The 1987-88 Schools and Staffing Survey (SASS) and the 1988-89 Teacher Followup Survey contain data that can be used to examine issues related to the need for teachers, sources of teacher supply, teacher turnover, teacher attrition, and teacher shortages. This report describes patterns in the sources of supply and the demand for teachers in terms of indicators of shortage and surplus. All but two tables include national estimates for all teachers and for public and private school teachers separately. In 1987-88, approximately 2.6 million teachers were employed in the nation's schools, 2.3 million of them in public schools. In 1987-88, about 63,000 teachers were newly hired, and most were just out of college. In 1987-88, approximately 11 percent of open teaching positions were not filled. Reasons why teachers left the workforce were also studied. Seventeen tables present survey findings. Appendix A presents 17 tables of standard errors, and Appendix B contains technical notes. (SLD)
Selected Tables on Teacher Supply and Demand: 1987–88 and 1988–89
Selected Tables on Teacher Supply and Demand: 1987–88 and 1988–89
National Center for Education Statistics

"The purpose of the Center shall be to collect, 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).

June 1993

Contact:
Sharon A. Bobbitt
(202) 219–1461
Highlights

- During the 1987-88 school year, approximately 2.6 million teachers were employed in the nation's schools, 2.3 million of them in public schools and 300,000 in private schools (table 1).

- Some 88 percent had taught in the same school the year before, 6 percent had taught in another school, 3 percent were first-time teachers, and 3 percent were former teachers returning to the classroom (table 1).

- There were 63,000 newly hired, first-time teachers in 1987-88 (table 2). The majority (61 percent) had been attending college the year before. Another 20 percent had been working in nonteaching jobs, 4 percent had been homemaking, and 1 percent had been unemployed. The rest (13 percent) had been in the military, or their status was unknown. Among the newly hired, first-time teachers in private schools who were between 36 and 50 years old, 36 percent had been homemaking the previous year.

- About 65,000 members of the teaching force were newly hired re-entrants (table 3). These were more likely than newly hired, first-time teachers to have been homemakers the previous year (26 percent) or to have been working in nonteaching jobs (31 percent) and less likely to have been enrolled in college (12 percent).

- Newly hired re-entrants were about as likely as continuing teachers to have earned a master's degree in education as their highest degree (39 percent of public school teachers and 19 percent of private school teachers) (table 4). In contrast, about 8 percent of newly hired, first-time teachers had master's degrees in education as their highest degree earned.

- There were approximately 260,000 open teaching positions in 1987–88 (200,000 of which were in public schools and 60,000 in private schools); 11 percent were not filled (table 6).

- Between 1987–88 and 1988–89, 6 percent of all teachers left classroom teaching (5 percent of public school teachers and 11 percent of private school teachers) (table 8). Eight percent of those who continued teaching moved to a new school.

- Almost all newly hired teachers in public districts had standard certification (93 percent); in private schools, 76 percent had standard certification (table 9).
Attrition rates varied with age, with younger and older teachers leaving most frequently. Leaving teaching in 1987–88 were 8 percent of teachers less than 36 years old, 3 percent of those between 36 and 50 years, and 11 percent of those 51 years or more (table 12). Attrition was higher in private schools than in public schools among teachers less than 36 years old (14 percent compared with 7 percent) and among teachers between 36 and 50 years (10 percent compared with 3 percent).

Of the public school teachers who left, 33 percent left for career reasons, 28 percent left for retirement, 19 percent left for child rearing, and 15 percent left for family or health reasons (table 14). The remaining 5 percent left involuntarily. Private school teachers were more likely than public school teachers to leave for family or health reasons (30 percent) and less likely to leave for retirement (5 percent).

Forty-two percent of the teachers who left voluntarily between 1987–88 and 1988–89 for reasons other than retirement planned to return to teaching, 62 percent of them by the following year and another 26 percent within 5 years (table 16).

Of the voluntary, nonretiring leavers from both public and private schools in 1987–88, 36 percent were homemaking in 1988–89, and 8 percent were attending college (table 17). Twenty percent of the former public school teachers and 9 percent of former private school teachers were employed in nonteaching jobs in education.
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<table>
<thead>
<tr>
<th>Page</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Attrition rate: percentage of teachers who left teaching (leavers) by sex, age, years of teaching experience, by sector and selected school and teacher characteristics: 1987–88 and 1988–89</td>
</tr>
<tr>
<td>13</td>
<td>Percentage distribution of teachers by age, by sector and selected school and teacher characteristics: 1987–88</td>
</tr>
<tr>
<td>15</td>
<td>Number of teachers, percentage distribution of teachers by highest degree earned, and percentage of teachers certified in main assignment field, by sector, 1988–89 teaching status, and reason for leaving: 1987–88 and 1988–89</td>
</tr>
<tr>
<td>16</td>
<td>Number of voluntary, nonretiring leavers, percentage of voluntary, nonretiring leavers who planned to return, and percentage distribution of those who planned to return by when they planned to return, by sector and selected teacher characteristics: 1987–88 and 1988–89</td>
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</tbody>
</table>

Appendix A: Standard Errors

Appendix B: Technical Notes
Introduction

The 1987–88 Schools and Staffing Survey (SASS) and the 1988–89 Teacher Followup Survey (TFS) contain a wealth of data that can be used to examine issues related to the need for teachers, sources of supply, turnover and attrition, and teacher shortages. It is possible not only to develop estimates of the numbers of teachers, where they come from, and where they go, but also to examine in some detail the factors related to the movement of teachers in and out of the teaching work force. For example, it is possible to test hypotheses about the relationship between teacher attrition and teachers' demographic characteristics, professional qualifications, and working conditions.

This report is not intended to provide a comprehensive treatment of teacher supply and demand. Rather, it is meant to describe patterns in the sources of supply, the demand for teachers in terms of various indicators of shortage and surplus, and teacher attrition, with a focus on the latter. All but two tables include national estimates for all teachers and for public and private school teachers separately. (The remaining two tables show public sector data by state.) Within the public and private sectors, data are reported for selected teacher characteristics, such as sex, race–ethnicity, age, experience, teaching level and field, and for selected school characteristics, such as region, community type, level, percentage of students eligible for free lunches, and percent minority enrollment. The teacher data presented in tables 7 and 9 represent full-time equivalent teachers; in all other tables the data represent teacher headcounts, including both full- and part-time teachers. Appendix A contains tables with the standard errors for each of the estimates.

Relationships suggested in these tables must be interpreted with caution because the link between teacher attrition and these school and teacher characteristics is complex and is best
studied using multivariate analytic techniques. To meet this need, a forthcoming Research and Development Report, *Modeling Teacher Supply and Demand, With Commentary*, scheduled for publication in summer 1993, develops and tests a series of multivariate models to identify the factors most closely related to staying in and leaving teaching.

The 1987–88 SASS consisted of separate surveys administered simultaneously by mail to linked samples of teachers, administrators, schools, and (in the public sector) districts. The 1988–89 TFS collected data from all teachers in the SASS sample who left teaching and from a sample of teachers who continued teaching. The survey methodology is described in the Technical Notes (appendix B).
Table 1—Number of teachers and percentage distribution of teachers by teacher status, by sector and selected school and teacher characteristics: 1987–88

<table>
<thead>
<tr>
<th>Teacher status (percent)</th>
<th>Number of teachers</th>
<th>Stayers</th>
<th>Movers</th>
<th>First-time teachers</th>
<th>Re-entrants</th>
</tr>
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<tbody>
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<td>Total</td>
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<td>6.2</td>
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<td>2.8</td>
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<td>Public</td>
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<td>89.1</td>
<td>6.1</td>
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<td>Region</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>440,932</td>
<td>90.4</td>
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<td>1.7</td>
<td>2.6</td>
</tr>
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<td>Midwest</td>
<td>538,119</td>
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<td>4.9</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td>South</td>
<td>754,906</td>
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<td>7.1</td>
<td>2.6</td>
<td>2.8</td>
</tr>
<tr>
<td>West</td>
<td>355,200</td>
<td>87.8</td>
<td>6.5</td>
<td>3.2</td>
<td>2.5</td>
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<tr>
<td>Teaching level and field</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>930,758</td>
<td>88.8</td>
<td>6.5</td>
<td>2.4</td>
<td>2.3</td>
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<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Math/computer science</td>
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<td>90.2</td>
<td>4.7</td>
<td>3.0</td>
<td>2.0</td>
</tr>
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<td>90.7</td>
<td>4.4</td>
<td>2.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Other</td>
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<td>91.0</td>
<td>4.7</td>
<td>1.9</td>
<td>2.3</td>
</tr>
<tr>
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<td>82.1</td>
<td>10.7</td>
<td>2.7</td>
<td>4.5</td>
</tr>
<tr>
<td>Private</td>
<td>245,342*</td>
<td>81.6</td>
<td>7.5</td>
<td>5.7</td>
<td>5.1</td>
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<td>Northeast</td>
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<td>6.8</td>
<td>5.0</td>
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<td>Midwest</td>
<td>66,811</td>
<td>83.2</td>
<td>6.4</td>
<td>6.3</td>
<td>4.1</td>
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<td>7.3</td>
<td>4.1</td>
<td>6.1</td>
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<td>West</td>
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<td>5.7</td>
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<tr>
<td>Teaching level and field</td>
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<td></td>
</tr>
<tr>
<td>Elementary</td>
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<td>80.9</td>
<td>8.1</td>
<td>5.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math/computer science</td>
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<td>80.8</td>
<td>6.9</td>
<td>7.1</td>
<td>5.2</td>
</tr>
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<td>Science</td>
<td>16,042</td>
<td>82.3</td>
<td>6.8</td>
<td>7.5</td>
<td>3.4</td>
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<tr>
<td>Other</td>
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<td>83.5</td>
<td>7.0</td>
<td>4.6</td>
<td>4.9</td>
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<tr>
<td>Special education</td>
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<td>74.7</td>
<td>5.2</td>
<td>11.0</td>
<td>9.1</td>
</tr>
</tbody>
</table>

*The total number of teachers and the numbers of public and private school teachers are less than numbers based on the Teacher Questionnaire published elsewhere (2,630,335; 2,323,204; and 307,131) because teachers missing data on teacher status due to item nonresponse were not included in this table.

NOTE: Details may not add to totals due to rounding.

Table 2—Number of newly hired, first-time teachers and percentage distribution of newly hired, first-time teachers by previous year's main activity, by sector and selected school and teacher characteristics: 1987–88

<table>
<thead>
<tr>
<th>Number of newly hired, first-time teachers*</th>
<th>Main activity during 1986–87 school year (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Working/ not teaching</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------</td>
</tr>
<tr>
<td>Total</td>
<td>62,558</td>
</tr>
<tr>
<td>Public</td>
<td>48,546</td>
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<tr>
<td>Region</td>
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<tr>
<td>Northeast</td>
<td>7,368</td>
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<tr>
<td>Midwest</td>
<td>10,308</td>
</tr>
<tr>
<td>South</td>
<td>19,584</td>
</tr>
<tr>
<td>West</td>
<td>11,287</td>
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<tr>
<td>Teaching level and field</td>
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<tr>
<td>Elementary</td>
<td>22,400</td>
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<tr>
<td>Secondary</td>
<td></td>
</tr>
<tr>
<td>Math/computer science</td>
<td>4,276</td>
</tr>
<tr>
<td>Science</td>
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<tr>
<td>Other</td>
<td>13,514</td>
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<td>Special education</td>
<td>5,209</td>
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<td>Sex</td>
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<tr>
<td>Male</td>
<td>12,228</td>
</tr>
<tr>
<td>Female</td>
<td>36,161</td>
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<tr>
<td>Race-ethnicity</td>
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<tr>
<td>White, non-Hispanic</td>
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<tr>
<td>All others</td>
<td>2,547</td>
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<tr>
<td>Age</td>
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<tr>
<td>Under 36 years</td>
<td>38,899</td>
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<tr>
<td>36–50 years</td>
<td>8,965</td>
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<td>51 years or older</td>
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<td>Private</td>
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<td>Northeast</td>
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<td>Midwest</td>
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<td>South</td>
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<td>West</td>
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Table 2—Number of new hired, first-time teachers and percentage distribution of newly hired, first-time teachers by previous year's main activity, by sector and selected school and teacher characteristics: 1987–88—Continued

<table>
<thead>
<tr>
<th>Main activity during 1985–87 school year (percent)</th>
<th>Number of newly hired, first-time teachers*</th>
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</thead>
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<tr>
<td></td>
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<td>Teaching level and field</td>
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<td>Elementary</td>
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<tr>
<td>Math/computer science</td>
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</tr>
<tr>
<td>Science</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3,579</td>
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<tr>
<td>Special education</td>
<td></td>
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<tr>
<td>Sex</td>
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<td>Race–ethnicity</td>
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<td>Black, non-Hispanic</td>
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<tr>
<td>White, non-Hispanic</td>
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<tr>
<td>All others</td>
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<tr>
<td>Age</td>
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<td>Under 36 years</td>
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<td>36–50 years</td>
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<td>51 years or older</td>
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*Includes teachers who reported that 1987–88 was the year in which they began their first full-time teaching position at the elementary or secondary level and that teaching at the elementary or secondary level was not their main activity in 1986–87.

NOTE: Details may not add to totals due to rounding or cell suppression.

