U.S. Department of Education
Institute of Education Sciences
NCES 2006-305

Teacher Professional Development in 1999–2000

What Teachers, Principals, and District Staff Report

Statistical Analysis Report

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January 2006

Susan P. Choy
Xianglei Chen
Rosio Bugarin
MPR Associates, Inc.

Stephen P. Broughman
Project Officer
National Center for Education Statistics

U.S. Department of Education
Margaret Spellings
Secretary

Institute of Education Sciences
Grover J. Whitehurst
Director

National Center for Education Statistics
Mark Schneider
Commissioner

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Suggested Citation

Choy, S.P., Chen, X., and Bugarin, R. (2006). *Teacher Professional Development in 1999–2000: What Teachers, Principals, and District Staff Report* (NCES 2006-305). U.S. Department of Education. Washington, DC: National Center for Education Statistics.

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Content Contact:

Stephen Broughman
(202) 502-7315
Stephen.Broughman@ed.gov

Executive Summary

For two decades, U.S. schools have been engaged in major reform efforts to improve student learning, and they have made teacher professional development an essential component of their plans. "Never before in the history of education has there been greater recognition of the importance of professional development. Every modern proposal to reform, restructure, or transform schools emphasizes professional development as a primary vehicle in efforts to bring about needed change" (Guskey 1995, p.1). The federal government, states, districts, schools, and other groups such as subject-matter associations; networks of teachers, schools, and districts; and school-university collaboratives are all actively engaged in efforts to improve professional development (Corcoran 1995; Hirsch, Koppich, and Knapp 2001; Massell 1998; U.S. Department of Education 1996).

For many years, professional development typically consisted of short, stand-alone workshops on topics selected by schools and districts (often without consulting teachers) and college/university coursetaking. During the 1990s, some experts began to suggest that these traditional forms of teacher professional development lacked the focus, intensity, and continuity needed to change classroom practices (Little 1993) and they were inadequate for preparing teachers to meet the educational needs of their students. As researchers and organizations have attempted to restructure professional development opportunities, there were some key elements for which there appeared a broad consensus. According to Hawley and Valli (2001), professional development should reflect student and teacher needs, be part of an overall plan for change, involve teachers in planning and developing opportunities, promote collaboration at the school level, and be evaluated for its impact on teaching practice and student learning. Although there have been relatively few rigorous evaluations to date, there are some suggestive findings indicating that professional development that meets the high-quality criteria as described by Hawley and Valli (2001) may change teacher learning and classroom practice (Porter et al. 2000) and that these changes, in turn, may affect the academic performance of students (Wenglinsky 2002; Cohen and Hill 2000).

In developing the 1999–2000 Schools and Staffing Survey (SASS), a special effort was made to include questions that would help determine the extent to which the characteristics of professional development policies and practices were consistent with the emerging consensus on the key features of professional development as described by Hawley and Valli (2001). The survey addressed how professional development was organized and managed, what kinds of activities were available to teachers, and which ones they participated in. This report uses these data to describe what district staff, principals, and teachers reported about these important aspects of teacher professional development. The SASS data cannot be used to address questions on whether these aspects actually improve the effectiveness of teacher professional development activities (i.e., questions regarding associations between particular professional development activities and student outcomes). Major topics covered by

this report include planning and implementation of professional development, selection and evaluation of professional development activities, support for teacher professional development, professional development topics, and usefulness of professional development activities.

The SASS is the nation's most extensive survey of elementary and secondary schools, and the teachers and administrators who staff them. The SASS design features parallel questionnaires for districts, schools, principals, teachers, and school library media centers. In 1999–2000, interviews were obtained from approximately 4,700 school districts, 12,000 schools, 12,300 principals, 52,400 teachers, and 9,900 school library media centers. The SASS data are reliable at the state level for public schools and at the affiliation level for private schools. For more details on the design of SASS and the 1999–2000 SASS collection, see the technical notes section (page B-1).

The Student's *t* statistic was used to test the likelihood that the differences between two estimates were larger than would be expected due to sampling error. When averages of a continuous variable were examined relative to a variable with ordered categories, Analysis of Variance (ANOVA) was used to test for a linear relationship between the two variables. To do this, ANOVA equations included orthogonal liner contrasts corresponding to successive levels of the independent variable. The variance between the means, and the unweighted sample sizes were used to partition the total sum of squares into within- and between-group sums of squares. These were used to create mean squares for the within- and between-group variance components and their corresponding F statistics, which were then compared with published values of F for a significance level of .05. Logistic regression was used to perform the multivariate analysis to determine whether or not a specific teacher, school, or district characteristic was associated with teacher participation in professional development, after controlling for the associations between teacher participation and all of the other teacher, school, and district characteristics examined in this report. All comparisons reported in the text are significant at an alpha level of 5 percent. Details of the statistical methodology and the statistical tests used are presented in the technical notes (page B-12).

Highlights

Following are some of the findings of this study.

- According to district staff, primary responsibility for deciding the content of professional development activities, designing and planning activities, and conducting activities rests most commonly with district staff or principals rather than teachers or outside providers. For example, 35 percent of district staff reported that they had primary responsibility for designing and planning activities and 37 percent named principals, whereas 24 percent picked teachers and 4 percent selected outside providers (table 1).

- Outside providers[1] play a larger role in conducting activities than they do at the earlier stages (i.e., deciding the content, deciding and planning the activities). Few districts reported that

[1] Outside providers might include, for example, university or college faculty or professional organizations.

outside providers had primary responsibility for deciding the content of the activities (2 percent) or designing and planning them (4 percent), but 21 percent reported that they had primary responsibility for conducting the activities (table 1).

- Most public school principals reported that they (83 percent), teachers (78 percent), and district staff (73 percent) had "a great deal of influence" in determining the content of in-service activities (i.e., they rated their influence as 4 or 5 on a 5-point scale) (table 2).

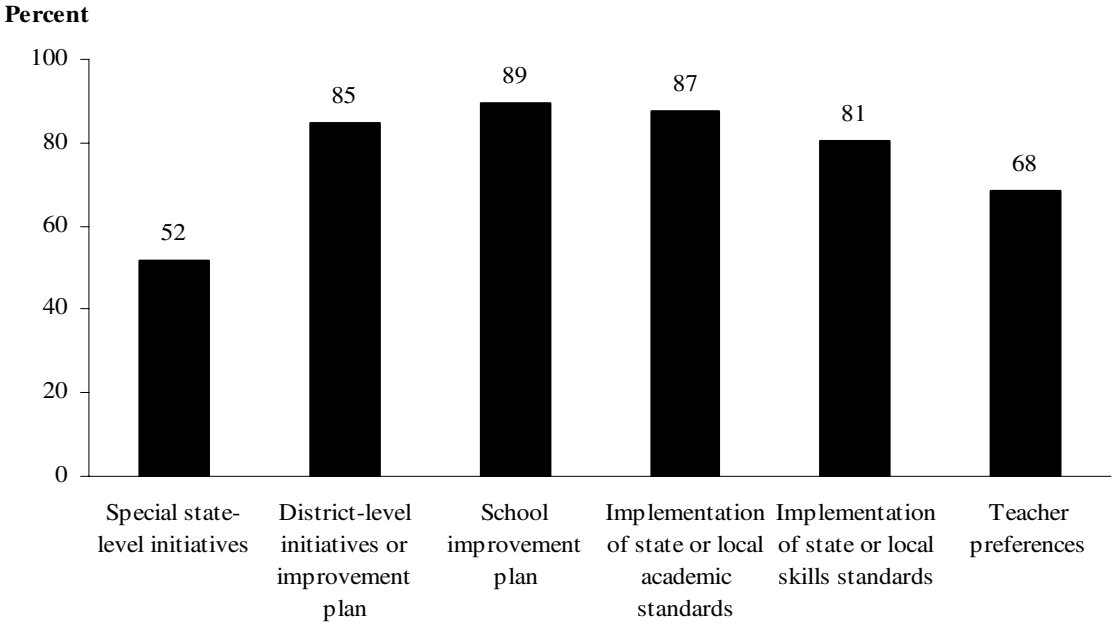
- Boards had similar amounts of influence in both public and private sectors (although the types of boards are obviously different). The percentage of private school principals who thought that their governing or diocesan board had "a great deal of influence" (29 percent) in determining the content of in-service activities (i.e., they rated their influence as 4 or 5 on a 5-point scale) was not significantly different from the percentage of public school principals who felt that way about their local school board (30 percent) (tables 2 and 3).

- At the elementary level, teachers' likelihood of reporting that teachers in their school had "a great deal of influence in determining the content of in-service activities" decreased as school size increased (table 2).

- Between 81 and 89 percent of public school principals reported that district-level initiatives and improvement plans, school improvement plans, and implementation of academic or skills standards were "very important" determinants of professional development activities for teachers (figure A).[2]

[2] That is, they rated these activities 4 or 5 on a scale of 1 to 5.

Figure A. Percentage of public school principals who reported that various initiatives, plans, and standards were very important in determining in-service professional development opportunities and activities for teachers in their school: 1999–2000



NOTE: Principals were asked to specify how important these initatives, plans, and standards were in determining the professional development opportunities and activities for teachers in their school using a scale of 1–5. "Very important" means that they chose 4 or 5.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

- In 1999–2000, most schools (92 percent) provided their teachers with time for professional development during regular contract hours, with public schools being more likely than private schools to do so (95 vs. 82 percent) (table 11).

- According to teachers' reports, scheduled time in the contract year for professional development was the most common form of support (71 percent received it), especially for public school teachers (74 vs. 57 percent for private school teachers) (table 12).

- The types of professional development activities in which teachers participated varied with their teaching experience. In both public and private schools, new teachers (those with 3 years of experience or less) were more likely than teachers with 10 years of teaching experience or more to take university courses in their main teaching field (table 16).

- In each topic area, more than one-half of all teachers who had participated thought that the activities were very useful (i.e., they rated them as 4 or 5 on a 5-point scale) (table 20).

Acknowledgments

Many people contributed to the production of this report, and the authors would like to thank several in particular. At NCES, Kathryn Chandler of the Elementary/Secondary and Library Studies Division reviewed several drafts of the report and provided valuable guidance and feedback. Paula Knepper, Elvira Hausken, and Michael Wiatrowski of NCES, and Aparna Sundaram, Nina Emerson, Todd Thomas, and Robin Gurley of the Education Statistics Services Institute reviewed the draft manuscript and provided valuable comments and suggestions. Shelley Burns of NCES was the statistical standards reviewer for this report. Lisa Bridges of the Institute of Education Sciences gathered and mediated comments from two anonymous external reviewers that greatly improved this report.

This report was produced under contract by MPR Associates. Susan Wiley, formerly of NCES, was the NCES project officer for the initial stages of the project; Stephen Broughman was the NCES project officer for the later stages of the project. Stephen Lew of MPR Associates did the programming for the tables in this report. Editing and production help was provided by Barbara Kridl, Andrea Livingston, and Francesca Tussing, also of MPR Associates, and by Joanna Bujard and Carol Rohr of Pinkerton Computer Consultants, Inc.

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Introduction

For two decades, U.S. schools have been engaged in major reform efforts to improve student learning, and they have made teacher professional development an essential component of their plans. "Never before in the history of education has there been greater recognition of the importance of professional development. Every modern proposal to reform, restructure, or transform schools emphasizes professional development as a primary vehicle in efforts to bring about needed change" (Guskey 1995, p.1).

This report uses data from the Schools and Staffing Survey (SASS) to describe teacher professional development activities in 1999–2000. The first part of the report examines the ways in which districts and schools organize and manage professional development, and the second part describes the extent to which teachers participate in various types of professional development activities. To place the analysis in context, the report begins by summarizing some of the predominant views of teacher professional development that emerged during the 1990s.

New Approaches to Professional Development

For many years, professional development typically consisted of short, stand-alone workshops on topics selected by schools and districts (often without consulting teachers), along with college or university coursetaking. During the 1990s, some experts began to suggest that these traditional forms of teacher professional development lacked the focus, intensity, and continuity needed to change classroom practices (Little 1993) and they were inadequate for preparing teachers to meet the educational needs of their students (Corcoran 1995; Miller 1995; Sprinthall, Reiman, and Theis-Sprinthall 1996).

Recognizing the limitations of traditional approaches to professional development, educators, researchers, and policymakers began to look at professional development differently. Their goal was to restructure teachers' work so that they could learn together and work collaboratively to effect changes in teaching practice and student learning (Corcoran 1995; Gilford 1996; Little 1993). As the concept of professional development changed, a new literature on "best practices" emerged (Loucks-Horsley et al. 1998), and numerous experts and

organizations developed guidelines for high-quality professional development programs.[1] While the lists differed in their specifics, there were some key elements for which there appeared a broad consensus (Hawley and Valli 2001; Elmore 2002). Hawley and Valli (2001) summarized these elements as follows:

- Is driven by analysis of the differences between goals and standards for student learning and student performance;
- Is part of a comprehensive change process;
- Is school based and integrated with school operations;
- Involves teachers in defining their needs and developing opportunities for professional development;
- Meets individual teachers' needs but is primarily collaborative;
- Provides opportunities for teachers to develop a theoretical understanding of the knowledge and skills learned;
- Is continuous and ongoing, with follow-up and support for further learning; and
- Incorporates an evaluation of the effect on teaching practice and student outcomes.

Despite the existence of this consensus view, relatively few evaluations have directly linked these strategies to improved student achievement (Elmore 2002; Guskey 2003). There are some suggestive findings indicating that professional development that meets the high-quality criteria as described by Hawley and Valli (2001) may change teacher learning and classroom practice (Porter et al. 2000) and that these changes, in turn, may affect the academic performance of students (Wenglinsky 2002; Cohen and Hill 2000). However, much additional empirical work is needed to address questions of whether particular teacher professional development practices are more or less effective than others in improving student academic performance. The current report, while providing new information on the extent to which various traditional and newer forms of teacher professional development are supported and utilized by teachers, cannot address these questions.

While support for a new approach to professional development strengthened in the early 1990s, a comprehensive 50-state review of practices in the mid-1990s suggested that professional development in many school districts still consisted of primarily one-shot workshops with little or no follow-up. Furthermore, the content typically was not linked to teachers' needs or work

[1] Guskey (2003), for example, found 13 different lists of the characteristics of effective professional development in the publications of various organizations, including the American Federation of Teachers, Association for Supervision and Curriculum Development, Education Development Center, Educational Research Service, Educational Testing Service, Eisenhower Professional Development Program, National Governors' Association, National Institute for Science Education, National Partnership for Excellence and Accountability in Teaching, National Staff Development Council, and the U.S. Department of Education.

assignments and paid little attention to teachers' subject-matter knowledge (Consortium for Policy Research in Education [CPRE] 1997). National surveys of full-time public school teachers in 1998 and 2000 found that teacher participation in professional development in seven content areas typically lasted 1 to 8 hours, except where it involved in-depth study of the teacher's subject area (Parsad, Lewis, and Farris 2001).[2] In addition, teachers were actually less likely in 2000 than in 1998 to report participating in regularly scheduled collaboration with other teachers. Nevertheless, teachers were more likely in 2000 than in 1998 to report that they felt "very well prepared" in almost all the content areas,[3] suggesting that the quality, if not the quantity, of professional development may be changing (at least according to teachers' perceptions). For new teachers, it may be that preservice training has improved.

A longitudinal evaluation of the Eisenhower Professional Development Program (1996 to 1999) concluded that teachers did not typically receive high-quality professional development on a consistent basis (Porter et al. 2000).[4] Among teachers participating in the Eisenhower-assisted programs nationwide, only 23 percent participated in the kinds of professional development recommended by reforms (such as teacher networks or study groups, rather than traditional workshops or conferences). In addition, the evaluators found that the professional development activities averaged less than a week in length, the average number of contact hours was 25, and the activities of half the teachers lasted 15 hours or less. Also, most activities did not involve collective participation or emphasize content, had limited content, and offered few active learning opportunities. Although the evaluators found many examples of high-quality professional development that had a positive effect on teaching practice, these programs were not provided consistently enough to produce an overall change in teaching practice during the period studied.

This report contributes yet another perspective on the practice of professional development using the 1999–2000 reports of teachers, principals, and district staff. Where possible, it compares activities in 1993–94 with those in 1999–2000 to provide an indication of how professional development changed (or did not change) in the intervening years. The report also examines differences between public and private schools and teachers and describes variation by district, school, and teacher characteristics.

[2] The content areas were state or district curriculum and performance standards, integration of educational technology in the grade or subject taught, new methods of teaching, in-depth study in the main subject area, student performance assessment, addressing the needs of students with disabilities, and classroom management (including student discipline).

[3] The one exception was maintaining order and discipline in the classroom.

[4] The evaluators defined high-quality professional development in terms of type (reform vs. traditional), duration, extent of collective participation, degree of active learning, extent of content focus, and degree of coherence (consistent with goals and aligned with state standards and assessments).

Data and Methodology

The Schools and Staffing Survey (SASS) is a nationally representative, integrated survey of districts, schools, principals, and teachers. The 1999–2000 survey is the fourth in a series that began in 1987–88. The second and third versions were conducted in 1990–91 and 1993–94. Approximately 4,700 public school districts, 12,000 public and private schools, 12,300 public and private school principals, and 52,000 public and private school teachers responded to the 1999–2000 SASS. Charter schools, their principals, and their teachers are included in the public totals.[5] For information on the survey's sample design, data collection procedures, and response rates, see appendix B of this report and the SASS website (http://nces.ed.gov/surveys/SASS).

The 1993–94 SASS was the first to address professional development. The items focused almost exclusively on teacher participation, with limited attention to organizational and management issues. In 1999–2000, SASS expanded its coverage of professional development, adding items to the district, principal, and teacher questionnaires. These questions were designed to provide more information about how professional development is organized and managed at the district and school levels and to discover to what extent professional development reflects the approaches now being recommended.

In cases where comparable data exist, the report describes changes that have occurred since the previous administration of SASS in 1993–94. However, the more limited coverage of organization and management issues in that school year means that not much can be discerned about how these aspects of professional development changed in the interim period. Changes in teacher participation are also difficult to determine, not only because the coverage of various types of activities changed but also because of differences in wording between the two surveys. In 1993–94, teachers were asked about the extent to which they had participated in various activities since the end of the last school year. Because teachers completed their surveys at different times during the school year, the periods covered were not uniform. To overcome this problem, teachers participating in 1999–2000 were asked to report their activities during the previous 12 months, thus making the time period covered identical for all teachers. Although the new approach to collecting information on participation provides a more complete picture of professional development activities, it limits the opportunity to make meaningful comparisons over time.

The Student's *t* statistic was used to test the likelihood that the differences between two estimates were larger than would be expected due to sampling error. When averages of a

[5] While the data related to charter schools are included in the public estimates in this report, they can, with the 1999–2000 SASS, be analyzed separately for the first time.

continuous variable were examined relative to a variable with ordered categories, Analysis of Variance (ANOVA) was used to test for a linear relationship between the two variables. To do this, ANOVA equations included orthogonal liner contrasts corresponding to successive levels of the independent variable. The variance between the means, and the unweighted sample sizes were used to partition the total sum of squares into within- and between-group sums of squares. These were used to create mean squares for the within- and between-group variance components and their corresponding F statistics, which were then compared with published values of F for a significance level of .05. Logistic regression was used to perform the multivariate analysis to determine whether or not a specific teacher, school, or district characteristic was associated with teacher participation in professional development, after controlling for the associations between teacher participation and all of the other teacher, school, and district characteristics examined in this report. All comparisons reported in the text are significant at an alpha level of 5 percent. Details of the statistical methodology and the statistical tests used are presented in the technical notes (page B-12).

Organization and Management of Teacher Professional Development

The commonly held view of effective professional development described earlier emphasizes issues related to the organization and management of professional development for teachers. It stipulates that effective professional development should reflect student needs, be part of an overall plan for change, involve teachers in planning and developing opportunities, promote collaboration at the school level, and be evaluated for its impact on teacher practice and student learning.

This section describes how professional development is organized in both the public and private sectors and managed at the school and district level (public school only) by addressing several important questions: Who plans and implements professional development activities? How are activities selected and evaluated? Does the school environment promote collaboration? Are principals actively involved? What kinds of support are provided?

Participants in Planning and Implementation

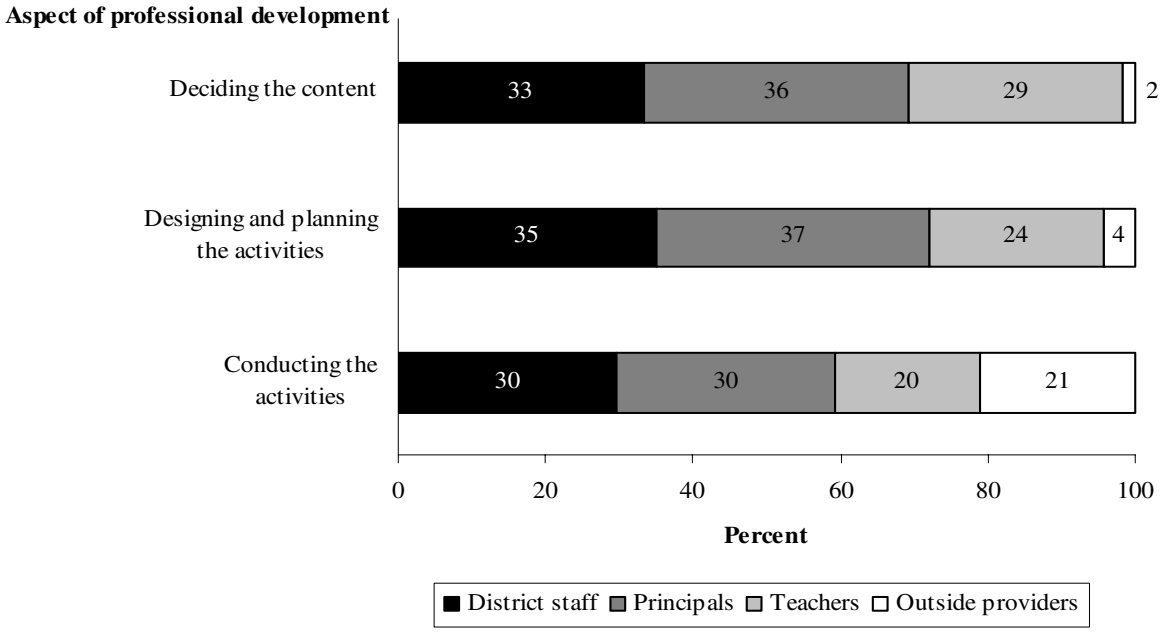
In the 1999–2000 SASS, public school district staff were asked who had primary responsibility for each of three aspects of in-service professional development activities for teachers in their districts: deciding the content of the activities, designing and planning these activities, and conducting them. In addition, principals and teachers were asked to describe the amount of influence they thought various groups and individuals had in determining the content of in-service professional development activities in their schools. These data paint a broad picture of how various actors influence and currently share responsibility for teacher professional development.

Primary Responsibility for Planning and Conducting Activities

According to public school district staff, primary responsibility for planning and conducting in-service professional development activities for public school teachers rests most commonly with district staff or principals. For each of the three stages shown in figure 1, district staff were more likely to name themselves or principals as having primary responsibility than they were to pick teachers or outside providers. For example, 35 percent of district staff reported that they had

primary responsibility for designing and planning activities and 37 percent named principals, whereas 24 percent picked teachers and 4 percent selected outside providers.

Figure 1. Percentage distribution of school districts by district staff reports of who had primary responsibility for various aspects of teacher in-service professional development activities: 1999–2000



NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "School District Survey," 1999–2000.

Teachers' roles decline moving from planning to implementation. District staff were most likely to report that teachers had primary responsibility for deciding the content of in-service professional development activities (29 percent) and least likely to report that they had primary responsibility for conducting them (20 percent). Outside providers[6] played a larger role in conducting activities than they do at the earlier stages. Few districts reported that outside providers had primary responsibility for deciding the content of the activities (2 percent) or designing and planning them (4 percent), but 21 percent reported that they had primary responsibility for conducting the activities.

For each stage of developing and implementing professional development activities, the likelihood that district staff had primary responsibility increased with district size (table 1). District staff had primary responsibility in roughly half (47 to 51 percent) of the largest districts

[6] Outside providers might include, for example, university or college faculty or professional organizations.

(10,000 or more students), compared with 22 to 30 percent of the districts with fewer than 1,000 students.

Table 1. Percentage distribution of school districts by district staff reports of who had primary responsibility for various aspects of teacher in-service professional development activities, by district size: 1999–2000

District size	District staff	Principals	Teachers	Outside providers
		Deciding the content		
Total	33.3	36.1	29.0	1.7
District size				
Less than 450	25.3	39.3	31.4	4.0
450–999	29.6	43.4	26.2	0.8
1,000–4,999	36.0	33.5	29.7	0.8
5,000–9,999	48.8	24.5	26.5	0.2
10,000 or more	48.3	27.2	24.3	0.3
		Designing and planning the activities		
Total	35.1	37.0	23.7	4.2
District size				
Less than 450	25.7	39.5	25.3	9.5
450–999	28.7	46.5	23.2	1.6
1,000–4,999	39.7	33.8	23.8	2.6
5,000–9,999	53.4	24.6	21.2	0.8
10,000 or more	50.9	28.9	19.5	0.6
		Conducting the activities		
Total	29.5	29.8	19.6	21.1
District size				
Less than 450	22.1	30.9	19.8	27.2
450–999	23.2	41.5	17.9	17.4
1,000–4,999	33.6	25.6	18.8	22.0
5,000–9,999	41.5	22.8	23.6	12.0
10,000 or more	46.7	21.8	24.4	7.1

NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "School District Survey," 1999–2000.

