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AMERICA'S TEACHERS:



PROFILE OF A PROFESSION, 1993-94

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AMERICA'S TEACHERS: PROFILE OF A PROFESSION, 1993-94

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FOREWORD

In 1993, NCES published *America's Teachers: Profile of a Profession*, a comprehensive report on elementary and secondary teachers in the United States that synthesized data from a number of NCES data sets collected during the 1987–88 and 1988–89 academic years and other data sources. The current report updates the first *America's Teachers*, and is intended to serve as both a discussion of the state of teachers and teaching in the early- to mid-1990s and a reference source for statistical information on teachers in the United States.

Data sources feature NCES datasets but also include data gathered by other agencies. Although the 1993–94 Schools and Staffing Survey (SASS:93–94) provides most of the data used in the report, data from the 1994–95 Teacher Follow-Up Survey (TFS:94–95), the first followup to the 1993 Baccalaureate and Beyond Longitudinal Study (B&B:93/94), the 1994 National Assessment of Educational Progress (NAEP), and the 1993 National Study of Postsecondary Faculty (NSOPF:93) were also analyzed for this report. In addition, data from the Common Core of Data and the

1992 National Adult Literacy Survey have been selected from tables and figures previously published in *The Condition of Education* and *Digest of Education Statistics*. Finally, the report includes data gathered by the National Education Association and American Federation of Teachers as well as international data assembled by the Organisation for Economic Co-operation and Development and originally reported in the 1995 and 1996 editions of its publication *Education at a Glance*.

The report addresses a wide range of topics related to teachers and teaching in the United States, including teachers' demographic characteristics and various characteristics of their schools and students, teachers' preparation and professional development experiences, their workloads, teaching practices, compensation, satisfaction with and opinions regarding their working conditions, and the supply and demand of teachers. The analyses presented provide information useful to educators at all levels, policymakers, administrators, parents, and the general public.

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At MPR Associates, Ellen Liebman wrote the computer programs that generated most of the estimates presented, and Jennifer Berkold kept track of the many files that resulted. Supervised by Barbara Kridl, production involved a number of MPR staff members and the help of teachers and students in the Bay Area. Andrea Livingston's editing improved the text a great deal, and Karyn Madden provided additional editorial support and proofreading. Stacie Chun, Laura Mihailoff, Tom Mills, Francesca Tussing, and Connie Yin worked to turn reams of computer output into attractive figures and tables. Leslie Retallick designed the report's cover and page layout, assisted by Don Eike and Mary Sukkestad, who completed the layout. Cover photographs of teachers and students at Berkeley High School in Berkeley, California were taken by Denise

Bradby, and at Jefferson Elementary School in San Leandro, California by Sean O'Keefe.

Experts within and outside of NCES provided helpful suggestions at all stages of report production. Serving as a consultant to the authors, Eileen Sclan of Long Island University reviewed the report outline, provided suggestions for background literature, and read and commented on an early draft of the report. At various stages of review, a number of NCES staff members read and commented on the report, including Daniel Kasprzyk, Steven Kaufman, Marilyn McMillen, Mary Rollefson, and Linda Zimble of the Surveys and Cooperative Systems Group; Paula Knepper and Edith McArthur of the Data Development and Longitudinal Studies Group; and Michael Cohen of the Statistical Standards and Services Group. Outside NCES, Sharon Bobbitt of the Office of Reform Assistance and Dissemination, Terry Dozier of the Office of the Secretary of Education, Jewell Gould of the American Federation of Teachers, and Ray Peceone of the Connecticut Department of Education also reviewed the report.

HIGHLIGHTS

This report presents national data on teachers and teaching from the Schools and Staffing Survey (SASS) and other sources. Where data permit, it compares findings from the early- to mid-1990s with findings from the late 1980s.

Teachers and Their Workplace

▮ The proportion of minority teachers lags far behind that of minority students. For example, in 1993–94, black, non-Hispanic students made up 16 percent of public school student population, while black, non-Hispanic teachers made up 9 percent of the public teaching force (figure 2.4).

▮ In 1993–94, 42 percent of public school teachers had students with limited English proficiency (LEP) in their classes (table 2.9). However, for about three-quarters of these teachers, less than 10 percent of their students—only a couple of students in the typical class—were in this category.

▮ Teachers in private schools were considerably more likely than those in public schools to report that they received a great deal of support from parents for their work (42 percent compared with 12 percent) (table A2.27).

Teacher Education and Qualifications

▮ Among teachers whose main teaching assignments were in English, a foreign language, mathematics, science, or social studies, 36 percent of public school teachers and 43 percent of private school teachers had neither an undergraduate major nor minor in their main assignment fields (figure 3.2). Furthermore, among public school academic teachers in schools where more than 40 percent of the students received free or reduced-price lunches, 47 percent had neither a college major nor minor in their main assignment fields (table 3.2).

▮ Teachers in public schools with more than 40 percent low-income students were only slightly less likely than teachers in schools with relatively fewer low-income students to be fully certified in the main assignment field (89 percent compared with 92 to 93 percent) (figure 3.6).

▮ Public school teachers are more experienced than their private school counterparts: in public schools 35 percent of teachers had 20 or more years of experience in 1993–94, compared with 22 percent of teachers in private schools (figure 3.7).

Teachers at Work

▮ Among 20 industrialized nations, the average primary level teacher taught 829 hours in 1994 (table 4.6). In the United States, primary level teachers taught 958 hours per year, on average.

▮ Although between 57 percent and 88 percent of teachers perceived themselves as having a lot of control over six areas of classroom-level decision making, no more than 38 percent perceived themselves as having a lot of influence over school-level decisions (table 4.8 and figure 4.7).

Instructional Practices

▮ Teachers who had attended a professional development program related to a particular type of instructional practice were more likely than teachers who had not to engage in that practice. In 1994–95, for example, 91 percent of public school teachers who had attended a professional development session on cooperative learning in the previous two years used small group instruction, compared with 83 percent of public school teachers who had not attended such a session (table 5.1).

Compensation

n In constant 1995 dollars, the average public school teacher's annual salary has recovered from the decline of the 1970s (figure 6.4). In 1993–94, full-time public school teachers' average base salary was \$34,200 (table A6.4).

n Despite having literacy skills equal to those of most other professionals, teachers' average annual earnings and average weekly wages in 1991 were lower than those of accountants and auditors, private-sector executives and managers, physicians, education administrators, and registered nurses (table 6.4).

Teachers' Perceptions of Their Work Environments and Job Satisfaction

n In 1993–94, most teachers (70 to 86 percent) indicated that the principals of their schools communicated expectations for the school well, enforced school rules, and were supportive and encouraging, and that staff members in their schools were recognized for a job well done (figure 7.1). Less than one-half (46 percent) of teachers, however, reported that their principals frequently talked with them about their instructional practices.

n In public schools, teachers in larger districts, larger schools, and schools with higher proportions

of low-income students were less likely than teachers in other schools to report that necessary materials were available (table 7.3).

n Based on a number of measures of teacher satisfaction, teachers were more satisfied with their work in 1993–94 than they had been in 1987–88. For example, whereas about one-third of 1987–88 teachers reported that they would certainly be willing to become teachers again, 40 percent of 1993–94 teachers reported so (figure 7.6).

Teacher Supply and Demand

n Virtually all of the teaching positions approved by public school districts were filled in 1993–94. On average, less than 1 percent of teaching positions were vacant or temporarily filled by substitute teachers because suitable candidates could not be found (figure 8.5).

n Although only 2 percent of public school districts offered cash bonuses to attract teachers to less desirable locations or teaching fields with shortages in 1993–94, even fewer (1 percent) had done so in 1987–88 (figure 8.6).

n About 7 percent of teachers left the profession between 1993–94 and 1994–95, about the same as the proportion that left between 1987–88 and 1988–89 (figure 8.8).

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CHAPTER 1

INTRODUCTION

In the last decade, a number of school reform commissions have focused their attention on teachers and their role in the education of elementary and secondary school children. At least partially in response to the 1983 publication of *A Nation at Risk*, in 1986 the Carnegie Forum on Education and the Economy and the Holmes Group issued reports that drew attention to teachers, their professional preparation, and their working conditions as aspects of schooling that were fundamental to improving elementary and secondary education. A decade later, the National Commission on Teaching and America's Future (NCTAF)—composed of governors, state and federal legislators, professors and administrators in universities and schools of education, representatives of teacher professional organizations, and teachers—has renewed the call for significant reforms to teacher preparation, teacher professional development, teachers' career paths and compensation, and the structure of teachers' daily work.

Although the reforms proposed in all of these reports address multiple aspects of teaching and sometimes take divergent approaches to improving the quality of instruction, they share the goal of improving teachers' capacity to work effectively with their students. Among the issues regarding teaching that have been addressed in these reports are the following:

▮ **Recruitment**—Three dimensions of the need for teachers have received particular attention in recent years. First, predicted increases in enrollments and in teacher retirements spawned concern regarding the supply of teachers in the 1980s (Darling-Hammond 1984). Although the teacher shortage that was predicted for the early 1990s did not materialize then, schools in many communities are now bursting at the seams as the baby boom “echo” reaches school age (Archer 1996; Hendrie 1996; Riley 1996; White 1996). At the same time, older baby-boomer teachers are beginning to reach retirement age, once again raising the specter of teacher shortages (Organisation for Economic Cooperation and Development 1996a).

Second, beginning in the early 1980s, a number of studies indicated that the academic achievement of college graduates who were becoming teachers was significantly lower than that of other college graduates (Murnane, Singer, Willett, Kemple, and Olson 1991; Schlechty and Vance 1983; Weaver 1983), raising concerns about the quality of instruction. Although at present the issue of teacher quality is being discussed less in terms of teacher talent and more in terms of the need to enhance all teachers' skills, policymakers and educators are once again turning their attention to the issue of teachers' qualifications.

Third, the proportion of teachers who are of minority backgrounds has declined as the proportion of students who are of minority backgrounds has increased (Adair 1984; Graham 1987; King 1993; Stewart, Meier, LaFollette, and England 1989), and the gap between the proportions of minority teachers and students has widened as the proportion of minority students increased between the late 1980s and early 1990s (Henke, Choy, Geis, and Broughman 1996). Combined, these three issues—the potential for a general teacher shortage, desires for more minority teachers, and concerns about teacher quality—have prompted many to call for new strategies to recruit talented college graduates, particularly of minority racial-ethnic backgrounds, into the teaching force to ensure that the quality of instruction does not decline as administrators struggle to staff classrooms (Evans 1996; NCTAF 1996).

▮ **Equity**—Beyond general concerns of teacher quality, many have also raised concerns about equity with respect to the quality of instruction. Some schools clearly face more problems than others (for example, higher proportions of students who have limited proficiency in English or who live in poverty, family/social problems, crime/violence in school). To meet the challenges in these schools

teachers must be at least as qualified as their peers in other schools. However, recent reports suggest that teachers in these schools are often not as qualified as those in affluent or suburban schools (Ingersoll and Gruber 1996; NCTAF 1996). Such claims raise the question of whether schools with especially challenging student populations will be more likely than others to hire less well-qualified teachers should a teacher shortage occur.

▮ Undergraduate preparation—The content of collegiate teacher preparation programs, which was raised as a serious problem in the 1980s, continues to be seen as insufficiently rigorous. Researchers and educators contend that college students who are preparing to teach spend too much time in education courses with little academic content and not enough time in demanding liberal arts and science courses (Association of Teacher Educators 1996; Carnegie Forum 1986; Holmes Group 1986; NCTAF 1996). Many regard this situation as particularly serious for secondary specialist teachers in mathematics and the sciences.

▮ Early years in the profession—In some professions, such as medicine or law, graduate-level professional training is supplemented by extended internships or apprenticeships that allow novice practitioners to work under the supervision of experts. In contrast, new teachers have traditionally been expected to fulfill the same responsibilities as teachers with many years of experience without the support or guidance of expert practitioners. Moreover, some reports indicate that because new teachers have no seniority they often receive the most challenging teaching assignments, exacerbating the stress of the already difficult first years of teaching. Given the complexity of teaching, a number of reform reports call the wisdom of these policies into question and propose that new teachers begin their careers with internships or residencies of one or two years' duration in which they receive the support of a mentor teacher and perhaps receive a reduced teaching load (Carnegie Forum 1986; Darling-Hammond 1995; Hall 1995; Holmes Group 1986).

▮ Career paths—There was a flip side to treating novice teachers like experts, however. Because

expert teachers were not distinguished from their less experienced or less proficient peers, the occupational structure of teaching offered little reward in status or responsibility for expert teachers. When this was first observed, it was discussed as an impediment to retaining expert teachers in the profession. Because they received little recognition for high-quality performance in terms of either financial reward or organizational status, talented teachers had little incentive to remain in the profession (Carnegie Forum 1986; Holmes Group 1986). More recently, as teacher professional development has received greater attention among policymakers, expert teachers are being seen as untapped resources available for enhancing the performance of their less experienced or less effective colleagues (Hart 1994; Malen 1987).

▮ Professional growth—Traditional “staff development” programs in which teachers attend a workshop for a few hours or a day and are then expected to return to their classrooms to implement a new teaching strategy appear to effect little long-term change in teachers' practice (Little 1993). Researchers believe these staff development programs are unlikely to be effective for a number of reasons: they tend to focus on changing the practice of individual teachers rather than building the capacity of a school's entire faculty; they tend to take a passive rather than active approach to training teachers; they rarely provide teachers with opportunities to try new strategies in their own classrooms along with ongoing feedback from experts; and they rarely provide teachers with enough time away from students to learn new theories or teaching strategies (Corcoran 1995).

▮ Compensation—Teaching is widely recognized as paying less, especially to its most experienced practitioners, than other occupations that require a college degree. Unlike the compensation patterns of college graduates in other occupations, teachers' pay scales are relatively flat: the ratio of novice to experienced teachers' salaries is relatively high. Again, reformers noted that teachers have relatively little incentive to remain in the profession over the long term when they can earn higher incomes in other occupations (Carnegie Forum 1986; Holmes Group 1986; Rumberger 1987).

This was seen as a particular difficulty among mathematics and science teachers who have greater opportunities to work in high-paying industries involving science and engineering.

▮ **Autonomy or control of work environment**—Although sociologists had noted for decades that teachers were relatively free of both regulation and scrutiny within the classroom (Lortie 1975), in the 1980s researchers and reformers began noting that teachers have relatively little say about school policy decisions made outside the classroom, even though these policies profoundly affect the way instruction is conducted. For example, teachers often have little say over policies regarding student assignment to grades, class scheduling, curriculum decisions made across grade levels, teacher hiring, or teacher evaluation procedures. Some have suggested that policy decisions made without teachers' input negatively affect their abilities to succeed in their work (Ingersoll 1994).

Although these issues have been discussed for over a decade now, they remain significant policy concerns today and are likely to persist into the next century. Public- and private-sector organizations—including, for example, state and local education agencies, the National Board for Professional Teaching Standards, subject area organizations such as the National Council of Teachers of English and the National Council of Teachers of Mathematics; and teacher professional associations or unions, including the American Federation of Teachers, the National Education Association and their affiliates—are now engaged in extensive efforts to improve the quality of instruction in the United States.

Because the issues are important to the future of the nation and so many resources are being invested to address them, both these organizations and the general public need information regarding the state of teaching during these times of reform. To address this need, this book assembles data from several national studies conducted by the National Center for Education Statistics (NCES) and other sources to provide information relevant to these crucial issues concerning teachers and their work. The remainder of this chapter briefly describes these data sets and how this report is organized.

Data Sources

Although a number of NCES data sets can inform policymakers, educators, and the general public as they consider policy alternatives related to teachers and teaching in elementary and secondary schools, the Schools and Staffing Survey (SASS) and the Teacher Follow-up Survey (TFS) provide the most significant source of national-level data on teachers and teaching. This report draws heavily on these two data sets. Three other NCES studies, all of which were conducted at some point during 1993–94, were analyzed for this report: the 1994 follow-up of the Baccalaureate and Beyond Longitudinal Study (B&B:93/94), the 1994 National Assessment of Educational Progress (NAEP:94), and the 1993 National Study of Postsecondary Faculty (NSOPF:93). Each of these studies includes information collected from a different segment of the population and therefore offers a slightly different perspective on the state of teaching in the early 1990s. Although each study is briefly described below, details regarding the methodology of each can be found in the technical appendix.

The *1993–94 Schools and Staffing Survey (SASS:93–94)* provides most of the data reported in this publication. SASS:93–94 is the third administration of the survey, a coordinated set of questionnaires that collect data from schools, principals, teachers, and school districts regarding school and district enrollments, programs, and staffing policies; teacher supply and demand; principals' and teachers' demographic characteristics, education, and professional qualifications; and teachers' workloads and working conditions. SASS's sample design allows estimations to be made not only by state but also by private school affiliation.

Combined with SASS:93–94, the *1994–95 Teacher Follow-up Survey (TFS:94–95)* supplements teacher supply and demand information as well as provides for the first time detailed, national-level estimates of teachers' instructional practices at all grade levels and in all subject areas. The TFS is a one-year follow-up of all teachers who were sampled in the previous SASS who left the teaching profession, all who moved, and a subsample of those who continued to teach in their 1993–94 schools. In 1994–95, the TFS included an extensive set of questions regarding the frequency with which teachers used a wide variety of instructional practices.

The *Baccalaureate and Beyond Longitudinal Study (B&B:93/94)* provides information regarding new college graduates' early forays into teacher preparation and teaching. This longitudinal study follows the undergraduate class of 1992–93: the 1994 data collection is the first in a series of follow-up data collections designed to provide information about the career choices, entry, and paths of college graduates. Unlike most of the data presented in this book, because respondents were sampled from all college graduates, these data permit comparisons between teachers and nonteaching college graduates in the U.S. Because the 1994 interview was conducted so soon after graduates had completed their degrees, it provides an incomplete picture of the individuals in this college class who will become teachers, but is most informative regarding the undergraduate academic achievement of those who prepared to teach as undergraduates or who taught in the year following graduation.

The *National Assessment of Educational Progress (NAEP:94)* was primarily an assessment of 4th-, 8th-, and 12th-grade students' achievement in reading, U.S. history, and geography but also included a survey of the teachers of sampled students in each of these subjects. For the purposes of this publication, the reading teacher data were used to examine the instructional practices of fourth-grade reading teachers in light of their teaching experience, the instructional support their schools provided, and the professional development they received.

The *1993 National Study of Postsecondary Faculty (NSOPF:93)* collected data from faculty in public and private postsecondary institutions, including both less-than-4-year institutions and 4-year colleges and universities. These data supply information regarding the characteristics and work lives of postsecondary faculty who instruct potential elementary and secondary school teachers as undergraduate and graduate students.

This report also includes previously published data from the Common Core of Data (CCD), the National Adult Literacy Survey (NALS), and the 1995 and 1996 editions of *Education at a Glance*, a publication of the Organisation for Economic Co-operation and Development (OECD). CCD is an annual data collection of state and local education agencies administered

by NCES. NALS, conducted by NCES in 1992, measured the verbal and quantitative literacy of U.S. adults aged 16 and older. With financial and material assistance from NCES and agencies of other member states, the OECD Directorate for Education, Employment, Labour, and Social Affairs gathers data from OECD member countries on elementary and secondary education, among other topics. These data can be used to make international comparisons on education institutions and staff as well as students.

Organization of This Report

Data from these sources have been gathered and analyzed to address the issues discussed above. These discussions are organized within the remaining eight chapters of this report as follows:

Chapter 2 describes teachers' demographic characteristics and the contexts within which teachers work: the students whom they teach and the schools within which that instruction occurs. It includes information regarding teachers' gender, age, racial-ethnic backgrounds; their students' racial-ethnic backgrounds, economic status, and proficiency in English; and teachers' perceptions of the problems they and their students face as they attempt to teach and learn.

Chapter 3 discusses a wide variety of indicators of teachers' qualifications to teach. Although some aspects of teachers' qualifications cannot easily be captured with quantitative data, the chapter examines teachers' professional qualifications from a variety of perspectives. This chapter pays particular attention to how teachers with various qualifications are allocated among schools with varying proportions of disadvantaged or minority students.

Chapter 4 answers basic questions about teachers' work, such as how many hours they work at school and how many hours they spend on school-related work outside the school day, what proportions work at various grade levels and in various subject area assignments, how many classes they teach, and how many students they teach per class and per semester. The chapter closes with a discussion of teachers' perceptions of both their control over various aspects of classroom life and their influence over schoolwide policies and decisions.

Chapter 5 presents information regarding the strategies teachers use as they instruct students. The chapter surveys five dimensions of classroom instruction—grouping practices, the use of various educational technologies, the degree to which teachers ask their students to do tasks of varying cognitive complexity both in the classroom and at home, and the degree to which teachers use portfolios to assess their students' learning—among teachers ranging from kindergarten through the 12th grade and across subject areas. The chapter then turns to a closer examination of reading instruction in the fourth grade.

Chapter 6 addresses the issue of teachers' compensation from a number of perspectives. It discusses public school district and private school schedules for teacher salaries, teachers' base salaries and trends in teacher salaries, the proportion of teachers who earn supplemental income of various types and the amount of such income they earn, and the benefits they receive. To put teachers' compensation levels in some context, the chapter also presents data comparing teachers' salaries to those of other professionals, taking into account educational achievement, and also compares U.S. teachers' salaries to those of teachers in other countries.

Chapter 7 discusses teachers' perceptions of their working environments and satisfaction with their work. It includes teachers' reports regarding the support they received from administrators and colleagues in their schools, their satisfaction with their salaries, and the degree to which they would be willing to reenter the profession if they could make the choice to teach all over again. As in Chapter 6, this chapter also attempts to present these data in some context by comparing teachers' satisfaction with their teaching jobs to the satisfaction of former teachers with their nonteaching occupations.

Chapter 8 addresses the issue of teacher supply and demand by presenting information regarding the supply of teachers as well as teacher turnover and attrition from the profession and by examining a number of indicators of teacher shortage. The chapter includes a discussion of why teachers move between schools and why they choose to leave teaching altogether. Chapter 9 concludes the report.

CHAPTER 2

TEACHERS AND THEIR WORKPLACE

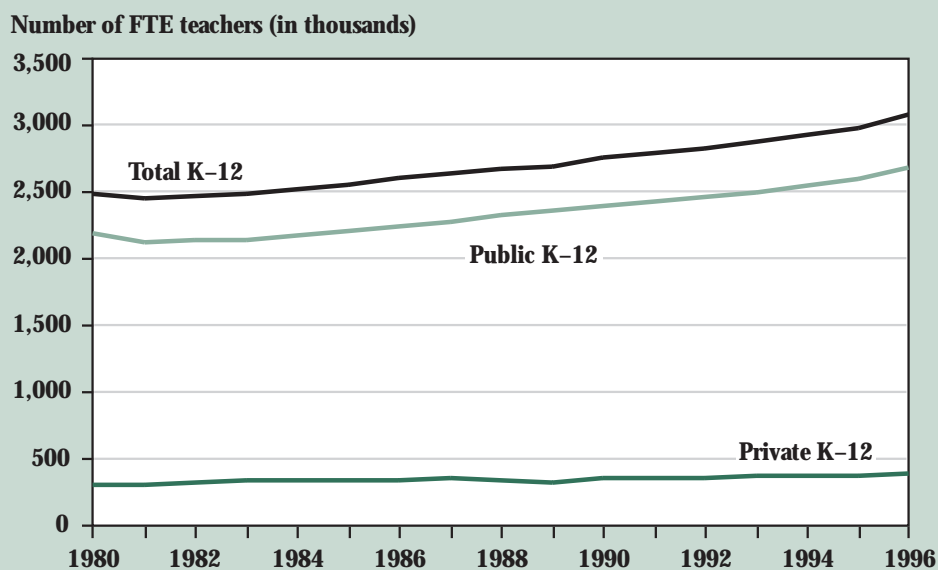
To provide a context for later discussions of issues regarding teachers and their work, this chapter describes important characteristics of the teaching work force and their workplace. The chapter begins with a description of the size of the work force and teachers' basic demographic characteristics such as gender, age, and race-ethnicity. It then describes teachers' workplaces, including the basic organization of schools by sector, location, level, and size; the characteristics of the student populations they teach; and teachers' perceptions of various aspects of school climate, such as school safety, student behavior, student problems that can interfere with learning, and parental support. Schools differ widely in terms of the quality of the workplace they provide for their teachers, and those that are able to provide a stimulating, safe, and pleasant working environment are in the best position to attract, retain, and motivate teachers and to provide students with a supportive learning environment.

The data on the school workplace presented in this chapter provide only a partial view of teachers' overall work environment. Other important aspects of their working conditions, such as workload, work schedules, control and autonomy in decision making, compensation, and teachers' perceptions of their workplace are discussed in chapter 4 (Teachers at Work), chapter 6 (Compensation), and chapter 7 (Teachers' Perceptions of Their Work Environments and Job Satisfaction).

Number of Teachers

In the fall of 1996, there were about 3.1 million full-time-equivalent (FTE) teachers in the nation's schools, about 2.7 million of them in public schools and another 390,000 in private schools (table A2.1). In both sectors, the size of the teaching work force has increased since the early 1980s (figure 2.1). This growth has followed, and

Figure 2.1
Number of full-time-equivalent (FTE) teachers, by sector: 1980–96



NOTE: Data for 1994 and 1995 are preliminary. Figures for 1996 are projected.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys and *Projections of Education Statistics to 2006*, published in *Digest of Education Statistics 1996* (Washington, DC: 1996), 74.

even outpaced, increases in student enrollment in both public and private schools: the pupil-teacher ratio declined from 18.7 to 17.4 in public schools between 1980 and 1996, and from 17.7 to 15.1 in private schools.^{1, 2}

To put the number of teachers into perspective, teachers at the primary and secondary levels made up 2.1 percent of the total labor force in the United States in 1992 (table A2.4). Internationally, the percentages reported for 18 countries in North America, the Pacific area, and Europe ranged from 1.7 to 3.8 percent, with a mean of 2.8 percent. Within public schools in the United States, teachers constituted 52 percent of the total FTE staff in 1993 (figure 2.2 and table A2.5).

Demographic Characteristics of Teachers

Monitoring the basic demographic characteristics of teachers (gender, age, and race-ethnicity) can help iden-

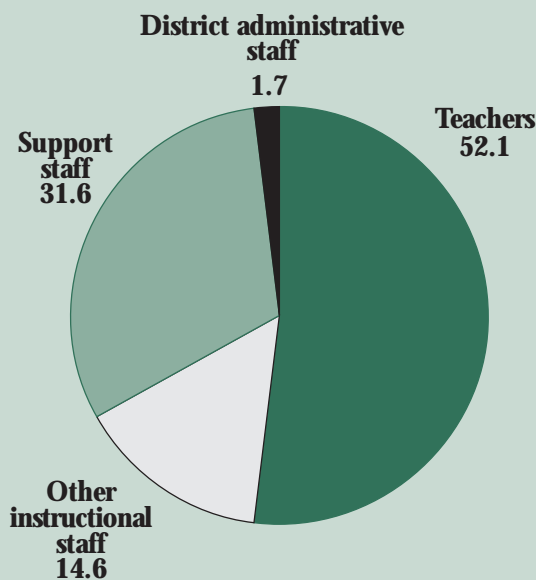
tify potential problems in the overall supply of teachers or in the supply of certain types of teachers. The proportion of female teachers, for example, might serve as an indicator of alternative opportunities for women in the labor force, which, in turn, may affect the ability of the teaching profession to attract talented women over time. Similarly, the racial-ethnic diversity of the teaching work force can serve as a measure of progress toward the frequently articulated goal of increasing the number of minority teachers. Finally, the age distribution of the teaching force can provide a basis for projecting the number of teachers who will retire at various points in the future.

Gender

Teaching has traditionally been a female-dominated profession and continues to be so. In 1993–94, 73 percent of public school teachers and 75 percent of private school teachers were female (tables 2.1 and A2.6). However, the degree to which teaching is female-dominated varies substantially by teaching assignment. For example, among public school teachers in 1993–94, the vast majority of teachers with kindergarten or general elementary, English, special education, and bilingual/ESL assignments were female.

Moreover, the predominance of female teachers is not limited to the United States. In 1994, the percentage of primary-level teachers who were female ranged from 27 percent to 83 percent in 19 countries (mostly European), with an average across countries of 65 percent (table A2.7). Although some educators believe that increasing the number of male teachers, particularly at the elementary level, would provide important role models for children (Hill 1996), data presented in chapter 4 indicate that the proportion of men and women who chose to teach kindergarten and general elementary classes has not changed since the late 1980s.

Figure 2.2
Percentage distribution of public school staff according to function: Fall 1993



SOURCE: U.S. Department of Education, National Center for Education Statistics, Common Core of Data surveys, published in *Digest of Education Statistics 1996* (Washington, DC: 1996), 89.

¹Tables A2.2 and A2.3 show the number of teachers by state and private school affiliation.

²Kindergarten through 12th-grade public school enrollment grew 12 percent (from 40.9 to 45.9 million) during this period, and K–12 private school enrollment increased 9 percent (from 5.3 to 5.8 million) (U.S. Department of Education, NCES 1996, 12).

Table 2.1
Percentage of teachers who were female, by sector
and main assignment field: 1993–94

	Public	Private
Total	72.8	75.0
Main assignment field		
K–general elementary	91.3	92.8
Mathematics, science	52.1	60.9
English, language arts	80.3	77.7
Social studies	37.5	46.6
Special education	83.9	82.3
Bilingual/ESL	82.3	—
Vocational education	48.8	47.7
Other	61.1	61.8

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

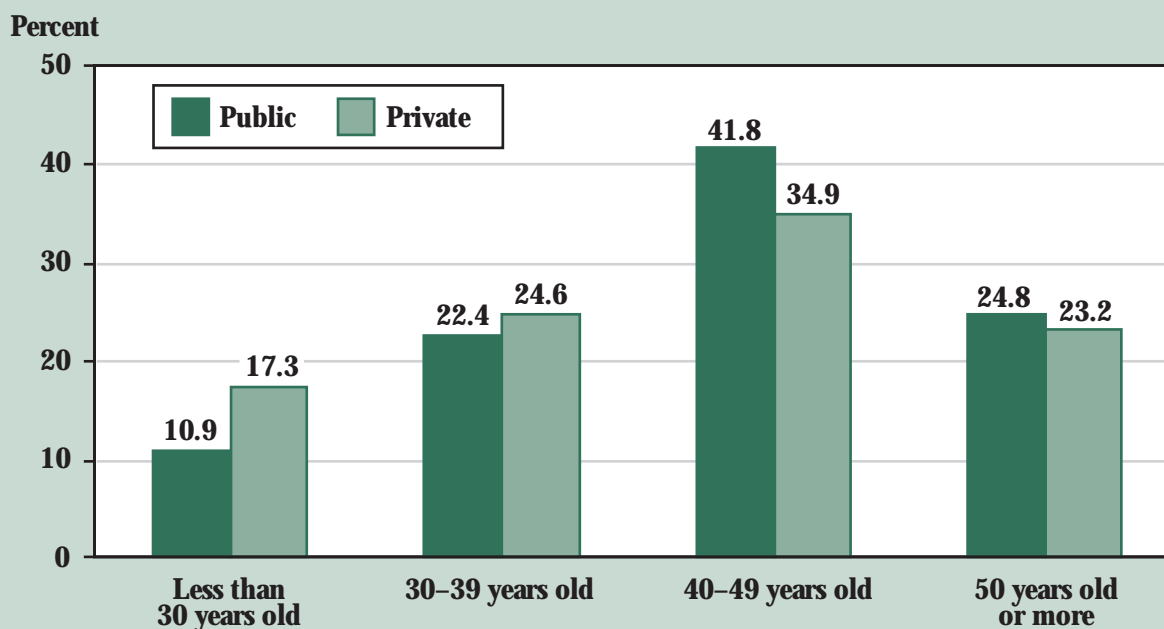
Age

The overall average age for public school teachers in 1993–94 was 43 years (table A2.8).³ While the average age for private school teachers was only one year less (42 years), the age distribution of public and private school teachers differed. Most notably, proportionately more private than public school teachers were under 30 years old, which was counterbalanced by a greater percentage of public than private school teachers in the 40- to 49-year-old age group (figure 2.3).

In the aggregate and in both sectors, the teaching force is aging. The average teacher age in 1993–94 was 43 years, 3 years older than in 1987–88 (table 2.2). If this trend continues, the future teacher supply may be affected as proportionately more teachers reach retirement age in a

³Tables A2.9 and A2.10 show the average age and percentage distribution of teachers according to age by state and private school affiliation.

Figure 2.3
Percentage distribution of teachers according to age, by sector: 1993–94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

Table 2.2
Average teacher age, by sector: 1987-88 and 1993-94

	1987-88	1993-94
Total	40.2	42.9
Sector		
Public	40.4	43.0
Private	39.0	41.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987-88 and 1993-94 (Teacher Questionnaire).

given year (see chapter 8 for a discussion of teacher demand and supply). There may be cost implications as well, because older teachers are usually more experienced and therefore are at higher points on their districts' salary schedules.

Race-Ethnicity

Many educators believe it is important for both minority and nonminority children to be taught by minority teachers, arguing that minority teachers are better equipped to motivate and work with minority students and that both minority and nonminority children benefit from having successful minority professionals as role models (Graham 1987; Ladson-Billings 1994). Many believe more minority teachers are needed so that the racial-ethnic composition of the teaching force can more closely reflect the racial-ethnic composition of the student population (American Association of Colleges for Teacher Education 1994).

This balance is difficult to accomplish, because the vast majority of teachers are white, non-Hispanic (87 percent in 1993-94) (tables 2.3, A2.11, and A2.12). However, beginning teachers in 1993-94 (those who had taught 3 years or less) were more likely than teachers with 10 or more years of experience to be minority. Most noticeable is the larger representation of Hispanic teachers among beginning teachers than among more experienced teachers. The pattern for black, non-Hispanic teachers was the reverse, however: black, non-Hispanic teachers were better represented among teachers with 20 or more years of experience than among those with less experience.

The proportion of minority teachers lags far behind that of minority students. For example, 16 percent of all public school students were black, non-Hispanic in 1993-94, but only 9 percent of their teachers were black, non-Hispanic (figure 2.4 and table A2.13).⁴ About three times as many students as teachers were Hispanic (12 percent versus 4 percent).

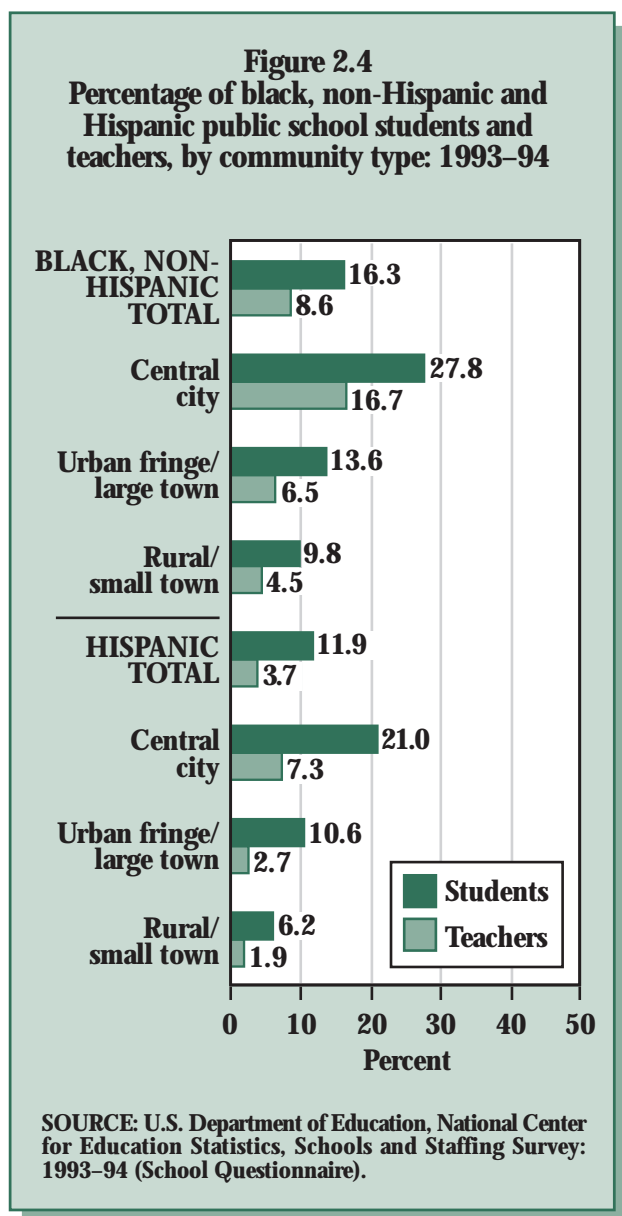
⁴See table A2.13 for the percentage distribution of both students and teachers according to race-ethnicity for selected school characteristics and tables A2.14 and A2.15 for the same information for public schools by state and private schools by affiliation. The proportions of teachers who were Hispanic and black, non-Hispanic as reported in table 2.3 differs from those reported in figure 2.4 because the estimates in table 2.3 were computed from the SASS Teacher Questionnaire and those reported in figure 2.4 were computed from the SASS School Questionnaire.

Table 2.3
Percentage distribution of teachers according to race-ethnicity, by years of teaching experience: 1993-94

	American Indian/ Alaskan Native	Asian/ Pacific Islander	Black, non-Hispanic	Hispanic	White, non-Hispanic
Total	0.7	1.1	6.7	4.1	87.3
Teaching experience					
3 or fewer years	0.9	1.6	6.0	6.8	84.7
4-9 years	0.8	1.3	5.8	5.1	86.9
10-19 years	0.7	0.9	6.4	4.0	88.1
20 or more years	0.7	1.0	8.0	2.5	87.8

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).



If an important goal is to have all students exposed to minority teachers, it is necessary to monitor where minority teachers work. In public schools, minority teachers are heavily concentrated in schools where more than one-half of the students belong to minority groups. Approximately two-thirds of minority teachers worked in such schools in 1993–94 (tables 2.4 and A2.16).

While this pattern may be beneficial for minority students, it also reduces the exposure of students in schools with low minority enrollments to minority teachers.

Schools with a minority enrollment of 10 percent or less had almost no minority teachers (only 1 or 2 percent) in 1993–94 (tables 2.5 and A2.13).

Teachers Among New College Graduates

The Baccalaureate and Beyond (B&B) data provide an opportunity to compare the demographic characteristics of 1992–93 bachelor's degree recipients who had taught by 1994 with the characteristics of other graduates. Those who taught were more likely to be female and to have been more than 25 years old when they graduated (tables 2.6 and A2.17).⁵ Teachers and nonteachers were about equally likely to be black, non-Hispanic, but teachers were more likely than nonteachers to be white, non-Hispanic and, conversely, nonteachers were more likely than teachers to belong to an "other" minority group (that is, to be Hispanic, Asian/Pacific Islander, or American Indian/Alaskan Native).

School Characteristics

The school is the teacher's workplace, and there is tremendous variety in that workplace. In many of the discussions of teachers and teaching that follow later, important differences by sector, community type, level, and size are noted. To provide a context for these discussions, table 2.7 provides a brief summary of some of these basic organizing characteristics.⁶ About one-half (49 percent) of all public schools were located in rural/small town communities in 1993–94. Compared with public schools, private schools were more concentrated in central cities. At both the elementary and secondary levels, public schools were much larger than private schools, on average. Combined schools were more common in the private than public sector.

⁵Table A2.17 also distinguishes among bachelor's degree recipients who taught and prepared to teach, taught but did not prepare, did not teach but prepared, and did not teach and did not prepare.

⁶For more detail, see tables A2.18–A2.20 and Henke, Choy, Geis, and Broughman 1996.

Table 2.4
Percentage distribution of public school teachers according to minority enrollment in their schools, by teacher race-ethnicity: 1993-94

	Minority enrollment in school				
	No minority students	1-10 percent	11-30 percent	31-50 percent	More than 50 percent
Total	4.9	33.5	22.8	14.2	24.6
Teacher race-ethnicity					
Black, non-Hispanic	0.4	3.4	11.8	16.1	68.3
White, non-Hispanic	5.6	37.7	24.3	14.2	18.2
Other*	0.8	8.6	13.0	12.7	64.8

NOTE: Percentage distributions may not sum to 100 due to rounding.

*Other includes Asian/Pacific Islanders, Hispanics of any race, American Indian/Alaskan Natives, and other racial-ethnic categories.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Table 2.5
Percentage distribution of teachers according to race-ethnicity, by sector and minority enrollment in their schools: 1993-94

	American Indian/ Alaskan Native	Asian/ Pacific Islander	Black, non-Hispanic	Hispanic	White, non-Hispanic
Total	0.4	1.1	7.9	3.6	87.0
Public	0.4	1.1	8.6	3.7	86.2
Minority enrollment					
No minority students	0.5	0.1	0.8	0.1	98.5
1-10 percent	0.2	0.3	1.0	0.4	98.1
11-30 percent	0.4	0.7	4.3	1.5	93.2
31-50 percent	0.5	0.9	9.4	2.9	86.3
More than 50 percent	0.7	2.7	23.1	10.8	62.8
Private	0.3	1.2	3.4	2.8	92.3
Minority enrollment					
No minority students	0.1	—	0.3	0.4	99.2
1-10 percent	0.1	0.3	0.6	0.8	98.2
11-30 percent	0.4	1.2	1.8	2.6	94.0
31-50 percent	0.2	2.1	2.8	5.1	89.7
More than 50 percent	0.7	4.6	18.7	11.0	65.1

—Too few cases for a reliable estimate.

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School Questionnaire).

Table 2.6
Percentage distributions of 1992–93 bachelor's degree recipients according to age, gender, and race–ethnicity, by teaching status: 1994

	Gender		Age		Race–ethnicity		
	Male	Female	25 years or more	Less than 25 years	Black, non-Hispanic	White, non-Hispanic	Other
Total	45.3	54.7	34.8	65.2	6.3	86.3	7.4
Teaching status							
Taught	27.1	72.9	39.7	60.3	5.7	89.7	4.6
Did not teach	48.0	52.0	34.3	65.7	6.1	86.2	7.8

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup, Data Analysis System.

Student Characteristics

The character of the student body is another important aspect of the teacher's workplace, affecting the difficulty of the teaching job and the overall school climate. This section focuses on several important student background characteristics: race–ethnicity, English proficiency, and income. Schools with racially and ethnically diverse populations, large proportions of students who have difficulty with the English language, or large proportions of low-income students provide teachers with special pedagogical challenges. In addition, as discussed in the next section, large proportions of low-income students are associated with greater incidence of school safety, student, and family problems that interfere with learning. Often, the student characteristics that make teaching and learning difficult go together, compounding the challenges teachers face.

Race–Ethnicity

The nation's schools are diverse in terms of the racial–ethnic backgrounds of their students. About 90 percent of all schools had at least some minority students in 1993–94 (tables 2.8 and A2.18). Public schools were more likely than private schools to have minority enrollments of more than 30 percent (36 percent compared with 23 percent). Central city schools were particularly likely to have minority enrollments of more than 30 percent, with 57 percent reporting such minority enrollments compared

with about 30 percent in urban fringe communities or large towns and 19 percent in rural communities or small towns.

Table 2.7
Percentage distributions of schools according to community type and level, and average size by level, by sector: 1993–94

	Total	Public	Private
<i>Percent of schools</i>			
Total	100.0	100.0	100.0
Community type			
Central city	27.0	23.8	37.2
Urban fringe/ large town	28.5	27.1	32.9
Rural/small town	44.4	49.1	29.9
School level			
Elementary	68.8	71.9	59.5
Secondary	20.8	24.3	9.8
Combined	10.4	3.8	30.7
<i>Average size</i>			
Level			
Elementary	404	463	180
Secondary	656	700	318
Combined	211	318	169

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (School Questionnaire).

