projections were obtained from Data Resources, Inc.'s Macroeconomic Model of the U.S. economy. Therefore, the many assumptions made in projecting disposable income per capita also apply to those projections based on projections of disposable income per capita.

Standard Errors of Estimates

Standard errors of the estimates were calculated for projections of elementary and secondary enrollments and high school graduates to compute confidence limits. These standard errors were estimated using procedures described by Bovas Abraham and Johannes Ledolter in *Statistical Methods for Forecasting* (John Wiley and Sons, 1983, pp. 131-132). According to Abraham and Ledolter, "...the observed forecast errors $e_{t-1}(1) = y_t - \hat{y}_{t-1}(1)$ $(t = 1, 2, \ldots n)$ can be used to estimate the variance of the one-step-ahead forecast errors." The variance is given as

$$\hat{\sigma}_e^2 = \frac{\sum_{t=1}^{n} [y_t - \hat{y}_{t-1}(1)]^2}{n}$$

where:

e = forecast error

y_t = observation at time t

$\hat{y}_{t-1}(1)$ = forecast of y_t at time t–1

n = number of observations

For single exponential smoothing, the estimated 95 percent prediction interval is

$$S_n \pm (1.96)\hat{\sigma}_e\sqrt{L},$$

where:

S_n = smoothed statistic

L = lead time

Table C33 presents the standard errors for projections of public school K-12, K-8, 9-12 enrollments. A confidence interval was constructed around the projection to determine if it is significantly different from zero. For example, the standard error for the 1990 projection of public school K–12 enrollment is 119,000. This standard error can be used to construct a confidence interval around the projection. To es tablish a 95 percent confidence interval, the standard error is multiplied by 1.96 and the resulting value is added to and subtracted from the projection. Therefore, the confidence interval for public school K–12 enrollment in 1990 can be expressed as 40,801,000 ± 233,000. This means that for 1990, it is 95 percent sure that the true enrollment will lie between 40,568,000 and 41,034,000.

A1. Enrollment

National

Enrollment projections were based on projected enrollment rates, by age and sex, which were applied to population projections by age and sex developed by the Bureau of the Census. These enrollment rates were projected by taking into account the most recent trends, as well as the effects of economic conditions and demographic changes on a person's decision to enter college. The enrollment rates were then used in an interactive forecasting model (IFMOD), which consists of age-specific rates by sex and by enrollment levels (nursery school through college). The model has 5 stages. See figure on page 85.

The first stage of IFMOD is an age-specific enrollment model in which enrollment rates are projected and applied to age-specific population projections. This stage, which is used separately for each sex, includes the following categories: (1) nursery and kindergarten, (2) elementary grades 1–8, (3) secondary grades 9–12, (4) full-time college enrollment, and (5) part-time college enrollment. For each of these enrollment categories, enrollment rates were projected by individual ages 3 through 24 and for the age groups 25 to 29, 30 to 34, and 35 years and over.

Enrollments by age and age groups from the Bureau of the Census were adjusted to NCES totals to compute enrollment rates for 1972 through 1988. Different assumptions were made to produce low, middle, and high alternative projections of past enrollment rates to the year 2001.

Elementary Grades 1–8

Projections of elementary enrollment rates were considered for ages 5 through 21. Elementary enrollments are negligible for the remaining ages. Since most elementary enrollment rates have been fluctuating at levels close to 100 percent from 1972 to 1988, alternative enrollment rate projections were not computed. The only set of enrollment rate projections computed was based on the assumption that rates will remain constant through the year 2001 (table A-1.1). Several of the rates in table A-1.1 exceed 100 percent. This is due to several factors. The enrollment data by age were prorated to agree with NCES totals. The Bureau of the Census does not revise enrollment estimates by age, but population estimates are revised regularly.

Secondary Grades 9–12

Projections of secondary enrollment rates were considered for ages 12 through 34. Secondary enrollments are negligible for the remaining ages. Secondary enrollment rates have fluctuated within a narrow range through the 1972 to 1988 period. Therefore, alternative enrollment rate projections were not calculated. The only set of projections computed was based on constant enrollment rates (table A-1.2). An analysis of projections errors from the past 14 editions of *Projections of Education Statistics* indicates that the mean absolute percentage errors (MAPEs) for lead times of 1, 2, and 5 years ahead for projections of enrollment in grades K–12 have been less than 1 percent—0.2, 0.4, and 0.8 percent, respectively. For the 1-year-ahead prediction, this means that one would expect the projection to be within 0.2 percent of the actual value, on the average. For projections of enrollment in grades K–8, the MAPEs for lead times of 1, 2, and 5 years were 0.3, 0.6, and 0.9 percent, respectively, while those for projections of enrollment in grades 9–12 were 0.6, 0.8, and 2.0 percent for the same lead times. For lead times of 6 to 10 years, the MAPEs increased gradually for projections of enrollment in grades K–12, K–8, and 9–12, from 1.1 percent to 7.2 percent for grades K–12, 1.2 percent to 8.8 percent for grades K–8, and 2.5 percent to 5.3 percent for grades 9–12.

College Full-Time and Part-Time Enrollment

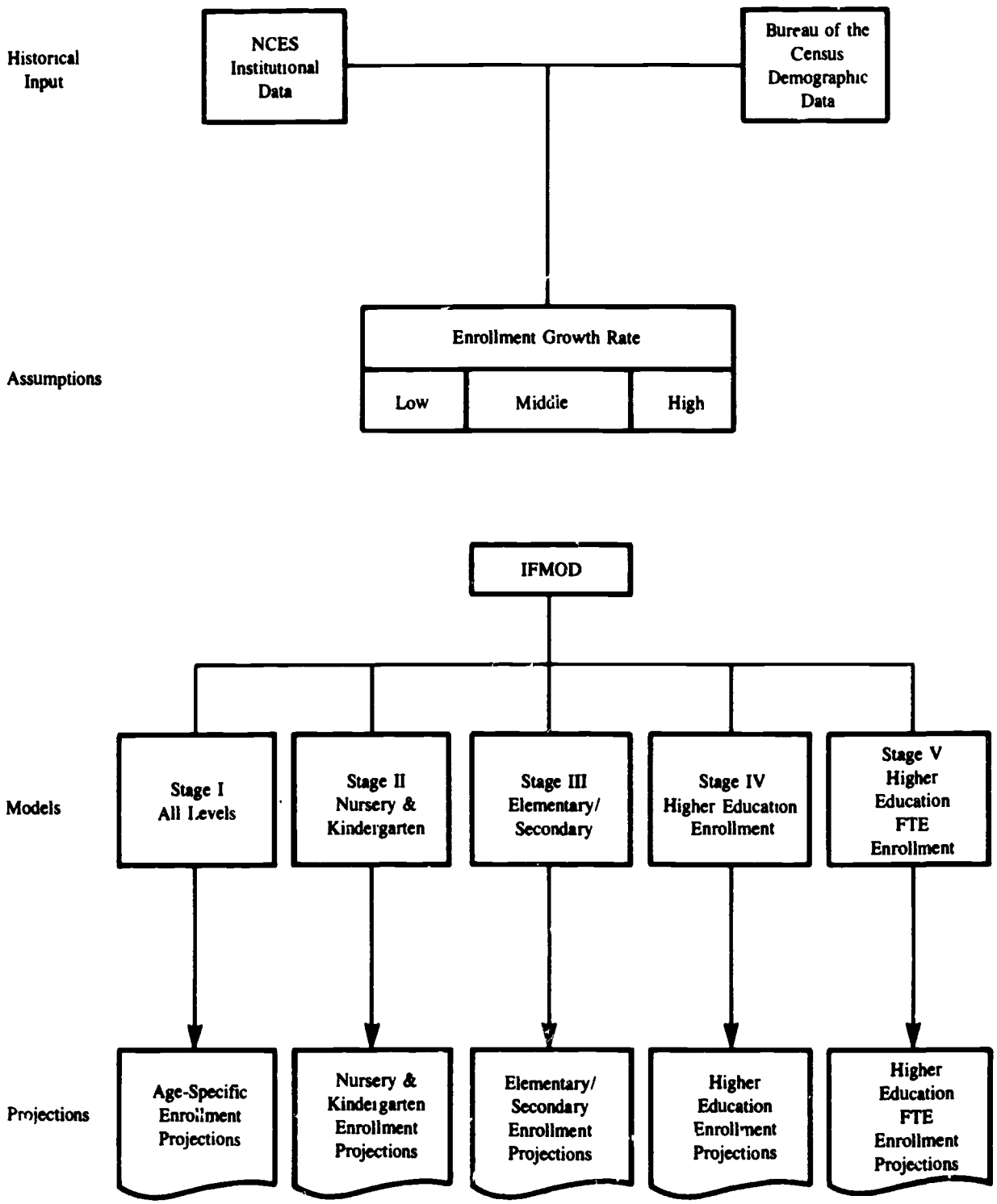
Projections of full-time and part-time college enrollments were considered only for ages 16 and over. (College enrollment is negligible for earlier ages.) Three alternative projections were made using various assumptions. Table A-1.3 shows enrollment rates for 1988 and low, middle, and high alternative projected enrollment rates for 1996 and 2001.

Enrollment in Public Elementary and Secondary Schools, by Grade Group and Organizational Level

The third stage of IFMOD projects public enrollment in elementary and secondary schools by grade group and by organizational level. Public enrollments by age were based on enrollment rate projections for nursery and kindergarten, grade 1, elementary ungraded and

Figure

General Structure and Methodology of the Interactive Forecasting Model (IFMOD)



special, secondary ungraded and special, and postgraduate enrollment. Grade retention rate projections were used for grades 2 through 12. Table A-1.4 shows the public enrollment rates and table A-1.5 shows the public grade-retention rates for 1988 and projections for 1996 and 2001. The projected rates in tables A-1.4 and A-1.5 were used to compute the projections of enrollments in elementary and secondary schools, by grade, shown in table 1.

College Enrollment, by Sex, Attendance Status, and Level Enrolled; and by Type and Control of Institution

The fourth stage of IFMOD projects enrollments in institutions of higher education, by sex, attendance status, and level enrolled by student; and by type and control of institution. For each age group, the percent that enrollment by age, attendance status, level enrolled, and type of institution was of total enrollment was projected. These projections are in tables A-1.6 and A-1.7, along with actual values for 1988. For all projections, it was assumed that there was no enrollment in 2-year institutions at the postbaccalaureate level (graduate and first-professional).

The projected rates in tables A-1.6 and A-1.7 were then adjusted to agree with the projected age-specific enrollment rates in the first stage of IFMOD. The adjusted rates were then applied to the projected enrollments by age group, sex, and attendance status from the first stage of IFMOD to obtain projections by age group, sex, attendance status, level enrolled, and type of institution.

For each enrollment category—sex, attendance status, level enrolled, and type of institution—the percent that public enrollment was of total enrollment was projected. These projections are in table A-1.8, along with actual percent for 1988 and projections for 1996 and 2001. The projected rates shown were then applied to the projected enrollments in each enrollment category to obtain projections by control of institution.

For each enrollment category by sex and enrollment level, and by type and control of institution, the percent that graduate enrollment was of postbaccalaureate enrollment was projected. Actual rates for 1988 and projections for 1996 and 2001 are in table A-1.9. The projected rates in table A-1.9 were then applied to projections of postbaccalaureate enrollment to obtain graduate and first-professional enrollment projections by sex and attendance status, and by type and control of institution.

Full-Time-Equivalent Enrollment, by Type and Control of Institution and by Level Enrolled

The fifth stage of IFMOD projects full-time-equivalent enrollment, by type and control of institution and by level enrolled. For each enrollment category by level enrolled and by type and control of institution, the percent that the full-time-equivalent of part-time enrollment was of part-time enrollment was projected. Actual percents for 1988 and projections for 1996 and 2001 are in table A-1.10.

These projected percents were applied to projections of enrollments by level enrolled and by type and control of institution from the fourth stage. The projections of the full-time-equivalent of part-time enrollment were added to projections of full-time enrollment (from the previous stage) to obtain projections of full-time-equivalent enrollment.

For projections of enrollment in higher education, an analysis of projection errors based on the past five editions of *Projections of Education Statistics* indicates that the MAPEs for lead times of 1, 2, and 4 years were 0.4, 2.3, and 5.0 percent, respectively. For the 1-year-ahead prediction, this means that one would expect the projection to be within 0.4 percent of the actual value, on the average.

Basic Methodology

The notation and equations that follow describe the basic models used to project public elementary and secondary enrollment.

Public Elementary and Secondary Enrollment

Let:

i = Subscript denoting age

j = Subscript denoting grade

t = Subscript denoting time

K_t = Enrollment at the nursery and kindergarten level

G_{jt} = Enrollment in grade j

G_{1t} = Enrollment in grade 1

E_t = Enrollment in elementary special and ungraded programs

S_t = Enrollment in secondary special and ungraded programs

PG_t = Enrollment in postgraduate programs

P_{it} = Population age i

RK_t = Enrollment rate for nursery and kindergarten

RG_{1t} = Enrollment rate for grade 1

RE_t = Enrollment rate for elementary special and ungraded programs

RS_t = Enrollment rate for secondary special and ungraded programs

RPG_t = Enrollment rate for postgraduate programs

EG_t = Total enrollment in elementary grades (K-8)

SG_t = Total enrollment in secondary grades (9-12)

R_{jt} = Retention rate for grade j, the proportion that enrollment in grade j in year t is of enrollment in grade j - 1 in year t-1.

Then:

$$EG_t = K_t + E_t + \sum_{j=1}^{8} G_{jt}$$

$$SG_t = S_t + PG_t + \sum_{j=9}^{12} G_{jt}$$

Where:

$K_t = RK_t(P_{5t})$

$G_{jt} = R_{jt}(G_{j-1,t-1})$

$$E_t = RE_t\left(\sum_{i=5}^{13} P_{it}\right)$$

$G_{1t} = RG_{1t}(P_{6t})$

$$S_t = RS_t\left(\sum_{i=14}^{17} P_{it}\right)$$

$PG_t = RPG_t(P_{18t})$

Higher Education Enrollment

For institutions of higher education, projections were computed separately by sex and attendance status of student. The notation and equations are:

Let:

i = Subscript denoting age except:

i = 25: ages 25-29

i = 26: ages 30-34

i = 27: ages 35 and over for enrollment (35-44 for population)

t = Subscript denoting year

E_{it} = Enrollment of students age i

P_{it} = Population age i

R_{it} = Enrollment rate for students age i

T_{it} = Total enrollment for particular subset of students: full-time men, full-time women, part-time men, part-time women

Then:

$$T_{it} = \sum_{i=16}^{27} E_{it}$$

Where:

$E_{it} = R_{it}(P_{it})$

Methodological Tables

The tables in this section give the rates used to calculate projections of enrollments, basic assumptions underlying enrollment projections (table A-1.11), and methods used to estimate values for which data are not available (table A-1.12).

Private School Enrollment

Projections of private school enrollment were derived in the following manner. For 1989, the ratio of private school enrollment to public school enrollment was calculated by grade level. These 1989 ratios were then held constant over the projection period. These ratios were then applied to projections of public school enrollment by grade level to yield projections of private school enrollment. This method assumes that the future pattern in the trend of private school enrollment will be same as in public school enrollment. The reader is

cautioned that a number of factors could alter the assumptions of constant ratios over the projection period.

State-Level

This edition contains projected trends in elementary and secondary enrollment by grade level in public schools from 1990 to the year 2000. This is the second report on state-level projections for public school elementary and secondary education statistics.

Public school enrollment data from the National Center for Education Statistics' Common Core of Data survey for 1970 to 1988 were used to develop these projections. This survey does not collect data on enrollment for private schools. In addition, population estimates for 1970 to 1988 and population projections for 1989 to 2000 from the U.S. Department of Commerce, Bureau of the Census were used to develop the projections.

Table A-1.13 describes the number of years, projection methods, and smoothing constants used to project enrollments in public schools. Also included in table A-1.13 is the procedure for choosing the different smoothing constants for the time series models.

The grade retention method and the enrollment rate method were used together to project public elementary and secondary school enrollment by State. The grade retention method starts with 6-year-olds entering first grade and then follows their progress through public elementary and secondary schools. The method requires calculating the ratio of the number of children in one year who "survive" the year and enroll in the next grade the following year. The enrollment rate method expresses the enrollment of a particular age group as a percent of the population for the same age group. The projections produced from these two methods were combined to yield a composite projection of enrollment.

First, projections of enrollment in public elementary and secondary schools by State were developed using primarily the grade retention method. Kindergarten and first grade enrollments are based on projected enrollment rates of 5- and 6-year-olds. These projected enrollment rates are applied to population projections of 5- and 6-year-olds developed by the Bureau of the Census.

Enrollments in grades 2 through 12 are based on projected grade retention rates. These projected rates are then applied to the current enrollment by grade to yield grade-by-grade projections for future years. Enrollment rates of 5- and 6-year-olds and retention rates are projected using single exponential smoothing. Elementary ungraded and special, and secondary ungraded and special enrollments are projected to remain constant at their 1988 levels. To obtain projections of total enrollment, projections of enrollments for the individual grades (Kindergarten through 12) and ungraded and special classes were summed.

Second, projections of enrollments in public elementary and secondary schools by State were developed using the enrollment rate method. The enrollment in grades K-8 was expressed as a percent of the 5- to 13-year-old population for 1970 to 1988. Similarly, the enrollment in grades 9-12 was expressed as a percent of the 14- to 17-year-old population. These percents were then projected using single exponential smoothing and applied to projections of the 5- to 13-year-old and 14- to 17-year-old populations developed by the Bureau of the Census.

The enrollment rate and grade retention methods assume that past trends in factors affecting public school enrollments will continue over the projection period. This assumption implies that all factors influencing enrollments will display future patterns consistent with past patterns. Therefore, this method has limitations when applied to States with unusual changes in migration rates. This method implicitly includes the net effect of such factors as migration, dropouts, deaths, nonpromotion, and transfers to and from private schools.

Combining Enrollment Projections

Projections of public school enrollment are based on the grade retention and enrollment rate methods. Empirical research on national models suggests that the enrollment rate method is superior to the grade retention method as the lead time of the projection increases. For longer lead times, the mean absolute percentage errors of the projections of national public school enrollment based on the enrollment rate method are smaller than those based on the grade retention method. It is reasoned that since the projections based on the enrollment rate method depend on population projections, they reflect long-term shifts in State migration patterns as projected by the Bureau of the Census. On the other hand, the projections based on the grade retention method reflect the net effects of State in- and out-migration for the short term.

The projections of enrollments developed using the grade retention and enrollment rate methods were combined using a simple linear combination of the projections as follows:

$$E = b X_1 + (1-b)X_2$$

Where:

E = combined enrollment projection

X_1 = projection based on the grade retention rate method

X_2 = projection based on the enrollment rate method

b = weight

The following table presents the weights used to combine the two methods. Here, b is an adaptive parameter that changes in time to give the most weight to longer lead times for the most successful of the two projection methods, the enrollment rate.

Weights used to combine the enrollment projections, by projection method and lead time

Projection method	Lead time, in years				
	1	2	3	4	5
Grade retention	1	8/9	7/9	6/9	5/9
Enrollment rate	0	1/9	2/9	3/9	4/9

The sum of the weights b and 1-b is constrained to sum to one. Empirical evidence suggests that the enrollment rate method is superior to grade retention method for long lead times.

Adjustment to National Projections

The sum of the projections of State enrollments was adjusted to add to the national projections of public school K-12, K-8, and 9-12 enrollments shown in table 1. For details on the methods used to develop the national projections for this statistic, see section on national enrollment projections in this appendix.

Projection Accuracy

Although the accuracy of past projections does not assure that the forecasts in this report will show similar accuracy, an analysis of forecast errors helps to determine how much faith users should place in these projections.

The mean absolute percentage error (MAPE) was used to measure forecast accuracy. To compute the MAPEs for public school K-12, K-8, and 9-12 enrollments for the Nation and each State, an average of the absolute values of the 1-, 2-, and 3-year-ahead aprojection errors was computed using data from 1970 to 1985. In calculating the MAPEs, estimates of population values rather than projected values were used to project public school enrollments. MAPEs for the Nation and individual States are shown in table D1. The resultant MAPEs indicate the likely average percent of deviation between the projection and the actual value for a specific number of years into the future. For example, the MAPEs for projections of public K-12 enrollment in Alabama were 0.4 percent for 1 year out, 0.4 percent for 2 years out, and 0.5 percent for 3 years out. For the 2-year-out prediction, this means that one would expect the projection to be within 0.4 percent of the actual value.