Principals' Perceptions of the Influence of Various Groups

Although the data just described suggest that district staff and principals have primary responsibility for deciding the content of in-service professional development activities for public school teachers, other groups or persons may influence content decisions, such as state-level bodies, school boards, teachers, school site councils, parent associations, and college and university partners. In the private sector, governing or diocesan boards assume the roles that state-level bodies and school boards play in the public sector.

Public Schools

Most public school principals (between 73 and 83 percent) thought that they, teachers, and district staff had "a great deal of influence" in determining the content of in-service activities (i.e., they rated their influence as 4 or 5 on a 5-point scale) (table 2). In contrast, about 30 percent thought that state departments of education (or other state-level bodies, such as state boards of education), local school boards, curriculum specialists, and school site councils or parent associations had a great deal of influence. As school size increased, principals were more likely to indicate that curriculum specialists and school site councils or parent associations had a great deal of influence. This pattern applied in both elementary and secondary schools and may reflect the prevalence of these types of staff and groups in large schools.

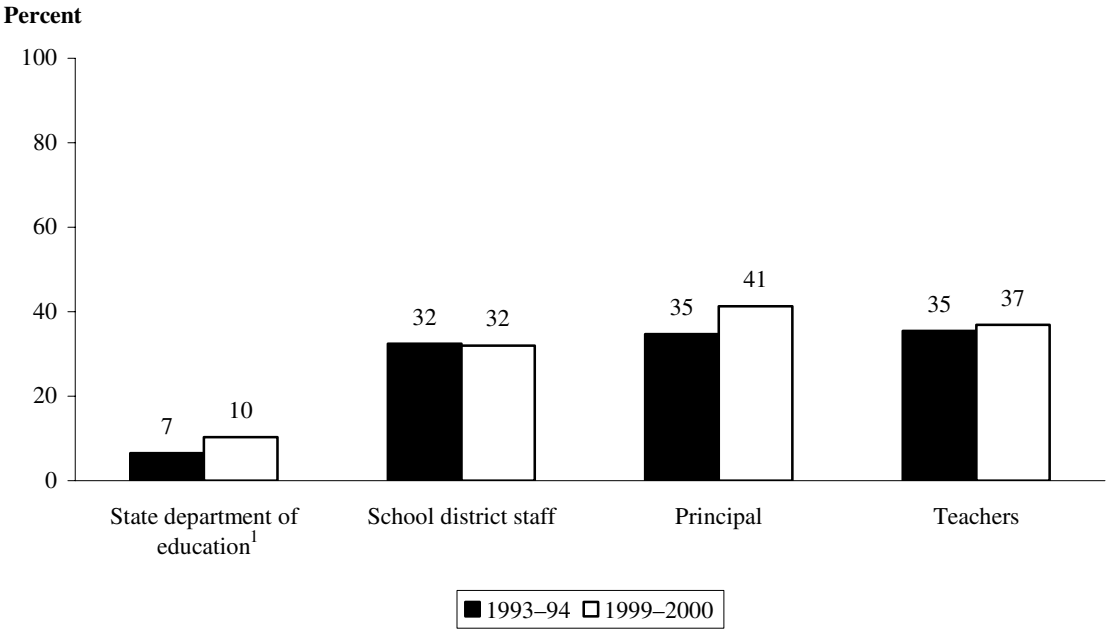
As described earlier, states became increasingly involved in teacher professional development in the 1990s, at the same time that teachers were asked to assume an active role in their own professional development. Consequently, one might expect to see changes in the amount of influence that various groups had in 1999–2000 versus 1993–94. Although principals were asked a similar question in both administrations of SASS, they were asked to rate the amount of influence on a scale of 0 to 5 the first time, and on a scale of 1 to 5 the second. Thus, it would not be valid to compare the percentage of principals choosing 4 or 5 in 1999–2000 (as shown in table 2) with the percentage using that rating in 1993–94. Comparing the percentages selecting only 5, the highest possible rating, can be more easily justified, although caution must still be used in drawing definitive conclusions. Using this measure (i.e., a rating of 5), the percentage of principals who thought that they had a great deal of influence increased (from 35 to 41 percent), while there were no statistically significant changes in the percentages who thought that school district staff or teachers had such influence (figure 2). The observed increase in the percentage reporting a great deal of influence at the state level may be due to state policy changes but also could be at least partly due to a change in the wording of the 1999–2000 survey to include "other state level bodies (e.g., state board of education)."

Table 2. Percentage of public school principals who thought that various groups had a great deal of influence in determining the content of teacher in-service professional development activities in their schools, by selected school characteristics: 1999–2000

School characteristic	State department of education/ other state-level bodies	Local school board	School district staff	Principal	Teachers	Curriculum specialists	School site council or parent association	College and university partners
Total	29.2	30.4	73.3	83.4	77.5	30.3	27.8	12.5
School level								
Elementary	29.2	30.4	73.8	83.3	77.8	31.0	28.3	12.7
Secondary	28.1	30.2	72.8	83.5	76.9	29.4	25.8	11.9
Combined	36.7	32.2	67.2	84.2	76.1	24.7	30.5	13.6
School size								
Elementary schools								
Less than 150	25.7	24.5	74.0	88.9	79.2	11.8	19.1	12.2
150–499	29.9	29.1	72.8	81.8	78.2	26.0	26.7	13.1
500 or more	29.7	32.7	74.3	83.8	77.8	34.2	32.3	12.8
Secondary schools								
Less than 400	30.6	27.8	71.1	81.9	77.1	15.7	19.4	13.5
400–749	25.4	29.1	73.8	83.6	75.4	31.9	26.3	9.5
750 or more	26.8	33.8	74.6	84.8	77.7	35.9	30.6	11.0
Combined schools								
Less than 150	42.1	35.2	66.8	83.3	77.3	17.4	36.8	15.5
150–499	35.8	29.5	67.0	86.2	72.5	27.4	27.3	11.4
500 or more	30.4	35.6	70.1	86.9	80.8	28.1	24.3	13.6

NOTE: Principals were asked how much actual influence they thought that various groups or persons had on decisions about determining the content of in-service professional development programs for teachers in their school. "A great deal of influence" means that principals rated their influence as 4 or 5 on a scale of 1–5.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Figure 2. Percentage of public school principals who thought that various groups had a great deal of influence in determining the content of teacher in-service professional development activities in their schools: 1993–94 and 1999–2000



[1] In 1999–2000, the wording was extended to include "other state-level bodies (e.g., state board of education)."
NOTE: Principals were asked how much actual influence they thought that various groups or persons had on decisions about determining the content of in-service professional development programs for teachers in their school. "A great deal of influence" means that they rated their influence as 5 on a scale of 0–5 in 1992–93 and as 5 on a scale of 1–5 in 1999–2000. This differs from the definition used in table 2 and was adopted to ensure better comparability between the 2 years.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public School Principal Surveys," 1993–94 and "Public and Charter School Principal Surveys," 1999–2000.

Private Schools

Compared with their public school counterparts, private school principals were more likely to indicate that they themselves had a great deal of influence in determining the content of teacher in-service professional development activities in their school (rating it 4 or 5) (92 vs. 83 percent), and less likely to report that teachers did (73 vs. 78 percent) (tables 2 and 3). Boards were reported by principals to have similar amounts of influence in both sectors (although the types of boards are obviously different). The percentage of private school principals who thought that their governing or diocesan board had a great deal of influence (29 percent) was not significantly different from the percentage of public school principals who felt that way about their local school board (30 percent).

Catholic school principals were more likely than nonsectarian principals to report that their board had a great deal of influence (43 vs. 13 percent). Compared with their counterparts at all non-Catholic religious schools,[7] Catholic school principals were more likely to think that they, their board (43 vs. 28 percent), and the teachers (80 vs. 65 percent) in their school had a great deal of influence in determining the content of in-service activities, and less likely to think that parents did (5 vs. 11 percent). Compared with principals at nonsectarian schools, those at non-Catholic religious schools were more likely to think that their board had a great deal of influence (28 vs. 13 percent) and less likely to think that their teachers did (65 vs. 81 percent).

In the private sector, principals' reports of influence varied by school level. For example, elementary school principals were more likely than secondary or combined school principals to indicate that their boards had a great deal of influence (34 percent vs. 19 and 23 percent, respectively). In addition, combined school principals were less likely than elementary or secondary school principals to report that teachers had a great deal of influence (63 percent vs. 77 and 80 percent, respectively).

Teachers' Perceptions of Their Own Influence

About one-third (33 percent) of teachers thought that the teachers at their school had a great deal of influence in determining the content of in-service professional development activities for teachers (table 4). At the elementary level, teacher influence varied with school size. As school size increased, teachers' likelihood of reporting that teachers in their school had a great deal of influence decreased.

[7] "Other religious schools" include conservative Christian schools, schools affiliated with an established religious group or denomination, and other religious schools not affiliated with any established religious group or denomination.

Table 3. Percentage of private school principals who thought that various groups had a great deal of influence in determining the content of teacher in-service professional development activities in their schools, by selected school characteristics: 1999–2000

School characteristic	Governing or diocesan board	Principals or school head	Curriculum specialists	Teachers	Parent association
Total	29.3	91.5	42.0	72.9	8.1
School level					
Elementary	34.1	91.8	40.8	76.5	8.4
Secondary	19.0	93.2	55.5	79.7	7.1
Combined	23.0	90.4	40.1	63.4	8.1
Affiliation					
Catholic	42.5	94.8	43.0	79.7	5.4
Other religious	27.9	89.3	39.0	64.9	10.5
Nonsectarian	13.2	91.8	47.7	81.3	6.8
School size					
Elementary schools					
Less than 150	34.2	86.5	33.7	75.1	11.2
150–499	32.3	95.9	43.9	78.9	5.2
500 or more	43.9	95.5	48.7	76.5	5.6
Secondary schools					
Less than 400	19.3	90.8	51.2	77.9	10.1
400–749	21.0	95.7	60.8	84.0	2.0
750 or more	12.9	100.0	61.5	76.8	1.4
Combined schools					
Less than 150	28.6	88.9	34.6	60.3	10.0
150–499	17.5	94.7	43.6	64.0	6.0
500 or more	11.1	92.4	53.0	78.8	2.2

NOTE: Principals were asked how much actual influence they thought that various groups or persons had on decisions about determining the content of in-service professional development programs for teachers in their school. "A great deal of influence" means that principals rated their influence as 4 or 5 on a scale of 1–5.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

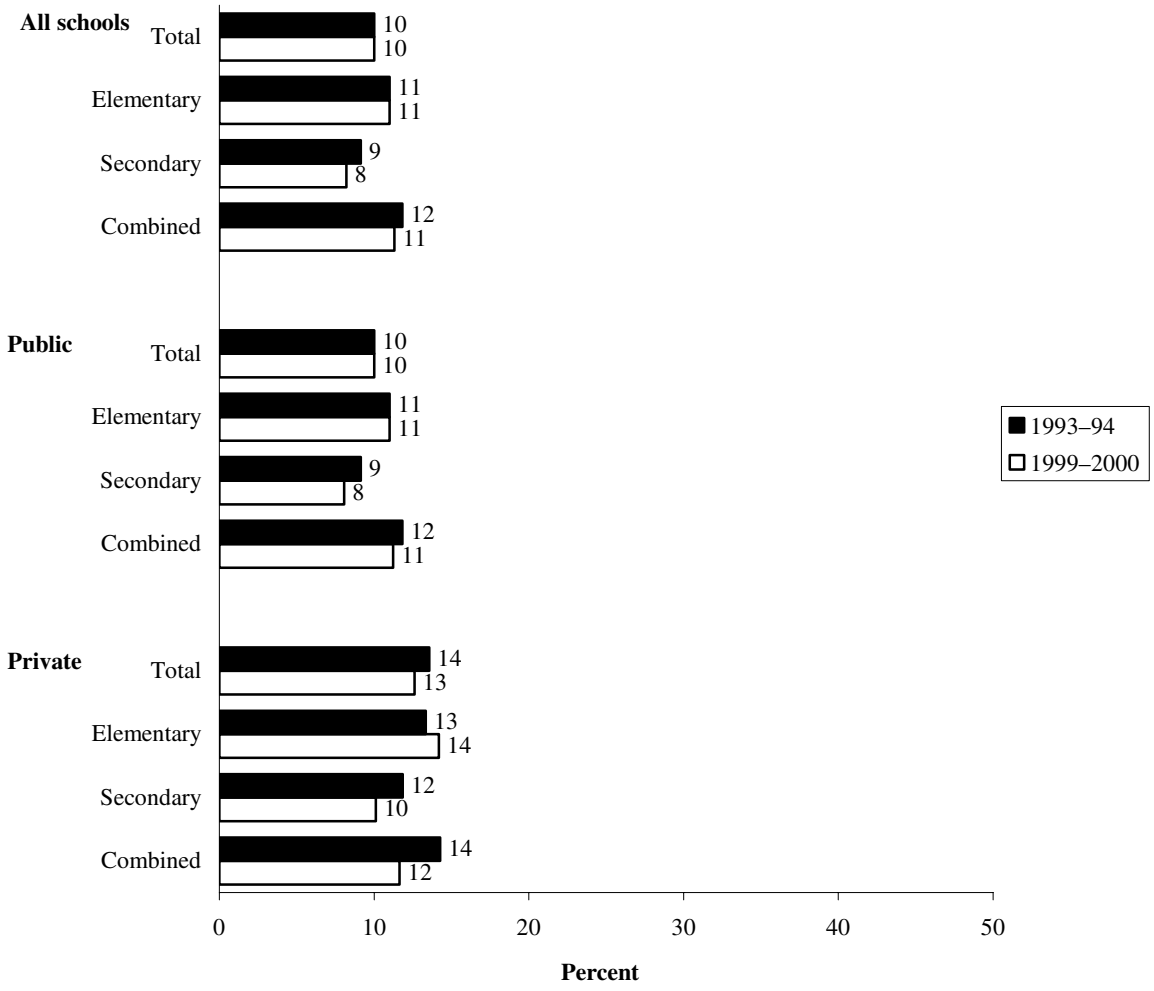
Table 4. Percentage of teachers who thought that teachers in their school had a great deal of influence in determining the content of teacher in-service professional development activities in their schools, by sector and selected school characteristics: 1999–2000

School characteristic	Total	Public	Private
Total	32.9	32.5	35.6
School level			
Elementary	33.9	33.4	37.6
Secondary	30.8	30.5	33.5
Combined	33.4	32.5	33.8
School size			
Elementary schools			
Less than 150	42.4	41.1	43.6
150–499	35.6	35.3	37.5
500 or more	32.3	32.3	29.5
Secondary schools			
Less than 400	32.9	32.3	35.4
400–749	31.5	31.2	34.7
750 or more	29.8	29.8	30.4
Combined schools			
Less than 150	35.1	30.2	37.7
150–499	34.0	35.4	33.4
500 or more	30.8	30.3	31.0

NOTE: Teachers were asked how much actual influence they thought that teachers at their school had in determining the content of in-service professional development programs. "A great deal of influence" means that teachers rated their influence as 4 or 5 on a scale of 1–5.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Given the recent emphasis on involving teachers in developing their own professional development activities, one might expect to find an increase over time in the percentage of teachers who thought that they had a great deal of influence, but this does not appear to be the case. Comparing teachers' views over time presents the same difficulty as that found for principals: different scales were used to measure influence in 1993–94 (0 to 5) and in 1999–2000 (1 to 5). Nevertheless, when the comparison is limited to those who selected the top value (5); in both years 10 percent of teachers thought that teachers in their school had a great deal of influence (figure 3).

Figure 3. Percentage of teachers who reported that teachers in their schools had a great deal of influence in determining the content of teacher in-service professional development activities, by sector and school level: 1993–94 and 1999–2000

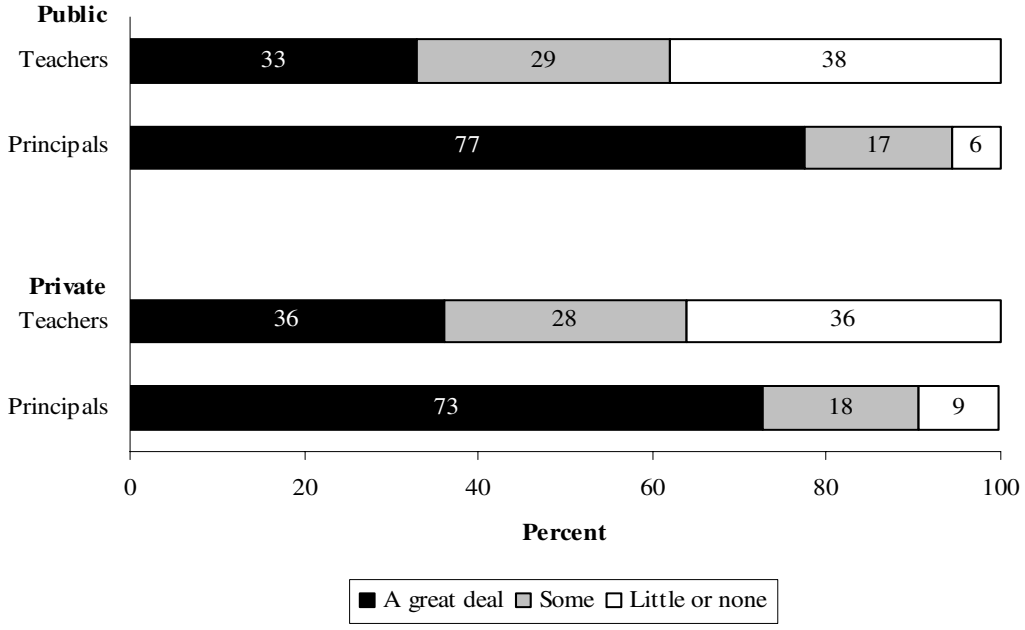


NOTE: Teachers were asked how much actual influence they thought that teachers at their school had in determining the content of in-service professional development programs. "A great deal of influence" means that teachers rated their influence as 5 on a scale of 0–5 in 1992–93 and as 5 on a scale of 1–5 in 1999–2000. This differs from the definition used in table 4 and was adopted to ensure better comparability between the 2 years.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public and Private School Teacher Surveys," 1993–94 and "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Principals and teachers did not agree about the amount of influence teachers in their school had on determining the content of in-service professional development activities. Principals were more likely than teachers to think that teachers had a great deal of influence at both public (77 vs. 33 percent) and private (73 vs. 36 percent) schools (figure 4). Although this result might reflect

real differences in opinion, it should be noted that the context in which teachers and principals were asked the question differed. Teachers were asked about their influence on the content of professional development as part of a series of questions about their influence over various school policies, whereas principals were asked about teachers' influence as part of a series of questions about the influence of various groups with respect to professional development alone. In addition, teachers' perceptions may be influenced by whether they personally had a role in determining the content. For example, if a principal consulted some teachers, the principal and those particular teachers might think that teachers had a great deal of influence, but other teachers in the school might not. Although teachers in SASS are representative of teachers both nationally and in their state (in the case of public school teachers), they are not necessarily representative of teachers in their schools because only a few teachers in each school participated in the survey.

Figure 4. Percentage distributions of teachers and principals by the amount of influence they thought that teachers in their schools had in determining the content of in-service professional development programs, by sector and staff: 1999–2000



NOTE: Teachers and principals were asked how much actual influence they thought that teachers at their school had in determining the content of in-service professional development programs. "Little or none" means that teachers and and principals rated teacher influence as 1 or 2; "Some" means they rated their influence as 3; and "A great deal" means they rated their influence as 4 or 5. Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "School District Survey," 1999–2000.

Basis for Selecting and Evaluating Professional Development Activities

As described earlier, critics faulted old professional development models for lacking focus and systematic links to district or school goals for student improvement (Corcoran 1995; Miller 1995; Sprinthall, Reiman, and Thies-Sprinthall 1996). The newer models, on the other hand, call for professional development activities that are driven by a coherent long-term plan for school improvement and evaluated for their effects on teaching practice and student outcomes. In SASS, principals were asked two sets of questions regarding the extent to which these newer approaches are taking hold. The first set addressed the importance of various initiatives, plans, and standards in determining professional development activities for teachers, and the second set asked about evaluation practices.

Importance of Initiatives, Plans, and Standards

Between 81 and 89 percent of public school principals reported that district-level initiatives and improvement plans, school improvement plans, and implementation of academic or skills standards were "very important" determinants of professional development activities for teachers (figure 5 and table 5).[8] Overall, special state initiatives were less important, with about half (52 percent) of public school principals reporting that they were very important (figure 5). According to public school principals, teachers' preferences (68 percent) were less important than plans (89 percent) or standards (87 percent), but, on average, more important than special state initiatives (52 percent) (figure 5 and table 5). The importance of certain factors was related to district size. As school district size increased, so did the percentage of principals who reported that school improvement plans, academic standards, and skills standards were very important in determining the content of professional development opportunities and activities (table 5).[9]

Among the various determinants, private school principals were most likely to rate academic standards as very important (81 percent), followed by teacher preferences (75 percent) (table 5). Religious affiliation accounted for some differences among private schools. Principals at Catholic schools were more likely than those at other types of private schools to indicate that school improvement plans, implementation of academic standards, and teacher preferences were very important factors in determining the content of professional development opportunities and activities.

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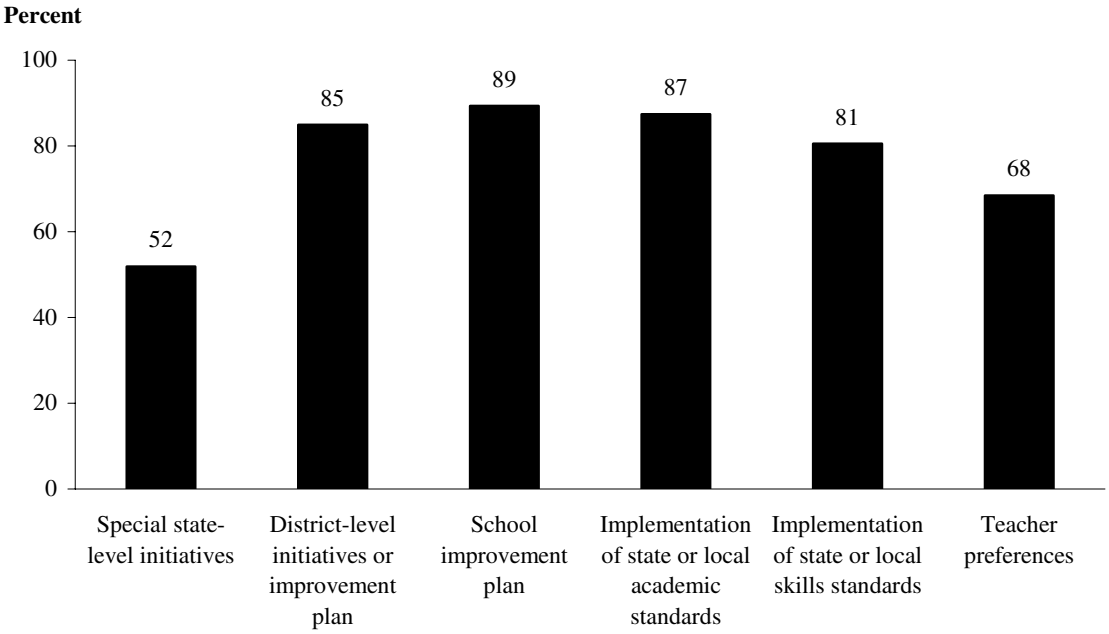
Figure 5. Percentage of public school principals who reported that various initiatives, plans, and standards were very important in determining in-service professional development opportunities and activities for teachers in their schools: 1999–2000



NOTE: Principals were asked to specify how important these initatives, plans, and standards were in determining the professional development opportunities and activities for teachers in their school using a scale of 1–5. "Very important" means that they chose 4 or 5.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table 5. Percentage of public and private school principals who reported that various initiatives, plans, and standards were very important in determining the in-service professional development opportunities and activities for teachers in their schools, by district size and selected school characteristics: 1999–2000

District size or school characteristic	Special state level initiatives	District/ private school organization or association initiatives[1]	School improvement plan	Implementation of academic standards[2]	Implementation of skills standards[2]	Teacher preferences
All schools	51.9	76.2	84.6	85.9	80.5	69.9
				Public		
Total	51.9	84.9	89.3	87.4	80.5	68.4
District size						
Less than 450	49.2	78.8	80.7	76.7	67.7	69.4
450–999	50.2	83.2	86.5	83.7	75.7	64.3
1,000–4,999	50.5	86.9	88.1	87.7	78.0	66.3
5,000–9,999	50.3	83.8	89.1	89.3	84.7	69.8
10,000 or more	54.7	85.5	92.4	90.0	84.2	72.4
School level						
Elementary	53.8	86.4	90.7	88.9	82.7	69.7
Secondary	46.3	82.2	86.3	84.6	75.5	65.1
Combined	50.6	74.9	83.1	76.5	70.1	65.1
				Private		
Total	†	48.2	69.6	81.2	†	74.8
School level						
Elementary	†	48.1	71.3	82.6	†	79.4
Secondary	†	43.8	68.2	83.3	†	76.6
Combined	†	50.0	66.4	77.8	†	64.8
Affiliation						
Catholic	†	44.9	82.5	90.1	†	86.1
Other religious	†	50.9	63.2	76.5	†	65.6
Nonsectarian	†	47.1	65.2	79.0	†	79.0

† Not applicable.

[1] For public schools, includes district improvement plan.

[2] These standards could be either state or local.

NOTE: Principals were asked to specify how important these initiatives, plans, and standards were in determining the professional development opportunities and activities for teachers in their school. "Very important" means that they chose 4 or 5 on a scale of 1–5.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Evaluating Professional Development Activities

To gather information on how professional development is evaluated at the school level, SASS asked principals how often professional development activities at their school were evaluated for evidence of improvement in teacher classroom practice and student achievement. The response categories were "never," "rarely," "sometimes," "frequently," or "always."