Table 2.8
Percentage distribution of schools according to minority enrollment, by sector and community type: 1993-94

	Sector			Community type		
	Total	Public	Private	Central city	Urban fringe/ large town	Rural/ small town
Total	100.0	100.0	100.0	100.0	100.0	100.0
Minority enrollment						
No minority students	10.9	7.8	20.3	3.5	6.5	18.2
1-10 percent	36.0	36.4	34.8	18.8	35.3	47.0
11-30 percent	20.6	20.1	22.4	20.6	28.5	15.6
31-50 percent	11.4	12.8	7.0	14.0	11.9	9.5
More than 50 percent	21.0	22.8	15.5	43.1	17.7	9.8

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School Questionnaire).

Limited English Proficiency

Having students with limited English proficiency (LEP) in their classes poses a special challenge for teachers, especially if they are not trained to teach them. In 1993-94, 39 percent of all teachers had LEP students in their classes (tables 2.9 and A2.21). However, for about three-quarters of these teachers, less than 10 percent of their students were in this category (which would amount to only a couple of students in the typical class).

Just over one-quarter of the teachers with LEP students had received any training for teaching LEP students. However, teachers with larger proportions of LEP students were more likely than teachers with relatively fewer such children to have training to teach them. For example, among public school teachers whose classes had more than 50 percent LEP students, 87 percent had training in teaching LEP students (figure 2.5). In contrast, among public school teachers with less than 10 percent LEP students, 19 percent had special training to teach them.

Overall, 8 percent of public school teachers thought that students' problems with the English language constituted a serious problem in their schools. However, central city public school teachers were at least twice as likely as public school teachers in other community types to believe so (figure 2.6).

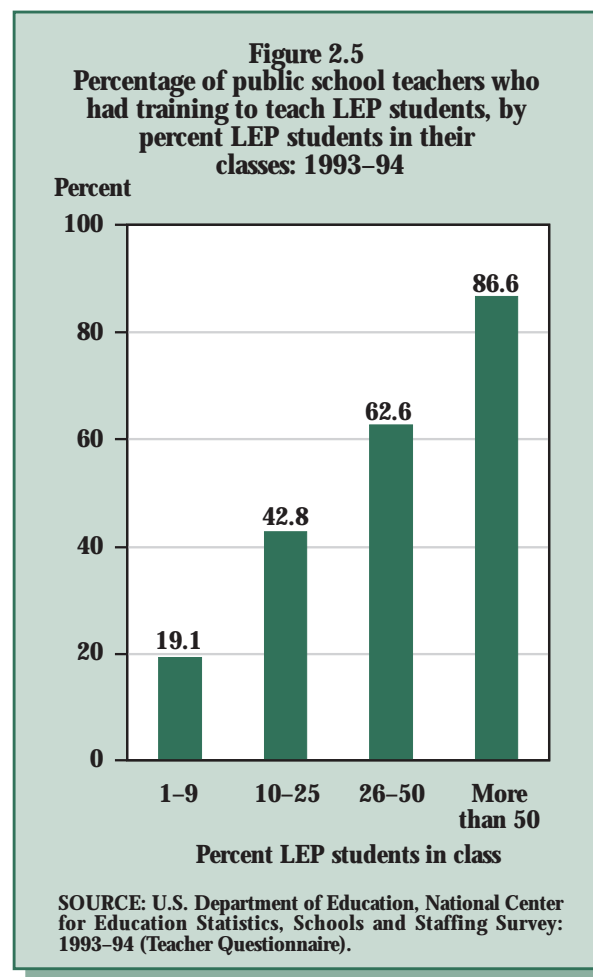


Table 2.9
Percentage of teachers with LEP students; among those teachers, the percentage of their students who were LEP and percentage who had training in teaching LEP students; and percentage of all teachers who reported that student problems with the English language were serious in their schools, by sector: 1993-94

	Total	Sector	
		Public	Private
Percent of teachers with LEP students in their classes	39.4	41.7	24.0
LEP enrollment	100.0	100.0	100.0
1-9 percent	75.6	74.5	89.0
10-25 percent	12.6	13.0	6.9
26-50 percent	4.9	5.1	1.9
More than 50 percent	7.0	7.4	2.2
Percent who had training in teaching LEP students	27.9	29.4	9.4
Percent of all teachers who thought that student problems with the English language were serious in their school	6.7	7.5	1.4

NOTE: Percentage distributions may not sum to 100 due to rounding.

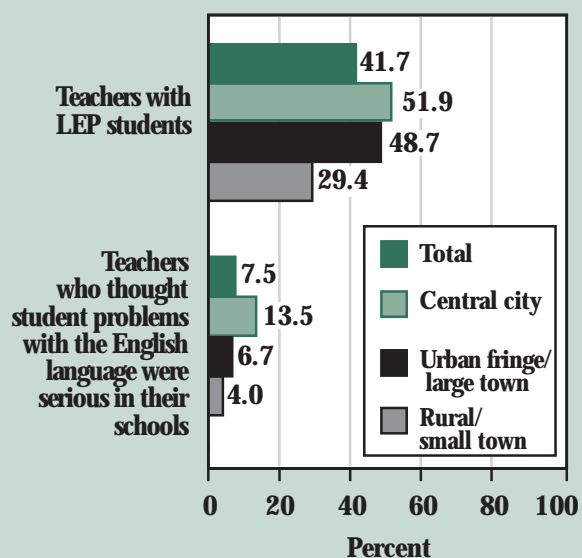
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Limited English proficiency and minority enrollment are often linked. In 1993-94, schools with larger proportions of minority students also tended to have more LEP students (tables 2.10 and A2.22). Overall, 9 percent of all schools had 10 percent or more LEP students, but among schools with minority enrollments of more than 50 percent, 31 percent of schools in central cities had at least 10 percent LEP students (as did 29 percent in urban fringe communities or large towns and 27 percent in rural areas or small towns).

Low-Income Status

Ninety-four percent of public schools participate in the National School Lunch Program. Among participating elementary schools, an average of 40 percent of the students came from families with incomes low enough to receive free or reduced-price lunches in 1993-94 (tables

Figure 2.6
Percentage of public school teachers with LEP students and percent who thought that student problems with the English language were serious in their schools, by community type: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Table 2.10
Percentage of schools with 10 or more percent LEP students, by community type and minority enrollment: 1993-94

	Total	Central city	Urban/ fringe/ large town	Rural/ small town
Total	8.7	16.2	8.2	4.4
Minority enrollment				
No minority students	0.9	2.1	1.7	0.5
1-10 percent	0.4	1.0	0.5	0.2
11-30 percent	3.3	4.2	2.5	3.5
31-50 percent	13.9	13.6	17.9	10.9
More than 50 percent	29.4	30.5	28.6	27.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School Questionnaire).

2.11 and A2.23). In participating public secondary schools, the average was 28 percent. The averages were higher in central city schools than in schools in other types of communities. Schools with more than 50 percent minority students and schools with more than 10 percent LEP students had higher average percentages of students who received free or reduced-price lunches than those with fewer such students.

Table 2.11
Participation in the National School Lunch Program in public elementary and secondary schools, by selected school characteristics: 1993-94

	Percent schools participating	Average percent students receiving free or reduced-price lunches*	
		Elementary	Secondary
Total	94.3	39.6	27.7
Community type			
Central city	96.2	51.8	33.6
Urban fringe/ large town	91.8	30.0	18.7
Rural/small town	94.8	38.4	29.7
Minority enrollment			
No minority students	87.7	39.0	29.5
1-10 percent	94.7	25.3	20.6
11-30 percent	93.0	30.1	22.0
31-50 percent	96.0	43.9	30.3
More than 50 percent	96.1	66.0	47.0
LEP enrollment			
No LEP students	93.6	38.2	29.8
1-9 percent	94.3	33.0	21.4
10 percent or more	98.0	64.2	43.8

*Among schools that participated in the National School Lunch Program.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School Questionnaire).

School Climate

For effective teaching and learning to take place, students and teachers must feel safe and be able to concentrate on the tasks at hand. If teachers or students are at risk of physical attack, if schools and classrooms are frequently

disrupted by misbehaving students, or if students or their families have serious personal problems that interfere with learning, neither teachers nor students can perform at their best. In recognition of the importance of school climate, one of the National Education Goals for the year 2000 is that all schools be safe, disciplined, and alcohol- and drug-free.

The SASS asked teachers to report on safety in their schools and on their perceptions of the seriousness of various problems related to students and their families. Their responses provide a picture of how teachers perceive their working environments and how their perceptions vary across types of schools. A clear pattern emerges, with problems consistently appearing to be much more serious in public than private schools. Within public schools, problems generally (although not always) appear to be more serious in secondary rather than elementary schools and in central city schools as opposed to those in other types of communities. In addition, problems usually appear to be more serious as the percentage of low-income students increases (as measured by the percentage of students receiving free or reduced-price lunches).

School Safety

Schools are not always safe places for teachers. In 1993-94, 23 percent of all school teachers reported that a student from their school had threatened to injure them, and 10 percent reported that a student had physically attacked them (tables 2.12 and A2.24). The percentages of teachers who reported being attacked or threatened by a student varied by sector, level, community type, and the percentage of low-income students in the pattern described above, with the exception that public elementary school teachers were more likely than public secondary school teachers to report being physically attacked by a student.

Physical conflicts among students, vandalism of school property, robbery or theft, and student possession of weapons are additional problems some of today's teachers must face (tables 2.13 and A2.24). From 3 percent to 8 percent of public school teachers thought that these were serious problems in their schools in 1993-94. In private schools, only 1 to 2 percent of teachers found any of these problems to be serious.

Table 2.12
Percentage of teachers who reported that they had been threatened or attacked by a student, by sector and selected public school characteristics: 1993–94

	Threatened by a student	Attacked by a student
Total	23.0	9.6
Public	25.4	10.5
Level		
Elementary	19.5	12.5
Secondary	31.7	8.3
Community type		
Central city	31.7	14.2
Urban fringe/large town	24.3	10.1
Rural/small town	21.9	8.2
Free/reduced-price lunch recipients		
5 percent or less	19.6	6.7
6–20 percent	23.5	8.4
21–40 percent	25.1	10.0
More than 40 percent	28.8	13.5
Private	6.6	4.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (School and Teacher Questionnaires).

Within the public sector, the percentage of teachers reporting that these were serious problems in their schools varied by level and community type, with quite striking differences in some cases. For example, 14 percent of public school teachers in central cities reported that physical conflicts among students were a serious problem and 13 percent reported vandalism of school property as such, compared with 5 percent and 4 percent, respectively, of teachers in rural/small town schools.

The percentages of public school teachers reporting that physical conflict and vandalism were serious problems increased with the percentage of low-income students. Teachers in schools where more than 40 percent of the students received free or reduced-price lunches were more likely than teachers in schools with fewer such students to find robbery or theft a serious problem.

Student Behavior at School

Student misbehavior in the classroom can interfere seriously with both a teacher's effectiveness and students' ability to learn. In 1993–94, 13 percent of all teachers strongly agreed with the statement that “the level of student misbehavior (for example, noise, horseplay, or fighting in the halls, cafeteria, or student lounge) in this school interferes with my teaching.”⁷ There was a striking difference, however, in the experiences of public and private school teachers, with teachers in public schools almost three times as likely as teachers in private schools to strongly agree that student misbehavior interfered with their teaching (14 percent versus 5 percent) (table A2.25).

Based on the reports of public school teachers, this problem was more common at the secondary than at the elementary level and in central cities than in urban fringe or rural communities (figure 2.7). In addition, the frequency with which teachers strongly agreed that student misbehavior interfered with their teaching increased as the percentage of low-income students increased (as indicated by the percent receiving free or reduced-price lunches). Among private school teachers, level and location made no notable difference.

The percentages of teachers who reported in 1993–94 that certain specific types of student misbehavior—absenteeism, tardiness, cutting class, and verbal abuse—were serious problems in their schools followed a similar pattern with respect to sector, level, and location (tables 2.14 and A2.25). These problems were more likely to be reported in public secondary schools and schools in central cities. Private school teachers rarely found these to be serious problems in their schools (no more than 2 to 3 percent thought any of these problems were serious).

Student Problems

Students who have serious health-related problems or use alcohol or abuse drugs often come to school unready to devote their full energies to learning. Those who are generally apathetic about school or who come to school

⁷Teachers were given a choice of responding “strongly agree,” “somewhat agree,” “somewhat disagree,” and “strongly disagree.”

Table 2.13
Percentage of teachers who reported that various safety problems were serious in their schools, by sector and selected public school characteristics: 1993-94

	Physical conflicts among students	Robbery or theft	Vandalism of school property	Student possession of weapons
Total	7.4	3.6	6.0	2.5
Public	8.2	4.1	6.7	2.8
Level				
Elementary	7.0	2.5	4.8	0.7
Secondary	9.5	5.7	8.7	5.1
Community type				
Central city	13.8	7.0	12.5	5.2
Urban fringe/large town	7.8	3.4	5.5	2.5
Rural/small town	4.7	2.6	3.6	1.4
Free/reduced-price lunch recipients				
5 percent or less	2.9	2.2	3.2	1.4
6-20 percent	4.9	3.1	4.8	2.8
21-40 percent	7.4	3.2	5.2	2.6
More than 40 percent	13.3	5.5	9.9	3.3
Private	1.5	0.8	1.2	0.3

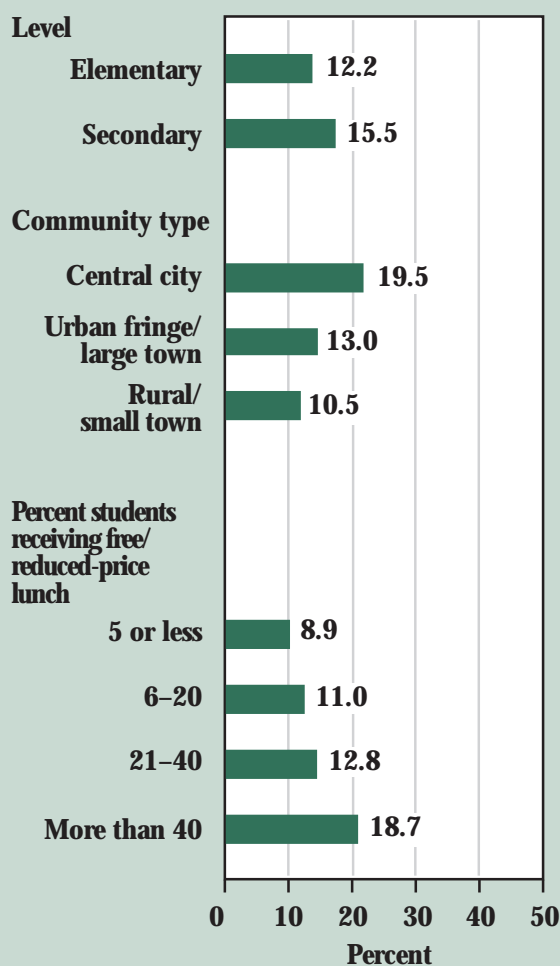
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Table 2.14
Percentage of teachers who reported that various types of student misbehavior were serious problems in their schools, by selected school characteristics: 1993-94

	Tardiness	Absenteeism	Cutting class	Verbal abuse of teachers
Total	9.5	12.9	4.6	10.0
Public	10.6	14.4	5.1	11.1
Level				
Elementary	5.7	6.8	0.7	6.9
Secondary	15.8	22.6	9.9	15.6
Community type				
Central city	17.6	21.9	9.3	17.1
Urban fringe/large town	10.5	13.8	4.8	10.5
Rural/small town	5.8	9.8	2.5	7.4
Free/reduced-price lunch recipients				
5 percent or less	7.4	9.7	4.1	6.0
6-20 percent	9.4	13.5	5.3	9.1
21-40 percent	8.8	13.5	4.4	9.8
More than 40 percent	13.9	17.0	5.5	14.8
Private	2.6	2.2	0.7	2.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Figure 2.7
Percentage of public school teachers who strongly agreed that student misbehavior interfered with their teaching, by selected school characteristics: 1993–94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (School and Teacher Questionnaires).

unprepared to learn may be disruptive in the classroom and may create problems for themselves, other students, and teachers.

In 1993–94, 29 percent of public school teachers reported that students coming to school unprepared to learn was a serious problem in their schools, and 24 percent reported that student apathy was a serious problem

(tables 2.15 and A2.26). As with many other problems, public school teachers in secondary schools and in schools in central cities were the most likely to report that these were serious problems in their schools. The percentage of teachers who reported that students coming to school unprepared to learn was a serious problem increased as the percentage of students receiving free or reduced-price lunches increased. However, the percentage reporting student apathy as a serious problem was similar among schools with more than 5 percent low-income students, and lower in schools where 5 percent or less of the students were low income.

Some student health issues—pregnancy, poor nutrition, and poor health—generally appeared to be most common in central city public schools and to increase with the percentage of low-income students, although these patterns were not true for alcohol use and drug abuse.⁸ Public school teachers in rural/small town schools were more likely than their counterparts in other community types to report that alcohol use was a serious problem. In addition, teachers in public schools with more than 40 percent low-income students were actually less likely than those in schools with fewer such students to report that alcohol use and drug abuse were serious problems. Although students who are better off financially may have more resources to purchase alcohol and drugs, it is also important to remember that these reports reflect teachers' perceptions, not actual levels of use. Alcohol use may simply seem more serious to some teachers in the relative absence of other serious problems.

Parental Support and Parents' Problems

Strong parental support and cooperation can greatly facilitate a teacher's job in working with individual students and enhance the overall school climate, both of which contribute to desirable working conditions for teachers and effective learning environments for students. In recognition of this, the National Education Goals for the year 2000 call upon schools to promote partnerships with parents to increase parental involvement in their children's education.

⁸The case of pregnancy was somewhat different: pregnancy was perceived to be a serious problem by about the same percentage of teachers in schools with 6 to 20 percent and 21 to 40 percent low-income students (3 percent).

Table 2.15
Percentage of teachers who reported that various student problems were serious in their schools, by selected school characteristics: 1993-94

	Coming to school unprepared to learn	Apathy	Poor nutrition	Poor health	Pregnancy	Alcohol use	Drug abuse
Total	25.6	21.2	7.3	4.5	3.6	8.5	5.2
Public	28.7	23.6	8.2	5.0	4.1	9.3	5.7
Level							
Elementary	22.3	11.8	9.3	5.8	2.5	1.2	0.6
Secondary	35.6	36.3	7.0	4.1	5.7	18.0	11.2
Community type							
Central city	37.1	28.0	12.7	8.5	7.0	6.9	6.3
Urban fringe/large town	26.4	21.9	7.1	4.2	3.4	8.1	5.7
Rural/small town	24.8	22.0	5.9	3.3	2.6	11.8	5.4
Free/reduced-price lunch recipients							
5 percent or less	15.9	17.7	2.1	1.3	2.2	12.7	7.0
6-20 percent	22.0	23.5	3.4	1.8	3.1	13.4	7.4
21-40 percent	27.9	24.3	7.3	4.1	3.2	8.5	5.3
More than 40 percent	38.8	25.3	14.5	9.4	5.5	5.4	3.9
Private	4.2	4.5	1.4	0.9	0.8	3.2	1.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

In 1993-94, the percentage of teachers who strongly agreed with the statement, "I receive a great deal of support from parents for the work I do," was relatively low in public schools (12 percent), but considerably higher in private schools (42 percent) (table A2.27). In both sectors, support was higher at the elementary than secondary level. Among public school teachers, the percentage declined as the percentage of low-income students increased (figure 2.8).

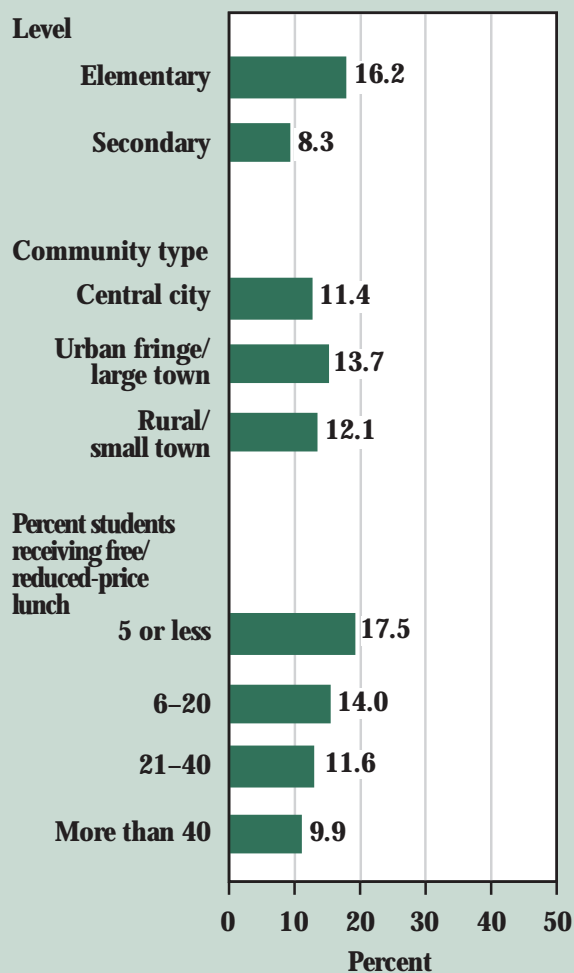
In 1993-94, 28 percent of public school teachers reported that lack of parental involvement was a serious problem in their schools (tables 2.16 and A2.27). Teachers in schools with more than 40 percent low-income students perceived it as a particularly serious problem, with 40 percent reporting it as such. Lack of parental support was seldom considered a serious problem in private schools, however: overall only 4 percent of private school teachers characterized it as one.

A lack of parent involvement may be related to other family problems. The percentages of public school teachers reporting that parental alcoholism, drug use, or poverty were serious problems in their schools varied by both community type and the percentage of students receiving free or reduced-price lunches. Where lack of parental support was most frequently reported, so were reports of parental problems. In public schools with more than 40 percent low-income students, the problems were particularly serious: 40 percent of the teachers reported that lack of parental involvement was a serious problem, 22 percent reported alcoholism or drug abuse, and 39 percent reported poverty.

Conclusion

This chapter has provided an overview of the basic demographic characteristics of teachers and key aspects of their workplace that provide the context in which teaching and

Figure 2.8
Percentage of public school teachers who strongly agreed that they received a great deal of support from parents, by selected school characteristics: 1993–94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (School and Teacher Questionnaires).

learning take place. Today's teachers are working with a diverse student population: the vast majority of schools have at least some racial-ethnic minority students, and central city schools are especially likely to have large minority enrollments. However, the teaching force continues to be primarily female and white, non-Hispanic. The proportion of minority teachers lags far behind the proportion of minority students, and in the public sector,

Table 2.16
Percentage of teachers who reported that various parental problems were serious in their schools, by selected school characteristics: 1993–94

	Lack of parent involvement	Parent alcohol or drug abuse	Poverty
Total	24.6	11.7	17.3
Public	27.5	13.0	19.5
Level			
Elementary	21.6	13.3	22.0
Secondary	34.0	12.7	16.8
Community type			
Central city	35.9	17.2	29.0
Urban fringe/large town	24.0	10.6	13.0
Rural/small town	24.6	12.1	17.9
Free/reduced-price lunch recipients			
5 percent or less	13.3	5.0	4.0
6–20 percent	19.4	7.2	6.4
21–40 percent	26.1	11.0	15.4
More than 40 percent	39.7	22.1	38.7
Private	4.0	2.6	2.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (School and Teacher Questionnaires).

minority teachers are heavily concentrated in schools where more than one-half of the students belong to a minority group. More than one-third of all teachers have students with limited English proficiency in their classes, but only about one-quarter of the teachers with these students have received training in teaching them.

Teachers' responses to questions on safety in their schools and their perceptions of the seriousness of various problems related to students and their parents show wide variation in school climate. These types of problems can seriously interfere with both teaching and learning. Problems consistently appear more serious in public than private schools. Within the public sector, they are generally more serious at the secondary than elementary level and in central cities than in other community types. Furthermore, they tend to increase with the percentage of low-income students.

CHAPTER 3

TEACHER EDUCATION AND QUALIFICATIONS

During the past decade, educators and policymakers have devoted much attention to the issue of teacher preparation and certification, prompted by two major reports issued in 1986: *A Nation Prepared: Teachers for the 21st Century*, issued by the Carnegie Forum on Education and the Economy, and *Tomorrow's Teachers*, prepared by the Holmes Group. Both reports called for sweeping changes in teacher education and stimulated extensive debate over the appropriate content of teacher education, how undergraduate and graduate teacher education should be structured, what should be necessary for certification, how new teachers should be supported in their beginning years, and how teachers already in the classroom should be supported and trained to meet today's educational challenges.

The 1993–94 Schools and Staffing Survey (SASS) allows examination of recent developments regarding some important aspects of teachers' education and training, including their initial preparation, degrees earned, certification, and participation in teacher induction and professional development programs. Other indicators of teachers' qualifications available from SASS include their years of teaching experience and their self-assessments of their qualifications to teach in their assigned fields. Some indications of the types of changes that have (or have not) taken place since the mid-1980s can be gleaned by comparing the backgrounds and experiences of new teachers with those who have been in the field for more than 10 years and by comparing the 1987–88 SASS with the 1993–94 SASS, where the data are comparable.

Other NCES surveys provide additional perspectives on teacher education. The Baccalaureate and Beyond Survey's First Followup (B&B:93/94) allows comparisons of courses taken by teachers and other bachelor's degree recipients, and the National Study of Postsecondary Faculty (NSOPF) allows comparisons of teacher educators and other education faculty with faculty in other fields.

It is important to keep in mind that the data presented in this chapter provide only a partial picture of teachers'

education and qualifications. Much of the debate regarding teacher education programs has centered not simply on the numbers and types of courses taken, but on their content, which is not addressed by any of the national data sets. Similarly, there is nothing in these data that measures the ability of teachers to work effectively with students. State certification provides no guarantee that teachers can inspire their students or communicate complex concepts, for example.

Initial Preparation of Teachers

The first formal step toward becoming a teacher has traditionally been an undergraduate degree in education, although some states require an additional year of postbaccalaureate study before certification. While it is generally accepted that teachers need a basic college education, a thorough grounding in the subjects they plan to teach, and training in teaching skills, beliefs about when and how this should happen and the relative emphasis on each aspect of teacher education have been shifting. A debate over the past decade has considered whether teachers should be allowed to major in education as undergraduates or should be required to major in a subject area and obtain their teacher training in graduate programs. Both the Carnegie Forum and Holmes Group reports recommended that prospective teachers use their undergraduate years to learn about the subjects they will teach and delay their professional education until graduate school.

Undergraduate Majors

The majority of today's teachers majored in education as undergraduates. In 1993–94, 45 percent of all teachers majored in general education as undergraduates, 7 percent majored in special education, and 1 percent in other educational fields (such as curriculum and instruction, educational administration, educational psychology, or counseling and guidance) (table A3.1). The rest majored in a particular subject area or the

teaching of it (for example, mathematics or mathematics education).¹

The preparation of elementary and secondary school teachers has been quite different, however. In 1993-94, 69 percent of all public elementary school teachers majored in general education as undergraduates (figure 3.1). Among teachers with kindergarten or general elementary assignments, 83 percent majored in general education (table A3.1). At the secondary level, in contrast, 20 percent of public school teachers majored in general education, with the rest majoring in an academic subject or the teaching of it.

Recent changes in the initial preparation of teachers are evident only among relatively new teachers, because the majority of today's teachers first prepared to teach before the initiation of current reform efforts (the average teacher in 1993-94 had 15 years of experience, see table 3.12, below). Among the newest teachers, there does appear to be some movement away from majoring in general education. For example, in 1993-94, public school teachers with 0-3 years of experience were less likely than those with more experience to have majored in general education as undergraduates (table 3.1). Among private school teachers, a similar proportion of those with 0-3 years of experience majored in general education, and the trend away from majoring in education also extended to those with 4-9 years of experience. This trend is also evident when one compares the majors of beginning teachers in 1987-88 and 1993-94. Among public school teachers with 0-3 years of experience in 1993-94, 38 percent had majored in general education, down from 44 percent in 1987-88.

Congruence Between Education and Teaching Assignments

If, in fact, it is important for teachers to have a strong formal education in a subject area other than teaching, students obviously benefit most if that education has been in the fields the teachers are assigned to teach. Analyses of earlier SASS data found that many teachers were assigned to classes in fields that did not match their educational backgrounds (see Bobbitt and McMillen (1995), Ingersoll and Gruber (1996), and Ingersoll and Han (1995)).

Table 3.1
Percentage of teachers who majored in general education as undergraduates, by sector and years of teaching experience: 1987-88 and 1993-94

	1987-88		1993-94	
	Public	Private	Public	Private
Total	46.0	46.3	45.3	43.2
Teaching experience				
3 or fewer years	44.0	42.1	38.2	37.6
4-9 years	46.5	47.2	45.5	41.5
10-19 years	47.0	48.0	47.3	46.6
20 or more years	44.7	45.7	45.8	45.5

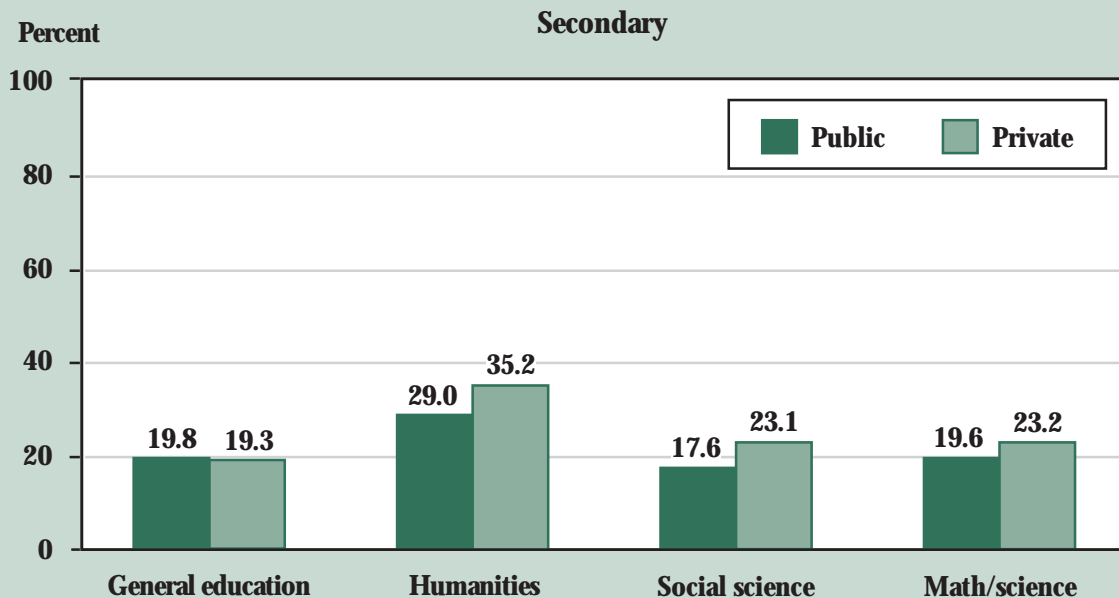
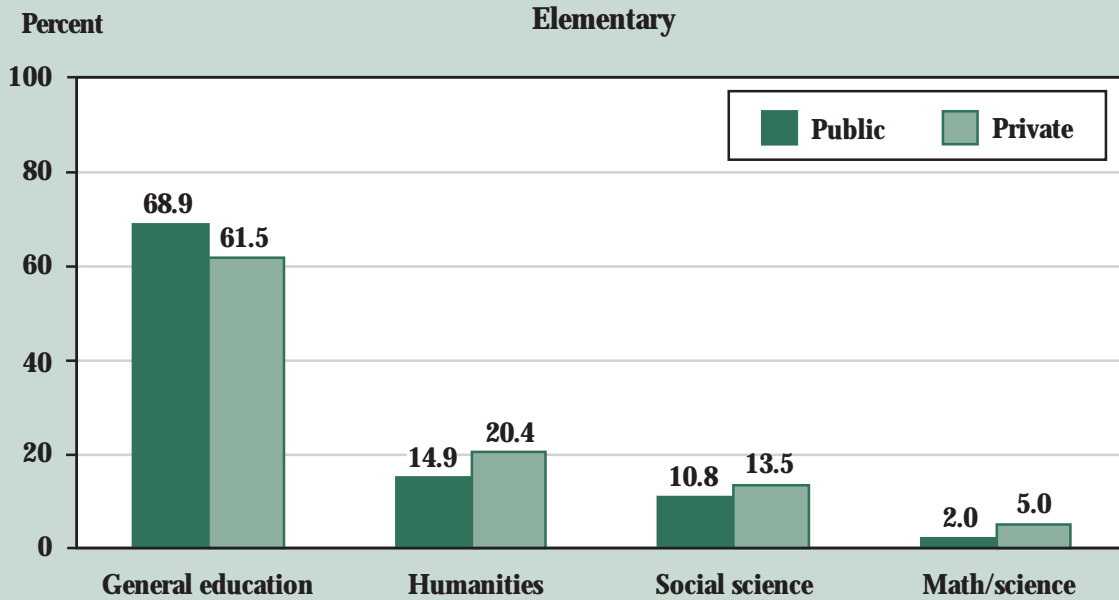
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Although some teachers may choose not to teach the subject in which they are most knowledgeable, it is probably fair to say that most incongruence between assignment and preparation is related to mismatches between supply and demand. Sometimes schools have difficulty filling vacancies and principals are forced to choose between hiring or assigning a less than fully qualified teacher or canceling the course altogether. In 1993-94, 8 percent of schools with teaching vacancies covered at least one of those vacancies by hiring a less than fully qualified teacher (Henke, Choy, Geis, and Broughman 1996). Also, as Ingersoll and Han (1995) point out, some degree of mismatch is attributable to the fact that school administrators charged with staffing programs in a range of required and elective subjects have to work with the teachers who are already on staff.

The percentages of teachers with undergraduate majors or minors (or neither) in their main and other teaching assignments and the percentage with graduate degrees in these fields provide an overview of teacher qualifications (table A3.2). They are at best rough indicators, however, because teachers may become qualified to teach a subject in other ways and the degree of congruence between education and teaching assignment

¹It is not easy to distinguish between teachers who majored in, say, mathematics education as opposed to mathematics.

Figure 3.1
Percentage of teachers who majored in selected fields as undergraduates, by level and sector: 1993–94



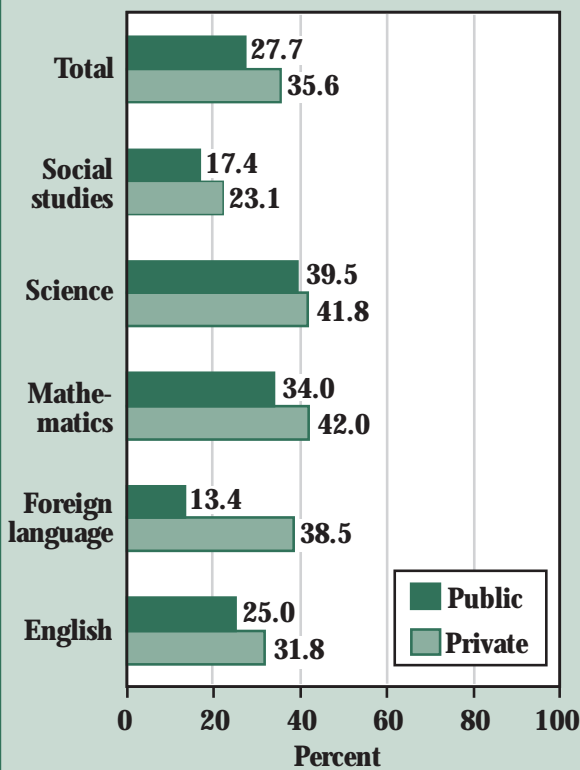
NOTE: Percentages may sum to more than 100 because some teachers had more than one major or earned more than one bachelor's degree.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

depends to some extent on how broadly or narrowly a match is defined. Because it is difficult to determine an appropriate match for some teaching assignments, the analysis here is limited to teachers in selected fields where matches are fairly easily made: English, foreign languages, mathematics, science, and social studies.² Relatively few elementary school teachers are included, because most of them are not assigned specifically to these fields. In English, foreign languages, and mathematics, private school teachers who taught these subjects were more likely than public school teachers to have neither majored nor minored in them (figure 3.2).

Consistent with concerns about equity raised by the National Commission on Teaching and America's Future (NCTAF), the 1993-94 SASS data suggest that less qualified teachers are found in greater concentrations in schools with many disadvantaged students. In 1993-94, close to 40 percent of the teachers in schools with more than 40 percent low-income students had neither a major nor minor in their main teaching field, while in schools with fewer low-income students 21 to 27 percent of the teachers had neither a major nor minor in their main teaching field (table 3.2).

Figure 3.2
Percentage of public and private school academic teachers who neither majored nor minored in main assignment field as undergraduates, by teaching field: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Table 3.2
Percentage of public school teachers with an academic main assignment field who neither majored nor minored in their main teaching field as undergraduates, by percent free/reduced-price lunch recipients: 1993-94

	Neither majored nor minored in main teaching field
Total	27.7
Free/reduced-price lunch recipients	
5 percent or less	21.2
6-20 percent	23.9
21-40 percent	27.2
More than 40 percent	38.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

²The undergraduate majors or minors considered matches were as follows: for English/language arts teaching assignments: English, English education, or reading education; for mathematics teaching assignments: mathematics, mathematics education, or engineering; for social studies/social science teaching assignments: economics, history, political science, psychology, public affairs or public services, social studies/social science education, sociology, other social sciences, American Indian studies, or other area and ethnic studies; for foreign language teaching assignments: foreign language education or the specific language taught (French, German, Latin, Russian, Spanish, or other); for specific science teaching assignments (biology/life sciences, chemistry, geology/earth sciences, or physics): science education or the specific science taught; or for general science assignments: science education, one of the specific science fields, or other natural sciences.

Undergraduate Coursework

The Baccalaureate and Beyond Study (B&B) provides information on course taking by undergraduates based on college transcripts collected from postsecondary institutions, which makes it possible to compare those who were teaching one year after graduation (or had prepared to teach as undergraduates) with other bachelor's degree recipients.³ For this analysis of course taking, those who prepared to teach are grouped with those who actually taught. Because graduates who prepared to teach are reasonably likely to teach in the near future, their academic backgrounds are of interest.

It is important to keep in mind that the SASS and B&B data sample quite different populations. The discussion of majors using the SASS data is based on a representative sample of all teachers, while the discussion of coursework based on the B&B data refers to a very limited sample of teachers—1992–93 bachelor's degree recipients who taught within one year of graduation or who prepared to teach as undergraduates. The B&B data provide no information about the education of teachers who prepared to teach at the graduate rather than undergraduate level or who earned their bachelor's degrees in other years, however.

The 1992–93 bachelor's degree recipients who taught within one year of graduation or prepared to teach as undergraduates earned an average of 35 education credits (tables 3.3 and A3.3).⁴ Those bachelor's degree recipients who taught in elementary schools earned more education credits, on average, than those who taught in secondary schools (42 credits versus 27 credits). Those who taught in public schools were more likely than those who taught in private schools to earn any education credits (reflecting state certification requirements for public school teachers), but among those who had any education credits, the average numbers earned were similar.

During the 1980s, some researchers suggested that college graduates who prepared to teach or became teachers tended to have less rigorous academic backgrounds than other college graduates. One indicator of the rigor

³“Prepared to teach” is defined as having either completed student teaching or earned certification to teach (see Henke, Geis, Giambattista, and Knepper (1996)).

⁴Table A3.4 shows the distribution of bachelor's degree recipients according to cumulative grade point average (GPA) as well as the average GPA. Comparisons of GPAs must be made with caution, because grades are not standardized across fields of study or institutions.

Table 3.3
Percentage of 1992–93 bachelor's degree recipients who earned college credits in selected fields, and average number of credits earned in education, by teaching/preparation status and, for teachers, school level and sector: 1994

	Education		Percent with remedial English credits	Percent with precollegiate mathematics credits
	Percent with credits	Average credits earned		
Bachelor's degree recipients				
Total	29.1	19.5	9.1	12.4
Teaching/preparation status				
Taught or prepared to teach	83.2	34.6	11.7	17.3
Did not teach or prepare to teach	18.6	6.4	8.5	11.3
School level (teachers only)				
Elementary	90.6	41.9	15.2	18.4
Secondary	81.3	27.1	8.9	13.9
Combined	74.8	35.9	12.3	17.4
School sector (teachers only)				
Public	87.1	37.4	12.6	18.6
Private	71.6	35.2	11.5	8.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup, Data Analysis System.

of one's undergraduate education is whether one has taken remedial courses in college. However, it is important to note that students who take remedial courses in one area may take quite challenging courses in another. Students who took remedial English, for example, may also take quite demanding mathematics and science courses.

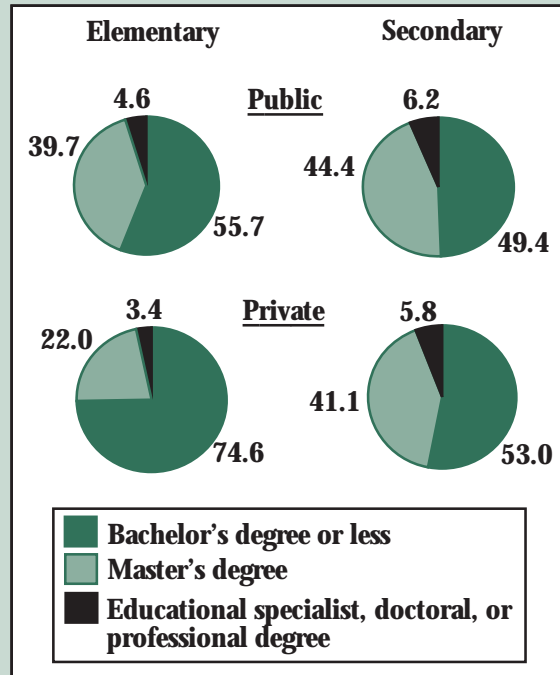
In fact, the B&B data indicate that bachelor's degree recipients who taught or prepared to teach were more likely than other bachelor's degree recipients to earn credits in remedial English or pre-collegiate mathematics. Public and private school teachers were about equally likely to earn credits in remedial reading, but public school teachers were more likely than private school teachers to earn credits in pre-collegiate mathematics. Moreover, other analyses of these data have indicated that 1992-93 graduates who had taught, prepared to teach, or were considering teaching were also less likely than their classmates to have taken advanced mathematics or calculus classes (Henke, Geis, Giambattista, and Knepper 1996).

Degrees Earned

Virtually all public school teachers (99 percent) in 1993-94 had at least a bachelor's degree, making them considerably more educated than the population as a whole. In 1994, 22 percent of the population 25 years and over had completed four or more years of college (U.S. Department of Education, NCES, 1995b). About one-half of all public school teachers had an advanced degree: 42 percent had a master's degree; 5 percent had an educational specialist or professional diploma (which requires at least one year of coursework beyond the master's level); and about 1 percent had a doctorate (table A3.5).⁵ Private school teachers were less likely than public school teachers to have an advanced degree, but the difference appeared mainly at the elementary level (figure 3.3). At the secondary level, the educational levels of public and private school teachers were more comparable.

Teachers have a strong financial incentive to continue their education, since the structure of the typical salary schedule rewards those who have accumulated additional education credits (see chapter 6). A common pattern is for teachers to begin their career with a

Figure 3.3
Percentage distribution of teachers according to highest degree earned, by sector and level: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

bachelor's degree and then either pursue advanced degrees part time while continuing to teach or take time off from teaching later on to work on a higher degree. In 1993-94, 15 percent of beginning public school teachers (that is, those with 0-3 years' experience) had earned a master's degree (table 3.4). The percentage of teachers with master's degrees increased with experience: among those teaching for 20 or more years, 54 percent had earned a master's degree.