Table A–1.1.—Elementary enrollment rates, by age and sex

Age	Boys		Girls	
	1988	1990-2001	1988	1990-2001
5	5 9	5 9	6 3	6 2
6	81 8	82 7	87 4	88 4
7	102.2	101 6	98 7	100 4
8	101.1	101 5	101 5	102 2
9	101 4	100 8	100 2	100 8
10	100 2	99.9	104 4	104 0
11	101.4	102.0	102 4	101 9
12	101.2	99 1	103 5	103 3
13	94 6	95.1	89 4	90 6
14	35.3	38.9	22 7	22 6
15	8.3	8.3	2 8	3 5
16	0.5	0 6	0 1	0 3
17	0.2	0.2	0	0
18	0	0	0	0

Table A–1.2.—Secondary enrollment rates, by age and sex

Age	Boys		Girls	
	1988	1990-2001	1988	1990-2001
12	0.2	0	0 6	0 5
13	5.6	5 8	6 8	7 7
14	66.2	66 8	78 1	77 1
15	84 7	85 4	90 8	90 9
16	91.5	91.9	90 8	91 4
17	79.4	79.6	79 0	79 5
18	29.2	28 2	15 1	15 5
19	5 3	5 4	3 3	3 3
20	0 9	1 4	0 4	1 0
21	0 7	0 7	0 3	0 6
22	0 2	0 4	0 2	0 3
23	0 2	0.2	0 0	0 2
24	0 3	0 3	0 5	0 5
25-29	0 1	0.2	0 3	0 4
30-34	0	0	0	0

Table A–1.3.—College enrollment rates, by age, sex, and attendance status, with alternative projections

	1998	Low alternative		Middle alternative		High alternative	
		1996	2001	1996	2001	1996	2001
Men							
Full-time							
16	0.0	0.2	0.2	0.2	0.2	0.2	0.2
17	2.5	3.2	3.2	3.2	3.2	3.2	3.2
18	31.0	31.3	31.3	35.4	36.0	36.5	39.5
19	29.6	30.0	30.0	33.2	34.0	33.6	35.6
20	30.1	29.9	29.9	33.4	34.0	36.4	36.4
21	24.8	24.5	24.5	26.0	27.2	26.5	28.0
22	17.3	16.9	16.9	19.0	19.0	19.8	21.9
23	11.9	11.7	11.7	12.4	12.5	12.8	13.3
24	7.6	7.6	7.6	8.0	8.0	8.8	9.0
25-29	3.5	3.6	3.6	4.0	4.0	5.0	5.0
30-34	1.5	1.5	1.5	1.5	1.5	1.5	1.5
35-44	0.8	0.8	0.8	1.1	1.2	1.1	1.3
Part-time							
16	0.0	0.1	0.1	0.1	0.1	1.3	1.5
17	0.2	0.8	0.8	1.0	1.2	1.0	1.2
18	3.5	3.6	3.6	4.0	4.2	4.0	4.3
19	3.4	3.9	3.9	4.6	5.0	4.8	5.3
20	6.3	6.3	6.3	8.0	8.0	8.7	9.1
21	5.2	5.1	5.1	6.0	6.1	6.6	6.6
22	9.0	8.3	8.3	9.1	9.3	9.2	9.5
23	6.2	6.0	6.0	6.7	6.7	6.8	7.0
24	3.9	4.4	4.4	4.5	4.5	5.0	5.0
25-29	4.4	5.0	5.0	5.0	5.0	5.1	5.1
30-34	4.2	4.1	4.1	4.1	4.1	4.2	4.2
35-44	3.8	3.7	3.7	4.0	4.0	4.1	4.1
Women							
Full-time							
16	0.1	0.2	0.2	0.2	0.2	0.2	0.2
17	5.2	5.0	5.0	5.0	5.0	5.0	5.0
18	37.9	37.4	37.4	40.0	40.0	43.0	43.0
19	34.6	34.8	34.8	38.0	38.0	40.0	40.0
20	30.5	30.2	30.2	33.0	33.0	35.0	35.0
21	27.4	26.5	26.5	27.0	27.0	30.0	30.0
22	11.4	11.8	11.8	13.0	13.0	13.7	14.0
23	8.1	8.3	8.3	10.0	10.0	10.1	11.2
24	7.4	7.1	7.1	7.8	8.0	8.6	9.7
25-29	2.7	2.8	2.8	3.0	3.1	3.0	3.1
30-34	1.8	1.7	1.7	1.9	2.1	2.0	2.2
35-44	1.4	1.4	1.4	1.8	1.8	1.8	2.0
Part-time							
16	0.0	0.1	0.1	0.1	0.1	0.1	0.1
17	0.9	1.2	1.2	2.0	2.4	2.1	2.5
18	5.5	5.5	5.5	6.0	6.0	7.0	7.0
19	5.0	5.0	5.0	6.0	6.0	6.3	7.0
20	6.3	6.4	6.4	7.6	7.8	7.6	8.2
21	5.6	5.8	5.8	7.3	8.1	7.3	8.2
22	8	8.4	8.4	8.9	8.9	9.2	9.2
23	6.2	6.6	6.6	7.5	8.1	7.8	8.5
24	5.6	5.6	5.6	6.3	6.8	6.6	7.0
25-29	5.8	5.8	5.8	5.8	5.8	6.0	6.0
30-34	4.6	5.0	5.0	5.1	5.1	5.1	5.1
35-44	7.3	7.1	7.1	7.9	8.6	8.4	9.3

Table A–1.4.—Enrollment rates in public schools, by grade level

Grade level	Population base age	1988	Projected	
			1996	2001
Kindergarten	5	93.5	93.4	93 4
Grade 1	6	94.5	94.5	94.5
Elementary ungraded and special	5–13	1.7	1 7	1.7
Secondary ungraded and special	14–17	2.0	2.0	2.0
Postgraduate	18	0.2	0.2	0.2

Table A–1.5.—Public school grade retention rates

Grade	1988	Projected	
		1996	2001
1 to 2	94.6	94.6	94 6
2 to 3	99.8	99 8	99.8
3 to 4	100.2	100.2	100.2
4 to 5	100.2	100.2	100.2
5 to 6	101.2	101.2	101.2
6 to 7	103 3	103.4	103.4
7 to 8	98.0	98 0	98.0
8 to 9	109 4	109 4	109.4
9 to 10	92 !	92.2	92 2
10 to 11	91 1	91 1	91 1
11 to 12	90 3	90.3	90 3

Table A–1.6.—Full-time enrollment, by level enrolled and type of institution, as a percent of total enrollment, for each age and sex classification

Age	Men			Women		
	1988	1996	2001	1988	1996	2001
Undergraduate, 4-year institutions						
16–17 years old	63.1	65.2	65.2	81.4	76.6	76.6
18–19 years old	67.8	67.6	67.6	67.9	68.7	68.7
20–21 years old	81.2	81.0	81.0	83.6	83.0	83.0
22–24 years old	66.9	65.7	65.7	64.6	63.9	63.9
25–29 years old	42.9	41.6	41.6	40.0	40.4	40.4
30–34 years old	32.0	30.8	30.8	39.5	39.3	39.3
35 years and over	26.3	29.3	29.3	42.0	38.8	38.8
Undergraduate, 2-year institutions						
16–17 years old	36.9	34.4	34.4	18.6	23.4	23.4
18–19 years old	32.2	32.4	32.4	32.1	31.3	31.3
20–21 years old	18.8	19.0	19.0	17.4	17.0	17.0
22–24 years old	15.7	15.2	15.2	16.4	16.8	16.8
25–29 years old	14.1	15.0	15.0	20.9	23.1	23.1
30–34 years old	17.3	18.0	18.0	29.7	31.4	31.4
35 years and over	23.2	21.3	21.3	32.7	33.5	33.5
Postbaccalaureate, 4-year institutions						
16–17 years old	—	—	—	—	—	—
18–19 years old	—	—	—	—	—	—
20–21 years old	—	—	—	—	—	—
22–24 years old	17.4	19.1	19.1	18.9	19.3	19.3
25–29 years old	43.0	44.0	44.0	39.2	36.5	36.5
30–34 years old	50.7	51.2	51.2	30.9	29.3	29.3
35 years and over	50.5	49.4	49.4	25.3	27.6	27.6

—Not applicable.

NOTE: Projections shown for 1996 and 2001 were adjusted to add to 100 percent before computing projections shown in tables 3 through 22.

Table A–1.7.—Part-time enrollment, by level enrolled and type of institution, as a percent of total enrollment, for each age and sex classification

	Men			Women		
	1988	1996	2001	1988	1996	2001
Undergraduate, 4-year institutions						
16–17 years old	0 0	17.1	17.1	10.0	16.9	16.9
18–19 years old	24.6	17 6	17.6	23.9	20.9	20.9
20–21 years old	13.9	18.7	18 7	30.5	28 2	28.2
22–24 years old	30.2	32.4	32.4	30.4	30.2	[illegible]2
25–29 years old	34.8	32.6	32.6	27.5	28 0	28.0
30–34 years old	31.1	31.3	31.3	21.5	24.8	24.8
35 years and over	28.8	28.4	28 4	27.8	27.0	27.0
Undergraduate, 2-year institutions						
16–17 years old	96.3	77.6	77.6	86.5	79.6	79.6
18–19 years old	71.0	75.2	75 2	72.2	74.9	74.9
20–21 years old	81.6	76.4	76.4	65.1	66.9	66.9
22–24 years old	57.3	54.8	54.8	56.2	55.8	55.8
25–29 years old	46.2	47.8	47.8	53 3	52.1	52 1
30–34 years old	48 4	47.8	47.8	61.8	57.4	57.4
35 years and over	41 4	43.0	43.0	50.9	52.2	52.2
Postbaccalaureate, 4-year institutions						
16–17 years old	3 8	5.3	5.3	3.5	3.5	3.5
18–19 years old	4.4	7.2	7 2	3.8	4 2	4.2
20–21 years old	4.6	5 0	5 0	4.4	4 8	4.8
22–24 years old	2.5	12.9	12 9	13.3	14.0	14.0
25–29 years old	19.0	19.6	19 6	19.2	19.8	19.8
30–34 years old	20.4	20.9	20.9	16.7	17.8	17.8
35 years and over	29 8	28.5	28.5	21.3	20.8	20 8

NOTE: Projections shown for 1996 and 2001 were adjusted to add to 100 percent before computing projections shown in tables 3 through 22.

Table A–1.8.—Public school enrollment as a percent of total enrollment, by attendance status, sex, level enrolled, and by type of institution

Enrollment category	Men			Women		
	1988	1996	2001	1988	1996	2001
Full-time undergraduate, 4-year institutions	69.2	69.3	69.3	68.8	68.8	68.8
Part-time, undergraduate, 4-year institutions	73.3	73.1	73.1	70.6	70.3	70.3
Full-time, undergraduate, 2-year institutions	91.3	91.0	91.0	89.2	88.8	88.8
Part-time, undergraduate, 2-year institutions	96.8	97.0	97.0	97.6	97.9	97.9
Full-time, postbaccalaureate, 4-year institutions	56.3	56.2	56.2	59.9	59.8	59.8
Part-time, postbaccalaureate, 4-year institutions	58.4	58.7	58.7	67.1	67.7	67.7

Table A–1.9.—Graduate enrollment as a percent of total postbaccalaureate enrollment, by sex and attendance status, and by type and control of institution

Enrollment category	Men			Women		
	1988	1996	2001	1988	1996	2001
Full-time, 4-year, public	75.0	74.4	74.4	79.8	79.7	79.7
Part-time, 4-year, public	98.7	98.8	98.8	99.4	99.4	99.4
Full-time, 4-year, private	56.3	55.5	55.5	63.2	63.1	63.1
Part-time, 4-year, private	92.4	92.2	92.2	95.4	95.4	95.4

Table A–1.10.—Full-time-equivalent of part-time enrollment as a percent of part-time enrollment, by level enrolled and by type of institution

Enrollment category	1988	1996	2001
Public, 4-year, undergraduate	40.0	40.0	40.0
Public, 2-year, undergraduate	33.6	33.6	33.6
Private, 4-year, undergraduate	40.0	39.9	39.9
Private, 2-year, undergraduate	39.3	39.7	39.7
Public, 4-year, graduate	36.3	36.2	36.2
Private, 4-year, graduate	38.2	38.2	38.2
Public, 4-year, first-professional	40.0	50.6	50.6
Private, 4-year, first-professional	52.4	53.6	53.6

Table A–1.11.—Enrollment (assumptions)

Variables	Assumptions	Alternatives	Tables
Elementary and secondary enrollment	Age-specific enrollment rates will remain constant at levels consistent with the most recent rates.	middle (no alternatives)	1, 2
	Public enrollment rates and public grade retention rates will remain constant at levels consistent with the most recent rates	middle (no alternatives)	1, 2
	The percentage of 7th and 8th grade public students enrolled in school organized as secondary schools will remain constant at levels consistent with the most recent rates	middle (no alternatives)	2
College full-time and part-time enrollment, by age			
Men	Age-specific enrollment rates will remain constant at levels consistent with most recent rates.	low	3–5 9–16
	Age-specific enrollment rates for the younger age cohorts will increase over the projection period.	middle	3–5 9–16
	Age-specific enrollment rates will either equal the middle alternative or increase at a faster rate, based on past trends.	high	3–5 9–16
Women	Age-specific enrollment rates will remain constant at levels consistent with the most recent rates.	low	3–5 9–16
	Age-specific enrollment rates will increase over the projection period.	middle	3–5 9–16
	Age-specific enrollment rates will either equal the middle alternative or increase at a faster rate, based on past trends	high	3–5 9–16
College enrollment, by sex, attendance status, and and by type of institution	For each group and for each attendance status separately, enrollment by sex and level enrolled by student, and by type of institution as a percent of total enrollment, will follow past trends through 2001. For each age group and attendance status category, the restriction that the sum of the percentages must equal 100 percent was applied.	high, middle, and low	3–5 9–16
College enrollment, by control of institution	For each enrollment category, by sex, attendance status, and level enrolled by student, and by type of institution, public enrollment as a percent of total enrollment will remain constant at levels consistent with most recent rates	high, middle, and low	3–5 9–16
Graduate enrollment	For each enrollment category, by sex and attendance status of student, and by type and control of institution, graduate enrollment as percent of postbaccalaureate enrollment will remain constant at levels consistent with most recent rates	high, middle, and low	17
Full-time-equivalent of part-time enrollment	For each enrollment category, by type and control of institution and level enrolled by student, the percent that full-time equivalent of part-time enrollment is of part-time enrollment will remain constant at levels consistent with the most recent rates.	high, middle, and low	23-25

Table A–1.12.—Enrollment (estimation methods)

Variables	Years	Estimation method	Tables
Enrollment in private elementary and secondary schools, by level	1988 1989	Grade-by-grade data for private elementary, secondary, and combined schools were aggregated to estimate private school enrollment by grade level.	1 2
Enrollment in institutions of higher education, by age and attendance status	1981, 1986, and 1989	For each sex, enrollment data from the Bureau of Census by individual ages and by attendance status for 2-year age groups were combined by assuming that within the 2-year age groups, age and attendance status were distributed independently. The resultant enrollment estimates by age and attendance status were then adjusted to NCES enrollment counts by attendance status.	6 7 8

Table A–1.13—Number of years, projection methods, and smoothing constants used to project public school enrollments and high school graduates, by State

Projected State variable	Number of Years (1970–1988)	Projection method	Smoothing constant	Choice of smoothing
Enrollment rates	19	Single exponential smoothing	0.4	Empirical research
Grade retention rates	19	Single exponential smoothing	0.4	Empirical research
Graduates/grade 12 enrollment	19	Single exponential smoothing	0.4	Empirical research

A2. High School Graduates

National

Projections of public high school graduates were developed in the following manner. The number of public high school graduates was expressed as a percent of grade 12 enrollment in public schools for 1970 to 1988. This percent was projected using single exponential smoothing and applied to projections of grade 12 enrollment to yield projections of high school graduates in public schools. (The dropout rate is not related to this percent. This percent does not make any assumptions regarding the dropout rate.) The grade 12 enrollment was projected based on State by State retention rates and population projections developed by the Bureau of the Census. This percent was assumed to remain constant at levels consistent with the most recent rates. This method assumes that past trends in factors affecting graduation will continue over the projection period.

An analysis of projections from models used in the past seven editions of *Projections of Education Statistics* indicates that the mean absolute percentage errors (MAPEs) for projections of public high school graduates were 0.5 percent for 1 year ahead, 1.0 percent for 2 years ahead, and 1.9 percent for 5 years ahead. For the 2-year-ahead prediction, this means that one would expect the projection to be within 1.0 percent of the actual value, on the average.

Projections of private high school graduates were derived in the following manner. For 1988-89, the ratio of private high school graduates to public school graduates was calculated. This 1988-89 ratio was held constant over the projection period. It was then applied to projections of public high school graduates to yield projections of private high school graduates. This method assumes that the future pattern of private high school graduates will be the same as public high school graduates. The reader should be aware that a number of factors could alter the assumption of a constant ratio over the projection period.

State-Level

This edition contains projections of high school graduates from public schools by state from 1989–90 to 1999–2000. Public school graduate data from the National Center for Education Statistics' Common Core of Data survey for 1969–70 to 1987–88 were used to develop these projections. This survey does not collect graduate data for private schools.

Projections of public high school graduates by State were developed in the following manner. For each State, the number of public high school graduates was expressed as a percent of grade 12 enrollment in public schools for 1970 to 1987. This percent was projected using single exponential smoothing and applied to projections of grade 12 enrollment to yield projections of high school graduates in public school. Projections of grade 12 enrollment were developed based on the grade retention method discussed in section A–1—Enrollment. This percent was assumed to remain constant at levels consistent with most recent rates. This assumes that past trends in factors affecting public high school graduates will continue over the projection period.

Projection Accuracy

Although the accuracy of past projections does not assure that the projections in this report will show similar accuracy, an analysis of projection errors helps to determine how much faith users should place in these projections.

The mean absolute percentage error (MAPE) was used to measure forecast accuracy. To compute the MAPEs for public high school graduates for the Nation and each State, an average of the absolute values of the 1-, 2-, 3-year-ahead projection errors was computed using data from 1970 to 1985. MAPEs for the Nation and individual States are shown in table D1. The resultant MAPEs indicate the likely average percent of deviation between the projection and the actual value for a specific number of years into the future. For example, the MAPEs for projections of public high school graduates in Alabama were 2.0 percent for 1 year out, 1.5 percent for 2 years out, and 2.8 percent for 3 years out. For the 1-year-out prediction, this means that one would expect the projection to be within 2.0 percent of the actual value.

A3. Earned Degrees Conferred

Projections of associate, bachelor's, master's, doctor's, and first-professional degrees by sex were based on demographic models which relate degree awards to college-age populations and college enrollment by level enrolled and attendance status.

Associate Degrees

Associate degree projections by sex were based on undergraduate enrollment by attendance status in 2-year institutions. Results of the regression analysis used to project associate degrees by sex are in table A-3.1. Tables of statistical confidence limits are in appendix C.

Bachelor's Degrees

Bachelor's degree projections by sex were based on the 18- to 24-year-old population, 25- to 34-year-old population, and undergraduate enrollment by attendance status in 4-year institutions. Results of the regression analysis used to project bachelor's degrees by sex are in table A-3.2. Tables of statistical confidence limits are in appendix C.

Master's Degrees

Master's degree projections by sex were based on the 35- to 44-year-old population and graduate enrollment by attendance status in 4-year institutions. Results of the regression analysis used to project master's degrees by sex are in table A-3.3. Tables of statistical confidence limits are in appendix C.

Doctor's Degrees

Doctor's degree projections by sex were based on the 35- to 44-year-old population, graduate enrollment by attendance status in 4-year institutions, and a time trend variable. Results of the regression analysis used to project master's degrees by sex are in table A-3.4. Tables of statistical confidence limits are in appendix C.

First-Professional Degrees

First-professional degree projections by sex were based on first-professional enrollment by attendance status in 4-year institutions. Results of the regression analysis used to project first-professional degrees by sex are in table A-3.5. Tables of statistical confidence limits are in appendix C.

Methodological Tables

These tables describe equations used to calculate projections (tables A-3.1 through A-3.5), and basic assumptions underlying projections (table A-3.6).

Projection Accuracy

An analysis of projections errors from similar models used in the past six editions of *Projections of Education Statistics* indicates that mean absolute percentage errors (MAPEs) for bachelor's degree projections were 1.8 percent for 1 year ahead, 2.2 percent for 2 years ahead, and 5.0 percent for 5 years ahead. For the 1-year-ahead prediction, this means that one would expect the projection to be within 1.8 percent of the actual value, on the average. For doctor's degrees, the MAPEs were 2.6, 5.4, and 7.6 percent, respectively, and those for first-professional degrees were 3.1, 2.8, and 2.6 percent, respectively. MAPEs for master's degrees (based on four editions of *Projections*) were 2.5, 4.2, and 6.2, respectively.

Table A–3.1.—Equations for associate degrees, (1969–70 to 1988–89)

	Regression equation	R^2	Durbin-Watson statistic*	Regression technique
Men	ASSOCM = -10,621.8 + 149.9UGFTM2 + 49.0UGPTM2 (4.3) (4.3)	0.84	1.1	Ordinary least squares
Women	ASSOCW = 1189.3 + 276.7UGFTW2 (39.0)	0.99	1.5	Ordinary least squares

R^2 = Coefficient of determination.

*For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometrics Methods*, New York: McGraw Hill, 1972, pages 251–252.

Where:

ASSOCM = Number of associate degrees awarded to men
ASSCOW = Number of associate degrees awarded to women
UGFTM2 = Full-time male undergraduate enrollment in 2-year institutions lagged 1 year
UGPTM2 = Part-time male undergraduate enrollment in 2-year institutions lagged 1 year
UGFTW2 = Full-time female undergraduate enrollment in 2-year institutions lagged 2 years

NOTE: The numbers in parentheses refer to the value of the t statistics.

Table A–3.2.—Equations for bachelor's degrees, (1969–70 to 1988–89)

	Regression equation	R^2	Durbin-Watson statistic*	Regression technique
Men	BACHM = 135,151.5 - 6.3P1824M - 2.7P2534M + 241.4UGFT4M (-2.3) (-2.4) (7.4) -117.4UGPT4M (-1.3)	0.82	1.2	Ordinary least squares
Women	BACHW = 156,612 - 13.4P1824W + 8.7P2534W + 225.1UGFT4W (-7.3) (2.5) (6.8) -208.0UPPT4W (-4.4)	0.99	1.4	Ordinary least squares

R^2 = Coefficient of determination.

*For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometrics Methods*, New York: McGraw Hill, 1972, pages 251–252.

Where:

BACHM = Number of bachelor's degrees awarded to men
BACHW = Number of bachelor's degrees awarded to women
P1824M = Population of 18- to 24-year-old males
P1824W = Population of 18- to 24-year-old females
P2534M = Population of 25- to 34 year-old males
P2534W = Population of 25- to 34-year-old females
UGFT4M = Full-time male undergraduate enrollment in 4-year institutions lagged 3 years
UGPT4M = Part-time male undergraduate enrollment in 4-year institutions lagged 3 years
UGFT4W = Full-time female undergraduate enrollment in 4-year institutions lagged 3 years
UGPT4W = Part-time female undergraduate enrollment in 4-year institutions lagged 3 years

NOTE: The numbers in parentheses refer to the value of the t statistics.

Table A–3.3.—Equations for master's degrees, (1969–70 to 1988–89)

	Regression equation	R^2	Durbin-Watson statistic*	Regression technique
Men	MASTM = -65,089.1 - 3.0P3544M + 316.5GPTM (-4.2) (4.5)	0.61	1.1	Ordinary least squares
Women	MASTW = 39,446.5 - 4.6P544W + 370.2GPTW (-5.3) (14.3)	0.95	1.3	Ordinary least squares

R^2 = Coefficient of determination.

*For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometrics Methods*, New York: McGraw Hill, 1972, pages 251–252

Where:

MASTM = Number of master's degrees awarded to men
MASTW = Number of master's degrees awarded to women
P3544M = Population of 35- to 44-year-old males
P3544W = Population of 35- to 44-year-old females
GPTM = Part-time male graduate enrollment
GPTW = Part-time female graduate enrollment

NOTE: The numbers in parentheses refer to the value of the t statistics

Table A-3.4.—Equations for doctor's degrees, (1969–70 to 1988–89)

	Regression equation	R^2	Durbin-Watson statistic*	Regression technique
Men	DOCM = 12,973 5 + 0.7P3544M +23 7GPTM - 668 8TIME (2.1) (1.9) (-4.7)	0.84	0 87	Ordinary least squares
Women	DOCW = 10.186 7 - 0 5P3544W - 2.2GPTW + 680.4TIME (-3 6) (-1.4) (17.6)	0.99	2 2	Ordinary least squares

R^2 = Coefficient of determination.