In 1999–2000, 54 percent of school principals reported that professional development activities were frequently or always evaluated for evidence of improvement in teacher classroom practice, and 59 percent reported the same for evidence of effects on student achievement[10] (table 6). In public schools, the likelihood that principals would report that these evaluation activities were conducted frequently or always increased with district size. In both sectors, these activities were more common in elementary than in secondary schools, and in public elementary schools, they were more common as school size increased.

School Environment

Current models of professional development emphasize the collegial nature of effective professional development, with the expectation that teachers and administrators will work together to develop common goals, share ideas, and achieve their goals (Friedkin and Slater 1994; Louis, Marks, and Kruse 1996). To determine the extent that this was happening, teachers were asked to report their perceptions about the amount of collaboration in their schools, and principals were asked about several aspects of teachers' and their own involvement in teacher professional development.

Teachers' Perspectives on Collaboration

In both 1993–94 and 1999–2000, the SASS teacher surveys addressed teachers' perceptions of the amount of collaboration in their schools, thus providing an opportunity to observe any change over time. Teachers were asked how often the principal talked with them about their instructional practices, how much coordination took place among teachers concerning class content, and how much cooperation existed among staff members. Teachers could "strongly" or "somewhat" agree or disagree with a series of statements.

[10] Principals were simply asked to indicate how frequently professional development activities were evaluated for evidence of improvement in teacher classroom practice or evaluated for evidence of effects on student achievement. Principals were not asked to describe these evaluation activities in any way.

Table 6. Percentage of principals who reported that teachers' professional development activities were frequently or always evaluated for improvement in teacher classroom practice and effects on student achievement, by district size and selected school characteristics: 1999–2000

District size or school characteristic	Improvement in classroom practice			Effects on student achievement		
	Total	Public	Private	Total	Public	Private
Total	54.2	54.1	54.4	59.1	60.4	54.8
District size						
Less than 450	45.9	45.9	†	51.2	51.2	†
450–999	45.9	45.9	†	54.0	54.0	†
1,000–4,999	49.9	49.9	†	53.0	53.0	†
5,000–9,999	55.0	55.0	†	61.9	61.9	†
10,000 or more	61.5	61.5	†	69.9	69.9	†
School level						
Elementary	56.1	55.9	56.9	61.7	62.9	57.3
Secondary	48.8	49.3	45.2	53.2	54.0	46.7
Combined	52.1	51.0	52.6	53.4	55.4	52.5
School size						
Elementary schools						
Less than 150	51.5	45.8	55.7	54.7	53.6	55.6
150–499	53.9	53.6	55.1	60.0	61.0	56.1
500 or more	59.8	59.0	57.1	66.1	66.3	62.6
Secondary schools						
Less than 400	48.6	48.8	47.8	53.5	54.0	51.3
400–749	46.6	47.2	40.8	51.6	52.4	41.4
750 or more	49.9	50.2	43.6	53.2	54.0	32.5
Combined schools						
Less than 150	55.2	56.6	54.7	58.1	58.5	58.0
150–499	51.6	48.9	52.8	50.5	53.8	49.0
500 or more	46.9	46.2	47.4	48.3	52.2	45.7

† Not applicable.
NOTE: Principals were asked to indicate how often professional development activities were evaluated for evidence of improvement in classroom practice and effects on student learning: "never," "rarely," "sometimes," "frequently," or "always."
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

In 1999–2000, 12 percent of all teachers strongly agreed that their principal talked with them frequently about their instructional practices, 38 percent reported that they themselves made a conscious effort to coordinate their course content with other teachers, and 37 percent reported that there was a great deal of cooperative effort among the staff members (table 7). Private school teachers were more likely than their public school counterparts to strongly agree that there was a great deal of cooperative effort among the staff members (56 vs. 34 percent).

In both sectors, teachers in elementary and combined schools were more likely than those in secondary schools to perceive their schools as collaborative places in which to work. School size was also a factor. Across sector and level, as school size increased teachers generally were less likely to strongly agree that there was a great deal of cooperative effort among the staff members and that the principal talked with them frequently about their instructional practices.[11]

On these three measures of collaboration, no significant change was observed among public school teachers between 1993–94 and 1999–2000 (figure 6).

[11] The two exceptions were that the apparent declines for public combined schools and private elementary schools in the percentages reporting that their principal talked with them frequently about their instructional practices were not statistically significant.

Table 7. Percentage of teachers who strongly agreed with various statements about within-school collaboration among teachers and principals, by sector and selected school characteristics: 1999–2000

School characteristic	The principal talks with me frequently about my instructional practices	I make a conscious effort to coordinate the content of my course with other teachers	There is a great deal of cooperative effort among the staff members
All schools	11.6	38.1	36.8
		Public	
Total	11.0	38.0	33.9
School level			
Elementary	12.6	42.0	37.9
Secondary	7.9	30.3	26.2
Combined	11.8	32.7	33.8
School size			
Elementary school			
Less than 150	15.0	45.7	53.7
150–499	15.3	44.1	41.6
500 or more	11.1	40.5	34.2
Secondary school			
Less than 400	13.0	25.6	33.5
400–749	9.6	28.7	28.1
750 or more	6.4	31.6	24.0
Combined school			
Less than 150	12.1	30.6	36.2
150–499	13.0	31.7	36.5
500 or more	9.7	34.6	29.5

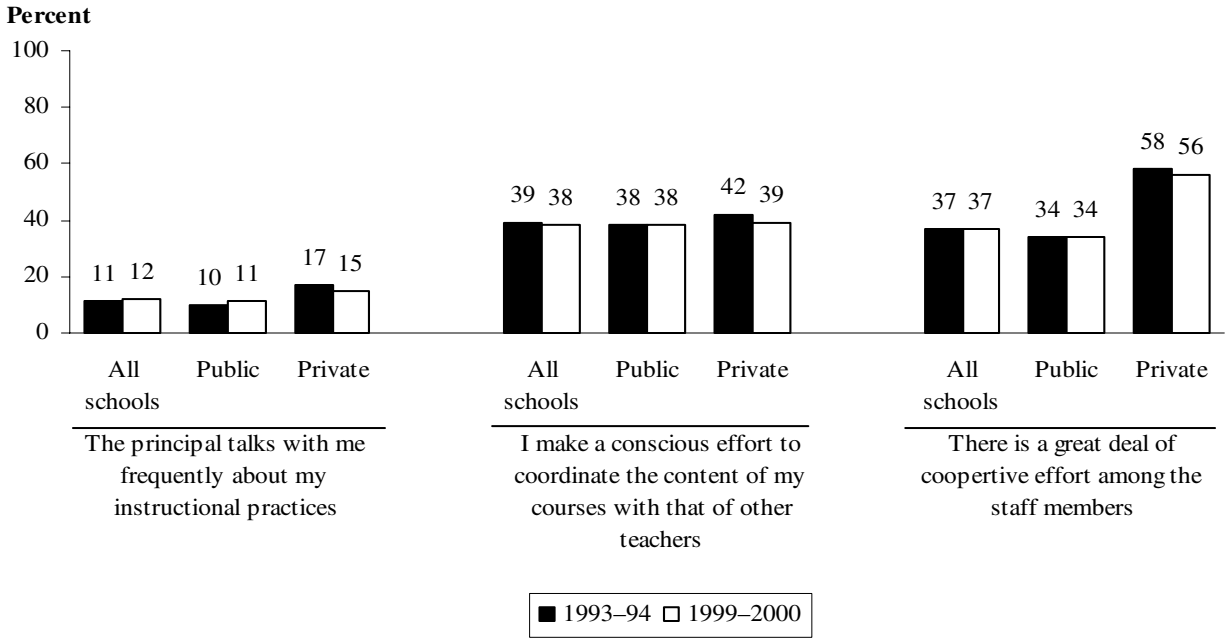
See notes at end of table.

Table 7. Percentage of teachers who strongly agreed with various statements about within-school collaboration among teachers and principals, by sector and selected school characteristics: 1999–2000—Continued

School characteristic	The principal talks with me frequently about my instructional practices	I make a conscious effort to coordinate the content of my course with other teachers	There is a great deal of cooperative effort among the staff members
		Private	
Total	15.3	39.2	56.0
School level			
Elementary	17.0	41.6	59.0
Secondary	8.3	29.2	41.5
Combined	16.2	40.7	58.9
School size			
Elementary school			
Less than 150	19.3	40.6	63.4
150–499	16.1	41.8	59.1
500 or more	16.3	45.1	54.5
Secondary school			
Less than 400	10.5	23.4	45.2
400–749	7.1	32.1	40.7
750 or more	5.0	33.6	36.0
Combined school			
Less than 150	24.7	39.8	65.6
150–499	15.2	37.0	57.1
500 or more	11.0	42.5	54.3

NOTE: Teachers were asked whether they "strongly agreed," "somewhat agreed," "somewhat disagreed," or "strongly disagreed" with the statements.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Figure 6. Percentage of teachers who strongly agreed with various statements about within-school collaboration between teachers and principals, by sector: 1993–94 and 1999–2000



NOTE: Teachers were asked whether they "strongly agreed," "somewhat agreed," "somewhat disagreed," or "strongly disagreed" with the statements.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public and Private School Teacher Surveys," 1993–94 and "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Characteristics of Teachers' Professional Development

Principals were asked several questions about how teachers' professional development was treated in their schools. Seventy-two percent of principals reported that professional development was frequently or always considered part of teachers' regular work, 58 percent indicated that teachers in their school or district frequently or always planned professional development activities, and 46 percent reported that teachers in their school or district frequently or always presented the professional development activities (table 8).

Private school principals were less likely than their public school counterparts to indicate that teachers frequently or always planned (47 vs. 62 percent) or presented professional development (31 vs. 51 percent).

Table 8. Percentage of principals who reported that teacher professional development frequently or always had certain attributes, by selected school or principal characteristic: 1999–2000

School or principal characteristic	Considered part of teachers' regular work	Planned by teachers in the school	Presented by teachers in the school	Accompanied by resources teachers need to make changes in the classroom[1]
All schools	72.1	58.1	46.1	53.4
		Public		
Total	71.1	61.6	50.8	53.1
School level				
Elementary	72.0	62.3	52.4	53.7
Secondary	68.1	60.0	47.1	51.1
Combined	73.6	59.0	44.2	53.0
School size				
Elementary school				
Less than 150	64.0	58.9	34.7	38.6
150–499	71.5	60.9	47.7	53.5
500 or more	73.6	64.8	59.8	57.0
Secondary school				
Less than 400	70.3	56.0	36.6	50.0
400–749	67.3	58.9	47.2	51.5
750 or more	66.6	63.8	57.5	50.1
Principal years of experience				
3 or fewer	69.5	57.3	47.5	52.0
4–9	71.2	62.8	51.0	53.7
10–19	71.3	63.5	52.5	53.1
20 or more	74.7	65.3	54.8	54.0

See notes at end of table.

Table 8. Percentage of principals who reported that teacher professional development frequently or always had certain attributes, by selected school or principal characteristic: 1999–2000—Continued

School or principal characteristic	Considered part of teachers' regular work	Planned by teachers in the school	Presented by teachers in the school	Accompanied by resources teachers need to make changes in the classroom[1]
		Private		
Total	75.0	46.6	31.1	54.4
School level				
Elementary	76.0	47.6	28.6	56.6
Secondary	74.0	51.4	37.3	53.7
Combined	73.4	43.1	34.1	50.2
School size				
Elementary school				
Less than 150	72.2	48.7	28.3	56.6
150–499	79.3	46.7	25.7	55.2
500 or more	79.5	43.6	24.1	61.1
Secondary school				
Less than 400	71.9	50.4	34.2	54.5
400–749	79.1	49.8	42.4	57.7
750 or more	74.4	48.5	35.7	49.7
Principal years of experience				
3 or fewer	71.9	40.9	29.4	54.0
4–9	74.8	48.8	32.6	56.0
10–19	74.8	48.9	30.3	50.2
20 or more	81.3	49.2	33.1	59.6

[1] For example, time and materials.
NOTE: Principals were asked how often professional development for teachers at their school had certain attributes: "never," "rarely," "sometimes," "frequently," or "always."
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Principals' reports were related to their years of experience. In both public and private schools, new principals (i.e., those in their first 3 years as a principal) were less likely than the most experienced principals (those with 20 or more years of experience) to regard professional development as part of teachers' regular work (public: 70 vs. 75 percent, private: 72 vs. 81 percent). In public schools, new principals were also less likely than principals with more experience to report that teachers in their school frequently or always planned or presented professional development at their school (48 vs. 55 percent).

School size also mattered in public schools, where the percentage of principals reporting that teachers in their school frequently or always planned or presented professional development activities increased with school size.

Approximately half (53 percent) of all principals thought that professional development was frequently or always accompanied by the resources teachers need (e.g., time and materials) to make changes in the classroom. Principals in small public elementary schools (fewer than 150 students) were less likely than those in larger elementary schools to think that needed resources were frequently or always available (39 vs. 54 and 57 percent).

Principals' Involvement in Teachers' Professional Development

In the 1999–2000 SASS, principals were asked how often they engaged in various activities related to teachers' professional development. The response categories were "never," "once or twice a month," "once or twice a week," or "every day." Overall, 36 percent of principals reported that they had provided and engaged staff in professional development activities at least once a week in the past month, and 66 percent reported that they made efforts to build professional community among faculty and other staff that often (table 9). Public school principals were more likely than private school principals to have reported that they had provided and engaged staff in professional development activities at least once a week in the past month (38 vs. 29 percent) or that they made efforts to build professional community among faculty and other staff that often (68 vs. 60).

In both public and private schools, as principals' years of experience increased, so did their likelihood of providing and engaging staff in professional development activities at least once a week. This relationship however was not found with regard to principals' efforts to build professional community.

Table 9. Percentage of principals who had participated in various activities related to professional development at least once a week during the last month, by sector and selected school or principal characteristic: 1999–2000

School or principal characteristic	Provided and engaged staff in professional development activities	Built professional community among faculty and other staff
All schools	36.1	66.3
	Public	
Total	38.3	68.3
School level		
Elementary	39.0	69.7
Secondary	36.8	64.9
Combined	34.3	62.4
School size		
Elementary school		
Less than 150	32.2	58.0
150–499	36.3	69.6
500 or more	42.8	71.9
Secondary school		
Less than 400	32.4	62.1
400–749	36.6	61.9
750 or more	40.9	69.2
Principal years of experience		
3 or fewer	36.2	68.2
4–9	38.4	70.2
10–19	37.9	67.1
20 or more	44.3	66.1
	Private	
Total	29.3	60.2
School level		
Elementary	28.7	61.8
Secondary	27.2	60.9
Combined	31.2	56.8
School size		
Elementary school		
Less than 150	24.9	54.7
150–499	32.0	65.2
500 or more	42.4	78.4
Secondary school		
Less than 400	28.7	58.1
400–749	24.9	69.4
750 or more	26.3	73.5
Principal years of experience		
3 or fewer	26.9	60.2
4–9	26.1	58.8
10–19	29.6	61.6
20 or more	38.1	60.1

NOTE: Principals were asked how often they had engaged in certain activities in the last month in their roles as principal: "never," "once or twice a month," "once or twice a week," or "every day."
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Principal involvement in professional development was also related to school size. In both sectors, principals were generally more likely to engage in these activities at least weekly as school size increased. Private secondary schools provided an exception to this pattern: size did not seem to be related to providing and engaging staff in professional development in these schools.

Support for Professional Development

This section examines several aspects of support for professional development, including sources of funding, the types of support and incentives districts offer teachers for participating, and the types of support and rewards teachers actually receive for completing professional development activities. Whether teachers actually receive support or rewards depends on several factors, including whether their schools or districts offer them; whether teachers have opportunities to participate in activities qualifying for support; and whether they are required to, choose to, or decline to take advantage of these opportunities when they are offered. For example, a district may offer reimbursement of travel expenses for attending conferences, but not all teachers in that district would necessarily choose to attend a conference in any given year.

Sources of Funding

Funding for teacher professional development in the public sector comes from a variety of sources. Almost all public school districts (94 percent) used general district operating funds, and 80 percent used general school operating funds (table 10). A majority received funding from their state (72 percent) and from various federal programs (the percentage varying with the program), and 35 percent received private sector grants. While almost all districts had district operating funds allocated for professional development, the likelihood of receiving funds from any of the other sources increased with district size.

Table 10. Percentage of school districts that reported using various sources of funding for teacher professional development activities in their districts, by district size: 1999–2000

District size	General district operating funds	General school operating funds	State professional development funds	Special project budgets	School improve-ment funds	Title 1	Eisen-hower program	Other federal	Private sector grants
Total	94.2	79.8	72.0	69.0	62.9	76.9	86.8	79.9	35.0
District size									
Less than 450	92.4	78.2	62.9	51.1	53.1	60.0	75.5	71.5	19.6
450–999	95.4	80.4	70.3	68.3	57.0	73.1	86.9	81.0	25.7
1,000–4,999	94.6	79.3	76.6	76.7	67.9	86.0	93.4	82.3	42.3
5,000–9,999	95.6	82.8	80.3	85.2	74.2	91.2	91.3	87.9	55.7
10,000 or more	93.9	85.7	82.4	90.0	84.3	95.9	92.9	92.5	69.9

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "School District Survey," 1999–2000.

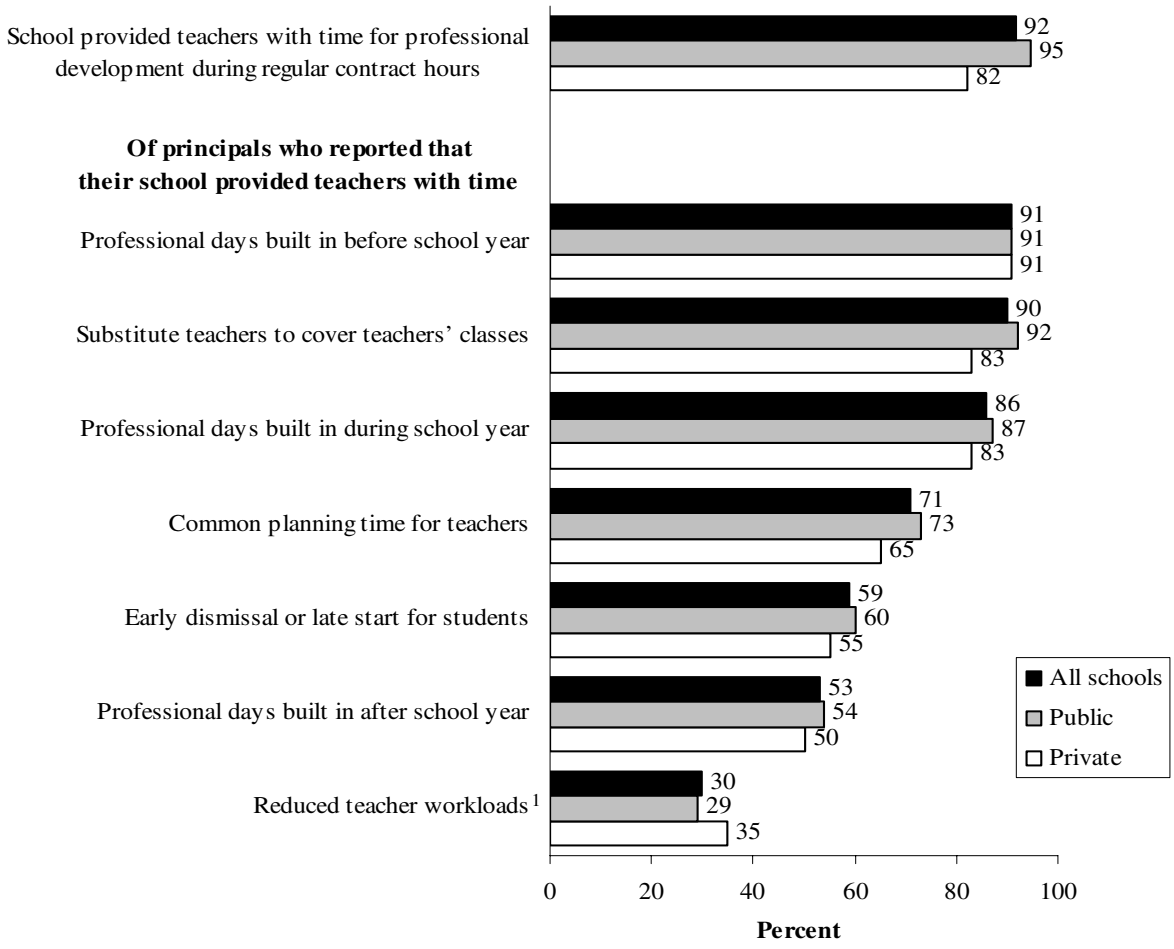
Making Time for Professional Development

Teachers need blocks of time to take advantage of the kinds of opportunities envisioned by the newer models of professional development, especially those that require concentrated work and collaboration with other teachers (Renyi 1996). However, school schedules in the United States are generally inflexible and allow teachers little time for preparation, planning, cooperation, or professional growth (National Education Commission on Time and Learning [NECTL] 1994).

A number of options exist for providing time for teachers to collaborate or attend professional development activities. Examples include setting aside days at the beginning of, during, or end of the school year, hiring substitutes to cover classes while teachers attend professional development activities, or restructuring teachers' schedules so that they spend less time in the classroom or on noninstructional duties. The SASS data show that most schools currently use one or more of these methods to provide teachers with time (although they do not indicate how much time teachers are allotted).

In 1999–2000, most schools (92 percent) provided their teachers with time for professional development during regular contract hours, with public schools being more likely than private schools to do so (95 vs. 82 percent) (figure 7 and table 11). Within the private sector, Catholic schools were more likely than either other religious or nonsectarian schools to provide teachers with this kind of time for professional development (95 percent vs. 74 and 81 percent, respectively).

Figure 7. Percentage of principals who reported that their school provided teachers with time for professional development during regular contract hours, and of these principals, percentage who reported that their school used various methods to provide their teachers with time, by sector: 1999–2000



[1] Examples of reduced teacher workloads are less time in the classroom with students or less time on assigned noninstructional duties.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table 11. Percentage of principals who reported that their school provided teachers with time for professional development during regular contract hours, and of those, percentage who reported that their schools used various methods to provide teachers with time, by sector, district size, and selected school characteristics: 1999–2000

District size or school characteristic	School provided teachers with time during regular contract hours	Of these principals, percentage who reported that their school used the following methods to provide teachers with time:						
		Professional days built in before school year	Substitute teachers to cover teachers' classes	Professional days built in during school year	Common planning time for teachers	Early dismissal or late start for students	Professional days built in after school year	Reduced teacher workloads[1]
All schools	91.7	91.0	90.1	86.2	71.4	59.0	52.9	30.4
Public								
Total	94.8	91.1	92.1	87.0	73.2	60.0	53.8	29.2
District size								
Less than 450	95.8	92.3	94.2	83.1	55.8	70.5	48.5	23.9
450–999	95.4	90.6	95.7	87.0	66.0	75.5	53.5	27.3
1,000–4,999	96.0	93.1	93.4	89.5	69.9	66.2	52.8	28.2
5,000–9,999	94.4	88.9	93.2	86.0	76.9	55.8	54.3	28.6
10,000 or more	93.4	91.2	90.0	86.8	79.9	51.2	55.7	30.9
School level								
Elementary	94.7	90.4	92.3	87.3	78.8	57.9	54.2	28.6
Secondary	95.1	93.0	92.2	86.5	57.3	65.5	52.5	30.2
Combined	94.9	91.6	87.5	85.3	69.5	63.3	53.4	34.5
Private								
Total	82.0	90.5	82.6	83.1	65.0	55.3	49.6	34.5
School level								
Elementary	83.4	91.7	86.2	83.6	64.2	53.6	47.8	32.6
Secondary	85.7	87.2	80.4	81.0	56.2	71.2	47.1	32.0
Combined	77.8	89.1	75.4	82.9	70.0	53.3	54.4	39.7
Affiliation								
Catholic	95.4	95.5	89.1	90.1	55.0	65.0	43.7	29.4
Other religious	73.9	89.4	79.3	79.2	68.5	52.4	53.6	35.2
Nonsectarian	80.8	84.1	78.1	79.2	75.1	44.6	51.3	42.1

[1] Examples of reduced teacher workloads are less time in the classroom with students or less time on assigned noninstructional duties.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Schools that provided teachers with time for professional development used various methods, including setting aside days for professional development before the beginning of the school year (91 percent), during the school year (86 percent), or after it (53 percent). In addition, many schools freed up teachers' time during the school day by hiring substitute teachers to cover their classes (90 percent), setting aside common planning time for teachers (71 percent), or adjusting the length of the school day by dismissing students early or starting them late (59 percent). Reducing teachers' workloads was less common (30 percent).

Public schools were more likely than private schools to use most of these methods to provide time for teacher professional development. The two exceptions were setting aside professional days before the school year began, where no difference between sectors was found, and reducing teachers' workloads, a method that private schools were more likely to use than public schools.

In both sectors, elementary schools were more likely than secondary schools to use common planning time for teachers (public: 79 vs. 57 percent, private: 64 vs. 56 percent) and less likely to dismiss students early or start them late (public: 58 vs. 66 percent, private: 54 vs.71 percent). In the private sector, elementary schools were more likely than secondary or combined schools to hire substitute teachers to cover teachers' classes (86 vs. 80 and 75 percent), and combined schools were more likely than elementary and secondary schools to reduce teachers' workloads (40 vs. 33 and 32 percent).