Table 3—Number of newly hired, re-entrant teachers and percentage distribution of newly hired, re-entrant teachers by previous year's main activity, by sector and selected school and teacher characteristics: 1987-88

<table>
<thead>
<tr>
<th>Number of newly hired, re-entrant teachers*</th>
<th>Main activity during 1986–87 school year (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Working/ not teaching</td>
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<tr>
<td>Total</td>
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<td>Public</td>
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<td>Northeast</td>
<td>11,667</td>
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<td>Midwest</td>
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<td>South</td>
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<tr>
<td>West</td>
<td>9,041</td>
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<td>Teaching level and field</td>
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<td>Elementary</td>
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<td>Secondary</td>
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<tr>
<td>Math/computer science</td>
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<td>Science</td>
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<td>Other</td>
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<td>Sex</td>
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<td>Male</td>
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<td>Female</td>
<td>39,935</td>
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<td>Black, non-Hispanic</td>
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<td>All others</td>
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<tr>
<td>Under 36 years</td>
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<tr>
<td>36–50 years</td>
<td>28,330</td>
</tr>
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<td>51 years or older</td>
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<td>Full-time experience</td>
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<td>Less than 5 years</td>
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</tr>
<tr>
<td>5–14 years</td>
<td>28,953</td>
</tr>
<tr>
<td>15 years or more</td>
<td>12,877</td>
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Table 3—Number of newly hired, re-entrant teachers and percentage distribution of newly hired, re-entrant teachers by previous year's main activity, by sector and selected school and teacher characteristics: 1987–88—Continued

<table>
<thead>
<tr>
<th>Number of newly hired, re-entrant teachers*</th>
<th>Working/ not teaching</th>
<th>Attending college/ university</th>
<th>Home-making</th>
<th>Unemployed</th>
<th>Retired</th>
<th>Military/ unknown</th>
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<td>Private</td>
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<tr>
<td>12,579</td>
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<td>14.8</td>
<td>23.6</td>
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<td>9.3</td>
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<td>18.8</td>
<td>—</td>
<td>0.0</td>
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<tr>
<td>Elementary</td>
<td>6,823</td>
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<tr>
<td>Secondary</td>
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<tr>
<td>Math/computer science</td>
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<td>Science</td>
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<td>Other</td>
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<td>Special education</td>
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<td>Sex</td>
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<tr>
<td>Male</td>
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<td>Race-ethnicity</td>
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<tr>
<td>Black, non-Hispanic</td>
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<tr>
<td>White, non-Hispanic</td>
<td>11,818</td>
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<td>14.5</td>
<td>23.5</td>
<td>2.5</td>
<td>8.9</td>
</tr>
<tr>
<td>All others</td>
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<td></td>
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<tr>
<td>Age</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 36 years</td>
<td>4,573</td>
<td>42.7</td>
<td>21.9</td>
<td>19.9</td>
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<td>0.0</td>
</tr>
<tr>
<td>36–50 years</td>
<td>6,060</td>
<td>34.0</td>
<td>10.6</td>
<td>32.0</td>
<td>2.7</td>
<td>—</td>
</tr>
<tr>
<td>51 years or older</td>
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<td></td>
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</tr>
<tr>
<td>Full-time experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>4,091</td>
<td>44.3</td>
<td>16.9</td>
<td>20.8</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>5–14 years</td>
<td>6,539</td>
<td>30.6</td>
<td>17.9</td>
<td>30.1</td>
<td>1.5</td>
<td>—</td>
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<tr>
<td>15 years or more</td>
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</tbody>
</table>

---Too few cases for a reliable estimate.

*Includes teachers who reported that the year in which they began their first full-time teaching position at the elementary or secondary level was prior to 1987–88 and that teaching at the elementary or secondary level was not their main activity in 1986–87.

NOTE: Details may not add to totals due to rounding or cell suppression.

Table 4—Number of teachers and percentage distribution of teachers by highest degree earned, by sector and teacher status: 1987–88

<table>
<thead>
<tr>
<th>Highest degree earned (percent)</th>
<th>Number of teachers</th>
<th>BA/BS in education</th>
<th>BA/BS not in education</th>
<th>MA/MS in education</th>
<th>MA/MS not in education</th>
<th>Higher degree</th>
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<tbody>
<tr>
<td>Total</td>
<td>2,315,209*</td>
<td>1.0</td>
<td>41.9</td>
<td>12.4</td>
<td>37.6</td>
<td>6.2</td>
</tr>
<tr>
<td>Public</td>
<td>2,070,634*</td>
<td>0.7</td>
<td>41.7</td>
<td>11.5</td>
<td>39.4</td>
<td>5.8</td>
</tr>
<tr>
<td>Teacher status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newly hired, first-time</td>
<td>48,129</td>
<td>1.4</td>
<td>64.6</td>
<td>20.5</td>
<td>8.3</td>
<td>4.4</td>
</tr>
<tr>
<td>Newly hired, re-entrant</td>
<td>51,599</td>
<td>0.4</td>
<td>42.5</td>
<td>9.1</td>
<td>39.4</td>
<td>6.4</td>
</tr>
<tr>
<td>Continuing</td>
<td>1,948,502</td>
<td>0.6</td>
<td>41.1</td>
<td>11.3</td>
<td>40.2</td>
<td>5.8</td>
</tr>
<tr>
<td>Private</td>
<td>244,575*</td>
<td>3.6</td>
<td>43.9</td>
<td>19.6</td>
<td>21.7</td>
<td>9.5</td>
</tr>
<tr>
<td>Teacher status</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newly hired, first-time</td>
<td>13,971</td>
<td>6.2</td>
<td>50.9</td>
<td>29.6</td>
<td>7.5</td>
<td>4.3</td>
</tr>
<tr>
<td>Newly hired, re-entrant</td>
<td>12,442</td>
<td>1.1</td>
<td>53.5</td>
<td>16.2</td>
<td>18.5</td>
<td>8.8</td>
</tr>
<tr>
<td>Continuing</td>
<td>214,897</td>
<td>3.6</td>
<td>42.9</td>
<td>19.2</td>
<td>22.7</td>
<td>9.9</td>
</tr>
</tbody>
</table>

*The total number of teachers and the numbers of public and private school teachers are less than numbers based on the Teacher Questionnaire published elsewhere (2,630,335; 2,323,204; and 307,131) because teachers missing data on teacher status or highest degree earned due to item nonresponse were not included in this table.
—Too few cases for a reliable estimate.

NOTE: Details may not add to totals due to rounding or cell suppression.

Table 5—Percentage distribution of 1987-88 teachers by 1988-89 teacher status, by sector: 1988-89

<table>
<thead>
<tr>
<th></th>
<th>Stayers</th>
<th>Movers</th>
<th>Leavers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>86.2</td>
<td>7.8</td>
<td>5.9</td>
</tr>
<tr>
<td>Public</td>
<td>87.2</td>
<td>7.5</td>
<td>5.3</td>
</tr>
<tr>
<td>Private</td>
<td>78.4</td>
<td>10.2</td>
<td>11.4</td>
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</tbody>
</table>

NOTE: Details may not add to totals due to rounding.

Table 6—Number of open teaching positions and percentage distribution of open positions by filled status, by selected public district and private school characteristics: 1987–88

<table>
<thead>
<tr>
<th></th>
<th>Number of open positions</th>
<th>Filled status of open positions (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Filled positions</td>
</tr>
<tr>
<td>Total</td>
<td>259,814</td>
<td>89.3</td>
</tr>
<tr>
<td>Public Districts</td>
<td>199,914</td>
<td>88.5</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>33,475</td>
<td>83.7</td>
</tr>
<tr>
<td>Midwest</td>
<td>42,094</td>
<td>87.0</td>
</tr>
<tr>
<td>South</td>
<td>84,098</td>
<td>90.3</td>
</tr>
<tr>
<td>West</td>
<td>40,247</td>
<td>90.3</td>
</tr>
<tr>
<td>Free lunch eligibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20%</td>
<td>72,170</td>
<td>86.9</td>
</tr>
<tr>
<td>20–49%</td>
<td>88,987</td>
<td>89.0</td>
</tr>
<tr>
<td>50% or more</td>
<td>35,695</td>
<td>90.2</td>
</tr>
<tr>
<td>Minority enrollment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5%</td>
<td>49,062</td>
<td>87.5</td>
</tr>
<tr>
<td>5–19%</td>
<td>46,415</td>
<td>90.9</td>
</tr>
<tr>
<td>20–49%</td>
<td>53,991</td>
<td>87.2</td>
</tr>
<tr>
<td>50% or more</td>
<td>50,114</td>
<td>88.8</td>
</tr>
<tr>
<td>Private Schools</td>
<td>59,899</td>
<td>92.1</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>17,549</td>
<td>91.9</td>
</tr>
<tr>
<td>Midwest</td>
<td>15,458</td>
<td>91.3</td>
</tr>
<tr>
<td>South</td>
<td>16,479</td>
<td>92.0</td>
</tr>
<tr>
<td>West</td>
<td>10,414</td>
<td>93.7</td>
</tr>
<tr>
<td>Free lunch eligibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20%</td>
<td>11,364</td>
<td>92.0</td>
</tr>
<tr>
<td>20–49%</td>
<td>3,972</td>
<td>93.0</td>
</tr>
<tr>
<td>50% or more</td>
<td>3,559</td>
<td>90.2</td>
</tr>
<tr>
<td>Minority enrollment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5%</td>
<td>24,243</td>
<td>93.1</td>
</tr>
<tr>
<td>5–19%</td>
<td>17,646</td>
<td>91.1</td>
</tr>
<tr>
<td>20–49%</td>
<td>7,663</td>
<td>91.5</td>
</tr>
<tr>
<td>50% or more</td>
<td>9,237</td>
<td>91.9</td>
</tr>
</tbody>
</table>

NOTE: Details may not add to totals due to rounding.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>students</td>
<td>FTE teachers</td>
<td>students</td>
<td>FTE teachers</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>45,156,131</td>
<td>2,590,806</td>
<td>45,411,325</td>
<td>2,638,931</td>
<td>0.6</td>
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<tr>
<td>Public districts</td>
<td>39,711,745</td>
<td>2,271,533</td>
<td>40,003,907</td>
<td>2,316,942</td>
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</tr>
<tr>
<td>Northeast</td>
<td>7,506,182</td>
<td>495,318</td>
<td>7,471,702</td>
<td>504,973</td>
<td>-0.5</td>
</tr>
<tr>
<td>Midwest</td>
<td>9,902,433</td>
<td>579,680</td>
<td>9,903,336</td>
<td>583,141</td>
<td>0.0</td>
</tr>
<tr>
<td>South</td>
<td>14,047,961</td>
<td>802,577</td>
<td>14,206,503</td>
<td>824,531</td>
<td>1.1</td>
</tr>
<tr>
<td>West</td>
<td>8,255,169</td>
<td>393,978</td>
<td>8,422,366</td>
<td>404,296</td>
<td>2.0</td>
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<tr>
<td>Private schools</td>
<td>5,444,386</td>
<td>319,274</td>
<td>5,407,418</td>
<td>321,989</td>
<td>-0.7</td>
</tr>
<tr>
<td>Northeast</td>
<td>1,587,947</td>
<td>93,609</td>
<td>1,573,969</td>
<td>93,377</td>
<td>-0.9</td>
</tr>
<tr>
<td>Midwest</td>
<td>1,551,901</td>
<td>85,579</td>
<td>1,535,368</td>
<td>86,492</td>
<td>-1.1</td>
</tr>
<tr>
<td>South</td>
<td>1,388,234</td>
<td>89,359</td>
<td>1,387,947</td>
<td>90,635</td>
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<tr>
<td>West</td>
<td>916,304</td>
<td>50,727</td>
<td>910,134</td>
<td>51,485</td>
<td>0.7</td>
</tr>
<tr>
<td>Grades K–6</td>
<td>24,825,174</td>
<td>1,315,494</td>
<td>25,319,370</td>
<td>1,353,119</td>
<td>2.0</td>
</tr>
<tr>
<td>Sector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Public districts</td>
<td>21,506,954</td>
<td>1,143,722</td>
<td>21,977,234</td>
<td>1,177,869</td>
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</tr>
<tr>
<td>Private schools</td>
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<td>171,772</td>
<td>3,342,135</td>
<td>175,250</td>
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<tr>
<td>Grades 7–12</td>
<td>20,330,956</td>
<td>1,275,313</td>
<td>20,091,955</td>
<td>1,285,458</td>
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<tr>
<td>Sector</td>
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<tr>
<td>Public districts</td>
<td>18,204,791</td>
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<td>147,502</td>
<td>2,065,283</td>
<td>146,737</td>
<td>-2.9</td>
</tr>
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</table>

NOTE: The number of full-time-equivalent teachers in this table was estimated using data from the Teacher Demand and Shortage Questionnaires and therefore differs from the number in Table 1, which was estimated using data from the Teacher Questionnaires.