*For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometrics Methods*, New York: McGraw Hill, 1972, pages 251–252.

Where:

DOCM = Number of doctor's degrees awarded to men
DOCW = Number of doctor's degrees awarded to women
P3544M = Population of 35- to 44-year-old males
P3544W = Population of 35- to 44-year-old females
GPTM = Part-time male graduate enrollment
GPTW = Part-time female graduate enrollment
TIME = Time trend, 1969-70 = 1

NOTE: The numbers in parentheses refer to the value of the t statistics.

Table A-3.5.—Equations for first-professional degrees, (1969–70 to 1988–89)

	Regression equation	R^2	Durbin-Watson statistic*	Regression technique
Men	FPROM = -20,569.2 + 413.4FPFTM (9.6)	0.84	0.59	Ordinary least squares
Women	FPROW = -2,501 4 + 2[illegible]FPFTW +530.0FPPTW (8.5) (2.2)	0 99	1.2	Ordinary least squares

R^2 = Coefficient of determination.

*For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometrics Methods*, New York: McGraw Hill, 1972, pages 251–252.

Where:

FPROM = Number of first-professional degrees awarded to nen
FPROW = Number of first-professional degrees awarded to women
FPFTM = Full-time male first-professional enrollment lagged 1 year
FPFTW = Full-time female first-rofessional enrollment lagged 1 year
FPPTW = Part-time female first-professional enrollment lagged 3 years

NOTE: The numbers in parentheses refer to the value of the t statistics.

Table A–3.6.—Earned degrees conferred (assumptions)

Variables	Assumptions	Alternatives	Tables
Associate degrees			
Men	The number of associate degrees awarded to men is a linear function of full-time and part-time undergraduate enrollment in 2-year institutions lagged 1 year. This relationship will continue through 2000–2001.	Middle (no alternatives)	27
Women	The number of associate degrees awarded to women is a linear function of full-time undergraduate enrollment in 2-year institutions lagged 2 years. This relationship wi continue through 2000–2001.	Middle (no alternatives)	27
Bachelor's degrees			
Men	The number of bachelor's degrees awarded to men is a linear function of full-time and part-time undergraduate enrollment in 4-year institutions lagged 3 years, the 18- to 24-year-old population, and 25- to 34-year-old population. This relationship will continue through 2000–2001.	Middle (no alternatives)	28
Women	The number of bachelor's degrees awarded to women is a linear function of full-time and part-time undergraduate enrollment in 4-year institutions lagged 3 years, the 18- to 24-year-old population, and 25- to 34-year-old population This relationship will continue through 2000–2001	Middle (no alternatives)	28
Master's degrees			
Men	The number of master's degrees awarded to men is a linear function of part-time graduate enrollment and the 35- to 44-year-old population This relationship will continue through 2000–2001	Middle (no alternatives)	29
Women	The number of master's degrees awarded to women is a linear function of part-time graduate enrollment and 35- to 44-year-old population This relationship will continue through 2000–2001.	Middle (no alternatives)	29
Doctor's degrees			
Men	The number of doctor's degrees awarded to men is a linear function of part-time graduate enrollment, time, and the 35- to 44-year-old population This relationship will continue through 2000–2001	Middle (no alternatives)	30
Women	The number of doctor's degrees awarded to women is a linear function of part-time graduate enrollment, time, and the 35- to 44-year-old population This relationship will continue through 2000–2001	Middle (no alternatives)	30
First professional degrees			
Men	The number of first-professional degrees awarded to men is a linear function of full-time first-professional enrollment lagged 1 year This relationship will continue through 2000–2001	Middle (no alternatives)	31
Women	The number of first-professional degrees awarded to women is a linear fuction of full-time first-professional enrollment lagged 1 year and part-time first-professional enrollment lagged 3 years. This This relationship will continue through 2000–2001	Middle (no alternatives)	31

A4. Classroom Teachers

Public Classroom Teachers

Public elementary and secondary classroom teachers were projected using a similar model as was used in *Projections of Education Statistics to 2000*, only the coefficients were re-estimated. The number of public school teachers was projected separately for the elementary and secondary levels. The elementary teachers were modeled as a function of per capita income (lagged 2 years), local education revenue receipts from State sources per capita, and elementary enrollment. Secondary teachers were modeled as a function of per capita income (lagged 2 years), local education revenue receipts from State sources per capita (lagged 3 years), and secondary enrollment. Both per capita income and local education revenue receipts from State sources were in constant 1988–89 dollars.

This model is based on suggestions in the National Academy of Sciences report: *Toward Understanding Teacher Supply and Demand. Priorities for Research and Development. Interim Report.* National Academy Press. The equations in this section should be viewed as forecasting rather than structural equations, as the limitations of time and available data precluded the building of a large-scale, structural teacher model. The particular equations shown were selected on the basis of their statistical properties, such as coefficients of determination (R^2's), the t statistics of the coefficients, the Durbin-Watson statistic, and residual plots.

The multiple regression technique used yields good projections only if the relationships that existed among the variables in the past continue throughout the projection period.

The public elementary classroom teacher model is:

$$ELTCH = b_0 + b_1PCI + b_2SGRANT + b_3ELENR$$

where:

ELTCH is the number of public elementary classroom teachers.

PCI is disposable income per capita in 1988-89 dollars, lagged 2 years;

SGRANT is local education revenue receipts from State governments per capita in 1988-89 dollars; and

ELENR is the number of students enrolled in public elementary schools.

Each variable affects the number of teachers in the expected way. As people receive more income, the State spends more money on education, and as enrollment increases, the number of elementary teachers hired increases.

The public secondary classroom teacher model is:

$$SCTCH = b_0 + b_1PCI + b_2SGRANT3 + b_3SCENR$$

where:

SCTCH is the number of public secondary classroom teachers;

PCI is disposable income per capita in 1988-89 dollars, lagged 2 years;

SGRANT3 is local education revenue receipts from State governments per capita in 1988-89 dollars, lagged 3 years, and;

SCENR is the number of students enrolled in public secondary schools.

Each variable affects the number of teachers in the expected way. As people receive more income, the State spends more money on education, and as enrollment increases, the number of secondary teachers hired increases.

Table A-4.1 summarizes the results for the elementary and secondary public teacher models.

Enrollment is by organizational level, not by grade level. Thus, secondary enrollment is not equal to grade 9–12 enrollment. This is because some States count some grade 7 and 8 enrollment as secondary. The distribution of the number of teachers is by organizational level, not by grade span.

Private Classroom Teachers

Projections of private classroom teachers were derived in the following manner. For 1989, the ratio of private school teachers to public school teachers was calculated by organization level. These 1989 ratios were held constant over the projection period. The ratios were then applied to projections of public school teachers by organizational level to yield projections of private school teachers. This method assumes that the future pattern in the trend of private school teachers will be the same for public school teachers. The reader is cautioned that a number of factors could alter the assumption of constant ratios over the projection period.

The total number of public school teachers, enrollment by organizational level, and local education revenue receipts from State sources used in these projections were from the Common Core of Data (CCD) survey conducted by NCES. The proportion of teachers by organizational level was from the National Education Association and then applied to the total number of teachers from CCD to produce the number of teachers by organizational level. The number of private classroom teachers was obtained from "Key Statistics for Private Elementary and Secondary Education: School Year 1989–90", *Early Estimates*.

Disposable income and population were obtained from the Data Resources, Inc., report "Offline U.S. Economic Service: Long-term Option."

Projection Accuracy

An analysis of projection errors from past editions of *Projections of Education Statistics* indicates that the mean absolute percentage errors (MAPEs) for classroom teachers in public elementary and secondary schools were 0.8 percent for 1 year ahead, 1.5 percent for 2 years ahead, and 3.0 percent for 5 years ahead. For the 2-year-ahead prediction, this means that one would expect the projection to be within 1.5 percent of the actual value, on the average.

Demand for New-Hiring of Classroom Teachers

Projections of the demand for new-hiring of classroom teachers were calculated separately for the elementary and secondary levels by control of institution. These were then added together to obtain the total demand for new-hiring of elementary and secondary classroom teachers. For each level and control of institution, the demand for new-hiring of teachers is decomposed into three parts: that due to turnover; that due to enrollment changes; and that due to other factors. The following equations provide the details of the calculations:

$$NH_t = NT_t + NE_t + NO_t$$

$$NT_t = TC_{t-1} * TN$$

$$NE_t = (EN_t - EN_{t-1})/(PT_{t-1})$$

$$NO_t = (TC_t - TC_{t-1}) - NE_t$$

where:

t = Subscript denoting time

EN_t = Enrollment

TC_t = Number of classroom teachers

NH_t = Total demand for new-hiring of teachers

NT_t = Number of new hires needed for turnover

NE_t = Number of new hires needed for enrollment changes

NO_t = Number of new hires needed for other reasons

PT_t = Pupil-teacher ratio

TN = Turnover rate

The data upon which the turnover rates were based were obtained from unpublished tables of the Bureau of Labor Statistics. Using the rates for 1983-84 (4.9 percent for public elementary teachers and 5.6 percent for public secondary teachers) as a basis, three alternatives were calculated (table A-4.2). The middle alternative assumes that the overall turnover rate will increase as fast as the retirement rate. The low alternative assumes that the overall turnover rate will increase half as fast as the retirement rate. The high alternative assumes that the overall turnover rate will increase twice as fast as the retirement rate.

The retirement rates were constructed by assuming that all those aged 50 or over in 1985 would retire at age 65 by the year 2001. It was further assumed that none of those 50 or older would die before retiring, and that those entering teaching from non-teaching status were younger than 50. The 5-year age groups were

disaggregated into single-year ages using linear regression. The retirement rates were then calculated using the appropriate years of projected teacher data.

Turnover data for public school teachers from the Schools and Staffing Survey released in 1990 indicate that the turnover rate in 1987 for public elementary school teachers was 4.2 percent and 4.0 percent for public secondary school teachers. When more data become available from future surveys of schools and staff, new projections of teacher turnover rates will be developed to reflect changes in teacher turnover rates over time.

Table A–4.1.—Equations for public elementary and secondary classroom teachers: 1960 to 1988

Regression equation	R^2	Durbin-Watson statistic*	Regression technique
Elementary ELTCH = -14 8 + 0.037PCI89 + 0.96SGRANT + 0.018ELENR (4 4) (4.3) (5 4)	0.99	1.2	Ordinary least squares
Secondary SCTCH = -174 9 + 0 031PCI89 + 0.52SGRANT3 + 0 037SCENR (4.2) (2.4) (18.3)	0.99	0.77	Ordinary least squares

R^2 = Coefficient of determination

*For an explanation of the Durbin-Watson statistic, see J. Johnston, *Econometrics Methods*, New York: McGraw Hill, 1972, pages 251–252.

Where:

ELTCH = Number of public elementary classroom teachers
SCTCH = Number of public secondary classroom teachers
PCI89 = Disposable income per capita in 1989 dollars lagged 2 years
SGRANT = Local education revenue receipts from State governments
SGRANT3 = Local education revenue receipts from State governments lagged 3 years
ELENR = Number of students enrolled in public elementary schools
SCENR = Number of students enrolled in public secondary schools

NOTE: The numbers in parentheses refer to the value of the t statistics.

Table A–4.2.—Alternative turnover rate assumptions, by organizational level, with alternative projections: 1989 to 2001

Year	Elementary			Secondary		
	Low	Middle	high	Low	Middle	high
1989*	5.3	5.5	5 9	6.7	6.9	7 4
				Projected		
1990	5.4	5 6	6 1	6 7	7 0	7 7
1991	5.4	5.7	6 3	6 8	7 2	7 9
1992	5.5	5.8	6.5	6 8	7 3	8.1
1993	5.5	5.9	6.7	6.9	7 4	8 3
1994	5.5	6.0	6 9	6.9	7 5	8 5
1995	5.6	6.1	7.0	7 0	7.6	8.7
1996	5.6	6.2	7.2	7.0	7.6	8.9
1997	5.7	6.2	7.4	7 1	7.7	9.1
1998	5.7	6.3	7.6	7.1	7.8	9.2
1999	5.8	6.4	7 7	7.2	7.9	9 4
2000	5.8	6.4	7.9	7 2	8.0	9.6
2001	5.8	6.4	7.9	7 2	8 0	9 6

*Estimated.

NOTE: This table was prepared April 1990.

A5. Expenditures of Public Elementary and Secondary Schools

Econometric techniques were used to produce the projections for current expenditures and average teacher salaries. The equations in this chapter should be viewed as forecasting, rather than structural equations. The limitations of time and available data precluded the building of large-scale, structural models. The particular equations shown were selected on the basis of their statistical properties, such as coefficients of determination (R^2's), the t-statistics of the variables, the Durbin-Watson statistic, and residual plots.

The multiple regression technique used yields good forecasting results only if the relationships that existed among the variables in the past continue throughout the projection period.

The Elementary and Secondary School Current Expenditure Model

Economists and other researchers have progressed in developing a model of the demand for elementary and secondary school current expenditures. In most instances, researchers have used cross-sectional data. The Elementary and Secondary School Current Expenditure Model builds on the knowledge gained from these cross-sectional studies and adapts them for use in a time series study.

The Elementary and Secondary School Current Expenditure Model is:

$$\ln(CUREXP) = b_0 + b_1\ln(PCI) + b_2\ln(SGRANT) + b_3\ln(ADAPOP)$$

where:

ln indicates the natural log;

CUREXP equals current expenditures of public elementary and secondary schools per pupil in average daily attendance (ADA) in constant school year 1988–89 dollars;

PCI equals disposable income per capita in constant 1988–89 dollars;

SGRANT equals local governments' education revenue receipts from State governments per capita in constant 1988–89 dollars; and

ADAPOP equals the ratio of average daily attendance to the population.

The model was estimated using the ordinary least squares option of the econometric package Regression Analysis of Time Series (RATS) using a sample period from 1959–60 to 1988–89. All variables were placed in log form as the test statistics were superior for that form and there is some evidence from the cross-sectional studies that the log form is superior. Further, Box-Cox tests to test for functional form were conducted, and the hypothesis that the log-linear form is correct could not be rejected.

The results for the model are on table A–5.1. Each variable affects current expenditures in the direction that would be expected. As people receive more income, either directly (PCI) or from the State government (SGRANT), the level of spending increases. As the number of pupils increases relative to the population (that is, as ADAPOP increases), the level of spending per pupil falls.

From the cross-sectional studies of the demand for education expenditures, we have a rough idea how sensitive current expenditures are to changes in PCI and ADAPOP. We can compare the results from this model to those from the cross-sectional studies. For this model, an increase in disposable income per capita of 1 percent, with SGRANT and ADAPOP held constant, would result in an increase of current expenditures per pupil in ADA of approximately 0.45 percent. Holding PCI and SGRANT constant, an increase of 1 percent in the ratio of average daily attendance to the population would result in a decrease in current expenditures per pupil in ADA of approximately 0.42 percent. Both numbers are well within the range of what has been found in other studies.

The confidence intervals for current expenditures per pupil were produced using the equation (4.48) of D. Montgomery, and Peck, *Introduction to Linear Regression Analysis*, New York: John Wiley and Sons, 1982, page 141. The 95 percent confidence interval can be viewed as showing for each year the interval in which it is 95 percent certain that current expenditures will fall within if the assumptions behind the projection occur.

Projections for total current expenditures were made by multiplying the projections for current expenditures per pupil in ADA by projections for the ADA. The projections were divided by projections for fall

enrollment to produce projections of current expenditures per pupil in fall enrollment. Current-dollar projections were produced by multiplying the constant-dollar projections by projections for the consumer price index.

Four alternative projections for current expenditures are presented: the middle-high alternative projection, the low alternative projection, the middle-low alternative projection, and the high alternative projection. Each alternative projection differs because of varying assumptions about the growth paths for disposable income and revenue receipts from State sources.

For the middle-high alternative projection, the projections for disposable income are from Data Resources, Inc.'s (DRI's) trend scenario. The trend scenario shows the economy following a pattern of smooth growth with actual output approximately paralleling the path of potential output. In this scenario, disposable income per capita rises each year from 1989–90 to 2000–2001 at rates between 0.2 and 2.2 percent. Revenue receipts from State sources are assumed to increase at a constant rate of 3.1 percent, the average of the last 3 years' growth rates.

For the low alternative projection, the projections for disposable income are from DRI's pessimistic scenario. In the pessimistic scenario growth is lower with the change in disposable income per capita ranging between 0.1 and 1.9 percent. Revenue receipts from State sources are assumed to increase at a rate equal to the growth rate of State and local purchase of goods and services as forecasted by Data Resources. As education spending's share of all State and local governments' expenditures has been steadily increasing, this may be an underestimate.

In the middle-low alternative projection, the projections for disposable income are again from the trend scenario. Revenue receipts are assumed to increase at the same rate as from 1987–88 to 1988–89, 2.1 percent.

For the high alternative projection, the projections for disposable income per capita are from DRI's optimistic scenario. In this scenario, the labor force, capital stock, and exogenous technical change grow at a faster rate, so there is greater growth. In this scenario, disposable income per capita rises each year from 1989–90 to 2000–2001 at rates between 0.9 and 2.2 percent. Revenue receipts from State sources are assumed to increase at a constant rate of 4.6 percent, the average of the last 5 years' growth rates. As the past 5 years, especially the first 2 in that period, were years of very rapid growth, it would seem unlikely, though not impossible, that this growth rate would continue.

This is the third consecutive year in which the *Projections of Education Statistics* has contained projections of current expenditures. The projections presented in the *Projections of Education Statistics to 1997–98* were produced by a slightly different model than those presented in this publication, as calendar year data, rather than school year data, were used for disposable income, the population, and the consumer price index. The same independent variables were used in the *Projections of Education Statistics to 2000* as in this publication. When placed in 1988–89 dollars, the 1 year out forecast for current expenditures which appeared in the *Projections of Education Statistics to 1997–98*, which is for the year 1987–88, was 0.8 percent high (using the middle alternative scenario). The 1 year out forecast for current expenditures per pupil in average daily attendance was 0.1 percent higher than the actual value. The 1987–89 early estimate can be used to make a comparison with the 2 year out forecast presented in the *Projections of Education Statistics to 1997–98* and the 1 year out presented in the *Projections of Education Statistics to 2000*. The projection for 1988–89 for current expenditures which appeared in the *Projections of Education Statistics to 1997–98* is 0.5 percent higher than the early estimate and the projection from *Projections of Education Statistics to 2000* is within 0.1 percent. When placed in per pupil terms using average daily attendance, the projection from *Projections of Education Statistics to 1997–98* is within 0.1 percent of the early estimate and the projection from *Projections of Education Statistics to 2000* is 0.3 percent high.

The Elementary and Secondary Teacher Salary Model

As with current expenditures, most studies conducted on teacher salaries have used cross-sectional data. Unlike current expenditures, however, the models from these existing cross-sectional studies cannot be easily reformulated for use with time-series data. One reason is that we have no data on the supply of teachers. Hence, the elementary and secondary salary model contains terms which measure the demand for teachers in the economy.

The Elementary and Secondary Teacher Salary Model is:

$$SALARY = b_0 + b_1 CUREXP + b_2 ADAPOP + b_3 DIFADA1 + b_4 DIFADA2$$

where:

SALARY equals the average annual salary of teachers in public elementary and secondary schools

in constant 1988–89 dollars;

CUREXP equals current expenditures of public elementary and secondary schools per pupil in average daily attendance in constant 1988–89 dollars;

ADAPOP equals the ratio of average daily attendance to the population;

DIFADA1 equals the change in average daily attendance lagged 1 period; and

DIFADA2 equals the change in average daily attendance lagged 2 periods.

The model was estimated using the period from 1959–60 to 1988–89 as a sample period. To estimate the Elementary and Secondary Teacher Salary model, a method for correcting for autocorrelation, the maximum likelihood search procedure of the program RATS was used. This was done as the test statistics were significantly better than those from the OLS estimations and the Durbin-Watson statistic was in the inconclusive region when the model was estimated using OLS. The Durbin-Watson statistic however is still in the inconclusive range suggesting that there is still a problem with autocorrelation.

The results for this model are also on table A–5.1.

There is no literature for comparing the sizes of the coefficients. However, the direction of the impact each variable has on salaries is as expected: As the level of spending per pupil increases (higher CUREXP), more teachers can be hired, so demand for teachers increases and salaries increase; as the number of students increases (higher ADAPOP, DIFADA1 and DIFADA2), demand for teachers increases, so salaries increase.

As this model was calculated using a different technique than the current expenditures model, a different method for calculating confidence intervals was required. In this case, the confidence limits were calculated using equation (8.3.14) of G. Judge, Griffiths, Hill, Lutkepohl, and Lee, *The Theory and Practice of Econometrics*, New York: John Wiley and Sons, 1985, page 318.

As with current expenditures, four different scenarios are presented for teacher salaries. The same projections for ADAPOP, DIFADA1, and DIFADA2 are used with each alternative projection; the sole difference comes for the projection for current expenditures. The middle-high alternative projection for salaries uses the middle-high alternative projection for current expenditures. The low alternative projection for salaries uses the low alternative projection for current expenditures. The middle-low alternative projection for salaries uses the middle-low alternative projection for current expenditures. The high alternative projection for salaries uses the high alternative projection for current expenditures.

Projections for teacher salaries appeared in the two previous editions of the *Projections of Education Statistics*. The same independent variables were used in producing the projections of teacher salaries presented in the earlier editions as in this edition. One difference however is that the consumer price index and the population were in calendar year, not school year, terms. The projection of teacher salaries for 1987–88 (using the middle alternative projection) coming from the *Projections of Education Statistics to 1997–98* was 2.5 percent above the actual value high and the projection for 1988–89 was 3.9 high. The projection for 1988–89 from the *Projections of Education Statistics to 2000* is 1.0 high.

Current expenditures, average teacher salaries, and the number of teachers are interrelated. Hence, two exercises were conducted to see if the projections of these three time series are consistent.

For every school year from 1974–75 until 2000–2001 (using the middle-high alternative projection), the number of teachers was multiplied by the average salary. This was divided by current expenditures. The resulting ratio shows the portion of current expenditures that go towards teacher salaries. The values for the projection period were all within the range of the values for the historical period.