As district size increased, public schools were more likely to set aside common planning time for teachers and reduce teacher workloads. However, they were less likely to hire substitute teachers to cover teachers' classes or adjust the length of the school day.

In the private sector, Catholic schools were more likely than other religious and nonsectarian schools to use most of the methods shown in table 11 to provide teachers with professional development time. The exceptions were that Catholic schools were less likely than the other two types of private schools to build in professional days after the school year, use common planning time for teachers, or reduce teacher workloads.

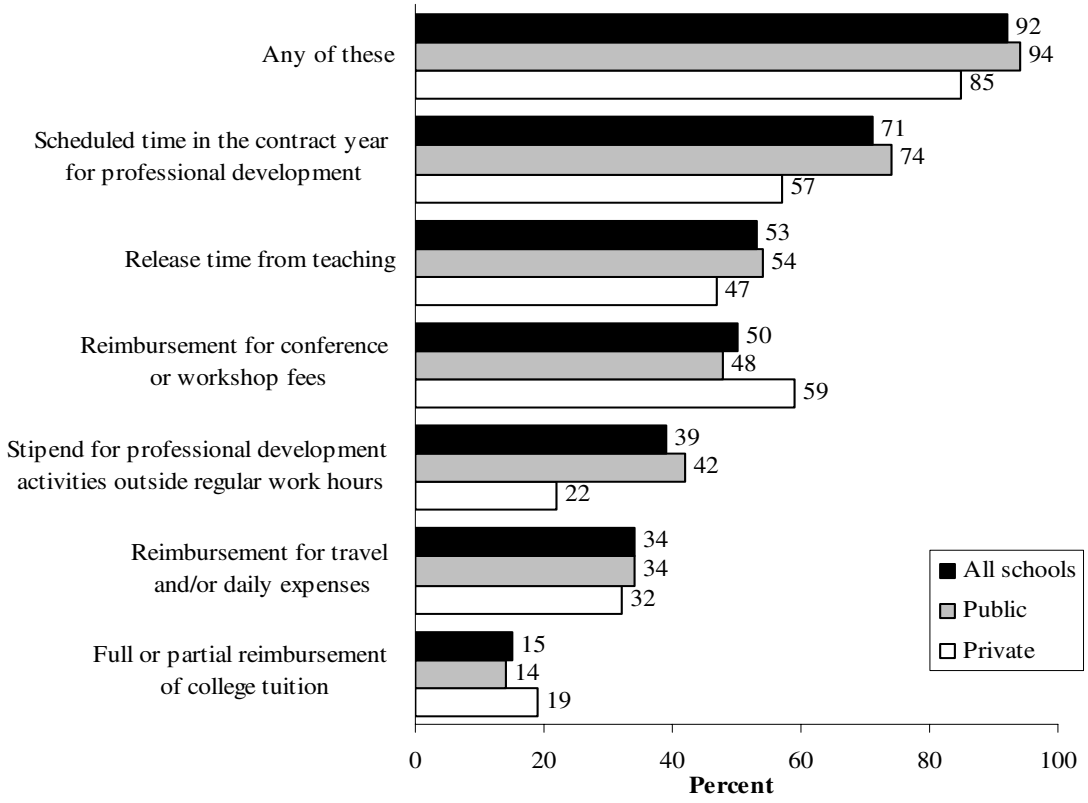
Types of Support Teachers Receive

This section describes the specific kinds of time and monetary support teachers actually receive. Examples of the former include release time from teaching or time built into teachers' schedules for professional development. Monetary support could take the form of stipends for participating in professional development activities outside regular work hours or reimbursement

for expenses such as college tuition, conference or workshop fees, or travel-related expenses. In the 1999–2000 SASS, teachers were asked to identify which types of support they had received during the previous 12 months.

According to teachers' reports, scheduled time in the contract year for professional development was the most common form of support (71 percent received it), especially for public school teachers (74 vs. 57 percent for private school teachers) (figure 8 and table 12). The next most common forms of support were release time from teaching, received by 53 percent of all teachers, then reimbursement for conference or workshop fees (50 percent received it). Teachers were less likely to receive stipends for professional development activities that took place outside regular work hours (39 percent) and reimbursement for travel or daily expenses (34 percent). Least common was full or partial reimbursement of college tuition and fees (15 percent). Overall, 93 percent of teachers had received at least one of these types of support during the previous 12 months (94 percent of public school teachers and 85 percent of private school teachers).

Figure 8. Percentage of teachers who reported receiving various types of support for professional development activities in which they had participated during the past 12 months, by sector: 1999–2000



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table 12. Percentage of teachers who reported receiving various types of support for professional development activities in the past 12 months, by sector, district size, and selected school and teacher characteristics: 1999–2000

District size and school or teacher characteristic	Any of these types of support	Scheduled time in the contract year for professional development	Release time from teaching	Reimbursement for conference or workshop fees	Stipend for professional development activities outside regular work hours	Reimbursement for travel and/or daily expenses	Full or partial reimbursement of college tuition
All schools	92.5	71.4	53.3	49.8	39.1	33.8	15.1
				Public			
Total	93.6	73.6	54.3	48.5	41.6	34.1	14.4
District size							
Less than 450	93.9	72.3	61.5	61.3	38.0	55.5	17.5
450–999	96.5	76.0	62.2	63.5	41.6	54.8	21.7
1,000–4,999	95.2	75.3	57.8	59.2	39.1	45.2	17.7
5,000–9,999	93.7	74.9	55.4	50.8	39.4	37.2	14.5
10,000 or more	92.0	72.2	50.6	37.6	44.5	21.9	11.1
School level							
Elementary	94.4	74.9	56.4	47.5	44.7	30.7	14.4
Secondary	92.1	71.2	49.6	50.4	35.9	40.3	14.6
Combined	92.6	72.1	59.3	48.5	36.0	40.2	14.0
Years of teaching experience							
3 or fewer	91.3	68.3	54.6	44.6	40.4	28.2	15.4
4–9	94.0	73.3	55.0	50.8	43.9	35.8	16.9
10–19	94.3	75.4	55.4	50.7	42.1	35.5	15.3
20 or more	93.9	74.9	52.7	47.1	40.3	34.5	11.7
				Private			
Total	84.8	56.6	46.9	58.7	22.3	32.3	19.2
School level							
Elementary	85.6	57.7	46.6	59.0	23.0	26.5	16.6
Secondary	84.1	53.8	46.7	56.1	20.1	32.0	23.6
Combined	84.0	56.4	47.5	59.6	22.4	40.5	20.7
Affiliation							
Catholic	85.5	57.4	45.9	54.1	21.5	18.7	17.3
Other religious	83.9	57.6	45.3	60.4	22.0	41.2	18.5
Nonsectarian	85.1	53.9	51.2	63.0	24.1	38.5	23.2
Years of teaching experience							
3 or fewer	77.7	49.9	44.3	50.9	20.3	27.0	16.6
4–9	84.6	56.3	47.6	59.7	24.5	32.4	21.9
10–19	86.8	59.8	48.9	61.9	22.1	34.2	20.3
20 or more	89.2	59.6	46.5	61.2	22.2	34.7	17.5

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

In the public sector, teachers' receipt of scheduled time during the contract year for professional development (the most common form of support) was not consistently related to district size, but teachers' receipt of several other types of support declined as district size increased. Specifically, as district size increased, public school teachers were less likely to receive release time from teaching or reimbursement for college tuition, conference or workshop fees, or travel expenses.

School level was a factor as well. In the public sector, elementary school teachers were more likely than secondary school teachers to receive stipends for participating in professional development activities that took place outside regular work hours. On the other hand, secondary school teachers were more likely than elementary school teachers to receive reimbursement for college tuition (in the private sector) and travel expenses (in both sectors).

In the private sector, teachers in Catholic schools were less likely than nonsectarian school teachers to receive release time from teaching (46 vs. 51 percent) or college tuition reimbursement (17 vs. 23 percent) and less likely than other religious and nonsectarian school teachers to receive reimbursement for conference or workshop fees (54 vs. 60 and 63 percent) or travel expenses (19 vs. 41 and 39 percent).

Whether teachers received various types of support for professional development was also related to the length of their teaching experience, with more experienced teachers more likely than new teachers (i.e., those in their first 3 years of teaching) to receive support. In both sectors, new teachers were less likely than more experienced ones to report receiving any of the kinds of support mentioned above. This does not necessarily mean that school or district policies are discriminatory, but may reflect the types of professional development teachers choose as their careers develop. For example, less experienced teachers may want to focus on accumulating college credits to earn advanced degrees, while more experienced ones may want to attend conferences and workshops to update their skills. Public school teachers with 20 or more years of experience were less likely than other teachers to have received tuition reimbursement, and new teachers in both sectors were less likely than others to have received reimbursement for conference or workshop fees or for travel or daily expenses.

Pay Incentives Provided for Completing Professional Development Activities

Some districts offer pay incentives such as cash bonuses, salary increases, or advancement to a higher step on the salary schedule to encourage teachers to participate in professional development activities. In 1999–2000, about one-quarter of public school districts (26 percent) used one or more of these mechanisms to reward teachers for completing in-service professional

development activities (table 13). The use of these pay incentives tended to increase with district size.

Table 13. Percentage of public school districts that reported using pay incentives to reward teachers for certain types of professional development, by district size: 1999–2000

District size	Completion of in-service professional development	Attainment of NBPTS[1] certification
Total	26.4	8.3
District size		
Less than 450	16.7	3.6
450–999	21.0	6.1
1,000–4,999	32.2	9.4
5,000–9,999	38.9	15.3
10,000 or more	38.9	23.9

[1] National Board for Professional Teaching Standards.
NOTE: Examples of pay incentives are cash bonuses, salary increases, or different steps on the salary schedule.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "School District Survey," 1999–2000.

In addition, 8 percent of districts reported using pay incentives to reward teachers who attained National Board for Professional Teaching Standards (NBPTS) certification. The likelihood of districts using this incentive also increased with district size. However, districts may support teachers' efforts to attain this certification in other ways such as fee support, license renewal or credits, and license portability. In 2002, 46 states used licensure incentives and 40 provided financial incentives for teachers to earn NBPTS certification (Quality Counts 2003).

Rewards Teachers Received for Completing Activities

Teachers were asked about various rewards they may have received for completing professional development activities, including credits toward recertification or advanced certification in their main teaching field, salary or other pay increases, and recognition or higher ratings on an annual teacher evaluation. As with all types of support, the percentage of teachers who actually receive rewards depends first on whether the districts offer them and second on whether teachers take advantage of them in the particular year under study. Although almost all teachers (98 percent) participated in some type of professional development activities in 1999–2000 (see table 16), a smaller percentage (54 percent) received any of these three rewards for completing them (table 14).[12] The most common reward was credit toward recertification or advanced certification in their main teaching field (42 percent). In addition, 18 percent received

[12] This does not mean that teachers who did not receive the rewards did not complete professional development programs.

recognition or a higher rating on their annual evaluation, and 13 percent received salary or other pay increases.

Table 14. Percentage of teachers who reported receiving various rewards as a result of completing professional development activities, by sector and teacher experience: 1999–2000

Teacher experience	Any of these rewards	Credits toward recertification or advanced certification in the main or other teaching field	Increase in salary or other pay increases	Recognition or higher ratings on an annual teacher evaluation
All schools	54.2	41.6	12.9	17.6
		Public		
Total	55.3	42.7	13.6	17.3
Years of teaching experience				
3 or fewer	53.1	41.5	10.7	16.4
4–9	61.8	49.3	17.7	19.2
10–19	57.3	44.8	15.0	17.0
20 or more	50.5	37.2	11.2	16.7
		Private		
Total	46.8	34.1	8.0	19.4
Years of teaching experience				
3 or fewer	37.6	27.5	5.9	15.4
4–9	50.3	37.9	9.9	20.9
10–19	49.7	37.0	8.6	19.4
20 or more	48.1	32.9	7.3	21.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Public school teachers were more likely than private school teachers to be rewarded for completing professional development activities (55 vs. 47 percent). They were more likely to have received credits toward certification (43 vs. 34 percent) (private school teachers are not required by the state to be certified) and salary or other pay increases (14 vs. 8 percent).

Teacher Participation in Professional Development

Almost all teachers participate in professional development activities during the course of a year, in some cases teachers are mandated by their districts or states to do so, while in other cases their participation is voluntarily. As indicated earlier, professional development was once achieved primarily through district- or school-sponsored workshops and college coursework, but newer approaches consider other activities to be important vehicles for teachers to develop professionally and improve their teaching practice. This section describes the extent to which teachers are using these other formats as well as the more traditional ones. It also describes teachers' participation in professional development on certain topics, including the amount of time they spend on activities on these topics, their assessments of the usefulness of the activities, and their priorities for future professional development.

Format of Activities

Induction and Mentoring Programs for New Teachers

At one time, new teachers were typically sent into the classroom with little or no support from more experienced teachers, but now this practice is believed to contribute to high turnover and less effective teaching (NCTAF 2003). Consequently, many schools provide formal induction or mentoring programs to help new teachers adjust to their teaching responsibilities and to familiarize them with school programs, policies, and resources. In 2002, 30 states had induction programs for new teachers, and 16 states both required and financed induction for all new teachers. Eight states required mentors and teachers to be matched by school, subject, and/or grade level, seven required release time for mentors, and nine required compensation for mentors (Quality Counts 2003).

Although teacher induction programs have become more common, they are still not universal. Among teachers with fewer than 5 years of teaching experience in 1999–2000, 56 percent had participated in a teacher induction program during their first year of teaching (60 percent in the public sector and 34 percent in the private sector) (table 15). This rate of participation represents an increase from that in 1993–94, when the participation rates in the public and private sectors were 56 and 29 percent, respectively (figure 9).

Table 15. Percentage of teachers with fewer than 5 years of teaching experience who had participated in a teacher induction program or had worked closely with a master or mentor teacher during their first year of teaching, and their experience, by sector, district size, and selected school or teacher characteristic: 1999–2000

District size and school or teacher characteristic	Percent who participated in a teacher induction program	Percent who worked with a master or mentor teacher	Of those who worked with a master or mentor teacher, Percent whose master or mentor teacher's subject area was the same as theirs	Of those who worked with a master or mentor teacher, Percent whose mentor helped to a great extent[1]
All schools	55.7	59.6	74.8	36.6
		Public		
Total	59.6	62.3	75.0	36.1
District size				
Less than 450	37.9	44.3	61.1	30.3
450–999	54.1	57.8	65.6	36.0
1,000–4,999	57.8	63.2	75.2	33.1
5,000–9,999	64.8	68.2	74.7	38.8
10,000 or more	61.1	61.9	77.1	36.7
School size				
Elementary school				
Less than 150	42.9	52.7	58.6	37.1
150–499	58.8	65.1	75.6	37.3
500 or more	61.1	64.1	74.6	37.0
Secondary school				
Less than 400	44.3	48.8	61.0	30.9
400–749	59.8	60.3	70.9	30.2
750 or more	64.4	61.0	79.0	35.3
Main assignment field				
K–general elementary	59.9	67.0	80.3	37.2
Math or science	62.1	61.8	70.8	36.6
English or language arts	57.1	58.0	75.3	33.2
Social studies	67.7	59.4	80.6	37.3
Special education	57.9	63.9	76.5	38.3
Bilingual or ESL	51.5	57.6	74.4	29.6
Vocational education	58.0	62.8	63.8	38.7
Other	58.1	55.9	64.6	32.7

See notes at end of table.

Table 15. Percentage of teachers with fewer than 5 years of teaching experience who had participated in a teacher induction program or had worked closely with a master or mentor teacher during their first year of teaching, and their experience, by sector, district size, and selected school or teacher characteristic: 1999–2000—Continued

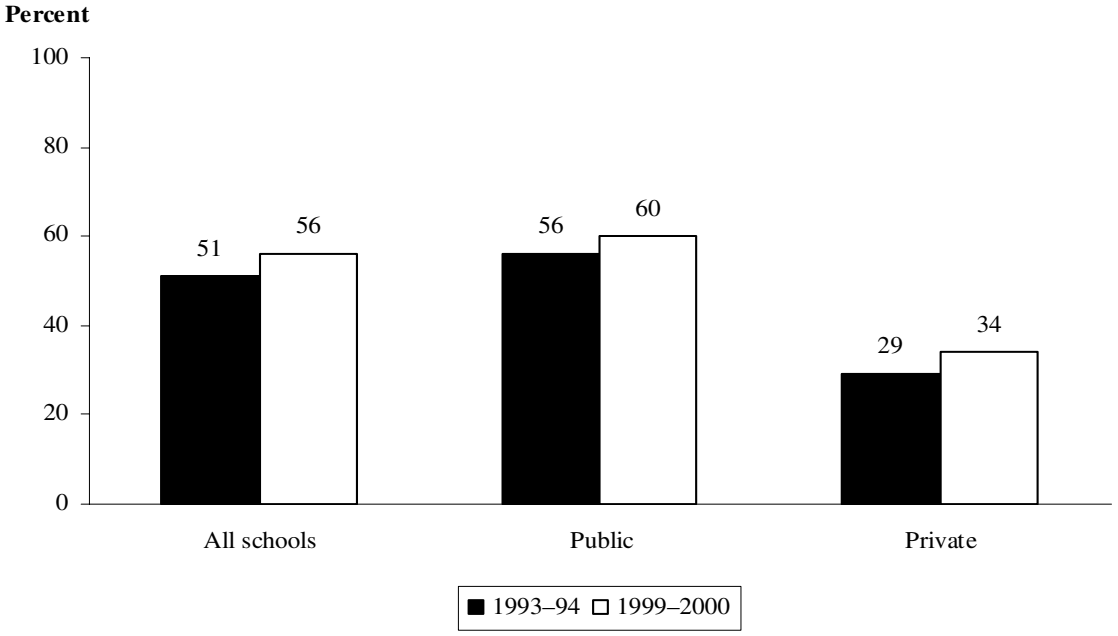
District size and school or teacher characteristic	Percent who participated in a teacher induction program	Percent who worked with a master or mentor teacher	Of those who worked with a master or mentor teacher, Percent whose master or mentor teacher's subject area was the same as theirs	Of those who worked with a master or mentor teacher, Percent whose mentor helped to a great extent[1]
		Private		
Total	34.4	44.8	73.0	40.1
School size				
Elementary school				
Less than 150	23.5	43.7	80.7	43.0
150–499	37.1	49.9	69.7	41.4
500 or more	36.2	52.4	68.3	51.1
Secondary school				
Less than 400	35.3	32.2	73.2	36.1
400–749	41.7	48.5	81.3	43.0
750 or more	59.5	49.7	77.2	30.1
Main assignment field				
K–general elementary	35.1	52.1	82.7	47.7
Math or science	36.2	43.8	55.6	31.7
English or language arts	35.5	47.9	72.7	30.4
Social studies	38.7	51.4	58.1	32.5
Special education	26.6	34.5	94.8	43.5
Bilingual or ESL	‡	‡	‡	‡
Vocational education	‡	‡	‡	‡
Other	32.6	35.4	66.1	36.9

‡ Reporting standards not met. Too few cases for reliable estimate.

[1] Teachers who had a master or mentor teacher in their first year were asked to what extent that teacher helped them on a scale of 1–5. Teachers who chose 4 or 5 were considered to have been helped to a great extent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Figure 9. Percentage of teachers with fewer than 5 years of teaching experience who participated in a teacher induction program during their first year of teaching, by sector: 1993–94 and 1999–2000



SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public and Private School Teacher Surveys," 1993–94 and "Public, Private, and Charter School Teacher Surveys," 1999–2000.

In addition, 60 percent of teachers with fewer than 5 years of teaching experience had worked closely with a master or mentor teacher in their first year (table 15). Of those who had done so, 75 percent had been assigned to a teacher in their own subject area, and 37 percent thought that their mentor had helped them to a great extent.[13]

Teachers in the smallest schools in both sectors (fewer than 150 students at the elementary level and fewer than 400 at the secondary level) had lower participation rates in formal induction programs than those at larger schools.

Ongoing Professional Development Activities

Teachers were asked whether they had participated in various types of professional development activities related to their teaching in the previous 12 months, including summer as well as school-year activities. The questions covered not only the more traditional types of professional development activities, such as workshops, conferences, or training and university

[13] Teachers who had a master or mentor teacher in their first year were asked to what extent that teacher helped them on a scale of 1–5. Teachers who chose 4 or 5 were considered to have been helped to a great extent.

coursetaking, but other activities such as observational visits to other schools, individual or collaborative research on a topic of interest, regularly scheduled collaboration with other teachers on instructional issues, mentoring or peer observation and coaching, and participation in teacher networks (Gilford 1996).

In 1999–2000, virtually all teachers (99 percent of public school teachers and 96 percent of private school teachers) reported that in the last 12 months they had participated in one or more of the types of professional development activities about which they were asked (figure 10 and table 16). Teachers were most likely to have participated in workshops, conferences, or training (95 percent of public school teachers and 87 percent of private school teachers). In addition, about three-quarters (73 percent) of all teachers had engaged in regularly scheduled collaboration with other teachers on instructional issues during the past 12 months.

Less than half of all teachers had participated in the other types of professional development activities during the previous 12 months: 46 percent had conducted individual or collaborative research on a topic of interest to them professionally, 42 percent had participated in mentoring or peer observation and coaching arranged by their schools or districts, 34 percent had made observational visits to other schools, 30 percent had taken university courses for recertification or advanced certification, 25 percent had joined a teacher network organized by an outside agency or available through the Internet, and 23 percent had taken university courses to keep current in their main teaching field. Although participation in workshops, conferences, or training was high (94 percent), teachers' participation in such activities as a presenter was substantially lower (21 percent).

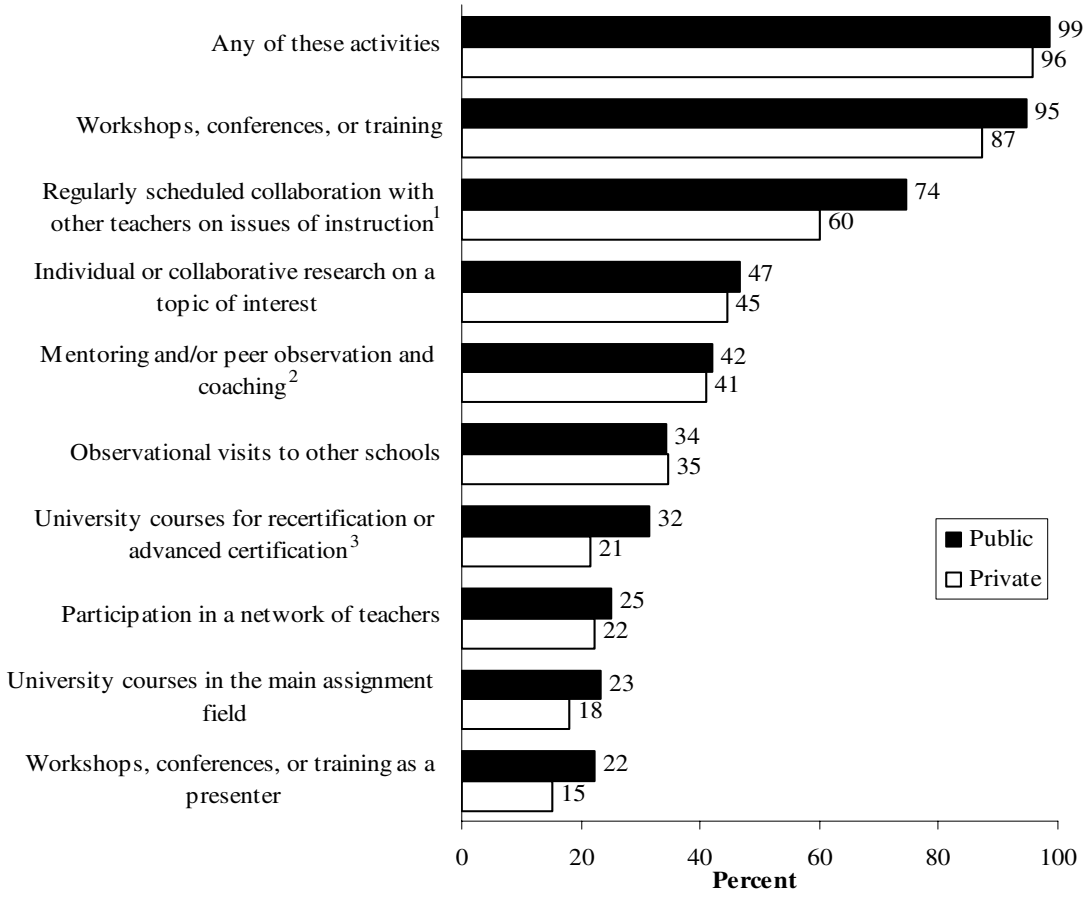
Participation rates in most types of professional development activities were higher for public school teachers than private school teachers. The only two exceptions to this pattern were observational visits to other schools and mentoring or peer observation and coaching, for which no sector differences were observed.

Factors Related to Participation

The extent to which teachers participate in various types of professional development activities is related to the characteristics of the schools in which they teach and to their own characteristics. A multivariate analysis of each of the nine types of professional development activities described above was conducted to identify the separate effects of various teacher and school characteristics. Because the outcome variable is dichotomous (i.e., teachers either participated or did not participate), a logistic regression model was used to analyze the association between an individual independent variable and a dependent variable, controlling for

the associations that both have with other independent variables in the model. Data for public and private school teachers were analyzed separately because of the different ways in which professional development is structured in the public and private sectors. The results of multivariate analyses are displayed in table 17.

Figure 10. Percentage of teachers who participated in various professional development activities related to teaching in the past 12 months, by sector: 1999–2000



[1] Refers to instruction; administrative meetings are excluded.

[2] As part of a formal arrangement that is recognized or supported by the school or district.