<table>
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<tr>
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<th>Number of 1987-88 teach.</th>
<th>1987-88 teachers</th>
<th>1987-88 teachers still teaching</th>
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</thead>
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<tr>
<td></td>
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<td>Percent who left</td>
<td>Percent who still taught</td>
</tr>
<tr>
<td>Total</td>
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<td>Public</td>
<td>2,151,619*</td>
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<td>Region</td>
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<tr>
<td>Northeast</td>
<td>458,728</td>
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<td>Midwest</td>
<td>571,627</td>
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<tr>
<td>South</td>
<td>763,799</td>
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<td>94.5</td>
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<td>School level</td>
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<tr>
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<td>Secondary</td>
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<tr>
<td>Combined/other</td>
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<td>93.5</td>
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<td>Community type</td>
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<td>Rural/farming</td>
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<td>95.1</td>
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<td>95.0</td>
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<td>Suburban</td>
<td>527,705</td>
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<td>95.3</td>
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<tr>
<td>Urban</td>
<td>508,665</td>
<td>5.5</td>
<td>94.5</td>
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<tr>
<td>Free lunch eligibility</td>
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</tr>
<tr>
<td>Less than 20%</td>
<td>836,187</td>
<td>5.1</td>
<td>94.9</td>
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<tr>
<td>20–49%</td>
<td>693,961</td>
<td>4.8</td>
<td>95.2</td>
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<td>50% or more</td>
<td>414,150</td>
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<td>94.5</td>
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<td>Minority enrollment</td>
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<tr>
<td>Less than 5%</td>
<td>644,058</td>
<td>4.9</td>
<td>95.1</td>
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<td>20–49%</td>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Percent who left</td>
<td>Percent who still taught</td>
</tr>
<tr>
<td>Elementary</td>
<td>958,603</td>
<td>5.3</td>
<td>94.7</td>
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<td></td>
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<tr>
<td>Math/computer science</td>
<td>140,044</td>
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<td>Science</td>
<td>120,410</td>
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<tr>
<td>Other</td>
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<tr>
<td>Special education</td>
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<td>94.2</td>
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<td>Sex</td>
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<tr>
<td>Male</td>
<td>644,885</td>
<td>4.7</td>
<td>95.3</td>
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<tr>
<td>Female</td>
<td>1,498,981</td>
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<td>94.5</td>
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<tr>
<td>Race-ethnicity</td>
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<tr>
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<tr>
<td>Full-time experience</td>
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<td>Less than 5 years</td>
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<tbody>
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<td></td>
<td>Number of</td>
<td>Percent who left</td>
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<tr>
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<td>20–49%</td>
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<td>50% or more</td>
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<tr>
<td>Less than 5%</td>
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<tr>
<td>5–19%</td>
<td>73,566</td>
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<tr>
<td>20–49%</td>
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<td>Other</td>
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<td>Special education</td>
<td>8,073</td>
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<tr>
<td>Sex</td>
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<td>Race-ethnicity</td>
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<td>White, non-Hispanic</td>
<td>237,717</td>
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<tr>
<td>All others</td>
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<td>Full-time experience</td>
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<tr>
<td>Less than 5 years</td>
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<tr>
<td>5–14 years</td>
<td>108,653</td>
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<tr>
<td>15 years or more</td>
<td>74,273</td>
<td>7.2</td>
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</tbody>
</table>

—Too few cases for a reliable estimate.

*The total number of teachers and the numbers of public and private school teachers are less than numbers based on the Teacher Followup Survey published elsewhere (2,699,098; 2,387,174; and 311,924) because teachers missing data on row school or teacher characteristics or on teaching status due to item nonresponse were not included in this table.

NOTE: Details may not add to totals due to rounding or cell suppression.

Table 9—Number of full-time-equivalent (FTE) teachers, percentage distribution of teachers by hiring status, and percentage of teachers with standard certification, by sector and selected public district and private school characteristics: 1987–88

<table>
<thead>
<tr>
<th>Hiring status (percent)</th>
<th>Number of 1987–88 FTE teachers</th>
<th>Percent with standard certification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>All teachers</td>
</tr>
<tr>
<td>Total</td>
<td>2,638,931</td>
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<tr>
<td>Public districts</td>
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<td></td>
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<tr>
<td>Northeast</td>
<td>504,973</td>
<td>94.8</td>
</tr>
<tr>
<td>Midwest</td>
<td>583,141</td>
<td>98.2</td>
</tr>
<tr>
<td>South</td>
<td>824,531</td>
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<tr>
<td>West</td>
<td>404,296</td>
<td>94.5</td>
</tr>
<tr>
<td>Free lunch eligibility</td>
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</tr>
<tr>
<td>Less than 20%</td>
<td>861,137</td>
<td>96.3</td>
</tr>
<tr>
<td>20–49%</td>
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<td>433,841</td>
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<tr>
<td>Minority enrollment</td>
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<td></td>
</tr>
<tr>
<td>Less than 5%</td>
<td>648,653</td>
<td>97.5</td>
</tr>
<tr>
<td>5–19%</td>
<td>550,432</td>
<td>95.7</td>
</tr>
<tr>
<td>20–49%</td>
<td>533,054</td>
<td>95.1</td>
</tr>
<tr>
<td>50% or more</td>
<td>582,078</td>
<td>92.9</td>
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<tr>
<td>Private schools</td>
<td>321,989</td>
<td>79.9</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>93,377</td>
<td>74.2</td>
</tr>
<tr>
<td>Midwest</td>
<td>86,492</td>
<td>88.3</td>
</tr>
<tr>
<td>South</td>
<td>90,635</td>
<td>79.3</td>
</tr>
<tr>
<td>West</td>
<td>51,485</td>
<td>77.2</td>
</tr>
<tr>
<td>Free lunch eligibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20%</td>
<td>66,555</td>
<td>86.8</td>
</tr>
<tr>
<td>20–49%</td>
<td>17,431</td>
<td>83.8</td>
</tr>
<tr>
<td>50% or more</td>
<td>17,073</td>
<td>72.1</td>
</tr>
<tr>
<td>Minority enrollment</td>
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<td></td>
</tr>
<tr>
<td>Less than 5%</td>
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<td>82.1</td>
</tr>
<tr>
<td>5–19%</td>
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<td>89.6</td>
</tr>
<tr>
<td>20–49%</td>
<td>38,909</td>
<td>76.8</td>
</tr>
<tr>
<td>50% or more</td>
<td>42,381</td>
<td>74.2</td>
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</table>

NOTE: Details may not add to totals due to rounding. The number of full-time-equivalent teachers in this table was estimated using data from the Teacher Demand and Shortage Questionnaires and therefore differs from the number in table 1, which was estimated using data from the Teacher Questionnaires. It differs from the number shown in table 7 (which was also estimated from the Teacher Demand and Shortage Questionnaires) because the number in table 7 includes pre-Kindergarten teachers.

Table 10—Number of full-time-equivalent (FTE) public school teachers, percentage distribution of teachers by hiring status, and percentage of teachers with standard certification, by state: 1987-88

<table>
<thead>
<tr>
<th>State</th>
<th>Number of FTE teachers</th>
<th>New Hire (percent)</th>
<th>Continuing teachers (percent)</th>
<th>All teachers (percent)</th>
<th>Newly hired teachers (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>36,983</td>
<td>7.8</td>
<td>92.2</td>
<td>95.4</td>
<td>92.6</td>
</tr>
<tr>
<td>Alaska</td>
<td>6,088</td>
<td>5.8</td>
<td>94.2</td>
<td>99.5</td>
<td>90.4</td>
</tr>
<tr>
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<td>27,596</td>
<td>11.8</td>
<td>88.2</td>
<td>96.7</td>
<td>99.4</td>
</tr>
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<td>Arkansas</td>
<td>29,543</td>
<td>12.3</td>
<td>87.7</td>
<td>93.3</td>
<td>84.1</td>
</tr>
<tr>
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<td>203,036</td>
<td>8.4</td>
<td>91.6</td>
<td>97.5</td>
<td>90.0</td>
</tr>
<tr>
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<td>9.0</td>
<td>91.0</td>
<td>96.1</td>
<td>99.0</td>
</tr>
<tr>
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<td>33,935</td>
<td>6.4</td>
<td>93.6</td>
<td>96.1</td>
<td>82.0</td>
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<td>5.4</td>
<td>94.6</td>
<td>87.9</td>
<td>95.4</td>
</tr>
<tr>
<td>Dist. of Columbia</td>
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<td>93.9</td>
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<td>100.0</td>
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<td>91,036</td>
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<td>91.6</td>
<td>89.7</td>
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</tr>
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<td>87.7</td>
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<td>96.3</td>
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<td>100.0</td>
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<td>90.1</td>
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<td>99.6</td>
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<td>94.5</td>
<td>99.2</td>
<td>98.8</td>
</tr>
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<td>93.5</td>
<td>96.1</td>
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<td>93.3</td>
<td>98.9</td>
<td>96.8</td>
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<td>98.1</td>
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<td>97.8</td>
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<td>97.0</td>
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<td>97.9</td>
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<td>98.5</td>
</tr>
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<td>93.9</td>
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<td>93.7</td>
<td>92.9</td>
<td>95.7</td>
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<td>11.9</td>
<td>88.1</td>
<td>96.5</td>
<td>86.5</td>
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</table>
Table 10—Number of full-time-equivalent (FTE) public school teachers, percentage distribution of teachers by hiring status, and percentage of teachers with standard certification, by state: 1987–88—Continued

<table>
<thead>
<tr>
<th>Hiring status (percent)</th>
<th>Number of FTE teachers</th>
<th>Newly hired</th>
<th>Continuing teachers</th>
<th>Percent with standard certification</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>All teachers</td>
</tr>
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<td>Utah</td>
<td>15,751</td>
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<td>87.7</td>
<td>80.7</td>
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<td>6,227</td>
<td>8.8</td>
<td>91.2</td>
<td>97.4</td>
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<td>91.9</td>
<td>89.5</td>
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<td>38,031</td>
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<td>92.8</td>
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<tr>
<td>West Virginia</td>
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<td>5.3</td>
<td>94.7</td>
<td>92.3</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>43,692</td>
<td>5.8</td>
<td>94.2</td>
<td>99.3</td>
</tr>
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<td>Wyoming</td>
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<td>95.5</td>
<td>98.9</td>
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NOTE: Details may not add to totals due to rounding or cell suppression. Numbers and percentages for Delaware, the District of Columbia, Hawaii, Nevada, and West Virginia are universe figures because all school districts in these jurisdictions were included in the sample. Estimates for all other states except Maryland and Utah are based on samples of at least 30 cases. The number of sample cases is 18 for Maryland and 29 for Utah.

Table 11—Percentage of public school teachers certified in their main and other assignment fields and percentage distribution of certified teachers by type of certification, by teaching level and field and by state: 1987–88

<table>
<thead>
<tr>
<th>Type of certification</th>
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<th>Type of certification</th>
<th>Certified another field</th>
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<tbody>
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<td>Probationary</td>
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<td>Total</td>
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Teaching level and field

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Elementary

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<td>92.6</td>
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Secondary

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State

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<th>Certified another field</th>
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Table 11—Percentage of public school teachers certified in their main and other assignment fields and percentage distribution of certified teachers by type of certification, by teaching level and field and by state: 1987–88—Continued

<table>
<thead>
<tr>
<th>State</th>
<th>Certified in main field</th>
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<th>Type of certification</th>
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<td>Temporary</td>
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—Too few cases for a reliable estimate.

NOTE: Details may not add to totals due to rounding or cell suppression.

### Table 12—Attrition rate: percentage of teachers who left teaching (leavers) by sex, age, years of teaching experience, by sector and selected school and teacher characteristics: 1987–88 and 1988–89

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<td>Male</td>
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<tr>
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<td>4.1</td>
<td>6.8</td>
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<td>4.2</td>
<td>6.7</td>
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<tr>
<td>South</td>
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<td>6.9</td>
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<td>6.5</td>
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<td>Combined/other</td>
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<td>5.8</td>
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<td>5–19%</td>
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<td>20–49%</td>
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<td>5.0</td>
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20
Table 12—Attrition rate: percentage of teachers who left teaching (leavers) by sex, age, years of teaching experience, by sector and selected school and teacher characteristics: 1987–88 and 1988–89—Continued

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<td>13.8 15.5 19.2</td>
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<td>12.7 11.0 12.0</td>
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<td>9.3 9.7 —</td>
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—Too few cases for a reliable estimate.
(*) Not applicable.
NOTE: Details may not add to totals due to rounding or cell suppression.
Table 13—Percentage distribution of teachers by age, by sector and selected school and teacher characteristics: 1987-88

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Table 13—Percentage distribution of teachers by age, by sector and selected school and teacher characteristics:
1987-88—Continued

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<td>19.3</td>
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<td>4.9</td>
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<tr>
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<td>12.4</td>
<td>15.0</td>
<td>24.3</td>
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<td>5.3</td>
<td>4.2</td>
<td>5.1</td>
<td>0.8</td>
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</tbody>
</table>

—Too few cases for a reliable estimate.

NOTE: Details may not add to totals due to rounding or cell suppression.