Perhaps as a result of some of the reform efforts of the past decade, increasing numbers of teachers are starting their careers with a master's degree. While in 1987-88 11 percent of beginning public school teachers had a

⁵Tables A3.5-A3.7 show degree attainment by teacher characteristics, state, and private school affiliation.

Table 3.4
Percentage of teachers with degree higher than a bachelor's degree, by type of degree, sector, and years of teaching experience: 1993–94

	Public			Private		
	Master's degree	Education specialist	Doctorate/professional	Master's degree	Education specialist	Doctorate/professional
Total	42.0	4.6	0.7	30.1	2.8	1.7
Teaching experience						
3 or fewer years	14.7	1.5	0.8	13.8	1.7	1.3
4–9 years	30.4	2.7	0.5	24.2	2.5	1.8
10–19 years	46.7	4.7	0.7	35.1	2.6	1.7
20 or more years	53.9	6.7	1.0	45.6	4.4	1.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

master's degree (Choy et al. 1993), 15 percent had one in 1993–94.

Education is often used as an indicator of teachers' qualifications. If this is a valid measure, then students in public schools with large percentages of low-income students (as measured by the percentage receiving free or reduced-price lunches) have less-qualified teachers, on average. In 1993–94, the greater the percentage of low-income students, the less likely their teachers were to have a master's degree (table 3.5).

Education Requirements in Other Countries

Given contemporary debates in this country regarding the adequacy of traditional teacher preparation, it is worth examining the education required of teachers in other countries. In the United States, a bachelor's degree (that is, 16 years of education) is normally required regardless of the level taught (table 3.6).⁶ In contrast, in the other countries included in this table (mainly European countries), more education is often required to teach at the secondary level than at the elementary level.

Teachers of Teachers

The quality of teacher education depends to a large extent on the quality of education faculty and their ability to gather the resources to design and implement

effective teacher education programs. Education departments have typically had a low status on university and college campuses and been relatively resource poor.⁷

The National Study of Postsecondary Faculty (NSOPF), conducted in the fall of 1992, provides information that enables comparisons of teacher educators and education faculty to noneducation faculty. Teacher educators teach instructional methods or teacher education in specific subjects and may supervise student teachers during their field experiences. Other education faculty teach subjects such as curriculum development, education administration, evaluation research, or educational psychology. Some systematic differences between education and noneducation faculty do exist. For example, reflecting the fact that they are often former teachers, teacher educators were more likely than other education or noneducation faculty in the fall of 1992 to be female (tables 3.7 and A.3.8). In addition, reflecting their different responsibilities, part-time teacher educators were less likely than either other education or noneducation faculty who were part time to have a doctoral or professional degree (tables 3.7 and A.3.9). Among full-time faculty, teacher educators had a lower average base salary than

⁶Some states, e.g., California, require a fifth year of college-level education for teacher certification, although this fifth year need not terminate in a degree.

⁷Goodlad (1990) and Clifford and Guthrie (1988) discuss the place of education faculty at length.

Table 3.5
Percentage distribution of public school teachers according to highest degree earned, by percent free/reduced-price lunch recipients: 1993-94

	Less than a bachelor's	Bachelor's	Master's	Education specialist	Doctoral or professional
Total	0.7	52.0	42.0	4.6	0.7
Free/reduced price lunch recipients					
5 percent or less	0.5	40.8	52.1	5.5	1.1
6-20 percent	0.9	48.7	45.1	4.5	0.8
21-40 percent	0.6	54.9	40.1	3.9	0.6
More than 40 percent	0.5	56.5	37.7	4.7	0.6

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Table 3.6
Total number of years of education required for public school teachers, by country and level of education: 1992

Country	Early childhood education	Primary education	Lower secondary education	Upper secondary education (general)	Upper secondary education (vocational)
Austria	—	15	15	16	15
Belgium	15	15	15	16	15
Finland	15	17	18	18	17
France	16	16	16	16	16
Germany (FTFR)*	15	19	19	20	20
Ireland	16	16	17	17	17
Italy	12	13	17	17	17
Netherlands	17	17	17	17	—
New Zealand	17	17	17	19	—
Norway	15	15	15	16	15
Portugal	16	17	17	17	17
Spain	15	15	15	17	17
Sweden	14	16	16	16	17
Turkey	15	15	15	15	15
United Kingdom	17	—	—	—	—
United States	16	16	16	16	16
Country mean	15.4	15.9	16.3	16.9	16.2

— Too few cases for a reliable estimate.

*"FTFR" denotes the former territory of the Federal Republic of Germany.

NOTE: The structure of education differs widely from country to country. Early childhood education corresponds approximately to prekindergarten in the United States; primary education to the elementary level; lower secondary to middle school or junior high; and upper secondary to high school.

SOURCE: Organisation for Economic Co-operation and Development (OECD), *Education at a Glance* (Paris: 1995), 185.

Table 3.7
Percentages of full- and part-time instructional faculty and staff teaching courses for credit in 4-year institutions who were female, had a doctoral or professional degree, and had tenure, and average base salary for full-time faculty, by teaching field: Fall 1992

	Percent female		Percent with doctoral or professional degree		Percent tenured		Average base salary
	Full time	Part time	Full time	Part time	Full time	Part time	Full time
Total	30.1	45.8	78.9	37.5	56.2	3.9	\$51,373
Teaching field							
Teacher educators	54.0	73.3	77.4	20.2	53.3	1.6	41,092
Other education	43.7	57.2	78.1	40.8	55.8	4.7	44,442
Noneducation	28.5	43.5	79.3	38.1	56.8	3.8	52,305

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 National Study of Postsecondary Faculty.

other education faculty, who in turn had a lower base salary than noneducation faculty (tables 3.7 and A3.10).

Most faculty (84 percent) were somewhat or very satisfied with their jobs overall, and teacher educators and other education faculty were slightly more likely than noneducation faculty to be so (tables 3.8 and A3.11). Satisfaction with the quality of the students varied as well, with teacher educators and education faculty more likely than other faculty to be somewhat or very satisfied with the quality of their graduate and undergraduate students.

NSOPF participants who taught undergraduates were asked questions about some of their teaching practices. Teacher educators reported using some of the practices that were asked about more frequently than noneduca-

tion faculty, including computer-aided instruction, student evaluation of others' work, and research papers, but they were less likely to grade on a curve (table 3.9 and A3.12).

Teachers' Certification Status

In addition to teachers' formal education, certification is an important component of their qualifications. Teacher certification—licensure by the state in which one teaches—includes requirements for formal education (usually a bachelor's degree and requirements for special courses), clinical experiences (student teaching, for example), and often some type of formal testing. The types of certification and the requirements set for each type vary widely among states, with some states

Table 3.8
Percentage of instructional faculty and staff teaching courses for credit in 4-year institutions who were somewhat satisfied or very satisfied with various aspects of their jobs, by teaching field: Fall 1992

	Job overall	Workload	Control over content and methods	Control over courses taught	Time for student mentoring	Quality of graduate students	Quality of undergraduates
Total	83.9	73.1	94.0	82.2	79.0	72.2	80.7
Teaching field							
Teacher educators	89.9	78.7	97.6	85.9	79.2	81.7	89.4
Other education	87.8	75.6	96.3	85.7	73.9	79.7	88.0
Noneducation	83.4	72.7	93.8	81.8	79.2	71.4	79.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 National Study of Postsecondary Faculty.

Table 3.9
Of instructional faculty and staff teaching courses for credit in 4-year institutions who taught undergraduate courses, percentage who used various teaching methods in at least one course, by teaching field: Fall 1992

	Computational tools	Computer-aided instruction	Student review of others' work	Multiple choice exams	Essay/short answer exams	Research papers	Grading on a curve	Competency-based grading
Total	37.2	29.8	37.3	50.0	61.4	58.1	34.9	53.7
Teaching field								
Teacher educators	42.8	41.2	65.6	51.6	65.7	66.5	13.8	60.4
Other education	30.2	32.4	53.8	58.6	65.5	65.3	19.0	61.7
Noneducation	37.4	29.2	35.4	49.6	61.2	57.5	36.6	53.1

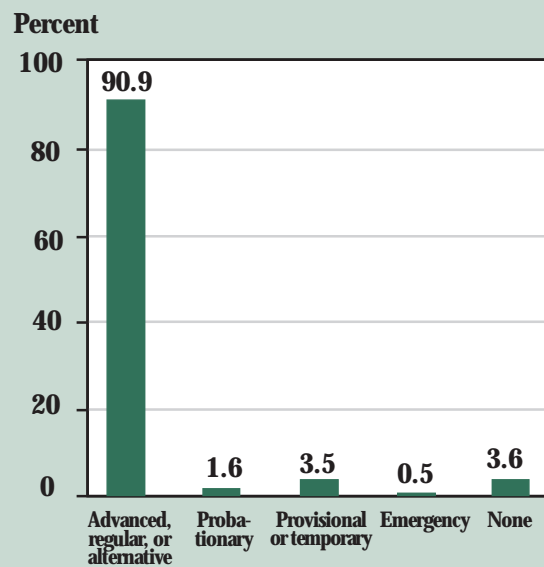
SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 National Study of Postsecondary Faculty.

requiring a probationary period, for example, and other states fully certifying teachers upon completion of the coursework and clinical experiences required (Tryneski 1993). Nevertheless, across states certification status indicates the degree to which teachers meet the minimum teaching standards and qualifications set by their state.

Because of this wide variation in certification among states, it is not surprising that national data indicate not all teachers who taught in elementary and secondary schools were fully certified in the field they taught most often. It is also something of a challenge to determine the degree to which the incidence of teaching without full certification is a problem. In 1993-94, approximately 4 percent of teachers who taught in public elementary or secondary schools were not certified at all in the subject area they taught most often (the main assignment field). Others had some, but not full, certification in the main assignment field: about 2 percent held probationary certification (they had completed all the requirements except for the completion of a probationary teaching period); about 4 percent held provisional or temporary certification (they still had requirements for certification to meet); and less than 1 percent held emergency certification (they still had to complete a certification program) (figure 3.4).⁸

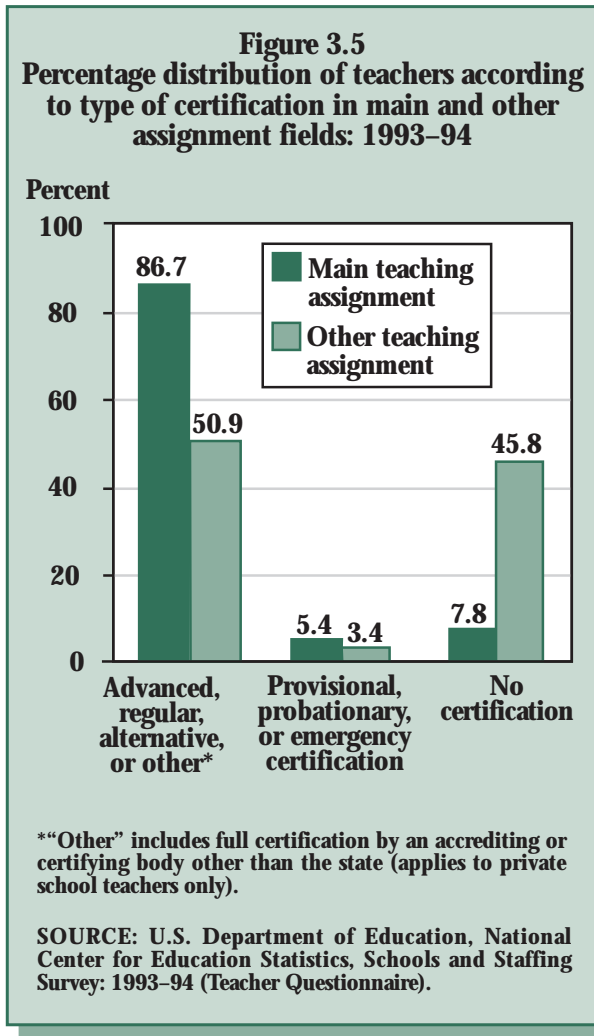
Moreover, teachers' certification status varied greatly between the main assignment field and the field they taught next most frequently (the other assignment field). Teachers were more likely to be certified in the main assignment field than in the other assignment field (figure 3.5 and tables A3.14a-b).

Figure 3.4
Percentage distribution of public school teachers according to type of certification in main assignment field: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

⁸Table A3.13 presents the proportions of public school teachers with various types of certification in their main assignment fields by state. Variation among states is largely attributable to the types of certification offered in each state as well as varying supply and demand for teachers across states.



Primarily because private schools are not bound by state regulations for teacher licensure, public school teachers are more likely than private school teachers to be certified in both their main and other assignment fields. Among public school teachers, 91 percent reported that they had advanced, regular, or alternative certification in the main field. Only 58 percent of private school teachers had one of these types of certification or certification by an accrediting or certifying body other than the state (table 3.10).

The National Commission on Teaching and America’s Future reported that children in urban schools, high poverty schools, or schools with a high concentration of minority students have less qualified teachers than children in suburban schools, affluent schools, or schools with low minority enrollment (NCATF 1996). Teacher certification data from the 1990–91 SASS support this assertion (Ingersoll and Gruber 1996), as do the 1993–94 SASS data, although the differences between the most and least disadvantaged schools tended to be rather small. Whereas in public schools with more than 40 percent low-income students 89 percent of teachers were fully certified to teach in their main assignment fields in 1993–94, in schools with smaller proportions of low-income students, 92 percent of teachers were fully certified (figure 3.6).

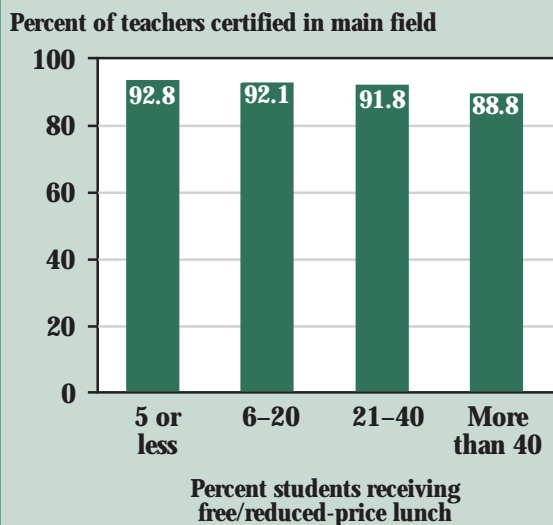
Table 3.10
Percentage of teachers with advanced, regular, or alternative certification in their assignment fields, by sector: 1993–94

	Main assignment field		Other assignment field	
	Advanced/regular/alternative/other certification*	No certification	Advanced/regular/alternative/other certification*	No certification
Total	86.7	7.8	50.9	45.8
School sector				
Public	90.9	3.6	56.6	39.6
Private	58.1	36.5	27.2	70.8

*“Other” includes full certification by an accrediting or certifying body other than the state (applies to private school teachers only).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

Figure 3.6
Percentage of public school teachers who held advanced, regular, or alternative certification in main assignment field, by percentage of students in school receiving free/reduced-price lunch: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Congruence Among Certification, Undergraduate and Graduate Study, and Teaching Fields

Ideally, teachers would teach only those subjects in which they were both certified and had studied in depth themselves. However, in reality, this is not always the case. Although teachers' fields of study do not always match all of the subjects they teach, fulfilling state certification requirements may compensate for not having earned a major in a field, especially when combined with an undergraduate minor. Thus, it is important to examine both certification status and formal education in a teaching field simultaneously when studying teachers' qualifications.

Among teachers with main assignments in an academic field (English, foreign languages, mathematics, science, or social studies), 56 percent had either an

undergraduate major or graduate degree and a license in their main field, and another 8 percent had an undergraduate minor and a license in this field (table 3.11).⁹ For the remaining teachers in these subject areas, the fields they studied as undergraduates or graduate students, the field in which they were licensed, and the field they taught most in school were not congruent.

Teachers in public schools with larger proportions of disadvantaged or minority students were less likely than teachers in other schools to have both a license to teach and a degree in their main assignment field. As the proportion of low-income students in their schools increased, the proportion of public school teachers who had both a degree and an advanced, regular, or alternative certificate in their main assignment field decreased (table A3.15a). A similar relationship was observed according to the percentage of minority students enrolled in schools.

Teaching Experience

Many teachers contend that experience is the best preparation for teaching in the classroom (Hargreaves 1984). In general, elementary and secondary school teachers in the United States have considerable classroom experience: teachers had about 15 years of teaching experience, on average (tables 3.12 and A3.16).¹⁰ Public school teachers tend to have more teaching experience than private school teachers (figure 3.7). For example, 35 percent of public school teachers had taught for more than 20 years, compared with 22 percent of private school teachers (figure 3.7). In addition, 85 percent of public school teachers had always taught full time, compared with 66 percent of their counterparts in private schools (table 3.12).

Concerns about equity in teacher qualifications are supported by data regarding teachers' experience as well as their initial preparation and certification. Teachers in

⁹For purposes of this analysis, "certified" includes having received advanced, regular, or alternative certification by the state or, for private school teachers, full certification by an accrediting or certifying body other than the state.

¹⁰Tables A3.17 and A3.18 show these data by state and private school affiliation.

Table 3.11
Percentage distribution of academic teachers according to certification and degrees held in main assignment field, by sector: 1993–94

	Certified in main field			Not certified in main field		
	Graduate degree or college major in main assignment field	Only minor in main assignment field	Neither graduate degree nor major nor minor in main assignment field	Graduate degree or college major in main assignment field	Only minor in main assignment field	Neither graduate degree nor major nor minor in main assignment field
Total	56.4	8.4	19.5	7.4	1.2	7.0
Sector						
Public	60.1	8.9	20.6	4.8	0.8	4.8
Private	35.5	5.7	13.1	22.4	3.7	19.6

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

schools where 5 percent or less of the students were low income had 17 years of experience, on average, but the average years of experience declined as the percentage of low-income students increased (figure 3.8).

Teachers' Self-Assessments of Their Qualifications

Informal learning situations, personal interests, professional experiences outside of teaching, and a host of

intangibles contribute to teachers' qualifications for teaching. Therefore, in some ways, teachers themselves are in the best position to assess how qualified they are to teach various subjects.

In addition to their certification status and teaching experience, teachers in the 1993–94 SASS were asked whether they thought they were teaching the subjects for which they were best qualified, and once again their responses regarding their main assignment field differed from those regarding their other assignment field.

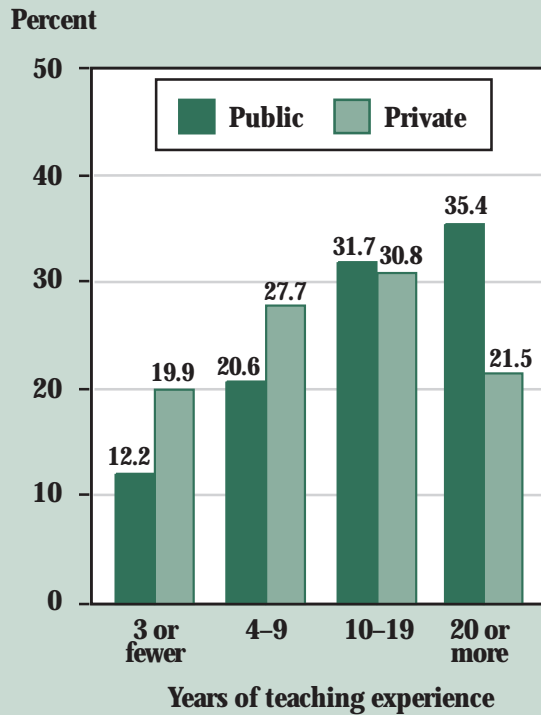
Table 3.12
Percentage distribution of teachers according to employment status throughout career; average years of teaching experience and percentage distribution of teachers by years of teaching experience, by sector: 1993–94

	Employment status throughout career			Average number of years taught	Teaching experience			
	Always full time	Always part time	Both full and part time		3 or fewer years	4–10 years	10–19 years	20 or more years
Total	82.3	1.6	16.1	14.8	13.2	21.5	31.6	33.7
Sector								
Public	84.7	0.9	14.4	15.2	12.2	20.6	31.7	35.4
Private	66.2	6.2	27.6	12.2	19.9	27.7	30.8	21.5

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

Figure 3.7
Percentage distribution of teachers by
years of teaching experience,
by sector: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

While most teachers (80 percent) reported that their main assignment was the one in which they were best qualified, only 14 percent of teachers with other teaching assignments said so regarding their other assignment fields (tables 3.13 and A3.19). As the proportion of students in their schools who were low income increased, teachers were less likely to report that their main assignment fields were the fields in which they were best qualified.

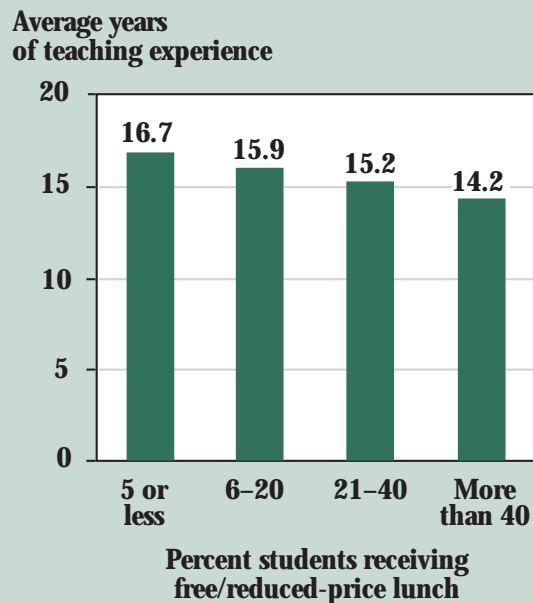
Recent Professional Development

Recent education reform efforts call for raising academic standards and expectations for all students. In response to these reform initiatives, teachers are being asked to update their subject matter knowledge, master

new skills, change their teaching practice, and transform their traditional role as a teacher. For example, inside the classroom, teachers are being advised to act as coaches and facilitators of their students' learning. Outside of the classroom, reformers are recommending that teachers assume new responsibilities as members of school governing boards and decision makers on school policies. Many believe that professional development is key to helping teachers meet these new expectations.

Professional development activities provide opportunities for teachers to explore new roles, upgrade their pedagogical skills, and broaden themselves both as educators and as individuals. The importance of professional development is reflected in a relatively new National Education Goal, adopted by Congress in 1995, that "all teachers should have access to high-quality professional development." In addition, the

Figure 3.8
Public school teachers' average years of
experience by percentage of students in
school receiving free/reduced-price
lunch: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Table 3.13
Percentage distribution of teachers according to self-reported qualifications in main or other teaching assignment fields, by sector and percent public school free/reduced-price lunch recipients: 1993–94

	Main assignment field			Other assignment field		
	Best qualified	Second best qualified	Neither first nor second best qualified	Best qualified	Second best qualified	Neither first nor second best qualified
Total	80.0	6.3	13.7	13.6	37.6	48.8
Public	80.5	6.1	13.4	13.6	37.0	49.3
Free/reduced-price lunch recipients						
5 percent or less	84.5	5.2	10.3	15.1	39.7	45.2
6–20 percent	83.3	6.2	10.5	13.5	39.9	46.6
21–40 percent	79.5	6.5	14.0	14.5	35.6	49.8
More than 40 percent	76.7	6.3	17.0	12.9	33.7	53.4
Private	76.4	7.5	16.0	13.6	39.9	46.5

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (School and Teacher Questionnaires).

U.S. Department of Education has included career-long professional development for teachers among its seven national priorities for research in education and administers a number of programs designed to enhance teachers' growth and performance in the classroom. Examples of such efforts include the regional education labs, which conduct research and provide technical assistance to state and local education agencies; the Chapter I Technical Assistance Centers, which provide local educators with training to educate disadvantaged children more effectively; and a number of teacher networking projects, designed to provide teachers with electronic platforms for sharing their expertise and techniques with each other.

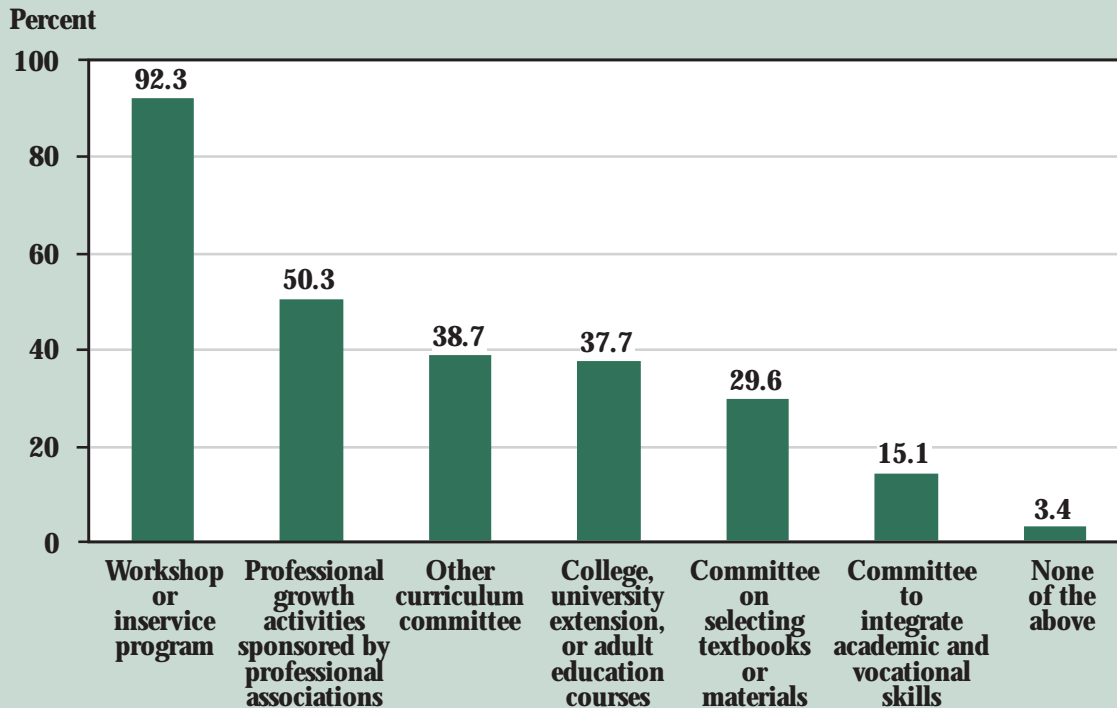
Relative to previous survey administrations, the 1993–94 SASS collected more information on teachers' professional development. New data include the types of professional development activities in which teachers participated, the topics of those activities, the amount of time teachers spent in professional development activities on various topics, the ways in which schools or districts supported teachers' participation in professional development activities, and teachers' perceptions of how these activities affected their teaching practices.

Types of Professional Development Activities

In 1993–94, most elementary and secondary teachers had participated in one or more professional development activities since the end of the previous school year. Among the various types of professional development activities, teachers were most likely to participate in school- or district-sponsored workshops or inservice programs: 92 percent of teachers reported that they had participated in these activities (figure 3.9 and table A3.20).

Because teacher professional development has long been the province of school districts, it is not surprising that public school teachers were more likely than their private school counterparts to have participated in all types of professional development experiences, with the exception of serving on committees to select textbooks or other curricular materials (table 3.14). The size of the districts in which teachers taught was related to the types of professional activities in which they were engaged. As the size of their school districts increased, teachers were less likely to have taken university extension or adult education courses, attended professional growth activities sponsored by professional associations, or participated in curriculum committees.

Figure 3.9
Percentage of teachers who had participated in various types of professional development since the end of the previous school year: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Content of Professional Development Activities

If teachers are to be prepared to work effectively in today's classrooms and schools, they need to remain current in both subject matter and teaching methods. Therefore, it is important to examine the content of teachers' professional development programs. In the 1993-94 SASS, teachers were asked whether they had participated in professional development that focused on using educational technology, instructional methods or content in their subject areas, student assessment, and cooperative learning.

A majority of teachers (87 percent) reported that they had addressed at least one of these topics in professional development programs they had attended since the end of the prior school year (tables 3.15 and A3.21). Among these teachers, 72 percent reported that they

had participated in a program that focused on methods of teaching in their subject area; at least one-half reported that the program focused on student assessment (57 percent), the use of educational technology for instruction (54 percent), or cooperative learning in the classroom (57 percent); and 34 percent said that the program focused on in-depth study in the subject field they were teaching.

Public school teachers were more likely than private school teachers to participate in professional development activities on each of these topics. In both sectors, elementary school teachers were more likely than secondary school teachers to have had professional development training since the end of the previous school year on teaching methods; secondary school teachers, on the other hand, were more likely than elementary school teachers to participate in a program that focused on using educational technology in the classroom.

Table 3.14
Percentage distribution of teachers who had participated in various types of professional development since the end of the previous school year, by sector and district size: 1993–94

	Workshop/ inservice program	College, university extension, or adult education courses	Professional growth activities sponsored by professional associations	Committee to integrate academic skills into vocational curriculum	Other curriculum committee	Committee on selecting textbooks/ materials	None of these
Total	92.3	37.7	50.3	15.1	38.7	29.6	3.4
Public	93.4	38.4	51.4	16.0	40.3	29.0	2.8
District size							
Less than 1,000	93.1	42.2	56.2	18.0	43.2	37.6	2.2
1,000–4,999	93.1	38.7	51.4	15.6	43.4	33.1	2.5
5,000–9,999	93.4	38.4	52.0	16.8	40.2	27.5	2.7
10,000 or more	93.3	37.6	49.1	15.4	36.6	23.9	3.4
Private	84.7	32.3	43.0	8.3	27.5	33.7	7.3

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher and Teacher Demand and Shortage Questionnaires).

Table 3.15
Percentage of teachers who had participated in professional development programs on any of several topics since the end of the last school year, and of those who had participated, percentage who participated in a program on each of the topics, by sector, teacher level, and district size: 1993–94

	Any of these fields	Uses of educational technology for instruction	Methods of teaching the subject field	In-depth study in the subject field	Student assessment	Cooperative learning in the classroom
Total	86.8	54.4	72.4	33.7	57.0	56.7
Public	88.2	56.0	72.6	34.0	58.3	57.7
Teacher level						
Elementary	90.0	53.3	79.4	35.3	61.5	57.4
Secondary	86.2	59.0	64.9	32.6	54.7	58.1
District size						
Less than 1,000	87.1	55.9	66.0	30.2	55.3	51.9
1,000–4,999	87.5	52.9	69.2	32.0	58.1	56.5
5,000–9,999	87.9	55.7	72.9	32.4	56.4	57.5
10,000 or more	89.3	58.4	76.0	36.9	59.2	59.7
Private	77.3	42.0	70.8	31.2	47.1	49.1
Teacher level						
Elementary	78.5	37.6	76.7	30.4	47.6	51.3
Secondary	75.7	48.2	62.5	32.4	46.3	45.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher and Teacher Demand and Shortage Questionnaires).

Furthermore, the size of teachers' districts was related to the content as well as the type of their professional development experiences. Teachers in larger districts were more likely than teachers in smaller districts to have participated in professional development on using educational technology, teaching methods in their subject areas, the content of their subject areas, student assessment, and cooperative learning.

Intensity of Professional Development Activities

Among the common concerns about, and recommendations for, teacher professional development are its intensity and depth. It is generally believed that half-day workshops, for example, are not effective for modifying teachers' practice in meaningful ways (Little 1993). The 1993-94 SASS data indicate that while the majority of elementary and secondary school teachers participated in professional development programs on the topics discussed above, the time they spent on them was often quite limited. No more than one-half of the teachers who participated in a program on any of these topics reported that the program lasted more than a day (tables 3.16 and A3.22). Among the topics asked about, teachers were most likely to spend more than one day in a program that focused on in-depth study in their subject field.

As noted with the types and content of teachers' professional development activity, the duration of activities varied according to sector and school district size among public school teachers. Private school teachers were less likely than public school teachers to participate in activities that lasted more than one day on all topics except the content of their subject areas. Also, with the exception of professional development on the content of their subject area, teachers in larger public school districts were more likely than their counterparts in smaller districts to participate in activities of more than one day's duration.

Impact of Professional Development

The primary purpose of professional development is to improve teaching and learning. One way to assess the effectiveness of professional development programs is to ask teachers directly how these programs affect their daily teaching practice. In general, teachers had positive views about the impact of the professional development programs in which they had participated.

For example, 85 percent of teachers who participated in professional development programs thought that these programs provided them with new information (tables 3.17 and A3.23). About 65 percent of teachers agreed that the professional development programs made

Table 3.16
Of teachers who participated in professional development on each of several topics, percentage who reported that the program lasted more than one day, by sector and district size: 1993-94

	Uses of educational technology for instruction	Methods of teaching the subject field	In-depth study in the subject field	Student assessment	Cooperative learning in the classroom
Total	29.6	42.0	50.8	22.8	25.2
Public	29.9	42.8	50.9	23.2	25.6
District size					
Less than 1,000	26.1	37.8	50.7	20.9	21.4
1,000-4,999	28.0	41.8	50.2	22.9	24.9
5,000-9,999	28.8	41.8	50.7	21.9	24.8
10,000 or more	32.6	45.1	51.5	24.0	27.4
Private	25.8	35.4	49.4	18.9	21.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher and Teacher Demand and Shortage Questionnaires).

Table 3.17
Of teachers who participated in professional development on each of several topics, percentage who agreed or strongly agreed with various statements about the impact of the program, by sector and district size: 1993–94

	Provided new information	Changed views on teaching	Caused me to change my teaching practices	Caused me to seek further information/training
Total	85.0	41.6	64.5	62.3
Public	84.9	41.7	64.7	62.6
District size				
Less than 1,000	83.9	41.0	62.9	58.2
1,000–4,999	85.4	42.1	64.5	62.7
5,000–9,999	85.6	42.3	66.1	63.6
10,000 or more	84.1	41.6	64.4	62.8
Private	85.7	40.8	62.7	60.6

NOTE: Teachers were given the option of responding that they strongly agreed, agreed, had no opinion, disagreed, or strongly disagreed.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher and Teacher Demand and Shortage Questionnaires).

them change teaching practices, and 62 percent reported that the programs motivated them to seek further information or training. A lower proportion of teachers (42 percent), however, reported that the professional development programs changed their views on teaching. Despite the consistent differences in professional development activity between public and private school teachers and among public school teachers in larger and smaller school districts, it is interesting to note that teachers differed little in how they perceived professional development to affect their teaching practices.

Conclusion

This chapter has covered a wide range of topics related to teachers' professional qualifications, including their formal education, professional certification, on-the-job experience, self-assessments of their qualifications for teaching in their primary subject area, and the professional development activities in which they engaged. Among the findings discussed in this chapter the following are particularly noteworthy for their relevance to contemporary policy discussions:

Trends in Preservice Education

Preservice preparation has received much recent attention, and the SASS data indicate that over this decade some change may have occurred in this area. In 1993–94, for instance, recent entrants into the profession were less likely than their more experienced colleagues to have majored in education as undergraduates. Furthermore, less experienced teachers were more likely to have an advanced degree in the early 1990s than they had been in the late 1980s.

Equity in Teachers' Qualifications

The National Commission on Teaching and America's Future raised concerns regarding the equity of resource allocation among schools (NCTAF 1996), and it appears from the SASS:93–94 data that, in fact, low-income students are less likely than other students to receive the most qualified teachers. Looking at various indicators of teachers' qualifications—including how the fields they studied as undergraduates match those they now teach, their educational attainment, certifica-

tion status in their main assignment fields, teaching experience, and self-assessments of their qualifications to teach in their main assignment fields—teachers in schools with relatively more low-income students were not as qualified as teachers in schools with relatively fewer such students.

Inservice Professional Development

SASS:93–94 provides the first national perspective on several aspects of teachers' participation in professional development activities, and indicates that participation is widespread. Furthermore, professional development activity took many forms, covered a range of content areas, and was of varying duration among the nation's teachers in the early 1990s. Teachers tended to report

that these activities did affect their practice, although the particulars of how, and how much, professional development affected their day-to-day activities cannot be examined with these data. Staff development continues to be a primary function of school districts, as was apparent from the consistent differences in experiences that were observed between public and private school teachers and among public school teachers in different-sized districts.

Having examined teachers' professional training and qualifications for their work, the next chapters describe their work itself. Chapter 4 discusses various characteristics of teachers' jobs, and chapter 5 continues by examining the core of teachers' work, instruction, in greater detail.

TEACHERS AT WORK

The adequacy of teachers' qualifications (chapter 3) and appropriateness of teachers' compensation (chapter 6) can only be assessed relative to their duties and responsibilities. Therefore, this chapter and the next describe teachers' jobs. The first section of this chapter examines teachers' employment status (i.e., the proportion who worked full time and part time), the ways their instructional activities were organized, and the distribution of teachers among grade levels and subject areas. The second section looks at the number of hours they spent teaching and performing teaching-related tasks each week, the number of subjects they taught, and the size of their classes. The final section discusses how much control teachers felt they had over classroom and school policies. Taken together, these data may inform debates on teacher qualifications and compensation, as well as present a broad picture of how teachers spend their workdays.

Assignments

Employment Status

Teaching is usually a full-time job in this country. However, while many teachers taught full time in a single school throughout each school year, others had more flexible schedules. In 1993–94, about 90 percent of all school teachers taught full time, and private school teachers were more likely than public school teachers to work part time (tables 4.1 and A4.1). In both the public and private sectors, teachers in larger schools were more likely than those in smaller schools to teach full time.

Some part-timers, about 2 percent of all teachers, had additional jobs in their schools (table 4.2 and A4.2). Typically these part-time teachers also served as administrators (35 percent), other professional staff (27 percent), or counselors (16 percent).¹

Still other teachers did not work in a single school, but instead divided their time among two or more institutions. Itinerant teachers (for example, music or art

teachers who move from school to school) were more commonly found in small schools than in larger schools (table 4.1). Finally, a very small proportion of teachers, less than 1 percent, were long-term substitutes hired by a district or school as a temporary measure to fill a vacancy.

Types of Teaching Assignments

Most teachers' work with students is structured by the school into self-contained or departmentalized classes. In 1993–94, 35 percent of all teachers taught in self-contained classes, a term used when a teacher instructs a single group of students in multiple subjects for all or most of the day (table A4.3). Another 45 percent taught departmentalized classes, that is, taught one or two subjects to different groups of students throughout the day.

The self-contained classroom organization is common among elementary school teachers, but is not the exclusive mode in which they work. For example, although 62 percent of public school elementary teachers taught such classes, 9 percent team taught, that is, co-taught a class of students for all or most of the day in multiple subjects (figure 4.1).

Another 11 percent of public elementary level teachers taught enrichment classes, which means they worked with elementary classes who were otherwise in a self-contained classroom in order to supplement their learning in particular subject area (e.g., art, music, or physical education). Finally, 11 percent taught pull-out classes, in which individual students are removed from several self-contained classrooms and work with another teacher for part of the day. This type of organization is often used for special education and gifted students who are otherwise in regular classrooms.

¹These proportions cannot be compared with those generated from 1987–88 SASS data due to differences in the questions on the 1987–88 and 1993–94 surveys.

Table 4.1
Percentage distribution of teachers according to whether they were full-time, part-time, itinerant, or long-term substitute teachers, by sector and school size: 1993-94

	Regular full time	Regular part time		Itinerant	Long-term substitute
		50% or more and less than full time	Less than 50%		
Total	89.5	4.0	2.7	3.4	0.4
Public	90.9	3.0	1.8	3.8	0.5
School size					
Less than 150	79.0	8.7	4.9	7.3	0.1
150-499	88.0	3.6	2.2	5.7	0.5
500-749	91.6	2.8	1.6	3.6	0.4
750 or more	94.1	2.2	1.3	1.8	0.6
Private	79.9	10.5	8.6	0.8	0.2
School size					
Less than 150	73.9	13.3	12.0	0.6	0.2
150-499	79.2	10.5	8.8	1.3	0.2
500-749	84.2	9.4	6.0	0.4	0.0
750 or more	88.5	6.3	5.1	—	0.0

—Too few cases for a reliable estimate.

NOTE: Percentage distributions may not sum to 100 due to rounding.

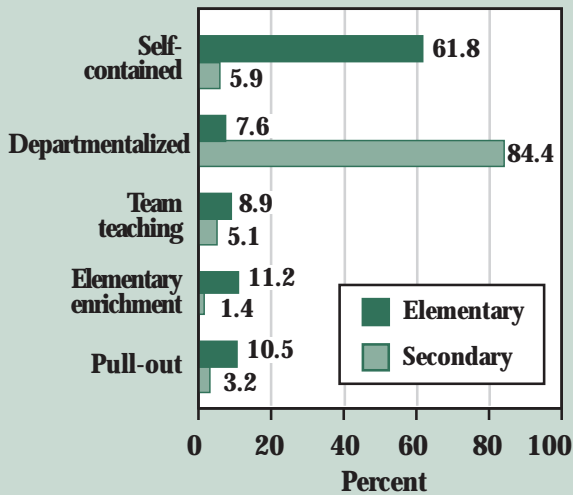
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Table 4.2
Percentage of all teachers who were part-time teachers and full-time school employees, and percentage distribution of part-time teachers who were full-time school employees according to their other school assignments: 1993-94

	Percentage who were part-time teachers and full-time school employees	Other school assignment of those who were part-time teachers and full-time school employees					
		Administrator	Counselor	Library media specialist/librarian	Coach	Other professional staff	Support staff
Total	2.0	35.1	16.4	7.5	7.8	27.2	6.0

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Figure 4.1
Percentage distribution of public school teachers according to type of class organization, by teacher level: 1993–94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

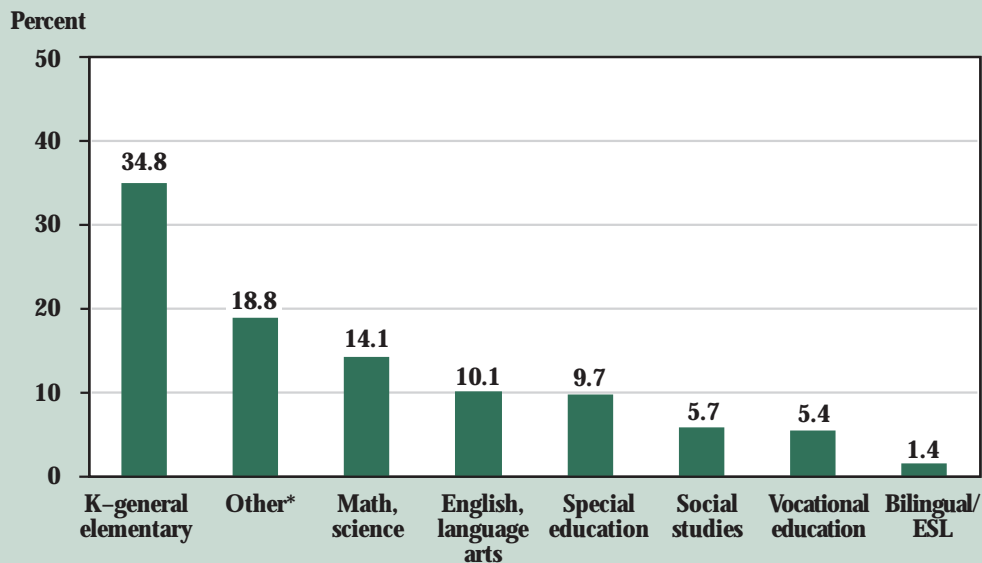
Secondary teachers' assignments tend to be less diverse. In order to meet the greater need for subject area specialization at the secondary level, these teachers' classes were largely departmentalized.

Main Assignment Fields

School teachers were assigned to a variety of grade levels and subject areas. One-third taught kindergarten or general elementary grades, with responsibility for teaching young children a wide range of subjects throughout the day, whereas the remaining two-thirds taught specialized subjects including mathematics, science, and vocational courses (figure 4.2 and table A4.4). Nearly one-fifth taught in noncore areas grouped together as "other," representing topics as diverse as foreign languages, drama, and home economics.