[3] Excludes courses taken for initial certification in main or other teaching field.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table 16. Percentage of teachers who participated in various professional development activities related to teaching in the past 12 months, by sector, district size, and selected school and teacher characteristics: 1999–2000

District size and school or teacher characteristic	Any of these activities	Workshops, conferences or training	Regularly scheduled collaboration with other teachers[1]	Individual or collaborative research on a topic of interest	Mentoring and/or peer observation and coaching[2]	Observational visits to other schools	University courses for recertification or advanced certification[3]	Networks of teachers	University courses in the main assignment field	Workshops, conferences or training as a presenter
All schools	98.3	93.8	72.6	46.5	41.9	34.4	30.3	24.6	22.7	21.4
Public										
Total	98.7	94.8	74.4	46.7	42.1	34.4	31.6	25.0	23.4	22.3
District size										
Less than 450	98.4	94.5	62.7	37.8	31.5	31.6	36.2	27.5	27.1	16.4
450–999	98.7	95.1	68.1	43.4	34.8	31.7	35.3	26.8	24.2	17.5
1,000–4,999	98.8	94.2	73.3	47.2	41.0	32.9	30.7	24.3	23.4	19.6
5,000–9,999	98.3	94.0	75.3	48.3	44.9	35.6	30.1	24.8	21.4	22.7
10,000 or more	98.8	95.4	76.6	46.7	43.8	35.2	32.1	25.3	23.5	24.6
School level										
Elementary	99.1	95.9	78.0	47.1	42.5	35.8	32.3	24.3	24.7	22.5
Secondary	98.0	92.7	67.9	46.1	41.7	31.7	30.4	26.4	21.2	22.2
Combined	98.4	93.9	69.1	45.9	36.3	35.1	29.0	26.1	20.0	20.7
Employment status										
Full-time	98.8	95.0	74.8	46.6	42.5	33.9	31.6	24.6	23.5	22.2
Part-time	97.8	92.6	70.5	48.1	37.4	40.4	31.3	29.4	22.6	24.1
Years of teaching experience										
3 or fewer	98.7	93.3	63.4	38.8	50.7	31.1	37.0	20.3	31.5	12.6
4–9	99.4	95.5	73.7	50.2	42.5	32.9	44.5	25.5	30.2	22.9
10–19	98.8	95.8	77.9	48.9	40.8	36.4	30.7	27.5	21.8	26.5
20 or more	98.2	94.2	77.5	46.5	38.8	35.5	21.2	25.1	16.4	23.4
Highest degree earned										
Bachelor's degree or lower	98.8	94.5	73.8	45.1	42.5	33.3	35.6	22.9	26.0	18.7
Master's degree	98.6	95.0	75.0	47.9	41.2	35.2	27.1	26.9	20.5	25.7
Doctoral/first-professional degree	98.9	95.4	76.0	53.7	44.6	39.2	28.6	30.9	21.1	32.2

See notes at end of table.

Table 16. Percentage of teachers who participated in various professional development activities related to teaching in the past 12 months, by sector, district size, and selected school and teacher characteristics: 1999–2000—Continued

District size and school or teacher characteristic	Any of these activities	Workshops, conferences or training	Regularly scheduled collaboration with other teachers[1]	Individual or collaborative research on a topic of interest	Mentoring and/or peer observation and coaching[2]	Observational visits to other schools	University courses for recertification or advanced certification[3]	Networks of teachers	University courses in the main assignment field	Workshops, conferences or training as a presenter
Main assignment field										
K–general elementary	99.4	96.9	80.7	46.4	43.8	35.9	33.5	22.2	27.6	21.2
Math or science	98.2	93.2	70.6	41.8	40.3	25.3	29.9	26.3	20.9	20.8
English or language arts	98.8	95.3	75.9	50.4	44.2	31.1	29.4	27.0	20.0	27.1
Social studies	98.8	93.6	72.4	49.4	45.1	29.1	30.5	23.3	19.0	21.6
Special education	98.7	95.4	72.5	44.6	41.2	38.3	31.3	22.9	24.0	20.0
Bilingual or ESL	99.4	97.9	75.1	51.5	39.7	37.3	33.9	28.6	22.9	30.2
Vocational education	96.8	92.3	66.6	47.0	37.2	42.2	34.1	29.6	23.6	25.3
Other	98.1	92.0	68.4	48.8	40.0	36.8	30.3	28.4	20.5	23.0
					Private					
Total	95.8	87.2	60.1	44.6	40.9	34.6	21.4	22.1	18.0	15.3
School level										
Elementary	96.9	91.0	61.7	42.1	36.1	34.6	23.5	21.0	19.2	14.1
Secondary	96.0	83.8	61.1	48.9	46.9	33.2	21.8	25.0	20.2	15.9
Combined	94.1	83.7	57.4	46.0	44.7	35.3	18.3	22.2	15.3	16.7
Affiliation										
Catholic	97.8	91.5	62.3	43.3	39.0	30.9	25.7	21.7	21.1	13.4
Other religious	94.7	85.7	55.9	42.6	38.6	32.7	17.9	20.7	15.1	15.3
Nonsectarian	94.5	83.3	63.3	49.8	47.6	43.3	20.4	25.0	18.0	18.1
Employment status										
Full-time	96.5	89.0	61.5	43.5	42.2	34.2	22.6	21.3	18.6	14.0
Part-time	92.7	79.6	53.7	49.6	35.4	36.5	16.0	25.7	15.5	20.9
Years of teaching experience										
3 or fewer	93.4	78.9	49.9	37.7	38.7	28.5	20.3	14.2	23.5	8.1
4–9	96.0	86.6	59.2	47.1	39.0	35.4	26.2	22.4	20.0	15.5
10–19	96.7	91.2	62.6	45.8	41.7	33.9	22.0	24.5	16.1	17.9
20 or more	96.7	91.1	67.7	47.0	44.2	40.4	16.5	26.5	12.9	18.7

See notes at end of table.

Table 16. Percentage of teachers who participated in various professional development activities related to teaching in the past 12 months, by sector, district size, and selected school and teacher characteristics: 1999–2000—Continued

District size and school or teacher characteristic	Any of these activities	Workshops, conferences or training	Regularly scheduled collaboration with other teachers[1]	Individual or collaborative research on a topic of interest	Mentoring and/or peer observation and coaching[2]	Observational visits to other schools	University courses for recertification or advanced certification[3]	Networks of teachers	University courses in the main assignment field	Workshops, conferences or training as a presenter
Highest degree earned										
Bachelor's degree or lower	95.4	86.1	58.3	41.7	39.0	32.4	22.8	18.7	19.4	12.2
Master's degree	96.9	90.5	63.2	48.6	43.8	37.6	18.6	27.5	15.5	19.7
Doctoral/first-professional degree	94.1	82.4	64.2	58.0	48.8	45.6	20.3	33.6	14.9	29.1
Main assignment field										
K–general elementary	96.4	91.6	63.3	41.2	38.4	35.0	23.2	17.4	18.1	11.3
Math or science	94.5	84.9	55.1	39.3	41.9	32.0	18.4	23.8	19.9	15.7
English or language arts	98.9	87.9	61.0	45.6	43.5	31.0	20.2	21.4	18.7	17.1
Social studies	97.4	89.8	64.3	47.7	49.9	30.8	21.3	20.9	15.6	14.9
Special education	98.5	92.5	65.9	51.5	42.8	41.8	27.0	27.6	20.4	20.3
Bilingual or ESL	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Vocational education	93.7	84.1	55.1	51.1	34.0	23.5	19.0	22.7	11.0	9.9
Other	93.6	80.5	55.9	50.0	40.7	36.7	20.2	27.4	17.0	19.4

‡ Reporting standards not met. Too few cases for a reliable estimate.

[1] Refers to instruction; administrative meetings are excluded.

[2] As part of a formal arrangement that is recognized or supported by the school or district.

[3] Excludes courses taken for initial certification in main or other teaching field.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table 17. Logistic regression results (in odds ratios) predicting whether teachers participated in various professional development activities in the past 12 months: 1999–2000

District, school, principal, or teacher characteristic	University courses for recertification/ advanced certification		University courses in the main teaching field		Observational visits to other schools		Individual/ collaborative research on a topic of interest		Regularly scheduled collaboration with other teachers		Mentoring and/or peer observation and coaching		Participating in a network of teachers		Attending workshops, conferences, or training		Attending workshops, conferences, or training as a presenter	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Intercept	1.21	0.03*	0.51*	0.11*	0.36*	0.44	0.46*	0.25*	0.50*	0.50	0.53*	0.18*	0.15*	0.07*	7.61*	0.36	0.05*	0.03*
District characteristic																		
District size																		
Less than 450	*1.00*	†	*1.00*	†	*1.00*	†	*1.00*	†	*1.00*	†	*1.00*	†	*1.00*	†	*1.00*	†	*1.00*	†
450–999	1.15	†	0.89	†	1.15	†	1.29*	†	1.12	†	1.06	†	0.93	†	1.10	†	1.08	†
1,000–4,999	0.98	†	0.87	†	1.25*	†	1.45*	†	1.41*	†	1.32*	†	0.81*	†	0.98	†	1.21	†
5,000–9,999	1.01	†	0.78	†	1.39*	†	1.43*	†	1.44*	†	1.49*	†	0.84	†	0.97	†	1.35*	†
10,000 or more	1.08	†	0.80	†	1.35*	†	1.33*	†	1.50*	†	1.30*	†	0.88	†	1.35	†	1.39*	†
School characteristics																		
School level																		
Elementary	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Secondary	0.93	0.82*	1.01	0.95	0.94	0.93	0.87*	1.14	0.68*	0.96	1.04	1.33*	0.95	0.89	0.80*	0.47*	0.83*	0.80*
Combined	0.78*	0.75*	0.84*	0.76*	0.98	0.85	1.03	1.08	0.79*	0.80*	0.80*	1.21*	0.94	0.84	0.77*	0.64*	0.86*	0.84
School size																		
Less than 150	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
150–499	0.72*	0.99	0.90	0.92	0.78*	0.98	0.88	0.95	1.32*	1.14	1.09	1.26*	0.95	0.91	0.81	1.49*	0.89	0.96
500–999	0.61*	0.99	0.77*	1.07	0.77*	1.09	0.79*	1.09	1.33*	1.37*	1.20	1.60*	0.92	1.09	0.65	1.59*	0.83*	1.09
1,000 or more	0.64*	1.16	0.81	1.08	0.70*	1.04	0.90	1.03	1.36*	1.31*	1.13	1.56*	0.91	1.15	0.60*	1.38	0.89	1.35
Percent minority enrollment																		
None	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
1–10	1.03	1.23	1.26	1.14	0.99	1.09	1.04	1.16	0.99	1.39*	0.87	1.13	0.97	1.27	1.22	1.21	1.07	1.14
11–30	0.87	1.10	1.23	1.14	1.05	1.21	1.19	1.06	1.13	1.45*	0.98	1.37*	1.00	1.29*	1.31	0.97	1.22	1.12
31–50	0.82	1.32	1.14	1.34	1.00	1.18	1.24*	1.20	1.10	1.09	0.96	1.33	1.14	1.20	1.21	1.17	1.34*	1.18
More than 50	0.87	1.43*	1.40*	1.33	1.09	1.24	1.22*	1.23	1.15	1.23	1.07	1.50*	1.13	1.21	0.93	1.00	1.39*	1.15

See notes at end of table.

Table 17. Logistic regression results (in odds ratios) predicting whether teachers participated in various professional development activities in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Percent eligible for free/ reduced-price lunch																		
0–5	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*
6–20	1.14*	(1)	0.94	(1)	0.81*	(1)	0.85*	(1)	0.98	(1)	0.84*	(1)	1.06	(1)	1.05	(1)	0.98	(1)
21–40	0.98	(1)	0.92	(1)	0.89	(1)	0.81*	(1)	0.95	(1)	0.85*	(1)	1.05	(1)	1.08	(1)	0.90	(1)
More than 40	0.98	(1)	0.86*	(1)	0.92	(1)	0.69*	(1)	0.86*	(1)	0.86*	(1)	0.96	(1)	1.19	(1)	0.89	(1)
Affiliation																		
Catholic	†	1.35*	†	1.18	†	0.55*	†	0.81*	†	0.83*	†	0.71*	†	0.85	†	1.80*	†	0.75*
Other religious	†	0.91	†	0.83*	†	0.68*	†	0.84*	†	0.83*	†	0.85*	†	0.99	†	1.43*	†	1.05
Nonsectarian	†	1.00	†	1.00	†	1.00	†	1.00	†	1.00	†	1.00	†	1.00	†	1.00	†	1.00
School has own professional development budget																		
Yes	1.10*	†	1.04	†	1.10	†	1.12*	†	1.18*	†	0.99	†	1.02	†	1.09	†	1.11*	†
No	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*
Professional development at this school was accompanied by the resources that teachers need																		
Never/rarely	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Sometimes	0.81*	1.14	0.88	0.94	1.11	0.88	0.92	1.01	1.10	0.91	0.97	0.99	1.00	0.81*	1.09	1.35	1.05	1.12
Frequently/always	0.80*	0.95	0.85	0.99	1.03	0.97	0.91	1.07	1.11	0.97	0.95	1.17	0.98	0.76*	1.24	1.53*	0.99	1.05

See notes at end of table.

Table 17. Logistic regression results (in odds ratios) predicting whether teachers participated in various professional development activities in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	University courses for recertification/ advanced certification		University courses in the main teaching field		Observational visits to other schools		Individual/ collaborative research on a topic of interest		Regularly scheduled collaboration with other teachers		Mentoring and/or peer observation and coaching		Participating in a network of teachers		Attending workshops, conferences, or training		Attending workshops, conferences, or training as a presenter	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
School provided teachers with time for professional development during regular contract hours																		
Yes	0.92	0.92	0.83	1.03	1.13	1.06	1.05	1.09	1.29*	1.26*	1.15	1.07	1.14	1.31*	1.26	1.20	1.15	1.52*
No	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Principal characteristics																		
Years of experience as principal																		
3 or fewer	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
4–9	0.98	0.93	1.08	1.19	0.93	1.00	1.00	0.84*	1.08	0.93	0.93	0.87	1.05	0.86	0.97	0.84	1.05	0.77*
10–19	1.10	0.97	1.16*	0.97	0.97	0.88	1.09	0.94	0.97	0.86	0.98	0.89	1.00	0.87	0.96	0.97	1.04	0.87
20 or more	0.99	1.24*	1.17	1.32*	0.90	0.74*	0.95	0.86	1.03	0.95	0.86*	0.77*	0.98	0.77*	0.88	0.80	0.82*	0.66*
Principal influence in determining the content of in-service professional development programs																		
No/little	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Somewhat	0.89	1.26	1.10	1.14	1.11	0.77	1.00	1.08	0.87	0.86	0.83	0.76	1.02	0.90	0.76	1.02	1.18	1.36
A great deal	0.95	1.01	1.15	0.73	1.05	0.60	1.01	0.89	0.91	0.85	0.87	0.62	1.16	0.77	0.85	1.26	1.17	1.48
Principal provided professional development activities and engaged staff in them																		
Never	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
1 or 2 times a month	1.57*	2.44*	1.87*	1.49*	1.36	1.45	1.35	1.33	1.55*	1.18	1.14	1.42*	1.27	1.25	1.41	1.28	1.21	0.79
1 or 2 times a week/daily	1.58*	2.07*	1.98*	1.35	1.43	1.51	1.39	1.33	1.45*	1.24	1.07	1.57*	1.35	1.45	1.45	1.15	1.26	1.05

See notes at end of table.

Table 17. Logistic regression results (in odds ratios) predicting whether teachers participated in various professional development activities in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	University courses for recertification/ advanced certification		University courses in the main teaching field		Observational visits to other schools		Individual/ collaborative research on a topic of interest		Regularly scheduled collaboration with other teachers		Mentoring and/or peer observation and coaching		Participating in a network of teachers		Attending workshops, conferences, or training		Attending workshops, conferences, or training as a presenter	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Principal built professional community among faculty and other staff																		
Never	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
1 or 2 times a month	1.02	1.32	0.91	1.09	1.05	1.24	0.83	1.12	1.01	1.02	1.17	1.01	1.19	1.17	0.83	1.62	0.83	0.99
1 or 2 times a week/daily	0.99	1.35	0.87	1.17	1.02	1.41	0.84	1.27	1.11	1.21	1.25	1.18	1.16	1.19	0.92	2.13*	0.75	0.86
Teacher influence in determining the content of in-service professional development programs																		
No/little	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Somewhat	1.03	0.84	0.99	1.44	0.84	1.00	1.03	1.40	0.95	0.88	0.95	1.15	0.83*	1.09	1.25	1.07	1.00	1.12
A great deal	1.02	0.86	1.03	1.56*	0.98	1.33	1.11	1.50*	1.08	1.19	1.03	1.33*	0.98	1.23	1.32	1.16	1.14	1.52
Professional development at this school was planned by teachers																		
Never/rarely	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Sometimes	0.87	1.14	0.96	0.84	1.08	1.11	0.97	1.00	0.89	0.94	0.94	1.03	0.92	0.96	1.03	1.30	0.91	0.65*
Frequently/always	0.88	1.21	0.97	0.77*	1.09	1.02	1.01	1.05	0.92	0.92	0.92	1.12	0.88	1.09	1.12	1.23	1.06	0.82
Professional development at this school was presented by teachers																		
Never/rarely	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Sometimes	0.87	1.29*	0.96	1.24*	0.98	0.95	1.03	1.18*	1.20*	1.17*	1.18*	1.28*	1.01	1.27*	1.21	1.14	1.18	1.65*
Frequently/always	0.87	1.14	0.99	1.25	0.95	1.01	1.07	1.14	1.15	1.19	1.15*	1.12	0.97	1.18	1.08	0.82	1.30*	1.59*
Professional development was considered part of teachers' regular work																		
Never/rarely	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Sometimes	1.00	1.34	0.96	1.13	0.97	1.03	0.92	1.00	1.00	1.09	1.10	1.25	1.06	0.90	1.08	0.99	1.08	0.85
Frequently/always	0.87	1.34	0.84*	1.28	0.91	1.00	0.94	0.98	0.96	1.15	1.06	1.16	1.03	1.20	0.95	1.23	1.06	1.02

See notes at end of table.

Table 17. Logistic regression results (in odds ratios) predicting whether teachers participated in various professional development activities in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	University courses for recertification/ advanced certification		University courses in the main teaching field		Observational visits to other schools		Individual/ collaborative research on a topic of interest		Regularly scheduled collaboration with other teachers		Mentoring and/or peer observation and coaching		Participating in a network of teachers		Attending workshops, conferences, or training		Attending workshops, conferences, or training as a presenter	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Teacher characteristics																		
Years of teaching experience																		
3 or fewer	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
4–9	1.37*	1.47*	0.93	0.83*	1.09	1.38*	1.63*	1.45*	1.64*	1.44*	0.73*	1.01	1.33*	1.59*	1.53*	1.78*	1.94*	1.84*
10–19	0.81*	1.07	0.65*	0.61*	1.29*	1.28*	1.54*	1.32*	2.21*	1.61*	0.69*	1.11	1.44*	1.86*	1.65*	2.56*	2.28*	2.29*
20 or more	0.48*	0.78*	0.43*	0.48*	1.23*	1.77*	1.30*	1.45*	2.15*	1.98*	0.63*	1.21*	1.21*	1.97*	1.21	2.45*	1.81*	2.38*
Highest degree earned																		
Bachelor's degree or lower	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Master's degree	0.81*	0.80*	0.91*	0.82*	1.04	1.14*	1.10*	1.11	0.90*	1.01	1.02	0.99	1.25*	1.32*	1.12	1.25*	1.36*	1.34*
Doctoral/ first-professional/ education specialist	0.91	0.89	0.98	0.80	1.25*	1.67*	1.36*	1.61*	0.93	1.19	1.14	1.23	1.54*	1.65*	1.28	0.74	1.76*	2.10*
Employment status																		
Full-time	0.99	1.49*	1.04	1.13	0.81*	0.85*	0.99	0.85*	1.08	1.15	1.15	1.20*	0.90	0.91	1.32*	1.59*	0.93	0.72*
Part-time	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Main assignment field																		
K–general elementary	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Math or science	0.87*	0.91	0.70*	1.24*	0.67*	0.80*	0.81*	0.84*	0.71*	0.69*	0.84*	0.97	1.33*	1.49*	0.52*	0.65*	1.05	1.51*
English or language arts	0.93	0.95	0.67*	1.08	0.87	0.73*	1.17*	1.01	0.86	0.84	0.97	1.08	1.37*	1.18	0.76	0.75	1.46*	1.43*
Social studies	0.88	1.05	0.62*	0.85	0.79*	0.66*	1.19*	1.09	0.83*	0.84	1.02	1.19	1.11	1.03	0.57*	0.88	1.12	1.38*
Special education	0.91	1.64*	0.84*	1.33	1.09	0.98	0.93	1.25*	0.76*	1.15	0.86*	1.01	1.13	1.52*	0.71*	1.91*	0.91	1.74*
Bilingual education or ESL	0.97	‡	0.77*	‡	1.04	‡	1.14	‡	0.62*	‡	0.73*	‡	1.30*	‡	1.55	‡	1.37*	‡
Vocational education	1.12	0.97	0.82*	0.74	1.34*	0.68	1.01	1.18	0.61*	0.76	0.77*	0.85	1.64*	1.41	0.50*	0.68	1.50*	1.17
Other field	0.89*	1.09	0.68*	1.02	1.08	0.95	1.11	1.33*	0.60*	0.77*	0.90	1.04	1.46*	1.70*	0.44*	0.51*	1.19*	1.75*

† Not applicable.

‡ Reporting standards not met. Too few cases for a reliable estimate.

* $p < .05$.

[1] Too few private schools participated to provide sufficient variation for analysis.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys" and "Public, Private, and Charter School Principal Surveys," 1999–2000.

The results are presented as odds ratios, which indicate the relative odds of having participated in a particular type of professional development activity in relation to a comparison group (in italics). Asterisks indicate statistically significant differences. An odds ratio that is less than 1.0 means the odds for a particular group are lower than the odds of the comparison group, while those that are greater than 1.0 mean the opposite. Take, for example, the row representing "Teaching experience" and the first column representing public school teachers who took "University courses for recertification/advanced certification." The odds ratio for teachers with 20 or more years of teaching experience is .48. This means that the odds of teachers with 20 or more years experience for taking university courses for recertification or advanced certification are .48 times the odds for teachers in the comparison group (3 or fewer years of experience). In other words, the odds of teachers with 20 or more years of experience taking university courses for recertification or advanced certification were 52 percent lower than the odds of teachers with 3 years of experience or less.

District and School Characteristics

For public school teachers, participation in some types of professional activities was related to the size of their school districts. For example, public school teachers in larger school districts (5,000 or more students) were more likely than their colleagues in the smallest districts (with enrollments of fewer than 450 students) to make observational visits to other schools, conduct individual or collaborative research, collaborate regularly with other teachers, participate in mentoring or peer observation and coaching, and present at workshops, conferences, or training sessions.

School size was related to teacher participation in professional development activities (independent of district size and other factors). In the public sector, teachers in the smallest schools (fewer than 150 students) were more likely than teachers in larger schools to enroll in college courses for certification or to visit other schools, but were less likely to collaborate regularly with other teachers. In the private sector, teachers in the smallest schools, in general, were less likely than teachers in schools with more than 500 students to collaborate regularly with other teachers, participate in mentoring or peer observation and coaching, or attend workshops, conferences, or training sessions.

Teacher participation in some activities was also related to school level and, in the private sector, affiliation. A pattern common to both sectors was that secondary school teachers were less likely than elementary school teachers to attend or present at workshops, conferences, or training sessions. Catholic school teachers were more likely than teachers in nonsectarian schools to participate in the more traditional forms of professional development: taking university courses

for recertification or advancement and attending workshops, conferences, or training. They were less likely, however, to make observational visits to other schools, conduct research, collaborate regularly with other teachers, participate in mentoring or peer observation and coaching, or present at workshops, conferences, or training sessions.

School resources for professional development and teacher participation in some professional development activities were also related. In the public sector, teachers who taught in schools with their own professional development budgets were more likely than those who taught in schools without such budgets to take university courses for certification,[14] conduct research, collaborate regularly with other teachers, and present at workshops, conferences, or training sessions. In addition, teachers in schools that provided time for professional development during regular contract hours were more likely than those in schools that did not provide this time to have collaborated regularly with other teachers, and in the private sector, to have participated in a teacher network and presented at workshops, conferences, or training sessions.

Principal Characteristics

When principals reported providing and engaging staff in professional development activities at least monthly, public school teachers were more likely to report that they had collaborated regularly with other teachers, and private school teachers were more likely to report that they had participated in mentoring or peer observation and coaching than teachers whose principals reported never providing and engaging staff in professional development activities. In addition, when private school teachers thought they had a great deal of influence in determining the content of in-service professional development activities, they were more likely than those who thought they had little or no influence to have taken university courses in their main teaching field, conducted research on a topic of interest, and participated in mentoring or peer observation and coaching.

Teacher Characteristics

The types of professional development activities in which teachers participated varied with their teaching experience. In both public and private sectors, new teachers (those with 3 years of experience or less) were more likely than teachers with 10 or more years of teaching experience to take university courses in their main teaching field. In addition, new teachers in public schools were more likely than their more experienced colleagues to have participated in mentoring or peer observation and coaching. However, in both sectors, new teachers were generally less likely

[14] However, schools might not have paid for their college tuition.

than other teachers to visit other schools, conduct research, collaborate regularly with other teachers, participate in a network of teachers, and attend or present at workshops, conferences, or training sessions.