Table 14—Percentage distribution of leavers by main reasons for leaving, by sector, by selected school and teacher characteristics: 1987–88 and 1988–89

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<th>Region</th>
<th>Public</th>
<th>Private</th>
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<td></td>
<td>Career</td>
<td>Family/health</td>
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<td>South</td>
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<td>West</td>
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<td>Community type</td>
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<tr>
<td>Suburban</td>
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<td>School level</td>
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<td>Secondary</td>
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<td>17.8</td>
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<td>Combined/other</td>
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<td>16.5</td>
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<td>Teaching level and field</td>
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<td>Secondary</td>
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<td>12.7</td>
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<tr>
<td>Math/computer science</td>
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<tr>
<td>Special education</td>
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<td></td>
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<tr>
<td>Sex</td>
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<td></td>
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<td>Male</td>
<td>50.6</td>
<td>11.2</td>
</tr>
<tr>
<td>Female</td>
<td>26.2</td>
<td>16.8</td>
</tr>
</tbody>
</table>

| Involuntary | 6.4   | 7.8   | 5.7   | 5.9   | 4.6   |


Table 14—Percentage distribution of leavers by main reasons for leaving, by sector, by selected school and teacher characteristics: 1987–88 and 1988–89—Continued

<table>
<thead>
<tr>
<th>Race–ethnicity</th>
<th>Public</th>
<th>Private</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Career</td>
<td>Family/health</td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>47.5</td>
<td>13.6</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>31.3</td>
<td>15.7</td>
</tr>
<tr>
<td>All others</td>
<td>37.4</td>
<td>13.8</td>
</tr>
</tbody>
</table>

| Full-time            |         |               |               |            |            |         |               |               |            |            |
| Less than 5 years    | 37.6    | 21.4          | 30.4           | —          | 10.0       | 52.8   | 24.2          | 16.8         | 0.0        | 6.2        |
| 5–14 years           | 34.6    | 22.4          | 32.9           | 5.9        | 4.2        | 23.8   | 30.0          | 33.8         | —          | 3.9        |
| 15 years or more     | 28.5    | 5.7           | 1.9            | 61.7       | 2.1        | 41.0   | 18.1          | 26.7         | 13.4       | —          |

—Too few cases for a reliable estimate.

*Teachers who left for career reasons include leavers who reported that they left to pursue another career, for better salary or benefits, to take courses to improve career opportunities inside or outside the field of education, to take a sabbatical or other break from teaching, or because they were dissatisfied with teaching as a career.

NOTE: Details may not add to totals due to rounding or cell suppression.

Table 15—Number of teachers, percentage distribution of teachers by highest degree earned, and percentage of teachers certified in main assignment field, by sector, 1988–89 teaching status, and reason for leaving: 1987–88 and 1988–89

<table>
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<tr>
<th>Number of 1987–88 teachers</th>
<th>Degree earned</th>
<th>Percent certified in main assignment field</th>
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<td>BA/BS in education</td>
<td>BA/BS not in education</td>
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<td>----------------------------</td>
<td>------------------</td>
<td>----------------------</td>
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<tr>
<td>Total</td>
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<td>2,123,982*</td>
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<tr>
<td>1988–89 status</td>
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<tr>
<td>Still teaching</td>
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<tr>
<td>Not teaching</td>
<td>112,711</td>
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<tr>
<td>Reason for leaving</td>
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<tr>
<td>Career</td>
<td>36,771</td>
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</tr>
<tr>
<td>Family/health</td>
<td>16,950</td>
<td>0.7</td>
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<tr>
<td>Childrearing</td>
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<td>Retirement</td>
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<td>Involuntarily</td>
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<tr>
<td>Private</td>
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<td>1988–89 status</td>
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<td>Still teaching</td>
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<tr>
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*The total number of teachers and the numbers of public and private school teachers are less than numbers based on the Teacher Followup Survey published elsewhere (2,699,098; 2,387,174; and 311,924) because teachers missing data on the row teacher characteristics, highest degree earned, or certification status in main field due to item nonresponse were not included in this table.

NOTE: Details may not add to totals due to rounding or cell suppression.

<table>
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<th>Percent who planned to return to teaching</th>
<th>When they planned to return</th>
<th>By next year</th>
<th>Within 5 years</th>
<th>In more than 5 years</th>
<th>Undecided</th>
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Table 16—Number of voluntary, nonretiring leavers, percentage of voluntary, nonretiring leavers who planned to return, and percentage distribution of those who planned to return by when they planned to return, by sector and selected teacher characteristics: 1987–88 and 1988–89—Continued

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<th>Number of voluntary nonretiring leavers</th>
<th>Percent who planned to return to teaching</th>
<th>When they planned to return</th>
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—Too few cases for a reliable estimate.

NOTE: Details may not add to totals due to rounding or cell suppression.


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<td>Non-teaching job in education</td>
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</tr>
<tr>
<td>Secondary</td>
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<th>Noneducation job</th>
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Private

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<th>Home-making</th>
<th>Nonteaching job in education</th>
<th>Non-education job</th>
<th>Other</th>
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<td>Math/computer science</td>
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<tr>
<td>Science</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Other</td>
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<td>24.5</td>
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<td>55.1</td>
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Sex

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<th>Nonteaching job in education</th>
<th>Non-education job</th>
<th>Other</th>
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<td>Male</td>
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Race-ethnicity

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<th>Home-making</th>
<th>Nonteaching job in education</th>
<th>Non-education job</th>
<th>Other</th>
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<tbody>
<tr>
<td>Black, non-Hispanic</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>6.8</td>
<td>32.5</td>
<td>6.9</td>
<td>42.1</td>
<td>11.7</td>
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<tr>
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</table>

Full-time experience

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<th>Home-making</th>
<th>Nonteaching job in education</th>
<th>Non-education job</th>
<th>Other</th>
</tr>
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<tbody>
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<td>Less than 5 years</td>
<td>18.6</td>
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<td>8.2</td>
<td>40.5</td>
<td>8.9</td>
</tr>
<tr>
<td>5–14 years</td>
<td>2.0</td>
<td>44.9</td>
<td>1.1</td>
<td>41.1</td>
<td>10.8</td>
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<tr>
<td>15 years or more</td>
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<td></td>
<td>42.4</td>
<td>37.6</td>
<td>16.1</td>
</tr>
</tbody>
</table>

NOTE: Details may not add to totals due to rounding or cell suppression.

Appendix A

Standard Errors
Table A.1—Standard errors for table 1: Number of teachers and percentage distribution of teachers by teacher status, by sector and selected school and teacher characteristics: 1987–88

<table>
<thead>
<tr>
<th>Teacher status (percent)</th>
<th>Number of teachers</th>
<th>Stayers</th>
<th>Movers</th>
<th>First-time teachers</th>
<th>Re-entrants</th>
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<tr>
<td></td>
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<td>0.15</td>
<td>0.07</td>
</tr>
<tr>
<td>Public</td>
<td>12,936.4</td>
<td>0.18</td>
<td>0.16</td>
<td>0.08</td>
<td>0.09</td>
</tr>
<tr>
<td>Region</td>
<td>12,936.4</td>
<td>0.18</td>
<td>0.16</td>
<td>0.08</td>
<td>0.09</td>
</tr>
<tr>
<td>Northeast</td>
<td>5,624.2</td>
<td>0.51</td>
<td>0.35</td>
<td>0.20</td>
<td>0.22</td>
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<td>0.29</td>
<td>0.18</td>
<td>0.17</td>
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<td>0.15</td>
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<td>0.18</td>
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<td>0.12</td>
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<td>7.11</td>
<td>2.72</td>
<td>3.53</td>
<td>4.00</td>
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</table>

<table>
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<th>Number of newly hired, first-time teachers</th>
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<th>Attending college/ university</th>
<th>Home-making</th>
<th>Unemployed</th>
<th>Retired</th>
<th>Military/ unknown</th>
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</tr>
<tr>
<td>Northeast</td>
<td>559.7</td>
<td>5.31</td>
<td>4.94</td>
<td>1.97</td>
<td>—</td>
<td>0.00</td>
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<td>Midwest</td>
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<td>3.65</td>
<td>5.89</td>
<td>3.55</td>
<td>0.00</td>
<td>0.00</td>
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<td>7.89</td>
<td>8.18</td>
<td>5.60</td>
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<td>—</td>
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35
Table A.2—Standard errors for table 2: Number of newly hired, first-time teachers and percentage distribution of newly hired, first-time teachers by previous year's main activity, by sector and selected school and teacher characteristics: 1987–88—Continued

<table>
<thead>
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<th>Number of newly hired, first-time teachers</th>
<th>Main activity during 1986–87 school year (percent)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Working/Attending college/Home-making Unemployed Retired Military/unknown</td>
<td></td>
</tr>
<tr>
<td>Teaching level and field</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>648.7</td>
<td>3.37</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math/computer science</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Science</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Other</td>
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<tr>
<td>Sex</td>
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<tr>
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<td>7.51</td>
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<td>2.38</td>
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<tr>
<td>Black, non-Hispanic</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>929.9</td>
<td>2.92</td>
</tr>
<tr>
<td>All others</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 36 years</td>
<td>816.5</td>
<td>3.03</td>
</tr>
<tr>
<td>36–50 years</td>
<td>257.4</td>
<td>10.64</td>
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<tr>
<td>51 years or older</td>
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—Too few cases for a reliable estimate.

Table A.3—Standard errors for table 3: Number of newly hired, re-entrant teachers and percentage distribution of newly hired, re-entrant teachers by previous year's main activity, by sector and selected school and teacher characteristics: 1987–88

| Number of newly hired, re-entrant teachers | Main activity during 1986–87 school year (percent) | Working/Attending Home-Making Unemployed Retired Military/unknown |
|-------------------------------------------|---------------------------------------------------|----------------------|-----------------|-----------------|-----------------|-----------------|
| Total                                     | 2,334.6                                           | 1.86                 | 0.46            | 1.33            | 1.31            |
| Public                                    | 1,873.0                                           | 2.00                 | 0.51            | 0.25            | 1.79            |
| Region                                    |                                                   |                      |                 |                 |                 |
| Northeast                                 | 954.6                                             | 4.21                 | 0.00            | 0.00            | 4.50            |
| Midwest                                   | 894.5                                             | 3.91                 | 1.30            | —               | 4.77            |
| South                                     | 1,130.0                                           | 2.32                 | 0.98            | —               | 2.56            |
| West                                      | 763.7                                             | 3.16                 | 0.86            | —               | 3.47            |
| Teaching level and field                  |                                                   |                      |                 |                 |                 |
| Elementary                                | 1,091.9                                           | 3.53                 | 0.53            | 0.47            | 3.35            |
| Secondary                                 |                                                   |                      |                 |                 |                 |
| Math/computer science                     | 390.3                                             | 4.74                 | —               | 0.00            | 7.61            |
| Science                                   | 453.8                                             | 4.85                 | —               | 0.00            | 7.09            |
| Other                                     | 1,129.8                                           | 2.72                 | 0.47            | —               | 2.76            |
| Special education                         | 955.1                                             | 2.50                 | —               | 2.56            | 4.24            |
| Sex                                       |                                                   |                      |                 |                 |                 |
| Male                                      | 842.6                                             | 1.85                 | —               | 1.54            | 0.79            | 3.65            |
| Female                                    | 1,729.1                                           | 2.52                 | 0.42            | —               | 2.04            |
| Race–ethnicity                            |                                                   |                      |                 |                 |                 |
| Black, non-Hispanic                       | 571.8                                             | 3.23                 | —               | 0.00            | 6.01            |
| White, non-Hispanic                       | 1,681.8                                           | 2.21                 | 0.50            | 0.29            | 2.05            |
| All others                                | 337.1                                             | 7.74                 | 0.00            | 0.00            | 7.13            |
| Age                                       |                                                   |                      |                 |                 |                 |
| Under 36 years                            | 1,226.6                                           | 3.29                 | 1.29            | 0.00            | 2.82            |
| 36–50 years                               | 1,337.7                                           | 2.41                 | 0.57            | 0.00            | 2.04            |
| 51 years or older                         | 619.4                                             | 3.94                 | 0.00            | 2.62            | 7.71            |
| Full-time experience                      |                                                   |                      |                 |                 |                 |
| Less than 5 years                         | 979.9                                             | 3.01                 | 1.00            | 0.00            | 3.26            |
| 5–14 years                                | 1,456.3                                           | 2.95                 | 0.89            | —               | 2.07            |
| 15 years or more                          | 1,245.3                                           | 2.77                 | 0.72            | 0.97            | 3.95            |
| Private                                   | 1,120.4                                           | 3.50                 | 1.11            | 6.57            | 3.23            |
| Region                                    |                                                   |                      |                 |                 |                 |
| Northeast                                 | 687.2                                             | 4.90                 | —               | —               | 6.52            |
| Midwest                                   | 396.3                                             | 9.15                 | 1.65            | 0.00            | 6.68            |
| South                                     | 950.2                                             | 7.18                 | —               | —               | 5.45            |
| West                                      | 297.6                                             | 4.75                 | —               | 0.00            | 5.34            |
Table A.3—Standard errors for table 3: Number of newly hired, re-entrant teachers and percentage distribution of newly hired, re-entrant teachers by previous year’s main activity, by sector and selected school and teacher characteristics: 1987–88—Continued

<table>
<thead>
<tr>
<th>Number of newly hired, re-entrant teachers</th>
<th>Main activity during 1986–87 school year (percent)</th>
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<tr>
<td></td>
<td>Working/not teaching</td>
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<tr>
<td>Teaching level and field</td>
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<td>Elementary</td>
<td>906.2</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
</tr>
<tr>
<td>Math/computer science</td>
<td></td>
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<tr>
<td>Science</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>742.5</td>
</tr>
<tr>
<td>Special education</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>490.9</td>
</tr>
<tr>
<td>Female</td>
<td>1,018.7</td>
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<tr>
<td>Race–ethnicity</td>
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</tr>
<tr>
<td>Black, non-Hispanic</td>
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</tr>
<tr>
<td>White, non-Hispanic</td>
<td>1,144.6</td>
</tr>
<tr>
<td>All others</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Under 36 years</td>
<td>570.9</td>
</tr>
<tr>
<td>36–50 years</td>
<td>682.7</td>
</tr>
<tr>
<td>51 years or older</td>
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</tr>
<tr>
<td>Full-time experience</td>
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</tr>
<tr>
<td>Less than 5 years</td>
<td>548.6</td>
</tr>
<tr>
<td>5–14 years</td>
<td>678.0</td>
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<tr>
<td>15 years or more</td>
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</tbody>
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—Too few cases for a reliable estimate.