Consistent with conventional wisdom, the 1993–94 Schools and Staffing Survey (SASS) data indicate that men and women chose to teach different subjects and at different grade levels. Whereas women were more likely than men to teach kindergarten and general ele-

Figure 4.2
Percentage distribution of teachers according to main assignment field: 1993–94



*Includes, for example, foreign language, art, religion, and philosophy teachers. See technical notes for further detail.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

mentary classes (43 percent of women versus 11 percent of men), men were more likely than women to teach mathematics, science, and social science (table 4.3). Moreover, the magnitude of these gender differences appears to have remained constant between 1987-88 and 1993-94. For example, SASS data collected in 1987-88 show that about 24 percent of male public school teachers taught mathematics or science, compared with 9 percent of their female counterparts, resulting in a 15-percentage-point gender gap. In 1993-94, the proportions of male and female public school teachers teaching mathematics or science were 24 and 10 percent respectively, a 14 percent gap. Thus, the proportions of men and women teaching mathematics and science remained constant over the six-year period.

In public schools, teachers' main assignment fields also varied with their educational attainment. Highly educated teachers (education specialists or those with a doctoral degree) were less likely than other teachers to teach kindergarten or general elementary classes (table 4.4). For example, in public schools 38 percent of teachers with bachelor's degrees and 31 percent with master's degrees taught in these fields, compared with 23 percent of education specialists and 8 percent of those with doctoral degrees.

While some teachers remained in the same main assignment field since they began teaching, others have changed teaching fields over the years. Data on teachers' previous assignments are presented in tables A4.5a-b.

Table 4.3
Percentage of public school teachers with main assignments in various fields, by gender: 1987-88 and 1993-94

	Male	Female
K-General elementary		
1987-88	11.6	43.3
1993-94	10.9	43.0
Mathematics, science		
1987-88	23.6	8.6
1993-94	24.2	9.8
Social science		
1987-88	12.9	2.8
1993-94	13.0	2.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987-1988 and 1993-94 (Teacher Questionnaire). The data from 1987-88 were previously published in Choy et al., *America's Teachers: Profile of a Profession*, 1993, 77.

Workload

This section presents multiple indicators of workload, measuring the demands placed on teachers from a number of perspectives. While the number of hours they spend teaching provides some information regarding teachers' workload, to obtain a more complete picture one must also consider the time teachers spend on other teaching-related activities, the size and number of their classes, and the number of students they interact with each week.

Table 4.4
Percentage distribution of public school teachers according to main assignment field, by teachers' highest earned degree: 1993-94

	Kindergarten or general elementary	Math, science	English/ language arts	Social science	Special education	Bilingual/ ESL education	Vocational education	All others
Total	34.2	13.7	10.1	5.7	10.5	1.6	6.0	18.2
Highest earned degree								
Bachelor's or less	38.1	12.7	9.0	5.2	8.7	1.6	6.2	18.5
Master's	31.0	15.0	10.7	6.2	12.0	1.3	5.7	18.0
Education specialist	23.4	13.5	15.3	6.0	16.7	2.5	6.7	15.9
Doctoral or professional	8.1	20.3	18.6	7.8	15.0	3.9	3.9	22.4

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Hours Spent Teaching, Number of Subjects and Students, and Hours Worked Per Week

Teachers spend their work days performing a variety of tasks. For the most part, of course, teachers lead classes, but they also plan lessons, grade homework, tutor individual students, and lead extracurricular activities. In addition, many teachers are required to complete paperwork, such as attendance and grade records.

Overall, full-time teachers spent about 46 hours per week doing school-related work in 1993–94 (tables 4.5 and A4.11).² While they were required to be at school an average of 33 hours per week, teachers also worked an average of nine hours per week before and after school and on weekends, preparing lessons, grading homework, and participating in other activities that did not involve direct contact with students. Many teachers also worked with students outside school hours, supervising extracurricular activities, tutoring, or leading field trips (three hours per week on average). Secondary teachers spent more time working outside school hours with students than elementary level teachers did. However, secondary and elementary school teachers were required to be at school about the same number of hours.

Elementary school teachers in self-contained classes spent an average of 21 hours per week teaching core academic subjects (figure 4.3 and table A4.10). About

10 of those hours were spent teaching English, reading, and language arts, and the rest of their teaching time was divided among arithmetic and mathematics, social studies and history, and science lessons.

Secondary level instructors of departmentalized classes divided their teaching time over an average of five periods per week and two different subject areas in both public and private schools (figure 4.4 and tables A4.12–A4.14). In public schools, secondary teachers of departmentalized classes taught about 124 students per week, compared with 99 among their private school counterparts (figure 4.5). Furthermore, the workload of secondary departmentalized teachers was associated with the size of their schools: teachers in larger schools taught more students and fewer subjects overall than did teachers in smaller schools.

²To compare this intensity of work to that of other professions, the number of hours worked by 1992–93 bachelor's degree recipients who were teachers in April 1994 was compared with the number of hours worked by their peers who had other occupations. Bachelor's degree recipients who were full-time teachers in April 1994 worked about 44 hours per week on average, slightly more than those in administrative support positions (42 hours), and slightly less than those in managerial positions (46 hours), but no more or less than professionals, sales or service workers, or those in other jobs (44 to 45 hours) (U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup, Data Analysis System).

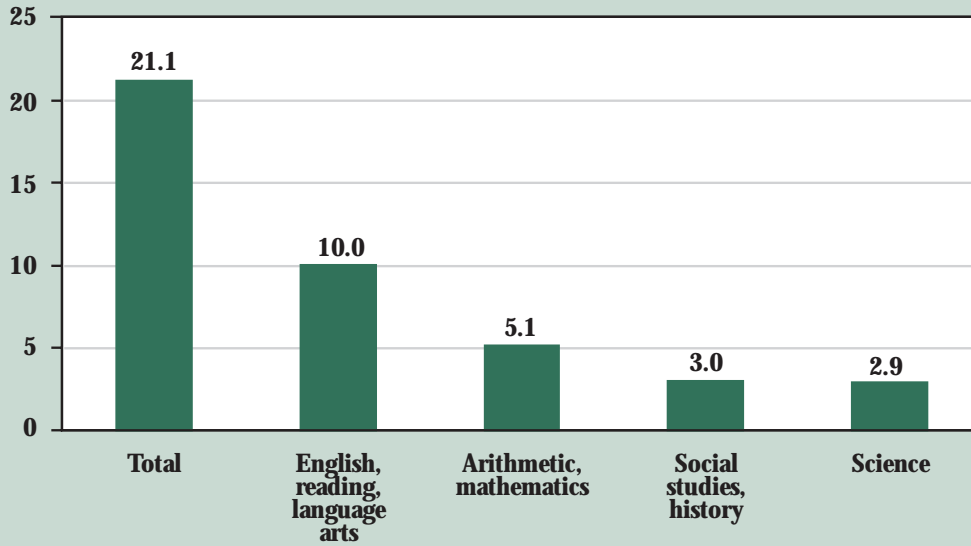
Table 4.5
Average hours per week teachers spent in all school-related work, spent outside school in student interaction, spent outside school without students, and were required to be at school, by teacher level: 1993–94

	Average hours spent per week in all school-related work	Average hours spent per week outside school in student interaction	Average hours spent outside school without students	Average hours per week required to be at school
Total	45.5	3.4	8.8	33.3
Public teacher level				
Elementary	44.0	1.7	9.2	33.0
Secondary	46.5	4.9	8.2	33.3
Private teacher level				
Elementary	46.0	2.3	9.2	34.5
Secondary	49.4	5.7	9.6	34.1

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

Figure 4.3
Average number of hours per week elementary teachers in self-contained classes spent teaching core academic subjects: 1993-94

Average number of hours per week

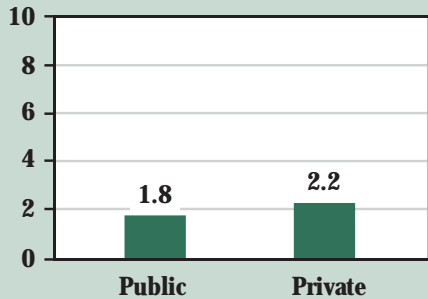


NOTE: Estimates may not sum to total due to rounding.

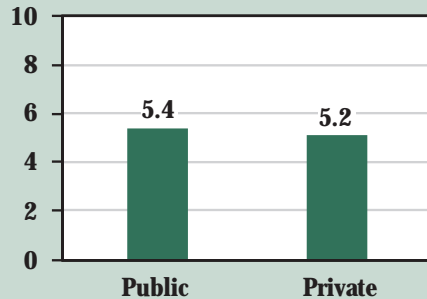
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Figure 4.4
Average number of subject areas and periods taught per week by secondary teachers who taught departmentalized classes, by sector: 1993-94

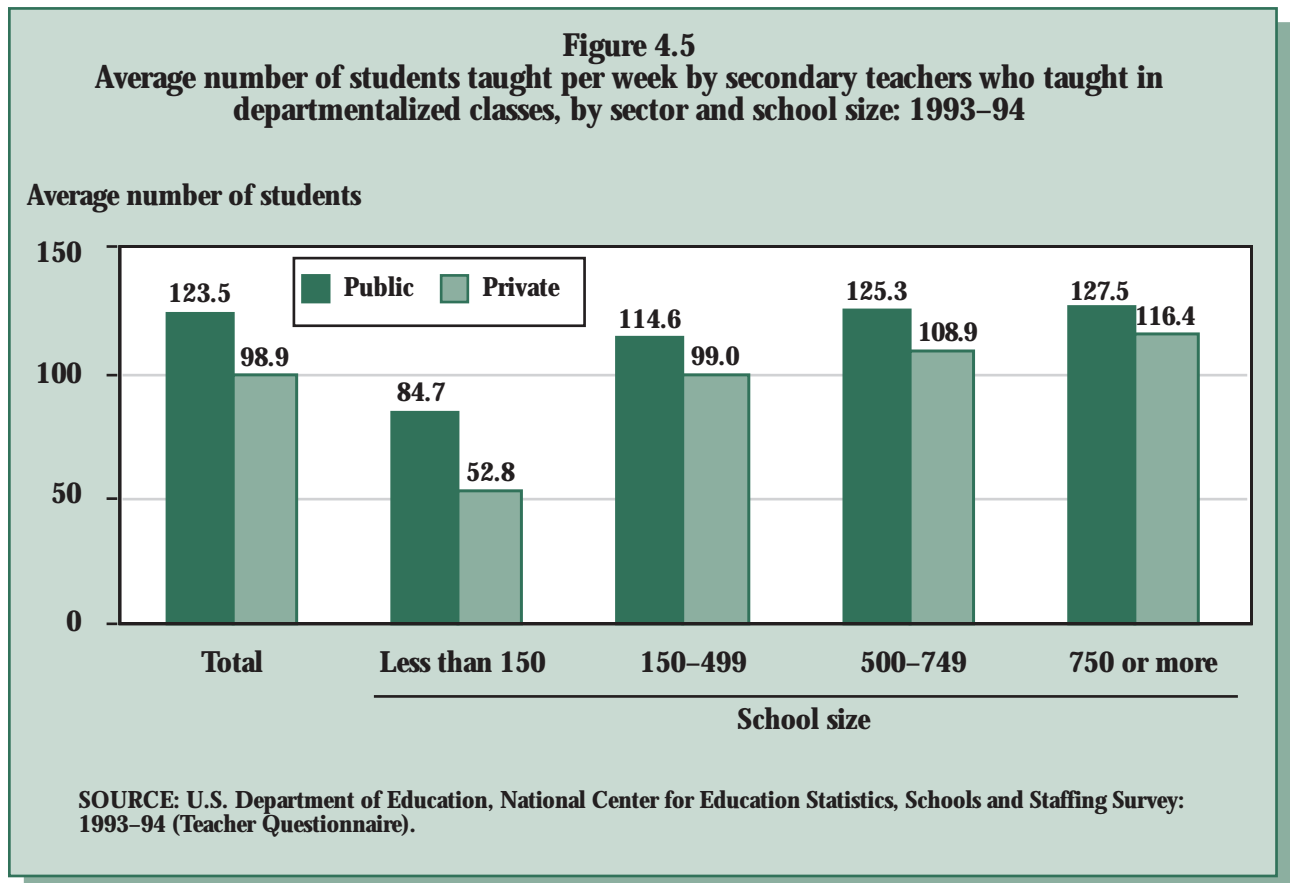
Average number of subject areas



Average number of periods taught per week



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).



To put U.S. teachers' workload in some context, table 4.6 presents the number of hours that primary level teachers in 20 OECD countries taught per year. Primary level teachers' teaching time ranged between 624 and 1,085 hours per year, for an average of 829 hours per year. The United States was among the six countries in which teachers worked at least 10 percent more than the average.

Finally, teachers' workload included paperwork not directly related to instruction. Case studies of teachers' work provide anecdotal evidence that noninstructional duties such as keeping attendance records or collecting lunch money absorb much of teachers' time that might be better spent in instruction (Johnson 1990; Kidder 1990). Consistent with this evidence, in 1993–94 nearly one in two public school teachers and about one in three private school teachers reported that routine paperwork duties interfered with their teaching responsibilities (table A4.11).

Class Size

Class size is an important aspect of school organization for students, teachers, and policymakers. Although small classes may enhance student achievement and teacher satisfaction, providing small classes for all students is an expensive undertaking. Recent research suggests that students in the lower grades, at least, benefit from smaller classes (e.g., 15 or fewer students) in terms of reading and mathematics achievement, and that these benefits may persist as students progress into the upper grades (Achilles 1996; Blatchford and Mortimore 1994; Mosteller, Light, and Sachs 1996; Slavin 1990). Other researchers have found that the benefits of smaller classes accrue, in particular, to elementary school students who come from racial-ethnic minority backgrounds (Bingham 1994), students with lower academic ability when they enter the class (Goettler-Sopko 1990), and students in inner cities (Finn, Achilles, Bain, and Folger 1990). Students may

benefit from smaller classes because teachers can be more flexible about their instructional practices, give more attention to individual students, and diagnose their students' needs more accurately (Hiestand 1994).

In 1993-94, the average teacher in a public school taught a class of 24 students, while the average private school teacher's class had 20 students (table 4.7).³ Within sectors, however, the level at which teachers taught made little difference in their class sizes. In public schools, the average elementary level teacher taught 1 fewer student per class than the average secondary level teacher. In private schools, by contrast, the average elementary level teacher taught 1 more student than the average secondary teacher.

Table 4.6
Number of teaching hours per year in primary level institutions, by country: 1994

Country mean	829
Most hours (over 10% above average: 912 hours or more)	
Switzerland	1,085
Netherlands	1,000
United States	958
United Kingdom	950
France	923
Ireland	915
Near-average hours (746-912)	
Spain	900
Finland	874
Belgium	832
Turkey	830
Portugal	828
New Zealand	788
Germany	760
Denmark	750
Italy	748
Fewest hours (at least 10% below average: less than 746 hours)	
Luxembourg	730
Austria	709
Greece	696
Norway	686
Sweden	624

SOURCE: Organisation for Economic Co-operation and Development (OECD), *Education at a Glance* (Paris: 1996), 60.

Table 4.7
Teachers' average class size, by selected teacher and school characteristics: 1993-94

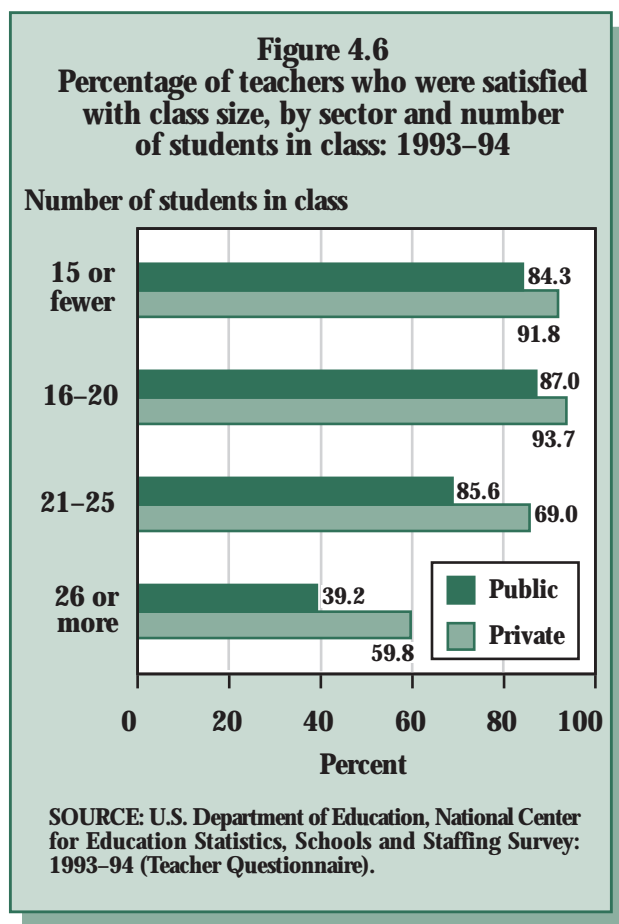
	Public	Private
Total	23.5	20.4
Teacher level		
Elementary	23.2	21.0
Secondary	23.7	19.7
Minority enrollment		
No minority students	21.0	18.6
1-10 percent	23.0	20.9
11-30 percent	23.6	18.8
31-50 percent	23.5	19.3
More than 50 percent	24.3	23.3
Community type		
Central city	24.1	21.1
Urban fringe/large town	24.4	20.6
Rural/small town	22.4	18.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Given research showing that minority students particularly benefit from smaller classes, it is important to note that as the percentage of minority students in a public school increased, so did teachers' class size. This may be an artifact of minority students' concentration in central city and urban fringe areas, however (see table A2.13). While teachers in central city and urban fringe areas taught classes with an average 24 students, teachers in rural areas had 22 students in their classes on average (tables A4.7-A4.9).

Teachers of smaller classes may feel less stress and have higher morale than those who teach larger classes (Goettler-Sopko 1990). The SASS data support the notion that teachers themselves prefer smaller classes. As a rule, teacher satisfaction with class size fell as the size of their classes rose (figure 4.6). Among those whose classes had 15 or fewer students, about 84 percent of public and 92 percent of private school teachers were satisfied with their class size. By contrast, only 39

³Includes both departmentalized classes (such as those in most high schools) and self-contained classes (such as those in most elementary schools).



percent of public and 60 percent of private school teachers whose classes had 26 or more students were satisfied with the size of their classes. It is also interesting to note that regardless of how large their classes were, public school teachers were less likely than their private school counterparts to be satisfied with their class size.

Autonomy and Control

Traditionally, teachers have had a great deal of autonomy in setting rules and planning teaching strategies within their own classrooms (Waller 1932; Lortie 1975). Outside of the classroom, however, they may have little voice in making decisions about school practices and policies. Even before the calls for reform of the early 1980s, some states, districts, and schools

tightened their control over schoolwide policies and classroom practices, including graduation requirements, curriculum content (such as textbooks used), standards for student achievement, and prescribed teaching methodologies (Medrich, Brown, Henke, Ross, and McArthur 1992; Rowan 1990).

Some of the calls for reform of the mid 1980s noted that teachers had little control over school-level policies that had important implications for their professional lives, such as the school schedule or class size (Goodlad 1984; Holmes Group 1986). School restructuring and site-based management reforms have been recommended, in part, to give teachers and principals more control over many aspects of their schools (Firestone and Pennell 1993; Shedd and Bachrach 1991), and states and districts have devolved authority to school sites in varying degrees and over varying aspects of school management. Among the decision-making powers that have been granted to some schools are budgeting choices, including staff allocation; faculty hiring; scheduling; and curricula (Weiss 1993). In addition, within schools some principals are turning over more authority regarding these and other administrative matters to faculty and staff (see, for example, Johnson and Pajares, 1996). Furthermore, in the 1990s, parents and teachers seeking to restore their control of the school environment have energized a new movement toward charter schools.

In the last 5 to 10 years, researchers have examined the effects of state, district, and school control over policy on the effectiveness of teachers. Some have found that teachers are more committed and satisfied with their work when they can contribute to decision making outside of the classroom and retain autonomy within it (Rowan 1990). Others have found, however, that greater curricular control at the district level was not necessarily associated with greater teacher dissatisfaction (Archbald and Porter 1994). This section addresses this debate by providing data on the extent to which teachers participated in decision making both inside and outside of the classroom.

As has traditionally been the case, teachers in 1993–94 felt that they had a great deal of control over what happened in their classrooms. More than one-half of all

teachers felt that they had “a lot of control” in their classrooms over each of six areas covered in the SASS questionnaire (table 4.8 and A4.15).⁴ Private school teachers were more likely than public school teachers to feel they had a lot of control over each of the areas except for deciding how much homework to assign, where a large majority of teachers in both sectors (87 percent) felt they had a lot of control. Although elementary level teachers were more likely than secondary level teachers to feel they had a lot of control over discipline in the classroom, in all the other areas secondary teachers were more likely than elementary teachers to feel they had a lot of control over classroom policy.

The extent to which public school teachers felt they had control in their classrooms was inversely related to the size of the school district in which they taught. As district size increased, the proportion of teachers who felt they had a lot of control over each of the six areas in the survey fell.

In contrast to their perceptions of control within the classroom, teachers were relatively unlikely to report that they had a lot of influence over the following six

areas of school-level policy and decision making: setting discipline policy; determining the content of inservice programs; hiring new full-time teachers; deciding how the school budget would be spent; evaluating teachers; and establishing curriculum. In fact, fewer than one-half of all teachers felt they had a lot of influence over any of these areas (figure 4.7 and table A4.16). Between 30 percent and 40 percent of teachers thought they had a lot of influence over disciplinary policy, the content of inservice programs, and establishing curriculum, while between 3 percent and 10 percent felt this way about hiring new teachers, deciding how to spend the budget, and evaluating teachers.

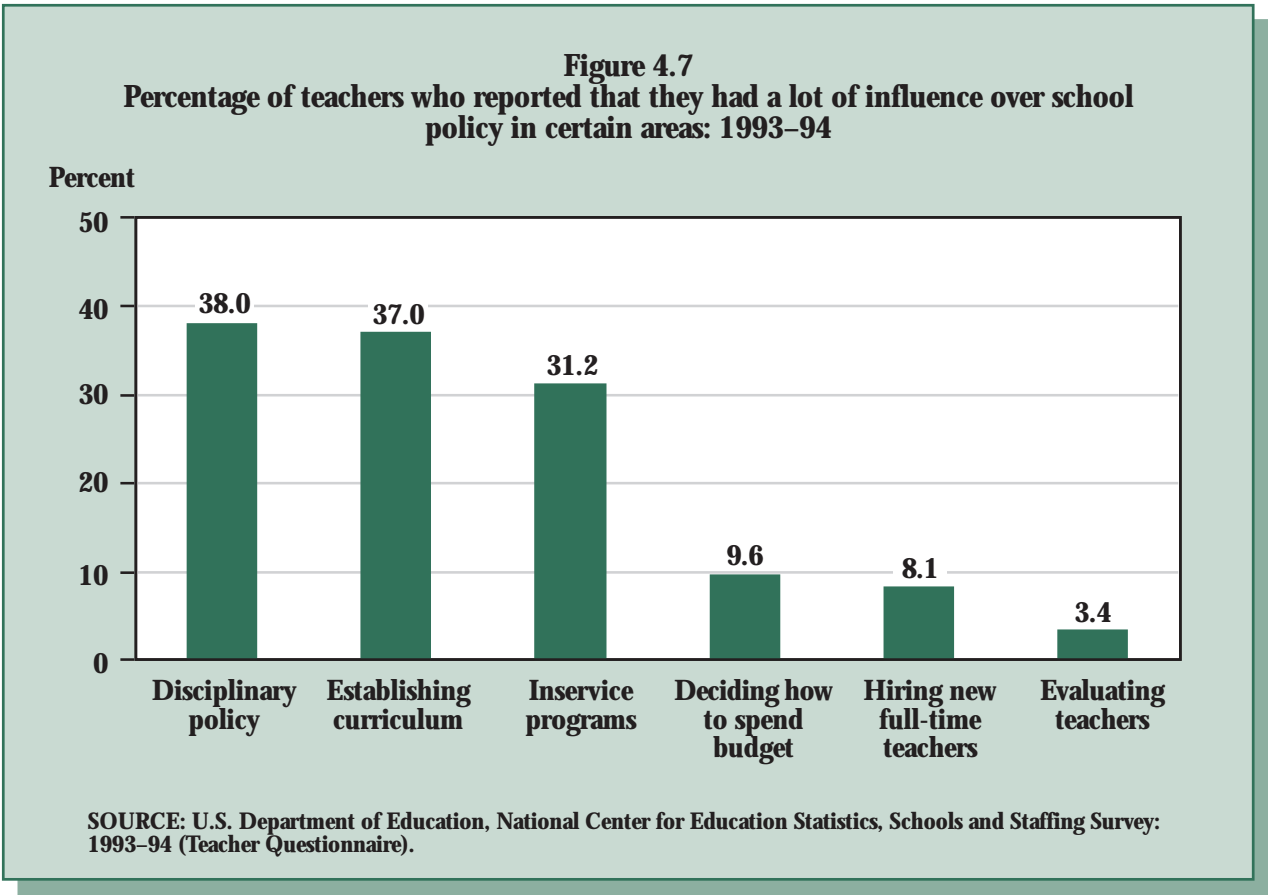
Private school teachers were more likely than public school teachers to think they had a lot of influence over a number of school policy areas, including setting disciplinary policy, determining the content of inservice

⁴Teachers were asked to rate on a scale of 0 (“No control”) to 5 (“Complete control”) how much influence they felt they had in their classrooms over several areas. Responses of 4 or 5 were considered to be “A lot of control.”

Table 4.8
Percentage of teachers who reported that they had a lot of control in their classrooms over selected areas of teaching and planning, by sector, teacher level, and public school district size: 1993-94

	Selecting materials	Selecting content, topics, skills	Selecting teaching techniques	Determining amount of homework	Evaluating and grading students	Disciplining students
Total	56.9	62.3	87.2	86.8	87.5	70.8
Public	55.2	60.5	86.5	86.7	86.9	68.9
Teacher level						
Elementary	48.8	54.1	83.9	83.7	83.9	73.4
Secondary	62.1	67.3	89.2	90.0	90.1	64.0
District size						
Less than 1,000	75.9	76.4	90.6	89.4	90.6	74.7
1,000-4,999	64.7	66.0	88.2	88.5	87.7	72.0
5,000-9,999	53.0	58.1	86.3	86.4	86.6	68.2
10,000 or more	44.2	53.4	84.3	84.8	85.1	64.8
Private	68.7	74.6	91.8	87.0	91.4	84.2
Teacher level						
Elementary	63.0	69.1	89.9	85.5	89.9	86.0
Secondary	76.5	82.2	94.3	89.0	93.4	81.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher and Teacher Demand and Shortage Questionnaires).



programs, evaluating teachers, and establishing curriculum (table 4.9). By contrast, public school teachers were more likely than private school teachers to think they had influence over deciding how to spend the school budget.

As noted above, however, since the 1980s some schools have made extra efforts to solicit input from teachers when making decisions about school policy. Although

fewer than one-half of all teachers felt they had a lot of influence over the particular aspects of school policy included in SASS, about 60 percent reported that teachers participated in decision making in their school (figure 4.8 and table A4.16). Again, private school teachers were more likely than public school teachers to report participating in school policy decision making (74 percent versus 58 percent).

Table 4.9
Percentage of teachers who reported that they had a lot of influence over school policy in certain areas, by sector: 1993–94

	Disciplinary policy	Content of inservice programs	Hiring new full-time teachers	Evaluating teachers	Deciding how school budget will be spent	Establishing curriculum
Total	38.0	31.2	8.1	3.4	9.6	37.0
Public	34.9	30.6	8.1	2.7	10.1	34.3
Private	59.1	35.1	8.3	8.5	6.2	55.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

Table 4.10
Percentage of public schools that had decision-making bodies other than school boards, student councils, or PTAs; and of those, percentage using various methods to select teachers to serve on decision-making body: 1993-94

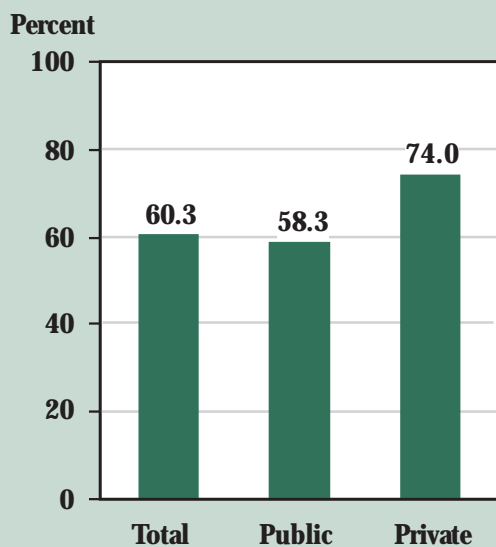
	Percentage of schools that had decision-making bodies other than school boards, student councils, or PTA	Of schools with other decision-making bodies, percentage using various methods to select teachers for those bodies		
		Teachers picked by principal	Teachers volunteer	Teachers elected
Total	55.5	26.7	49.4	52.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School Questionnaire).

One way to give teachers more control over school policy is to include them in school-level boards of authority. Fifty-six percent of public schools had a decision-making body other than the school board, stu-

dent council, or parent-teacher association (tables 4.10 and A4.17), some of which included teachers as members. The teachers who served on the boards may have volunteered to serve, or may have been selected by another authority. Rowan (1990), in noting the importance of teachers being able to serve on a decision-making board by volunteering, quotes a teacher who claimed that teachers who were chosen to serve on the boards were usually those who already had influence over school policy. The SASS results indicate that in about one-half of the schools with these boards, teachers who participated did so by volunteering. In about 53 percent of schools, teachers had to be elected to the board, and in one-fourth of schools teachers were picked by the principal.

Figure 4.8
Percentage of teachers who reported that teachers participated in making important decisions in their school, by sector: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Conclusion

Teaching is a multifaceted occupation requiring a variety of skills. On a daily basis teachers may work with many students and with multiple subjects as they instruct their students, do teaching-related paperwork or supervisory work, manage their classrooms, and (for some teachers) participate in schoolwide decision making. The discussion of the various tasks for which teachers are responsible highlighted the complexity of designing adequate preservice preparation and inservice professional development programs. The next chapter further illustrates the heterogeneity of teachers' work by examining the strategies they use to instruct their students.

INSTRUCTIONAL PRACTICES

As the reform movement begun in the early 1980s has progressed, the focus of reformers' efforts has changed, and in recent years teachers' instructional strategies have received increasing attention. Early policy recommendations for improving elementary/secondary instruction focused on intensification strategies such as longer school days and years, requiring more courses for high school graduation, and insisting that students pass minimum competency tests in order to move on to the next grade or graduate from high school (Education Commission of the States 1983; National Commission on Excellence in Education 1983; National Science Board 1983; Twentieth Century Fund 1983). While continuing to discuss *how much work* students and teachers do and *how much time* they spend doing it, contemporary reform proposals tend to focus on *what* students and teachers should be doing and *how* they should do it (e.g., American Association for the Advancement of Science 1993; Carnegie Task Force on Learning in the Primary Grades 1996; National Commission on Teaching and America's Future (NCTAF) 1996; National Council of Teachers of Mathematics 1991; Renyi 1996).

Several general strategies for improving instruction have been recommended by both subject matter specialists and researchers who study learning processes more generally, and two NCES data sets permit study of teachers' use of these and other instructional strategies. The Teacher Follow-up Survey (TFS) was administered to teachers who worked in teaching situations that varied widely in terms of the grade level, subject area, and type of students taught. Therefore, survey items measuring teachers' instructional practices were designed to be detailed enough to provide useful information yet not so detailed as to be applicable to only small subsets of teachers. In contrast, the National Assessment of Educational Progress (NAEP) Teacher Questionnaires were administered only to teachers in selected fields, and therefore could ask more specific questions about instruction in those fields.

This chapter first discusses findings from the TFS on how teachers used various grouping practices and edu-

cational technologies, the degree to which they required students to participate in various learning activities, the amount of homework their students did, the types of assignments they gave as homework, and their use of portfolios for assessment. The chapter then discusses data gathered from fourth-grade reading teachers as part of the NAEP, enabling a closer look at the kinds of materials and activities that elementary teachers used to teach reading.

Instruction Across Subject Areas

This section focuses on how instruction varied between public and private school teachers, among teachers of different subject areas, and with teachers' participation in related professional development. Several researchers have found that teachers' instructional and assessment strategies vary significantly with the subjects they teach at both the elementary and secondary levels (Grossman and Stodolsky 1995; Sosniak and Stodolsky 1993; Stiggins and Conklin 1992; Stodolsky 1988). In addition, in light of the focus of recent policy initiatives on delivering high-quality professional development to teachers in an effort to improve their instruction, this chapter examines the relationship between teachers' use of various grouping practices, types of educational technology, and portfolio assessment and their participation in professional development programs related to these practices.¹

Grouping Practices

Although the conventional picture of classroom instruction is of one teacher instructing an entire class of students, both individual and small group

¹Because the SASS did not ask teachers about professional development related to the other two categories of instructional practices addressed in this report—use of higher order thinking tasks and types of homework tasks—this chapter does not examine the relationship between professional development and these instructional strategies.

instruction have been promoted as effective alternatives for some time (Johnson and Johnson 1994; Slavin 1987, 1996). For example, when an entire class includes students of widely varying levels of skill in a particular area, teachers may divide the class into smaller groups of students with similar levels of skill. This enables the teacher to focus instruction at the skill level most appropriate to each subgroup of students within the class.

In 1994–95, a majority of teachers reported using three grouping strategies—whole group, small group, and individual instruction—at least once per week. Consistent with the conventional image of teaching, nearly 100 percent of public and private school teachers at both the elementary and secondary levels reported using whole group instruction (tables 5.1 and A5.1). Their instruction was not limited to whole group activities, however. In both sectors, more than 90 percent of teachers also reported working with individual students at least once a week and at least 80 percent of teachers reported working with small groups of students this often.

The TFS also asked teachers about several specific groupwork strategies, including having students work on group projects, either for a group grade or for an individual grade, and having the class as a whole discuss the work that students do in groups. Previous research indicates that teachers are often reluctant to grade students as a group out of concerns for fairness (Brookhart 1993; Stiggins and Conklin 1992), and the TFS data are consistent with these earlier findings: whereas about one-third of teachers had students do group projects for individual grades at least once per week, 18 percent had students do group projects for group grades that often (figure 5.1). Thirty-one percent of teachers reported that they had their students discuss as a class the work they did in small groups. Public school teachers were slightly more likely than private school teachers to engage in each of these activities.

Class subject area

Consistent with research comparing instruction across subject areas at both the elementary and secondary levels (Sosniak and Stodolsky 1993; Stodolsky 1988), the proportion of teachers who reported using small group

instruction and working with individuals varied with the subjects they taught in 1994–95. In particular, those who taught kindergarten or general elementary classes were more likely than most core academic subject (English/language arts, mathematics, science, or social studies) teachers to use small group instruction (table 5.1).²

In addition, as previous research has indicated, teachers in different core academic subjects used these practices at different rates. In public schools, mathematics teachers were more likely than English/language arts or social studies teachers to use small group instruction. Furthermore, public school social studies teachers were less likely than public school teachers in other academic subject areas to use alternatives to whole class instruction: along with the differences noted above, they were also less likely than English/language arts or mathematics teachers to work with individual students.

Professional development

One form of groupwork, cooperative learning, has been advocated by a number of education researchers (Cohen 1994; Johnson and Johnson 1994; Slavin 1996). In cooperative learning tasks, students work in small groups to achieve a single goal and they depend on each other to achieve that goal. The goal may involve competition with other groups, producing a product, or completing a project, and often involves division of labor among group members. Group members work independent of the teacher for the most part, and students take responsibility for each others' learning. Learning tasks of this type appear to support goals for higher order thinking among students and to work particularly well with students of minority cultural

²Teachers who taught multiple subjects to the same class over the course of the day, as elementary teachers are likely to do, were instructed to answer the instructional practice items in terms of the whole day. Teachers who taught different classes of students throughout the day were asked to answer the items in terms of their first instructional period of the day. Consequently, teachers whose classes were kindergarten or general elementary are likely to have answered these items in terms of a significantly longer period of time per week than are subject area specialists (five full days as opposed to about five hours in a given week). This difference makes it difficult to interpret differences between kindergarten/general elementary teachers and specific subject area teachers.

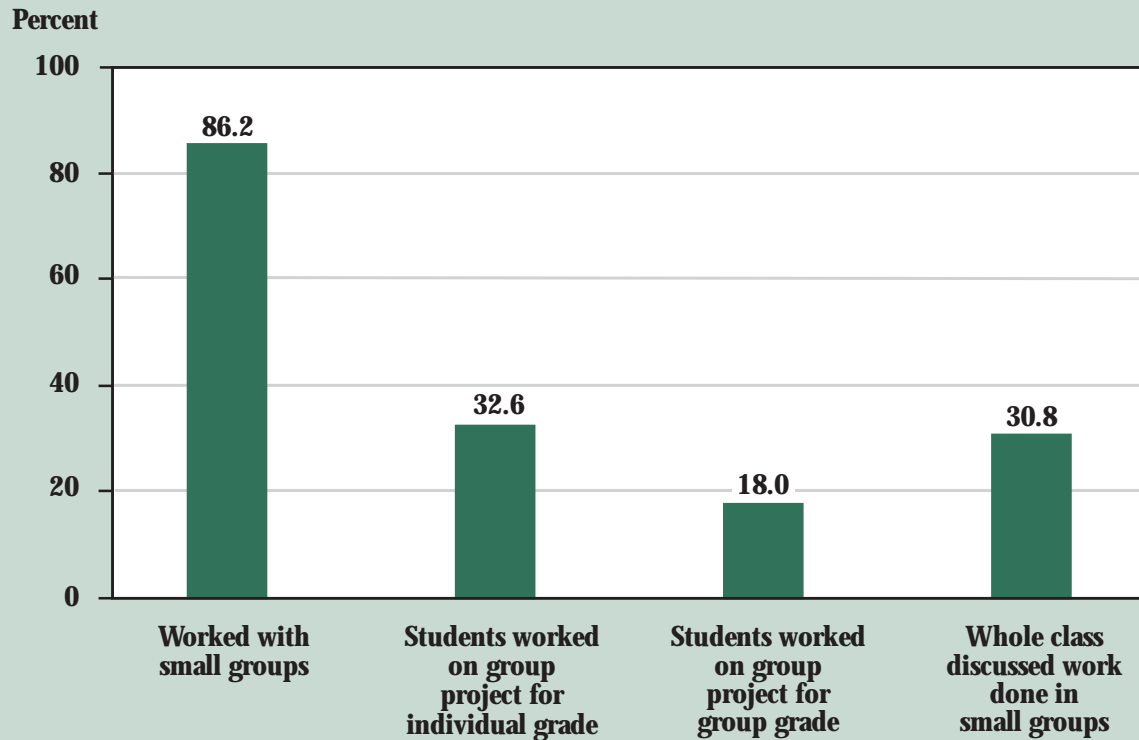
Table 5.1
Percentage of teachers who reported that they instructed students in various grouping patterns and that students did various group activities at least once a week during the last semester, by selected teacher characteristics: 1994–95

	Teacher activities			Student activities		
	Provided whole group instruction	Worked with small groups	Worked with individual students	Group project for individual grade	Group project for group grade	Class discussed work done in groups
Total	97.8	86.2	96.3	32.6	18.0	30.8
Public	97.9	86.9	96.6	33.6	18.6	31.3
Class subject area						
K–General elementary	99.3	95.6	99.4	33.9	19.8	45.3
English, language arts	97.6	76.3	98.1	28.9	14.5	23.6
Mathematics	99.8	91.0	99.8	29.9	13.6	23.5
Science	100.0	85.8	94.3	39.1	21.0	27.3
Social studies	100.0	62.1	85.9	30.0	11.8	24.5
Special education	91.0	97.9	99.9	24.5	13.1	25.5
Bilingual/ESL	100.0	82.2	99.8	33.6	10.8	21.0
Vocational education	94.9	77.3	97.1	41.5	28.5	21.3
Other	98.0	81.2	91.2	38.3	21.7	22.9
Professional development:						
Cooperative learning						
Yes	98.2	90.7	97.5	37.4	21.8	36.7
No	97.6	83.0	95.6	29.7	15.2	25.7
Private	97.2	80.8	94.4	25.7	13.5	27.2
Class subject area						
K–General elementary	98.9	91.4	99.0	28.3	17.1	32.2
English, language arts	96.0	72.6	92.2	25.0	8.0	25.7
Mathematics	99.9	73.1	94.0	20.6	11.9	27.3
Science	100.0	81.7	95.2	36.5	12.2	20.2
Social studies	96.5	62.7	85.3	15.2	8.3	21.6
Special education	92.6	91.6	100.0	19.9	8.5	37.4
Bilingual/ESL	—	—	—	—	—	—
Vocational education	—	—	—	—	—	—
Other	94.2	71.3	88.4	23.3	12.4	20.3
Professional development:						
Cooperative learning						
Yes	98.6	86.7	97.4	29.3	16.6	32.2
No	96.3	76.9	92.0	23.3	11.4	23.9

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire) and Teacher Follow-up Survey: 1994–95.

Figure 5.1
Percentage of teachers who reported they used various group work strategies at least once a week during the last semester: 1994-95



SOURCE: U.S. Department of Education, National Center for Education Statistics, Teacher Follow-up Survey: 1994-95.

backgrounds. In addition, cooperative learning is also advocated as a strategy for helping all students learn to work effectively with people who differ from them in skill or in linguistic or cultural background.

Given the promise of this strategy for achieving higher order learning goals and engaging students of diverse backgrounds, many teachers, schools, and districts are interested in learning and applying it in their classrooms and cooperative learning is frequently the topic of professional development activities (see chapter 3). The TFS data indicate that teachers who had participated in any professional development program on cooperative learning in the last two years were more likely than those who had not to report that they used small group instruction at least once a week (91 percent versus 83 percent among public school teachers and 87 percent versus 77 percent among private school teachers) (table 5.1).³ Similarly, teachers who had participat-

ed in a professional development program on cooperative learning were more likely than others to use all three of the specific small group practices presented.

Educational Technology

“Technology” is becoming a widely used word among education reformers (Means et al. 1993). A number of education policy initiatives focus on students’ access to the Internet and other computer-based technologies because these technologies offer students access to a

³The reader is cautioned not to interpret these findings as indicative of the effectiveness of professional development. Because teachers may have participated in professional development on a voluntary or mandatory basis, it is impossible to determine whether participation indicates prior inclination to use a strategy.

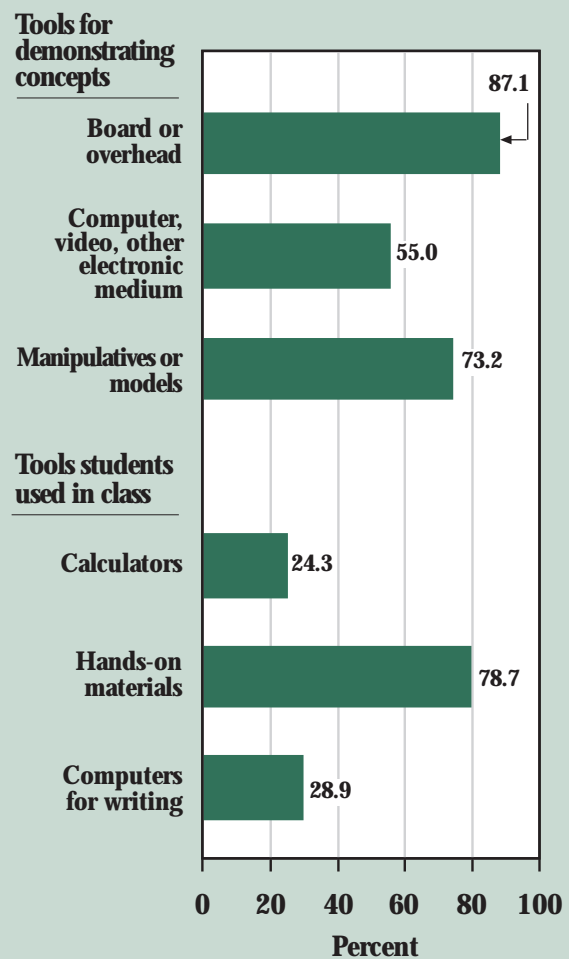
wide range of information and experiences and because computer skills are expected to be increasingly important in the workplace in the future (U.S. Department of Education 1996).