The highest degree earned was also associated with the types of professional development activities in which teachers were involved. Teachers with a bachelor's degree or less were more likely than those with a master's degree to have taken university courses to obtain full or advanced certification or enroll in college courses in their main teaching field. They were generally less likely than teachers with a master's or more advanced degree to visit other schools, conduct research, participate in a teacher network, or present at workshops, conferences, or training sessions.

Topics

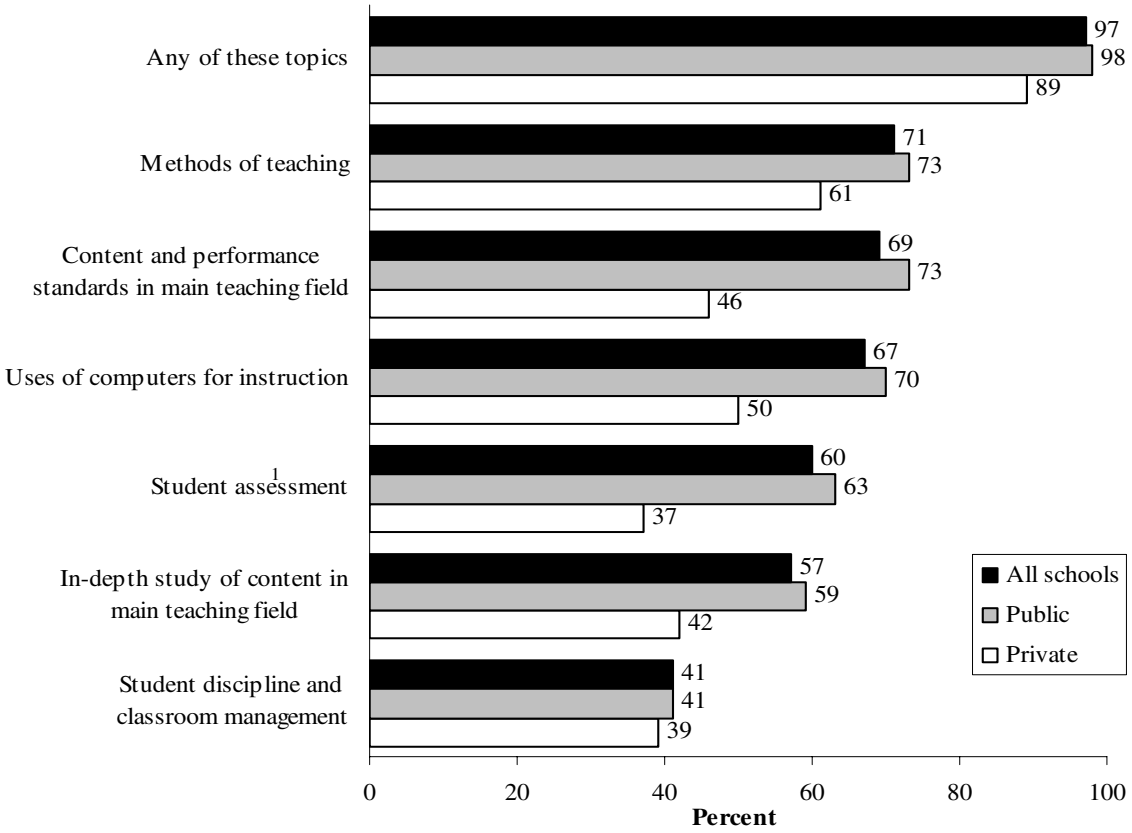
Many believe that, to complement current reform initiatives, in-service professional development activities should address topics that enable teachers to expand their expertise in subject content, teaching strategies, uses of technologies, and other elements essential to teaching to high standards (Gilford 1996). The SASS questions focus on teachers' participation in these types of activities: in-depth study of the content in their main teaching field, content and performance standards in their main teaching field, teaching methods, uses of computers for instruction, student assessment, and student discipline and classroom management.

Participation Rates by Topic

Almost all teachers (97 percent) reported that they had participated in professional development activities on at least one of these topics during the previous 12 months (figure 11). About 70 percent of all teachers reported that they had participated in activities that focused on teaching methods (71 percent), content and performance standards in their main teaching field (69 percent), or using computers for instruction (67 percent). More than one-half participated in activities that focused on student assessment[15] (60 percent) and in-depth study of content in their main teaching field (57 percent). Forty-one percent participated in professional development activities focused on student discipline and classroom management. Public school teachers were more likely than private school teachers to participate in professional development activities on each of these topics.

[15] Examples given were testing, evaluation, and performance assessment.

Figure 11. Percentage of teachers who participated in professional development programs that focused on various topics in the past 12 months, by sector: 1999–2000



[1] Such as methods of testing, evaluation, or performance assessment.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

In the 1993–94 SASS, teachers were asked about their participation in professional development activities on some of the same topics, and the percentages were reported in a previous publication (Choy and Chen 1998). When comparing the percentages of teachers who participated in these activities in 1993–94 and in 1999–2000, it appears that there was an increase in participation in professional development activities on these topics. However, these data should not be compared because in 1993–94 teachers were asked about their participation since the end of the last school year, and in 1999–2000 they were asked about their participation within the past 12 months (a longer period of time).

Factors Related to Participation

Multivariate analysis (logistic regression) was conducted on participation in each of six professional development topic areas to identify the unique associations of various teacher, principal, and school characteristics with participation in professional development activities focused on each of the six topic areas (table 18). Again, public and private school teachers were analyzed separately.

Teacher Characteristics

Experience was an important factor relating to teachers' participation in professional development activities in different content areas after controlling for the many school, principal, and teacher characteristics listed in table 18. In both public and private schools, participation in each topic was generally higher among more experienced teachers than new teachers (those with 3 years experience or less). The one exception was found in public schools, where more experienced teachers were less likely than new teachers to have attended professional development on student discipline and classroom management.

In addition to experience, teachers' participation was generally associated with their employment status, with full-time teachers in both sectors being more likely than part-time teachers to have participated in professional development in almost all the content areas.[16] The differences between full- and part-time teachers may reflect different levels of commitment and interest, but may also be related to variations in district or school requirements and support for participation.

School and District Characteristics

In both sectors, elementary school teachers were more likely than other teachers to have engaged in professional development related to their main teaching field, content and performance standards in their main teaching field, and uses of computers for instruction. In addition, in the public sector, secondary school teachers were less likely than elementary school teachers to have addressed teaching methods and student assessment in their professional development. Private secondary school teachers were less likely than their elementary school counterparts to have had training on student discipline and classroom management.

[16] The one exception was in-depth study of the content in the main teaching field in public schools, where no significant difference between full- and part-time teachers was detected.

Table 18. Logistic regression results (in odds ratios) predicting whether teachers participated in professional development programs that focused on various topics in the past 12 months: 1999–2000

District, school, principal, or teacher characteristic	In-depth study of content in the main teaching field		Content and performance standards in the main teaching field		Methods of teaching		Uses of computers for instruction		Student assessment		Student discipline and classroom management	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Intercept	0.69	0.17*	1.41	0.26*	0.49*	0.28*	1.15	0.03*	0.75	0.21*	0.31*	0.18*
District characteristic												
District size												
Less than 450	*1.00*	†	*1.00*	†	*1.00*	†	*1.00*	†	*1.00*	†	*1.00*	†
450–999	0.91	†	0.95	†	0.91	†	1.07	†	1.14	†	0.96	†
1,000–4,999	0.88	†	1.03	†	1.25*	†	1.06	†	1.10	†	1.23*	†
5,000–9,999	1.01	†	1.09	†	1.34*	†	1.09	†	1.22	†	1.17	†
10,000 or more	1.20	†	1.26*	†	1.50*	†	0.88	†	1.29*	†	1.11	†
School characteristics												
School level												
Elementary	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Secondary	0.75*	0.76*	0.77*	0.86*	0.83*	0.91	0.96	0.75*	0.83*	1.02	0.96	0.81*
Combined	0.78*	0.71*	0.78*	0.80*	0.91	0.87	0.81*	0.70*	0.92	1.02	1.00	1.04
School size												
Less than 150	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
150–499	1.22*	1.18*	1.10	1.15*	1.14	1.09	0.81	1.43*	1.03	0.93	0.74*	0.81*
500–999	1.20	1.35*	1.08	1.26*	1.10	1.26*	0.85	1.95*	0.92	0.95	0.70*	0.65*
1,000 or more	1.13	1.62*	1.07	1.20	1.02	0.81	0.77*	2.66*	0.87	0.89	0.66*	0.38*
Percent minority enrollment												
None	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
1–10	1.15	1.22	0.89	1.21*	1.17	1.08	0.71*	1.51*	1.02	1.05	1.32*	0.80
11–30	1.25*	1.16	0.93	1.27*	1.34*	1.08	0.81	1.21	1.10	1.10	1.41*	0.83
31–50	1.29*	1.22	0.97	1.21	1.39*	1.07	0.81	1.03	1.09	1.03	1.50*	0.92
More than 50	1.49*	1.46*	1.04	1.52*	1.54*	1.29*	0.72*	1.39*	1.21	1.49*	1.71*	1.44*

See notes at end of table.

Table 18. Logistic regression results (in odds ratios) predicting whether teachers participated in professional development programs that focused on various topics in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	In-depth study of content in the main teaching field		Content and performance standards in the main teaching field		Methods of teaching		Uses of computers for instruction		Student assessment		Student discipline and classroom management	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Percent eligible for free/ reduced-price lunch												
0–5	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*	*1.00*	*(1)*
6–20	0.96	(1)	0.97	(1)	1.01	(1)	0.91	(1)	0.98	(1)	1.08	(1)
21–40	0.99	(1)	1.01	(1)	0.99	(1)	0.85	(1)	0.97	(1)	1.24*	(1)
More than 40	0.94	(1)	0.95	(1)	1.05	(1)	0.77*	(1)	1.01	(1)	1.43*	(1)
Affiliation												
Catholic	†	0.88	†	1.51*	†	1.18	†	1.46*	†	1.75*	†	1.40*
Other religious	†	0.86	†	1.10	†	1.20*	†	0.71*	†	1.13	†	1.66*
Nonsectarian	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*
School has own professional development budget												
Yes	1.07*	†	1.12*	†	1.14*	†	1.05	†	1.20*	†	1.09*	†
No	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*	*1.00*	*†*
Professional development at this school was accompanied by the resources that teachers need												
Never/rarely	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Sometimes	1.01	1.28*	1.06	1.44*	1.02	0.87	1.07	1.08	1.01	0.91	0.87*	0.86
Frequently/always	1.07	1.37*	1.07	1.54*	1.11	0.97	1.11	1.24*	1.04	1.02	0.93	0.98
School provided teachers with time for professional development during regular contract hours												
Yes	1.23*	1.11	1.09	1.33*	1.15	1.26	1.12	1.85*	1.14	1.15	1.06	1.11
No	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

See notes at end of table.

Table 18. Logistic regression results (in odds ratios) predicting whether teachers participated in professional development programs that focused on various topics in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	In-depth study of content in the main teaching field		Content and performance standards in the main teaching field		Methods of teaching		Uses of computers for instruction		Student assessment		Student discipline and classroom management	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Principal characteristics												
Years of experience as principal												
3 or fewer	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
4–9	0.97	0.98	0.99	0.80*	1.02	0.85	1.09	0.85	0.92	0.87*	1.00	0.83*
10–19	0.99	0.95	0.96	0.77*	1.03	0.89	1.04	1.14	1.04	0.77*	0.99	0.82*
20 or more	0.81*	0.83*	0.79*	0.88	0.91	0.86	1.13	0.94	0.89	0.86	0.94	0.91
Principal influence in determining the content of in-service professional development programs												
No/little	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Somewhat	0.93	0.78	0.83	0.43*	1.17	0.96	1.11	1.42	1.15	0.93	0.94	1.10
A great deal	0.93	0.85	0.86	0.40*	1.17	0.95	1.20	1.32	1.09	0.84	0.88	1.22
Principal provided professional development activities and engaged staff in them												
Never	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
1 or 2 times a month	1.23*	1.12	1.66*	1.12	1.46*	1.47	1.09	1.20	1.22	1.19	1.05	1.67*
1 or 2 times a week/daily	1.20	1.30	1.62*	1.23	1.43*	1.56*	1.05	1.27	1.20	1.39*	0.97	1.83*
Principal built professional community among faculty and other staff												
Never	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
1 or 2 times a month	1.01	0.95	0.93	1.20	0.95	1.16	0.88	1.23	0.83	0.95	0.99	0.91
1 or 2 times a week/daily	1.03	0.99	1.07	1.26	0.93	1.15	0.85	1.31	0.81	0.86	0.99	0.79

See notes at end of table.

Table 18. Logistic regression results (in odds ratios) predicting whether teachers participated in professional development programs that focused on various topics in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	In-depth study of content in the main teaching field		Content and performance standards in the main teaching field		Methods of teaching		Uses of computers for instruction		Student assessment		Student discipline and classroom management	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Teacher influence in determining the content of in-service professional development programs												
No/little	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Somewhat	0.91	1.20	0.84	1.31	0.93	0.97	0.99	1.32	0.75*	0.97	1.03	1.27
A great deal	0.94	1.44*	0.84	1.48*	1.07	1.24	1.03	1.43*	0.87	1.10	1.08	1.39*
Professional development at this school was planned by teachers												
Never/rarely	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Sometimes	0.89	1.02	1.02	1.03	0.95	1.13	1.04	1.00	1.03	0.86	0.78*	0.99
Frequently/always	0.95	1.07	0.96	1.04	0.94	1.04	1.06	1.19	0.96	0.85	0.79*	0.84
Professional development at this school was presented by teachers												
Never/rarely	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Sometimes	1.26*	1.34*	1.16*	1.13	1.07	1.30*	1.03	1.14	1.21*	1.35*	1.25*	1.04
Frequently/always	1.25*	1.20	1.14	0.92	1.01	1.11	1.13	0.97	1.27*	1.34*	1.23*	1.02
Professional development was considered part of teachers' regular work												
Never/rarely	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Sometimes	1.00	1.03	1.13	0.91	1.22*	1.21	1.10	1.02	1.06	1.04	1.23*	1.50*
Frequently/always	1.02	1.11	1.14	1.01	1.24*	1.38*	1.18*	0.97	1.09	1.17	1.40*	1.61*

See notes at end of table.

Table 18. Logistic regression results (in odds ratios) predicting whether teachers participated in professional development programs that focused on various topics in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	In-depth study of content in the main teaching field		Content and performance standards in the main teaching field		Methods of teaching		Uses of computers for instruction		Student assessment		Student discipline and classroom management	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Teacher characteristics												
Years of teaching experience												
3 or fewer	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
4–9	1.34*	1.36*	1.44*	1.36*	1.27*	1.38*	1.64*	1.80*	1.41*	1.35*	0.81*	1.33*
10–19	1.48*	1.26*	1.65*	1.76*	1.26*	1.34*	2.20*	2.29*	1.66*	1.62*	0.78*	1.12
20 or more	1.28*	1.43*	1.55*	1.81*	1.09	1.42*	2.39*	2.50*	1.72*	1.81*	0.77*	1.24*
Highest degree earned												
Bachelor's degree or lower	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Master's degree	1.07	1.07	1.06	1.22*	0.97	0.96	0.99	1.11	0.97	1.06	0.90*	0.82*
Doctoral/first-professional/ education specialist	1.15	1.45*	1.13	1.02	1.28*	0.96	0.99	1.38*	1.09	1.25	0.87	0.93
Employment status												
Full-time	0.96	1.23*	1.17*	1.31*	1.22*	1.22*	1.26*	1.63*	1.19*	1.22*	1.47*	1.18*
Part-time	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Main assignment field												
K–general elementary	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*	*1.00*
Math or science	0.58*	0.80*	0.55*	0.59*	0.73*	0.80*	0.95	1.34*	0.60*	1.01	0.93	0.72*
English or language arts	0.80*	0.94	0.63*	0.66*	0.88	0.91	0.96	1.33*	0.90	1.06	1.05	0.84
Social studies	0.49*	0.64*	0.51*	0.52*	0.99	0.84	1.07	1.32	0.67*	0.90	1.02	0.85
Special education	0.65*	1.70*	0.42*	1.72*	0.81*	1.56*	0.87*	1.24	0.67*	2.39*	1.92*	2.26*
Bilingual education or ESL	0.86	‡	0.80	‡	1.16	‡	0.99	‡	1.00	‡	0.81	‡
Vocational education	0.70*	0.94	0.40*	0.42*	0.61*	0.47*	1.31*	1.19	0.53*	0.83	1.22*	1.59
Other field	0.60*	1.04	0.41*	0.68*	0.71*	0.79*	0.87*	1.01	0.56*	0.84*	1.24*	1.01

† Not applicable.
‡ Reporting standards not met. Too few cases for a reliable estimate.
* $p < .05$.
[1] Too few private schools participated to provide sufficient variation for analysis.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys" and "Public, Private, and Charter School Principal Surveys," 1999–2000.

After controlling for all other variables, teachers' participation in professional development on some topics was associated with district size. For example, teachers' participation rates in professional development on teaching methods, activities related to content and performance standards in the main teaching field, and student assessment were greater in districts with 1,000 students or more than in districts with fewer than 450 students.

School size was associated with teachers' participation in professional development in some topic areas; in public schools district size may be more relevant than school size. Private school teachers in schools with 150 or more students were generally more likely than those in the smallest schools (fewer than 150 students) to have participated in activities related to in-depth study, standards, and uses of computers, but were less likely to have had training in student discipline and classroom management. In the public sector, teachers who taught in the larger schools were also less likely than those in smaller schools to have addressed student discipline and classroom management.

The minority enrollment of the school in which a teacher taught was positively related to participation in professional development on various topics after controlling for the other school, principal, and teacher characteristics included in the analyses. Teachers in private schools with a minority enrollment of more than 50 percent were more likely than those in schools with no minority students to have attended professional development on each of the topics. Teachers in public schools with a minority enrollment of 11 percent or more were more likely than their colleagues in schools with no minority students to have participated in professional development involving in-depth study, teaching methods, and student discipline and classroom management.

The proportion of low-income students in a public school (as measured by the proportion of students in school who were eligible for free or reduced-price lunch) was related to teacher participation in programs on student discipline and classroom management and uses of computers for instruction. Compared with teachers in schools that enrolled relatively smaller proportions of low-income students (5 percent or less), teachers in schools with larger proportions of low-income students (21 percent or more) were more likely to report that they had attended a program on student discipline and classroom management. Teachers in schools with more than 40 percent of students eligible for free or reduced-price lunch were less likely than those in schools enrolling relatively smaller proportions of such students (5 percent or less) to have had training on uses of computers.

After controlling for all other variables, Catholic school teachers were more likely than those in nonsectarian schools to have had professional training on the topics of standards, uses of computers, student assessment, and student discipline and classroom management. Teachers in

other religious schools were more likely than nonsectarian school teachers to have participated in programs on teaching methods and student discipline and classroom management, but were less likely to have participated in programs on uses of computers.

School resources to conduct teacher professional development were also associated with teachers' participation in certain topic areas. In the public sector, teachers were more likely to have attended programs on in-depth study of content, standards, teaching methods, student assessment, and student discipline and classroom management if their school had its own budget for professional development. In the private sector, teachers were more likely to participate in programs on in-depth study of content, content and performance standards, and uses of computers if the principal at their school reported that teacher professional development was "frequently/always" accompanied by resources rather than "never/rarely" accompanied by them.

Teachers were more likely to have participated in various professional development activities if their school provided time for them. For example, when they were given time for professional development during contract hours, public school teachers were more likely to engage in in-depth study of content, and private school teachers were more likely to participate in professional development activities on standards and uses of computers.

Teachers' participation was not positively associated with principals' experience, their amount of influence in determining the content of in-service professional development programs, or the frequency with which they tried to build professional community among faculty and other staff after controlling for other variables. However, in both sectors, teachers' participation was positively associated with the frequency with which the principal engaged school staff in professional development activities. In the public sector, teachers were more likely to have participated in activities related to in-depth study of content in their main teaching field, content and performance standards in their main teaching field, and teaching methods if the principals said that they provided and engaged the school staff in professional development activities at least once or twice a month. Similarly, private school teachers were more likely to have participated in programs on teaching methods, student assessment, and student discipline and classroom management if the principals provided and engaged the school staff in professional development activities at least once a week.

Duration of Participation

In 1999–2000, teachers who had participated in professional development activities on the topics described above were asked about the amount of time they had spent on activities related to each topic: 8 hours or less, 9–32 hours, or 33 hours or more. The question referred to the total

amount of time they had spent on the topic in the last 12 months, not the duration of any particular program.

In four of the six topic areas covered, between 25 and 35 percent of all teachers reported they had spent 9 to 32 hours in professional development: standards (35 percent), teaching methods (31 percent), in-depth study of content (28 percent), and uses of computers (25 percent) (figure 12). On these four topics, an additional 8 to 17 percent of teachers reported that they had participated in activities lasting 33 hours or more. Teachers were less likely to have spent more than 8 hours on student assessment and discipline and classroom management. Public school teachers were generally more likely than private school teachers to report that they had spent more than 8 hours on all of the topics except student discipline and classroom management.[17]

Teachers' Priorities

Teachers were asked to pick their top priorities for their own future professional development from a list of seven topics. They were most likely to pick their main subject field (24 percent) and use of technology in instruction (21 percent) (figure 13 and table 19) and were least likely to choose student assessment.

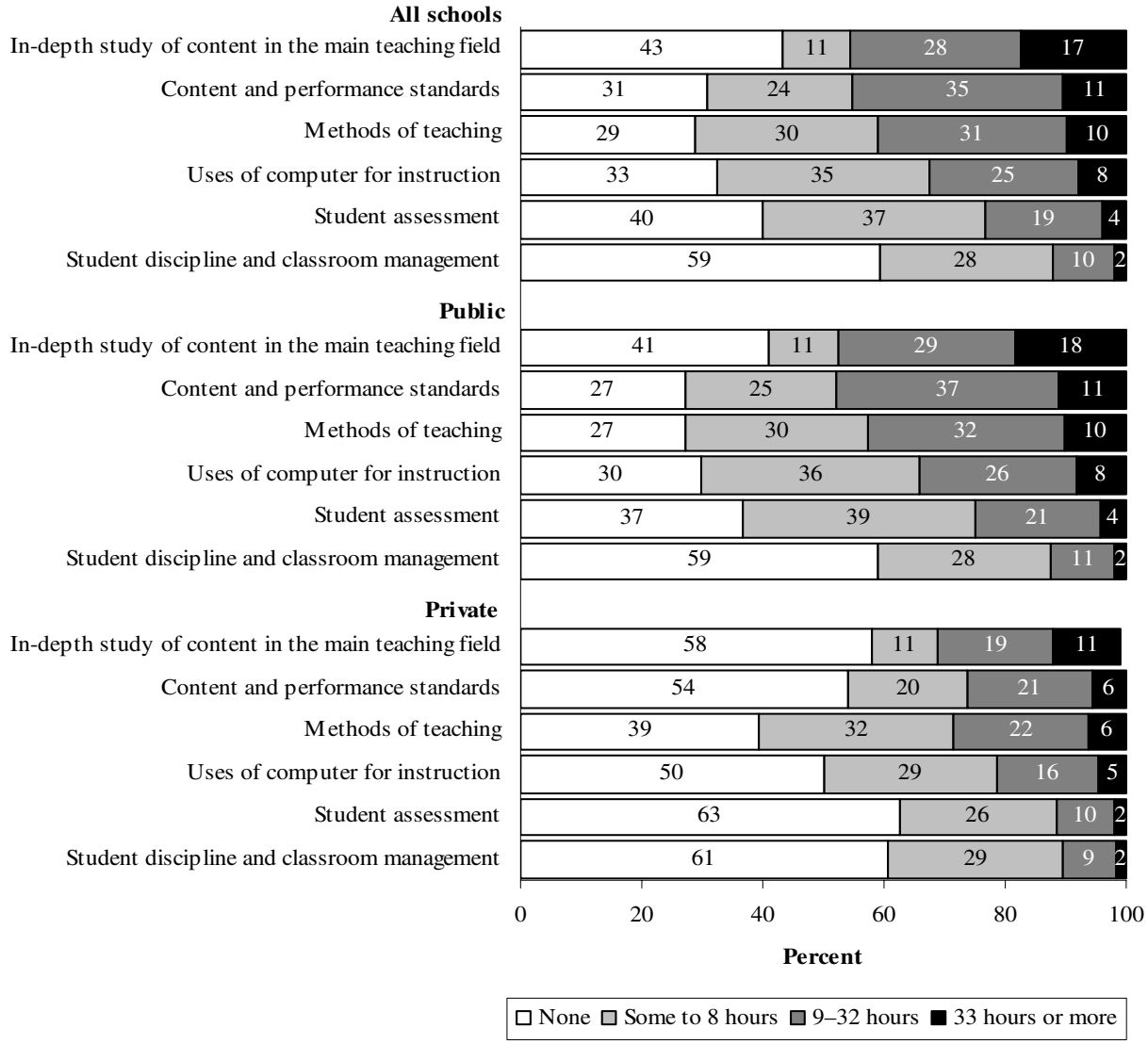
Public and private school teachers had somewhat different priorities, although the differences typically were not very large. Private school teachers were more likely than public school teachers to choose their main subject field or teaching methods.

Usefulness of Activities

Teachers who participated in professional development activities on various topics were asked to rate the usefulness of these activities on a 5-point scale, ranging from "not useful at all" to "very useful." In each topic area, more than one-half of all teachers who had participated thought that the activities were very useful (i.e., they rated them as 4 or 5 on the scale of 1–5) (table 20). Among all the topics, teachers who undertook in-depth study in their main teaching field were the most likely to think that this topic was very useful (71 percent). With one exception, no differences were observed between the percentages of public and private school teachers who judged their professional development activities to be very useful. The exception was that private school teachers were more likely than public school teachers to indicate that the activities related to student discipline and classroom management were very useful (62 vs. 56 percent).