Second, for each year in the projection period, the number of teachers was multiplied by the average salary. This result was divided by the 1988–89 share of current expenditures going to teacher salaries to find an estimate of current expenditures. Each number in this series was divided by its counterpart in the average daily attendance time series to find a time series for current expenditures per pupil in average daily attendance. This imputed time series was compared with the projected series for current expenditures per pupil in average daily attendance. For every year, this imputed series was well within the 95 percent confidence interval.

The results of these exercises indicate that the projections of these three time series are consistent.

Sources of Past and Projected Data

Numbers from different sources were used to produce these projections. In some instances, the time series used were made by either combining numbers from various sources or manipulating the available numbers. The sources and the methods of manipulation are described here.

The time series used for current expenditures was compiled from several different sources. For the school

years ending in even numbers from 1959–60 to 1975–76, the numbers for current expenditures were from various issues of the *Statistics of State School Systems* published by the National Center for Education Statistics (NCES). The numbers for the school years ending in odd numbers during the 1960s were from various issues of the National Education Association's (NEA) *Estimates of School Statistics*. For the school years ending in odd numbers during the 1970s up to and including 1976–77, the numbers were from various issues of the *Revenues and Expenditures for Public Elementary and Secondary Education* published by NCES. From 1977–78 until 1987–88, the numbers were from the NCES Common Core of Data survey and unpublished data. The number for 1988–89 is from the NCES early estimates system.

For 1974–75, and 1976–77, expenditures for summer schools were subtracted from the published figure for current expenditures. The value for 1972–73 is the sum of current expenditures at the local level, State administration, and local administration.

Note that while the data from the different sources are similar, they are not entirely consistent. Also, the NCES numbers beginning with 1980–81 are not entirely consistent with the earlier NCES numbers.

With two exceptions, the sources for the past values of average daily attendance (ADA) were identical to the sources for current expenditures. For 1978–79, the number was from the *Revenues and Expenditures for Public Elementary and Secondary Education*. The number for 1988–89 is from the NEA's *Estimates of School Statistics*.

Projections for ADA were made by multiplying the projections for enrollment by the average value of the ratios of the ADA to the enrollment from 1979–80 to 1988–89, approximately 0.93.

The values of fall enrollment from 1959–60 to 1977–78 were from issues of the NCES publication *Statistics of Public Elementary and Secondary Schools*. The 1978–79 value was from the *NCES Bulletin* of October 23, 1979, "Selected Public and Private Elementary and Secondary Education Statistics." The values from 1979–80 to 1988–89 are from the NCES Common Core of Data survey. The number for 1989–90 is from the NCES early estimate system. The projections for fall enrollment are those describe earlier in this publication.

For 1959–60 to 1987–88, the sources for revenue receipts from State sources were the two NCES publications, *Statistics of State School Systems and Revenues and Expenditures for Public Elementary and Secondary Education*, and the NCES Common Core of Data survey. The value for 1988–89 was determined by taking the values for revenue receipts for 1987–88, and 1988–89 from the NEA, *Estimates of School Statistics*, calculating the growth rate for total revenue receipts in constant 1988–89 dollars, approximately 2.1 percent, and applying that growth rate to NCES's 1988–89 number. The methods for producing the different alternative projections for revenue receipts from State sources are outlined above.

The numbers for average teacher salaries were from various issues of NEA's *Estimates of School Statistics*.

Both the past values and the projected values for the population and disposable income per capita were from Data Resources, Inc.'s "Off-line U.S. Economic Service: Long-term Option." The Consumer Price Index (CPI) for all urban consumers, which was used for adjusting current expenditures, teacher salaries, and revenue receipts from State sources, and the implicit price deflator for personal consumption expenditures, which was used for adjusting disposable income per capita, were also from Data Resources, Inc (DRI). The projected values for all the variables, except disposable income, are from DRI's trend scenario.

The values of the four variables from DRI—population, disposable income, the CPI, and the price deflator for personal consumption expenditures—were all placed in school-year terms. All the data except for the projections of disposable income from the pessimistic and optimistic scenarios were available in quarterly format. In those cases, the school-year numbers were calculated by taking the average of the last two quarters of 1 year with the first two of the next year. To calculate the values for disposable income from the pessimistic and optimistic scenarios, 2-year averages of the calendar year values were taken.

The forecasts for four variables from DRI extended only to 1999–2000. The values for 2000–2001 were produced by applying the growth rates from 1998–99 to 1999–2000 on the 1999–2000 numbers.

Table A–5.1—Equations for current expenditures per pupil in average daily attendance and average annual salaries of teachers in public elementary and secondary schools

Dependent variable	Equation[1]	$\bar{R}^2$	Durbin-Watson statistic[2]	Estimation technique	Rho
Current expenditures per pupil	ln(CUREXP) = - 0.771 + 0.445ln(PCI) + 0.702ln(SGRANT) (-0 60) (1 94) (5 64) - 0.416ln(ADAPOP) (-4 00)	.996	1.401	OLS[3]	
Average annual salaries	SALARY = - 8386 + 4.65CUREXP + 111543ADAPOP (-4 70) (24.14) (14 72) + .00089 DIFADA1 + 0.00052DIFADA2 (5.58) (3.34)	.990	1.605	AR1[4]	0.572 (3 20)

[1]The sample size in each case is 30.

[2]For an explanation of the Durbin-Watson statistics, see J. Johnson, *Econometric Methods*, New York: McGraw Hill, 1972, pages 251–52

[3]OLS equals Ordinary Least Squares.

[4]AR1 is an estimation procedure for correcting the problem of first order autocorrelation Specifically, the maximum likelihood procedure of the econometrics program RATS was used to estimate rho. For a general discussion of the problem of autocorrelation, and the methods to correct it, see Johnston (1972), Chapter 8 For a discussion of the method used to forecast in the presence of autocorrelation, see G Judge, W. Hill, R Griffiths, H Lutkepohl, and T. Lee, *The Theory and Practice of Econometrics*, New York. John Wiley and Sons, 1985, pages 315–18

NOTE: Numbers in parentheses are t-statistics
(This table was prepared May 1990.)

Appendix B

Supplementary Tables

Table B1.—Annual number of births (U.S. Census Projections, Middle Series): 50 States and D.C., 1946 to 2001

(In thousands)

Calendar year	Number of births
1946	3,426
1947	3,834
1948	3,655
1949	3,667
1950	3,645
1951	3,845
1952	3,933
1953	3,989
1954	4,102
1955	4,128
1956	4,244
1957	4,332
1958	4,279
1959	4,313
1960	4,307
1961	4,317
1962	4,213
1963	4,142
1964	4,070
1965	3,801
1966	3,642
1967	3,555
1968	3,535
1969	3,626
1970	3,739
1971	3,556
1972	3,258
1973	3,137
1974	3,160
1975	3,144
1976	3,168
1977	3,327
1978	3,332
1979	3,494
1980	3,612
1981	3,629
1982	3,681
1983	3,639
1984	3,669
1985	3,761
1986	3,757
1987	3,829
1988	3,908
1989 *	3,757
Projected	
1990	3,731
1991	3,690
1992	3,646
1993	3,601
1994	3,558
1995	3,517
1996	3,481
1997	3,449
1998	3,424
1999	3,404
2000	3,389
2001	3,380

*Projected

SOURCE: U.S. Department of Commerce, Bureau of the Census, "United States Population Estimates, by Age, Sex, Race, and Hispanic Orgin 1980 to 1988," *Current Population Reports*, Series P-25, No. 1045, January 1990, and "Projections of the Population of the United States, by Age, Sex, and Race 1988 to 2080," *Current Population Reports*, Series P-25, No. 1018, January 1989.

Table B2.—Preprimary school-age populations (U.S. Census Projections, Middle Series): 50 States and D.C., 1976 to 2001

(In thousands)

Year (July 1)	3 years old	4 years old	5 years old	3–5 years old
1976	3,101		3,634	10,071
1977	3,035	[illegible]	3,334	9,524
1978	3,117	3,091	3,156	9,364
1979	3,077	3,175	3,092	9,344
1980	3,240	3,129	3,181	9,550
1981	3,270	3,281	3,135	9,686
1982	3,378	3,311	3,285	9,974
1983	3,505	3,419	3,313	10,237
1984	3,562	3,545	3,421	10,529
1985	3,608	3,604	3,548	10,760
1986	3,625	3,650	3,605	10,880
1987	3,560	3,668	3,651	10,879
1988	3,678	3,604	3,671	10,953
1989*	3,677	3,736	3,604	11,017
		Projected		
1990	3,682	3,719	3,736	11,137
1991	3,693	3,725	3,719	11,137
1992	3,704	3,735	3,724	11,163
1993	3,690	3,746	3,734	11,170
1994	3,654	3,731	3,745	11,130
1995	3,610	3,696	3,730	11,036
1996	3,566	3,651	3,694	10,911
1997	3,523	3,607	3,649	10,779
1998	3,481	3,563	3,605	10,649
1999	3,444	3,521	3,561	10,526
2000	3,410	3,483	3,519	10,412
2001	3,382	3,449	3,481	10,312

*Projected.

SOURCE: U.S Department of Commerce, Bureau of the Census, "United States Population Estimates, by Age, Sex, Race, and Hispanic Origin: 1980 to 1988," *Current Population Reports*, Series P-25, No. 1045, January 1990, and "Projections of the Population of the United States, by Age, Sex, and Race: 1988 to 2080," *Current Population Reports*, Series P-25, No. 1018, January 1989.

Table B5.—School-age populations (U.S. Census Projections, Middle Series), ages 5, 6, 5–13, and 14–17 years: 50 States and D.C., 1976 to 2001

(In thousands)

Year (July 1)	5 years old	6 years old	5–13 years old	14–17 years old
1976	3,634	3,560	33,516	17,119
1977	3,334	3,644	32,855	17,045
1978	3,156	3,343	32,094	16,946
1979	3,092	3,164	31,431	16,611
1980	3,181	3,112	31,095	16,142
1981	3,135	3,192	30,754	15,599
1982	3,285	3,144	30,614	15,041
1983	3,313	3,293	30,410	14,720
1984	3,421	3,321	30,238	14,704
1985	3,548	3,428	30,110	14,865
1986	3,605	3,555	30,351	14,797
1987	3,651	3,612	30,824	14,468
1988	3,671	3,660	31,406	13,983
1989*	3,604	3,674	31,793	13,476
Projected				
1990	3,736	3,609	32,393	13,237
1991	3,719	3,741	32,827	13,334
1992	3,724	3,724	33,243	13,538
1993	3,734	3,729	33,549	13,774
1994	3,745	3,739	33,738	14,187
1995	3,730	3,750	33,864	14,510
1996	3,694	3,734	33,898	14,846
1997	3,649	3,698	33,871	15,090
1998	3,605	3,653	33,870	15,141
1999	3,561	3,609	33,690	15,269
2000	3,410	3,483	33,483	15,332
2001	3,481	3,523	33,236	15,382

*Projected.

SOURCE: U.S. Department of Commerce, Bureau of the Census, "United States Population Estimates, by Age, Sex, Race, Hispanic Origin: 1980 to 1988," *Current Population Reports*, Series P-25, No 1045, January 1990, and "Projections of the Population of the United States, by Age, Sex, and Race: 1988 to 2080," *Current Population Reports*, Series P-25, No. 1018, January 1989.

Table B4.—College-age populations (U.S. Census Projections, Middle Series), ages 18, 18–24, 25–29, 30–34, and 35–44 years: 50 States and D.C., 1976 to 2001

(In thousands)

Year (July 1)	18 years old	18–24 years old	25–29 years old	30–34 years old	35–44 years old
1976	4,266	28,645	18,274	14,485	23,093
1977	4,257	29,174	18,277	15,721	22,563
1978	4,247	29,622	18,683	16,280	24,437
1979	4,316	30,048	19,178	17,025	25,176
1980	4,243	30,350	19,804	17,822	25,868
1981	4,175	30,428	20,306	18,853	26,460
1982	4,115	30,283	20,865	18,876	28,115
1983	3,946	29,943	21,321	19,281	29,369
1984	3,734	29,391	21,661	19,769	30,619
1985	3,634	28,749	21,892	20,346	31,839
1986	3,562	27,968	22,132	20,847	33,145
1987	3,632	27,334	22,106	21,409	34,382
1988	3,718	26,888	22,008	21,878	35,343
1989*	3,791	26,591	21,830	22,194	36,548
			Projected		
1990	3,491	26,140	21,511	22,414	37,897
1991	3,307	25,700	20,910	22,642	39,361
1992	3,230	25,271	20,300	22,613	39,927
1993	3,304	24,992	19,688	22,497	40,764
1994	3,253	24,601	19,204	22,321	41,561
1995	3,400	24,281	18,966	21,996	42,336
1996	3,426	23,915	19,004	21,384	43,036
1997	3,533	23,954	18,836	20,766	43,546
1998	3,657	24,301	18,564	20,147	43,873
1999	3,712	24,783	18,148	19,658	44,022
2000	3,756	25,231	17,736	19,413	43,911
2001	3,772	25,747	17,188	19,451	43,527

*Projected

SOURCE: U.S. Department of Commerce, Bureau of the Census, "United States Population Estimates, by Age, Sex, Race and Hispanic origin: 1980 to 1988," *Current Population Reports*, Series P-25, No. 1045, January 1990, and "Projections of the Population of the United States, by Age, Sex, and Race 1988 to 2080," *Current Population Reports*, Series P-25, No. 1018, January 1989.

Table B5.—Average daily attendance in public elementary and secondary schools, the change in average daily attendance, the population, and average daily attendance to the population: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Average daily attendance[1] (in thousands)	Change in average daily attendance	Population (in millions)	Ratio of average daily attendance to the population
1976	41.270	-254.280	217.1	0.190
1977	40,832	-437.720	219.3	0 186
1978	40.080	-752,410	221.5	0 181
1979	39.076	-1.003.590	223.9	0.174
1980	38.289	-787.089	226.5	0.169
1981	37.704	-585.167	229.1	0 165
1982	37.095	-609,092	231.5	0 160
1983	36.636	-458.784	233.8	0.157
1984	36,363	-272.890	236.0	0.154
1985	36.404	4 .283	238.3	0 153
1986	36.523	118.842	240.6	0.152
1987	36.864	340.764	242 9	0 152
1988	37.051	186.840	245.3	0.151
1989	37.241	190.128	247 7	0.150
1990[3]	37.583	341.700	250 0	0.150
		Projected		
1991	37.761	178.621	252 1	0.150
1992	38.303	542.341	254 2	0 151
1993	38.868	564.552	256.2	0.152
1994	39.428	559.925	258 1	0 153
1995	39.994	566.403	259.9	0 154
1996	40.428	433.132	261.7	0.154
1997	40.772	344.284	263.4	0 155
1998	40.971	198.982	265.1	0.155
1999	41.017	46.275	266.7	0.154
2000	40.999	-18.510	268 2	0.153
2001	40.894	-104.581	269.8	0.152

[1]Projections of average daily attendance were made by multiplying the forecasts for enrollment reported earlier in this publication by the average value of the ratio average daily attendance to the enrollment from 1980 to 1989, approximately 92.

[2]Average daily attendance is from the National Education Association

[3]Projected.

SOURCE: U.S. Department of Education. National Center for Education Statistics. *Statistics of State School Systems. Revenues and Expenditures for Public Elementary and Secondary Education*; Common Core of Data survey; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*; Data Resources, Inc., "Off-line U.S. Economic Service: Long-term Option," and National Education Association, annual *Estimates of State School Statistics*. (Latest edition 1988–89. Copyright © 1989 by the National Education Association. All rights reserved.) (This table was prepared April 1990.)

Table B6.—Disposable income per capita (constant 1988–89 dollars[1]), with alternative projections: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Disposable income per capita		
1976	$11,531	—	—
1977	11,771	—	—
1978	12,192	—	—
1979	12,313	—	—
1980	12,422	—	—
1981	12,403	—	—
1982	12,411	—	—
1983	12,448	—	—
1984	12,994	—	—
1985	13,429	—	—
1986	13,707	—	—
1987	13,876	—	—
1988	14,189	—	—
1989	14,672	—	—
1990[2]	14,994	$14,953	$14,990
	Trend alternative projections	**Pessimistic alternative projections**	**Optimistic alternative projections**
1991	15,021	15,018	15,129
1992	15,236	15,030	15,299
1993	15,325	15,085	15,500
1994	15,417	15,295	15,739
1995	15,600	15,475	15,994
1996	15,827	15,562	16,211
1997	16,007	15,631	16,388
1998	16,187	15,720	16,588
1999	16,384	15,845	16,843
2000	16,563	15,989	17,131
2001	16,744	16,135	17,423

[1]Based on the price deflator for personal consumption expenditures, Bureau of Labor Statistics, U S Department of Labor

[2]Projected.

SOURCE: Data Resources, Inc, "Off-line U.S. Economic Service. Long-term Option." (This table prepared April 1990.)

Table B7.—Education revenue receipts from State sources per capita (constant 1988–89 dollars[1]), with alternative projections: 50 States and D.C. 1975–76 to 2000–2001

Year ending	Education revenue receipts from State sources per capita			
1976	$320	—	—	—
1977	308	—	—	—
1978	306	—	—	—
1979	317	—	—	—
1980	313	—	—	—
1981	307	—	—	—
1982	292	—	—	—
1983	297	—	—	—
1984	304	—	—	—
1985	323	—	—	—
1986	341	—	—	—
1987	353	—	—	—
1988	359	—	—	—
1989[2]	362	—	—	—
1990[3]	366	$370	$365	$376
	Middle-high alternative projections	**Low alternative projections**	**Middle-low alternative projections**	**High alternative projections**
1991	378	365	371	389
1992	387	365	376	404
1993	395	366	380	419
1994	404	369	385	435
1995	414	372	391	452
1996	424	376	396	470
1997	434	380	402	488
1998	444	385	407	508
1999	455	388	413	528
2000	467	392	420	549
2001	478	396	426	571

[1]Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U S Department of Labor.

[2]The value for revenue receipts was determined by using the growth rates from the values reported by the National Education Association

[3]Projected

SOURCE: U S Department of Education, National Center for Education Statistics, *Statistics of State School Systems, Revenues and Expenditures for Public Elementary and Secondary Education*; Common Core of Data survey; and "Key Statistics for Public Elementary and Secondary Education School Year 1989–90," *Early Estimates*, and National Education Association, annual *Estimates of State School Statistics* (Latest edition 1988–89. Copyright © 1989 by the National Education Association All rights reserved.) (This table was prepared April 1990.)

Table B8.—Consumer Price Index (base year = 1988–89), the price deflator for personal consumption expenditures (base year = 1988–89): 50 States and D.C., 1975–76 to 2000–2001

Year ending	Consumer price price index (base year = 1988–89)	Price deflator for personal consumption expenditures (base year = 1988–89)
1976	0.457	0.479
1977	0.484	0.507
1978	0.516	0.541
1979	0.565	0.586
1980	0.640	0.646
1981	0.714	0.713
1982	0.776	0.766
1983	0.809	0.802
1984	0.839	0.834
1985	0.872	0.862
1986	0.898	0.887
1987	0.918	0.917
1988	0.956	0.959
1989	1.000	1.000
1990*	1.043	1.040
	Projected	
1991	1.088	1.087
1992	1.142	1.141
1993	1.200	1.201
1994	1.260	1.260
1995	1.325	1.326
1996	1.396	1.398
1997	1.471	1.474
1998	1.550	1.555
1999	1.633	1.640
2000	1.723	1.730
2001	1.817	1.826

*Projected.

SOURCE: Data Resources, Inc., "Off-line U.S. Economic Service: Long-term Option." (This table prepared April 1990.)

Appendix C

Tables of Statistical Confidence Limits and Standard Errors for Selected Projections

Table C1.—Total K–12[1] enrollment, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	49,484	—	—
1977	48,717	—	—
1978	47,636	—	—
1979	46,645	—	—
1980	46,249	—	—
1981	45,522	—	—
1982	45,166	—	—
1983	44,967	—	—
1984	44,908	—	—
1985	44,979	—	—
1986	45,205	—	—
1987	45,487	—	—
1988[2]	45,434	—	—
1989[2]	45,963	—	—
		Projected	
1990	46,192	45,861	46,523
1991	46,856	46,449	47,263
1992	47,546	47,074	48,018
1993	48,226	47,696	48,756
1994	48,909	48,329	49,489
1995	49,431	48,804	50,058
1996	49,843	49,171	50,515
1997	50,080	49,368	50,792
1998	50,136	49,387	50,885
1999	50,108	49,323	50,893
2000	49,976	49,155	50,797
2001	49,786	48,934	50,638

[1]Includes most kindergarten and some nursery school enrollment.
[2]Estimate.

—Not applicable.

NOTE: Some data have been revised from previously figures Projections are based on data through 1988.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; "Private Elementary and Secondary Education, 1983; Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90", *Early Estimates*; and "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; and "Key Statistics for Private Elementary and and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table C2.—Total public K–12[1] enrollment, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	44,317	—	—
1977	43,577	—	—
1978	42,550	—	—
1979	41,645	—	—
1980	40,918	—	—
1981	40,022	—	—
1982	39,566	—	—
1983	39,252	—	—
1984	39,208	—	—
1985	39,422	—	—
1986	39,753	—	—
1987	40,008	—	—
1988	40,192	—	—
1989[2]	40,608	—	—
		Projected	
1990	40,801	40,568	41,034
1991	41,387	41,057	41,717
1992	41,997	41,593	42,401
1993	42,602	42,136	43,068
1994	43,214	42,692	43,736
1995	43,682	43,111	44,253
1996	44,054	43,437	44,671
1997	44,269	43,609	44,929
1998	44,319	43,619	45,019
1999	44,299	43,561	45,037
2000	44,186	43,412	44,960
2001	44,022	43,214	44,830

[1]Includes most kindergarten and some nursery school enrollment.
[2]Estimate.

—Not applicable

NOTE: Some data have been revised from previously published figures Projections are based on data through 1988.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table C3.—Total public K–8[1] enrollment, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	30,006	—	—
1977	29,336	—	—
1978	28,528	—	—
1979	27,931	—	—
1980	27,677	—	—
1981	27,270	—	—
1982	27,158	—	—
1983	26,979	—	—
1984	26,901	—	—
1985	27,030	—	—
1986	27,419	—	—
1987	27,930	—	—
1988	28,501	—	—
1989[2]	29,147	—	—
		Projected	
1990	29,546	29,354	29,738
1991	30,006	29,734	30,278
1992	30,423	30,090	30,756
1993	30,732	30,348	31,116
1994	30,930	30,500	31,360
1995	31,061	30,591	31,531
1996	31,104	30,596	31,612
1997	31,094	30,551	31,637
1998	31,098	30,522	31,674
1999	30,939	30,332	31,546
2000	30,754	30,117	31,391
2001	30,528	29,863	31,193

[1]Includes most kindergarten and some nursery school enrollment
[2]Estimate.