Less sophisticated education technologies are also recommended with some frequency. For example, researchers who study children's understanding of mathematics and science advocate the use of manipulatives in mathematics instruction and concrete models of objects or principles in science instruction (American Association for the Advancement of Science 1993; National Council of Teachers of Mathematics 1991). Emerging standards for teaching practice advocate teachers' flexible use of a wide range of strategies depending on their students, the content, and the context of their instruction (National Board for Professional Teaching Standards 1989).

The TFS data indicate that teachers used various technologies at significantly different rates in 1994–95. For example, a large majority of teachers used blackboards or overhead projectors to present material (87 percent), and many teachers also reported that they used manipulatives or models to present materials and that their students used hands-on materials or objects during their lessons at least once a week (73 percent and 79 percent, respectively) (figure 5.2 and table A5.2). In contrast, about one-half of teachers reported using computers, videos, or other electronic technology; slightly less than one-third of teachers reported that they had students use computers for writing; and about one-quarter reported that their students used calculators at least once a week.

Technology use varied not only with the type of technology but also with the sector of the schools in which they taught. For instance, teachers in public schools were somewhat more likely than their private school counterparts to use computers, video equipment, or other electronic technologies at least once a week when they present material to students (56 percent of public school teachers, compared with 45 percent of private school teachers) (table 5.2). Similarly, students in public schools were more likely than those in private schools to work with hands-on materials at least once a week during instruction.

Figure 5.2
Percentage of teachers who reported that they demonstrated a concept using various instructional tools and that planned in-class activities required students to use various tools at least once a week during the last semester: 1994–95



SOURCE: U.S. Department of Education, National Center for Education Statistics, Teacher Follow-up Survey: 1994–95.

Class subject area

With the exception of blackboards or overhead projectors, technology use varied significantly with the subject area of the designated class. Often this variation was not surprising: the use of calculators and manipulatives was generally much higher in mathematics and

Table 5.2
Percentage of teachers who reported that they demonstrated a concept using various instructional tools and that planned in-class activities required students to use various tools at least once a week during the last semester, by selected teacher characteristics: 1994-95

	Tools for demonstrating concepts			Tools students used in class		
	Board or overhead projector	Computer, video, or other electronic medium	Manipulatives or models	Calculators	Hands-on materials	Computers for writing
Total	87.1	55.0	73.2	24.3	78.7	28.9
Public	87.1	56.3	74.4	24.5	79.7	29.1
Class subject area						
K-General elementary	94.2	71.4	92.6	25.0	91.6	46.1
English, language arts	91.4	40.1	42.5	5.5	52.8	24.9
Mathematics	97.2	42.8	70.4	76.0	65.1	17.1
Science	95.5	50.7	77.3	32.1	78.9	15.6
Social studies	95.6	47.9	39.8	7.4	46.9	6.2
Special education	82.7	63.7	79.5	48.5	86.1	39.3
Bilingual/ESL	98.8	50.4	64.5	6.8	73.3	18.4
Vocational education	88.2	63.9	74.5	26.9	91.6	28.7
Other	63.7	40.0	67.4	6.0	80.9	11.1
Professional development:						
Education technology						
Yes	90.7	62.7	75.7	28.3	80.5	36.1
No	83.7	50.2	73.3	20.8	79.0	22.4
Private	87.1	45.1	64.0	23.1	71.6	27.2
Class subject area						
K-General elementary	95.6	58.0	86.3	25.7	85.1	36.7
English, language arts	88.6	23.7	28.6	5.4	42.6	31.7
Mathematics	98.5	38.6	44.7	69.1	48.4	18.3
Science	98.7	38.6	82.6	46.0	85.2	17.9
Social studies	91.0	43.6	28.8	9.1	32.5	16.9
Special education	81.4	57.4	85.2	61.1	85.9	38.9
Bilingual/ESL	—	—	—	—	—	—
Vocational education	—	—	—	—	—	—
Other	66.2	35.3	49.1	2.8	73.2	15.3
Professional development:						
Education technology						
Yes	87.1	56.9	59.8	28.8	69.7	35.7
No	87.1	38.7	66.3	20.0	72.6	22.6

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire) and Teacher Follow-up Survey: 1994-95.

science classes than in English/language arts classes, for example. It is interesting, however, to note that at least one expected difference was not observed: English/language arts teachers were no more likely than mathematics or science teachers to report that their students used computers for writing in class at least once a week.

Professional development

As with grouping practices, teachers' participation in professional development on technology use was associated with their use of technology. For example, teachers who had participated in at least one formal professional development experience on the use of educational technology in the last 2 years were more likely than others to report that they used computers, video equipment, or other electronic technologies; calculators; and computers for writing.

Higher Order Thinking

Business leaders and education reformers have argued that students need not only basic literacy and compu-

tational skills, but also higher order thinking skills in order to be competitive in the global economy of the 21st century (Murnane and Levy 1996; Secretary's Commission on Achieving Necessary Skills 1991). "Higher order thinking skills" can be defined in a number of ways, but the term usually refers to complex intellectual tasks such as analyzing a problem and planning to solve it, synthesizing facts, evaluating propositions, applying concepts to new or different situations, or developing logical arguments for or against a position.

At least four of the student tasks about which teachers were asked in the TFS required students to use higher order thinking skills: explaining the connections between what they were learning in school and the real world; working on problems that had several solutions or that could be solved with a variety of methods; and putting events or things in order and explaining why they organized them in that way. With the exception of ordering events or things, about 60 percent of teachers reported that they had required students to perform each of these activities at least once a week during the last semester (tables 5.3 and A5.3).

Table 5.3
Percentage of teachers who reported that their students participated in various learning activities at least once a week during the last semester, by sector and class subject area: 1994–95

	Public				Private			
	Explained links between school work and real world	Worked on problems with several answers	Worked on problems with several methods of solution	Put events or things in order and explained their organization	Explained links between school work and real world	Worked on problems with several answers	Worked on problems with several methods of solution	Put events or things in order and explained their organization
Total	63.5	59.5	58.8	38.7	62.0	54.4	55.7	30.8
Class subject area								
K–General elementary	73.5	69.7	69.0	51.8	74.5	58.1	60.0	36.8
English, language arts	60.2	66.3	54.9	30.3	51.3	65.7	56.6	21.0
Mathematics	48.7	39.4	69.0	21.1	54.4	47.8	72.0	35.4
Science	67.1	54.3	53.9	32.0	64.6	36.9	45.3	18.6
Social studies	66.8	50.4	41.4	32.5	54.0	48.4	43.0	22.9
Special education	60.4	51.0	43.7	45.8	76.3	69.3	69.9	44.9
Bilingual/ESL	54.7	61.9	58.1	54.0	—	—	—	—
Vocational education	63.3	59.4	58.0	34.7	—	—	—	—
Other	52.1	53.0	54.2	25.7	48.7	48.9	46.1	25.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, Teacher Follow-up Survey: 1994–95.

Public school teachers of core academic subjects (i.e., English, language arts, mathematics, science, social studies, and kindergarten/general elementary teachers) were less likely to have students put events or objects in order and explain why they were organized that way than to have them engage in the other types of tasks included in table 5.3. Otherwise, there was little consistent variation in teachers' use of these activities by subject area.

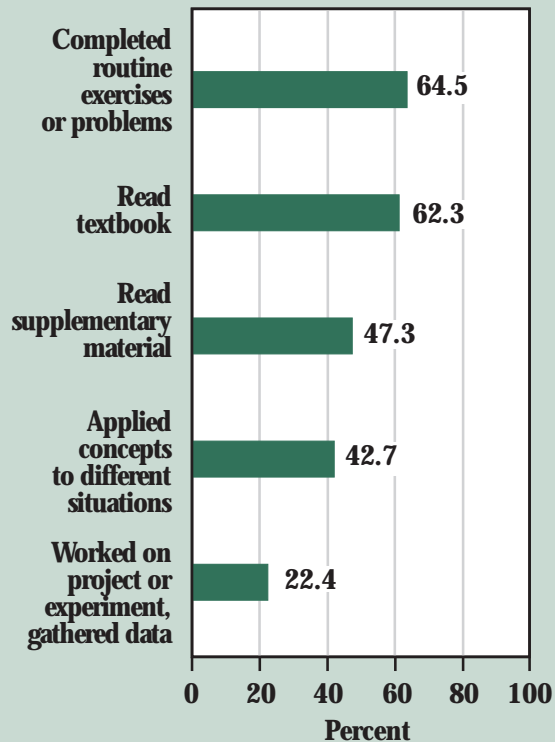
Homework

Policymakers and parents tend to believe that homework improves students' achievement and ought to be an important part of their schooling (Palardy 1988). Reform in the 1970s and 1980s included legislative and policy mandates for increasing the amount of homework that students did (Medrich, Brown, Henke, Ross, and McArthur 1992). Researchers, on the other hand, disagree over whether homework makes a difference in student achievement (Barber 1986; Walberg, Pascal, and Weinstein 1986), and if so, what kinds of homework are more effective than others (Palardy 1988).

The TFS data indicate that teachers assign homework involving routine practice of skills somewhat more frequently than they assign homework involving creative production or problem-solving. At least 60 percent of teachers assigned students textbook reading and routine exercises as homework (figure 5.3). In contrast, less than one-half of teachers asked students to read supplementary materials or apply concepts to different or unfamiliar situations. Furthermore, of the five types of homework tasks included in figure 5.3, teachers were least likely to have students work on projects, gather data, or conduct experiments. Differences between public and private school teachers tended to be small; however, where they existed, private school teachers tended to be more likely to assign a homework task than public school teachers (table A5.4).

There were quite dramatic, if not always surprising, differences in the types of homework assigned by teachers of different subject areas. Among public school teachers, for example, nearly all social studies teachers (95 percent) assigned students textbook reading at least once a week, whereas no more than three-quarters of teachers of any other subject area did so (table 5.4).

Figure 5.3
Percentage of teachers who reported that they assigned various learning tasks as homework at least once a week during the last semester: 1994-95



SOURCE: U.S. Department of Education, National Center for Education Statistics, Teacher Follow-up Survey: 1994-95.

Despite having more time with students, about 40 percent of public kindergarten and general elementary school teachers asked students to apply concepts to new situations in homework assignments, compared with nearly 60 percent of public school mathematics or science teachers. In addition, 40 to 50 percent of science and vocational education teachers in public schools assigned projects or experiments as homework, larger proportions than in all other subject areas.

Portfolio Assessment

Teachers, researchers, and reformers are examining and trying to improve classroom assessment of students' work as well as instruction. Borrowing an idea from the

Table 5.4
Percentage of public school teachers who reported they assigned various learning activities as homework at least once a week during the last semester, by class subject area: 1994–95

	Read textbook	Read supplementary material	Routine exercise from workbook or worksheet	Apply concepts to new situation	Do project, gather data, or do experiment
Total	61.6	47.7	63.9	42.3	22.5
Class subject area					
K–General elementary	66.4	61.0	74.9	38.5	26.4
English, language arts	77.8	60.5	58.6	47.7	14.0
Mathematics	61.0	23.9	86.6	57.6	12.9
Science	75.2	48.2	74.6	58.8	52.7
Social studies	95.4	46.7	74.8	45.6	14.2
Special education	54.6	44.2	63.3	39.7	13.8
Bilingual/ESL	44.2	30.1	59.2	29.2	8.8
Vocational education	50.6	43.3	51.3	46.1	41.9
Other	37.1	28.9	36.3	35.3	14.7

SOURCE: U.S. Department of Education, National Center for Education Statistics, Teacher Follow-up Survey: 1994–95.

fine arts, some elementary and secondary school teachers have begun to use portfolios—collections of students' work that are used to evaluate student growth over a given period of time—to supplement or replace traditional modes of assessment. The potential advantages of portfolio assessment are at least two-fold: they invite students and teachers to review progress over time and look for the next steps in an individual's learning; and they are designed for, and may well encourage the use of, complex, multidimensional learning tasks (Arter, Spandel, and Culham 1996).

The TFS asked teachers whether they used portfolios in their classes, and if so, what kinds of student work were included in them. Slightly more than one-half of all teachers (56 percent) reported using portfolios during the last semester (tables 5.5 and A5.5). Although portfolios have been touted as tools for encouraging the use of complex learning tasks, the majority of teachers who used portfolios (57 to 62 percent) reported that they included students' worksheets, tests, and assessments in them. Lower proportions of teachers (23 to 30 percent) reported including exploratory investigations or work on interdisciplinary problems. Given these data, further research into teachers' conceptions and use of portfolios in instruction, including impediments to teachers' use, may well be warranted.

Class subject area

Portfolios were more common among general elementary and English teachers than among teachers in other academic fields. In public schools, kindergarten or general elementary and English/language arts teachers were more likely to use portfolios than were teachers in mathematics, science, or social studies (about three-quarters of the former versus one-half or less of the latter). In private schools, English teachers were more likely than mathematics, science, or social studies teachers to use portfolios, as were kindergarten or general elementary teachers than mathematics teachers.⁴

Professional development

Both public and private school teachers who had attended a professional development program on student assessment since the end of the 1992–93 school year were more likely than other teachers to use portfo-

⁴Due to small sample sizes, there were few statistically significant differences in the types of student work that teachers of different subject areas included in portfolios.

Table 5.5
Percentage of teachers who reported using portfolios during the last semester, and of those who used portfolios, percentage who reported including various types of student work in them, by selected teacher characteristics: 1994-95

	Percent who used portfolios	Type of student work included in portfolio				
		Worksheets	Exploratory investigations	Interdisciplinary problems	Homework	Tests and assessments
Total	56.4	56.5	29.5	22.7	35.1	61.9
Public	57.2	56.3	29.7	23.0	34.4	61.7
Class subject area						
K-General elementary	72.5	53.3	30.1	22.0	28.0	60.2
English, language arts	73.2	42.8	25.5	18.7	32.6	56.8
Mathematics	51.1	67.8	35.5	29.6	58.3	81.1
Science	42.2	64.5	60.3	31.3	40.9	71.1
Social studies	42.9	60.1	45.7	25.4	50.3	71.0
Special education	61.6	76.3	20.8	24.1	42.4	72.0
Bilingual/ESL	69.5	57.9	22.5	18.2	23.6	46.7
Vocational education	34.4	66.9	20.0	33.0	44.4	53.6
Other	36.5	49.6	24.4	20.1	31.0	51.5
Professional development: Assessment						
Yes	64.3	54.7	31.2	26.2	34.0	64.5
No	49.9	58.4	27.7	18.8	35.0	58.0
Private	50.7	58.7	28.0	20.6	40.4	63.3
Class subject area						
K-General elementary	60.7	64.3	25.8	22.5	36.3	66.6
English, language arts	68.8	39.7	10.6	8.4	35.9	51.9
Mathematics	33.9	61.2	25.9	11.1	48.3	80.4
Science	39.2	—	—	—	—	—
Social studies	42.5	79.7	30.7	27.5	61.8	95.7
Special education	85.5	72.4	46.8	24.7	56.6	67.8
Bilingual/ESL	—	—	—	—	—	—
Vocational education	—	—	—	—	—	—
Other	31.9	49.5	34.9	23.2	36.5	48.8
Professional development: Assessment						
Yes	58.2	59.4	30.2	23.4	38.6	65.3
No	46.3	58.2	26.4	18.5	41.7	61.8

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire), and Teacher Follow-up Survey: 1994-95.

lios. Professional development in assessment made little consistent difference, however, in the types of student work that teachers included in the portfolios. The only exception was that public school teachers who participated in professional development on assessment were more likely to include interdisciplinary problems and tests and assessments in students' portfolios than their counterparts who had not participated. Otherwise, participating in such professional development was not related to the types of work public and private school teachers included in their students' portfolios.

Reading Instruction at the Elementary Level

Early literacy is widely recognized as the foundation of later academic achievement, and recent education policy initiatives include particular attention to elementary students' literacy skills. The 1994 NAEP Reading Teacher Questionnaire provides information on the reading instruction fourth graders received, including the types of materials students used, the types of activities in which they engaged, and the types of assessment strategies their teachers used to assess their reading proficiency. In general, it appears from these data that fourth-grade teachers used a variety of materials and instructional and assessment strategies in 1994. In

addition, participation in professional development was consistently associated with differential use of various strategies.

Types of Reading Materials

Consistent with the recommendations of experts in the process of learning to read (Adams 1990), fourth-grade teachers had their students read a variety of materials in school. At least two-thirds of fourth graders' teachers reported having their students read a variety of books in their reading classes, including novels, poetry, and nonfiction, as well as materials from other subject areas (tables 5.6 and A5.6). Considerably fewer teachers had their students read children's newspapers in school (29 percent) or use reading kits or computer software (21 to 22 percent).

Teachers in public schools were more likely than those in private schools to have their students read a variety of books or materials from other subjects or use computer software. Furthermore, the more time teachers spent in professional development on reading instruction, the more likely they were to have their fourth graders read both a variety of books and materials from other subject areas at least once a week in their reading classes.

Table 5.6
Percentage of fourth graders whose reading teachers reported using various resources at least once a week, by sector and staff development hours in reading: 1994

	Children's newspapers	Reading kits	Software for reading	Variety of books	Materials from other subject areas
Total	28.7	20.7	21.9	70.4	66.0
Sector					
Public	28.7	20.6	23.0	72.9	67.4
Private	28.7	21.8	12.1	48.5	53.8
Staff development hours in reading					
Fewer than 6	27.1	15.6	19.6	58.8	57.8
6–35	28.1	25.2	24.1	74.4	71.7
More than 35	34.2	17.4	20.7	87.7	71.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, 1994 (Reading Teacher Questionnaire).

Types of Reading Activities

In addition to using a variety of materials, teachers of fourth graders reported using a variety of instructional activities, ranging from routine exercises to higher order tasks, at least once a week. Relatively few teachers (about 30 percent) had students do a group activity or project about material they had read (tables 5.7 and A5.7). Larger proportions of teachers (66 to 90 percent) had their fourth graders perform any of the other activities listed, including talking with each other or writing about what they had read, discussing different interpretations or explaining their understandings of their reading, and working on worksheets or in workbooks. Public school teachers were more likely than private school teachers to have students write about their reading; otherwise, they used these strategies at similar rates.

Teachers' professional development activity was related to their use of all six of the activities included in table 5.7. Compared with their colleagues who had spent less time in professional development on reading instruction, teachers who spent more time in such professional development were less likely to use workbook exercises and were more likely to use all five of the other strategies.

Reading Assessment Strategies

Fourth-grade teachers' assessment strategies also varied widely. Whereas about 80 percent of teachers gave their fourth graders short-answer tests or had them write a paragraph about what they had read to assess their progress in reading, about 60 percent of teachers gave their fourth graders multiple-choice tests or had them give presentations (tables 5.8 and A5.8). Fewer teachers (about 40 percent) used reading portfolios to assess their students' progress in reading. Although public school teachers were more likely than private school teachers to use portfolios, there were no other differences between public and private school teachers in terms of the assessment strategies they used.

Teachers who had spent more time in professional development on reading instruction were more likely than teachers who had spent less time to use paragraph-length writing, presentations, and portfolios to assess their students' progress in reading and were less likely to use multiple-choice tests. Similar relationships were observed with respect to teachers' participation in courses or workshops on assessment. In particular, those who had participated were more likely than those who had not to use paragraph-length writing, presenta-

Table 5.7
Percentage of fourth graders whose reading teachers asked them to do certain activities at least once a week, by sector and staff development hours in reading: 1994

	Talk with other students about readings	Write about readings	Group activity about readings	Discuss interpretations of readings	Explain understanding of readings	Workbook exercises
Total	79.4	82.7	31.4	66.4	89.7	73.4
Sector						
Public	80.4	84.1	31.8	66.9	90.0	72.4
Private	70.6	70.8	28.0	62.2	86.9	82.1
Staff development hours in reading						
Fewer than 6	71.9	76.9	23.2	60.2	86.5	83.9
6-35	82.5	85.9	34.4	67.9	92.4	71.5
More than 35	92.6	91.2	42.0	79.2	93.6	60.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, 1994 (Reading Teacher Questionnaire).

Table 5.8
Percentage of fourth graders whose reading teachers used various assessment practices at least once a month, by sector and selected teacher characteristics: 1994

	Multiple-choice tests	Short answer tests	Paragraph length writings	Presentations	Reading portfolios
Total	59.3	79.8	80.6	62.5	39.0
Sector					
Public	58.8	79.8	80.8	63.1	40.3
Private	63.0	80.6	79.2	57.2	28.4
Staff development hours in reading					
Fewer than 6	66.6	77.8	72.0	51.1	25.2
6–35	59.6	83.3	86.4	67.9	42.7
More than 35	46.4	78.1	87.3	73.5	56.6
Courses/workshops on assessment in last 5 years					
Yes	57.0	81.8	85.9	71.9	49.9
No	67.7	80.8	75.1	49.2	21.2

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Assessment of Educational Progress, 1994 (Reading Teacher Questionnaire).

tions, and portfolios and less likely to use multiple-choice tests.

Conclusion

Teachers' use of various instructional practices varied not only with their subject areas but also with the degree to which they had participated in relevant professional development programs. However, the SASS data do not indicate whether the particular professional development programs in which teachers participat-

ed were mandatory or voluntary. Therefore, one cannot conclude that attending professional development is the cause of the differences observed between the practices used by teachers who attended and teachers who did not. It may be, for example, that teachers who voluntarily attended professional development on assessment strategies were already more inclined than other teachers to use portfolios or other alternative assessments. Thus the effectiveness of professional development programs in helping teachers alter their teaching practices remains to be researched by others.

CHAPTER 6

COMPENSATION

Introduction

One of the major premises of the recently released report by the National Commission on Teaching and America's Future (NCTAF) is that "recruiting, preparing, and retaining good teachers is the central strategy for improving our schools" (NCTAF 1996, 8), and many believe that competitive salaries and benefits are key to attracting and retaining high-quality teachers (Murnane, Singer, Willett, Kemple, and Olson 1991; Rumberger 1987). Over the years, policymakers have struggled with issues related to levels of compensation and criteria for awarding salary increases. Their decisions affect who goes into teaching, who stays, and how teachers move from district to district and school to school (Odden and Kelley 1997).

Starting salaries and potential increases over time are important considerations for college graduates considering possible careers. When asked whether various factors were important to them in determining the type of work they planned to do in the future, 1992–93 bachelor's degree recipients responded affirmatively to "income potential over career" and "intellectually challenging work" (45 percent in each case) more often than to any of the other factors mentioned (Choy and Geis forthcoming).¹ While no one would deny that teaching provides intellectually challenging work, many have long been concerned that teachers are inadequately paid and that the low income potential over the course of a teaching career compared with other occupations requiring similar preparation may discourage college students from entering the profession.

Compensation can also be a very important consideration for current teachers weighing the tangible and intangible costs and benefits of remaining in the teaching field or in a particular district or school. Consequently, differences in salary schedules among districts, particularly those within a geographic region, can have important equity implications. Poorer districts and schools that are unable to offer competitive salaries are likely to be at a serious disadvantage when it comes to hiring and retaining teachers.

This chapter uses data from the Schools and Staffing Survey (SASS) and the Teacher Follow-up Survey (TFS) to examine various aspects of teacher compensation in some detail, including salary schedules, base salaries, additional types of compensation (including nonschool jobs), and benefits.² Particular attention is paid to how teacher compensation varies according to teacher characteristics and sector and across types of districts and schools. To place these data in context, this chapter presents information from the American Federation of Teachers on trends in teacher compensation over time. It also compares U.S. teachers' compensation with that received by U.S. bachelor's degree recipients in other occupations, using data from the National Adult Literacy Survey, and with teachers in other countries, using data published by the Organisation for Economic Co-operation and Development (OECD).

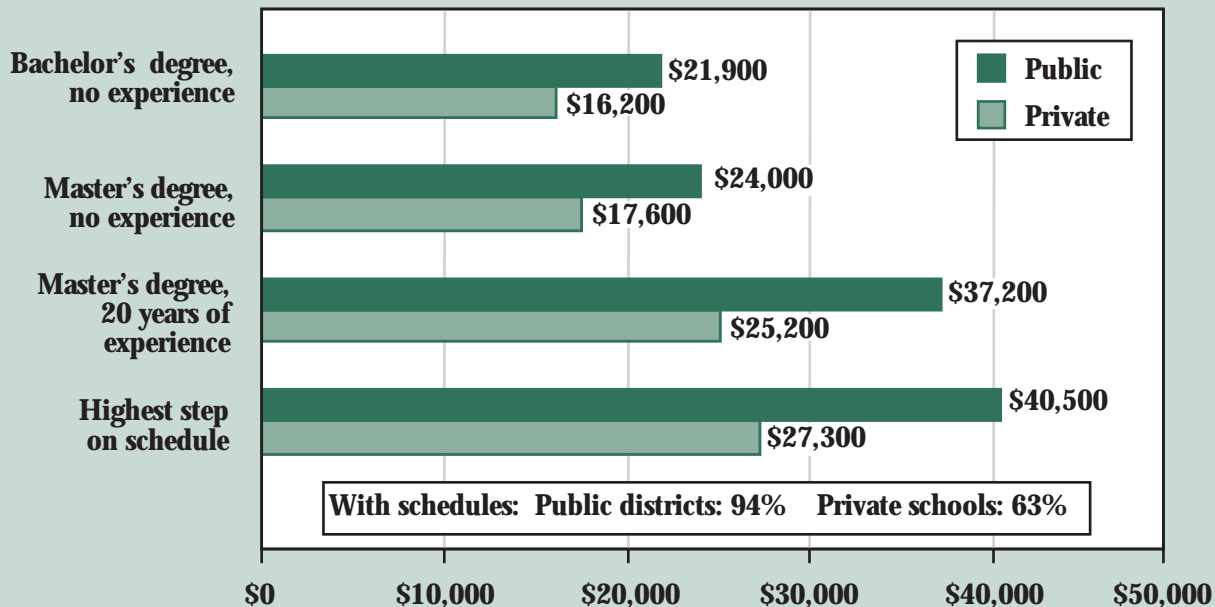
Scheduled Salaries

Almost all public school districts and the majority of private schools (94 percent and 63 percent, respectively, in 1993–94) use schedules to determine teacher salaries (figure 6.1 and table A6.1). In most cases, the steps on the salary schedules are determined by a combination of educational attainment and years of teaching experience and are not affected by grade level or subject taught. Teachers with a bachelor's degree and no experience typically start at the bottom of the schedule and move up to a specified maximum as they accumulate credit for experience and additional education.

¹Other factors students were asked about and the percentages who reported that they were very important to them in determining the type of work they planned to do in the future included a good starting income (35 percent), job security (36 percent), interesting work (42 percent), and interaction with others (33 percent).

²For more detailed, multivariate analyses of teacher compensation using the 1990–91 SASS data, see Chambers and Bobbitt (1996) and McLaughlin, O'Donnell, Ries, and Broughman (1995).

Figure 6.1
Average scheduled teacher salary in public districts and private schools according to teachers' degrees and years of teaching experience, by sector: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

This structure provides teachers with a strong incentive to continue their formal education beyond a bachelor's degree, which many do (see chapter 3).

The vast majority of teachers (87 percent) were employed by public school districts in 1993-94 (chapter 2). On average, scheduled salaries were substantially higher in public school districts than in private schools at major points on the schedules (figure 6.1 and table A6.1).³ For example, public school districts paid about 35 percent more than private schools, on average, for a teacher with a bachelor's degree but no experience in 1993-94 (\$21,900 versus \$16,200) and almost 50 percent more for a teacher at the top of the schedule (\$40,500 versus \$27,300). Some of this public-private variation may be due to differences in teacher characteristics such as education and experience (see chapter 3 for the nature of these differences), but

not all (Chambers and Bobbitt 1996; McLaughlin 1997).

Within the public sector, regional differences were quite striking, with scheduled salaries highest in the Northeast and generally lowest in the South in 1993-94 (table 6.1). In districts in the Northeast, the average salary at the top of the schedule was \$51,300, and in the South, \$33,800. To some extent, regional differences reflect cost-of-living differences. However, the cost of living was similar in the Midwest and South, but the scheduled salary for the highest step was considerably higher in the Midwest.

³See tables A6.2 and A6.3 for additional detail on scheduled salaries by state for public districts and years of experience for private schools by affiliation.

Table 6.1
Average scheduled salaries in public school districts and private schools for 1993–94 and consumer price index for 1993, by region

	Scheduled salaries		Consumer price index for 1993*
	Bachelor's degree, no experience	Highest step on salary schedule	
Total	\$21,923	\$40,517	144.5
Northeast	25,581	51,270	151.4
Midwest	20,879	38,415	140.0
South	20,407	33,848	140.8
West	21,913	41,318	146.0

*1982–84=100. The Consumer Price Index is based on prices of a fixed “market basket” of goods and services purchased by urban wage earners (which covers 80 percent of the total population).

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Demand and Shortage Questionnaire), and U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States, National Data Book*, 1994, 492.

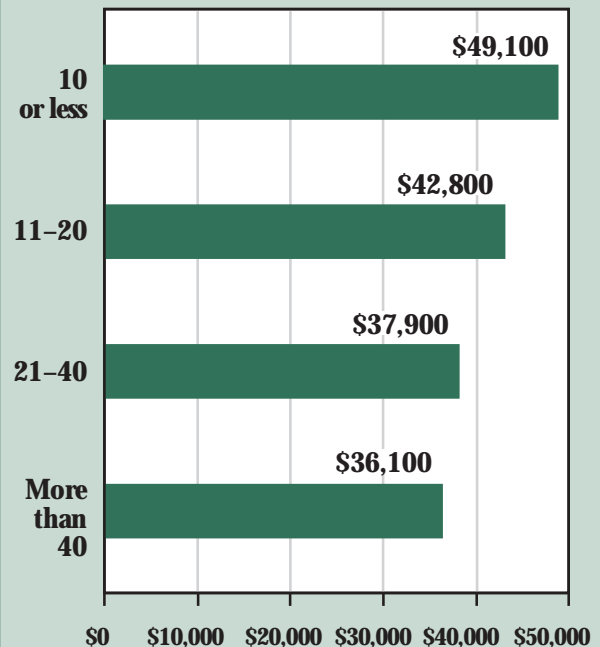
Scheduled salaries tend to be lower in districts with higher percentages of low-income students. For example, in 1993–94, the average salary for a teacher at the top of the schedule was \$49,100 in districts with 0–10 percent of their students enrolled in the National School Lunch Program, falling to \$36,100 in districts where more than 40 percent of the students participated in this program (figure 6.2). To the extent that higher salaries permit districts to attract and retain better teachers, this pattern suggests serious equity problems.

Sometimes public school districts or private schools introduce additional factors into the salary schedules, such as step increases in order to attract teachers to less desirable locations or to fields with teacher shortages (see chapter 8). However, the 1993–94 SASS data show

that relatively few public school districts did so: 5 percent of public school districts provided step increases for teaching in certain locations, and 5 percent for teaching in a field with shortages. Eleven percent of private schools provided step increases for teaching in a field with shortages (Henke, Choy, Geis, and Broughman 1996).

Figure 6.2
Average teacher salary at the top of the salary schedule in public school districts, by percent free/reduced-price lunch recipients: 1993–94

Percent students receiving free/reduced-price lunch



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Public School and Teacher Demand and Shortage Questionnaires).

Base Salaries

While salary schedules describe what districts and schools pay teachers with various qualifications, actual salaries reflect the age and educational characteristics of the current teacher work force. If the work force ages over time, for example, the average base salary will increase even if scheduled salaries do not change. In 1993-94, the average base salary for full-time teachers was \$32,800 overall, \$34,200 for those who taught in public schools, and \$22,000 for those who taught in private schools (table A6.4). Average salaries increased with experience in both sectors, reflecting the typical salary schedule structure.

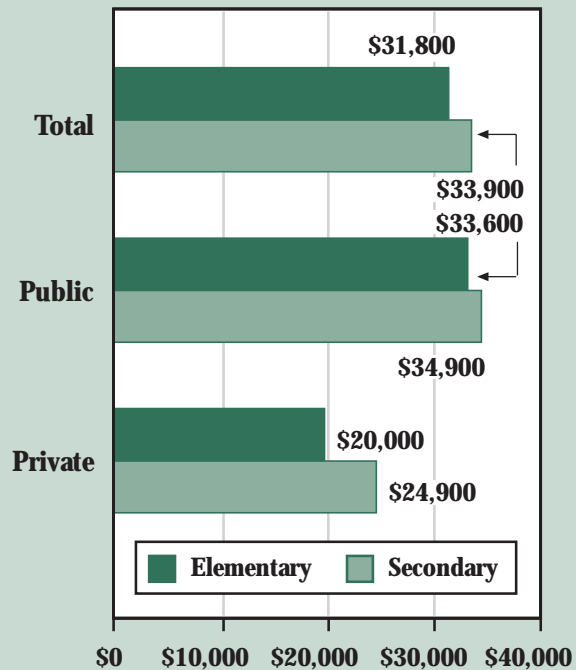
In both sectors, but particularly in private schools, secondary school teachers who were employed full time tended to earn more than their elementary school counterparts, despite the fact that salary schedules typically do not consider teaching level (figure 6.3). This difference reflects, at least in part, differences in educational attainment. In private schools, for example, secondary school teachers were almost twice as likely as elementary school teachers to have a master's degree (40 percent versus 22 percent) (see table A3.5).

Trends in Teacher Salaries

According to data collected by the American Federation of Teachers, the average annual salary for public school teachers increased steadily (in constant 1995 dollars) from 1960 until 1972. This upward trend was followed by a period of decline in the 1970s and then another period of steady increase during the 1980s. Average salaries (in constant 1995-96 dollars) have remained relatively constant since the late 1980s (figure 6.4 and table A6.5).

Because changes in average salaries over time are affected by changes in the age and educational attainment of the teaching work force, it is useful to look at changes in scheduled salaries over time as well. Data from SASS show that in constant 1993-94 dollars, average salaries for a teacher with a bachelor's degree and no experience declined by about 4 percent in public schools and increased by about 2 percent in private schools between 1987-88 and 1993-94 (Henke, Choy, Geis, and Broughman 1996).

Figure 6.3
Average base salary for full-time teachers,
by sector: 1993-94

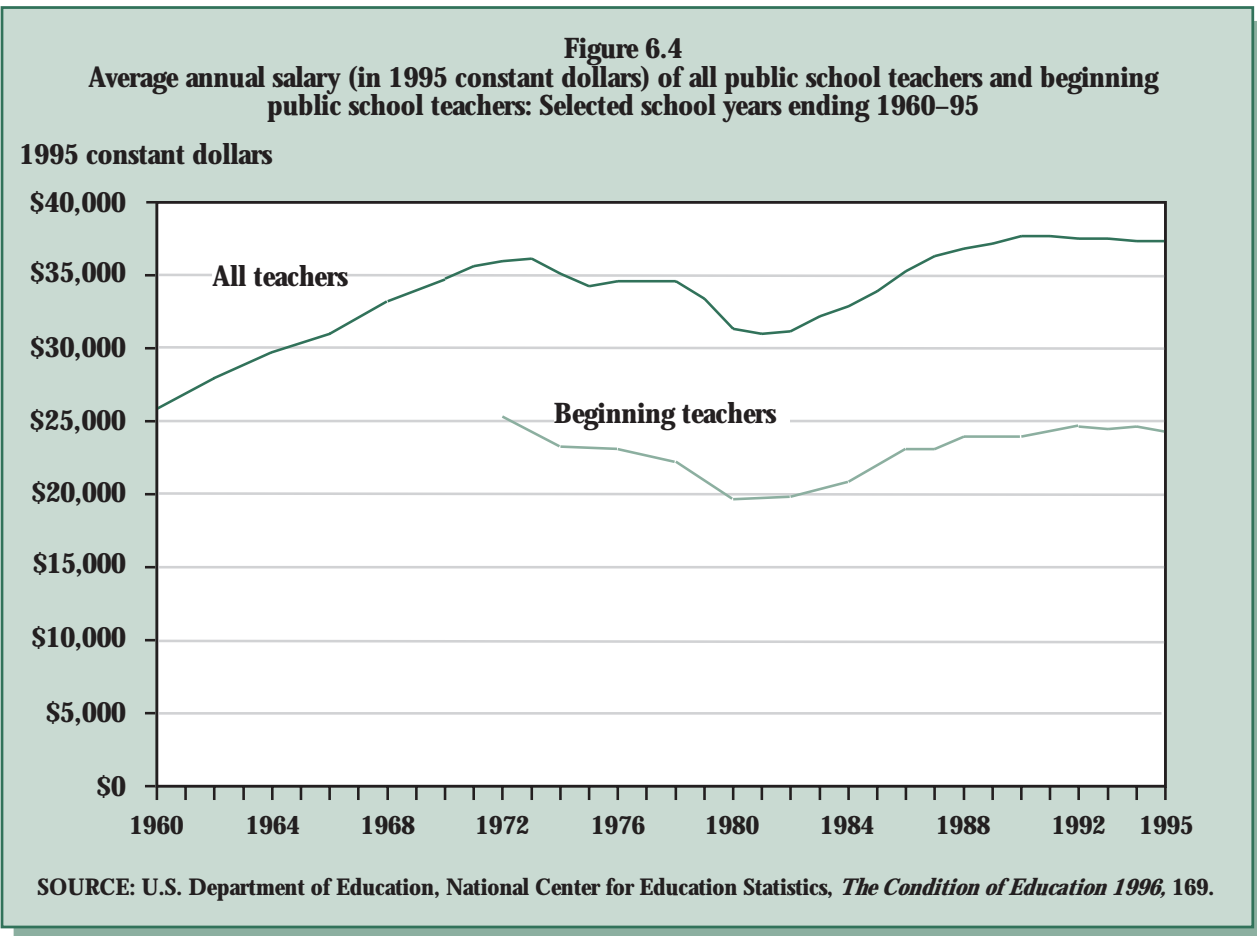


SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

The American Federation of Teachers reports that teacher salaries now account for a smaller proportion of states' educational expenditures than they did 30 years ago, having dropped from 53 percent in 1964-65 to 38 percent in 1994-95 (Nelson and Schneider 1995). This pattern of decline is found in every state.

Supplemental Income

The base salary paid to teachers as compensation for meeting their teaching responsibilities may not represent their total school-related earnings. In 1993-94, about one-half of all full-time teachers (51 percent) earned additional money for extra work in their own or another school or earned some type of supplemental pay, such as a merit bonus (tables 6.2 and A6.6). This extra work might have included teaching summer



school; working in a nonteaching job at their own or another school during the summer; or working on extracurricular or other activities during the school year (such as coaching, sponsoring a student activity, or teaching evening classes). For those with additional school-related earnings, the average was about \$2,500. Earning additional compensation during the school year was much more common than either type of summer employment (42 percent earned money during the school year versus 13 percent for teaching summer school and 6 percent for summer nonteaching responsibilities).

Some teachers supplement their school salaries by holding nonschool jobs. In 1993–94, 26 percent of all full-time teachers had a nonschool job either during the summer or during the school year (tables 6.2 and A6.7). The average amount earned from such jobs was about \$5,000.

Table 6.2
Percentage of full-time teachers who earned various types of supplemental school and nonschool income and average amounts earned by those with each type of income, by sector: 1993–94

	Total	Public	Private
Any supplemental school income	50.5	51.8	39.8
Summer school salary	12.5	12.4	13.5
Summer nonteaching job in a school	5.8	5.5	8.3
Additional school year compensation	42.3	44.2	27.3
Average amount of all supplemental school income	\$2,522	\$2,532	\$2,412
Any nonschool earnings	25.6	24.8	31.1
Average amount of nonschool earnings	\$4,993	\$5,112	\$4,249

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

In the full-time teaching force, public school teachers were more likely than private school teachers to earn supplemental income from their own or another school. On the other hand, outside jobs were more common for private school full-time teachers than their public school counterparts in 1993-94. Private school teachers may have a greater need to supplement their income because their salaries tend to be lower, but they might also turn more frequently to nonschool employment because their schools provide fewer opportunities for them to supplement their income.

For both public and private school teachers, characteristics associated with greater supplemental school income and nonschool employment include teaching at the secondary rather than elementary level, being male, being under 30 years of age rather than over 40 years, and not being married (tables A6.6 and A6.7). These differences reflect variation in factors such as the availability of employment opportunities, the teachers' need for additional income, the amount of time they have available to work, and whether or not they want to work. For example, secondary schools tend to have more extracurricular activities than elementary schools and therefore more opportunities for their teachers to earn additional school-related income, and married

teachers may not need the additional income if they have spouses who work.

Benefits

Benefits constitute an important part of a teacher's compensation package. Most employees consider medical insurance a critical benefit, and in the aggregate teachers are well covered in this regard. In 1993-94, 88 percent of all full-time teachers in public schools received medical insurance paid for entirely or in part by their school or district (tables 6.3 and A6.8). Other key benefits they received included dental insurance (66 percent), group life insurance (62 percent), and pension contributions (63 percent). A majority of part-time public school teachers received each of these benefits, but they were less likely than full-time teachers to receive them: 78 percent had health insurance, 60 percent had dental insurance, 55 percent had group life insurance, and 59 percent received pension contributions (figure 6.5).