### Table A.4—Standard errors for table 4: Number of teachers and percentage distribution of teachers by highest degree earned, by sector and teacher status: 1987–88

<table>
<thead>
<tr>
<th>Highest degree earned (percent)</th>
<th>Number of teachers</th>
<th>BA/BS</th>
<th>BA/BS</th>
<th>MA/MS</th>
<th>MA/MS</th>
<th>Higher degree</th>
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<tr>
<td></td>
<td></td>
<td>AA/AS</td>
<td>in education</td>
<td>not in education</td>
<td>in education</td>
<td>not in education</td>
</tr>
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<td>Total</td>
<td>14,181.1</td>
<td>0.06</td>
<td>0.32</td>
<td>0.21</td>
<td>0.29</td>
<td>0.14</td>
</tr>
<tr>
<td>Public</td>
<td>13,089.1</td>
<td>0.04</td>
<td>0.32</td>
<td>0.22</td>
<td>0.31</td>
<td>0.13</td>
</tr>
<tr>
<td>Teacher status</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newly hired, first-time</td>
<td>1,643.6</td>
<td>0.37</td>
<td>1.71</td>
<td>1.32</td>
<td>1.11</td>
<td>0.68</td>
</tr>
<tr>
<td>Newly hired, re-entrant</td>
<td>1,830.1</td>
<td>0.14</td>
<td>2.02</td>
<td>1.12</td>
<td>1.84</td>
<td>0.92</td>
</tr>
<tr>
<td>Continuing</td>
<td>12,948.8</td>
<td>0.04</td>
<td>0.34</td>
<td>0.22</td>
<td>0.31</td>
<td>0.14</td>
</tr>
<tr>
<td>Private</td>
<td>6,772.7</td>
<td>0.47</td>
<td>1.02</td>
<td>0.67</td>
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</tr>
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<td>Teacher status</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newly hired, first-time</td>
<td>883.2</td>
<td>1.91</td>
<td>3.15</td>
<td>2.93</td>
<td>1.91</td>
<td>2.00</td>
</tr>
<tr>
<td>Newly hired, re-entrant</td>
<td>1,114.9</td>
<td>0.61</td>
<td>5.64</td>
<td>3.90</td>
<td>3.85</td>
<td>1.93</td>
</tr>
<tr>
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<td>1.08</td>
<td>0.72</td>
<td>0.88</td>
<td>0.72</td>
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</table>

—Too few cases for a reliable estimate.


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<thead>
<tr>
<th></th>
<th>Stayers</th>
<th>Movers</th>
<th>Leavers</th>
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<tr>
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<td>0.42</td>
<td>0.32</td>
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<td>0.50</td>
<td>0.45</td>
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<tr>
<td>Private</td>
<td>1.39</td>
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<td>0.89</td>
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Table A.6—Standard errors for table 6: Number of open teaching positions and percentage 
distribution of open positions by filled status, by selected public district and private 
school characteristics: 1987–88

<table>
<thead>
<tr>
<th>Filled status of open positions (percent)</th>
<th>Number of open positions</th>
<th>Filled positions</th>
<th>Unfilled positions</th>
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<tbody>
<tr>
<td>Total</td>
<td>2,651.8</td>
<td>0.59</td>
<td>0.59</td>
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<tr>
<td>Public Districts</td>
<td>1,889.9</td>
<td>0.67</td>
<td>0.67</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>1,501.3</td>
<td>2.79</td>
<td>2.79</td>
</tr>
<tr>
<td>Midwest</td>
<td>849.6</td>
<td>1.09</td>
<td>1.09</td>
</tr>
<tr>
<td>South</td>
<td>1,279.5</td>
<td>0.91</td>
<td>0.91</td>
</tr>
<tr>
<td>West</td>
<td>702.7</td>
<td>.33</td>
<td>.33</td>
</tr>
<tr>
<td>Free lunch eligibility</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20%</td>
<td>1,596.0</td>
<td>1.55</td>
<td>1.55</td>
</tr>
<tr>
<td>20–49%</td>
<td>1,258.0</td>
<td>0.80</td>
<td>0.80</td>
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<tr>
<td>50% or more</td>
<td>728.8</td>
<td>0.44</td>
<td>0.44</td>
</tr>
<tr>
<td>Minority enrollment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5%</td>
<td>1,178.2</td>
<td>1.50</td>
<td>1.50</td>
</tr>
<tr>
<td>5–19%</td>
<td>962.2</td>
<td>1.36</td>
<td>1.36</td>
</tr>
<tr>
<td>20–49%</td>
<td>1,149.6</td>
<td>1.19</td>
<td>1.19</td>
</tr>
<tr>
<td>50% or more</td>
<td>735.7</td>
<td>0.34</td>
<td>0.34</td>
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<tr>
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<td>0.72</td>
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<td>Region</td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Northeast</td>
<td>1,484.6</td>
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<td>1.58</td>
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<td>Midwest</td>
<td>723.2</td>
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<td>1.31</td>
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<tr>
<td>South</td>
<td>1,023.2</td>
<td>1.72</td>
<td>1.72</td>
</tr>
<tr>
<td>West</td>
<td>637.1</td>
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<td>1.44</td>
</tr>
<tr>
<td>Free lunch eligibility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20%</td>
<td>721.7</td>
<td>1.61</td>
<td>1.61</td>
</tr>
<tr>
<td>20–49%</td>
<td>579.2</td>
<td>1.60</td>
<td>1.60</td>
</tr>
<tr>
<td>50% or more</td>
<td>572.9</td>
<td>2.92</td>
<td>2.92</td>
</tr>
<tr>
<td>Minority enrollment</td>
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<tr>
<td>Less than 5%</td>
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<td>0.93</td>
<td>0.93</td>
</tr>
<tr>
<td>5–19%</td>
<td>1,085.5</td>
<td>1.19</td>
<td>1.19</td>
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<tr>
<td>20–49%</td>
<td>815.1</td>
<td>2.62</td>
<td>2.62</td>
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<tr>
<td>50% or more</td>
<td>1,174.1</td>
<td>1.59</td>
<td>1.59</td>
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</table>


<table>
<thead>
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<tbody>
<tr>
<td></td>
<td>students</td>
<td>FTE</td>
<td>students</td>
<td>FTE</td>
<td>students/teacher</td>
<td>Change in number of students</td>
</tr>
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<td>215,313.9</td>
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<td>0.03</td>
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<td>181,981.7</td>
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<td>Region</td>
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<td></td>
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<tr>
<td>Northeast</td>
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<td>76,521.7</td>
<td>5,680.9</td>
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<td>0.07</td>
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<td>86,410.6</td>
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<td>96,209.8</td>
<td>4,550.4</td>
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<td>135,766.2</td>
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<td>Region</td>
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<tr>
<td>Northeast</td>
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<td>74,821.7</td>
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<td>2,257.1</td>
<td>43,375.8</td>
<td>2,401.5</td>
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<td>0.44</td>
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<td>Grades K–6</td>
<td>139,260.6</td>
<td>7,589.1</td>
<td>137,207.5</td>
<td>7,874.2</td>
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<td>0.04</td>
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<td></td>
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<td></td>
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</tr>
<tr>
<td>Public Districts</td>
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<td>113,856.3</td>
<td>6,594.3</td>
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<td>76,425.8</td>
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<td>7,504.1</td>
<td>113,589.2</td>
<td>7,697.8</td>
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<td>0.05</td>
</tr>
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</tr>
<tr>
<td>Public Districts</td>
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<td>89,672.8</td>
<td>5,820.6</td>
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</thead>
<tbody>
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<td>Percent who left</td>
<td>Percent who still teach</td>
</tr>
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<td>Total</td>
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<td>0.33</td>
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<td>Region</td>
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<td>Northeast</td>
<td>24,986.7</td>
<td>0.78</td>
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<td>14,077.8</td>
<td>1.40</td>
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<tr>
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<tr>
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<td>36,165.2</td>
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<tr>
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<td>0.76</td>
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<tr>
<td>20–49%</td>
<td>24,785.4</td>
<td>0.63</td>
</tr>
<tr>
<td>50% or more</td>
<td>25,469.4</td>
<td>0.71</td>
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<td>Teaching level and field</td>
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<tr>
<td>Elementary</td>
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<td>Secondary</td>
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<td></td>
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<td>Math/computer science</td>
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<td>Female</td>
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<td></td>
<td></td>
<td>Percent who left</td>
<td>Percent who still teach</td>
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<td></td>
<td></td>
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<td>0.35</td>
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<td>0.58</td>
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<tr>
<td>Free lunch eligibility</td>
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<tr>
<td>Less than 20%</td>
<td>4,387.1</td>
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<td>20–49%</td>
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<tr>
<td>Minority enrollment</td>
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<tr>
<td>Less than 5%</td>
<td>7,199.6</td>
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<td>1.38</td>
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<tr>
<td>5–19%</td>
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<td>1.46</td>
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<tr>
<td>20–49%</td>
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<tr>
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<tbody>
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<td></td>
<td>1987–88 teachers</td>
<td>Percent who left</td>
<td>Percent who still teach</td>
</tr>
<tr>
<td>Level/field</td>
<td>Percent</td>
<td>Percent</td>
<td>Percent</td>
</tr>
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<td>Elementary</td>
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<td>Other</td>
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<td>Special education</td>
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<td>11.74</td>
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<tr>
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<td>1.82</td>
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<tr>
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<td>0.94</td>
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<tr>
<td>Female</td>
<td>562.8</td>
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<td>10.57</td>
</tr>
<tr>
<td>Race-ethnicity</td>
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<td>0.93</td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>2,298.9</td>
<td>4.86</td>
<td>4.86</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>2,298.9</td>
<td>4.86</td>
<td>4.86</td>
</tr>
<tr>
<td>All others</td>
<td>2,298.9</td>
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<td>4.86</td>
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<tr>
<td>Full-time experience</td>
<td>5,182.9</td>
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<td>1.62</td>
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<tr>
<td>Less than 5 years</td>
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<td>5–14 years</td>
<td>6,383.2</td>
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</table>

—Too few cases for a reliable estimate.

Table A.9—Standard errors for table 9: Number of full-time-equivalent teachers, percentage distribution of teachers by hiring status, and percentage of teachers with standard certification, by sector and selected public district and private school characteristics: 1987–88

<table>
<thead>
<tr>
<th>Number of 1987–88 teachers</th>
<th>Hiring status (percent)</th>
<th>Percent with standard certification</th>
</tr>
</thead>
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<tr>
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<td>Newly hired</td>
<td>Continuing teachers</td>
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<tr>
<td>Total</td>
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</tr>
<tr>
<td>Northeast</td>
<td>5,680.9</td>
<td>0.10</td>
</tr>
<tr>
<td>Midwest</td>
<td>7,671.1</td>
<td>0.09</td>
</tr>
<tr>
<td>South</td>
<td>4,841.1</td>
<td>0.09</td>
</tr>
<tr>
<td>West</td>
<td>4,550.4</td>
<td>0.11</td>
</tr>
<tr>
<td>Free lunch eligibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 20%</td>
<td>8,721.8</td>
<td>0.08</td>
</tr>
<tr>
<td>20–49%</td>
<td>11,192.4</td>
<td>0.08</td>
</tr>
<tr>
<td>50% or more</td>
<td>5,548.6</td>
<td>0.12</td>
</tr>
<tr>
<td>Minority enrollment</td>
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<td></td>
</tr>
<tr>
<td>Less than 5%</td>
<td>8,142.9</td>
<td>0.09</td>
</tr>
<tr>
<td>5–19%</td>
<td>8,343.6</td>
<td>0.10</td>
</tr>
<tr>
<td>20–49%</td>
<td>8,192.2</td>
<td>0.11</td>
</tr>
<tr>
<td>50% or more</td>
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<td>0.09</td>
</tr>
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<tr>
<td>South</td>
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<td>0.90</td>
</tr>
<tr>
<td>West</td>
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<td>1.00</td>
</tr>
<tr>
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</tr>
<tr>
<td>Less than 20%</td>
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</tr>
<tr>
<td>20–49%</td>
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<td>1.88</td>
</tr>
<tr>
<td>50% or more</td>
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<tr>
<td>Minority enrollment</td>
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</tr>
<tr>
<td>Less than 5%</td>
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<td>0.75</td>
</tr>
<tr>
<td>5–19%</td>
<td>5,029.1</td>
<td>0.69</td>
</tr>
<tr>
<td>20–49%</td>
<td>3,725.6</td>
<td>0.92</td>
</tr>
<tr>
<td>50% or more</td>
<td>4,531.3</td>
<td>1.69</td>
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Table A.10—Standard errors for table 10: Number of full-time-equivalent public school teachers, percentage distribution of teachers by hiring status, and percentage of teachers with standard certification, by state: 1987–88