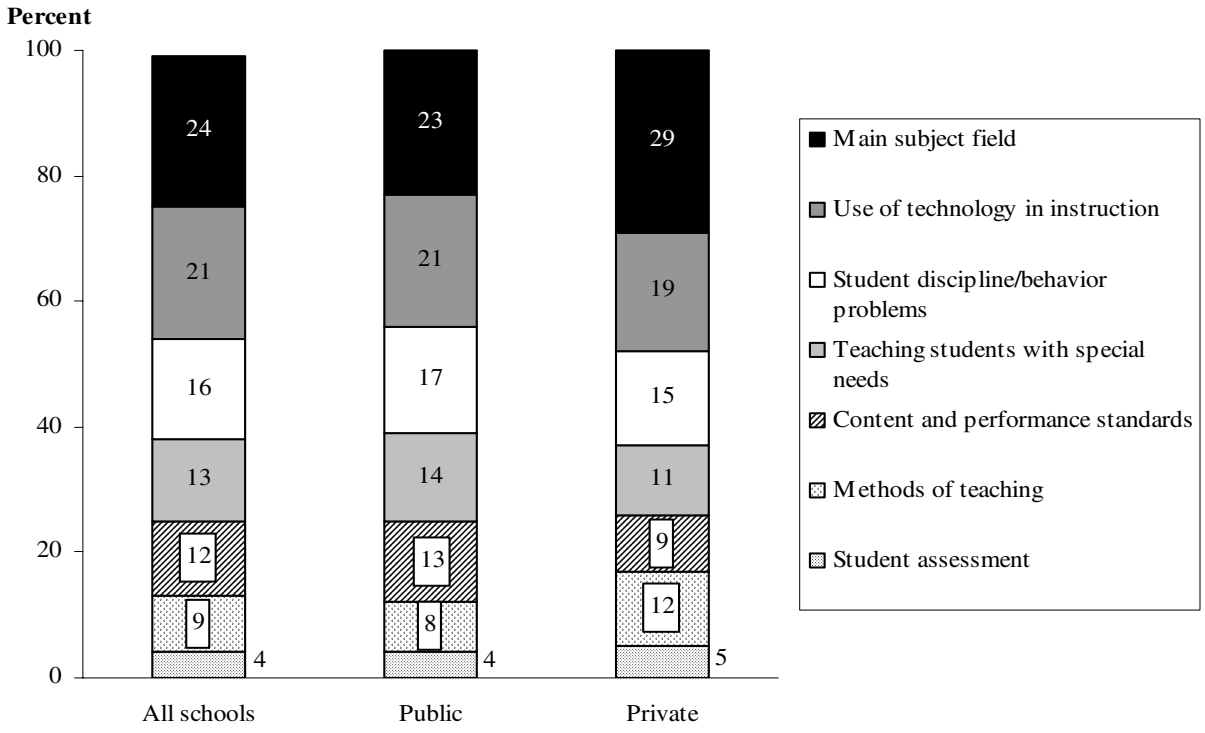
[17] The one exception was that there was no difference between sectors in the percentages of teachers spending 33 hours or more on professional development related to student discipline and classroom management.

Figure 12. Percentage distribution of teachers by the amount of time they spent on professional development programs, by sector and topic: 1999–2000



NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Figure 13. Percentage distribution of teachers by their top priority for additional professional development, by sector: 1999–2000



NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table 19. Percentage distribution of teachers by their top priority for additional professional development, by sector, school level, and teacher experience: 1999-2000

Sector and school or teacher characteristic	Main subject field	Uses of computers for instruction	Student discipline and behavior problems	Teaching students with special needs[1]	Content and performance standards in subject area	Methods of teaching	Student assessment
6.22)-11.80.63	1310.0(1310.0(						

Table 20. Percentage of teachers who thought that various professional development activities in which they had participated in the past 12 months were very useful, by sector and time spent on the corresponding topic: 1999–2000

Sector and time spent on topic	Methods of teaching	Content and performance standards in main teaching field	Uses of computer for instruction	Student assessment[1]	In-depth study of content in main teaching field	Student discipline and classroom management
All schools	61.2	57.2	63.3	52.5	71.4	56.3
			Public			
Total	61.2	56.7	63.6	52.4	71.3	55.5
Time spent on the corresponding topic						
8 hours or less	46.5	40.5	49.5	42.8	53.0	47.7
9–16 hours	63.9	55.5	72.0	61.5	65.1	68.1
17–32 hours	75.0	67.9	81.6	72.6	75.9	77.0
33 hours or more	83.8	81.0	89.1	79.0	84.7	86.8
			Private			
Total	60.8	62.7	60.7	54.1	72.7	62.1
Time spent on the corresponding topic						
8 hours or less	48.3	49.2	47.6	45.8	53.4	55.8
9–16 hours	68.8	66.4	71.2	67.9	66.6	75.2
17–32 hours	77.7	74.5	82.6	77.2	80.3	80.5
33 hours or more	86.2	87.2	92.1	86.6	91.2	91.0

[1] Such as methods of testing, evaluation, or performance assessment.
NOTE: Teachers were asked about the usefulness of their professional development activities on these topics. "Very useful" means they rated their usefulness as 4 or 5 on a scale of 1–5.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

The amount of time teachers spent on professional development activities in a particular content area and their perceptions of the usefulness of these activities were strongly related.[18] For each of the six topics covered, the more time teachers spent in professional development, the more likely they were to indicate that it was very useful. This pattern held for both public and private school teachers.

Among both public and private school teachers, the more time that the teachers spent on professional development related to uses of computers for instruction, the more likely they were

[18] This finding is consistent with those from another national survey of teacher professional development (Parsad, Lewis, and Farris 2001).

to report that their students used computers during class time (table 21). Considering only teachers whose students had used computers during class time, the more time teachers reported spending on professional development on this topic during the past 12 months, the more likely they were to report that their students used computers in the classroom for the following purposes: practice and master skills; to learn about course subject matter; work collaboratively with other students; solve problems; do word processing; produce multimedia or video reports or projects; or correspond with experts, authors, or students from other schools via e-mail or the Internet. This pattern was true for both public and private school teachers. The direction of causality is not known, however. While it is possible that participating in professional development activities encourages teachers to use computers for instruction, it is also possible that being required to use computers in the classroom (or just having them available) encourages teachers to seek professional development in this area.

Table 21. Percentage of teachers who reported that students used computers during class time, and of those, the percentage who reported that their students had used computers for various purposes in two or more class meetings during the past 2 weeks, by sector and time spent on a professional development program that focused on using computers for instruction: 1999–2000

		Among teachers whose students used computers, percentage who used them for:							
Sector and time spent on professional development	Percent of teachers whose students used computers	Practicing and mastering skills	Learning about course subject matter	Working collaboratively with other students	Solving problems	Doing word processing	Producing multimedia	Corresponding with experts via e-mail/ the Internet	Other
All schools	59.3	66.7	59.5	51.4	46.3	44.7	15.7	7.0	16.5
Public									
Total	61.6	67.2	60.1	51.7	47.0	45.2	15.5	7.1	16.7
Time spent on uses of computer for instruction									
None	48.7	64.9	52.7	47.1	40.5	39.5	10.9	3.9	15.7
Some to 8 hours	62.3	66.6	58.5	50.2	45.5	42.2	12.7	6.0	15.8
9–16 hours	70.0	67.8	62.6	52.9	49.9	48.6	16.5	8.1	16.9
17–32 hours	71.3	68.8	67.4	57.2	51.3	49.9	21.1	9.8	18.7
33 hours or more	77.8	71.7	69.8	59.3	56.1	56.1	27.8	13.0	19.9
Private									
Total	43.9	61.7	53.0	48.0	40.3	40.6	17.1	6.7	14.1
Time spent on uses of computer for instruction									
None	33.3	62.3	46.6	40.2	36.6	36.2	13.0	3.9	15.1
Some to 8 hours	49.2	60.2	53.4	49.9	38.8	40.4	14.2	6.8	11.5
9–16 hours	60.7	56.5	55.1	55.2	38.8	44.0	24.3	7.5	12.6
17–32 hours	62.6	66.7	61.9	50.0	46.6	49.2	23.6	9.9	18.3
33 hours or more	64.9	70.7	69.2	60.8	62.0	47.4	26.8	14.9	19.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Summary

In developing the 1999–2000 SASS, a special effort was made to include questions covering all types of professional development activities, including both tradition forms (e.g., workshops, university or college courses), and more recently-developed innovations for which there appeared to be a broad consensus among educators, researchers, and policy makers (Hawley and Valli 2001). The survey addressed how professional development was organized and managed, what kinds of activities were available to teachers, and which ones they participated in.

Organization and Management of Professional Development

Recent views of professional development frequently emphasize the importance of involving teachers in defining their needs and developing opportunities for their own professional development. According to public school districts, primary responsibility for planning and conducting professional development activities rests more commonly with district staff and principals than with teachers, especially in large districts. At the same time, however, most public school principals thought that teachers, as well as principals and district staff, had "a great deal of influence" in determining the content of in-service activities. Nevertheless, the proportion of teachers who thought that teachers in their school had a great deal of influence was about one-third.

Recent views of professional development also frequently call for it to be part of a comprehensive change process, integrated with school operations and evaluated for its impact on teaching practice and student learning. In 1999–2000, a large majority of public school principals reported that district initiatives, school improvement plans, and academic or skills standards were "very important" determinants of professional development activities for teachers. Roughly one-half of all principals said that professional development was evaluated for evidence of improvement in classroom practice and student achievement (more so in public schools than in private schools). In the public sector, the likelihood that principals would report that these evaluations activities were conducted frequently or always increased with district size.

Recent models of professional development often emphasize the importance of a collaborative school environment. In such an environment, one would expect to find teachers working with each other and the school principal. About one-third of teachers "strongly agreed"

that there was a great deal of cooperative effort among staff at their schools. When comparing 1993–94 and 1999–2000 data, no difference could be found in the percentage of teachers who felt this way. Nevertheless, about three-quarters of principals thought that professional development was "frequently" or "always" part of teachers' regular work, and roughly half of them reported that teachers frequently or always planned and presented professional development activities. About one-third of all principals reported that they had provided and engaged teachers in professional development at least once a week in the last month, and about two-thirds reported that they had tried to build a professional community in their school that often.

Almost all schools (9 out of 10) provided teachers with time for professional development during regular contract hours, either at the beginning or end of the school year or during the year. The majority of schools also found ways to free-up time during the school day, either by hiring substitutes to cover classes or adjusting the length of the school day. Reducing teachers' workloads was a less common practice.

Teacher Participation in Professional Development Activities

Virtually all teachers reported participating in some type of in-service professional development during the previous year. Nine out of 10 teachers attended workshops, conferences, or training sessions. In addition, some teachers participated in more innovative types of professional development activities that were identified by numerous educational, research, and policy groups as being high quality. However, except for regularly collaborating with other teachers (which about three-quarters of teachers reported doing), less than half of all teachers had participated in any of these more innovative types of activities during the previous year.

In terms of content, about one-half to two-thirds of all teachers participated in professional development activities related to reforms, including programs covering content and performance standards in their main teaching field, student assessment, using computers for instruction, and in-depth study of content in their main teaching field. Many of these activities lasted a day or less. When asked to pick their top priorities for additional professional development, teachers were most likely to pick their main subject field and the use of computers for instruction, choices that are consistent with a focus on improving teachers' knowledge of the subjects they teach.

More than one-half of all teachers rated their professional development activities as "very useful." Among the topic areas covered in the survey, teachers who undertook in-depth study in their fields were the most likely to judge their professional development activities as very useful (about three-quarters did so). For each of the six topic areas, the more time teachers spent in professional development, the more likely they were to consider it very useful.

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Appendix A—Standard Error Tables

Table A1. Standard errors for table 1 and figures A and 1: Percentage distribution of school districts by district staff reports of who had primary responsibility for various aspects of teacher in-service professional development activities, by district size: 1999–2000

District size	District staff	Principals	Teachers	Outside providers
		Deciding the content		
Total	0.85	0.76	0.84	0.41
District size				
Less than 450	2.42	2.37	2.23	1.38
450–999	2.08	2.23	2.16	0.25
1,000–4,999	1.30	1.23	1.29	0.17
5,000–9,999	1.45	1.12	1.39	0.12
10,000 or more	0.88	0.78	0.77	0.00
		Designing and planning the activities		
Total	0.92	0.87	0.75	0.54
District size				
Less than 450	2.29	2.70	2.28	1.76
450–999	1.91	2.08	1.81	0.48
1,000–4,999	1.13	1.10	0.96	0.49
5,000–9,999	1.49	1.14	1.39	0.17
10,000 or more	0.84	0.66	0.77	0.01
		Conducting the activities		
Total	0.91	0.82	0.67	0.99
District size				
Less than 450	2.20	2.43	1.94	2.68
450–999	1.92	2.45	1.51	1.61
1,000–4,999	1.11	1.14	1.01	1.07
5,000–9,999	1.53	1.57	1.52	0.89
10,000 or more	0.75	0.71	0.79	0.40

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "School District Survey," 1999–2000.

Table A2. Standard errors for table 2 and figure 2: Percentage of public school principals who thought that various groups had a great deal of influence in determining the content of teacher in-service professional development activities in their schools, by selected school characteristics: 1999–2000

School characteristic	State department of education/ other state-level bodies	Local school board	School district staff	Principal	Teachers	Curriculum specialists	School site council or parent association	College and university partners
Total	0.63	0.61	0.59	0.55	0.56	0.61	0.54	0.43
School level								
Elementary	0.83	0.77	0.78	0.72	0.73	0.79	0.70	0.53
Secondary	0.90	0.81	0.78	0.72	0.81	0.78	0.71	0.60
Combined	2.55	2.52	2.04	1.59	1.57	1.81	2.27	1.69
School size								
Elementary schools								
Less than 150	3.02	2.82	2.08	1.81	2.37	2.69	2.90	2.18
150–499	1.33	1.22	1.22	1.12	1.06	1.23	1.00	0.83
500 or more	1.15	1.14	1.23	1.10	1.13	1.28	1.27	0.86
Secondary schools								
Less than 400	1.63	1.61	1.33	1.59	1.43	1.13	1.22	0.95
400–749	1.54	1.56	1.71	1.35	1.60	1.67	1.65	1.04
750 or more	1.10	1.11	1.16	0.89	0.96	1.07	1.20	0.70
Combined schools								
Less than 150	4.52	4.46	3.82	3.17	2.94	3.50	4.17	3.11
150–499	3.30	2.48	2.90	1.83	3.11	2.72	2.48	1.47
500 or more	3.66	4.01	3.74	1.84	2.51	3.48	3.60	3.04

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table A3. Standard errors for table 3: Percentage of private school principals who thought that various groups had a great deal of influence in determining the content of teacher in-service professional development activities in their schools, by selected school characteristics: 1999–2000

School characteristic	Governing or diocesan board	Principals or school head	Curriculum specialists	Teachers	Parent association
Total	1.11	0.66	1.18	1.08	0.79
School level					
Elementary	1.42	0.84	1.56	1.41	1.20
Secondary	2.63	2.63	2.83	2.40	2.22
Combined	2.00	1.44	2.16	2.05	1.53
Affiliation					
Catholic	1.60	0.76	1.55	1.22	0.64
Other religious	1.81	1.09	1.46	1.61	1.37
Nonsectarian	2.13	1.53	3.72	2.31	1.57
School size					
Elementary schools					
Less than 150	2.78	1.87	2.56	2.69	2.47
150–499	1.85	0.63	2.07	1.46	0.66
500 or more	4.16	1.62	3.81	3.93	2.08
Secondary schools					
Less than 400	3.74	4.04	3.94	3.51	3.47
400–749	2.89	1.29	2.90	2.60	0.84
750 or more	2.05	0.00	2.82	2.95	0.87
Combined schools					
Less than 150	3.25	2.30	3.87	3.45	2.91
150–499	2.42	1.27	2.90	2.83	1.54
500 or more	2.71	2.30	3.66	3.40	0.74

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table A4. Standard errors for table 4: Percentage of teachers who thought that teachers in their school had a great deal of influence in determining the content of teacher in-service professional development activities in their schools, by sector and selected school characteristics: 1999–2000

School characteristic	Total	Public	Private
Total	0.31	0.33	0.62
School level			
Elementary	0.42	0.45	0.89
Secondary	0.39	0.41	1.01
Combined	0.82	1.29	1.09
School size			
Elementary schools			
Less than 150	1.90	3.16	2.53
150–499	0.69	0.83	1.14
500 or more	0.78	0.79	2.41
Secondary schools			
Less than 400	0.86	1.02	1.95
400–749	0.62	0.67	2.11
750 or more	0.59	0.60	1.73
Combined schools			
Less than 150	2.58	3.30	3.35
150–499	1.32	2.14	1.63
500 or more	1.21	1.57	1.65

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A5. Standard errors for table 5 and figure 5: Percentage of public and private school principals who reported that various initiatives, plans, and standards were very important in determining the in-service professional development opportunities and activities for teachers in their schools, by district size and selected school characteristics: 1999–2000

District size or school characteristic	Special state level initiatives	District/ private school organization or association initiatives	School improvement plan	Implementation of academic standards	Implementation of skills standards	Teacher preferences
All schools	0.60	0.45	0.40	0.39	0.49	0.50
				Public		
Total	0.60	0.47	0.38	0.44	0.49	0.58
District size						
Less than 450	2.46	1.85	2.04	1.93	2.14	2.06
450–999	2.21	1.78	1.72	1.89	2.11	2.59
1,000–4,999	1.16	0.84	0.78	0.75	1.02	1.14
5,000–9,999	2.10	1.40	1.18	1.08	1.30	1.97
10,000 or more	1.13	0.86	0.73	0.61	0.76	0.94
School level						
Elementary	0.77	0.61	0.51	0.54	0.58	0.78
Secondary	0.93	0.73	0.75	0.66	0.77	0.86
Combined	2.51	1.59	1.48	2.15	2.23	2.02
				Private		
Total	†	1.02	1.09	0.93	†	1.09
School level						
Elementary	†	1.48	1.40	1.10	†	1.38
Secondary	†	2.99	2.62	2.31	†	2.88
Combined	†	2.02	2.32	1.74	†	2.26
Affiliation						
Catholic	†	1.49	0.97	0.94	†	1.11
Other religious	†	1.55	1.85	1.40	†	1.77
Nonsectarian	†	3.43	3.29	2.71	†	2.38

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table A6. Standard errors for table 6: Percentage of principals who reported that teachers' professional development activities were frequently or always evaluated for improvement in teacher classroom practice and effects on student achievement, by district size and selected school characteristics: 1999–2000

District size or school characteristic	Improvement in classroom practice			Effects on student achievement		
	Total	Public	Private	Total	Public	Private
Total	0.51	0.54	1.22	0.58	0.63	1.13
District size						
Less than 450	2.23	2.23	†	2.42	2.42	†
450–999	2.52	2.52	†	2.59	2.59	†
1,000–4,999	1.29	1.29	†	1.35	1.35	†
5,000–9,999	1.89	1.89	†	1.81	1.81	†
10,000 or more	1.11	1.11	†	1.02	1.02	†
School level						
Elementary	0.59	0.63	1.57	0.73	0.76	1.56
Secondary	0.95	0.94	3.21	0.85	0.89	3.19
Combined	1.67	2.32	2.17	1.59	2.46	1.97
School size						
Elementary schools						
Less than 150	2.36	3.24	2.92	2.41	3.61	2.94
150–499	0.95	1.10	1.77	0.97	1.12	1.86
500 or more	1.43	1.48	4.25	1.18	1.22	4.20
Secondary schools						
Less than 400	1.61	1.68	4.54	1.54	1.65	4.68
400–749	2.25	2.41	3.38	2.00	2.16	3.75
750 or more	1.20	1.23	3.65	0.99	1.00	3.26
Combined schools						
Less than 150	2.77	4.01	3.54	2.79	4.59	3.34
150–499	2.27	2.72	3.20	2.32	2.88	3.31
500 or more	2.79	4.82	3.62	2.88	4.84	3.85

† Not applicable.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table A7. Standard errors for table 7: Percentage of teachers who strongly agreed with various statements about within-school collaboration among teachers and principals, by sector and selected school characteristics: 1999–2000

School characteristic	The principal talks with me frequently about my instructional practices	I make a conscious effort to coordinate the content of my course with other teachers	There is a great deal of cooperative effort among the staff members
All schools	0.21	0.33	0.39
		Public	
Total	0.24	0.37	0.43
School level			
Elementary	0.36	0.53	0.60
Secondary	0.22	0.38	0.45
Combined	0.79	1.13	1.18
School size			
Elementary school			
Less than 150	2.74	2.57	2.77
150–499	0.59	0.76	0.83
500 or more	0.48	0.78	0.74
Secondary school			
Less than 400	0.59	0.81	1.10
400–749	0.52	0.68	0.87
750 or more	0.28	0.55	0.59
Combined school			
Less than 150	1.60	3.22	2.99
150–499	1.56	1.73	2.27
500 or more	0.90	1.39	1.46

See notes at end of table.

Table A7. Standard errors for table 7: Percentage of teachers who strongly agreed with various statements about within-school collaboration among teachers and principals, by sector and selected school characteristics: 1999–2000—Continued

School characteristic	The principal talks with me frequently about my instructional practices	I make a conscious effort to coordinate the content of my course with other teachers	There is a great deal of cooperative effort among the staff members
		Private	
Total	0.49	0.63	0.70
School level			
Elementary	0.63	0.86	0.89
Secondary	0.69	1.01	1.29
Combined	0.92	1.20	1.20
School size			
Elementary school			
Less than 150	1.69	2.25	2.31
150–499	0.80	1.07	1.16
500 or more	2.05	2.07	2.37
Secondary school			
Less than 400	1.25	1.56	2.53
400–749	0.91	1.67	2.08
750 or more	0.68	1.79	1.71
Combined school			
Less than 150	2.55	2.79	3.32
150–499	1.43	1.95	1.61
500 or more	1.25	2.44	2.54

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A8. Standard errors for table 8: Percentage of principals who reported that teacher professional development frequently or always had certain attributes, by selected school or principal characteristic: 1999–2000

School or principal characteristic	Considered part of teachers' regular work	Planned by teachers in the school	Presented by teachers in the school	Accompanied by resources teachers need to make changes in the classroom
All schools	0.53	0.63	0.57	0.60
		Public		
Total	0.61	0.70	0.71	0.71
School level				
Elementary	0.80	0.89	0.97	0.88
Secondary	0.91	1.03	1.03	0.86
Combined	2.02	2.14	2.28	2.26
School size				
Elementary school				
Less than 150	3.48	3.58	3.26	3.64
150–499	1.19	1.27	1.33	1.30
500 or more	1.15	1.41	1.43	1.33
Secondary school				
Less than 400	1.72	1.73	1.82	1.78
400–749	1.90	1.99	2.02	1.94
750 or more	1.18	1.26	1.36	1.31
Principal years of experience				
3 or fewer	1.21	1.11	1.19	1.15
4–9	1.04	1.06	1.03	1.33
10–19	1.16	1.29	1.28	1.36
20 or more	1.64	2.09	2.06	1.72

See notes at end of table.

Table A8. Standard errors for table 8: Percentage of principals who reported that teacher professional development frequently or always had certain attributes, by selected school or principal characteristic: 1999–2000—Continued

School or principal characteristic	Considered part of teachers' regular work	Planned by teachers in the school	Presented by teachers in the school	Accompanied by resources teachers need to make changes in the classroom
Total	1.11	1.26	1.12	1.04
School level				
Elementary	1.39	1.64	1.59	1.46
Secondary	2.40	2.51	2.92	3.13
Combined	2.02	2.24	1.87	2.04
School size				
Elementary school				
Less than 150	2.60	2.78	2.85	2.71
150–499	1.63	1.92	1.80	1.77
500 or more	3.51	4.03	4.07	3.17

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Table A9. Standard errors for table 9: Percentage of principals who had participated in various activities related to professional development at least once a week during the last month, by sector and selected school or principal characteristic: 1999–2000

School or principal characteristic	Provided and engaged staff in professional development activities	Built professional community among faculty and other staff
All schools	0.54	0.58
	Public	
Total	0.66	0.63
School level		
Elementary	0.85	0.78
Secondary	0.79	0.86
Combined	2.25	2.19
School size		
Elementary school		
Less than 150	3.37	3.15
150–499	1.11	1.18
500 or more	1.25	1.42
Secondary school		
Less than 400	1.64	1.81
400–749	1.51	1.74
750 or more	1.29	1.09
Principal years of experience		
3 or fewer	1.21	1.19
4–9	1.29	1.06
10–19	1.48	1.20
20 or more	2.00	1.69
	Private	
Total	1.01	1.27
School level		
Elementary	1.28	1.64
Secondary	2.25	3.35
Combined	1.80	2.20
School size		
Elementary school		
Less than 150	2.51	3.11
150–499	1.86	2.04
500 or more	3.38	3.64
Secondary school		
Less than 400	3.25	4.72
400–749	2.64	2.65
750 or more	2.74	3.21
Principal years of experience		
3 or fewer	2.07	2.51
4–9	1.54	2.06
10–19	1.67	2.22
20 or more	2.72	2.43

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table A10. Standard errors for table 10: Percentage of school districts that reported using various sources of funding for teacher professional development activities in their districts, by district size: 1999–2000

District size	General district operating funds	General school operating funds	State professional development funds	Special project budgets	School improve-ment funds	Title 1	Eisen-hower program	Other federal	Private sector grants
Total	0.50	0.90	0.94	1.06	0.86	0.96	0.89	0.92	0.79
District size									
Less than 450	1.57	2.48	2.63	2.54	2.69	2.45	2.62	2.63	1.67
450–999	0.94	1.53	2.05	2.29	1.99	1.74	1.26	1.67	1.62
1,000–4,999	0.62	1.00	0.95	1.13	1.04	1.00	0.57	1.07	1.10
5,000–9,999	0.61	1.29	1.30	1.12	1.30	0.95	1.06	1.10	1.63
10,000 or more	0.59	0.66	0.67	0.72	0.59	0.42	0.55	0.65	0.96

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "School District Survey," 1999–2000.