—Not applicable

NOTE: Some data have been revised from previously published figures. Projections are based on data through 1988.

SOURCE: U.S. Department of Education, National Center for Education Statistics. *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics." *NCES Bulletin*, October 23, 1979; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table C4.—Total public 9–12 enrollment, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	14,311	—	—
1977	14,240	—	—
1978	14,223	—	—
1979	13,714	—	—
1980	13,242	—	—
1981	12,752	—	—
1982	12,407	—	—
1983	12,274	—	—
1984	12,308	—	—
1985	12,392	—	—
1986	12,334	—	—
1987	12,078	—	—
1988	11,692	—	—
1989*	11,461	—	—
		Projected	
1990	11,255	11,100	11,410
1991	11,381	11,162	11,600
1992	11,574	11,306	11,842
1993	11,870	11,560	12,180
1994	12,284	11,938	12,630
1995	12,621	12,242	13,000
1996	12,950	12,540	13,360
1997	13,175	12,737	13,613
1998	13,221	12,756	13,686
1999	13,360	12,870	13,850
2000	13,432	12,918	13,946
2001	13,494	12,958	14,030

*Estimate

—Not applicable

NOTE: Some data have revised from previously published figures Projections are based on data through 1988.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979, and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table C5.—Total private K–12 enrollment, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	5,167	—	—
1977	5,140	—	—
1978	5,086	—	—
1979[1]	5,000	—	—
1980	5,331	—	—
1981[1]	5,500	—	—
1982[1]	5,600	—	—
1983	5,715	—	—
1984[1]	5,700	—	—
1985	5,557	—	—
1986[1]	5,452	—	—
1987[2]	5,479	—	—
1988[2]	5,241	—	—
1989[2]	5,355	—	—
		Projected	
1990	5,391	5,157	5,625
1991	5,469	5,229	5,709
1992	5,549	5,304	5,794
1993	5,624	5,374	5,874
1994	5,695	5,439	5,951
1995	5,749	5,489	6,009
1996	5,789	5,525	6,053
1997	5,811	5,544	6,078
1998	5,817	5,548	6,086
1999	5,809	5,539	6,079
2000	5,790	5,518	6,062
2001	5,764	5,492	6,036

[1]Estimated on the basis on past data.
[2]Estimate.

—Not applicable.

NOTE Projections are based on data for 1989

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*; and "Key Statistics for Private Elementary and Secondary Education: School Year 1989–90," *Early Estimates* (This table was prepared April 1990.)

Table C6.—Total public elementary[1] enrollment, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	25,430	—	—
1977	24,954	—	—
1978	25,017	—	—
1979	24,544	—	—
1980	24,220	—	—
1981	24,074	—	—
1982	23,823	—	—
1983	23,949	—	—
1984	24,095	—	—
1985	24,229	—	—
1986	24,150	—	—
1987	24,305	—	—
1988	24,417	—	—
1989[2]	24,998	—	—
		Projected	
1990	25,303	24,233	26,373
1991	25,647	24,134	27,160
1992	25,893	24,039	27,747
1993	26,077	23,937	28,217
1994	26,201	23,808	28,594
1995	26,285	23,664	28,906
1996	26,358	23,527	29,189
1997	26,298	23,271	29,325
1998	26,224	23,014	29,434
1999	26,071	22,687	29,455
2000	25,876	22,327	29,425
2001	25,636	21,929	29,343

[1]Includes most kindergarten and some nursery school enrollment.
[2]Estimate.

—Not applicable.

NOTE. Some data have been revised from previously published figures. Projections are based on data through 1988

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table C7.—Total public secondary enrollment, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	18,887	—	—
1977	18,623	—	—
1978	17,534	—	—
1979	17,102	—	—
1980	16,698	—	—
1981	15,948	—	—
1982	15,742	—	—
1983	15,303	—	—
1984	15,113	—	—
1985	15,193	—	—
1986	15,603	—	—
1987	15,703	—	—
1988	15,775	—	—
1989*	15,610	—	—
		Projected	
1990	15,498	14,559	16,437
1991	15,740	14,412	17,068
1992	16,104	14,478	17,730
1993	16,525	14,647	18,403
1994	17,013	14,914	19,112
1995	17,397	15,097	19,697
1996	17,696	15,212	20,180
1997	17,971	15,316	20,626
1998	18,095	15,278	20,912
1999	18,228	15,259	21,197
2000	18,310	15,196	21,424
2001	18,386	15,134	21,638

*Estimate.

—Not applicable.

NOTE: Some data have been revised from previously published figures. Projections are based on data through 1988.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys, "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table C8.—High school graduates, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

(In thousands)

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	3,148	—	—
1977	3,155	—	—
1978	3,127	—	—
1979	3,117	—	—
1980	3,043	—	—
1981	3,020	—	—
1982	2,995	—	
1983	2,888	—	
1984	2,767	—	
1985	2,677	—	
1986	2,643	—	
1987	2,699	—	
1988	2,801	—	—
1989*	2,820	—	—
		Projected	
1990	2,628	2,606	2,650
1991	2,522	2,494	2,550
1992	2,517	2,483	2,551
1993	2,518	2,480	2,556
1994	2,512	2,470	2,554
1995	2,631	2,585	2,677
1996	2,670	2,620	2,720
1997	2,770	2,717	2,823
1998	2,879	2,823	2,935
1999	2,923	2,864	2,982
2000	2,966	2,904	3,028
2001	3,237	3,172	3,302

*Estimate.

—Not applicable

NOTE: Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*; "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89,"; and "Key Statistics for Private Elementary and Secondary Education: School Year 1989–90," *Early Estimates* (This table was prepared May 1990.)

Table C9.—Public high school graduates, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

(In thousands)

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	2,837	—	—
1977	2,840	—	—
1978	2,825	—	—
1979	2,817	—	—
1980	2,748	—	—
1981	2,725	—	—
1982	2,705	—	—
1983	2,598	—	-
1984	2,495	—	—
1985	2,414	—	—
1986	2,383	—	—
1987	2,434	—	—
1988	2,500	—	—
1989*	2,496	—	—
		Projected	
1990	2,326	2,291	2361
1991	2,232	2,182	2,282
1992	2,228	2,167	2,289
1993	2,229	2,158	2,300
1994	2,223	2,144	2,302
1995	2,329	2,243	2,415
1996	2,363	2,270	2,456
1997	2,452	2,352	2,552
1998	2,548	2,442	2,654
1999	2,587	2,475	2,699
2000	2,625	2,508	2,742
2001	2,865	2,743	2,987

*Estimate.

—Not applicable

NOTE: Because of rounding, details may not add to totals.

SOURCE: U S. Department of Education, National Center for Education Statistics. *Statistics of Public Elementary and Secondary Schools*: Common Core of Data surveys: "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; and "Key Statistics for Public Elementary and Secondary Education. School Year 1989–90," *Early Estimates*. (This table was prepared May 1990.)

Table C10.—Private high school graduates, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	311	—	—
1977	315	—	—
1978	302	—	—
1979	300	—	—
1980	295	—	—
1981	295	—	—
1982	290	—	—
1983	290	—	—
1984	272	—	—
1985	263	—	—
1986	260	—	—
1987	265	—	—
1988	301	—	—
1989*	324	—	—
		Projected	
1990	302	277	327
1991	290	266	314
1992	289	263	315
1993	289	264	314
1994	289	264	314
1995	302	275	329
1996	307	279	335
1997	318	289	347
1998	331	301	361
1999	336	305	367
2000	341	310	372
2001	372	338	406

*Estimate

—Not applicable.

NOTE Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Private Elementary and Secondary Education, School Year 1988–89," *Early Estimates*; and "Key Statistics for Private Elementary and Secondary Education: School Year 1989–90," *Early Estimates* (This table was prepared May 1990.)

Table C11.—Associate degrees, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	391,454	—	—
1977	406,377	—	—
1978	412,246	—	—
1979	402,702	—	—
1980	400,910	—	—
1981	416,377	—	—
1982	434,515	—	—
1983	456,441	—	—
1984	452,416	—	—
1985	454,712	—	—
1986	446,047	—	—
1987	437,137	—	—
1988	435,537	—	—
1989*	436,462	—	—
		Projected	
1990	458,000	445,000	470,000
1991	463,000	450,000	476,000
1992	465,000	452,000	477,000
1993	461,000	448,000	474,000
1994	459,000	446,000	472,000
1995	458,000	445,000	471,000
1996	459,000	446,000	472,000
1997	463,000	450,000	476,000
1998	469,000	456,000	482,000
1999	477,000	464,000	490,000
2000	482,000	470,000	495,000
2001	489,000	476,000	502,000

*Estimate.

—Not applicable

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C12.—Associate degrees awarded to men, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	209,996	—	—
1977	210,842	—	—
1978	204,718	—	—
1979	192,091	—	—
1980	183,737	—	—
1981	188,638	—	—
1982	196,939	—	—
1983	207,141	—	—
1984	202,762	—	—
1985	202,932	—	—
1986	196,166	—	—
1987	191,525	—	—
1988	190,189	—	—
1989*	190,071	—	—
		Projected	
1990	201,000	180,000	222,000
1991	201,000	180,000	223,000
1992	201,000	179,000	222,000
1993	199,000	177,000	221,000
1994	199,000	177,000	220,000
1995	198,000	177,000	220,000
1996	200,000	178,000	222,000
1997	201,000	178,000	223,000
1998	204,000	183,000	226,000
1999	208,000	186,000	229,000
2000	208,000	187,000	230,000
2001	211,000	190,000	232,000

*Estimate.

— Not applicable

NOTE: Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates* (This table was prepared April 1990.)

Table C13.—Associate degrees awarded to women, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1977	195,535	—	—
1978	207,528	—	—
1979	210,611	—	—
1980	217,173	—	—
1981	227,739	—	—
1982	237,576	—	—
1983	249,300	—	—
1984	249,654	—	—
1985	251,780	—	—
1986	249,881	—	—
1987	245,612	—	—
1988	245,348	—	—
1989*	246,391	—	—
		Projected	
1990	257,000	244,000	269,000
1991	262,000	249,000	274,000
1992	264,000	251,000	277,000
1993	262,000	249,000	275,000
1994	260,000	248,000	273,000
1995	260,000	247,000	272,000
1996	259,000	247,000	272,000
1997	262,000	249,000	274,000
1998	265,000	252,000	278,000
1999	269,000	257,000	282,000
2000	274,000	261,000	287,000
2001	278,000	265,000	291,000

*Estimate.

—Not applicable.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C14.—Bachelor's degrees, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	925,746	—	—
1977	919,549	—	—
1978	921,204	—	—
1979	921,390	—	—
1980	929,417	—	—
1981	935,140	—	—
1982	952,998	—	—
1983	969,510	—	—
1984	974,309	—	—
1985	979,477	—	—
1986	987,823	—	—
1987	991,339	—	—
1988	993,362	—	—
1989*	1,016,728	—	—
		Projected	
1990	1,017,000	1,004,000	1,030,000
1991	1,024,000	1,009,000	1,039,000
1992	1,059,000	1,041,000	1,078,000
1993	1,062,000	1,042,000	1,083,000
1994	1,059,000	1,037,000	1,080,000
1995	1,047,000	1,024,000	1,069,000
1996	1,031,000	1,008,000	1,054,000
1997	1,015,000	992,000	1 039,000
1998	1,012,000	987,000	1,037,000
1999	1,010,000	983,000	1,037,000
2000	1,020,000	991,000	1,048,000
2001	1,036,000	1,005,000	1,067,000

*Estimate.

—Not applicable.

NOTE. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics· Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C15.—Bachelor's degrees awarded to men, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	504,925	—	—
1977	495,545	—	—
1978	487,347	—	—
1979	477,344	—	—
1980	473,611	—	—
1981	469,883	—	—
1982	473,364	—	—
1983	479,140	—	—
1984	482,319	—	—
1985	482,528	—	—
1986	485,923	—	—
1987	480,854	—	—
1988	476,842	—	—
1989*	483,613	—	—
		Projected	
1990	481,000	460,000	503,000
1991	469,000	446,000	492,000
1992	503,000	475,000	531,000
1993	506,000	476,000	535,000
1994	506,000	475,000	537,000
1995	502,000	470,000	533,000
1996	497,000	465,000	530,000
1997	493,000	460,000	526,000
1998	496,000	463,000	528,000
1999	499,000	467,000	531,000
2000	508,000	477,000	540,000
2001	522,000	490,000	553,000

*Estimate.

—Not applicable.

NOTE: Because of rounding, details may not add to totals

SOURCE: U.S Department of Education, National Center for EducationStatistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C16.—Bachelor's degrees awarded to women, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1[illegible]	420,821	—	—
19[illegible]	424,004	—	—
1978	433,857	—	—
[illegible]79	444,046	—	—
1980	455,806	—	—
1981	465,257	—	—
1982	479,634	—	—
1983	490,370	—	—
1984	491,990	—	—
1985	496,949	—	—
1986	501,900	—	—
1987	510,485	—	—
1988	516,520	—	—
1989*	533,115	—	—
		Projected	
1990	536,000	523,000	549,000
1991	555,000	536,000	574,000
1992	557,000	534,000	579,000
1993	557,000	530,000	584,000
1994	552,000	522,000	582,000
1995	545,000	514,000	576,000
1996	534,000	503,000	566,000
1997	522,000	489,000	556,000
1998	516,000	479,000	554,000
1999	511,000	469,000	553,000
2000	511,000	464,000	558,000
2001	515,000	463,000	567,000

*Estimate

—Not applicable.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C17.—Master's degrees, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	311,771	—	—
1977	317,164	—	—
1978	311,620	—	—
1979	301,079	—	—
1980	298,081	—	—
1981	295,739	—	—
1982	295,546	—	—
1983	289,921	—	—
1984	284,263	—	—
1985	286,251	—	—
1986	288,567	—	—
1987	289,557	—	—
1988	298,733	—	—
1989*	307,682	—	—
		Projected	
1990	320,000	309,000	331,000
1991	322,000	310,000	333,000
1992	322,000	311,000	334,000
1993	323,000	311,000	335,000
1994	323,000	311,000	336,000
1995	324,000	311,000	336,000
1996	324,000	311,000	336,000
1997	324,000	312,000	337,000
1998	324,000	311,000	336,000
1999	325,000	312,000	337,000
2000	326,000	313,000	338,000
2001	327,000	315,000	339,000

*Estimate.

—Not applicable.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C18.—Master's degrees awarded to men, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	167,248	—	—
1977	167,783	—	—
1978	161,212	—	—
1979	153,370	—	—
1980	150,749	—	—
1981	147,043	—	—
1982	145,532	—	—
1983	144,697	—	—
1984	143,595	—	—
1985	143,390	—	—
1986	143,508	—	—
1987	141,363	—	—
1988	144,923	—	—
1989*	147,505	—	—
		Projected	
1990	156,000	138,000	174,000
1991	156,000	138,000	175,000
1992	156,000	137,000	175,000
1993	155,000	136,000	174,000
1994	154,000	135,000	174,000
1995	154,000	134,000	173,000
1996	153,000	133,000	172,000
1997	152,000	132,000	172,000
1998	151,000	131,000	171,000
1999	150,000	130,000	170,000
2000	150,000	130,000	169,000
2001	149,000	130,000	169,000

*Estimate.

—Not applicable.

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C19.—Master's degrees awarded to women, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	144,523	—	—
1977	149,381	—	—
1978	150,408	—	—
1979	147,709	—	—
1980	147,332	—	—
1981	148,696	—	—
1982	150,014	—	—
1983	145,224	—	—
1984	140,668	—	—
1985	142,861	—	—
1986	145,059	—	—
1987	148,194	—	—
1988	153,810	—	—
1989*	160,177	—	—
		Projected	
1990	163,000	151,000	176,000
1991	165,000	152,000	178,000
1992	166,000	153,000	180,000
1993	168,000	154,000	181,000
1994	169,000	155,000	183,000
1995	170,000	156,000	184,000
1996	171,000	157,000	185,000
1997	172,000	158,000	186,000
1998	173,000	159,000	187,000
1999	175,000	160,000	189,000
2000	176,000	162,000	191,000
2001	178,000	164,000	192,000

*Estimate.

—Not applicable.

NOTE: Because of rounding, details may not add to totals

SOURCE: U.S Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics. Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C20.—Doctor's degrees, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	34,064	—	—
1977	33,232	—	—
1978	32,131	—	—
1979	32,730	—	—
1980	32,615	—	—
1981	32,958	—	—
1982	32,707	—	—
1983	32,775	—	—
1984	33,209	—	—
1985	32,943	—	—
1986	33,653	—	—
1987	34,120	—	—
1988	34,839	—	—
1989*	35,379	—	—
		Projected	
1990	35,600	34,000	37,200
1991	35,900	34,200	37,500
1992	36,000	34,300	37,600
1993	36,100	34,400	37,800
1994	36,200	34,500	37,900
1995	36,300	34,600	38,000
1996	36,400	34,600	38,100
1997	36,400	34,700	38,100
1998	36,400	34,700	38,100
1999	36,400	34,800	38,100
2000	36,400	34,800	38,000
2001	36,300	34,700	37,800

*Estimate.

—Not applicable

NOTE. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics, Fall 1989," *Early Estimates* (This table was prepared April 1990.)

Table C21.—Doctor's degrees awarded to men, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	26,267	—	—
1977	25,142	—	—
1978	23,658	—	—
1979	23,541	—	—
1980	22,943	—	—
1981	22,711	—	—
1982	22,224	—	—
1983	21,902	—	—
1984	22,064	—	—
1985	21,700	—	—
1986	21,819	—	—
1987	22,099	—	—
1988	22,592	—	—
1989[1]	22,627	—	—
		Projected	
1990	22,600	19,500	25,600
1991	22,600	19,300	25,800
1992	22,100	18,900	25,400
1993	21,800	18,500	25,100
1994	21,500	18,100	24,800
1995	21,100	17,700	24,500
1996	20,700	17,300	24,100
1997	20,200	16,800	23,500
1998	19,600	16,300	22,900
1999	19,000	15,800	22,200
2000	18,200	15,100	21,300
2001	17,300	14,300	20,400

[1]Estimate

—Not applicable

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C22.—Doctor's degrees awarded to women, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	7,797	—	—
1977	8,090	—	—
1978	8,473	—	—
1979	9,189	—	—
1980	9,672	—	—
1981	10,247	—	—
1982	10,483	—	—
1983	10,873	—	—
1984	11,145	—	—
1985	11,243	—	—
1986	11,834	—	—
1987	12,021	—	—
1988	12,247	—	—
1989*	12,752	—	—
		Projected	
1990	13,000	12,700	13,400
1991	13,300	12,900	13,700
1992	13,800	13,400	14,200
1993	14,300	13,900	14,600
1994	14,700	14,300	15,100
1995	15,200	14,800	15,600
1996	15,700	15,300	16,100
1997	16,200	15,800	16,600
1998	16,800	16,400	17,200
1999	17,400	17,100	17,800
2000	18,100	17,700	18,600
2001	18,900	18,500	19,400

*Estimate.

—Not applicable.

NOTE: Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C23.—First-professional degrees, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	62,649	—	—
1977	64,359	—	—
1978	66,581	—	—
1979	68,848	—	—
1980	70,131	—	—
1981	71,956	—	—
1982	72,032	—	—
1983	73,136	—	—
1984	74,407	—	—
1985	75,063	—	—
1986	73,910	—	—
1987	72,750	—	—
1988	70,415	—	—
1989*	68,800	—	—
		Projected	
1990	74,200	71,300	77,000
1991	74,700	71,800	77,500
1992	75,700	72,900	78,600
1993	76,800	73,900	79,600
1994	77,900	75,000	80,700
1995	77,300	74,500	80,100
1996	77,300	74,500	80,100
1997	77,300	74,500	80,100
1998	77,800	75,000	80,700
1999	77,800	75,000	80,700
2000	71,300	68,300	74,300
2001	71,300	68,400	74,300

*Projected.

—Not applicable

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C24.—First-professional degrees awarded to men, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001.

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	52,892	—	—
1977	52,374	—	—
1978	52,270	—	—
1979	52,652	—	—
1980	52,716	—	—
1981	52,792	—	—
1982	52,223	—	—
1983	51,310	—	—
1984	51,334	—	—
1985	50,455	—	—
1986	49,261	—	—
1987	47,460	—	—
1988	45,288	—	—
1989*	43,954	—	—
		Projected	
1990	47,600	42,400	52,900
1991	47,600	42,400	52,900
1992	48,500	43,300	53,700
1993	48,500	43,300	53,700
1994	49,300	44,100	54,500
1995	48,500	43,300	53,700
1996	48,500	43,300	53,700
1997	48,500	43,300	53,700
1998	48,500	43,300	53,700
1999	48,500	43,300	53,700
2000	41,400	36,000	46,800
2001	41,400	36,000	46,800

*Projected

—Not applicable

NOTE: Projections are based on data through 1988. Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics: Fall 1989," *Early Estimates* (This table was prepared April 1990.)

Table C25.—First-professional degrees awarded to women, with projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	9,757	—	—
1977	11,985	—	—
1978	14,311	—	—
1979	16,196	—	—
1980	17,415	—	—
1981	19,164	—	—
1982	19,809	—	—
1983	21,826	—	—
1984	23,073	—	—
1985	24,608	—	—
1986	24,649	—	—
1987	25,290	—	—
1988	25,127	—	—
1989*	24,846	—	—
		Projected	
1990	26,500	24,600	28,400
1991	27,000	25,000	29,000
1992	27,300	25,300	29,200
1993	28,300	26,300	30,300
1994	28,600	26,600	30,500
1995	28,800	26,800	30,800
1996	28,800	26,800	30,800
1997	28,800	26,800	30,800
1998	29,300	27,300	31,400
1999	29,300	27,300	31,400
2000	29,900	27,700	32,000
2001	29,900	27,700	32,000

*Estimate.

—Not applicable

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, "Degrees and Other Formal Awards Conferred" survey, Integrated Postsecondary Education Data System (IPEDS), "Completions" survey, and "National Higher Education Statistics' Fall 1989," *Early Estimates*. (This table was prepared April 1990.)