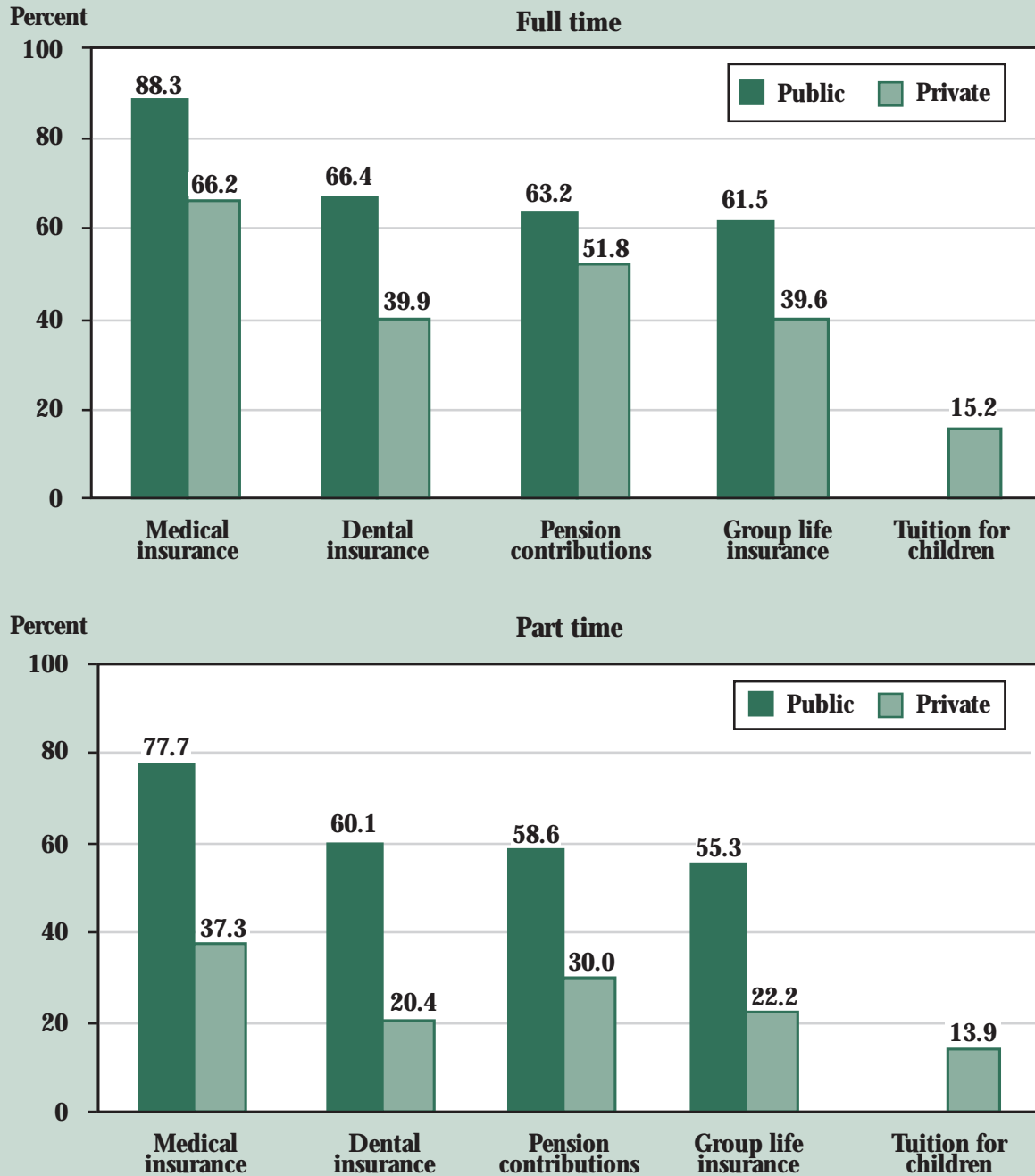
As with salaries, private school teachers lag behind public school teachers with respect to benefits. Both full- and part-time private school teachers were less likely

Table 6.3
Percentage of full-time teachers who received various employee benefits, by public school district and private school size: 1993-94

	Medical insurance	Dental insurance	Pension contribution	Group life insurance
Total	85.8	63.4	61.9	59.0
Public districts	88.3	66.4	63.2	61.5
District size				
Less than 1,000	82.7	48.9	56.8	44.2
1,000-4,000	87.8	63.5	62.8	61.9
5,000-9,999	89.4	66.6	64.0	62.8
10,000 or more	89.0	70.6	63.5	64.5
Private schools	66.2	39.9	51.8	39.6
School size				
Less than 150	50.3	27.0	31.8	23.4
150-499	67.2	39.9	51.6	38.5
500-749	72.3	42.0	61.7	47.7
750 or more	76.1	51.8	74.1	59.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Figure 6.5
Percentage of teachers receiving various benefits, by teaching status and sector: 1993–94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

than their public school counterparts to receive each type of benefit mentioned above.

Teachers in small public school districts or private schools are at a disadvantage in terms of the benefits they receive. Full-time teachers in public school districts with enrollments of fewer than 1,000 students were less likely than those in larger districts to receive each type of benefit in 1993–94 (table 6.3). In private schools, the percentage of teachers receiving each type of benefit increased with school size.

One concern public school teachers often have when they move (or consider moving) to a new district is whether they can get credit in the new retirement system for past service (99.8 percent of public school teachers had district retirement plans). Lack of transferability could decrease overall teacher mobility, but in reality, virtually all (99 percent) public school teachers in districts with retirement plans could get credit for previous in-state service (although 8 percent of those who could get credit had to put money into the plan to receive it) (table A6.9). Sixty-two percent could receive credit for out-of-state teaching experience, but 87 percent had to buy it. Thus, retirement system rules are more likely to discourage inter- than intrastate mobility. Private school teachers were less likely to have a retirement plan (71 percent), but when they did, 69 percent could get credit under some circumstances (such as when they transferred from a school within the same organization or body, rolled over funds from another retirement plan, or purchased credit in the school's retirement plan) (table A6.10).

In addition to the major types of insurance and pension benefits just described, teachers may receive various other types of benefits, such as reimbursement of tuition, fees, or transportation expenses, meals, housing, and child care. Among public school teachers, the most common benefit for full-time teachers and one of the most common for part-time teachers was reimbursement for tuition or fees (received by 20 percent of full-time and 23 percent of part-time public school teachers in 1993–94) (tables A6.11a and A6.11b). Reimbursement of tuition and fees provides a double benefit for teachers by making it easier for them to earn additional education credits and thus raise their salaries. Another substantial benefit for some private school teachers is free or reduced tuition for their chil-

dren: 15 percent of full-time and 14 percent of part-time teachers received this benefit in 1993–94.

Comparisons With Other Professions and Other Countries

Other Professions

Teachers have long complained that they receive less compensation than others with similar levels of education and skill (Johnson 1990; Lortie 1975). Among bachelor's degree recipients who were employed full time, teachers' average prose literacy skills were similar to those of many other professionals in 1992 (table 6.4). Only scientists had measurably higher scores. Teachers' average earnings, however, were often considerably lower than those of other bachelor's degree recipients (figure 6.6). Some of these differences disappear when the number of weeks worked are taken into account, but even so, teachers' weekly earnings were lower than the average earnings for all bachelor's degree recipients.

The Teacher Follow-up Survey shows that 1993–94 teachers who left teaching for another occupation in 1994–95 did not immediately earn more than they had made in teaching (tables 6.5 and A6.12). For teachers who left public or private schools, their average total income was about the same in their new occupation as it had been in teaching. The only leavers with apparent increases were those who left teaching for a nonteaching job within elementary/secondary education (to become a principal, for example). However, these differences were not statistically significant. Although they may not have been earning more immediately, teachers who left teaching may have done so with the expectation that they would earn more in the long run. After all, their 1993–94 teaching salary reflects their number of years of experience in teaching, which was sometimes substantial, while their 1994–95 salary is what they were paid in the first year in their new occupation. As a final caution with respect to comparing leavers' new income with their previous income as teachers, it should be noted that they may have had a change in employment status (from full- to part-time or vice versa). A retired teacher who took a part-time job, for example, could easily earn less than he or she did as a teacher, even if the new salary rate were higher.

Table 6.4
Average prose literacy scores and labor market outcomes of full-time employed bachelor's degree recipients,
by occupation: 1992

	Average prose literacy scores	Average annual earnings in 1991	Average weekly wage last week	Average weeks worked in 1991
Total	334	\$38,530 ¹	\$805 ¹	49 ¹
Occupation				
Scientists	354 ¹	39,320 ¹	805	49 ¹
Lawyers and judges	352	71,223 ¹	1,871	49 ¹
Accountants, auditors	344	38,463 ¹	832 ¹	50 ¹
Private-sector executives, managers	341	56,044 ¹	1,052 ¹	51 ¹
Postsecondary teachers	340	47,867	924	48
Engineers	339	48,408 ¹	952	50 ¹
Physicians	335	121,120 ¹	2,454 ¹	49
Teachers ²	333	25,983	568	45
Writers and artists	332	29,507	589	46
Social workers	332	26,739	551	50 ¹
Sales representatives	328	39,872 ¹	900	49 ¹
Education administrators	326	44,130 ¹	888 ¹	50 ¹
Registered nurses	326	33,981 ¹	741 ¹	49
Sales supervisors, proprietors	316	32,720	669	51 ¹

¹Statistically significant difference from teachers.

²Includes prekindergarten and kindergarten teachers, elementary and secondary school teachers, teachers in special education, and teachers not elsewhere categorized.

NOTE: Individuals scoring between 326 and 375 were able to integrate or synthesize information from complex or lengthy passages. For example, at proficiency level 328, test-takers were able to state in writing an argument made in a lengthy newspaper article.

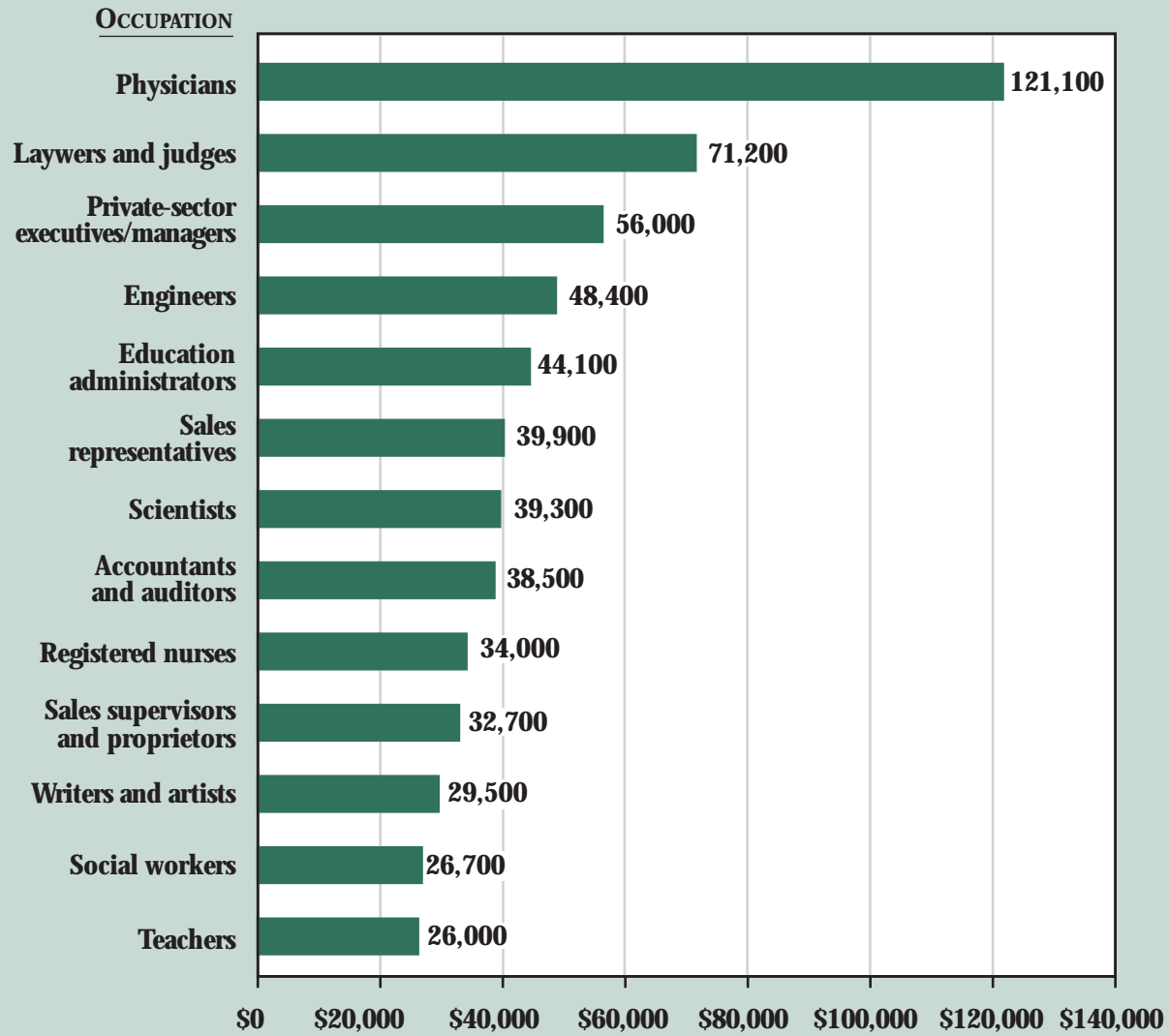
SOURCE: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992, published in *The Condition of Education 1995*, 160.

Table 6.5
Average total annual income of 1993–94 teachers who left teaching, by sector, year, and 1994–95 occupation:
1993–94 and 1994–95

	Public		Private	
	1993–94 (While teaching)	1994–95 (While not teaching)	1993–94 (While teaching)	1994–95 (While not teaching)
Total	\$33,379	\$30,408	\$22,699	\$22,004
1994–95 occupation				
Managers and professionals	29,252	25,209	20,377	19,630
Nonteaching elementary	35,721	38,572	24,895	26,220
Technical/services/clerical	32,476	14,534	23,267	21,218
Other	34,639	23,132	21,771	20,168

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire) and Teacher Follow-up Survey: 1994–95.

Figure 6.6
Average annual earnings of bachelor's degree recipients, by occupation: 1991



SOURCE: U.S. Department of Education, National Center for Education Statistics, National Adult Literacy Survey, 1992, published in *The Condition of Education 1995*, 160.

Comparison With Other Countries

Comparing salaries meaningfully across countries requires some adjustment for differences in standards of living. Table 6.6 summarizes OECD's efforts to compare teachers' salaries internationally by various measures. By one measure, teachers in the United States in 1992 were better off than teachers in other countries: average teacher salaries in the United States (beginning and maximum) appear higher than the average for 18 countries (mostly European). By another measure, however, teachers in the United States

appear relatively less well off. When teachers' salaries are compared to the per capita Gross Domestic Product (GDP), an index of the economic well being of the country's population, the United States is below the average.

The ratio of the salary at 15 years' experience to the beginning salary in the United States is right at the 18-country average, but the time it takes to get from the beginning to the maximum salary is less than average (16 years as opposed to 24 or 25 years). Table A6.13 shows country-by-country comparisons.

Table 6.6
Annual teacher salaries in public primary and lower secondary institutions in equivalent U.S. dollars converted using PPPs,¹ by country, 1994

	Primary teachers		Lower secondary teachers	
	United States	Country mean ²	United States	Country mean ²
Starting salary	\$22,753	\$18,702	\$22,265	\$19,685
Salary at 15 years' experience	30,716	24,745	29,577	26,460
Salary at top of scale	38,142	29,946	39,292	31,817
Ratio of starting salary to per capita GDP	0.9	1.1	0.9	1.1
Ratio of salary at 15 years' experience to per capita GDP	1.2	1.4	1.2	1.5
Ratio of salary at 15 years' experience to starting salary	1.3	1.3	1.3	1.3
Years from starting to top salary	16	25	16	25

¹Converted using "purchasing power parity (PPP) rates," which are conversion factors between foreign currencies and the U.S. dollar that reflect the domestic purchasing power of each national currency. By using PPP rates rather than market exchange rates, teachers' pay in other countries is not distorted by market fluctuations in currency exchange rates.

²Includes Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, Turkey and the United States.

SOURCE: Organisation for Economic Co-operation and Development, *Education at a Glance: OECD Indicators* (Paris: 1996), 149.

Conclusion

Teacher compensation is an important issue. It affects the attractiveness of the profession to the college-educated population and can be an important consideration for teachers weighing the costs and benefits of staying in the profession. In addition, differences in compensation among districts and schools have important equity implications, putting poorer districts at a disadvantage.

On average, public school teachers earn more and receive more benefits than their private school counterparts. Within the public sector regional variation exists that is partly, but not entirely, accounted for by differences in cost of living: scheduled salaries tend to be

higher in the Midwest than South despite similar costs of living. Districts with the highest percentages of low-income students tend to have the lowest scheduled salaries, which raises serious equity concerns.

About half of all full-time teachers earn more than their base salary (from their own or another school) by teaching summer school, holding a nonteaching summer job in a school, or performing additional work during the school year. In addition, about one in four teachers has earnings from a nonschool job. Those who leave teaching for an administrative job within elementary/secondary education tend to earn more than they did teaching, but those who leave for other occupations do not immediately earn more, on average, than they did teaching.

TEACHERS' PERCEPTIONS OF THEIR WORK ENVIRONMENTS AND JOB SATISFACTION

In addition to issues of teacher compensation, the teacher-oriented reform reports of the mid-1980s drew attention to the importance of teachers' work environments for enhancing their effectiveness and guaranteeing an adequate supply of well-qualified teachers (Carnegie Forum 1986; Holmes Group 1986). This theme persists in contemporary discussions of how best to reform the structure of the occupation (National Commission on Teaching and America's Future (NCTAF) 1996). Some aspects of teachers' work environments that reformers and researchers have examined are the degrees to which

- administrators support teachers in interactions with parents and students, provide instructional leadership and clear expectations for student and teacher performance, and recognize teachers' accomplishments (Mitchell, Ortiz, and Mitchell 1987; Rosenholtz 1991);
- teachers participate in school-wide decisions and have control over policies that affect instruction (Goodlad 1984; Rosenholtz 1991);¹
- the faculty of a school cooperate in instruction and in enforcement of disciplinary policy (Rosenholtz 1991); and
- teachers have access to the materials and equipment they need (Goodlad 1984; Johnson 1990).

These and other studies have found some empirical evidence that these aspects of teachers' work environments affect both their ability to work effectively with children and also the length of time they remain in the profession. Inadequate instructional leadership from the principal, for example, may limit the coordination of instruction among teachers and grade levels, making individual teachers' jobs all the more difficult (Mitchell, Ortiz, and Mitchell 1987). Similarly, when teachers inconsistently enforce school rules for student

behavior, student misbehavior may interfere with instruction.

In addition to their direct impact on teachers' effectiveness with their students, teachers' working environments affect the profession in other ways. Working conditions that limit their effectiveness with students may also affect their decisions about changing schools or professions. Teachers who are frustrated in their work are more likely to move to another school or leave the profession altogether, as data in this chapter and the next illustrate.

This chapter uses data from the 1993–94 Schools and Staffing Survey (SASS) and the 1994–95 Teacher Follow-up Survey (TFS) to examine several aspects of teachers' work environments and their satisfaction with them. The chapter begins by discussing teachers' perceptions of their administrators' leadership and support for teachers and their opinions about their colleagues: whether teachers in their school enforced rules consistently, shared beliefs, had a common mission, and cooperated with each other. The chapter next addresses teachers' job satisfaction from multiple viewpoints, and concludes by connecting teachers' perceptions of and satisfaction with various aspects of their work with their plans to remain in the profession.

Administrative Leadership and Support

In the 1993–94 SASS, teachers indicated how much they agreed with statements about various aspects of their principals' performance, generally giving their principals high marks. For example, 86 percent of

¹See chapter 4 for a discussion of teachers' perceptions of control in the classroom and influence over school-wide decision making.

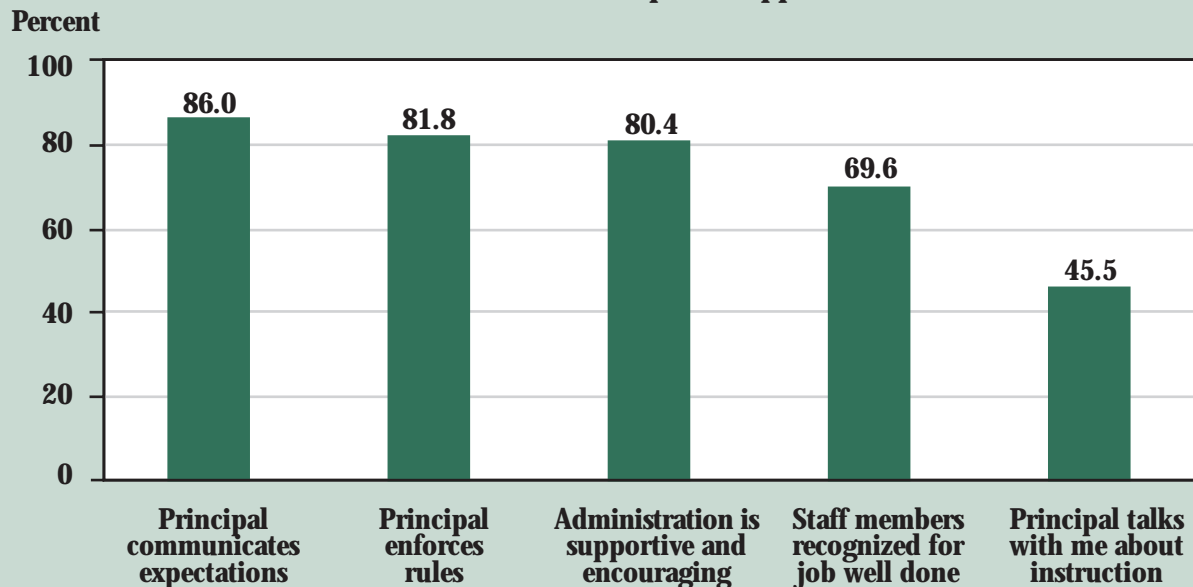
teachers thought their principal communicated expectations for the school well, 82 percent that the principal enforced rules, and 80 percent that their administrator was supportive and encouraging (figure 7.1). Although still a majority, somewhat fewer (70 percent) felt that teachers in their schools were recognized for a job well done. Finally, less than one-half of teachers reported that their principal talked with them frequently about their instructional practices.

Teachers' perceptions of principal support and leadership varied with a number of school characteristics. Public school teachers were consistently less likely than their peers in private schools to agree with these statements about the leadership in their schools (tables 7.1

and A7.1). In both sectors, elementary-level teachers were more likely than secondary school teachers to believe that their principals were doing a good job in these areas, but in large high schools, department heads may assume some of these responsibilities. Finally, as the proportion of low-income students in their schools increased, public school teachers became more likely to report that their principals frequently talked with them about their instruction.

Recommendations for reform include serious discussions about the support that teachers receive in the early stages of their careers (Darling-Hammond 1995; NCTAF 1996). Therefore, the degree to which principals talked with new teachers about their instruction is

Figure 7.1
Percentage of teachers who agreed with various statements about their school administrations' leadership and support: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Table 7.1
Percentage of teachers who agreed with various statements about their school administrations' leadership and support, by selected school and teacher characteristics: 1993–94

	Communicates expectations to staff	Administration supportive and encouraging	Enforces rules	Talks with me about instructional practices	Staff recognized for job well done
Total	86.0	80.4	81.8	45.5	69.6
Public	85.6	79.3	80.8	44.3	67.9
Teacher level					
Elementary	87.1	81.0	83.0	50.7	72.4
Secondary	84.0	77.5	78.4	37.4	63.1
Free/reduced-price lunch recipients					
5 percent or less	85.4	78.6	80.1	40.6	67.7
6–20 percent	84.6	78.9	80.6	41.8	67.0
21–40 percent	86.0	80.4	82.6	44.7	68.0
More than 40 percent	86.2	78.8	80.2	48.0	68.8
Private	88.3	88.1	88.3	53.8	80.9
Teacher level					
Elementary	89.0	89.3	89.5	57.9	83.6
Secondary	87.3	86.5	86.6	48.2	77.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (School and Teacher Questionnaires).

of particular interest. Teachers in the first three years of their careers were generally more likely than their more experienced colleagues to report receiving support from their principal on instructional matters (figure 7.2).

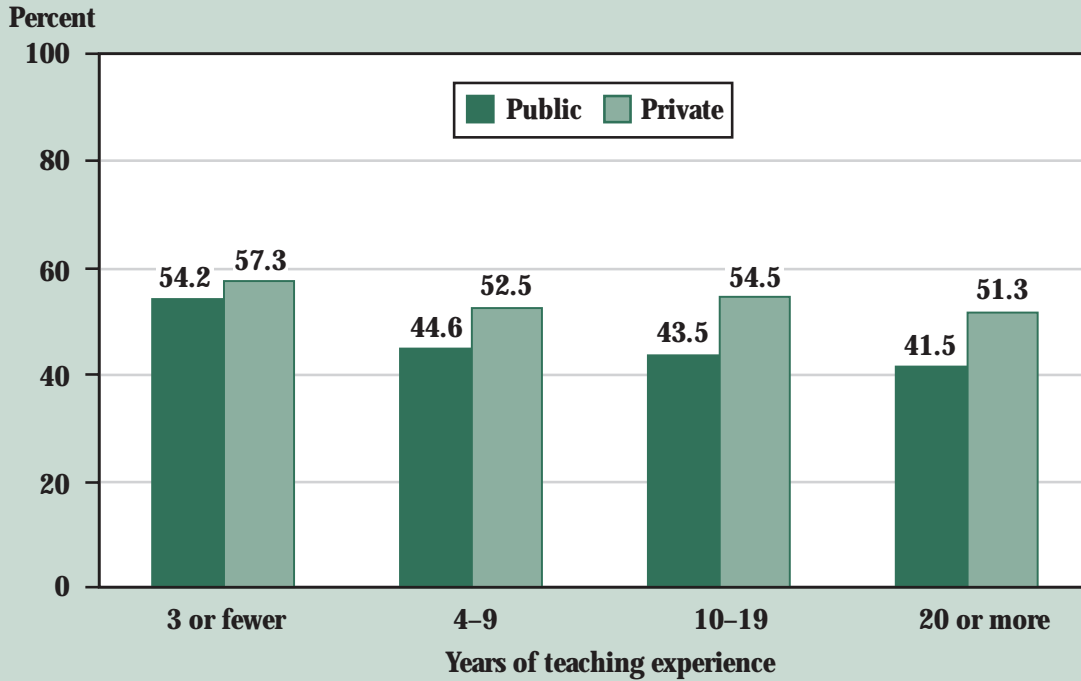
Cooperation Among Colleagues

Some research indicates that school culture has a profound effect on teachers' commitment to their school and career (Darling-Hammond and Sclan 1996; Mitchell, Ortiz, and Mitchell 1987; Rosenholtz 1991). One component of a school culture that is conducive to teacher commitment is a common set of values and goals among teachers and other staff (Rosenholtz 1991). In 1993–94, a large majority of teachers agreed that their colleagues shared their beliefs and had a similar mission for the school (85 percent) and that staff

worked cooperatively (79 percent) (figure 7.3 and tables 7.2 and A7.2). For both of these factors, agreement was stronger among teachers in private schools than in public schools and among elementary than secondary teachers (table 7.2)

About two-thirds of teachers, somewhat fewer than those recognizing a shared mission, thought that student conduct rules were consistently enforced by teachers in their schools (figure 7.3). In particular, as the proportion of low-income students in their schools increased, public school teachers were more likely to report that teachers in their schools enforced the rules (table 7.2). However, confidence in staff solidarity on enforcing rules was weaker among public secondary teachers, where fewer than one-half agreed that rules were consistently enforced, than among public elementary teachers and private school teachers at either level.

Figure 7.2
Percentage of teachers who reported that their principals talked with them frequently about instructional matters, by sector and years of teaching experience: 1993-94



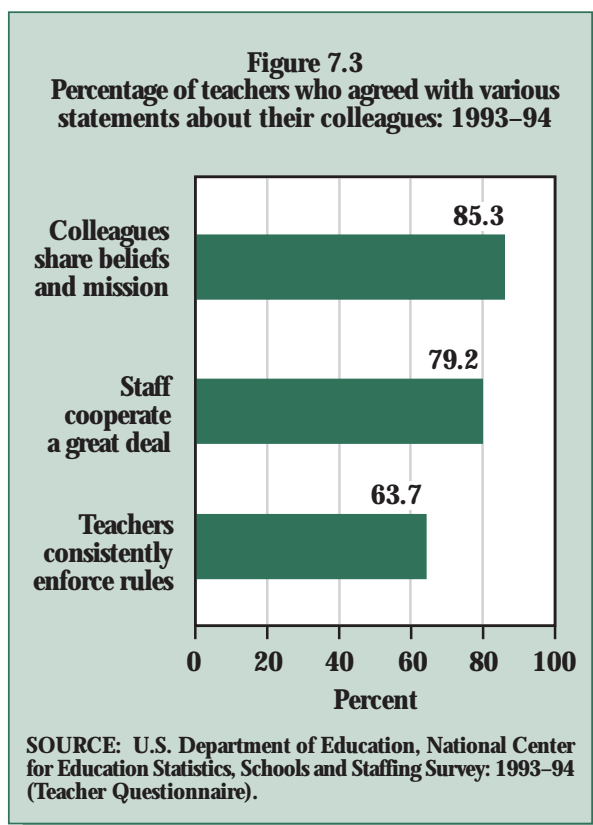
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

Table 7.2
Percentage of teachers who agreed with various statements about their colleagues, by selected school and teacher characteristics: 1993-94

	Public			Private		
	School rules enforced by all teachers	Colleagues share beliefs and mission	Great deal of cooperative effort among staff	School rules enforced by all teachers	Colleagues share beliefs and mission	Great deal of cooperative effort among staff
Total	61.7	84.2	77.5	77.4	93.3	90.5
Teacher level						
Elementary	74.2	88.1	81.3	83.7	95.5	91.6
Secondary	48.4	80.0	73.5	68.9	90.2	88.9
Free/reduced-price lunch recipients						
5 percent or less	57.6	83.2	78.3	—	—	—
6-20 percent	58.9	83.1	77.2	—	—	—
21-40 percent	63.0	85.3	78.9	—	—	—
More than 40 percent	65.0	84.8	76.7	—	—	—

—Not computed for private schools.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).



Availability of Resources

About three-quarters of all teachers—73 percent in public schools and 86 percent in private schools—agreed that necessary materials (such as textbooks, supplies, and a copy machine) were available to the staff as needed (tables 7.3 and A7.2). However, the proportion of teachers who agreed with this statement varied among different types of schools. In the public sector, for example, teachers in larger schools and districts were less likely than those in smaller schools or districts to report that necessary materials were available. Similarly, teachers in schools with larger proportions of low-income students were less likely than their counterparts in schools with relatively fewer low-income students to report that necessary materials were available as needed.²

In the public sector, the type of community in which teachers taught was also related to the relative frequency with which they reported they had access to necessary materials. Whereas about two-thirds of central city teachers reported that necessary materials were avail-

able, about three-quarters of their peers in other types of communities did so. Among private school teachers, no such differences were observed.

Relatively few teachers in either sector—16 percent among public school teachers and 10 percent among private—reported that their principals were poor at getting resources for their schools (tables 7.3 and A7.1). Moreover, teachers in different types of public schools did not vary much with respect to their perceptions of principals' resource acquisition.

Satisfaction With Salary

Teachers earn less than other professionals with comparable levels of education (see chapter 6; Salmon 1988), and the divergence in salaries grows with professional work experience. As a result, people do not choose to teach with the goal of earning a high income; rather, they are attracted to the profession because they like working with children, they want to help improve the lives of young people or contribute to the community, or they want to work in a given subject area (Andrew 1983; Book, Freeman, and Brousseau 1985; Lortie 1975). Nevertheless, when teachers' pay diminishes sharply relative to that of other professionals, as occurred during the 1970s, teachers are likely to be dissatisfied with their pay and perhaps to consider changing occupations. Lower salaries may also reduce the supply of new entrants into the profession.

Measuring teachers' satisfaction with their salaries, however, is no simple task. Teachers, as well as other employees, may assess the adequacy of their salaries in different ways. Some may compare their salary with what they think they could earn in other professions (or what they know other teachers earn); some may look at the increase since they started teaching; and others may consider their salary in relation to their job's rewards, workload, responsibilities, and stress.

²Participation in the National School Lunch program is less widespread among private schools, making the proportion of students who receive free or reduced-price lunch a less reliable indicator of poverty in the private sector. Therefore, this variable was not computed for private schools.

Table 7.3
Percentage of teachers who agreed with various statements about resource availability in their schools, by sector and selected school characteristics: 1993-1994

	Public		Private	
	Necessary materials are available	Principal is poor at getting resources	Necessary materials are available	Principal is poor at getting resources
Total	73.1	16.1	85.7	10.4
School size				
Less than 150	78.0	17.3	84.9	12.7
150-499	74.4	16.1	83.5	10.3
500-749	74.4	14.3	90.6	10.3
750 or more	71.3	17.7	90.8	5.6
Free/reduced-price lunch recipients				
5 percent or less	80.4	15.0	—	—
6-20 percent	76.0	15.5	—	—
21-40 percent	74.5	16.2	—	—
More than 40 percent	68.0	17.0	—	—
Community type				
Central city	66.1	17.3	85.2	10.7
Urban fringe/large town	74.7	14.8	85.7	10.7
Rural/small town	76.6	16.3	87.0	9.1
District size				
Less than 1,000	79.6	17.8	—	—
1,000-4,999	75.9	16.1	—	—
5,000-9,999	73.5	15.0	—	—
10,000 or more	69.5	16.4	—	—

—Not computed for private schools.

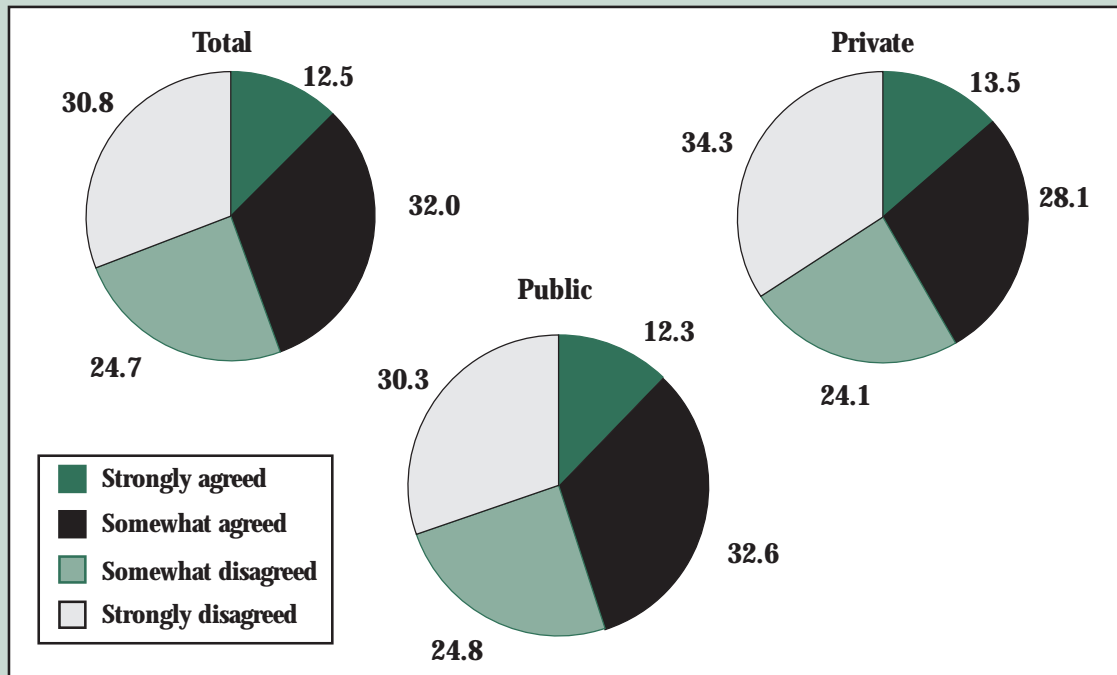
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Different question wording may also produce disparate responses from teachers on their satisfaction with their salaries. For example, one 1996 national survey of teachers indicated that only 17 percent thought they were paid enough, with 78 percent saying they were not paid enough, given "the amount and quality of work [they] do" (Feistritz 1996). SASS respondents, on the other hand, were asked to indicate the degree to which they agreed with the following statement: "I am satisfied with my teaching salary." About 45 percent of teachers in the 1993-94 SASS reported that they agreed or strongly agreed with this statement (figure

7.4, tables 7.4 and A7.3), a figure considerably higher than the 17 percent who thought they were paid "enough" only two or three years later.

In fact, there was considerable variation in 1993-94 teachers' satisfaction with their salaries. Although their salaries did not differ, public school teachers of different racial-ethnic backgrounds varied in the degree to which they were satisfied with their salaries: one-half of black, non-Hispanic teachers in public schools strongly disagreed with the statement "I am satisfied with my teaching salary," and an additional one in four dis-

Figure 7.4
Percentage distribution of teachers according to their level of agreement with the statement
I am satisfied with my teaching salary, by sector: 1993–94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

agreed somewhat. This lack of satisfaction among black, non-Hispanic teachers occurred even though on average neither their base salaries nor their total school salaries differed from those of other racial-ethnic groups. Differences in satisfaction among racial-ethnic groups may be related to differences in the schools or communities in which teachers with different racial-ethnic backgrounds taught. Nevertheless, racial-ethnic differences in teachers' satisfaction with their salaries may contribute to the discrepancy between the proportion of minority students and teachers if they affect the rate at which minority teachers enter or leave the profession.

Teachers in public central city schools and in schools in the largest districts were less likely than teachers in

other types of communities or smaller districts, respectively, to be satisfied with their salaries. This may be related, at least in part, to cost of living differences or perceived differences in the difficulty of the job in different types of schools.

Finally, teachers' satisfaction with their salaries has improved since the late 1980s. In 1987–88, 8 percent of public school teachers strongly agreed that they were satisfied with their salaries, and by 1993–94 that figure had increased to 12 percent (figure 7.5). A small increase in the percentage of private school teachers who strongly agreed that they were satisfied with their salaries also occurred over these six years, from 12 to 14 percent (table 7.4).

Table 7.4
Percentage distribution of teachers according to their level of agreement with the statement *I am satisfied with my teaching salary*, teachers' average base salary, and teachers' average total school income, by selected school and teacher characteristics: 1993-94

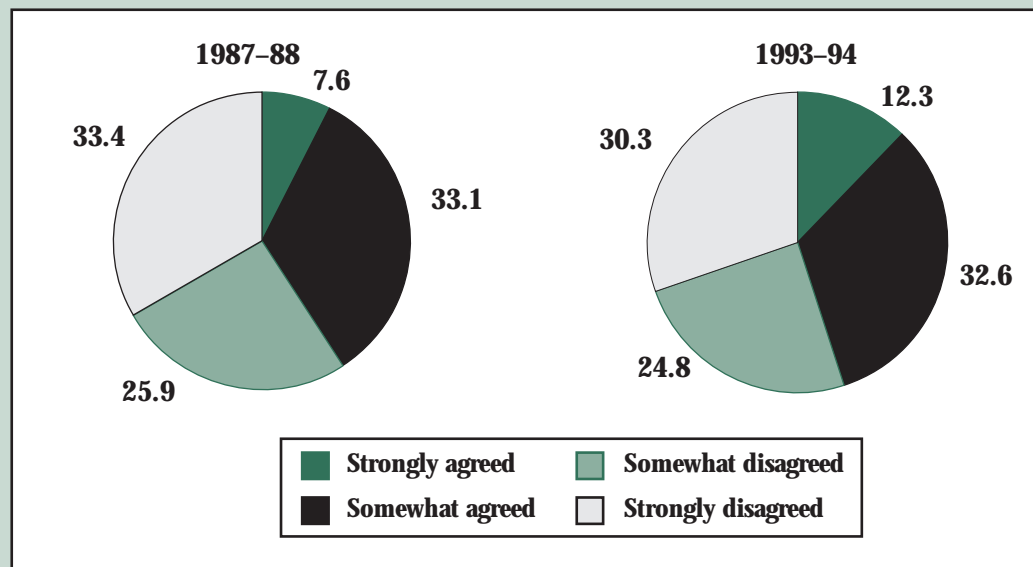
	Percentage distribution of teachers				Average base salary	Average total school income*
	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree		
Total	12.5	32.0	24.7	30.8	\$32,031	\$32,292
Public	12.3	32.6	24.8	30.3	33,666	33,925
Race-ethnicity						
Black, non-Hispanic	5.2	21.9	22.5	50.3	33,652	34,053
White, non-Hispanic	13.1	33.7	25.0	28.2	33,696	33,931
Other	9.3	29.3	24.3	37.1	33,243	33,690
Community type						
Central city	8.6	28.0	25.6	37.8	34,112	34,476
Urban fringe/large town	16.3	35.0	23.1	25.6	37,732	37,993
Rural/small town	11.9	33.8	25.4	28.8	30,262	30,450
District size						
Less than 1,000	13.3	36.1	25.9	24.7	28,050	28,240
1,000-4,999	15.1	37.5	23.7	23.7	33,847	34,047
5,000-9,999	15.5	33.0	23.3	28.2	34,936	35,154
10,000 or more	8.2	27.8	26.0	38.0	33,889	34,215
Private	13.5	28.1	24.1	34.3	20,753	21,018
Race-ethnicity						
Black, non-Hispanic	19.4	19.1	13.2	48.3	19,500	20,058
White, non-Hispanic	13.2	28.6	24.2	34.0	20,817	21,065
Other	14.8	25.5	27.5	32.2	20,317	20,709
Community type						
Central city	13.3	27.2	23.6	35.9	21,507	21,806
Urban fringe/large town	13.0	27.5	24.6	34.9	21,616	21,884
Rural/small town	14.8	31.2	24.0	30.0	17,434	17,613

*Includes academic year base salary, additional school income from extracurricular activities, summer teaching salary, and earnings from a nonteaching summer job in a school.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School, Teacher, and Teacher Demand and Shortage Questionnaires).

Figure 7.5
Percentage distribution of public school teachers according to their level of agreement with the statement *I am satisfied with my teaching salary*: 1987–88 and 1993–94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987–88 and 1993–94 (Teacher Questionnaire).

Satisfaction With Other Aspects of Work

Recognizing that teachers are not drawn to their profession with extensive financial rewards in mind, their work must satisfy them in other ways that are important to them. One aspect of work that has received much attention among educators and reformers is professional status (Carnegie Forum 1986; Holmes Group 1986; NCTAF 1996). These commissions noted that if all students are to meet the high standards required by a competitive global economy, then teachers must undergo additional training and take on additional roles and responsibilities. These reformers also argue that if the public expects teachers to meet these new demands, then they must also expect to reward teachers with greater respect, higher pay, and greater professional recognition and advancement opportunities.

Furthermore, in addition to professional status, a number of other aspects of their work have historically been

particularly important to teachers. Previous studies have found that the people who enter teaching find job security, the opportunity to work in an academic field in which they are interested, and autonomy on the job to be important features of work, and because teaching as an occupation tends to have these characteristics these people are attracted to it (Lortie 1975). On the other hand, teaching is also noted for unmanageable work loads, requiring teachers to juggle preparation for class, evaluation of student work, supervision of students outside school hours both on- and off-site, parent conferences, curriculum development, and participation in school committees in addition to classroom teaching (Johnson 1990; Lortie 1975).

The TFS data allow comparisons between the satisfaction of teachers who remained in the classroom and that of their peers who left teaching and were employed elsewhere in 1994–95, as well as examination of teachers' satisfaction with their work over time. The reader is cautioned to keep in mind that the TFS data cannot be

generalized to all 1994-95 teachers. Because the teachers in the TFS sample represent teachers who were teaching in 1993-94 and continued to teach in 1994-95, it excludes those who were teaching in 1994-95 but had not been teaching in 1993-94, such as first-year teachers in 1994-95. However, only 5 percent of teachers were first-year teachers in 1993-94, and it is quite likely that a similarly small proportion were first-year teachers in 1994-95 (table A8.1). Therefore, the TFS sample represents a large majority of 1994-95 teachers and offers useful information regarding teachers' perspectives on various aspects of their work.

Teachers expressed fairly high rates of overall satisfaction with their jobs in 1994-95: 78 percent reported that they were satisfied with their working conditions in general, and 82 percent reported that they were satisfied overall. About 88 percent of teachers were satisfied with their job security, the intellectual challenge their jobs provided, and their autonomy over their work (tables 7.5a and 7.5b). Although a majority of teachers were satisfied with all aspects of work included in the table, lower proportions were satisfied with a

number of frequently cited obstacles to teacher satisfaction, including the manageability of their work (63 percent), the resources available to do their work (60 percent), the professional prestige of teaching (58 percent), and their salaries (58 percent).³

Comparisons With Other Professions

Those 1993-94 teachers who left teaching for other occupations were more likely than those who stayed to report that they were satisfied with most aspects of work. For example, 81 percent to 83 percent of former teachers who had become managers or professionals, salespeople or clerks, or entered some other occupation outside elementary/secondary education were satisfied

³Although this estimate of the proportion of teachers who were satisfied with their salaries appears to be significantly greater than that derived from the 1993-94 SASS data, these estimates cannot be directly compared because of differences between the items in the two surveys. As noted above, responses can be quite sensitive to item wording.