<table>
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<tr>
<th>State</th>
<th>Number of teachers</th>
<th>Newly hired (percent)</th>
<th>Continuing teachers (percent)</th>
<th>All teachers (percent)</th>
<th>Newly hired teachers (percent)</th>
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<td>Alabama</td>
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<td>0.19</td>
<td>0.68</td>
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<td>0.19</td>
<td>0.19</td>
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<td>Arizona</td>
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<td>0.73</td>
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<td>0.14</td>
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<td>0.72</td>
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<td>1.08</td>
</tr>
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<td>0.18</td>
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<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
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<td>0.00</td>
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<td>0.35</td>
<td>0.46</td>
<td>0.38</td>
</tr>
<tr>
<td>New Mexico</td>
<td>482.0</td>
<td>0.28</td>
<td>0.28</td>
<td>0.15</td>
<td>1.75</td>
</tr>
<tr>
<td>New York</td>
<td>3,652.4</td>
<td>0.23</td>
<td>0.23</td>
<td>0.57</td>
<td>0.51</td>
</tr>
<tr>
<td>North Carolina</td>
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<td>0.18</td>
<td>0.18</td>
<td>0.63</td>
<td>0.37</td>
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<tr>
<td>North Dakota</td>
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<td>0.47</td>
<td>0.35</td>
<td>0.31</td>
</tr>
<tr>
<td>Ohio</td>
<td>4,000.6</td>
<td>0.17</td>
<td>0.17</td>
<td>0.72</td>
<td>0.24</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>2,021.3</td>
<td>0.42</td>
<td>0.42</td>
<td>0.46</td>
<td>1.58</td>
</tr>
<tr>
<td>Oregon</td>
<td>809.0</td>
<td>0.43</td>
<td>0.43</td>
<td>1.38</td>
<td>0.80</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>2,595.6</td>
<td>0.19</td>
<td>0.19</td>
<td>0.57</td>
<td>0.82</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>185.4</td>
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<td>0.15</td>
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</tr>
<tr>
<td>South Carolina</td>
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<td>0.25</td>
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</tr>
<tr>
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<td>0.53</td>
<td>0.53</td>
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</tr>
<tr>
<td>Tennessee</td>
<td>1,396.0</td>
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<td>0.34</td>
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<td>0.99</td>
</tr>
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<td>Texas</td>
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<td>0.26</td>
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<td>1.41</td>
</tr>
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Table A.10—Standard errors for table 10: Number of full-time-equivalent public school teachers, percentage distribution of teachers by hiring status, and percentage of teachers with standard certification, by state: 1987–88—Continued

<table>
<thead>
<tr>
<th>State</th>
<th>Number of teachers</th>
<th>Newly hired (percent)</th>
<th>Continuing teachers (percent)</th>
<th>Percent with standard certification (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>All teachers</td>
</tr>
<tr>
<td>Utah</td>
<td>272.1</td>
<td>0.19</td>
<td>0.19</td>
<td>1.09</td>
</tr>
<tr>
<td>Vermont</td>
<td>311.8</td>
<td>0.69</td>
<td>0.69</td>
<td>1.17</td>
</tr>
<tr>
<td>Virginia</td>
<td>1,315.6</td>
<td>0.18</td>
<td>0.18</td>
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</tr>
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<td>Washington</td>
<td>1,803.3</td>
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<td>0.30</td>
<td>0.99</td>
</tr>
<tr>
<td>West Virginia</td>
<td>0.0</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>1,554.8</td>
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<td>0.25</td>
<td>0.23</td>
</tr>
<tr>
<td>Wyoming</td>
<td>208.4</td>
<td>0.30</td>
<td>0.30</td>
<td>0.05</td>
</tr>
</tbody>
</table>

—Too few cases for a reliable estimate.
NOTE: Standard errors for Delaware, the District of Columbia, Hawaii, Nevada, and West Virginia are 0 because all school districts in these jurisdictions were included in the sample.

Table A.11—Standard errors for table 11: Percentage of public school teachers certified in their main and other assignment fields and percentage distribution of certified teachers by type of certification, by teaching level and field and by state: 1987–88

<table>
<thead>
<tr>
<th>State</th>
<th>Certified in main field</th>
<th>Type of certification</th>
<th>Certified in another field</th>
<th>Type of certification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Probationary</td>
<td>Temporary</td>
<td>Standard</td>
</tr>
<tr>
<td>Total</td>
<td>0.09</td>
<td>0.26</td>
<td>0.11</td>
<td>0.21</td>
</tr>
</tbody>
</table>

Teaching level and field

Elementary

<table>
<thead>
<tr>
<th>State</th>
<th>Certified in main field</th>
<th>Type of certification</th>
<th>Certified in another field</th>
<th>Type of certification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Probationary</td>
<td>Temporary</td>
<td>Standard</td>
</tr>
<tr>
<td>Arkansas</td>
<td>0.48</td>
<td>0.50</td>
<td>0.44</td>
<td>0.41</td>
</tr>
<tr>
<td>California</td>
<td>0.37</td>
<td>0.76</td>
<td>0.57</td>
<td>0.56</td>
</tr>
<tr>
<td>Colorado</td>
<td>0.70</td>
<td>1.02</td>
<td>0.81</td>
<td>0.64</td>
</tr>
<tr>
<td>Connecticut</td>
<td>0.69</td>
<td>2.03</td>
<td>1.18</td>
<td>1.71</td>
</tr>
<tr>
<td>Delaware</td>
<td>1.02</td>
<td>1.79</td>
<td>1.24</td>
<td>1.29</td>
</tr>
<tr>
<td>Hawaii</td>
<td>1.43</td>
<td>2.09</td>
<td>2.04</td>
<td>1.30</td>
</tr>
<tr>
<td>Idaho</td>
<td>0.32</td>
<td>1.07</td>
<td>—</td>
<td>1.12</td>
</tr>
<tr>
<td>Illinois</td>
<td>0.41</td>
<td>1.28</td>
<td>0.39</td>
<td>1.23</td>
</tr>
<tr>
<td>Indiana</td>
<td>0.29</td>
<td>0.78</td>
<td>0.43</td>
<td>0.69</td>
</tr>
<tr>
<td>Iowa</td>
<td>0.35</td>
<td>1.25</td>
<td>0.56</td>
<td>1.02</td>
</tr>
<tr>
<td>Kansas</td>
<td>0.43</td>
<td>0.62</td>
<td>—</td>
<td>0.61</td>
</tr>
<tr>
<td>Kentucky</td>
<td>0.35</td>
<td>1.75</td>
<td>0.64</td>
<td>1.68</td>
</tr>
<tr>
<td>Louisiana</td>
<td>1.29</td>
<td>1.34</td>
<td>0.82</td>
<td>1.15</td>
</tr>
<tr>
<td>Maine</td>
<td>0.85</td>
<td>2.09</td>
<td>1.41</td>
<td>1.77</td>
</tr>
<tr>
<td>Maryland</td>
<td>0.90</td>
<td>1.92</td>
<td>1.24</td>
<td>1.23</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>0.71</td>
<td>0.99</td>
<td>—</td>
<td>0.94</td>
</tr>
<tr>
<td>Michigan</td>
<td>0.55</td>
<td>1.07</td>
<td>0.68</td>
<td>0.86</td>
</tr>
<tr>
<td>Minnesota</td>
<td>0.38</td>
<td>1.46</td>
<td>0.89</td>
<td>0.97</td>
</tr>
<tr>
<td>Mississippi</td>
<td>0.33</td>
<td>1.00</td>
<td>0.54</td>
<td>0.94</td>
</tr>
<tr>
<td>Missouri</td>
<td>0.45</td>
<td>0.78</td>
<td>0.25</td>
<td>0.74</td>
</tr>
<tr>
<td>Montana</td>
<td>0.44</td>
<td>1.32</td>
<td>1.15</td>
<td>0.90</td>
</tr>
<tr>
<td>Nebraska</td>
<td>0.54</td>
<td>1.45</td>
<td>1.47</td>
<td>0.53</td>
</tr>
<tr>
<td>Nevada</td>
<td>0.81</td>
<td>1.56</td>
<td>0.94</td>
<td>1.25</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>0.99</td>
<td>1.76</td>
<td>1.20</td>
<td>1.17</td>
</tr>
<tr>
<td>New Jersey</td>
<td>0.57</td>
<td>0.51</td>
<td>0.00</td>
<td>0.51</td>
</tr>
<tr>
<td>New Mexico</td>
<td>0.59</td>
<td>1.35</td>
<td>—</td>
<td>1.29</td>
</tr>
<tr>
<td>New York</td>
<td>0.56</td>
<td>1.21</td>
<td>0.85</td>
<td>1.02</td>
</tr>
<tr>
<td>North Carolina</td>
<td>0.53</td>
<td>1.51</td>
<td>1.23</td>
<td>0.79</td>
</tr>
<tr>
<td>North Dakota</td>
<td>0.35</td>
<td>0.78</td>
<td>0.69</td>
<td>0.41</td>
</tr>
<tr>
<td>Ohio</td>
<td>0.35</td>
<td>1.00</td>
<td>0.36</td>
<td>1.00</td>
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</table>
Table A.11—Standard errors for table 11: Percentage of public school teachers certified in their main and other assignment fields and percentage distribution of certified teachers by type of certification, by teaching level and field and by state: 1987-88—Continued

<table>
<thead>
<tr>
<th>State</th>
<th>Certified in main field</th>
<th>Type of certification</th>
<th>Certified another field</th>
<th>Type of certification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Standard</td>
<td>Probationary</td>
<td>Temporary</td>
<td>Standard</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>0.58</td>
<td>0.76</td>
<td>0.33</td>
<td>0.71</td>
</tr>
<tr>
<td>Oregon</td>
<td>0.65</td>
<td>1.38</td>
<td>1.04</td>
<td>1.29</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>0.30</td>
<td>0.86</td>
<td>0.51</td>
<td>0.72</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>1.10</td>
<td>1.44</td>
<td>1.06</td>
<td>1.28</td>
</tr>
<tr>
<td>South Carolina</td>
<td>0.79</td>
<td>0.99</td>
<td>—</td>
<td>0.98</td>
</tr>
<tr>
<td>South Dakota</td>
<td>0.39</td>
<td>0.87</td>
<td>0.73</td>
<td>0.53</td>
</tr>
<tr>
<td>Tennessee</td>
<td>0.67</td>
<td>1.78</td>
<td>1.19</td>
<td>1.18</td>
</tr>
<tr>
<td>Texas</td>
<td>0.48</td>
<td>0.86</td>
<td>0.37</td>
<td>0.65</td>
</tr>
<tr>
<td>Utah</td>
<td>0.70</td>
<td>1.36</td>
<td>0.91</td>
<td>1.14</td>
</tr>
<tr>
<td>Vermont</td>
<td>0.27</td>
<td>2.14</td>
<td>2.12</td>
<td>0.61</td>
</tr>
<tr>
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<tr>
<td>Washington</td>
<td>0.52</td>
<td>1.26</td>
<td>1.00</td>
<td>1.05</td>
</tr>
<tr>
<td>West Virginia</td>
<td>0.42</td>
<td>1.34</td>
<td>0.93</td>
<td>0.98</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>0.24</td>
<td>1.23</td>
<td>0.52</td>
<td>1.14</td>
</tr>
<tr>
<td>Wyoming</td>
<td>0.49</td>
<td>1.14</td>
<td>0.66</td>
<td>1.00</td>
</tr>
</tbody>
</table>

—Too few cases for a reliable estimate.

Table A.12—Standard errors for table 12: Attrition rate: percentage of teachers who left teaching (leavers) by sex, age, years of teaching experience, by sector and selected school and teacher characteristics: 1987–88 and 1988–89

<table>
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<th></th>
<th>Sex</th>
<th>Age</th>
<th>Years teaching experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
<td>Less than 36</td>
</tr>
<tr>
<td>Total</td>
<td>0.38</td>
<td>0.48</td>
<td>0.71</td>
</tr>
<tr>
<td>Public</td>
<td>0.40</td>
<td>0.49</td>
<td>0.72</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>0.93</td>
<td>1.32</td>
<td>2.14</td>
</tr>
<tr>
<td>Midwest</td>
<td>1.00</td>
<td>0.69</td>
<td>1.40</td>
</tr>
<tr>
<td>South</td>
<td>0.55</td>
<td>1.16</td>
<td>1.19</td>
</tr>
<tr>
<td>West</td>
<td>1.18</td>
<td>0.69</td>
<td>1.68</td>
</tr>
<tr>
<td>School level</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Elementary</td>
<td>0.46</td>
<td>0.51</td>
<td>0.83</td>
</tr>
<tr>
<td>Secondary</td>
<td>0.59</td>
<td>0.63</td>
<td>1.26</td>
</tr>
<tr>
<td>Combined/other</td>
<td>2.22</td>
<td>1.57</td>
<td>1.34</td>
</tr>
<tr>
<td>Community type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural/farming</td>
<td>0.88</td>
<td>0.72</td>
<td>1.61</td>
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<tr>
<td>Small city</td>
<td>0.94</td>
<td>0.61</td>
<td>1.22</td>
</tr>
<tr>
<td>Suburban</td>
<td>0.74</td>
<td>1.12</td>
<td>1.27</td>
</tr>
<tr>
<td>Urban</td>
<td>0.76</td>
<td>0.79</td>
<td>1.16</td>
</tr>
<tr>
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<td>Less than 20%</td>
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<td>20–49%</td>
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<td>50% or more</td>
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<td>1.36</td>
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<td>Minority enrollment</td>
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<td>Less than 5%</td>
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</tr>
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<td>5–19%</td>
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<tr>
<td>20–49%</td>
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<td>1.40</td>
<td>1.25</td>
</tr>
<tr>
<td>50% or more</td>
<td>0.83</td>
<td>1.15</td>
<td>1.74</td>
</tr>
<tr>
<td>Teaching level and field</td>
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<td>0.66</td>
<td>1.25</td>
</tr>
<tr>
<td>Elementary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
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<td></td>
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<td>Math/computer science</td>
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<tr>
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<td>1.02</td>
</tr>
<tr>
<td>Sex</td>
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<td></td>
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</tr>
<tr>
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<td>(*)</td>
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</tr>
<tr>
<td>Female</td>
<td>0.40</td>
<td>(*)</td>
<td>0.85</td>
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</tbody>
</table>
Table A.12—Standard errors for table 12: Attrition rate: percentage of teachers who left teaching (leavers) by sex, age, years of teaching experience, by sector and selected school and teacher characteristics: 1987–88 and 1988–89—Continued