Table C26.—Classroom teachers in elementary and secondary schools, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	2,454	—	—
1977	2,488	—	—
1978	2,478	—	—
1979	2,459	—	—
1980	2,485	—	—
1981	2,437	—	—
1982	2,446	—	—
1983	2,463	—	—
1984	2,508	—	—
1985	2,550	—	—
1986	2,592	—	—
1987	2,632	—	—
1988	2,661	—	—
1989*	2,737	—	—
		Projected	
1990	2,785	2,769	2,801
1991	2,840	2,824	2,856
1992	2,877	2,861	2,893
1993	2,930	2,913	2,947
1994	2,975	2,959	2,991
1995	3,016	3,000	3,032
1996	3,061	3,045	3,077
1997	3,107	3,090	3,124
1998	3,143	3,126	3,160
1999	3,178	3,161	3,195
2000	3,212	3,196	3,228
2001	3,242	3,226	3,258

*Estimate.

—Not applicable

NOTE: Because of rounding, details may not add to totals.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979, "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984; 1985 Private School Survey; "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*; and "Key Statistics for Private Elementary and Secondary Education: School Year 1989–90," *Early Estimates* (This table was prepared April 1990.)

Table C27.—Classroom teachers in public elementary and secondary schools, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	2,186	—	—
1977	2,209	—	—
1978	2,206	—	—
1979	2,183	—	—
1980	2,184	—	—
1981	2,124	—	—
1982	2,121	—	—
1983	2,126	—	—
1984	2,168	—	—
1985	2,207	—	—
1986	2,244	—	—
1987	2,279	—	—
1988	2,316	—	—
1989*	2,360	—	—
		Projected	
1990	2,401	2,375	2,425
1991	2,448	2,423	2,473
1992	2,480	2,455	2,505
1993	2,527	2,501	2,552
1994	2,566	2,542	2,592
1995	2,602	2,577	2,627
1996	2,642	2,617	2,667
1997	2,681	2,656	2,706
1998	2,712	2,687	2,737
1999	2,743	2,718	2,768
2000	2,772	2,748	2,798
2001	2,799	2,775	2,823

*Estimate.

—Not applicable

NOTE: Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys, "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, December 1984; and "Key Statistics for Public Elementary and Secondary Education School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table C28.—Classroom teachers in public elementary schools, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	1,166	—	—
1977	1,185	—	—
1978	1,190	—	—
1979	1,190	—	—
1980	1,189	—	—
1981	1,159	—	—
1982	1,171	—	—
1983	1,178	—	—
1984	1,205	—	—
1985	1,237	—	—
1986	1,267	—	—
1987	1,297	—	—
1988	1,337	—	—
1989*	1,332	—	—
		Projected	
1990	1,361	1,328	1,395
1991	1,388	1,352	1,423
1992	1,402	1,367	1,436
1993	1,422	1,387	1,457
1994	1,437	1,402	1,471
1995	1,451	1,417	1,485
1996	1,469	1,435	1,503
1997	1,486	1,453	1,520
1998	1,502	1,469	1,536
1999	1,517	1,484	1,550
2000	1,532	1,499	1,564
2001	1,544	1,512	1,577

*Estimate

—Not applicable

NOTE: Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table C29.—Classroom teachers in public secondary schools, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	1,020	—	—
1977	1,024	—	—
1978	1,016	—	—
1979	993	—	—
1980	995	—	—
1981	965	—	—
1982	950	—	—
1983	948	—	—
1984	963	—	—
1985	970	—	—
1986	977	—	—
1987	982	—	—
1988	979	—	—
1989*	1,028	—	—
		Projected	
1990	1,039	1,004	1,074
1991	1,060	1,024	1,096
1992	1,078	1,043	1,114
1993	1,105	1,069	1,140
1994	1,130	1,095	1,165
1995	1,151	1,116	1,186
1996	1,173	1,138	1,208
1997	1,195	1,159	1,230
1998	1,210	1 175	1,246
1999	1,226	1,190	1,262
2000	1,241	1,205	1,276
2001	1,255	1,219	1,291

*Estimate.

—Not applicable.

NOTE: Because of rounding, details may not add to totals

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of Public Elementary and Secondary Schools*; Common Core of Data surveys; "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*. (This table was prepared April 1990.)

Table C30.—Classroom teachers in private elementary and secondary schools, with projections and confidence limits: 50 States and D.C., fall 1976 to fall 2001

(In thousands)

Year	Total	Lower limit, 95 percent confidence interval	Upper limit, 95 percent confidence interval
1976	268	—	—
1977	279	—	—
1978	272	—	—
1979 [1]	276	—	—
1980	301	—	—
1981 [1]	313	—	—
1982 [1]	325	—	—
1983	337	—	—
1984 [1]	340	—	—
1985	343	—	—
1986 [1]	348	—	—
1987 [2]	353	—	—
1988 [2]	345	—	—
1989 [2]	377	—	—
		Projected	
1990	384	365	403
1991	392	373	411
1992	396	377	415
1993	403	383	423
1994	409	389	429
1995	414	394	434
1996	420	400	440
1997	425	404	446
1998	430	409	451
1999	435	414	456
2000	439	418	460
2001	443	422	464

[1]Estimated by NCES
[2]Estimate.

—Not applicable.

NOTE: Because of rounding, details may not add to totals

SOURCE. U S. Department of Education, National Center for Education Statistics, "Selected Public and Private Elementary and Secondary Education Statistics," *NCES Bulletin*, October 23, 1979; "Private Elementary and Secondary Education, 1983: Enrollment, Teachers, and Schools," *NCES Bulletin*, December 1984, 1985 Private School Survey, "Key Statistics for Private Elementary and Secondary Education: School Year 1988–89," *Early Estimates*, and "Key Statistics for Private Elementary and Secondary Education School Year 1989–90," *Early Estimates*. (This table was prepared April 1990)

Table C31.—Current expenditures per pupil in average daily attendance (constant 1988–89 dollars) of public elementary and secondary schools, with alternative projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Constant 1988–89 dollars[1]		
	Per pupil in average daily attendance	Lower limit, 95 percent confidence limit	Upper limit, 95 percent confidence limit
1976	$3,288	—	—
1977	3,382	—	—
1978	3,530	—	—
1979	3,576	—	—
1980	3,550	—	—
1981	3,503	—	—
1982	3,511	—	—
1983	3,651	—	—
1984	3,780	—	—
1985	3,978	—	—
1986	4,183	—	—
1987	4,325	—	—
1988	4,440	—	—
1989[2]	4,526	—	—
1990[3]	4,641	$4,421	$4,871
	Middle-high alternative projections		
1991	4,723	4,507	4,949
1992	4,815	4,592	5,048
1993	4,890	4,666	5,125
1994	4,968	4,742	5,204
1995	5,060	4,829	5,303
1996	5,169	4,929	5,420
1997	5,278	5,033	5,534
1998	5,397	5,148	5,658
1999	5,530	5,276	5,797
2000	5,668	5,409	5,939
2001	5,814	5,550	6,091
	Low alternative projections		
1991	4,607	4,383	4,843
1992	4,599	4,372	4,836
1993	4,602	4,371	4,845
1994	4,643	4,396	4,903
1995	4,677	4,415	4,954
1996	4,714	4,448	4,997
1997	4,761	4,493	5,044
1998	4,813	4,543	5,098
1999	4,873	4,599	5,163
2000	4,939	4,659	5,235
2001	5,010	4,726	5,312

Table C31.—Current expenditures per pupil in average daily attendance (constant 1988–89 dollars) of public elementary and secondary schools, with alternative projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001 —Continued

Year ending	Constant 1988-89 dollars[1]		
	Per pupil in average daily attendance	Lower limit, 95 percent confidence limit	Upper limit, 95 percent confidence limit
	Middle-low alternative projections		
1991	$4,659	$4,440	$4,890
1992	4,718	4,487	4,961
1993	4,759	4,525	5,006
1994	4,802	4,564	5,053
1995	4,859	4,609	5,122
1996	4,929	4,666	5,208
1997	4,999	4,726	5,289
1998	5,078	4,795	5,377
1999	5,168	4,877	5,476
2000	5,261	4,963	5,576
2001	5,360	5,057	5,680
	High alternative projections		
1991	4,837	4,620	5,064
1992	4,976	4,755	5,207
1993	5,122	4,896	5,360
1994	5,280	5,046	5,525
1995	5,445	5,203	5,698
1996	5,617	5,366	5,880
1997	5,794	5,532	6,068
1998	5,989	5,713	6,278
1999	6,210	5,916	6,517
2000	6,448	6,135	6,776
2001	6,700	6,365	7,053

[1]Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor.

[2]Early Estimate.

[3]Estimated on the basis of past data.

—Not applicable.

SOURCE: U.S. Department of Education, National Center for Education Statistics, *Statistics of State School Systems: Revenues and Expenditures for Public Elementary and Secondary Education*; Common Core of Data survey; and "Key Statistics for Public Elementary and Secondary Education: School Year 1989–90," *Early Estimates*; and National Education Association, annual *Estimates of State School Statistics*. (Latest edition 1988–89. Copyright © 1989 by the National Education Association. All rights reserved.) (This table was prepared April 1990.)

Table C32.—Average annual salaries of classroom teachers (constant 1988–89 dollars) in public elementary and secondary schools, with alternative projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001

Year ending	Constant 1988–89 dollars[1]		
	Average annual salary	Lower limit, 95 percent confidence limit	Upper limit, 95 percent confidence limit
1976	$27,555	—	—
1977	27,584	—	—
1978	27,493	—	—
1979	26,609	—	—
1980	24,955	—	—
1981	24,703	—	—
1982	24,829	—	—
1983	25,566	—	—
1984	26,114	—	—
1985	27,044	—	—
1986	28,061	—	—
1987	28,938	—	—
1988	29,305	—	—
1989	29,567	—	—
1990[2]	30,145	$29,535	$30,756
Middle-high alternative projections			
1991	30,629	29,860	31,399
1992	31,106	30,266	31,946
1993	31,821	30,908	32,735
1994	32,513	31,537	33,489
1995	33,076	32,067	34,086
1996	33,654	32,610	34,697
1997	34,079	33,020	35,138
1998	34,462	33,393	35,531
1999	34,822	33,743	35,901
2000	35,142	34,056	36,228
2001	35,541	34,437	36,646
Low alternative projections			
1991	30,092	29,339	30,845
1992	30,102	29,297	30,907
1993	30,485	29,627	31,344
1994	31,004	30,097	31,911
1995	31,295	30,371	32,218
1996	31,542	30,605	32,479
1997	31,677	30,742	32,612
1998	31,746	30,820	32,673
1999	31,766	30,848	32,684
2000	31,755	30,848	32,663
2001	31,807	30,901	32,713

Table C32.—Average annual salaries of classroom teachers (constant 1988–89 dollars) in public elementary and secondary schools, with alternative projections and confidence limits: 50 States and D.C., 1975–76 to 2000–2001 —Continued

Year ending	Constant 1988–89 dollars[1]		
	Average annual salary	Lower limit, 95 percent confidence limit	Upper limit, 95 percent confidence limit
	Middle-low alternative projections		
1991	$30,334	$29,574	$31,094
1992	30,656	29,832	31,479
1993	31,214	30,327	32,101
1994	31,744	30,805	32,683
1995	32,140	31,177	33,102
1996	32,541	31,557	33,526
1997	32,785	31,796	33,774
1998	32,979	31,992	33,966
1999	33,139	32,154	34,124
2000	33,251	32,271	34,230
2001	33,432	32,447	34,416
	High alternative projections		
1991	31,161	30,372	31,949
1992	31,854	[illegible]	32,724
1993	32,902	[illegible]956	33,868
1994	33,964	32,911	35,016
1995	34,863	33,752	35,973
1996	35,736	34,569	36,903
1997	36,477	35,272	37,682
1998	37,213	35,972	38,454
1999	37,978	36,698	39,259
2000	38,765	37,444	40,086
2001	39,661	38,284	41,038

[1]Based on the Consumer Price Index for all urban consumers, Bureau of Labor Statistics, U.S. Department of Labor

[2]Estimated on the basis of past data

—Not applicable.

SOURCE: National Education Association, annual *Estimates of State School Statistics* (Latest edition 1988–89 Copyright © 1989 by the National Education Association All rights reserved) (This table was prepared April 1990.)

Table C33.—Standard errors of projections of public school enrollment, by grade level: Fall 1990 to fall 2001

(In thousands)

Year	K–12	K–8	9–12
1990	119	98	79
1991	168	139	112
1992	206	170	137
1993	238	196	158
1994	266	219	177
1995	291	240	194
1996	315	259	209
1997	337	277	225
1998	357	294	237
1999	376	310	250
2000	395	325	262
2001	412	339	274

NOTE: To construct a 95 percent confidence interval around a projection, multiply the standard error by 1.96.

SOURCE: Derived from the public enrollment projection model

Table C34.—Standard errors of projections of private school enrollment: Fall 1990 to fall 2001

(In thousands)

Year	Standard error
1990	120
1991	122
1992	125
1993	128
1994	130
1995	133
1996	135
1997	145
1998	137
1999	138
2000	139
2001	139

NOTE: To construct a 95 percent confidence interval around a projection, multiply the standard error by 1.96

SOURCE: Derived from the private enrollment projection model.

Table C35.—Standard errors of projections of public school enrollment, by organizational level: Fall 1990 to fall 2001

(In thousands)

Year	Elementary	Secondary
1990	546	479
1991	772	677
1992	946	830
1993	1,092	958
1994	1,221	1,071
1995	1,337	1,173
1996	1,445	1,267
1997	1,544	1,355
1998	1,638	1,437
1999	1,727	1,515
2000	1,811	1,589
2001	1,891	1,659

NOTE To construct a 95 percent confidence interval around a projection, multiply the standard error by 1.96

SOURCE. Derived from the public enrollment projection model.

Table C36.—Standard errors of projections of public high school graduates: 1989–90 to 2000–2001

(In thousands)

Year ending	Standard error
1990	18
1991	25
1992	31
1993	36
1994	40
1995	44
1996	48
1997	51
1998	54
1999	57
2000	60
2001	62

NOTE To construct a 95 percent confidence interval around a projection, multiply the standard error by 1.96

SOURCE: Derived from the public high school graduates projection model

Appendix D

Table of Mean Absolute Percentage Errors

Table D1.—Mean absolute percentage errors (MAPEs) for public school enrollment and high school graduates, by State and lead time

State	Lead time	Enrollment			High school graduates
		K–12	K–8	9–12	
Alabama	1-year out	0 4	0 7	1.3	2.0
	2-year out	0 4	0 8	3 7	1.5
	3-year out	0 5	0 9	4.1	2.8
Alaska.	1-year out	4 6	5.4	2 5	3 1
	2-year out	10.1	11 5	6.3	1.5
	3-year out	13 9	14 9	11.1	1 3
Arizona	1-year out	4 6	6.1	1.7	1.8
	2-year out	3 1	3 2	3 1	2 7
	3-year out	5.8	5 4	6 7	7.8
Arkansas.	1-year out	0 4	0 7	0.5	0 8
	2-year out	0 5	0.8	0.9	1.6
	3-year out	0 7	1.3	0.6	1.9
California....	1-year out	0 5	0 2	1 2	3 7
	2-year out	0 6	0 3	1 2	0.6
	3-year out	0.3	0.2	0.6	0 8
Colorado	1-year out	0 9	0 9	0 8	0 7
	2-year out	2 0	2.1	1.6	2.0
	3-year out	2 3	2 5	1.7	2 2
Connecticut.	1-year out	1 0	0 1	3 4	8.8
	2-year out	1 3	0 1	4 7	5.5
	3-year out	2.4	0 1	8.4	5.8
Delaware	1-year out	0 9	1 4	1.0	1 2
	2-year out	1.3	1 7	2.2	1 1
	3-year out	0.7	0 3	3 3	0.7
District of Columbia.	1-year out	3 7	5 2	2 5	5 2
	2-year out	5 4	8.3	2 6	4.8
	3-year out	9 1	13.2	2.2	3.1
Florida	1-year out	0 7	1 2	0.6	0.2
	2-year out	1 4	2 1	0 4	0.4
	3-year out	1.8	2 7	0.3	0 8
Georgia	1-year out	0 6	0 5	1.5	0 6
	2-year out	1 0	0.5	2.9	0 6
	3-year out	1 4	0 1	5 5	1.7
Hawaii.	1-year out	0 6	0.4	1.8	0.4
	2-year out	0 8	0 7	2 4	0 7
	3-year out	1 1	0 3	3.0	2.2
Idaho	1-year out	1 4	1 5	1 0	2 3
	2-year out	2 0	2 1	1 4	1.1
	3-year out	2 0	2 2	1 4	1 0
Illinois.	1-year out	1 1	1 1	0.9	0 6
	2-year out	2 2	2 3	1 9	0.4
	3-year out	2 9	3 0	2 7	0.6

Table D1.—Mean absolute percentage errors (MAPEs) for public school enrollment and high school graduates, by State and lead time—Continued

State	Lead time	Enrollment			High school graduates
		K–12	K–8	9–12	
Indiana	1-year out	0 5	1 2	1.1	1.9
	2-year out	1 1	2 4	1 9	2.0
	3-year out	1 8	3 4	1 9	0.7
Iowa	1-year out	1 0	1 6	0 5	0 6
	2-year out	2 2	3 1	0 3	0 3
	3-year out	3 0	4 3	0 1	0 2
Kansas	1-year out	0 6	0 9	0 3	0 9
	2-year out	1 1	1 6	0.1	1.6
	3-year out	2.0	2 5	0 6	0 1
Kentucky	1-year out	0 7	0 9	0 2	0.6
	2-year out	1.2	1 4	0.8	0.8
	3-year out	1 6	1 7	1.5	0.2
Louisiana	1-year out	0 7	0 9	0.6	1 5
	2-year out	1 8	2 3	0.5	0.2
	3-year out	2 3	3 4	0 9	2 2
Maine	1-year out	1 5	1 8	2 0	4 0
	2-year out	2.3	2 6	3 0	5.1
	3-year out	4.2	4 0	4 6	1 7
Maryland	1-year out	0 3	0 4	0 4	0.5
	2-year out	0 4	0 8	0 7	0.3
	3-year out	0 4	1 1	1 4	2.2
Massachusetts	1-year out	0 6	1.0	0 4	3 6
	2-year out	1 1	1 7	0.2	4.6
	3-year out	2 0	2.7	0 3	6.8
Michigan	1-year out	1 1	1 8	0 5	1.0
	2 year out	1 7	3 1	1 3	1.2
	3-year out	2 6	4.2	1 1	1 5
Minnesota	1-year out	0 9	1 4	0 4	0 5
	2-year out	2 0	2 8	0.1	0 7
	3-year out	2 8	4 0	0 1	0.7
Mississippi	1-year out	3 8	5 1	0 8	0 6
	2-year out	4 9	6 3	1 3	3 4
	3-year out	6 2	7 8	1 6	6 2
Missouri	1-year out	0.2	0 2	0 9	0.5
	2-year out	0 1	0 5	1 3	0.7
	3-year out	0 5	1 0	0 8	0 2
Montana	1-year out	0 9	1 0	0 7	0 4
	2-year out	1.3	1.7	1 0	0 5
	3-year out	0 1	0 3	0.7	1 2
Nebraska	1-year out	0 6	0.9	0 4	1 0
	2-year out	1 0	1 6	0.3	1 2
	3-year out	2 0	2 5	0 6	0.3

Table D1.—Mean absolute percentage errors (MAPEs) for public school enrollment and high school graduates, by State and lead time—Continued

State	Lead time	Enrollment			High school graduates
		K–12	K–8	9–12	
Nevada	1-year out	0 3	0.4	0 1	3 1
	2-year out	0 5	0.7	0 1	3 3
	3-year out	0.1	0.3	0 3	3.1
New Hampshire	1-year out	0 8	1 8	1.3	2.7
	2 year out	1 2	2.9	2 9	2 4
	3-year out	2 0	4.6	4 1	0 2
New Jersey	1-year out	0 3	0 4	0.7	0.4
	2-year out	0 3	0 4	1 8	0 6
	3-year out	0 1	1 0	2 1	0 8
New Mexico	1-year out	0.5	0 7	0.5	1 4
	2-year out	0 6	1 1	2 1	2.3
	3-year out	0.1	1.9	4 2	2 1
New York	1-year out	0.2	0 6	0 9	0 8
	2-year out	0 3	0 9	0 9	0 7
	3-year out	0 5	1 1	0.9	0 9
North Carolina.	1-year out	0 1	0 4	0.6	0 7
	2-year out	0 1	0 4	1.1	1 6
	3-year out	0 3	0 3	1 5	1.3
North Dakota	1-year out	0.3	0.6	0 6	0.8
	2-year out	0 5	0 6	0 3	1 1
	3-year out	0.2	0.1	0.5	1 0
Ohio	1-year out	0 1	0 2	0 5	1 8
	2-year out	0 2	0.6	0.6	1 4
	3-year out	0 2	0 8	1 1	0.7
Oklahoma	1-year out	1 2	1 4	0 8	2.5
	2-year out	2.9	3 6	1 2	3.0
	3-year out	4 1	4 7	2 7	4 0
Oregon	1-year out	1 7	2 4	0 2	1 6
	2-year out	3 1	3 9	1 1	1 2
	3-year out	4 2	5 0	2.0	0.9
Pennsylvania	1-year out	0 2	0 7	0 8	1.0
	2-year out	0 7	1.5	1 0	1 2
	3-year out	1 0	2 3	1.7	0.5
Rhode Island	1-year out	0 8	1 0	0 9	0 9
	2-year out	1 2	1 6	1 7	1 3
	3-year out	1 0	2.2	1.8	0 3
South Carolina	1-year out	0 2	0.1	0 6	3 3
	2-year out	0 6	0.2	1 6	5 1
	3-year out	0 7	0.2	2 0	1.2
South Dakota	1-year out	0.3	0 5	0 5	1 4
	2-year out	0 8	1 0	0 3	0.8
	3-year out	1 1	1 3	0 5	0 4

Table D1.—Mean absolute percentage errors (MAPEs) for public school enrollment and high school graduates, by State and lead time—Continued

State	Lead time	Enrollment			High school graduates
		K–12	K–8	9–12	
Tennessee	1-year out	05	07	03	23
	2-year out	12	14	07	50
	3-year out	13	13	13	54
Texas	1-year out	14	19	07	18
	2-year out	22	28	06	05
	3-year out	45	51	30	04
Utah	1-year out	04	03	06	14
	2-year out	10	10	12	18
	3-year out	13	14	08	16
Vermont	1-year out	13	12	23	15
	2-year out	17	13	27	25
	3-year out	21	05	61	02
Virginia	1-year out	04	05	05	06
	2-year out	07	09	10	09
	3-year out	15	14	16	02
Washington	1-year out	09	13	02	30
	2-year out	19	26	05	46
	3-year out	29	35	14	44
West Virginia	1-year out	01	02	03	09
	2-year out	01	03	02	06
	3-year out	03	05	02	01
Wisconsin	1-year out	06	11	05	04
	2-year out	13	22	06	04
	3-year out	19	31	09	03
Wyoming	1-year out	30	36	17	14
	2-year out	55	68	22	12
	3-year out	75	89	38	33
United States	1-year out	03	05	06	04
	2-year out	04	08	06	02
	3-year out	07	11	04	06

NOTE: To compute the MAPEs for the Nation and States, an average of the absolute values of the 1-, 2-, and 3-year-ahead projections errors was calculated using data from 1970 to 1985. The MAPE indicates the likely average percent of deviation between the projection and actual value for 1 to 3 years into the future

Appendix E

Data Sources

Sources and Comparability of Data

The information in this report is from many sources, including Federal and State agencies, private research organizations, and professional associations. The data were collected by many methods, including surveys of a universe (such as all colleges) or of a sample, and compilations of administrative records. Care should be used when comparing data from different sources. Differences in procedures, such as timing, phrasing of questions, and interviewer training mean that the results from the different sources are not strictly comparable. More extensive documentation of one survey's procedures than of another's does not imply more problems with the data, only that more information is available.