Table 7.5a
Percentage of 1993-94 teachers who were very or somewhat satisfied with various aspects of 1994-95 job, by teaching status and occupation: 1994-95

	Overall satisfaction	Professional prestige	Evaluation	Manageability of work	Resources available	General working conditions	Job security	Intellectual challenge
Total	82.0	58.7	74.3	63.2	60.6	78.6	88.6	87.1
1994-95 teaching status								
Stayers and movers	81.7	57.7	73.8	62.5	59.8	78.1	88.7	87.2
Leavers	93.1	86.9	88.4	86.2	84.9	94.0	85.4	84.3
1994-95 occupation (leavers only)								
Employed in education	96.3	93.2	92.2	79.3	80.4	89.8	84.8	95.2
Not employed in education	90.4	81.8	85.3	91.8	88.7	97.4	85.9	75.3
Managers and professionals	89.0	81.4	84.0	89.1	87.4	99.0	83.1	82.9
Technicians, service personnel	98.1	81.1	97.8	86.2	68.6	86.1	94.2	73.9
Sales, clerical occupations	86.1	82.5	83.4	96.3	95.9	99.7	86.4	56.5
Other	95.8	82.3	84.5	96.9	93.9	96.1	89.0	79.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, Teacher Follow-up Survey: 1994-95.

Table 7.5b
Percentage of 1993–94 teachers who were very or somewhat satisfied with various aspects of 1994–95 job, by teaching status and occupation: 1994–95

	Salary	Benefits	Opportunity for advancement	Support from administrators, managers	Safety of environment	Influence over policy	Autonomy over work	Caliber of colleagues
Total	58.1	64.8	68.6	64.3	76.1	56.7	89.1	85.4
1994–95 teaching status								
Stayers and movers	57.7	64.7	68.1	63.5	75.5	55.7	89.2	85.3
Leavers	69.0	67.5	85.0	88.2	94.0	87.7	88.2	86.9
1994–95 occupation (leavers only)								
Employed in education	66.9	75.4	88.5	90.7	90.3	89.8	91.7	90.3
Not employed in education	70.8	61.0	82.2	86.2	97.0	85.9	85.3	84.1
Managers and professionals	72.6	63.4	83.8	85.6	98.1	85.1	88.8	81.1
Technicians, service personnel	89.7	69.3	82.6	67.9	99.5	81.6	85.4	83.5
Sales, clerical occupations	51.2	55.0	83.9	92.2	96.9	89.2	72.3	86.4
Other	82.0	57.1	74.6	90.1	92.6	86.4	92.8	90.0

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Teacher Follow-up Survey: 1994–95.

with the professional prestige of their jobs, compared with 58 percent of teachers (table 7.5a and A7.4a). Among former teachers who continued to work in elementary or secondary education in some nonteaching capacity, 93 percent reported that they were satisfied with the professional prestige of their new jobs. Similar differences were observed in 1993–94 teachers' satisfaction with other aspects of their 1994–95 jobs.

Comparisons Over Time

It is interesting to note that with respect to two important job characteristics, teachers in 1994–95 were satisfied more often than teachers in 1988–89 had been. In 1988–89, 80 percent of public school teachers and 87 percent of private school teachers reported that they were satisfied with the intellectual challenges posed by their work (table 7.6). By 1994–95, these proportions had risen to 87 percent in the public sector and 91 percent in the private sector. Perhaps more striking, given the attention to career ladders and differentiation of

work and status among teachers during the 1980s, is the rising proportion of teachers who were satisfied with the opportunity for advancement in their work. In 1988–89, 57 percent of public school teachers and 61 percent of private school teachers reported that they were satisfied with the opportunity to advance in their

Table 7.6
Percentage of teachers who were very or somewhat satisfied with selected aspects of their jobs, by sector: 1988–89 and 1994–95

	Intellectual challenge		Opportunity for advancement	
	1988–89	1994–95	1988–89	1994–95
Total	81.0	87.2	57.0	68.1
Public	80.2	86.6	56.8	68.0
Private	87.2	91.1	61.2	68.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, Teacher Follow-up Surveys: 1988–89 and 1994–95.

work, and in 1994-95, 68 percent of both public and private school teachers were satisfied in this area.

Would They Choose Teaching Again?

In addition to their answers to direct questions about their satisfaction with various aspects of their work, the SASS Teacher Questionnaire asked teachers whether they would become teachers again if they were starting over. As with the direct measures of teachers' satisfaction discussed above, this measure also indicates that a majority of 1993-94 teachers were satisfied with their occupational choice. Forty percent of teachers reported that they certainly would become teachers again were they to start over, and another 26 percent said they probably would become teachers again. Only 5 percent

of teachers reported that they certainly would not become teachers again (tables 7.7 and A7.5).

As with previous measures of teacher satisfaction, private school and elementary level teachers appear to have been more satisfied than their public school and secondary school colleagues. Also, in both sectors, elementary level teachers were somewhat more likely than secondary level teachers to say they certainly would become a teacher again.⁴ In addition, public school teachers in schools with larger proportions of low-income children were more likely than their colleagues in more affluent schools to report that they probably or certainly would not become teachers again.

⁴Table A7.6 presents data connecting teachers' perceptions of their working conditions to their willingness to become a teacher again.

Table 7.7
Percentage distribution of teachers according to their willingness to become a teacher again, by selected school and teacher characteristics: 1993-94

	Certainly would	Probably would	Chances about even	Probably would not	Certainly would not
Total	39.7	26.1	16.2	12.9	5.1
Public	38.0	26.0	16.7	13.8	5.5
Teacher level					
Elementary	41.4	26.4	15.2	12.4	4.6
Secondary	34.2	25.6	18.4	15.3	6.5
Free/reduced-price lunch recipients					
5 percent or less	40.8	26.6	16.7	11.3	4.6
6-20 percent	37.2	26.8	17.1	13.9	5.0
21-40 percent	37.6	26.4	16.3	14.4	5.3
More than 40 percent	38.0	25.0	16.6	14.2	6.2
Private	52.0	26.3	12.8	6.8	2.1
Teacher level					
Elementary	53.8	25.9	12.6	6.0	1.8
Secondary	49.5	27.0	13.0	8.0	2.5

NOTE: Percentage distributions may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School and Teacher Questionnaires).

Furthermore, as other measures of teacher satisfaction discussed in this chapter have indicated, teachers were more satisfied with their work in 1993–94 than in 1987–88. Whereas about one-third of 1987–88 teachers reported that they would certainly be willing to become teachers again, 40 percent of 1993–94 teachers reported so (figure 7.6). Similar differences were observed among both public and private school teachers.

Plans to Remain in Teaching

This final section of the chapter examines the relationships between teachers' perceptions of their work environments and their plans to remain in teaching.⁵ Compared with those whose working conditions were less conducive to teachers' effectiveness, teachers who reported that their working conditions were more posi-

tive were also more likely to report that they planned to remain in teaching as long as they were able. For example, 40 percent of public school teachers who received a great deal of administrative support planned to stay in teaching as long as they were able, compared with 29 percent of public school teachers who did not receive a great deal of support (tables 7.8 and A7.7).

⁵Teachers' plans to remain in teaching are further examined in chapter 8.

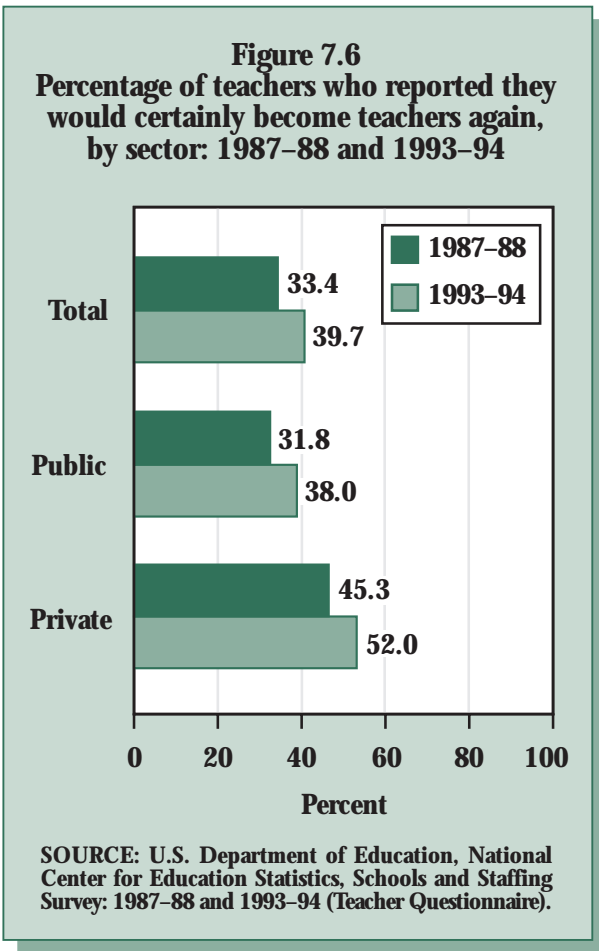


Table 7.8
Percentage of teachers who planned to remain in teaching as long as they were able, by sector and selected perceptions of their work environments: 1993–94

	Public	Private
Total	32.5	49.0
Administrative support		
High	40.1	56.1
Not high	29.4	42.3
Faculty cooperation in school		
High	43.4	55.8
Not high	30.0	41.2
Resource provision in school		
High	45.2	58.0
Not high	31.4	45.9
Rule enforcement in school		
High	37.6	54.9
Not high	30.4	42.3
Students unprepared to learn		
Not serious problem in school	34.1	49.4
Serious problem in school	28.5	39.8
Lack of parent involvement		
Not serious problem in school	33.6	49.5
Serious problem in school	29.7	37.9
Student apathy		
Not serious problem in school	34.7	49.4
Serious problem in school	25.4	39.6
Student disrespect for teachers		
Not serious problem in school	34.2	49.3
Serious problem in school	25.3	41.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

Conclusion

The SASS and TFS data indicate that teachers' perceptions of their working conditions and their satisfaction with a number of aspects of their work have improved since the late 1980s. Both public and private school teachers were slightly more likely in 1993-94 than in 1987-88 to report that they were satisfied with their salaries. In addition, 1993-94 teachers who were still teaching in 1994-95 were more likely than their counterparts six years earlier to report that they were satisfied with the intellectual challenge of their work and the opportunity for advancement it afforded.

The data presented in this chapter also contribute to the empirical evidence linking teachers' working conditions and their longevity in the profession. Teachers' perceptions of their working conditions were, in fact, related to their plans to remain in teaching. As part of its discussion of teacher supply and demand, the next chapter pursues this issue by exploring the relationship between teachers' plans to remain in teaching and their longevity in the profession.

TEACHER SUPPLY AND DEMAND

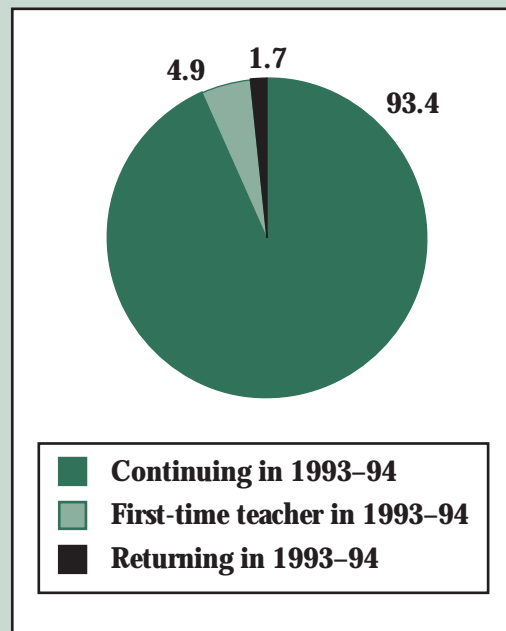
Large enrollment increases and predicted teacher retirements have led local, state, and national policymakers to urge increased recruitment of elementary and secondary school teachers (Archer 1996; Hendrie 1996; NCTAF 1996; Riley 1996; White 1996). Individual states and localities are experiencing some teacher scarcity, and national NCES projections indicate that by 2006, schools in the United States will enroll 54.6 million children, a 10 percent increase from 1994 (Hussar and Gerald 1996). To handle this increase, NCES estimates that the elementary and secondary teacher work force will need to grow by between 325,000 and 600,000 teachers, depending upon demographic shifts and economic conditions.

If indeed baby-boomer teachers retire in large numbers and enrollments increase as expected over the next decade, determining whether the supply of teachers will meet the anticipated demand may become an important concern. This chapter uses data from the 1993–94 Schools and Staffing Survey (SASS:93–94), the 1994–95 Teacher Follow-up Survey (TFS:94–95), and the First Followup of the 1993 Baccalaureate and Beyond (B&B:93/94) Study to address a number of issues related to the supply of and demand for elementary and secondary school teachers, including the incidence of teaching and preparation to teach among new college graduates, whether teacher shortages were already occurring in the early 1990s, how schools filled teaching vacancies when they occurred, and teacher attrition.¹

The Supply of Teachers

The vast majority of the nation's teachers are experienced teachers who continue to teach from year to year. In 1993–94, 93 percent of teachers had taught during the previous year and were continuing to teach, either in the same school or in a different school (figure 8.1 and table A8.1). About 5 percent of teachers were new to the profession.

Figure 8.1
Percentage distribution of teachers according to whether they were continuing, first-time, or returning teachers, by sector: 1993–94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire).

In discussions of how to cope with anticipated teacher shortages, researchers and policymakers have suggested that teachers who have left the profession—one component of what is sometimes termed “the reserve pool”—may be a potential source of new hires. In 1993–94, about 2 percent of all teachers had returned to the profession after leaving for at least a year.

¹For additional discussion of SASS:93–94 data concerning the supply and demand of teachers, see Henke, Choy, Geis, and Broughman (1996).

Traditionally, women have favored teaching as an occupation precisely because it allowed easy exit and reentry, facilitating long absences from the labor force to care for young children (Lortie 1975), and about one-fifth of 1993-94 returning teachers had most recently spent time homemaking or child rearing (figure 8.2 and table A8.1). However, returning teachers had done a number of other things as well: another one-fifth had been working in jobs outside elementary/secondary education before returning; 16 percent had been students themselves; and another 39 percent had been substitute teaching, teaching at the preschool or post-secondary level, working in some other position in elementary/secondary education, in the military, or

unemployed and seeking work. Almost no teachers came back to the classroom from retirement.

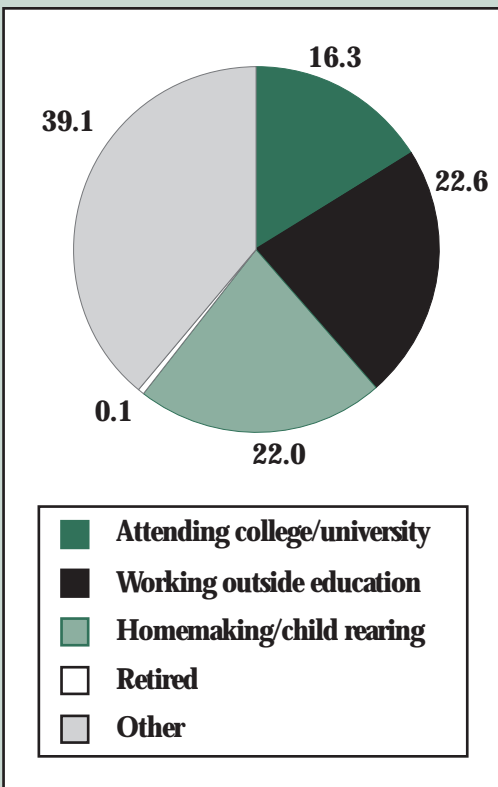
Teaching and Preparation to Teach Among New College Graduates

In the last decade a number of states have developed alternative certification programs to allow college graduates who did not prepare to teach as undergraduates to obtain full certification to teach without returning to college for extensive course taking (Feistritz 1993). These programs certify relatively few teachers in the U.S., however, and as has traditionally been the case, new college graduates continue to be one of the major sources of new entrants into the profession.

Some of these new entrants prepared to teach during their college years, either as education majors or as liberal arts majors who also completed the education coursework and practicum experience required for state licensure. Others teach soon after completing their bachelor's degrees without undergoing formal teacher preparation. These new teachers often work in private schools, teaching in order to earn a living while pursuing graduate studies part time, or to find out whether they want to make the investment in teacher training, or pursue other graduate studies or career options.

In B&B:93/94, 1992-93 college graduates were asked a number of questions regarding their preparation for teaching and experience as teachers in the year following their graduation from college.² In addition, the B&B:93/94 data collection included graduates' transcripts from the institution through which they were sampled for the 1993 National Postsecondary Student Aid Study (NPSAS:93). For the purposes of this analysis, graduates were defined as having prepared to teach if their NPSAS transcripts indicated they had completed student teaching or if in the B&B:93/94 interview they reported that they became certified to teach in the year following graduation.

Figure 8.2
Percentage distribution of returning teachers according to main activity in 1992-93: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire).

²For further details regarding teaching and new college graduates, see Henke, Geis, Giambattista, and Knepper (1996).

Among 1,146,000 bachelor's degree recipients, 8 percent had prepared to teach and actually became teachers by 1994, 3 percent taught without having prepared to teach, and another 4 percent had prepared to teach as undergraduates but did not teach in the year following graduation (table 8.1 and A8.2).³ Not surprisingly, graduates who had majored in education were more likely than graduates with other college majors to prepare to teach and then teach in the year following graduation.

Another component of the reserve pool includes college graduates who prepare to teach and do not enter teaching but could at a later date. By 1994, many 1992–93 graduates who had completed student teaching or had been certified to teach had not yet entered the profession. Among graduates who majored in education, 22 percent prepared to, but did not, teach in the year following graduation. Moreover, 51 percent of bachelor's degree recipients who had prepared to teach did not apply for teaching jobs (table A8.3a).

Graduates who had prepared to teach or were considering teaching but had not applied were asked why they did not apply and their responses were coded by telephone interviewers. Most of the reasons they gave fell into two broad categories. Among the most commonly chosen reasons were those indicating that graduates were not fully prepared or needed to complete some additional steps before teaching, perhaps reflecting the fact that in some states teacher certification requires some graduate study. For example, 33 percent said they had not taken or passed necessary tests, 24 percent

³Because students may have earned credits at other institutions, some of a graduate's credits may not appear on the NPSAS transcript. Therefore, it is possible that some graduates had completed student teaching, and therefore were prepared to teach, although their transcripts did not so indicate. To the extent this occurred, the estimates of graduates who did not prepare would be biased upward and the estimates of those who did prepare would be biased downward.

Table 8.1
Number of 1992–93 bachelor's degree recipients and percentage distribution according to teaching status and preparation, by undergraduate major: 1994

	Number of 1992–93 bachelor's degree recipients	Teaching status and preparation			
		Taught and prepared	Taught, did not prepare	Did not teach, prepared	Did not teach, did not prepare
Total	1,146,000	8.0	3.4	4.4	84.1
Major field of study					
Business and management	279,000	0.4	1.8	0.7	97.1
Education	147,000	46.4	4.2	21.6	27.9
Mathematics, computer science, natural sciences	217,000	4.2	2.7	2.0	91.1
Social sciences	172,000	2.0	4.2	2.6	91.3
Humanities	116,000	6.0	7.8	3.9	82.3
Other	202,000	1.0	2.8	2.0	94.2

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup, Data Analysis System.

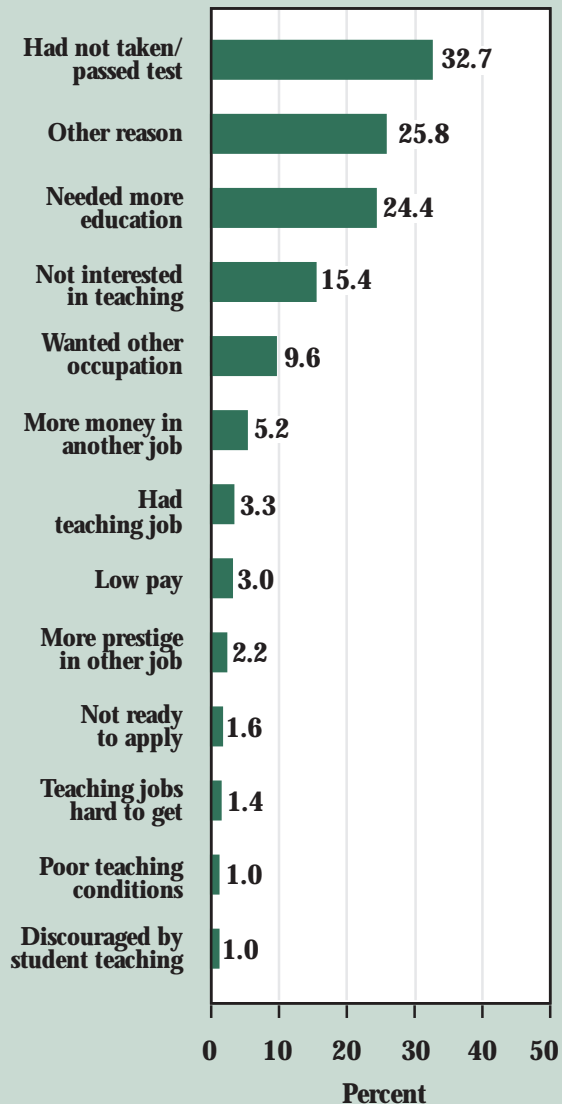
wanted to obtain more education, and 2 percent felt they were not yet ready to apply for a teaching job (figure 8.3 and tables A8.3a-b).

Several other reasons that were expressed less frequently indicated that some graduates were ambivalent about teaching, either on its own or in comparison with other options, or were in fact not inclined to teach. For example, 15 percent reported that they had no interest in teaching, 10 percent wanted to pursue other occupations, and 5 percent were offered jobs with larger salaries. Only 3 percent of these graduates were discouraged from teaching by low pay and only 1 percent cited poor teaching conditions as the reason for not applying for a teaching position.

About one-half of bachelor's degree recipients who had taught or were considering teaching did apply for a teaching position after graduation, however, and this proportion varied considerably by college major (figure 8.4 and table A8.4). Among college graduates who had taught or were considering teaching, those who majored in education were considerably more likely than those who had majored in other fields to apply for a teaching position. Nearly three-quarters of graduates who applied for teaching positions received offers, and nine out of ten of those who received offers accepted them (table A8.4).⁴

The B&B:93/94 data indicate that, in total, about 11 percent of those who received bachelor's degrees in 1992-93 had taught in elementary or secondary schools by 1994, of whom the majority (8 percent out of 11 percent) had prepared to teach during their recent undergraduate work. Thus, this one year's college graduating class added about 130,000 teachers to

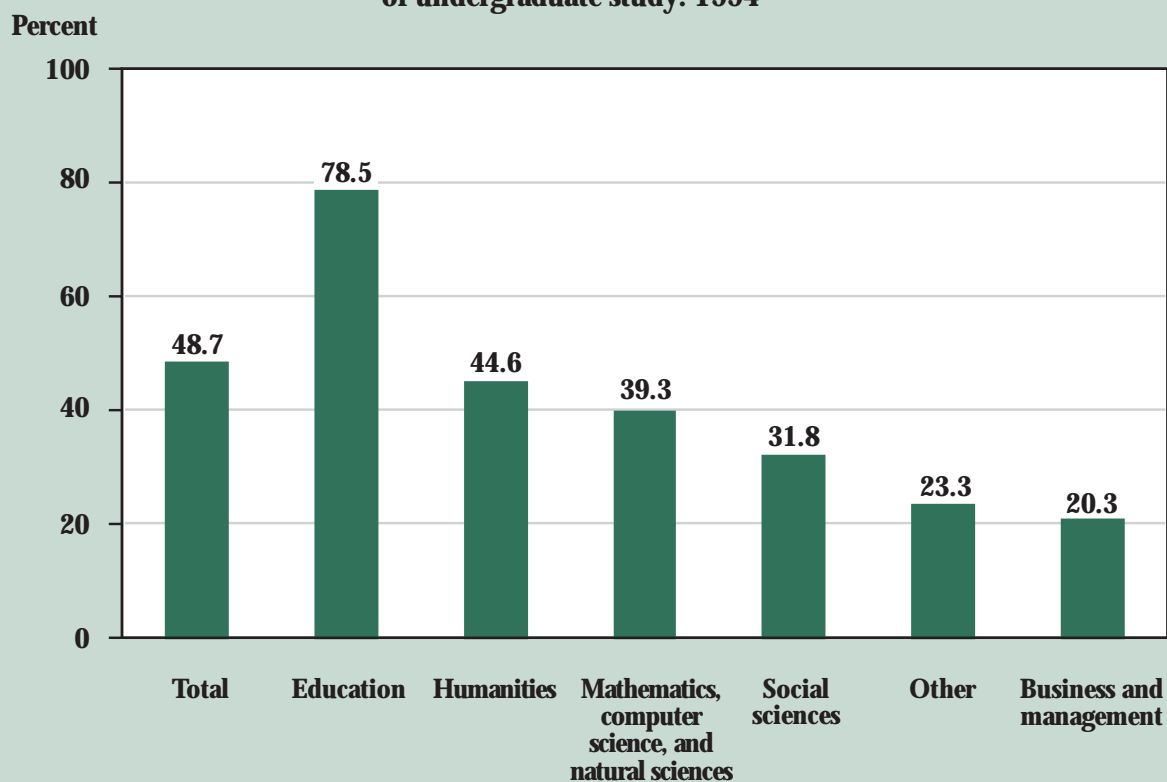
Figure 8.3
Of 1992-93 bachelor's degree recipients who prepared to teach but did not apply for teaching jobs, percentage who reported they did not apply for various reasons: 1994



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup, Data Analysis System.

⁴Tables A8.2 through A8.6 present additional data regarding new college graduates and teaching, including their employment status and the degree to which they saw their primary jobs as having career potential.

Figure 8.4
Of 1992–93 bachelor's degree recipients who had taught, prepared to teach, or were considering teaching, percentage who had applied for a teaching position, by major field of undergraduate study: 1994



SOURCE: U.S. Department of Education, National Center for Education Statistics, 1993 Baccalaureate and Beyond Longitudinal Study First Followup, Data Analysis System.

the teaching work force within a year of completing their degrees. Exactly how many of these graduates remained in teaching, for how long, and how many of their classmates entered teaching later in their post-baccalaureate careers will be examined in future B&B:93 followups.

Indicators of Teacher Shortages

Identifying teacher shortages is not an easy matter. For example, although the number of vacant teaching positions at both the school and district levels offers relevant information, it is not conclusive because schools and districts have several ways of filling teaching vacancies even when shortages occur. Moreover, it is impor-

tant to determine how schools and districts fill vacancies not only because the use of alternative means might indicate shortages that would otherwise be hidden but also because some methods of filling vacancies may affect the quality of instruction.

This section presents a number of indicators of teacher shortage from public school districts and both public and private schools that participated in SASS:93–94. In total, these indicators do not suggest that there was a general shortage of teachers in the early 1990s. However, during this period it was more difficult for schools to find fully qualified teachers in some fields than in others, indicating that teachers in these fields may have been in shorter supply.

District-Level Indicators

Filling teaching positions

Virtually all of the teaching positions approved by public school districts were filled in 1993-94. On average, less than 1 percent of teaching positions were vacant or temporarily filled by a substitute teacher because suitable candidates could not be found, and virtually no position was withdrawn because suitable candidates could not be found (figure 8.5 and table A8.7). Moreover, this lack of shortage does not appear to be a function of budget tightening: only 0.4 percent of teaching positions in public school districts were withdrawn because of budget cuts.

Use of incentives to attract teachers

When public school districts include schools in less desirable locations or when positions in some teaching fields are particularly difficult to fill, they sometimes

offer potential teachers pay incentives to attract them to these locations or teaching fields. Therefore, if many districts offer such incentives, it may indicate that teachers for these locations or fields are in short supply.⁵

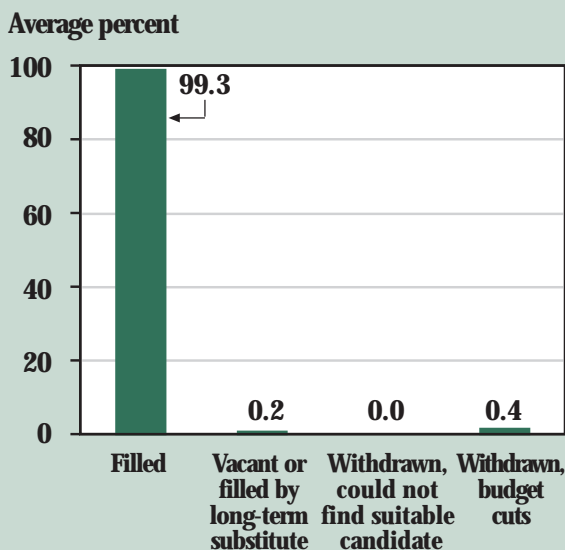
In 1993-94, only a small proportion of school districts reported offering any of three specific financial incentives to attract teachers to less desirable locations. For example, 5 percent of public school districts offered an increase on the salary schedule to attract teachers to less desirable locations, 4 percent offered some other salary increase, and 2 percent offered a cash bonus (table 8.2).

Furthermore, none of these pay incentives was used extensively to attract teachers to teaching fields. Perhaps because they were less likely to have collective bargaining agreements that regulate teacher salary schedules (see chapter 6), private schools were more likely than public school districts to offer teachers incentives to teach in fields of shortage. Districts in which larger proportions of students received free or reduced-price lunches, an indicator of low income, were more likely than districts with fewer low-income students to report that they offered cash bonuses or other salary increases, but not increases on the salary schedule, to attract teachers to both locations and fields of shortage.

Although relatively few districts used pay incentives to attract teachers to less desirable locations or teaching fields with shortages in 1993-94, even fewer had done so in 1987-88. For example, 1 percent of districts offered cash bonuses to attract teachers to either less desirable locations or fields of shortage in 1987-88, compared with about 2 percent in 1993-94 (figure 8.6 and table A8.8).

Considering all types of pay incentives, 10 percent of public school districts and 19 percent of private schools reported offering some type of financial incentive to

Figure 8.5
Average percentage of FTE teaching positions filled, vacant or filled with long-term substitute, or withdrawn in public school districts: 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School and Teacher Demand and Shortage Questionnaires).

⁵However, the opposite is not true. Collective bargaining agreements or financial constraints may prohibit districts from using pay incentives to attract teachers, so that even when shortages occur public school districts may have to use other means to fill teaching vacancies. This is another reason for using multiple indicators to determine whether teachers are in short supply.

Table 8.2
Percentage of public school districts and private schools that used various types of pay incentives to recruit or retain teachers in less desirable locations or in fields of shortage, by sector and percent free/reduced-price lunch recipients in public school districts: 1993-94

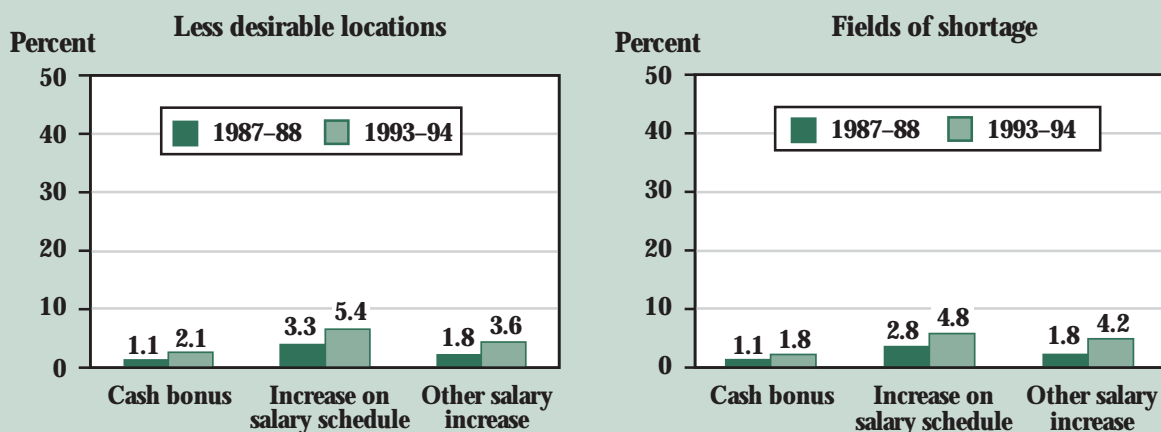
	Less desirable locations*			Fields of shortage		
	Cash bonus	Steps on salary schedule	Other salary increase	Cash bonus	Steps on salary schedule	Other salary increase
Public districts	2.1	5.4	3.6	1.8	4.8	4.2
Free/reduced-price lunch recipients						
10 percent or less	0.7	5.4	0.6	0.6	5.2	1.2
11-20 percent	0.6	4.9	1.6	0.5	6.7	1.9
21-40 percent	2.1	5.0	3.9	1.8	4.4	3.5
More than 40 percent	4.7	6.2	7.3	4.3	4.7	9.0
Private schools	—	—	—	5.7	11.3	8.2

—Too few cases for a reliable estimate.

*This question was not asked of private schools.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School and Teacher Demand and Shortage Questionnaires).

Figure 8.6
Percentage of public school districts that offered various financial incentives to recruit and retain teachers in less desirable locations or in fields of shortage: 1987-88 and 1993-94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987-88 and 1993-94 (Teacher Demand and Shortage Questionnaires).

attract teachers to one field or another (tables 8.3, A8.9a-b, and A8.10a-b). Approximately 6 percent of public districts offered incentives for special education teachers, and 3 percent offered incentives for mathematics; science; or ESL (English as a second language), ESOL (English for speakers of other languages), or bilingual education teachers. Private schools appear to have had a special need for teachers in noncore fields or to have been more flexible in their approaches to filling vacancies in these fields. Twelve percent of private schools offered pay incentives to attract teachers to some field other than the eight fields specified in table 8.3.

On the other hand, public school districts and private schools appeared to be more likely to offer free training to prepare staff members to teach in fields of shortage than to offer pay incentives to attract potential candidates. About one in five public school districts offered free training to prepare staff members to teach in at least one field of shortage (tables 8.3 and A8.10a-b). In addition, among districts where more than 40 percent of the students received free or reduced-price lunches,

one in four public school districts offered training in at least one teaching field to cope with teacher shortages in that field (table A8.10a).⁶

School-Level Indicators

Although the data just examined indicate that public school districts and private schools had few unfilled vacancies, schools could still experience teacher shortages that these data would not reveal. Schools may find it more difficult to fill positions in some fields than others, for example, or may fill vacancies by hiring teachers who are not fully qualified to teach in a particular field or cancel classes for lack of a qualified teacher to teach them. This section examines not only whether such phenomena were occurring in 1993-94, but also the degree to which schools with relatively more disadvantaged students experienced greater difficulty than other schools in finding fully qualified teachers.

⁶Because of a change in question wording in the 1993-94 SASS questionnaires, these proportions cannot be compared over time.

Table 8.3
Percentage of public school districts and private schools that used pay incentives or offered free training to recruit or retain teachers in various fields of shortage: 1993-94

	Percentage using pay incentives		Percentage offering free training	
	Public districts	Private schools	Public districts	Private schools
Any field	10.2	19.2	19.0	24.8
Special education	6.2	3.0	12.2	8.9
Mathematics	3.2	5.1	11.3	12.4
Computer science	1.7	3.3	9.5	11.8
Physical sciences	2.7	3.9	9.1	9.2
Biology or life sciences	2.8	3.6	9.1	9.2
ESL, ESOL, or bilingual education	3.2	1.2	10.1	2.6
Foreign languages	2.0	2.4	6.1	4.1
Vocational/technical education	2.5	0.5	6.6	2.7
Other	1.1	11.8	0.9	5.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Private School and Teacher Demand and Shortage Questionnaires).

Schools' reports of teaching vacancies

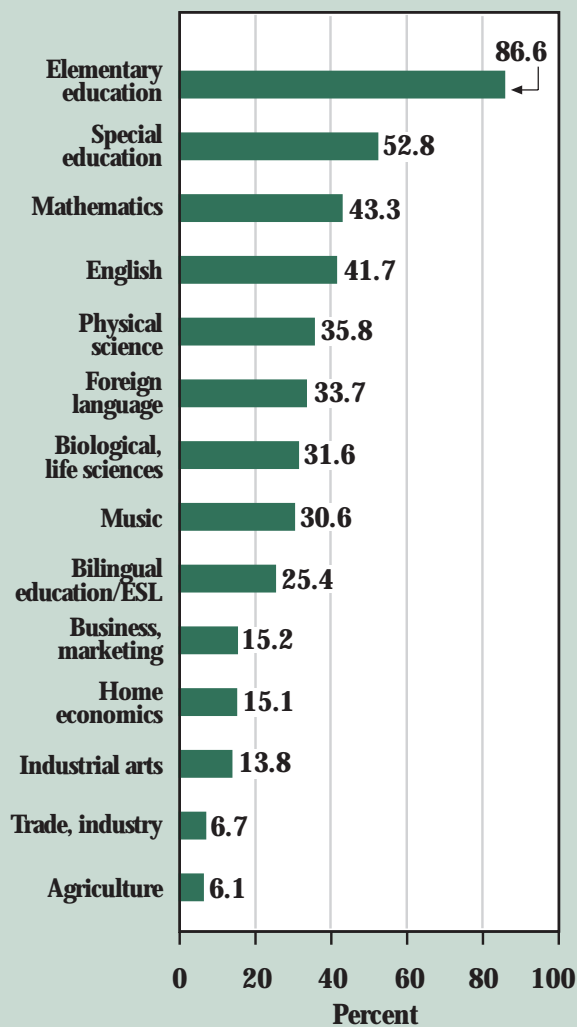
This section discusses the rates at which schools reported vacancies in various fields, and the difficulty they had filling those vacancies. When examining the rates at which schools reported vacancies across fields, it is important to note that schools vary in the fields for which they have teaching positions to begin with. For example, elementary schools are unlikely to have teaching positions in vocational education and high schools are unlikely to have general elementary positions. The SASS allowed schools to indicate whether the items on a given field were applicable to their school. Therefore, for each field this analysis excludes schools that did not have vacancies in a given field because there were no positions in that field.

The proportions of schools that reported teaching vacancies varied among teaching fields. For example, whereas 87 percent of schools reported vacant general elementary teaching positions, and 42 percent had vacant positions in English, only 15 percent of schools reported vacancies in business and marketing, and 6 percent in agriculture (figure 8.7).

High proportions of schools with vacancies in a given field, however, do not necessarily indicate a shortage of teachers in that field. First, the probability of having a vacancy in a given field varies with the number of positions the school has in that field. Because schools are likely to have multiple teaching positions in some fields, such as general elementary positions, the proportion of schools with vacancies in these fields is likely to be higher merely because there are more of these teaching positions available to be vacant in a given school. Second, high proportions of schools with vacancies alone do not indicate teacher shortages: if those vacancies are easily filled, teachers are not in short supply, but rather are highly mobile among schools.

Therefore, the proportion of schools with vacancies must be examined along with the degree of difficulty that administrators have in filling the vacancies. To demonstrate the need to take multiple statistics into

Figure 8.7
Of schools that could have had teaching vacancies in various fields, percentage that reported at least one vacancy, by field: 1993–94



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (School Questionnaire).

account simultaneously when looking at teacher shortages, this section examines data on the demand and

availability of ESL/bilingual education teachers.⁷ Because the proportion of limited English proficient students is increasing, many believe that ESL and bilingual education teachers may become increasingly difficult to find because of increasing demand.

Was there a shortage of ESL or bilingual education teachers in 1993-94? In that academic year, approximately 32,000 schools reported that they could have had a teaching vacancy in one of these fields (table 8.4). Of those schools, one-quarter (about 8,000) indicated that they did in fact have a vacant ESL or bilingual education position. Of the approximately 8,000 schools with vacancies, one-third (about 2,700) reported that those vacancies were somewhat difficult to fill, nearly one-quarter (about 1,900) reported that they were very difficult to fill, and 3 percent (about 240) reported that they could not be filled. Thus, about 7 percent of schools with ESL or bilingual teaching positions experienced significant difficulty in filling those positions and only about 1 percent could not find qualified teachers to fill them.⁸

The proportion of low-income students that schools served was related to their difficulty in filling ESL or

bilingual education teaching vacancies. Compared with public schools that enrolled relatively fewer low-income students, public schools with larger proportions of such students were more likely to report that they both had ESL or bilingual education teaching vacancies and that they could not fill them. Combined, these proportions indicate that among schools that had vacant ESL or bilingual positions and where more than 40 percent of students received free or reduced-price lunches 2 percent of schools could not fill those positions because they could not find qualified teachers.

⁷Tables A8.11a-g present these same data by a number of school characteristics for ESL/bilingual education and 13 additional fields.

⁸The proportion of schools that could have had ESL/bilingual vacancies and found it very difficult or impossible to fill them is computed by multiplying the 25 percent of schools with vacancies by the 26 percent that reported those vacancies were very difficult or impossible to fill. The proportion that found it impossible to fill them is computed by multiplying 25 percent by 3 percent, yielding .75 percent.

Table 8.4
Number of schools that could have had a vacant ESL or bilingual education position; of those schools, percentage with vacancies; and of schools with vacancies, percentage that experienced various levels of difficulty filling the vacancies, by sector and percentage of students receiving free/reduced-price lunch in public school districts: 1993-94

	Number of schools that could have had vacancies	Percent schools that had vacancy	ESL/bilingual education		
			Of schools with a vacancy, percentage that found it		
			Somewhat difficult to fill	Very difficult to fill	Could not fill
Total	31,931	25.4	34.1	22.9	3.0
Public	28,047	27.3	33.9	24.1	3.1
Free/reduced-price lunch recipients					
5 percent or less	2,405	15.6	30.7	28.9	0.0
6-20 percent	7,340	22.5	37.4	23.4	1.2
21-40 percent	6,298	21.3	34.3	26.4	0.9
More than 40 percent	10,439	37.1	32.4	23.8	5.4
Private	3,884	11.2	36.4	—	0.0

—Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (School Questionnaire).

Staffing vacant teaching positions

In addition to filling vacancies with qualified teachers, schools may use a number of methods to staff classes, and the degree to which alternatives are used may indicate how difficult it is for schools to locate fully qualified instructors. Most schools (94 percent) hired a fully qualified teacher to fill at least one of their teaching vacancies (tables 8.5 and A8.12).

However, when schools were unable to find a fully qualified teacher, public and private schools used different strategies to staff their classes. Whereas public schools were more likely than private schools to hire long- or short-term substitute teachers, private schools were more likely than public schools to assign an administrator or counselor to teach classes for which fully qualified teachers could not be hired.

Other methods were used in both sectors. Eight percent of public schools and 9 percent of private schools hired less than fully qualified teachers, and no more than 5 percent of schools in either sector canceled planned course offerings, expanded some class sizes, added sections to others' teaching loads, or assigned a

teacher of another subject or grade level or an administrator to teach those classes.

Finally, the methods that public schools used to fill vacancies varied with the student populations they served. Public schools in which more than 40 percent of the students were low income were less likely than schools with lower proportions of low-income students to fill vacancies by hiring a fully qualified teacher (although 91 percent of the former did hire a fully qualified teacher). Schools in which more than 40 percent of the students were low income were also more likely than other schools to hire a less than fully qualified teacher.