<table>
<thead>
<tr>
<th></th>
<th>Sex</th>
<th>Age</th>
<th>Years teaching experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td>Male</td>
<td>Less than 36</td>
</tr>
<tr>
<td>Race-ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>1.50</td>
<td>1.47</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>0.42</td>
<td>0.57</td>
<td>0.86</td>
</tr>
<tr>
<td>All others</td>
<td>0.77</td>
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<td>1.05</td>
</tr>
<tr>
<td>Private</td>
<td>0.94</td>
<td>1.82</td>
<td>1.55</td>
</tr>
<tr>
<td>Region</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>1.87</td>
<td>2.66</td>
<td>2.06</td>
</tr>
<tr>
<td>Midwest</td>
<td>1.45</td>
<td>2.05</td>
<td>3.04</td>
</tr>
<tr>
<td>South</td>
<td>1.83</td>
<td>2.68</td>
<td>2.37</td>
</tr>
<tr>
<td>West</td>
<td>4.89</td>
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<td>6.07</td>
</tr>
<tr>
<td>School level</td>
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<td></td>
</tr>
<tr>
<td>Elementary</td>
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<td>1.55</td>
</tr>
<tr>
<td>Secondary</td>
<td>3.94</td>
<td>1.64</td>
<td>5.40</td>
</tr>
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<td>Combined/other</td>
<td>3.08</td>
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</tr>
<tr>
<td>Rural/farming</td>
<td>1.97</td>
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Table A.12—Standard errors for table 12: Attrition rate: percentage of teachers who left teaching (leavers) by sex, age, years of teaching experience, sector, and selected school and teacher characteristics: 1987–88 and 1988–89—Continued

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—Too few cases for a reliable estimate.
(* ) Not applicable.

Table A.13—Standard errors for table 13: Percentage distribution of teachers by age, by sector and selected school and teacher characteristics: 1987-88

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Table A.13—Standard errors for table 13: Percentage distribution of teachers by age, by sector and selected school and teacher characteristics: 1987–88—Continued

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Table A.13—Standard errors for table 13: Percentage distribution of teachers by age, by sector and selected school and teacher characteristics: 1987-88—Continued

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Too few cases for a reliable estimate.


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Involuntary

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<td>1,537.2</td>
<td>0.00</td>
</tr>
<tr>
<td>Retirement</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Involuntarily</td>
<td>391.8</td>
<td>0.00</td>
</tr>
</tbody>
</table>

—Too few cases for a reliable estimate.

Table A.16—Standard errors for table 16: Number of voluntary, nonretiring leavers, percentage of voluntary, nonretiring leavers who planned to return, and percentage distribution of those who planned to return by when they planned to return, by sector and selected teacher characteristics: 1987–88 and 1988–89

<table>
<thead>
<tr>
<th></th>
<th>Number of voluntary nonretiring leavers</th>
<th>Percent who planned to return to teaching</th>
<th>When they planned to return</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>By next year</td>
<td>Within 5 years</td>
<td>In more than 5 years</td>
</tr>
<tr>
<td>Total</td>
<td>6,519.9</td>
<td>3.07</td>
<td>4.52</td>
<td>4.13</td>
</tr>
<tr>
<td>Public</td>
<td>6,202.7</td>
<td>3.97</td>
<td>5.77</td>
<td>5.45</td>
</tr>
<tr>
<td>Teaching level and field</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>4,317.1</td>
<td>7.06</td>
<td>6.53</td>
<td>4.45</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math/computer science</td>
<td>622.1</td>
<td>6.13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td>1,523.5</td>
<td>12.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>3,605.5</td>
<td>7.60</td>
<td>15.34</td>
<td>16.06</td>
</tr>
<tr>
<td>Special education</td>
<td>1,718.3</td>
<td>9.19</td>
<td>11.39</td>
<td>11.20</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>2,133.0</td>
<td>3.31</td>
<td>9.36</td>
<td>9.91</td>
</tr>
<tr>
<td>Female</td>
<td>5,696.4</td>
<td>4.96</td>
<td>6.29</td>
<td>5.91</td>
</tr>
<tr>
<td>Race-ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>2,248.8</td>
<td>13.47</td>
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<td></td>
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<tr>
<td>White, non-Hispanic</td>
<td>5,312.3</td>
<td>4.56</td>
<td>6.11</td>
<td>5.72</td>
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<td>All others</td>
<td>339.4</td>
<td>10.70</td>
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</tr>
<tr>
<td>Full-time experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>2,592.1</td>
<td>5.29</td>
<td>5.73</td>
<td>5.46</td>
</tr>
<tr>
<td>5–14 years</td>
<td>4,759.1</td>
<td>7.07</td>
<td>9.58</td>
<td>8.57</td>
</tr>
<tr>
<td>15 years or more</td>
<td>3,139.1</td>
<td>4.23</td>
<td>7.78</td>
<td>7.48</td>
</tr>
<tr>
<td>Private</td>
<td>2,149.1</td>
<td>4.58</td>
<td>8.02</td>
<td>5.40</td>
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<tr>
<td>Teaching level and field</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>1,161.8</td>
<td>6.09</td>
<td>9.46</td>
<td>6.08</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Math/computer science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1,616.0</td>
<td>6.22</td>
<td>12.24</td>
<td>11.36</td>
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<tr>
<td>Special education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>870.1</td>
<td>11.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>2,147.3</td>
<td>5.01</td>
<td>7.51</td>
<td>4.84</td>
</tr>
<tr>
<td>Race-ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>2,194.6</td>
<td>5.06</td>
<td>7.89</td>
<td>5.08</td>
</tr>
<tr>
<td>All others</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table A.16—Standard errors for table 16: Number of voluntary, nonretiring leavers, percentage of voluntary, nonretiring leavers who planned to return, and percentage distribution of those who planned to return by when they planned to return, by sector and selected teacher characteristics: 1987–88 and 1988–89—Continued

<table>
<thead>
<tr>
<th>Full-time experience</th>
<th>Number of voluntary nonretiring leavers</th>
<th>Percent who planned to return to teaching</th>
<th>When they planned to return</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>By next year</td>
<td>Within 5 years</td>
<td>In more than 5 years</td>
<td>Undecided</td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>905.2</td>
<td>3.86</td>
<td>7.46</td>
<td>5.70</td>
<td>5.38</td>
<td>3.22</td>
</tr>
<tr>
<td>5–14 years</td>
<td>1,883.0</td>
<td>7.90</td>
<td>13.02</td>
<td>9.57</td>
<td>8.19</td>
<td>---</td>
</tr>
<tr>
<td>15 years or more</td>
<td>583.3</td>
<td>7.15</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

—Too few cases for a reliable estimate.


<table>
<thead>
<tr>
<th>1988-89 Occupational status</th>
<th>Noneducation job</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Attending college/university</td>
</tr>
<tr>
<td>Total</td>
<td>0.83</td>
</tr>
<tr>
<td>Public</td>
<td>1.01</td>
</tr>
<tr>
<td>Teaching level and field</td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>1.78</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
</tr>
<tr>
<td>Math/computer science</td>
<td>3.00</td>
</tr>
<tr>
<td>Science</td>
<td>5.68</td>
</tr>
<tr>
<td>Other</td>
<td>1.93</td>
</tr>
<tr>
<td>Special education</td>
<td>4.13</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1.95</td>
</tr>
<tr>
<td>Female</td>
<td>1.14</td>
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<tr>
<td>Race-ethnicity</td>
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</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>5.45</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>1.09</td>
</tr>
<tr>
<td>All others</td>
<td>3.43</td>
</tr>
<tr>
<td>Full-time experience</td>
<td></td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>2.46</td>
</tr>
<tr>
<td>5–14 years</td>
<td>1.68</td>
</tr>
<tr>
<td>15 years or more</td>
<td>1.35</td>
</tr>
<tr>
<td>Private</td>
<td>1.52</td>
</tr>
</tbody>
</table>
—Continued

<table>
<thead>
<tr>
<th>1988–89 Occupational status</th>
<th>Noneducation job</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending college/ university</td>
<td>Home-making</td>
</tr>
<tr>
<td>Teaching level and field</td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>1.68</td>
</tr>
<tr>
<td>Secondary</td>
<td>—</td>
</tr>
<tr>
<td>Math/computer science</td>
<td>—</td>
</tr>
<tr>
<td>Science</td>
<td>—</td>
</tr>
<tr>
<td>Other</td>
<td>3.18</td>
</tr>
<tr>
<td>Special education</td>
<td>—</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
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<tr>
<td>Male</td>
<td>4.92</td>
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<tr>
<td>Female</td>
<td>1.66</td>
</tr>
<tr>
<td>Race–ethnicity</td>
<td></td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>—</td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>1.35</td>
</tr>
<tr>
<td>All others</td>
<td>—</td>
</tr>
<tr>
<td>Full-time experience</td>
<td></td>
</tr>
<tr>
<td>Less than 5 years</td>
<td>4.03</td>
</tr>
<tr>
<td>5–14 years</td>
<td>0.53</td>
</tr>
<tr>
<td>15 years or more</td>
<td>0.99</td>
</tr>
</tbody>
</table>

—Too few cases for a reliable estimate.

Appendix B
Technical Notes

SASS Sample Selection

Selection of Schools

The public school sample of 9,317 schools was selected from the Quality of Education Data (QED) file of public schools. All public schools in the file were stratified first by state (50 states and the District of Columbia) and then by three grade levels (elementary, secondary, and combined elementary and secondary). Within each stratum, the schools were sorted by urbanicity, percent minority (four categories), zip code (first three digits), highest grade in the school, enrollment, and PIN number (assigned by QED). For each stratum within each state, sample schools were selected by systematic (interval) sampling with probability proportional to the square root of the number of teachers within a school.

The private school sample of 3,513 schools was selected primarily from the QED file of private schools. Because this list of private schools did not fully cover all private schools in the country, two additional steps were taken to improve coverage. The first step was to update the QFD file with current lists of schools from 17 private school associations. All private schools obtained in this way and the private schools on the QED list were stratified by state and within state by grade level and affiliation group. Sampling within each stratum was done as it was for public schools.

The second step taken to improve private school coverage was to select an area frame of schools contained in 75 Primary Sampling Units (PSUs) selected from the universe of 2,497 PSUs with probability proportional to the square root of the PSU population. The PSUs, each of which consisted of a county or group of counties, were stratified by Census geographic region (Northeast, Midwest, South, and West), Metropolitan Statistical Area (MSA) status (MSA or non-MSA), and private school enrollment (two groups). Within each of the 75 PSUs, a telephone search was conducted to find all in-scope private schools. Sources included yellow pages, religious institutions (except for Roman Catholic religious institutions, because each Catholic diocese is contacted annually when the QED list is updated), local education agencies, chambers of commerce, local government offices, commercial milk companies, and commercial real estate offices. All schools not on the QED file or the lists from private school associations were eligible to be selected for the area sample. Most of these schools were selected with certainty, but when sampling was done, schools were sampled with probability proportional to the square root of the number of teachers (for schools that could be contacted) or a systematic equal probability procedure (for schools that could not be contacted).

The private school sample was designed to allow detailed comparisons among the following affiliations: Catholic, Friends, Episcopal, Jewish, Lutheran, Seventh Day Adventist, Christian Schools International, American Association of Christian Schools, Exceptional Children, Military Schools, Montessori, and Independent Schools. At least 100 schools were selected from each affiliation, or all schools in the affiliation if there were fewer than 100 schools.

Selection of LEAs

All local education agencies (LEAs) that had at least one school selected for the school sample were included in the LEA sample for the Teacher Demand and Shortage Survey. In addition, a sample of 70 LEAs that did not contain eligible schools was selected directly. Only 8 of these 70 were actually in scope (that is, reported hiring teachers). The total LEA sample was 5,592.

Selection of Teachers

All 56,242 public and 11,529 private school teachers in the teacher samples were selected from the public and private school samples. The specified average teacher sample size was four, eight, and six teachers for public elementary, secondary, and combined schools, respectively, and four, five, and three teachers for private elementary, secondary, and combined schools, respectively.