Accuracy of Data

The accuracy of any statistic is determined by the joint effects of "sampling" and "nonsampling" errors. Estimates based on a sample will differ from the figures that would have been obtained if a complete census had been taken using the same survey instruments, instructions, and procedures. Besides sampling errors, both surveys, universe and sample, are subject to errors of design, reporting, processing, and errors due to nonresponse. To the extent possible, these nonsampling errors are kept to a minimum by methods built into the survey procedures. In general, however, the effects of nonsampling errors are more difficult to gauge than those produced by sampling variability.

Sampling Errors

The standard error is the primary measure of sampling variability. It provides a specific range—with a stated confidence—within which a given estimate would lie if a complete census had been conducted. The chances that a complete census would differ from the sample by less than the standard error are about 68 out of 100. The chances that the difference would be less than 1.65 times the standard error are about 90 out of 100; that the difference would be less than 1.96 times the standard error, about 95 out of 100; and that it would be less than 2.58 times as large, about 99 out of 100.

Standard error can help assess how valid a comparison between two estimates might be. The standard error of a difference between two sample estimates which are uncorrelated is approximately equal to the square root of the sum of the squared standard errors of the estimates. The standard error (se) of the difference between sample estimate "a" and sample estimate "b" is:

$$se_{a-b} = \sqrt{se_a^2 + se_b^2}$$

Note that most of the standard errors in subsequent sections and in the original documents are approximations. That is, to derive estimates of standard errors that would be applicable to a wide variety of items and could be prepared at a moderate cost, a number of approximations were required. As a result, most of the standard errors presented provide a general order of magnitude rather than the exact standard error for any specific item.

Nonsampling Errors

Both universe and sample surveys are subject to nonsampling errors. Nonsampling errors are of two kinds—random and nonrandom. Random nonsampling errors may arise when respondents or interviewers interpret questions differently, when respondents must estimate values, or when coders, keyers, and other processors handle answers differently. Nonrandom nonsampling errors result from total nonresponse (no usable data obtained for a sampled unit), partial or item nonresponse (only a portion of a response may be usable), inability or unwillingness on the part of respondents to provide information, difficulty

interpreting questions, mistakes in recording or keying data, errors of collection or processing, and overcoverage or undercoverage of the target universe. Random nonresponse errors usually, but not always, result in an understatement of sampling errors and thus an overstatement of the precision of survey estimates. Since estimating the magnitude of nonsampling errors would require special experiments or access to independent data, these magnitudes are seldom available.

To compensate for suspected nonrandom errors, adjustments of the sample estimates are often made. For example, adjustments are frequently made for nonresponse, both total and partial. An adjustment made for either type of nonresponse is often referred to as an imputation, that is, substitution of the "average" questionnaire response for the nonresponse. Imputations are usually made separately within various groups of sample members which have similar survey characteristics. Imputation for item nonresponse is usually made by substituting for a missing item the response to that item of a respondent having characteristics that are similar to those of the nonrespondent.

Although the magnitude of nonsampling error in the data collected in this *Projections* is frequently unknown, idiosyncrasies that have been identified are noted on the appropriate tables.

Federal Agency Sources

National Center for Education Statistics (NCES)

Common Core of Data

NCES uses the Common Core of Data (CCD) survey to acquire and maintain statistical data on the 50 States, the District of Columbia, and the outlying areas from the universe of State-level education agencies. Information about staff and students is collected annually at the school, LEA (local education agency or school district), and State levels. Information about revenues and expenditures is also collected at the State level.

Data are collected for a particular school year (July 1 through June 30) by survey instruments sent to the States by October 15 of the subsequent school year. States have 2 years in which to modify the data onginally submitted.

Since the CCD is a universe survey, the CCD information in *Projections* is not subject to sampling error. However, nonsampling error could come from two sources—nonretum and inaccurate reporting. Almos ll of the States submit the six CCD survey instru its each year, but there are many delays in submitting data and the submissions are sometimes incomplete.

Understandably, when 57 education agencies compile and submit data for over 85,000 public schools and approximately 15,800 local school districts, misreporting can occur. Typically, this results from varying interpretation of NCES definitions and differing recordkeeping systems. NCES attempts to minimize these errors by working closely with the Council of Chief State School Officers (CCSSO) and its Committee on Evaluation and Information Systems (CEIS).

The State education agencies report data to NCES from data collected and edited in the regular reporting cycles for which NCES reimburses them. NCES encourages the agencies to incorporate into their own survey systems the NCES items they do not collect so those items will also be available for the subsequent CCD survey. Over time, this has meant fewer missing data cells in each State's response, reducing the need to impute data.

NCES subjects data from the education agencies to a comprehensive edit. Where data are determined to be inconsistent, missing, or out of range, NCES asks the education agencies for verification. NCES-prepared State summary forms are retumed to the State education agencies for verification. States are also given an opportunity to revise their State-level aggregates from the previous survey cycle.

Questions conceming the Common Core of Data can be directed to:

Lee Hoffman
Elementary and Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Public School Early Estimates System. The Public School Early Estimates System is designed to allow NCES to report selected key statistics early in the school year. Statistics include the number of students in membership, teachers, and high school graduates, and total revenues and expenditures. These estimates are either preliminary actual counts for individual States, estimates derived by the States for NCES, or imputed values developed by NCES using a combination of State-specific and national data.

Forty-eight States and the District of Columbia participated in the 1989 survey. Estimates reported in this book were provided to NCES by State education agencies and represent the best information available to

States at this early stage of the school year. They are, however, subject to revision.

Early in November of each year, a survey form is sent to each State education agency requesting cooperation and specifying when NCES will collect data by telephone. States are contacted during the first week in November, and State estimates are received through the third week in December. Data collected by telephone are checked for reasonableness against prior years' data.

Questions concerning the Early Estimates System can be directed to:

Frank Johnson
Elementary and Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Private School Early Estimate System: 1988–89. The private school early estimates are the first reporting component of the Private School Universe data collection system. In subsequent years, the statistical information will be collected from all private schools in the NCES universe, and the early estimates will be based on a subsample of that universe.

Early in October 1988, questionnaires were mailed to a national probability sample of 1,167 private elementary and secondary schools from a universe of approximately 30,000 private schools. Telephone followup of nonrespondents was initiated in late October, and data collection was completed in late November. The overall response rate was 94 percent: 978 of the 1,035 eligible schools. Some 132 of the original 1,167 schools in the sample were determined to be out-of-scope. While this survey was not designed specifically to yield an estimate of the number of private schools, the number of out-of-scope schools identified in this survey resulted in a weighted estimate of approximately 26,300 private schools.

The sampling frame used for the survey was composed of two non-overlapping frames: the NCES list frame of approximately 24,000 eligible schools, and an area frame developed by the Census Bureau for 75 Primary Sampling Units (PSUs). The area frame yielded a sample size of 523 schools for the Schools and Staffing Survey (SASS). The private school early estimates area sample was drawn from the SASS area sample. The sample from the area frame was sorted by level of school, by religious orientation class within school level, then by PSU within religious orientation class, and finally by student membership within PSU.

The sample from the list frame was stratified by level of school (elementary, secondary, combined, and other) and religious orientation (Catholic, other religious, and nonsectarian), and within strata schools were further sorted by Office of Education regions, and by student membership size within region. Each school in the sorted frame was assigned a sampling measure of size equal to the square root of student membership, and samples were selected with probabilities proportionate to size from each orientation/level stratum.

The survey data were weighted to reflect the sampling rates (probability of selection) and were adjusted for nonresponse.

Estimates of standard errors were computed using a variance estimation procedure for complex sample survey data known as jackknife. The standard errors for private school early estimates for school years 1987–88 and 1988–89 are shown in the table below.

Students (1988–89)	Teachers (1988–89)	Graduates (1987–88)
96,779.9	7,624.7	9,605.4

Nonsampling errors may include such things as differences in the respondents' interpretation of the meaning to the questions, differences related to the particular time the survey was conducted, or errors in data preparation. During the design of the survey and survey pretest, an effort was made to check for consistency of interpretation of questions and to eliminate ambiguous items. The questionnaire was pretested with respondents like those who completed the survey, and the questionnaire and instructions were extensively reviewed by NCES and representatives of private school associations attending the NCES private school data users meeting. Manual and machine editing of the questionnaires was conducted to check the data for accuracy and consistency. Extensive telephone followup was conducted for missing or inconsistent items; data were keyed with 100 percent verification.

Undercoverage in the list and area frames is another possible source of nonsampling error. The area frame was used to complement the list frame through the identification of schools missing from the list frame. As the Early Estimates System and the Private School Universe data collection system develop, efforts will be directed towards updating the universe list and identifying and minimizing sources of undercoverage in both the list and area frames.

Questions concerning the Private School Early Estimates can be directed to:

Marilyn M. McMillen
Elementary and Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Private School Early Estimate System: 1989–90. This is the second in a series of early estimates for private elementary and secondary education. These early estimates are key statistics reported early in the school year and include the numbers of teachers, students, and high school graduates for private elementary and secondary schools. In subsequent years, the statistical information will be collected from all private schools in the NCES universe, and the early estimates will be based on a subsample of that universe.

Early in October 1989, questionnaires were mailed to a national probability sample of 1,169 private elementary and secondary schools from a universe of approximately 27,000 private schools. Telephone followup of nonrespondents was initiated in late October, and data collection was completed in late November. The overall response rate was 95 percent: 986 of the 1,042 eligible schools. Some 127 of the original 1,167 schools in the sample were determined to be out-of-scope. While this survey was not designed specifically to yield an estimate of the number of private schools, the number of out-of-scope schools identified in this survey resulted in a weighted estimate of approximately 26,645 private schools.

The sampling frame used for the survey was composed of two non-overlapping frames: the NCES list frame of approximately 24,000 eligible schools, and an area frame developed by the Census Bureau for 75 Primary Sampling Units (PSUs). The area frame yielded a sample size of 523 schools for the Schools and Staffing Survey (SASS). The private school early estimates area sample was drawn from the SASS area sample. The sample from the area frame was sorted by level of school, by religious orientation class within school level, then by PSU within religious orientation class, and finally by student membership within PSU.

The sample from the list frame was stratified by level of school (elementary, secondary, combined, and other) and religious orientation (Catholic, other religious, and nonsectarian), and within strata schools were further sorted by Census regions, and by student membership size within region. Each school in the sorted frame was assigned a sampling measure of size equal to the square root of student membership. The sample design for the list frame was similar, differing in two ways from the design for the area frame. First, stratification by level of school yielded four, rather than three categories: elementary, secondary, combined, and other. Second, the measure of size was simply the square root of student membership.

The survey data were weighted to reflect the sampling rates (probability of selection) and were adjusted for nonresponse.

Estimates of standard errors were computed using a variance estimation procedure for complex sample survey data known as balanced repeated replication. The standard errors for private school early estimates for school years 1988–89 and 1989–90 are shown in the table below.

Students (1989–90)	Teachers (1989–90)	Graduates (1988–89)
117,830.9	8,636.1	13,305.6

Nonsampling errors may include such things as differences in the respondents' interpretations of the meaning to the questions, differences related to the particular time the survey was conducted, or errors in data preparation. The survey instrument used in the 1989-90 Early Estimates data collection was developed based on the experiences of the 1988-89 Early Estimates data collection. The form was modified as needed to accommodate one data collection instrument for both the Early Estimates and Universe components of the Private School data collection system. The content of the survey was developed in consultation with representatives of private school associations attending NCES private school data users meetings. The questionnaire and instructions were extensively reviewed by NCES staff. Manual and machine editing of the questionnaires was conducted to check the data for accuracy and consistency. Data were keyed with 100 percent verification.

Undercoverage in the list and area frames is another possible source of nonsampling error. The area frame was used to complement the list frame through the identification of schools missing from the list frame. As the Early Estimates System and the Private School Universe data collection system develop, both the list

and area frames will be updated periodically. For the 1989-90 Early Estimates data collection, 1,000 private schools were added to the universe list.

Questions concerning the Private School Early Estimates can be directed to:

Marilyn M. McMillen
Elementary and Secondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208-5

Higher Education General Information Survey

The Higher Education General Information Survey (HEGIS) was a coordinated effort administered by NCES to acquire and maintain statistical data on the characteristics and operations of institutions of higher education. Developed in 1966, HEGIS was an annual universe survey of institutions listed in the NCES *Education Directory, Colleges and Universities.*

The information presented in this report draws on HEGIS surveys which solicited information concerning institutional characteristics, faculty salaries, finances, enrollment, and degrees. Since these surveys cover all institutions in the universe, the data are not subject to sampling error. However, they are subject to nonsampling error, the sources of which vary with the survey instrument. Each survey will therefore be discussed separately. Information concerning the nonsampling error of the enrollment and degrees surveys is drawn extensively from the HEGIS Post-Survey Validation Study conducted in 1979.

Institutional Characteristics of Colleges and Universities. This survey provides the basis for the universe of institutions in the *Education Directory, Colleges and Universities*, and it is used in all other HEGIS data collection activities. The universe includes institutions that offer at least a 1-year program of college-level studies leading toward a degree and that meet certain accreditation criteria. In the fall, institutions included in the *Directory* the previous year receive a computer printout of their information to update. Institutions not previously included and that applied for *Directory* listing are sent a questionnaire. All institutions reported are certified as eligible to be listed by the Division of Eligibility and Agency Evaluation, U.S. Department of Education.

Opening Fall Enrollment in Colleges and Universities. This survey has been part of the HEGIS series since its development. The enrollment survey does not appear to suffer significantly from problems associated with nonresponse: the 1985 response rate was 92 percent. Major sources of nonsampling error for this survey are classification problems, the unavailability of needed data, interpretation of definitions, the survey due date, and operational errors. Of these, the classification of students appears to be the main source of error. Institutions have problems in correctly classifying first-time freshmen, other first-time students, and unclassified students for both full-time and part-time categories. These problems occur most often at 2-year institutions (both private and public) and private 4-year institutions. In 1977–78, the classification problem led to an estimated overcount of 11,000 full-time students and an undercount of 19,000 part-time students. Although the ratio of error to the grand total was small (less than 1 percent), the percentage of errors was as high as 5 percent for detailed student levels and even higher at certain aggregation levels.

Beginning with fall 1986, the survey system was redesigned with the introduction of the Integrated Postsecondary Education Data System (IPEDS). The new survey system comprises all postsecondary institutions, but also maintains comparability with earlier surveys by allowing HEGIS institutions to be tabulated separately. The new system also provides for preliminary and revised data releases. This allows the Center flexibility to release early data sets while still maintaining a more accurate final database. For example, the fall 1986 IPEDS enrollment data in this report exclude 16,000 students whose level and enrollment status could not be determined in time for the preliminary release. In the final release, this undercount and other items will be revised.

Earned Degrees Conferred. This survey has been part of the HEGIS series since its development. However, the degree classification taxonomy was revised in 1970–71 and 1982–83. Though information from survey years 1970–71 through 1981–82 is directly comparable, care must be taken if information before or after that period is included in any comparison. Degrees-conferred trend tables arranged by the 1982–83 classification have been added to the *Digest of Education Statistics* to provide consistent data from 1970–71 to 1983–84. Data in this edition on associate and other formal awards below the baccalaureate are not directly comparable with figures for earlier years. The nonresponse rate does not appear to be a significant source of nonsampling error for this survey. The return rate over the years has been extremely high, with the response rate for the 1983–84 survey at 95 percent. Because of the high return rate, nonsampling error caused by imputation would also be minimal.

The major sources of nonsampling error for this

survey are differences between the HEGIS program taxonomy and taxonomies used by the colleges, classification of double majors and double degrees, operational problems, and survey timing. In the 1979 validation study, these sources of nonsampling error were found to contribute to an error rate of 0.3 percent overreporting of bachelor's degrees and 1.3 percent overreporting of master's degrees. The differences, however, varied greatly among fields. Over 50 percent of the fields selected for the validation study had no errors identified. Categories of fields that had large differences were business and management, education, engineering, letters, and psychology. It is also shown that differences in proportion to the published figures were less than 1 percent for most of the selected fields that had some errors. Exceptions to these were: master's and doctoral programs in labor and industrial relations (20 percent and 8 percent); bachelors's and master's programs in art education (3 percent and 4 percent); bachelor's and doctoral programs in business and commerce, and in distributive education (5 percent and 9 percent); master's programs in philosophy (8 percent); and doctoral programs in psychology (11 percent).

Questions concerning the surveys used as data sources for this report or other questions concerning HEGIS can be directed to:

Postsecondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Integrated Postsecondary Education Data System

Beginning with surveys for the 1986–87 school year, the Center expanded its collection of postsecondary data. The Integrated Postsecondary Education Data System (IPEDS) surveys all postsecondary institutions, including universities and colleges, as well as institutions offering technical and vocational education beyond the high school level. This survey will enable, for the first time, a comprehensive coverage of education data for all postsecondary institutions. The higher education portion of this survey is a census of all education institutions similar to HEGIS; however, data from the other technical and vocational institutions will be collected through a sample survey. Thus, some portions of the data will be subject to sampling and nonsampling errors, while some portions will be subject only to nonsampling errors. The data on institutional characteristics used for enrollment projections are based on lists of all institutions and are not subject to sampling errors.

Questions concerning the surveys used as data sources for this report or other questions concerning HEGIS can be directed to:

Postsecondary Education Statistics Division
National Center for Education Statistics
555 New Jersey Avenue NW
Washington, DC 20208

Bureau of the Census

Current Population Survey

Estimates of school enrollment, as well as social and economic characteristics of students, are based on data collected in the Census Bureau's monthly survey of about 60,000 households. The monthly Current Population Survey (CPS) sample is of 614 areas comprising 1,113 counties, independent cities, and minor civil divisions throughout the 50 States and the District of Columbia. The sample was initially selected from the 1970 Census files and is periodically updated to select new housing construction.

The monthly CPS deals primarily with labor force data for the civilian noninstitutional population (i.e., excluding military personnel and their families living on post and inmates of institutions). In addition, supplemental questions are asked about the education of all eligible members of the household. The October 1982 survey obtained information about highest grade completed, level of current enrollment, attendance status, number and types of courses, degree or certificate objective, and type of organization offering instruction. Information on enrollment status by grade is gathered each October.

The estimation procedure used for the monthly CPS data involves inflating weighted sample results to independent estimates of characteristics of the civilian noninstitutional population in the United States by age, sex, and race. These independent estimates are based on statistics from decennial censuses; statistics on births, deaths, immigration, and emigration; and statistics on the population in the armed services. Generalized standard error tables are in the *Current Population Reports*. The data are subject to both nonsampling and sampling errors.

More information is available in the *Current Population Reports*, Series P-20, or by contacting:

Population Division
Bureau of the Census
U.S. Department of Commerce
Washington, DC 20233

School Enrollment. Each October, the Current Population Survey (CPS) includes supplemental questions on the enrollment status of the populations 3 years old and over. The main sources of nonsampling variability in the responses to the supplement are those inherent in the survey instrument. The question concerning educational attainment may be sensitive for some respondents, who may not want to acknowledge the lack of a high school diploma. The question of current enrollment may not be answered accurately for various reasons. Some respondents may not know current grade information for every student in the household, a problem especially prevalent for households with members in college or in nursery school. Confusion over college credits or hours taken by a student may make it difficult to determine the year in which the student is enrolled. Problems may occur with the definition of nursery school (a group or class organized to provide educational experiences for children) where respondents' interpretations of "educational experiences" vary.

Questions concerning the CPS "School Enrollment" survey may be directed to:

Education and Social Stratification Branch
Bureau of the Census
U.S. Department of Commerce
Washington, DC 20233

Total population estimates. The population estimates contained in this report for the 1980s were developed by averaging the results of two methods, both of which use current data to estimate population change since April 1980. The Census Bureau's Composite Method uses vital statistics and school enrollment to estimate the population 0-14 years of age by a variation of Component Method II. For the household population 15 to 64 years old, the method employs a Ratio-Correlation technique in which a multiple correlation estimating equation is applied to the changes in three independent variables (Federal income tax returns, school enrollment, and housing units) to estimate changes in the population.

In the second method (the Administrative Records Method), net internal migration is estimated using individual Federal income tax returns, immigration from abroad is developed from immigration reports, and reported vital statistics are used to account for natural increase. These two methods are averaged to estimate the household population under 65 years of age. The population under 65 years old in group quarters and the population 65 years old and over are added to the household population to obtain an estimate of the population total for each State.

Estimates of the group quarters population were obtained by adding to the 1980 Census count of nonbarracks group quarters population, the latest survey data on military barracks population plus an allowance for change in the population in major Job Corps centers. The population 65 years old and over was obtained by adding the estimated change in the number of people enrolled under Medicare between April 1, 1980, and the estimate date to the 1980 Census population 65 years old and over. Civilian population estimates were created by subtracting the Armed Forces population from the resident State population estimate. The Armed Forces data were obtained directly from reports of the Department of the Defense and Transportation showing the number of military personnel assigned to each installation, adjusted where necessary to reflect place of residence.