Teacher Attrition

To deliver high-quality education, schools must not only attract talented individuals as teachers but also keep them in the classroom. As noted in chapter 3, teaching experience and expertise are valuable components of teachers' overall qualifications. Therefore, losing experienced teachers can significantly affect the quality of instruction. Understanding how many teach-

Table 8.5
Of schools that had vacancies, percentage that used various methods to fill them, by sector and percentage of students who received free/reduced-price lunch in public school districts: 1993–94

	Hired fully qualified teacher	Hired less than fully qualified teacher	Canceled course offerings	Expanded some class sizes	Added sections to other teachers' loads	Assigned a teacher of another subject/grade level	Assigned an administrator/counselor	Used substitutes
Total	94.2	7.7	1.3	5.0	4.1	4.5	1.8	12.2
Public	94.6	7.4	1.4	5.6	4.0	4.5	0.9	14.9
Free/reduced-price lunch recipients								
5 percent or less	97.4	2.5	1.4	6.1	5.0	4.2	1.0	13.9
6–20 percent	97.8	4.7	1.2	5.5	5.4	4.2	0.9	13.3
21–40 percent	96.1	6.6	0.8	5.2	3.4	5.4	0.6	11.9
More than 40 percent	90.8	11.0	1.9	6.2	3.4	4.4	1.1	19.1
Private	93.1	9.0	1.0	3.0	4.4	4.4	4.7	3.1

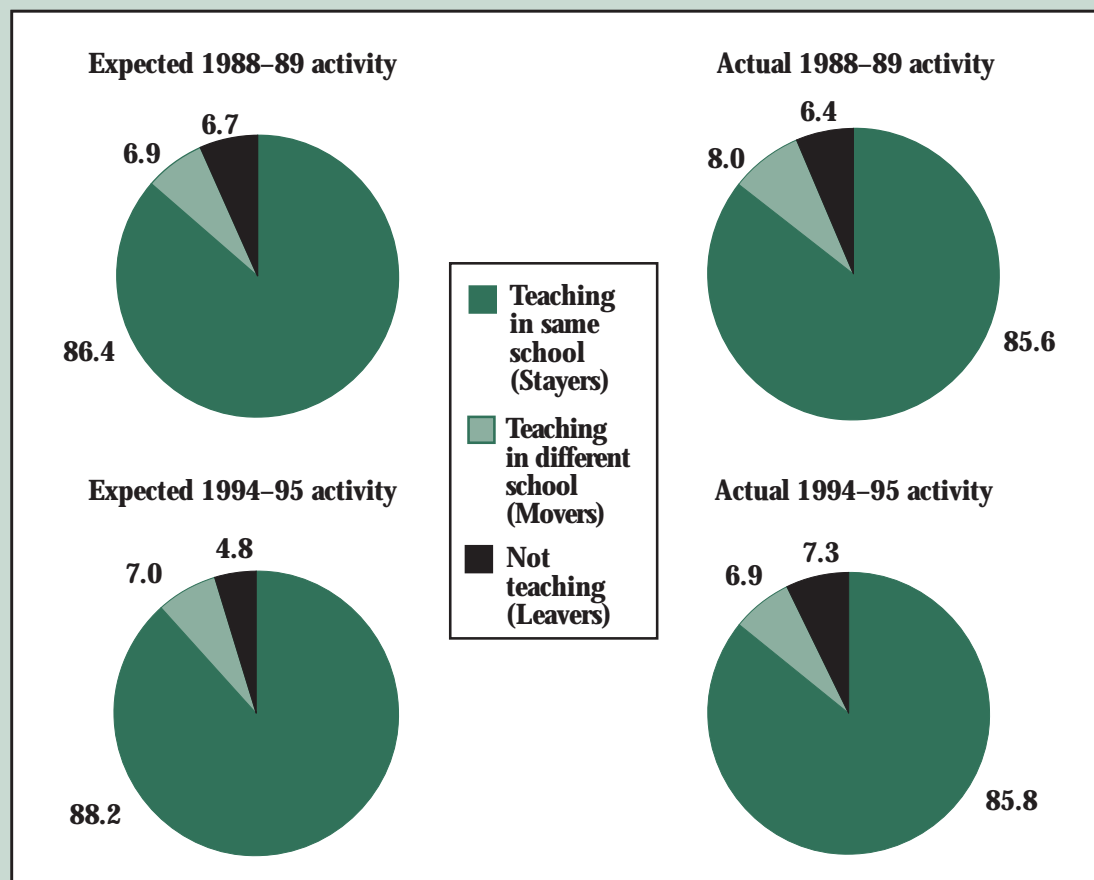
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (School Questionnaire).

ers leave teaching, who leaves, and why they do so can help policymakers prepare for future demand for teachers by encouraging practicing teachers to remain in the profession.

In the 1993-94 SASS, elementary and secondary school teachers were asked what they expected they would be doing professionally in 1994-95. Nearly 90 percent of teachers expected to continue teaching in the same schools, and another 7 percent expected to

move to other schools (figure 8.8 and table A8.13). Only 5 percent of teachers expected to leave the classroom during the next year in order to pursue other activities, including teaching at a college or university, working in a non-teaching position in education, attending college, working in an occupation outside education, caring for family members, or retiring. These proportions differ little from those of 1987-88 teachers regarding their 1988-89 activities.

Figure 8.8
Percentage distributions of teachers according to expected and actual teaching status one year later: 1987-89 and 1993-95



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1987-88 and 1993-94 (Teacher Questionnaire) and Teacher Follow-up Survey: 1988-89 and 1994-95.

The 1994–95 TFS data indicate that teachers continued teaching in their schools, moved to new schools, and left teaching at about the rates they predicted. Eighty-six percent of 1993–94 teachers were still teaching in the same schools in 1994–95, 7 percent had changed schools, and another 7 percent had left teaching. Moreover, the proportions who stayed, moved, and left between 1993–94 and 1994–95 were comparable to those of six years earlier (figure 8.8 and table A8.14). In general, the attrition rate among private school teachers was greater than that among public school teachers: an average of 12 percent of teachers in the private sector left teaching, compared with 7 percent of public school teachers (table 8.6).

Leavers' 1994–95 Occupations

Among school leavers, most retired (25 percent), found jobs outside of education (23 percent), or switched to nonteaching jobs in elementary and secondary schools

(19 percent) (tables 8.6 and A8.14). About one-fifth had left teaching to care for family members (16 percent) or attend college (4 percent).

Compared with public school teachers, private school teachers are younger and less likely to receive benefits, including participation in retirement programs. In addition, there are fewer nonteaching positions available in private than in public schools.⁹ These differences between public and private schools and teachers are consistent with differences between public and private school leavers in the activities they pursued after teaching. For example, public school leavers were about equally likely to take a nonteaching job outside or within elementary/secondary education, with about one-fifth of leavers pursuing each of these alternatives. In contrast, about one-third of private school leavers

⁹See chapter 2 for data regarding teachers' age and chapter 6 for a discussion of public and private school teachers' benefits.

Table 8.6
Percentage distribution of 1993–94 teachers according to teaching status in 1994–95; and of leavers, percentage distribution by main activity in 1994–95, by sector and gender: 1993–94 and 1994–95

	1994–95 teaching status			Leavers' main activity in 1994–95					
	Stayers	Movers	Leavers	Non-teaching job in education	Job outside education	Attending college/university	Caring for family members	Retirement	Other
Total	85.8	6.9	7.3	19.2	23.3	3.6	16.4	25.3	12.2
Public	86.3	7.1	6.6	21.2	20.4	2.2	16.2	28.7	11.3
Gender									
Male	88.3	6.5	5.2	19.8	28.6	3.3	—	35.5	12.2
Female	85.6	7.3	7.1	21.5	18.1	1.9	20.5	26.9	11.0
Private	82.1	5.8	12.1	11.9	34.1	8.6	17.1	12.6	15.7
Gender									
Male	82.1	4.8	13.1	8.5	59.1	5.6	—	12.4	14.0
Female	82.2	6.1	11.7	13.2	24.6	9.7	23.4	12.6	16.4

—Too few cases for a reliable estimate.

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire) and Teacher Follow-up Survey: 1994–95.

took jobs outside education, and about 12 percent took nonteaching jobs in elementary/secondary education. Similarly, nearly 30 percent of public school leavers retired, compared with 13 percent of private school leavers.

Even when teachers leave the classroom, schools may continue to benefit from their expertise when they work as school administrators, nonteaching specialists, or support personnel. Nearly 20 percent of 1994-95 leavers took nonteaching jobs in elementary and secondary schools (tables 8.7 and A8.15). Among teachers who left the classroom for other positions in schools, 63 percent worked as other school professionals, including counselors, librarians, and support personnel for other teachers; 27 percent became school administrators; and 10 percent became other school employees. In the public sector, male leavers were much more likely than female leavers to become administrators: 60 percent of male leavers became school administrators, compared with only 16 percent of female leavers.

Teachers who took jobs outside education entered a variety of occupations. About one-half became man-

agers or professionals, 13 percent became salespeople, 11 percent became clerical workers or administrative support personnel, 9 percent became service workers, 7 percent became postsecondary instructors, and 3 percent became engineers, scientists, or technicians (tables 8.8 and A8.16). Interestingly, women who left public school teaching were more likely than men who had taught in public schools to become managers or professionals (61 percent of female leavers became managers or professionals versus only 39 percent of male leavers).

Why Do They Leave?

Although some have suggested that teachers leave teaching for better pay or other career opportunities, this belief is not strongly supported by the 1994-95 TFS data. Seven percent of leavers reported leaving to obtain better pay or benefits and 14 percent left to pursue another career, proportions similar to those observed six years earlier (figure 8.9 and table A8.17). Substantial proportions of leavers gave reasons that appeared to be unrelated to teaching. For instance,

Table 8.7
Percentage of 1993-94 teachers who left teaching for other elementary or secondary school occupations by 1994-95; and percentage distribution of those leavers according to non-teaching occupation, by sector and public school teacher gender: 1993-94

	Left for other job in education	Non-teaching occupation		
		Administrator	Other school professionals	Other school employee
Total	19.2	27.0	62.8	10.2
Public	21.2	25.2	66.2	8.6
Gender				
Male	19.8	60.0	28.2	11.8
Female	21.5	16.4	75.8	7.8
Private	11.9	38.7	40.3	20.9

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993-94 (Teacher Questionnaire), and Teacher Follow-up Survey: 1994-95.

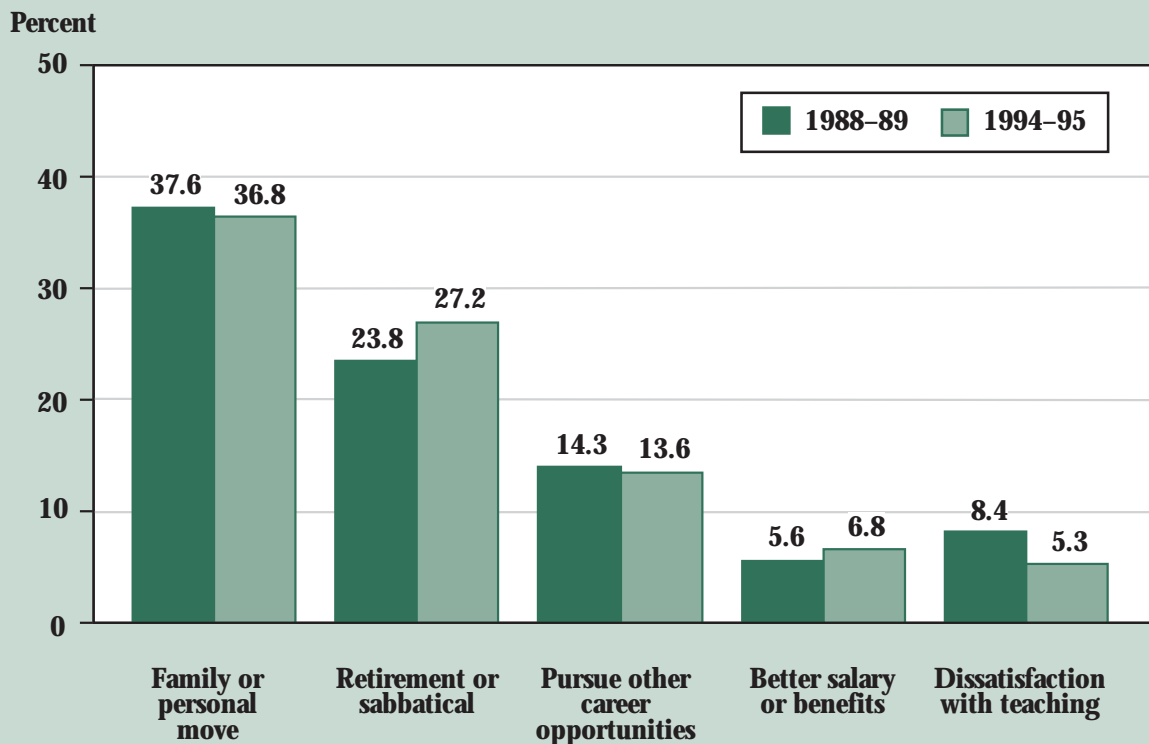
Table 8.8
Percentage distribution of 1993–94 teachers who left teaching by 1994–95 and were employed outside elementary/secondary education according to occupation, by sector and public school teacher gender: 1993–94 and 1994–95

	Managers/ professionals	Engineers/ scientists/ technicians	Post- secondary teachers	Sales	Clerical/ administrative support	Service	Other
Total	47.7	3.0	6.6	12.8	10.6	9.0	10.2
Public	54.0	3.1	5.9	12.7	8.8	7.7	7.8
Gender							
Male	38.5	9.0	9.8	9.1	4.3	8.4	20.8
Female	60.6	0.5	4.3	14.3	10.7	7.4	2.2
Private	33.7	2.9	8.2	13.1	14.5	12.0	15.6

NOTE: Percentages may not sum to 100 due to rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey: 1993–94 (Teacher Questionnaire), and Teacher Follow-up Survey: 1994–95.

Figure 8.9
Percentage of leavers who left teaching for various reasons: 1988–89 and 1994–95



SOURCE: U.S. Department of Education, National Center for Education Statistics, Teacher Follow-up Survey: 1988–89 and 1994–95.

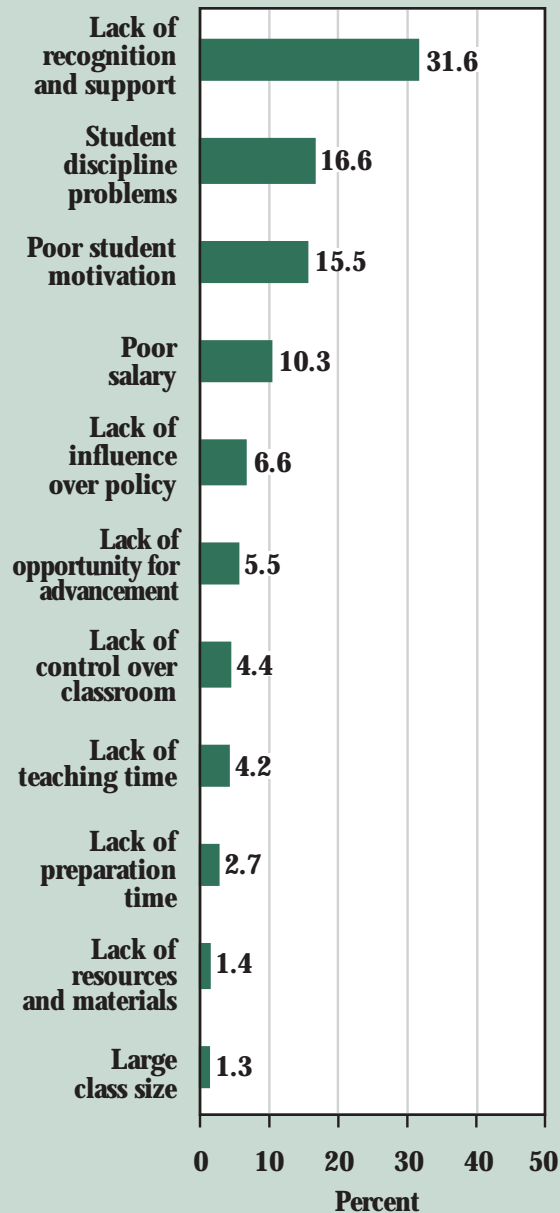
approximately 37 percent of leavers reported they left primarily because of family or personal moves, and another 27 percent left to retire or take a sabbatical or other break.

However, some teachers (5 percent) did cite dissatisfaction with teaching as their primary reason for leaving. Leavers who left because they were dissatisfied with teaching indicated that they were dissatisfied with the recognition and support that they received from administrators, student discipline problems, and poor student motivation in particular: 32, 17, and 16 percent of dissatisfied school leavers, respectively, chose these as their main areas of dissatisfaction with teaching (figure 8.10 and tables A8.18a-b). Another 10 percent of leavers left because they were more or less dissatisfied with their salaries.

Conclusion

Is the supply of teachers in the U.S. adequate to the demand? The SASS:93-94 data examined in this chapter do not indicate national shortages of teachers in general or within specific teaching fields. However, teacher supply and demand is a complex issue and this chapter by no means exhausts the analyses that could provide relevant information. Widespread out-of-field teaching, for example, could indicate that administrators are having difficulty filling classrooms with qualified teachers in specific fields. As discussed in chapter 3, 91 percent of public school teachers whose main assignments were in academic subject areas were fully certified to teach those fields, with the remainder about evenly divided between those had no certification to teach in their main assignment fields and those who had some lesser form of certification. However, only 57 percent of public school teachers whose other assignment fields were in academic subject areas were fully certified to teach those fields, and 40 percent had no certification to teach in their other assignment field. Thus using certification alone, regardless of the match between teachers' fields of undergraduate and graduate study, a substantial portion of teachers did some amount of out-of-field teaching.

Figure 8.10
Of leavers who left because they were dissatisfied with teaching, percentage distribution by main aspect of teaching with which they were dissatisfied: 1994-95



SOURCE: U.S. Department of Education, National Center for Education Statistics, Teacher Follow-up Survey: 1994-95.

Do these indicators point to a teacher shortage? Analysts of the 1987–88 and 1990–91 SASS data have studied the out-of-field teaching phenomenon and concluded that the observed discrepancies between teachers' qualifications and their fields of study represent the vicissitudes of staffing class schedules that vary from semester to semester with virtually the same faculty (and faculty qualifications). Examined in concert with the data presented in this chapter, the 1993–94 SASS data do not point to widespread teacher shortages among or within academic subject areas.

However, these data do indicate that schools serving larger proportions of low-income students experienced somewhat greater difficulty finding qualified teachers to fill vacancies. Few districts used pay incentives to attract teachers to fields or locations of shortages, but districts with relatively more low-income students were more likely to do so than districts with fewer such stu-

dents. Moreover, public schools with larger proportions of low-income students were more likely to report both that they had hired a less than fully qualified teacher and that they had used long-term substitutes to fill teaching vacancies. Finally, public school teachers in schools with higher proportions of low-income students were less likely than their peers in more affluent schools to be fully certified to teach in their main assignment fields.

As enrollments increase in the coming decade, some policymakers fear that schools will find it increasingly difficult to hire fully qualified teachers to fill teaching vacancies as they arise. Although the proportion of teachers who left the profession within a given year did not change between 1987–89 and 1993–95, as baby-boomer teachers age and retire, teacher attrition could increase, exacerbating the need for new teachers created by increasing enrollments.

BETWEEN THE 1980s REFORM REPORTS AND 21ST CENTURY GOALS: TEACHING IN THE 1990s

This report began by describing some of the critical issues related to teachers and teaching that have been discussed by policymakers and educators over the past decade, including teacher recruitment, supply, and demand; initial preparation and continuing professional development; workload; compensation; autonomy and working conditions; and the equity of resources available to schools serving diverse student populations. These issues also underlie the President's 10-point Call to Action for American Education in the 21st Century and the research priorities announced by the National Educational Research Policy and Priorities Board (the Board). Given the data reviewed here, where did America's teachers stand regarding these issues in the early- to mid-1990s? In light of contemporary national priorities for education policy and research, what do these issues portend for America's teachers in the 21st century?

Recruitment: Supply and Demand, Qualifications, and Diversity

The President's Call to Action included a national commitment to ensure that every classroom has a talented and dedicated teacher. Moreover, the Board called for a national effort to support schools in order to assure that diverse student populations are well served. At the same time, increasing enrollments and an aging teacher work force may make finding the teachers needed to staff all classrooms difficult. To the extent that meeting national goals for talented teachers requires increasing the number of high academic achievers who enter teaching, especially among minority college graduates, the challenges of recruiting new teachers will be even more significant.

Overall Supply and Demand

In the fall of 1996, elementary schools were bursting at the seams, and projections of increasing enrollments, especially among children of minority racial-ethnic

backgrounds (Riley 1996), indicated that the need for teachers will only increase in the coming decades. The data reviewed in this report indicate that earlier predictions regarding an increased demand for teachers overall had not materialized in the early 1990s: teachers left the profession at similar rates in 1987–89 and in 1993–95 (chapter 8), and neither district- nor school-level data indicated that teacher shortages were widespread problems. Nevertheless, demand is likely to increase as the turn of the century approaches. The teacher work force is aging (chapter 2) and many teachers may begin to retire in the coming decade, adding to the need for teachers posed by increasing enrollments.

Teacher Qualifications

Should the demand for teachers rise substantially, the goal of ensuring a talented and dedicated teacher in every classroom may become an even greater challenge than it would otherwise be. In the early 1980s, researchers reported that college graduates who became teachers were less likely to be at the top of their classes than those who entered other professions, and that the teachers with higher educational achievement were also more likely than others to leave the profession. However, the data examined in chapter 3 indicate that the undergraduate achievement of 1992–93 college graduates who entered teaching by 1994 did not differ much from that of other graduates. Although new teachers were more likely than other graduates to have taken remedial English and precollegiate mathematics, relatively few of them had taken these courses, and overall their GPAs were higher than those of other graduates.

Moreover, in 1993–94, teachers were no less qualified than they had been in the late 1980s. Teachers continued to be highly educated relative to the population as a whole, since virtually all had bachelor's degrees and about one-half had at least a master's degree. Some have suggested that teachers are better prepared to teach if they major in an academic discipline rather than in

education and obtain teacher training later, and in fact relatively more teachers had done so in 1993-94 than in 1987-88. In addition, an analysis that combined teachers' certification status with their formal education (both undergraduate and graduate degrees) indicated that 1 percent of teachers had only an undergraduate minor in their main assignment field and 7 percent had no certification or degree in that field.

However, some classrooms were systematically less likely than others to have such qualified teachers. Teachers in public schools serving large proportions of low-income students tended to be less qualified to teach in their assignment fields than teachers in other schools, regardless of the measure of qualifications being used, whether it be formal education, certification status, years of teaching experience, or teachers' self-assessments of their qualifications.

Diversity

In addition to teachers' professional training, some researchers and educators believe that teachers' racial-ethnic backgrounds figure prominently in their ability to serve diverse student populations. In 1993-94, the proportion of minority teachers remained lower than the proportion of minority students (chapter 2), which many believe makes the goal of serving diverse student populations well more difficult. Although the Schools and Staffing Survey (SASS) data indicate a slight increase in the proportion of minority teachers since the late 1980s, minority enrollments have grown and are expected to grow even more in the coming years. Moreover, the data do not suggest that the proportion of minority teachers is likely to catch up soon. The Baccalaureate and Beyond Longitudinal Study First Followup (B&B:93/94) data, for example, indicate that 1992-93 college graduates who entered teaching in the year following graduation were more likely than other graduates to be white, non-Hispanic (chapter 2).

Professional Development

Talented and dedicated teachers are borne of not only excellent undergraduate and graduate education and

initial professional certification, but also classroom experience and continuing professional development. The National Goal for teacher professional development attests to the belief that becoming an expert in work as complex as teaching requires time, reflection, and the opportunity to consult with other professionals about problems and strategies to solve them.

Moreover, in any profession goals change and new strategies for accomplishing them are developed, and the Board noted that these changes occur in elementary and secondary education as well. The nation's education goals have expanded beyond students' mastery of basic skills to include problem-solving, creativity, and the motivation to continue a lifetime of learning. Furthermore, computers and other electronic technologies are becoming increasingly important tools for improving education. To serve their students well, teachers must learn new techniques for teaching new skills and using new technologies.

Most teachers reported that they had participated in some form of professional development in the year preceding the 1993-94 SASS. However, the intensity of teachers' professional development experiences has been of some concern to reformers (NCTAF 1996), and with respect to most of the topics included in the survey, teachers reported that the programs in which they participated did not last more than one day.

The attention paid to teachers' professional development is predicated on the assumption that professional development makes a difference in teachers' capacity to instruct students well. Analysis of the Teacher Follow-up Survey (TFS) data on teachers' use of various instructional practices suggest that professional development experiences may affect teachers' instruction. Those who attended a professional development program related to cooperative learning techniques, the use of educational technology, and assessment strategies were more likely than other teachers to have students work in groups, use computers or other electronic technologies, and use portfolios to assess their students' work, respectively. Whether these results reflect differences between the teachers who chose to attend these programs and those who did not, or reflect the effects of professional development, cannot be determined from the available data.

Compensation

Attracting talented people to teaching and retaining their services requires adequate compensation. After losing ground relative to other professionals during the 1970s, teachers' salaries had caught up to their previous levels and stabilized by the late 1980s (chapter 6). In addition, teachers were slightly more likely to report that they were satisfied with their salaries in 1993–94 than in 1987–88.

However, teachers continue to earn less than other professionals with similar literacy skills, and equity of compensation among teachers is of particular concern. Public school districts that served larger proportions of low-income students had lower scheduled teacher salaries than districts with fewer such students. Not surprisingly, teachers in schools with more low-income students also tended to be less satisfied with their salaries than teachers in schools serving more affluent student populations.

Autonomy

The reform reports of the 1980s noted teachers' lack of control over their work and the conditions under which they worked, and in the 1990s the charter school movement offers one strategy for increasing teachers' control over schools. The President's Call to Action includes a commitment to increase the number of charter schools in order to give students, and teachers, more choices regarding the schools in which they learn and work. Many school districts are initiating change within regular schools as well, using site-based management as a mechanism for providing teachers and school-site administrators with greater control over their schools.

In the early 1990s, most teachers perceived themselves as having a great deal of control over policies within their classrooms, but relatively fewer believed they wielded a great deal of influence over schoolwide policies, as has traditionally been the case (chapters 4 and 7). However, the majority of teachers (60 percent) also reported that teachers participated in making important decisions in their schools.

Working Conditions and Teacher Satisfaction

Although policymakers have paid increasing attention to teachers and teaching in recent waves of education reform, they also recognize the importance of the environments in which teachers work. The President's Call to Action included a commitment to safe, disciplined, and drug-free schools, and both the President and the Board called for increased efforts to involve parents and families in children's schooling.

The data presented in this report indicate that these goals also pose significant challenges to the nation. One-quarter of public school teachers reported that they had been threatened by a student, and 11 percent reported that they had been attacked by a student (chapter 2). Moreover, family problems such as poverty, parental alcoholism, and parental drug abuse were significant concerns for 13 to 20 percent of public school teachers, and 28 percent of public school teachers reported that a lack of parent involvement was a serious problem in their schools. Currently, schools with larger proportions of minority students also tend to have higher proportions of low-income students. If this relationship persists and minority students become a larger proportion of the entire student population, the problems of poverty are also likely to become more serious for schools and teachers.

Conclusion

On some dimensions—some measures of teachers' qualifications, their satisfaction with their salaries, and their overall satisfaction with their work—the state of teachers and teaching appears to have improved between 1987–88 and 1993–94. Nevertheless, the data indicate that concerns regarding inequity among schools are deserved. On a number of dimensions—including several measures of teachers' qualifications, teachers' salaries and their satisfaction with them, teachers' perceptions of the availability of necessary materials, the difficulty filling teaching vacancies, the severity of student and family problems that affect teachers' work with students—public schools with relatively more low-income students and the teachers in those schools were less well off than more affluent schools and their teachers.

The nation's policymakers have posed significant challenges for teachers, teacher educators, school administrators, and parents in the coming decades. Future

profiles of America's teachers will contribute to a national assessment of whether we are meeting those challenges.

REFERENCES

- Achilles, C. 1996. "Students Achieve More in Smaller Classes." *Educational Leadership* 53 (5): 76–77.
- Adair, A.V. 1984. *The Illusion of Black Progress*. Lanham, MD: University Press of America.
- Adams, M.J. 1990. *Beginning to Read: Thinking and Learning About Print*. Cambridge, MA: MIT Press.
- American Association for the Advancement of Science. 1993. *Benchmarks for Scientific Literacy*. Washington, DC.
- American Association of Colleges for Teacher Education. 1994. *Teacher Education Pipeline III: Schools, Colleges, and Departments of Education: Enrollments by Race and Ethnicity*. Washington, DC.
- Andrew, M.D. 1983. "The Characteristics of Students in a Five-Year Teacher Education Program." *Journal of Teacher Education* 34 (1): 20–23.
- Archbald, D. and Porter, A. 1994. "Curriculum Control and Teachers' Perceptions of Autonomy and Satisfaction." *Educational Evaluation and Policy Analysis* 16 (1): 21–39.
- Archer, J. 1996. "Today, Private Schools Span Diverse Range." *Education Week* 16 (9): 1, 12–15.
- Arter, J.A., Spandel, V., and Culham, R. 1996. *Portfolios for Assessment and Instruction*. ERIC Digest, ED 388890.
- Association of Teacher Educators. 1996. *Creating a Culture of Quality and Credibility in Teacher Education: A Call to Action*. Reston, VA.
- Barber, B. 1986. "Homework Does Not Belong on the Agenda for Educational Reform." *Educational Leadership* 43 (8): 55–57.
- Bingham, C. 1994. "Class Size as an Early Intervention Strategy in White–Minority Achievement Gap Reduction." Paper presented at the annual meeting of the American Association of School Administrators, San Francisco, CA.
- Blatchford, P. and Mortimore, P. 1994. "The Issue of Class Size for Young Children in School: What Can We Learn from Research?" *Oxford Review of Education* 20 (4): 411–428.
- Bobbitt, S.A. and McMillen, M.M. 1995. *Qualifications of the Public School Teacher Workforce: 1988 and 1991*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 95-665).
- Book, C.L., Freeman, D.J., and Brousseau, B. 1985. "Comparing Academic Backgrounds and Career Aspirations of Education and Non-Education Majors." *Journal of Teacher Education* 36 (3): 27–30.
- Brookhart, S. 1993. "Teachers' Grading Practices: Meaning and Values." *Journal of Educational Measurement* 30 (2): 123–42.
- Carnegie Task Force on Learning in the Primary Grades. 1996. *Years of Promise: A Comprehensive Learning Strategy for America's Children*. New York, NY: Carnegie Corporation of New York.
- Carnegie Forum on Education and the Economy. 1986. *A Nation Prepared: Teachers for the 21st Century*. New York, NY.
- Chambers, J. and Bobbitt, S.A. 1996. *The Patterns of Teacher Compensation*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 95-829).
- Choy, S.P., Bobbitt, S.A., Henke, R.R., Medrich, E.A., Horn, L.J., and Lieberman, J. 1993. *America's Teachers: Profile of a Profession*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 93-025).
- Choy, S.P. and Geis, S. Forthcoming. *Early Labor Force Experiences and Debt Burden*. Washington, DC: U.S. Department of Education, National Center for Education Statistics.
- Choy, S.P., Medrich, E.A., Henke, R.R., and Bobbitt, S.A. 1992. *Schools and Staffing in the United States: A Statistical Profile, 1987–88*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 92-120).
- Clifford, G.J. and Guthrie, J.W. 1988. *Ed School: A Brief for Professional Education*. Chicago, IL: University of Chicago Press.
- Cohen, E. 1994. *Designing Groupwork: Strategies for the Heterogeneous Classroom*. Second edition. New York, NY: Teachers College Press.
- Corcoran, T.C. 1995. *Transforming Professional Development for Teachers: A Guide for State Policymakers*. Washington, DC: National Governors' Association.

- Darling-Hammond, L. 1984. *Beyond the Commission Reports: The Coming Crisis in Teaching*. Santa Monica, CA: RAND Corporation.
- Darling-Hammond, L. 1995. "Changing Conceptions of Teaching and Teacher Development." *Teacher Education Quarterly* 22 (4): 9-26.
- Darling-Hammond, L. and Sclan, E.M. 1996. "Who Teaches and Why: Dilemmas of Building a Profession for Twenty-first Century Schools." In J.P. Sikula, T.J. Buttery, and E. Guyton (Eds.), *Handbook of Research on Teacher Education* (67-101). New York, NY: Macmillan Library Reference.
- Education Commission of the States. Task Force on Education for Economic Growth. 1983. *Action for Excellence: A Comprehensive Plan to Improve Our Nation's Schools*. Denver, CO.
- Evans, D.L. 1996. "Unqualified Teachers: A Predictable Finding." *Education Week* 16 (9): 36.
- Feistritzer, C.E. 1993. "National Overview of Alternative Teacher Certification." *Education and Urban Society* 26 (1): 18-28.
- Feistritzer, C.E. 1996. *Profile of Teachers in the U.S.* Washington, DC: National Center for Education Information.
- Finn, J., Achilles, C., Bain, H., and Folger, J. 1990. "Three Years in a Small Class." *Teaching and Teacher Education* 6 (2): 127-136.
- Firestone, W.A. and Pennell, J.R. 1993. "Teacher Commitment, Working Conditions, and Differential Incentive Policies." *Review of Educational Research* 63: 489-525.
- Goettler-Sopko, S. 1990. "The Effect of Class Size on Reading Achievement." ERIC Digest, ED 325826.
- Goodlad, J.I. 1984. *A Place Called School: Prospects for the Future*. New York, NY: McGraw-Hill Book Co.
- Goodlad, J.I. 1990. *Teachers for Our Nation's Schools*. San Francisco, CA: Jossey-Bass.
- Graham, P.A. 1987. "Black Teachers: A Drastically Scarce Resource." *Phi Delta Kappan* 68 (8): 598-605.
- Grossman, P.L. and Stodolsky, S.S. 1995. "Content as Context: The Role of School Subjects in Secondary School Teaching." *Educational Researcher* 24 (8): 5-11, 23.
- Hall, J. 1995. "Teacher Socialization: A Spiral Process." *Teacher Educator* 30 (4): 25-36.
- Hargreaves, A. 1984. "Experience Counts, Theory Doesn't: How Teachers Talk About Their Work." *Sociology of Education* 57: 244-254.
- Hart, A.W. 1994. "Work Feature Values of Today's and Tomorrow's Teachers: Work Redesign as an Incentive and School Improvement Policy." *Educational Evaluation and Policy Analysis* 16 (4): 458-73.
- Hendrie, C. 1996. "Enrollment Crunch Stretches the Bounds of the Possible." *Education Week* 16 (2): 1, 12-15.
- Henke, R.R., Choy, S.P., Geis, S., and Broughman, S.P. 1996. *Schools and Staffing in the United States: A Statistical Profile, 1993-94*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 96-124).
- Henke, R.R., Geis, S., Giambattista, J., and Knepper, P. 1996. *Out of the Lecture Hall and Into the Classroom: 1992-93 College Graduates and Elementary/Secondary School Teaching*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 96-899).
- Hiestand, N. 1994. "Reduced Class Size in ESEA Chapter 1: Unrealized Potential?" Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Hill, D. 1996. "Odd Man Out." *Education Week* 16 (2): 28-32.
- Holmes Group. 1986. *Tomorrow's Teachers*. East Lansing, MI.
- Hussar, W.J. and Gerald, D.E. 1996. *Projections of Education Statistics to 2006*. Twenty-fifth edition. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 96-661).
- Ingersoll, R.M. 1994. "Organizational Control in Secondary Schools." *Harvard Educational Review* 64 (2): 150-72.
- Ingersoll, R.M. and Gruber, K. 1996. *Out of Field Teaching and Educational Equality*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 96-040).
- Ingersoll, R.M. and Han, M. 1995. *Teacher Supply, Teacher Qualifications, and Teacher Turnover: 1990-91*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 95-744).
- Johnson, D.W. and Johnson, R.T. 1994. *Learning Together and Alone: Cooperative, Competitive, and Individualistic Learning*. Fourth edition. Boston, MA: Allyn and Bacon.
- Johnson, M.J. and Pajares, F. 1996. "When Shared Decision Making Works: A 3-Year Longitudinal Study." *American Educational Research Journal* 33: 599-627.
- Johnson, S. 1990. *Teachers at Work: Achieving Success in Our Schools*. New York, NY: Basic Books.

- Kidder, T. 1990. *Among Schoolchildren*. Boston, MA: Houghton Mifflin Company.
- King, S.H. 1993. "On the Limited Presence of African-American Teachers." *Review of Educational Research* 63: 115-149.
- Ladson-Billings, G. 1994. *The Dreamkeepers: Successful Teachers of African-American Children*. San Francisco, CA: Jossey-Bass.
- Little, J.W. 1993. "Teachers' Professional Development in a Climate of Educational Reform." *Educational Evaluation and Policy Analysis* 15: 129-151.
- Lortie, D. 1975. *Schoolteacher: A Sociological Study*. Chicago, IL: University of Chicago Press.
- Malen, B. 1987. "Career Ladder Reform: A Multi-Level Analysis of Initial Efforts." *Educational Evaluation and Policy Analysis* 9: 9-23.
- McLaughlin, D. 1997. *Private Schools in the United States: A Statistical Profile, 1993-94*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 97-459).
- McLaughlin, D., O'Donnell, C., Ries, L., and Broughman, S. 1995. *Private Schools in the United States: A Statistical Profile, 1990-91*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 95-330).
- Means, B., Blando, J., Olson, K., Middleton, T., Morocco, C., Remz, A., and Zorfass, J. 1993. *Using Technology to Support Education Reform*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement.
- Medrich, E.A., Brown, C.L., Henke, R.R., Ross, L., and McArthur, E. 1992. *Overview and Inventory of State Requirements for School Coursework and Attendance*. Washington, DC: U.S. Department of Education, National Center for Education Statistics (NCES 92-663).
- Mitchell, D.E., Ortiz, F.I., and Mitchell, T.K. 1987. *Work Orientation and Job Performance: The Cultural Basis of Teaching Rewards and Incentives*. Albany, NY: State University of New York Press.
- Mosteller, F., Light, R., and Sachs, J. 1996. "Sustained Inquiry in Education: Lessons from Skill Grouping and Class Size." *Harvard Educational Review* 66 (4): 797-842.
- Murnane, R.J. and Levy, F. 1996. *Teaching the New Basic Skills: Principles for Educating Children to Thrive in a Changing Economy*. New York, NY: The Free Press.
- Murnane, R.J., Singer, J.D., Willett, J.B., Kemple, J.J., and Olson, R.J. 1991. *Who Will Teach? Policies That Matter*. Cambridge, MA: Harvard University Press.
- National Board for Professional Teaching Standards. 1989. *What Teachers Should Know and Be Able to Do*. Detroit, MI.
- National Commission on Excellence in Education. 1983. *A Nation at Risk: The Imperatives for Educational Reform*. Washington, DC.
- National Commission on Teaching and America's Future (NCTAF). 1996. *What Matters Most: Teaching for America's Future*. New York, NY.
- National Council of Teachers of Mathematics. 1991. *Professional Standards for Teaching Mathematics*. Reston, VA.
- National Science Board. Commission on Precollege Education in Mathematics, Science, and Technology. 1983. *Educating Americans for the 21st Century: A Plan of Action for Improving Mathematics, Science, and Technology Education for All*. Washington, DC.
- Nelson, F.H. and Schneider, K. 1995. *Surveys and Analysis of Salary Trends 1995*. Washington, DC: American Federation of Teachers.
- Odden, A. and Kelley, C. 1997. *Paying Teachers for What They Know and Do: New and Smarter Compensation Strategies to Improve Schools*. Thousand Oaks, CA: Corwin Press, Inc.
- Organisation for Economic Co-operation and Development (OECD). 1995. *Education at a Glance: OECD Indicators*. Paris, France.
- Organisation for Economic Co-operation and Development (OECD). 1996a. *Education at a Glance: Analysis*. Paris, France.
- Organisation for Economic Co-operation and Development (OECD). 1996b. *Education at a Glance: OECD Indicators*. Paris, France.
- Palardy, J.M. April 1988. "The Effect of Homework Policies on Student Achievement." *NASSP Bulletin* 72 (507): 14-17.
- Renyi, J. 1996. *Teachers Take Charge of Their Learning*. Washington, DC: National Foundation for the Improvement of Education.
- Riley, R. 1996. *A Back to School Special Report: The Baby Boom Echo*. Washington, DC: U.S. Department of Education.
- Rosenholtz, S.J. 1991. *Teachers' Workplace: The Organizational Context of Schooling*. New York, NY: Teachers College.
- Rowan, B. 1990. "Commitment and Control: Alternative Strategies for the Organizational Design of Schools." In C.B. Cazden (Ed.), *Review of Research in Education* (Volume 16). Washington, DC: AERA.

- Rumberger, R.W. 1987. "The Impact of Salary Differentials on Teacher Shortages and Turnover: The Case of Mathematics and Science Teachers." *Economics of Education Review* 6 (4): 389-399.
- Salmon, R.G. 1988. "Teacher Salaries: Progress over the Decade." In K. Alexander and D.H. Monk (Eds.), *Attracting and Compensating America's Teachers* (249-261). Cambridge, MA: Ballinger Publishing Company.
- Schlechty, P.C. and Vance, V.S. 1983. "Recruitment, Selection, and Retention: The Shape of the Teaching Force." *Elementary School Journal* 83 (4): 469-487.
- The Secretary's Commission on Achieving Necessary Skills. 1991. *What Work Requires of Schools: A SCANS Report for America 2000*. Washington, DC: U.S. Department of Labor.
- Shedd, J.B. and Bachrach, S.B. 1991. *Tangled Hierarchies: Teachers As Professionals and the Management of Schools*. San Francisco, CA: Jossey-Bass.
- Slavin, R. 1987. "Cooperative Learning: Where Behavioral and Humanistic Approaches to Classroom Motivation Meet." *Elementary School Journal* 88: 29-37.
- Slavin, R. 1990. "Class Size and Student Achievement: Is Smaller Better?" *Contemporary Education* 62 (1): 6-12.
- Slavin, R.E. 1996. "Research on Cooperative Learning and Achievement: What We Know, What We Need to Know." *Contemporary Educational Psychology* 21 (1): 43-69.
- Sosniak, L. and Stodolsky, S.S. 1993. "Teachers and Textbooks: Materials' Use in Four Fourth-Grade Classrooms." *Elementary School Journal* 93 (3): 249-75.
- Stewart, J., Meier, K.J., LaFollette, R.M., and England, R.E. 1989. "In Quest of Role Models: Change in Black Teacher Representation in Urban School Districts, 1968-1986." *Journal of Negro Education* 58: 140-152.
- Stiggins, R.J. and Conklin, N.F. 1992. *In Teachers' Hands: Investigating the Practices of Classroom Assessment*. Albany, NY: State University of New York Press.
- Stodolsky, S.S. 1988. *The Subject Matters: Classroom Activity in Math and Social Studies*. Chicago, IL: The University of Chicago Press.
- Tryneski, J. (Ed.). 1993. *Requirements for Certification of Teachers, Counselors, Librarians, Administrators for Elementary and Secondary Schools*. Fifty-eighth edition, 1993-94. Chicago, IL: University of Chicago Press.
- Twentieth Century Fund Task Force on Federal Elementary and Secondary Education Policy. 1983. *Making the Grade*. New York, NY.
- U.S. Department of Commerce. Bureau of the Census. 1994. *Statistical Abstract of the United States, National Data Book*. Washington, DC.
- U.S. Department of Education. 1996. *Getting America's Students Ready for the 21st Century*. Washington, DC.
- U.S. Department of Education. National Center for Education Statistics. 1995a. *The Condition of Education 1995*. (NCES 95-273). Washington, DC.
- U.S. Department of Education. National Center for Education Statistics. 1995b. *Digest of Education Statistics 1995*. (NCES 95-029). Washington, DC.
- U.S. Department of Education. National Center for Education Statistics. 1996. *Digest of Education Statistics 1996*. (NCES 96-133). Washington, DC.
- Walberg, H.J., Pascal, R., and Weinstein, T. May 1986. "Walberg and Colleagues Reply: Effective Schools Use Homework Effectively." *Educational Leadership* 43 (8): 58.
- Waller, W. 1932. *The Sociology of Teaching*. New York, NY: J. Wiley and Sons.
- Weaver, W.T. 1983. *America's Quality Teacher Problem: Alternatives for Reform*. New York, NY: Praeger Publishers.
- Weiss, C. 1993. "Shared Decision Making About What?" *Teachers College Record* 95: 69-92.
- White, K.A. 1996. "Crowded, Dilapidated Schools Lack Welcome Mat for Students." *Education Week* 16 (5): 1, 12-13.