A list that included all full- and part-time teachers, itinerant teachers, and long-term substitutes was obtained from each sample school. Within each school, teachers were stratified by experience into two groups: new teachers and all others. New teachers were those who, counting 1987–88, were in their first, second, or third year of teaching. New teachers in private schools were oversampled by 60 percent; oversampling in public schools was not necessary. Within each new and experienced teacher stratum, elementary teachers were sorted into general elementary, special education, and “other” categories; and secondary teachers were sorted into mathematics, science, English, social science, vocational education, and “other” categories. Within each school and teacher stratum, teachers were selected systematically with equal probability.

In order to obtain more reliable estimates of bilingual–ESL teachers, both the public and private school teacher samples included a bilingual–ESL (English as a second language) supplement that included teachers who used a native language other than English to instruct students with limited-English proficiency and teachers who provided intensive instruction in English to students with limited-English proficiency. The bilingual–ESL supplement of 2,447 teachers was selected independently from the basic sample. It was designed to provide estimates for California, Texas, Florida, Illinois, New York, and for all other states combined. The sample size within each school was chosen to be proportional to the weighted number of bilingual-ESL teachers in the school. Within a school containing bilingual–ESL teachers, the teachers were selected systematically with equal probability.

Selection of Teachers for the Teacher Followup Survey

The 1988–89 occupational status of teachers responding to the 1987–88 SASS was determined by contacting their schools to determine whether they were still at the school, had left to teach elsewhere, or had left for a nonteaching job. All leavers were included in the sample. Continuing teachers were sorted by Census region, by urbanicity, teacher subject, and school enrollment within each public stratum. Within each private stratum, continuing teachers were sorted by affiliation, urbanicity, teacher subject, and school enrollment. After the teachers were sorted, teachers were selected within each stratum using a probability proportional to size procedure. The measure of size was the SASS basic weight (inverse of the probability of selecting a teacher in the SASS teacher sample). This sample allocation method yielded a total sample size of 7,172 teachers, of whom 2,987 were leavers and 4,185 were stayers or movers.

2 The supplement was funded by the Department of Education's Office of Bilingual Education and Minority Language Affairs (OBEMLA).
3 Bilingual-ESL teachers selected in both the basic and supplement samples were unduplicated so that each teacher appears only once in the combined sample of bilingual-ESL and all other teachers.
Data Collection Procedures

The data were collected for the National Center for Education Statistics (NCES) by the U.S. Bureau of the Census. Questionnaires were mailed to school districts, schools, administrators, and teachers in January and February 1988. Six weeks later, a second questionnaire was sent to each nonrespondent. A telephone followup of nonrespondents was conducted during April, May, and June. Because of the large number of nonresponding teachers and the need to complete the survey before the end of the school year, the telephone followup was conducted for only a subsample of teachers. The weights for this subsample were adjusted to reflect the subsampling.

The Teacher Followup Survey was conducted in two phases. First, in October 1988 schools were contacted to determine the status of all teachers in the 1987-88 SASS. Principals were asked to indicate whether the teacher was still at the school in a teaching or nonteaching capacity or had left the school to teach elsewhere or for a nonteaching job. In March 1989, the questionnaire for former teachers was sent to the 2,987 persons who had left the teaching profession, and the questionnaire for current teachers was sent to a sample of 4,185 persons reported as still teaching. If this questionnaire was not returned within 4 to 5 weeks, a second questionnaire was sent. Finally, if neither questionnaire elicited a response, a telephone call was made in May.

Weighting

Weights of the sample units were developed to produce national and state estimates for public schools, teachers, administrators, and LEAs. The private sector data were weighted to produce national and affiliation group estimates. The affiliation groups for private schools were Catholic, other religious, and nonsectarian. The basic weights were the inverse of the probability of selection and were adjusted for nonresponse.

Standard Errors

The estimates in these tables are based on samples and are subject to sampling variability. Standard errors were estimated using a balanced repeated replications procedure that incorporates the design features of this complex sample survey. The standard errors indicate the accuracy of each estimate. If all possible samples of the same size were surveyed under the same conditions, an interval of 1.96 standard errors below to 1.96 standard errors above a particular statistic would include the universe value in approximately 95 percent of the cases. Note, however, that the standard errors do not take into account the effects of biases due to item nonresponse, measurement error, data processing error, or other possible systematic error.

Accuracy of Estimates

The statistics in this report are population estimates derived from the samples described in the preceding section. Consequently, they are subject to sampling variability. In addition, they are subject to nonsampling errors, which can arise because of nonresponse, errors in reporting, or errors in data collection. These types of errors can bias the estimates and are not easy to measure. They can occur because respondents interpret questions differently, remember things incorrectly, or misrecord their responses. Nonsampling errors can also be due to incorrect editing, coding, preparing, or entering of the data or to differences related to the time the survey was conducted.

4 Copies of the questionnaires may be obtained by writing to the Special Surveys and Analysis Branch of NCES.
5 For a detailed description of the weighting processes see Kaufman, op. cit., 47-57.
The precision with which one can use survey results to make inferences to a population depends upon the magnitude of both sampling and nonsampling errors. In large sample surveys, such as the SASS, sampling errors are generally minimal, except when estimates are made for relatively small subpopulations (Native Americans, for example).

When a table contains cells with dashes that indicate "too few cases for a reliable estimate," it means that there were fewer than 30 cases on which to base the estimate or that the cell had to be suppressed for confidentiality purposes.

**Response Rates and Imputation**

Most item-level missing data on the district and school files were imputed using a sequential hot deck procedure that matched the nonrespondent district or school with the most similar respondent in the same stratum. "Most similar" was determined on the basis of metropolitan status, percent minority, and enrollment. On the public school file, all missing items were imputed. On the private school file, items 7 and 35 were not imputed. On both the public and private teacher demand and shortage file, items 3, 11, 12, 13, and 28 were not imputed.

No imputation was done for either the teacher or administrator files or for the teacher followup. Item nonresponse was treated as missing data in the computation of estimates for tables that include data from either of these files. This is equivalent to assuming equal distributions for both respondents and nonrespondents. Not imputing for item nonresponse when averages are estimated results in bias, and the nature of this bias is unknown.

The weighted response rates for the each of the surveys were as follows:

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<thead>
<tr>
<th>Survey</th>
<th>Public</th>
<th>Private</th>
</tr>
</thead>
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<tr>
<td>Teacher demand and shortage</td>
<td>90.8</td>
<td>66.0</td>
</tr>
<tr>
<td>Administrator</td>
<td>94.4</td>
<td>79.3</td>
</tr>
<tr>
<td>School</td>
<td>91.9</td>
<td>78.6</td>
</tr>
<tr>
<td>Teacher</td>
<td>86.4</td>
<td>79.1</td>
</tr>
<tr>
<td>Teacher followup</td>
<td>84.1</td>
<td>75.9</td>
</tr>
</tbody>
</table>

The response rates for the items used from the teacher and teacher followup files are listed below. They do not reflect additional response loss due to complete questionnaire refusal. Tables in this report are based on the cases that responded to the items tabulated.

---

6 The effective response rate shown here is the product of the response rates to the Teacher Survey, which were 86.4 percent (public) and 79.1 percent (private), and the Followup Survey, which were 97.3 percent (public) and 96.0 percent (private).
<table>
<thead>
<tr>
<th>Table number</th>
<th>Variable name</th>
<th>Response rate (percent)</th>
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</thead>
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<td></td>
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<td>Public</td>
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<tr>
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<td>Year began teaching</td>
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<tr>
<td></td>
<td>Activity 1986–87</td>
<td>99.3</td>
</tr>
<tr>
<td>Table 4,16</td>
<td>Highest degree earned</td>
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<tr>
<td>Table 5,8</td>
<td>Teaching status: stayers, movers</td>
<td>99.9*</td>
</tr>
<tr>
<td></td>
<td>Teaching status: leavers</td>
<td>100.0*</td>
</tr>
<tr>
<td>Table 12</td>
<td>Type of certification in main field</td>
<td>82.1</td>
</tr>
<tr>
<td></td>
<td>Type of certification in other field</td>
<td>77.8</td>
</tr>
<tr>
<td>Table 13</td>
<td>Teacher sex</td>
<td>99.6</td>
</tr>
<tr>
<td></td>
<td>Years of teaching experience</td>
<td>100.0</td>
</tr>
<tr>
<td>Table 13,14</td>
<td>Year of birth</td>
<td>98.9</td>
</tr>
<tr>
<td>Table 15,17,18</td>
<td>Main reason for leaving teaching</td>
<td>99.4*</td>
</tr>
<tr>
<td>Table 16</td>
<td>Certification in main field</td>
<td>99.0</td>
</tr>
<tr>
<td>Table 17</td>
<td>Plans to return to teaching (leavers)</td>
<td>99.4*</td>
</tr>
<tr>
<td></td>
<td>When might return to teaching (leavers)</td>
<td>98.6*</td>
</tr>
<tr>
<td>Table 18</td>
<td>Occupational status</td>
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</tr>
<tr>
<td></td>
<td>Type of job</td>
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<td>Row variables</td>
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</tr>
<tr>
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<td>Teaching field</td>
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<td></td>
<td>Race</td>
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<tr>
<td></td>
<td>Hispanic origin</td>
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</tr>
</tbody>
</table>

*Applies to public and private school teachers.

**Variable Definitions**

**Public and Private Schools**

A public school was defined as an institution that provides educational services, has one or more teachers, is located in one or more buildings, receives public funds as primary support, and is operated by an education agency. Prison schools and schools operated by the U.S. Department of Education are not included in the definition.
of Defense and the Bureau of Indian Affairs were included. A private school was defined as a school not in the public system that provides instruction for any of grades 1–12 where the instruction was not given exclusively in a private home.

To be included in SASS, a school was required to have a minimum school day of 4 hours and a minimum school year of 160 days, and it had to provide instruction to students at or above the first-grade level and not be in a private home. (If it could not be determined that instruction was not in a private home, the school had to have at least 10 students or more than one teacher.) In addition, the school could not offer only adult, night, or specialized courses.

**Community Type**

Respondents to the School Questionnaire were asked to identify the community type that best described their school’s location. They were given ten choices, which were aggregated into four categories as follows:

- **Rural/farming**
  A rural or farming community or an Indian reservation.

- **Small city**
  A small city or town of fewer than 50,000 people that was not a suburb of a larger city.

- **Suburban**
  A suburb of a medium-sized, large, or very large city, or a military base or station.

- **Urban**
  A medium-sized city (50,000 to 100,000 people), large city (100,000 to 500,000 people), or very large city (more than 500,000 people).

**School Level**

- **Elementary**
  A school that had grade 6 or lower, or “ungraded,” and no grade higher than the 8th.

- **Secondary**
  A school that had no grade lower than the 7th, or “ungraded,” and some grade between 7th and 14th.

- **Combined**
  A school that had grades higher than the 8th and lower than the 7th.

**Minority Enrollment**

Categories were based on the percentage of the students who were American Indian or Alaskan Native; Asian or Pacific Islander; Hispanic, regardless of race (Mexican, Puerto Rican, Cuban, Central or South American, or other culture or origin); Black (not of Hispanic origin).

**Public School District**

A public school district (or LEA) was defined as a government agency administratively responsible for providing public elementary and/or secondary instruction and educational support services. The agency or administrative unit had to operate under a public board of education. Districts that operated only one school and districts that did not operate schools but did hire...
teachers were included. A district was considered out of scope if it did not employ elementary or secondary teachers.

Region


Midwest Ohio, Indiana, Illinois, Michigan, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas

South Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, Texas

West Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Alaska, Hawaii

Teacher

For the purposes of SASS, a teacher was any full- or part-time teacher whose primary assignment was to teach in any of grades K–12. Itinerant teachers and long-term substitutes who were filling the role of a regular teacher on an indefinite basis were also included. An itinerant teacher was defined as a teacher who taught at more than one school.

Teachers were classified as elementary or secondary on the basis of the grades they taught rather than the schools in which they taught. An elementary school teacher was one who, when asked for the grades taught, checked:

- Only “ungraded” and was designated as an elementary teacher on the list of teachers provided by the school; or
- 6th grade or lower, or “ungraded” and no grade higher than 6th; or
- 6th grade or lower and 7th grade or higher, and reported a primary assignment of prekindergarten, kindergarten, or general elementary; or
- 7th and 8th grades only, and a reported primary assignment of prekindergarten, kindergarten, or general elementary; or
- 6th grade or lower and 7th grade or higher, and reported a primary assignment of special education and was designated as an elementary teacher on the list of teachers provided by the school; or
- 7th and 8th grades only, and reported a primary assignment of special education and was designated as an elementary teacher on the list of teachers provided by the school.

A secondary school teacher was one who, when asked for the grades taught, checked:

- “Ungraded” and was designated as a secondary teacher on the list of teachers provided by the school; or
• 6th grade or lower and 7th grade or higher, and reported a primary assignment other than prekindergarten, kindergarten, or general elementary; or

• 9th grade or higher, or 9th grade or higher and "ungraded"; or

• 7th and 8th grades only, and reported a primary assignment other than prekindergarten, kindergarten, general elementary, or special education; or

• 7th and 8th grades only, and reported a primary assignment of special education and was designated as a secondary teacher on the list of teachers provided by the school; or

• 6th grade or lower and 7th grade or higher, or 7th and 8th grades only, and were not categorized above as either elementary or secondary.

Comments and More Information

We are interested in your reaction to the information and analysis presented here and to the content of the questions used to produce these results. We welcome your recommendations for improving our survey work. If you have suggestions or comments, if you want more information about this report, or if you are interested in replicating these numbers, please contact:

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