The procedures used to develop the all-ages estimates have been tested and modified through comparisons with the results of several decennial censuses. The mean difference of the average of the estimates produced by the Composite Method and the Administrative Records Method for April 1, 1980, from the 1980 census counts was 1.1 percent, with the greatest deviation being 10.1 percent in the District of Columbia. A more detailed description of the population estimates methodology and an indication of their accuracy may be found in Current Population Reports, Series P-25, No. 957 published by the U.S. Department of Commerce, Bureau of the Census.

Population estimates by age. The methodology used to develop the age estimates is a variation of Component Method II, one of the methods formerly used to estimate the total population of States. This method involves using the 1980 Census data as a base for each of the age groups by State and taking into account changes in the population attributed to births, deaths, and net migration from April 1, 1980, to the estimate date.

The migration component was derived by using changes in the school enrollment data for each State to estimate a school-age migration rate, which was then converted to a rate for other age groups under 65.

The natural change component makes use of the number of registered births and deaths by State of residence for the calendar years provided by State health departments, adjusted to cover the periods from April 1 to July 1 and adjusted to independent national controls.

As in the all-ages procedure, estimates for the population 65 years old and over were developed using the change measured in Medicare records for each State.

As a final step, the estimates of the age groups for each State were adjusted to sum to the independently

estimated resident population total for the State. In addition, the State estimates for each age group were adjusted to be consistent with an independent national population estimate for that age group.

Questions concerning the "Population Estimates" may be directed to:

State and Local Estimates Branch
Bureau of the Census
U.S. Department of Commerce
Washington, DC 20233

State population projections. These projections are available in Current Population Reports, *Projections of the Population of States, by Age, Sex, and Race: 1988 to 2010*, Series P-25, No. 1017, published by the Bureau of the Census. They were prepared using a cohort component method whereby each component of population change—births, deaths, domestic inmigration, domestic outmigration, international inmigration, and international outmigration—is projected separately for each birth cohort by sex and race. Although this basic framework is the same as in past projections, these projections represent a major advance in State population projections methodology. The major innovations include:

1. The projection of annual population by single years of age instead of the projections by 5-year age groups for every fifth year;

2. The use of State-to-State migration flows rather than net migration, or gross inmigration and outmigration;

3. The tying of migration projections to the administration data used in the State current population estimates program to provide more recent information as well as the possibility of updating the migration data during the intercensal period;

4. A time series analysis of recent annual trends in migration streams to add a dynamic element to migration projections, rather than the past practice of holding migration rates constant;

5. The use of State differentials in survival rates based on the 1980 decennial life tables; and

6. The use of State differentials in the timing patterns of fertility based on 1980 birth and population data

where:

The cohort-component method is based on the traditional demographic accounting system:

$$P_1 = P_o + B - D + DIM - DOM + IIM - IOM$$

P_1 = population at the end of the period
P_o = population at the beginning of the period
B = births during the period
D = deaths during the period
DIM = domestic inmigration during the period
DOM = domestic outmigration during the period
IIM = international inmigration during the period
IOM = international outmigration during the period

In order to generate population projections with this model, one needs separate data for each of these components. In general, the assumptions concerning the future levels of fertility, mortality, and international immigration are consistent with the assumptions developed for the national population projections published in *Current Population Reports*, Series P-25, No. 1018

Once the data for each of the components have been developed, it is a relatively straightforward process to apply the cohort-component method and produce the projections. For each projection year, the base population for each State is disaggregated into the three racial categories (white, black, other races), by sex and single years of age (age 0 to 85 and over). The next step is to survive each age-sex-race group forward 1 year using the pertinent survival rate. The internal redistribution of the population is accomplished by applying the appropriate State-to-State migration rates to the survived population in each State. The projected outmigrants are subtracted from the State of origin and added to the State of destination (as inmigrants). The appropriate number of immigrants from abroad is then added to each group. The population under age 1 is created by applying the appropriate age-specific birth rates to the females of childbearing age. The number of births by sex and race are survived forward and exposed to the appropriate migration rates to yield the population under age 1. As a last step, the final results of the projection process are adjusted to be consistent with the national population projections by single years of age, sex, and race.

Questions concerning the State population projections may be directed to:

Population Projections Branch
Bureau of the Census
U.S. Department of Commerce
Washington, D.C. 20233

Other Sources

National Education Association

Estimates of School Statistics

The National Education Association (NEA) reports revenues and expenditure data in its annual publication, *Estimates of School Statistics*. Each year, NEA prepares regression-based estimates of financial and other education statistics and submits them to the States for verification. Generally, about 30 States adjust these estimates based on their own data. These preliminary data are published by NEA along with revised data from previous years. States are asked to revise previously submitted data as final figures become available. The most recent publication contains all changes reported to the NEA.

Some expenditure projections use revised estimates of financial data prepared by NEA because it was the most current source. Since expenditure data reported to NCES must be certified for use in Department of Education formula grant programs (such as Chapter 1 of the Education Consolidation and Improvement Act), NCES data are not available as soon as NEA estimates.

Further information on NEA surveys can be obtained from:

National Education Association—Research
1201 16th Street NW
Washington, DC 20036

Data Resources, Inc.

Data Resources, Inc. (DRI) provides an information system that includes more than 125 databases; simulation and planning models; regular publications and special studies; data retrieval and managements systems; and access to experts on economic, financial, industrial, and market activities. One service is the DRI U.S. Annual Model Forecast Data Bank, which contains annual projections of the U.S. economic and financial conditions, including forecasts for the Federal Government, incomes, population, prices and wages, and State and local government, over a long-term (10- to 25-year) forecast period.

Additional information is available from:

Data Resources, Inc.
24 Hartwell Avenue
Lexington, MA 02173

Appendix F

Glossary

Data Terms

Associate degree: A degree granted for the successful completion of a sub-baccalaureate program of studies, usually requiring at least 2 years (or equivalent) of full-time college-level study. This includes degrees granted in a cooperative or work/study program.

Average daily attendance (ADA): The aggregate attendance of a school during a reporting period (normally a school year) divided by the number of days school is in session during this period. Only days on which the pupils are under the guidance and direction of teachers should be considered days in session.

Average daily membership (ADM): The aggregate membership of a school during a reporting period (normally a school year) divided by the number of days school is in session during this period. Only days on which the pupils are under the guidance and direction of teachers should be considered as days in session. The average daily membership for groups of schools having varying lengths of terms is the average of the average daily memberships obtained for the individual schools.

Bachelor's degree: A degree granted for the successful completion of a baccalaureate program of studies, usually requiring at least 4 years (or equivalent) of full-time college-level study. This includes degrees granted in a cooperative or work/study program.

Classroom teacher: A staff member assigned the professional activities of instructing pupils in self-contained classes or courses, or in classroom situations. Usually expressed in full-time-equivalents.

Class size: The membership of a class at a given date.

Cohort: A group of individuals that have a statistical factor in common, for example, year of birth.

College: A postsecondary school which offers general or liberal arts education, usually leading to an associate, bachelor's, master's, doctor's, or first-professional degree. Junior colleges and community colleges are included in this term.

Constant dollars: Dollar amounts that have been adjusted by means of price and cost indexes to eliminate inflationary factors and allow direct comparison across years.

Consumer Price Index (CPI): This price index measures the average change in the cost of a fixed market basket of goods and services purchased by consumers.

Current dollars: Dollar amounts that have not been adjusted to compensate for inflation.

Current expenditures (elementary/secondary): The expenditures for operating local public schools excluding capital outlay and interest on school debt. These expenditures include such items as salaries for school personnel, fixed charges, student transportation, school books and materials, and energy costs.

Current expenditures per pupil in average daily attendance: Current expenditures for the regular school term divided by the average daily attendance of full-time pupils (or full-time-equivalency of pupils) during the term. See also current expenditures and average daily attendance.

Current Population Survey: See Data Sources.

Disposable personal income: Current income received by persons less their contributions for social insurance, personal tax, and nontax payments. It is the income available to persons for spending and saving. Nontax payments include passport fees, fines and penalties, donations, and tuitions and fees paid to schools and hospitals operated mainly by the Government. See also personal income.

Doctor's degree: An earned degree carrying the title of doctor. The Doctor of Philosophy degree (Ph.D.) is the highest academic degree and requires mastery within a field of knowledge and demonstrated ability to perform scholarly research. Other doctorates are

awarded for fulfilling specialized requirements in professional fields, such as education (Ed.D.) musical arts (D.M.A.), business administration (D.B.A.), and engineering (D.Eng. or D.E.S.). Many doctor's degrees in both academic and professional fields require an earned master's degree as a prerequisite. First-professional degrees, such as M.D. and D.D.S., are not included under this heading.

Elementary school: A school classified as elementary by State and local practice and composed of any span of grades not above grade 8. A preschool or kindergarten school is included under this heading only if it is an integral part of an elementary school or a regularly established school system.

Elementary/secondary school: As reported in this publication, includes only regular school, i.e., schools that are part of State and local school systems, and also most not-for-profit private elementary/secondary schools, both religiously affiliated and nonsectarian. Schools not reported include subcollegiate departments of institutions of higher education, American residential schools for exceptional children, Federal schools for Indians, and Federal schools on military posts and other Federal installations.

Enrollment: The number of students registered in a given school unit at a given time, generally in the fall of a year.

Expenditures: Charges incurred, whether paid or unpaid, which are presumed to benefit the current fiscal year. For elementary/secondary schools, these include all charges for current outlays plus capital outlays and interest on school debt. For institutions of higher education, these include current outlays plus capital outlays. For government, these include charges net of recoveries and other correcting transactions other than for retirement of debt, investment in securities, extension of credit, or as agency transaction. Government expenditures include only external transactions, such as the provision of perquisites or other payments in kind. Aggregates for groups of governments exclude intergovernmental transactions among the governments.

Expenditures per pupil: Charges incurred for a particular period of time divided by a student unit of measure, such as average daily attendance or average daily membership.

First-professional degree: A degree that signifies both completion of the academic requirements for beginning practice in a given profession and a level of professional skill beyond that normally required for a bachelor's degree. This degree usually is based on a program requiring at least 2 academic years of work before entrance and a total of at least 6 academic years of work to complete the degree program, including both prior-required college work and the professional program itself. By NCES definition, first-professional degrees are awarded in the fields of dentistry (D.D.S or D.M.D.), medicine (M.D.), optometry (O.D.), osteopathic medicine (D.O.), pharmacy (D.Phar.), podiatric medicine (D.P.M.), veterinary medicine (D.V.M.), chiropractic (D.C. or D.C.M.), law (LL.B. or J.D.), and theological professions (M.Div. or M.H.L.).

First-professional enrollment: The number of students enrolled in a professional school or program which requires at least 2 years of academic college work for entrance and a total of at least 6 years for a degree. By NCES definition, first-professional enrollment includes only students in certain programs. (See first-professional degree for a list of programs.)

Full-time enrollment: The number of students enrolled in higher education courses with total credit load equal to at least 75 percent of the normal full-time course load.

Full-time-equivalent (FTE) enrollment: For institutions of higher education, enrollment of full-time students, plus the full-time equivalent of part-time students as reported by institutions. In the absence of an equivalent reported by an institution, the FTE enrollment is estimated by adding one-third of part-time enrollment to full-time enrollment.

Full-time worker: In educational institutions, an employee whose position requires being on the job on school days throughout the school year at least the number of hours the schools are in session; for higher education, a member of an educational institution's staff who is employed full time.

Graduate: An individual who has received formal recognition for the successful completion of a prescribed program of studies.

Graduate enrollment: The number of students who hold the bachelor's or first-professional degree, or the equivalent, and who are working towards a master's or doctor's degree. First-professional students are counted separately. These enrollment data measure those students who are registered at a particular time during the fall. At some institutions, graduate enrollment also includes students who are in postbaccalaureate classes but not in degree programs. In specified tables, graduate enrollment includes all students in regular graduate programs and all students in postbaccalaureate

classes but not in degree programs (unclassified postbaccalaureate students).

Higher education: Study beyond secondary school at an institution that offers programs terminating in an associate, baccalaureate, or higher degree.

Higher education institutions (traditional classification):

4-year institution: An institution legally authorized to offer and offering at least a 4-year program of college-level studies wholly or principally creditable toward a bachelor's degree. In some tables, a further division between universities and other 4-year institutions is made. A "university" is a postsecondary institution which typically includes one or more graduate professional schools (also see university). For purposes of trend comparisons in this volume, the selection of universities has been held constant for all tabulations after 1982. "Other 4-year institutions" would include the rest of the nonuniversity 4-year institutions.

2-year institution: An institution legally authorized to offer and offering at least a 2-year program of college-level studies which terminates in an associate degree or is principally creditable toward a baccalaureate.

High school: A secondary school offering the final years of high school work necessary for graduation, usually including grades 10, 11, and 12 (in a 6-3-3 plan), or grades 9, 10, 11, and 12 (in a 6-2-4 plan).

Instructional staff: Full-time-equivalent number of positions, not the number of different individuals occupying the positions during the school year. In local schools it includes all public elementary and secondary (junior and senior high) day-school positions that are in the nature of teaching or the improvement of the teaching-learning situation. Includes consultants or supervisors of instruction, principals, teachers, guidance personnel, librarians, psychological personnel, and other instructional staff. Excludes administrative staff, attendance personnel, clerical personnel, and junior college staff.

Master's degree: A degree awarded for successful completion of a program generally requiring 1 or 2 years of full-time college-level study beyond the bachelor's degree. One type of master's degree, including the Master of Arts degree, or M.A., and the Master of Science degree, or M.S., is awarded in the liberal arts and sciences for advanced scholarship in a subject field or discipline and demonstrated ability to perform scholarly research. A second type of master's degree is awarded for the completion of a professionally oriented program; for example, an M.Ed. in education, an M.B.A. in business administration, an M.F.A. in fine arts, an M.M. in music, an M.S.W. in social work, and an M.P.A. in public administration. A third type of master's degree is awarded in professional fields for study beyond the first-professional degree, for example, the Master of Laws (LL.M.) and Master of Science in various medical specializations.

Newly qualified teacher: Person who (1) first became eligible for a teaching license during the period of the study referenced or who was teaching at the time of survey but was not certified or eligible for a teaching license and (2) had never held a full-time, regular teaching position (as opposed to substitute) before completing the requirements for the degree that brought the person into the survey.

Part-time enrollment: The number of students enrolled in higher education courses with a total credit load less the 75 percent of the normal full-time credit load.

Personal income: Current income received by persons from all sources minus their personal contributions for social insurance. Classified as "persons" are individuals (including owners of unincorporated firms), nonprofit institutions serving individuals, private trust funds, and private noninsured welfare funds. Personal income includes transfers (payments not resulting from current production) from government and business such as social security benefits, military pensions, etc., but excludes transfers among persons.

Postbaccalaureate enrollment: The number of graduate and first-professional students working towards advanced degrees and of students enrolled in graduate-level classes but not enrolled in degree programs. See also graduate enrollment and first-professional enrollment.

Private institution: A school or institution that is controlled by an individual or agency other than a State, a subdivision of a State, or the Federal Government, which is usually supported primarily by other than public funds, and the operation of whose program rests with other than publicly elected or appointed officials.

Property tax: The sum of money collected from a tax levied against the value of property.

Public school or institution: A school or institution controlled and operated by publicly elected or appointed officials and deriving its primary support from public funds.

Pupil-teacher ratio: The enrollment of pupils at a given period of time, divided by the full-time-equivalent number of classroom teachers serving these pupils during the same period.

Revenues: All funds received from external sources, net of refunds, and correcting transactions. Noncash transactions such as receipt of services, commodities, or other receipts "in kind" are excluded as are funds received from the issuance of debt, liquidation of investments, and nonroutine sale of property.

Revenues receipts: Additions to assets that do not incur an obligation that must be met at some future date and do not represent exchanges of property for money. Assets must be available for expenditures.

Salary: The total amount regularly paid or stipulated to be paid to an individual, before deductions, for personal services rendered while on the payroll of a business or organization.

School: A division of the school system consisting of students in one or more grades or other identifiable groups and organized to give instruction of a defined type. One school may share a building with another school or one school may be housed in several buildings.

Secondary instructional level: The general level of instruction provided for pupils in secondary schools (generally covering grades 7 through 12 or 9 through 12) and any instruction of a comparable nature and difficulty provided for adults and youth beyond the age of compulsory school attendance.

Secondary school: A school including any span of grades beginning with the next grade following an elementary or middle school (usually 7, 8, or 9) and ending with or below grade 12. Both junior high schools and senior high schools are included.

Senior high school: A secondary school offering the final years of high school work necessary for graduation.

Student: An individual for whom instruction is provided in an educational program under the jurisdiction of a school, school system, or other education institution. No distinction is made between the terms "student" and "pupil," though "student" may refer to one receiving instruction at any level while "pupil" refers only to one attending school at the elementary or secondary level. The term "student" is used to include individuals at all instructional levels. A student may receive instruction in a school facility or in another location, such as at home or in a hospital. Instruction may be provided by direct student-teacher interaction or by some other approved medium such as television, radio, telephone, and correspondence.

Tax base: The collective value of objects, assets, and income components against which a tax is levied.

Total expenditure per pupil in average daily attendance: Includes all expenditures allocable to per pupil costs divided by average daily attendance. These allocable expenditures include current expenditures for regular school programs, interest on school debt, and capital outlay. Beginning in 1980-81, expenditures for State administration are excluded and expenditures for other programs (summer schools, community colleges, and private schools) are included.

Unclassified students: Students who are not candidates for a degree or other formal award, although they are taking higher education courses for credit in regular classes with other students.

Undergraduate students: Students registered at an institution of higher education who are working in a program leading to a baccalaureate or other formal award below the baccalaureate, such as an associate degree.

Statistical Terms

Auto-Correlation: When the error terms from different observations of the same variable are correlated. Also called serial correlation.

Confidence Limits: The values t_1 and t_2 which form the upper and lower limits of the confidence interval.

Degrees of Freedom: The number of free or linearly independent sample observations used in the calculation of a statistic.

Dependent Variable: A mathematical variable whose value is determined by that of one or more other variables in a function. In regression analysis, when a random variable, y, is expressed as a function of variables, x_1, x_2,..., plus a stochastic term, the y is known as the "dependent variable."

Double Exponential Smoothing: A method that takes a single smoothed average component of demand and smooths it a second time so as to allow for estimation of a trend effect.

Durbin-Watson Statistic: A statistic testing the independence of errors in least squares regression against the alternative of first-order serial correlation. The statistic is a simple linear transformation of the first-order serial correlation of residuals and, although its distribution is unknown, it is tested by bounding statistics which follow R. L. Anderson's distribution.

Econometrics: The quantitative examination of economic trends and relationships using statistical techniques, and the development, examination, and refinement of those techniques.

Estimate: A numerical value obtained from a statistical sample and assigned to a population parameter. The particular value yielded by an estimator in a given set of circumstances; or, the rule by which such particular values are calculated.

Estimating Equation: An equation involving observed quantities and an unknown which serves to estimate the latter.

Estimation: Estimation is concerned with inference about the numerical value of unknown population values from incomplete data, such as a sample. If a single figure is calculated for each unknown parameter, the process is called point estimation. If an interval is calculated within which the parameter is likely, in some sense, to lie, the process is called interval estimation.

Exogenous Variable: Variables for which the values are determined outside the model but which influence the model.

Exponential Smoothing: A method used in time series to smooth or to predict a series. There are various forms, but all are based on the supposition that more remote history has less importance than more recent history.

Ex-Ante Forecast: When forecasting a dependent variable for some time period t using a model with at least one independent variable, the forecast of the dependent variable is an ex-ante forecast if the values for the independent variables for time period t are themselves known.

Ex-Post Forecast: When forecasting a dependent variable for some time period t using a model with at least one independent variable, the forecast of the dependent variable is an ex-post forecast if the values for the independent variables for time period t are the actual values. Ex-post forecasts are often used in forecast evaluation.

First-Order Serial Correlation: When errors in one time period are correlated directly with errors in the ensuing time period. Also called auto-correlation.

Forecast: An estimate of the future based on rational study and analysis of available pertinent data, as opposed to subjective prediction.

Forecasting: Assessing the magnitude which a quantity will assume at some future point in time: as distinct from "estimation," which attempts to assess the magnitude of an already existent quantity.

Forecast Horizon: The number of time periods into the future which are forecasted. Forecasts for next year are said to have a 1-year forecast horizon.

Function: A mathematical correspondence that assigns exactly one element of one set to each element of the same or another set. A variable that depends on and varies with another.

Functional Form: A mathematical statement of the relationship among the variables in a model.

Independent Variable: In regression analysis, when a random variable, y, is expressed as a function of

variables, x_1, x_2,..., plus a stochastic term, the x's are known as "independent variables."

Lag: An event occurring at time t + k (k>0) is said to lag behind an event occurring at time t, the extent of the lag being k. An event occurring k time periods before another may be regarded as having a negative lag.

Maximum Likelihood Estimation: A method of estimating a parameter or parameters of a population by that value (or values) which maximizes (or maximize) the likelihood of a sample.

Mean Absolute Percentage Error (MAPE): The average value of the absolute value of errors expressed in percentage terms.

Model: A system of postulates, data, and inferences presented as a mathematical description of a phenomenon such as an actual system or process. The actual phenomenon is represented by the model in order to explain it, to predict it, and to control it.

Ordinary Least Squares (OLS): The estimator which minimizes the sum of squared residuals.

Parameter: A quantity that describes a statistical population.

Prediction Interval: An interval around an estimate to which can be ascribed a given probability that the interval contains the actual value. For example, in forecasting, if we calculate a 95 percent prediction interval given the information available at time t, there is a 95 percent probability that the actual forecast value, when it occurs, will lie within that interval.

Projection: In relation to a time series, an estimate of future values based on a current trend.

R^2: The coefficient of determination; the square of the correlation coefficient between the dependent variable and its OLS estimate.

$\bar{R}^2$ (also called the adjusted R^2): The coefficient of determination adjusted for the degrees of freedom.

Regression Analysis: Regression analysis is a statistical technique for investigating and modeling the relationship between variables.

Rho: A measure of the correlation coefficient between errors in time period t and time period t-1.

Serial Correlation: When the error terms from different observations are correlated. Also called auto-correlation.

Standard Error of Estimate: An expression for the standard deviation of the observed values about a regression line. An estimate of the variation likely to be encountered in making predictions from the regression equation.

Time Series: A set of ordered observations on a quantitative characteristic of an individual or collective phenomenon taken at different points in time. Usually the observations are successive and equally spaced in time.

Time Series Analysis: The branch of quantitative forecasting where data for one variable are examined for patterns of trend, seasonality, and cycle.

Variable: A quantity that may assume any one of a set of values.

☆ U.S. GOVERNMENT PRINTING OFFICE : 1990 - 279-920