Table A11. Standard errors for table 11 and figure 7: Percentage of principals who reported that their schools provided teachers with time for professional development during regular contract hours, and of those, percentage who reported that their school used various methods to provide teachers with time, by sector, district size, and selected school characteristics: 1999–2000

District size or school characteristic	School provided teachers with time during regular contract hours	Of these principals, percentage who reported that their school used the following methods to provide teachers with time:						
		Professional days built in before school year	Substitute teachers to cover teachers' classes	Professional days built in during school year	Common planning time for teachers	Early dismissal or late start for students	Professional days built in after school year	Reduced teacher workloads
All schools	0.35	0.34	0.33	0.43	0.44	0.58	0.60	0.54
				Public				
Total	0.31	0.41	0.36	0.51	0.52	0.69	0.66	0.64
District size								
Less than 450	0.82	1.73	1.40	2.40	3.00	2.43	2.64	2.30
450–999	1.01	1.74	0.69	1.80	2.07	2.07	2.39	2.34
1,000–4,999	0.47	0.62	0.69	1.00	1.13	1.17	1.33	1.05
5,000–9,999	1.16	1.51	1.01	1.38	1.55	1.90	1.82	1.65
10,000 or mor	0.68	0.72	0.69	0.90	0.95	1.06	1.18	1.06
School level								
Elementary	0.42	0.59	0.47	0.70	0.65	0.87	0.87	0.81
Secondary	0.37	0.55	0.55	0.61	0.84	0.84	0.99	0.87
Combined	0.91	1.61	1.34	2.05	2.27	2.05	2.49	2.70
				Private				
Total	1.05	0.84	0.80	0.99	1.01	1.11	1.26	1.09
School level								
Elementary	1.41	1.08	0.98	1.35	1.37	1.47	1.59	1.36
Secondary	2.56	2.16	1.84	2.64	2.53	2.34	2.66	2.52
Combined	1.94	2.13	2.16	1.86	1.79	1.90	2.18	2.01
Affiliation								
Catholic	0.71	0.52	0.97	0.84	1.54	1.45	1.72	1.55
Other religious	1.48	1.43	1.43	1.74	1.67	1.75	1.93	1.75
Nonsectarian	3.83	2.30	2.48	2.49	2.26	2.66	3.10	3.33

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table A12. Standard errors for table 12 and figure 8: Percentage of teachers who reported receiving various types of support for professional development activities in the past 12 months, by sector, district size, and selected school and teacher characteristics: 1999–2000

District size and school or teacher characteristic	Any of these types of support	Scheduled time in the contract year for professional development	Release time from teaching	Reimbursement for conference or workshop fees	Stipend for professional development activities outside regular work hours	Reimbursement for travel and/or daily expenses	Full or partial reimbursement of college tuition
All schools	0.15	0.31	0.36	0.33	0.34	0.36	0.23
				Public			
Total	0.15	0.34	0.40	0.36	0.38	0.40	0.25
District size							
Less than 450	0.89	1.78	1.63	1.52	2.23	1.92	1.32
450–999	0.54	1.16	1.47	1.45	1.41	1.45	1.43
1,000–4,999	0.28	0.73	0.65	0.71	0.75	0.93	0.65
5,000–9,999	0.49	1.09	1.13	1.18	1.22	1.31	0.92
10,000 or more	0.30	0.55	0.69	0.64	0.65	0.59	0.38
School level							
Elementary	0.19	0.47	0.60	0.54	0.55	0.60	0.35
Secondary	0.21	0.41	0.34	0.43	0.39	0.44	0.32
Combined	0.50	0.97	1.21	1.41	1.13	1.23	0.84
Years of teaching experience							
3 or fewer	0.44	0.70	0.87	0.73	0.87	0.81	0.65
4–9	0.34	0.76	0.77	0.79	0.79	0.84	0.46
10–19	0.27	0.60	0.75	0.68	0.67	0.74	0.47
20 or more	0.29	0.51	0.57	0.64	0.60	0.51	0.37
				Private			
Total	0.53	0.70	0.61	0.70	0.51	0.62	0.55
School level							
Elementary	0.68	0.85	1.01	0.91	0.71	0.80	0.63
Secondary	0.87	1.06	1.05	1.09	0.95	1.03	1.17
Combined	1.08	1.37	1.20	1.28	1.06	1.27	1.07
Affiliation							
Catholic	0.55	0.73	0.89	0.85	0.70	0.65	0.80
Other religious	1.03	1.16	1.07	1.38	0.91	1.22	0.72
Nonsectarian	1.16	1.84	1.52	1.48	0.98	1.32	1.27
Years of teaching experience							
3 or fewer	1.21	1.24	1.28	1.26	1.08	1.19	0.95
4–9	1.04	1.15	1.29	1.35	1.11	1.30	0.95
10–19	0.93	1.42	1.15	1.12	1.10	1.06	1.01
20 or more	0.75	1.17	1.04	1.17	0.98	1.10	0.96

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table A13. Standard errors for table 13: Percentage of school districts that reported using pay incentives to reward teachers for certain types of professional development, by district size: 1999–2000

District size	Completion of in-service professional development	Attainment of NBPTS certification
Total	0.38	0.70
District size		
Less than 450	0.83	1.57
450–999	1.10	1.84
1,000–4,999	0.61	1.02
5,000–9,999	0.99	1.61
10,000 or more	0.59	0.82

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "School District Survey," 1999–2000.

Table A14. Standard errors for table 14: Percentage of teachers who reported receiving various rewards as a result of completing professional development activities, by sector and teacher experience: 1999–2000

Teacher experience	Any of these rewards	Credits toward recertification or advanced certification in the main or other teaching field	Increase in salary or other pay increases	Recognition or higher ratings on an annual teacher evaluation
All schools	0.37	0.30	0.26	0.27
		Public		
Total	0.41	0.34	0.29	0.30
Years of teaching experience				
3 or fewer	0.83	0.75	0.60	0.61
4–9	0.75	0.68	0.60	0.61
10–19	0.72	0.68	0.46	0.54
20 or more	0.62	0.57	0.45	0.47
		Private		
Total	0.68	0.69	0.33	0.45
Years of teaching experience				
3 or fewer	1.33	1.19	0.57	0.98
4–9	1.30	1.32	0.74	0.92
10–19	1.24	1.04	0.64	0.86
20 or more	1.16	1.05	0.59	0.88

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A15. Standard errors for table 15: Percentage of teachers with fewer than 5 years of teaching experience who had participated in a teacher induction program or had worked closely with a master or mentor teacher during their first year of teaching, and their experience, by sector, district size, and selected school or teacher characteristic: 1999–2000

District size and school or teacher characteristic	Percent who participated in a teacher induction program	Percent who worked with a master or mentor teacher	Of those who worked with a master or mentor teacher, Percent whose master or mentor teacher's subject area was the same as theirs	Of those who worked with a master or mentor teacher, Percent whose mentor helped to a great extent
All schools	0.62	0.63	0.74	0.72
		Public		
Total	0.70	0.70	0.81	0.81
District size				
Less than 450	3.77	3.34	4.64	5.75
450–999	3.58	3.31	3.47	4.66
1,000–4,999	1.34	1.56	1.59	1.72
5,000–9,999	1.86	2.14	2.15	2.77
10,000 or more	1.08	1.26	1.10	1.29
School size				
Elementary school				
Less than 150	5.30	4.56	8.25	8.26
150–499	1.98	1.80	1.77	2.22
500 or more	1.44	1.39	1.71	1.54
Secondary school				
Less than 400	2.10	2.09	2.61	2.65
400–749	1.96	2.20	2.03	2.03
750 or more	1.08	1.04	1.01	1.08
Main assignment field				
K–general elementary	1.40	1.49	1.25	1.63
Math or science	1.50	1.48	2.04	1.98
English or language arts	1.78	2.28	2.30	2.35
Social studies	2.40	2.05	2.27	3.14
Special education	2.20	2.18	2.24	2.82
Bilingual or ESL	5.55	4.84	5.15	5.48
Vocational education	2.32	2.58	2.94	3.13
Other	1.76	1.64	2.32	2.11

See notes at end of table.

Table A15. Standard errors for table 15: Percentage of teachers with fewer than 5 years of teaching experience who had participated in a teacher induction program or had worked closely with a master or mentor teacher during their first year of teaching, and their experience, by sector, district size, and selected school or teacher characteristic: 1999–2000—Continued

District size and school or teacher characteristic	Percent who participated in a teacher induction program	Percent who worked with a master or mentor teacher	Of those who worked with a master or mentor teacher, Percent whose master or mentor teacher's subject area was the same as theirs	Of those who worked with a master or mentor teacher, Percent whose mentor helped to a great extent
		Private		
Total	1.06	1.08	1.29	1.60
School size				
Elementary school				
Less than 150	3.12	3.93	4.57	5.32
150–499	2.04	2.14	2.81	2.57
500 or more	3.76	5.23	4.25	6.12
Secondary school				
Less than 400	3.66	3.90	4.94	5.56
400–749	3.16	3.88	3.48	4.81
750 or more	4.11	3.66	3.93	5.94
Main assignment field				
K–general elementary	1.59	1.99	1.63	2.47
Math or science	2.87	2.35	3.94	3.57
English or language arts	3.66	3.67	4.40	5.17
Social studies	3.86	5.02	5.66	4.88
Special education	4.19	5.25	3.69	7.31
Bilingual or ESL	‡	‡	‡	‡
Vocational education	‡	‡	‡	‡
Other	2.15	2.05	2.72	3.61

‡ Reporting standards not met. Too few cases for a reliable estimate.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A16. Standard errors for table 16 and figure 10: Percentage of teachers who participated in various professional development activities related to teaching in the past 12 months, by sector, district size, and selected school and teacher characteristics: 1999–2000

District size and school or teacher characteristic	Any of these activities	Workshops, conferences or training	Regularly scheduled collaboration with other teachers	Individual or collaborative research on a topic of interest	Mentoring and/or peer observation and coaching	Observational visits to other schools	University courses for recertification or advanced certification	Networks of teachers	University courses in the main assignment field	Workshops, conferences or training as a presenter
All schools	0.07	0.15	0.28	0.37	0.33	0.31	0.29	0.26	0.29	0.28
					Public					
Total	0.07	0.16	0.30	0.41	0.38	0.35	0.32	0.30	0.32	0.31
District size										
Less than 450	0.55	1.01	1.59	1.44	1.75	1.60	1.60	1.54	1.43	1.22
450–999	0.23	0.60	1.32	1.50	1.46	1.14	1.27	1.31	1.39	1.03
1,000–4,999	0.15	0.36	0.60	0.65	0.80	0.68	0.61	0.50	0.59	0.58
5,000–9,999	0.28	0.48	0.88	1.09	1.23	1.02	1.00	0.90	0.83	0.79
10,000 or more	0.11	0.20	0.50	0.62	0.64	0.57	0.51	0.46	0.47	0.46
School level										
Elementary	0.10	0.23	0.43	0.59	0.57	0.55	0.45	0.42	0.48	0.46
Secondary	0.10	0.18	0.38	0.34	0.38	0.34	0.32	0.36	0.27	0.31
Combined	0.20	0.40	1.05	1.28	1.32	0.76	1.00	0.97	0.86	0.76
Employment status										
Full-time	0.07	0.17	0.30	0.42	0.39	0.36	0.35	0.31	0.34	0.32
Part-time	0.39	0.58	1.14	1.13	1.37	1.19	1.14	1.23	0.95	0.92
Years of teaching experience										
3 or fewer	0.14	0.42	0.83	0.80	0.91	0.86	0.92	0.77	0.82	0.53
4–9	0.12	0.31	0.62	0.74	0.77	0.68	0.67	0.63	0.59	0.59
10–19	0.18	0.26	0.64	0.65	0.70	0.67	0.53	0.64	0.52	0.66
20 or more	0.13	0.26	0.47	0.67	0.64	0.65	0.43	0.49	0.46	0.49
Highest degree earned										
Bachelor's degree or lower	0.10	0.23	0.42	0.54	0.52	0.50	0.48	0.42	0.36	0.41
Master's degree	0.13	0.22	0.47	0.57	0.51	0.49	0.43	0.50	0.49	0.49
Doctoral/first-professional degree	0.27	0.61	1.25	1.65	1.56	1.45	1.31	1.32	1.24	1.31

See notes at end of table.

Table A16. Standard errors for table 16 and figure 10: Percentage of teachers who participated in various professional development activities related to teaching in the past 12 months, by sector, district size, and selected school and teacher characteristics: 1999–2000—Continued

District size and school or teacher characteristic	Any of these activities	Workshops, conferences or training	Regularly scheduled collaboration with other teachers	Individual or collaborative research on a topic of interest	Mentoring and/or peer observation and coaching	Observational visits to other schools	University courses for recertification or advanced certification	Networks of teachers	University courses in the main assignment field	Workshops, conferences or training as a presenter
Main assignment field										
K–general elementary	0.09	0.26	0.50	0.76	0.69	0.65	0.57	0.53	0.63	0.53
Math or science	0.21	0.43	0.68	0.83	0.78	0.75	0.71	0.74	0.71	0.64
English or language arts	0.23	0.36	0.87	1.10	1.12	0.99	0.97	0.97	0.77	0.97
Social studies	0.21	0.53	0.97	1.02	1.30	1.20	0.98	1.01	0.83	1.09
Special education	0.25	0.47	0.88	1.06	0.97	1.26	0.80	1.02	0.90	0.86
Bilingual or ESL	0.26	0.49	2.59	2.22	2.30	2.17	2.25	2.13	1.85	2.34
Vocational education	0.65	0.89	1.17	1.10	1.18	1.06	1.25	1.05	1.08	1.15
Other	0.21	0.46	0.70	0.73	0.77	0.70	0.67	0.67	0.67	0.68
					Private					
Total	0.28	0.47	0.63	0.55	0.59	0.64	0.50	0.52	0.41	0.53
School level										
Elementary	0.36	0.56	0.86	0.88	0.86	0.93	0.74	0.69	0.66	0.66
Secondary	0.44	0.83	0.94	0.90	1.17	1.00	0.85	0.87	0.94	0.79
Combined	0.58	0.91	1.31	1.04	1.23	1.19	0.92	1.05	0.73	1.13
Affiliation										
Catholic	0.23	0.46	0.86	0.71	0.79	0.76	0.73	0.63	0.75	0.47
Other religious	0.54	0.87	1.13	1.05	1.07	1.11	0.77	0.78	0.62	0.71
Nonsectarian	0.62	1.05	1.29	1.20	1.35	1.54	1.06	1.11	0.95	1.30
Employment status										
Full-time	0.31	0.52	0.67	0.62	0.66	0.69	0.58	0.57	0.48	0.52
Part-time	0.83	1.17	1.53	1.50	1.36	1.29	0.94	1.04	1.05	1.12
Years of teaching experience										
3 or fewer	0.64	1.20	1.22	1.01	1.19	1.26	0.95	0.83	1.08	0.66
4–9	0.61	0.93	1.45	1.28	1.20	1.24	1.01	0.95	0.89	1.07
10–19	0.50	0.75	0.99	1.08	1.10	1.12	0.82	1.08	0.82	0.96
20 or more	0.44	0.62	1.11	1.07	1.33	1.10	0.82	1.02	0.65	0.84

See notes at end of table.

Table A16. Standard errors for table 16 and figure 10: Percentage of teachers who participated in various professional development activities related to teaching in the past 12 months, by sector, district size, and selected school and teacher characteristics: 1999–2000—Continued

District size and school or teacher characteristic	Any of these activities	Workshops, conferences or training	Regularly scheduled collaboration with other teachers	Individual or collaborative research on a topic of interest	Mentoring and/or peer observation and coaching	Observational visits to other schools	University courses for recertification or advanced certification	Networks of teachers	University courses in the main assignment field	Workshops, conferences or training as a presenter
Highest degree earned										
Bachelor's degree or lower	0.39	0.64	0.76	0.77	0.69	0.74	0.67	0.60	0.54	0.51
Master's degree	0.36	0.56	0.86	0.95	1.10	1.04	0.74	0.89	0.80	0.88
Doctoral/first-professional degree	1.40	2.14	2.44	2.47	2.48	2.14	2.19	2.35	1.49	2.46
Main assignment field										
K–general elementary	0.46	0.73	1.03	0.99	1.00	1.03	0.92	0.78	0.80	0.73
Math or science	0.68	0.95	1.45	1.27	1.32	1.15	1.01	1.17	1.11	1.03
English or language arts	0.33	1.47	2.00	1.93	2.05	1.90	1.38	1.66	1.44	1.27
Social studies	0.71	1.22	1.92	1.87	2.27	1.69	1.62	1.65	1.52	1.53
Special education	0.59	1.39	2.93	2.95	2.78	3.13	2.72	2.81	2.51	2.86
Bilingual or ESL	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡
Vocational education	2.44	3.74	5.07	5.38	5.14	3.79	4.51	4.00	2.71	2.48
Other	0.55	0.88	1.09	1.08	1.19	0.94	0.85	1.07	0.70	0.97

‡ Reporting standards not met. Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A17. Standard errors for table 17: Logistic regression results (in odds ratios) predicting whether teachers participated in various professional development activities in the past 12 months: 1999–2000

District, school, principal, or teacher characteristic	University courses for recertification/ advanced certification		University courses in the main teaching field		Observational visits to other schools		Individual/ collaborative research on a topic of interest		Regularly scheduled collaboration with other teachers		Mentoring and/or peer observation and coaching		Participating in a network of teachers		Attending workshops, conferences, or training		Attending workshops, conferences, or training as a presenter	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Intercept	0.29	0.47	0.26	0.42	0.32	0.50	0.26	0.36	0.24	0.39	0.29	0.42	0.25	0.40	0.48	0.54	0.31	0.59
District characteristic																		
District size																		
Less than 450	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
450–999	0.10	†	0.12	†	0.10	†	0.10	†	0.10	†	0.11	†	0.10	†	0.28	†	0.11	†
1,000–4,999	0.09	†	0.12	†	0.10	†	0.09	†	0.10	†	0.10	†	0.10	†	0.24	†	0.11	†
5,000–9,999	0.12	†	0.13	†	0.11	†	0.10	†	0.11	†	0.11	†	0.10	†	0.25	†	0.11	†
10,000 or more	0.10	†	0.12	†	0.12	†	0.10	†	0.11	†	0.11	†	0.11	†	0.25	†	0.11	†
School characteristics																		
School level																		
Elementary	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Secondary	0.05	0.10	0.05	0.10	0.05	0.08	0.05	0.07	0.06	0.07	0.06	0.08	0.05	0.09	0.10	0.13	0.06	0.11
Combined	0.07	0.09	0.08	0.10	0.06	0.10	0.06	0.09	0.06	0.09	0.07	0.09	0.07	0.10	0.12	0.13	0.07	0.12
School size																		
Less than 150	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
150–499	0.09	0.09	0.11	0.08	0.09	0.09	0.09	0.07	0.10	0.07	0.09	0.08	0.10	0.09	0.23	0.11	0.09	0.10
500–999	0.09	0.11	0.11	0.10	0.10	0.11	0.09	0.08	0.10	0.09	0.10	0.10	0.11	0.10	0.25	0.16	0.10	0.11
1,000 or more	0.10	0.18	0.11	0.16	0.11	0.13	0.10	0.12	0.10	0.14	0.11	0.12	0.12	0.18	0.25	0.19	0.11	0.18
Percent minority enrollment																		
None	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
1–10	0.10	0.14	0.15	0.14	0.10	0.13	0.08	0.12	0.10	0.13	0.10	0.13	0.11	0.12	0.16	0.18	0.14	0.15
11–30	0.10	0.15	0.16	0.16	0.11	0.15	0.09	0.12	0.10	0.15	0.10	0.13	0.12	0.13	0.17	0.19	0.14	0.16
31–50	0.11	0.16	0.15	0.16	0.13	0.15	0.10	0.15	0.11	0.15	0.12	0.16	0.13	0.16	0.23	0.25	0.14	0.18
More than 50	0.11	0.16	0.14	0.15	0.11	0.15	0.09	0.14	0.10	0.16	0.11	0.14	0.12	0.17	0.18	0.23	0.14	0.19

See notes at end of table.

Table A17. Standard errors for table 17: Logistic regression results (in odds ratios) predicting whether teachers participated in various professional development activities in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	University courses for recertification/ advanced certification		University courses in the main teaching field		Observational visits to other schools		Individual/ collaborative research on a topic of interest		Regularly scheduled collaboration with other teachers		Mentoring and/or peer observation and coaching		Participating in a network of teachers		Attending workshops, conferences, or training		Attending workshops, conferences, or training as a presenter	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Percent eligible for free/ reduced-price lunch																		
0–5	†	(1)	†	(1)	†	(1)	†	(1)	†	(1)	†	(1)	†	(1)	†	(1)	†	(1)
6–20	0.07	(1)	0.07	(1)	0.07	(1)	0.06	(1)	0.06	(1)	0.06	(1)	0.06	(1)	0.10	(1)	0.08	(1)
21–40	0.07	(1)	0.08	(1)	0.07	(1)	0.07	(1)	0.07	(1)	0.07	(1)	0.06	(1)	0.10	(1)	0.08	(1)
More than 40	0.07	(1)	0.07	(1)	0.07	(1)	0.07	(1)	0.07	(1)	0.07	(1)	0.07	(1)	0.10	(1)	0.09	(1)
Affiliation																		
Catholic	†	0.10	†	0.11	†	0.09	†	0.09	†	0.08	†	0.09	†	0.09	†	0.14	†	0.12
Other religious	†	0.10	†	0.09	†	0.10	†	0.08	†	0.08	†	0.08	†	0.08	†	0.13	†	0.11
Nonsectarian	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)	†	(†)
School has own professional development budget																		
Yes	0.04	†	0.04	†	0.05	†	0.04	†	0.05	†	0.04	†	0.05	†	0.09	†	0.05	†
No	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Professional development at this school was accompanied by the resources that teachers need																		
Never/rarely	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Sometimes	0.06	0.12	0.07	0.13	0.07	0.12	0.06	0.10	0.06	0.10	0.06	0.12	0.06	0.11	0.12	0.18	0.08	0.16
Frequently/always	0.06	0.13	0.08	0.13	0.06	0.13	0.06	0.10	0.06	0.11	0.06	0.13	0.06	0.11	0.13	0.19	0.08	0.17

See notes at end of table.

Table A17. Standard errors for table 17: Logistic regression results (in odds ratios) predicting whether teachers participated in various professional development activities in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	University courses for recertification/ advanced certification		University courses in the main teaching field		Observational visits to other schools		Individual/ collaborative research on a topic of interest		Regularly scheduled collaboration with other teachers		Mentoring and/or peer observation and coaching		Participating in a network of teachers		Attending workshops, conferences, or training		Attending workshops, conferences, or training as a presenter	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
School provided teachers with time for professional development during regular contract hours																		
Yes	0.09	0.13	0.10	0.13	0.09	0.11	0.06	0.10	0.08	0.11	0.10	0.11	0.10	0.14	0.17	0.17	0.11	0.15
No	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Principal characteristics																		
Years of experience as principal																		
3 or fewer	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
4–9	0.05	0.09	0.06	0.09	0.05	0.08	0.04	0.07	0.05	0.08	0.05	0.09	0.05	0.09	0.10	0.14	0.05	0.11
10–19	0.05	0.08	0.05	0.09	0.05	0.08	0.04	0.06	0.06	0.08	0.05	0.08	0.06	0.08	0.10	0.12	0.05	0.11
20 or more	0.06	0.09	0.08	0.09	0.06	0.09	0.06	0.08	0.07	0.08	0.06	0.10	0.07	0.10	0.12	0.15	0.08	0.13
Principal influence in determining the content of in-service professional development programs																		
No/little	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Somewhat	0.15	0.32	0.14	0.29	0.15	0.42	0.09	0.26	0.15	0.36	0.13	0.40	0.15	0.33	0.31	0.46	0.12	0.35
A great deal	0.13	0.30	0.13	0.24	0.15	0.41	0.10	0.22	0.13	0.36	0.12	0.37	0.13	0.28	0.26	0.45	0.11	0.35
Principal provided professional development activities and engaged staff in them																		
Never	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
1 or 2 times a month	0.16	0.24	0.19	0.19	0.20	0.21	0.18	0.16	0.10	0.15	0.18	0.18	0.15	0.18	0.33	0.42	0.21	0.25
1 or 2 times a week/daily	0.16	0.23	0.20	0.19	0.21	0.22	0.18	0.18	0.11	0.15	0.18	0.20	0.15	0.20	0.35	0.43	0.21	0.26

See notes at end of table.

Table A17. Standard errors for table 17: Logistic regression results (in odds ratios) predicting whether teachers participated in various professional development activities in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	University courses for recertification/ advanced certification		University courses in the main teaching field		Observational visits to other schools		Individual/ collaborative research on a topic of interest		Regularly scheduled collaboration with other teachers		Mentoring and/or peer observation and coaching		Participating in a network of teachers		Attending workshops, conferences, or training		Attending workshops, conferences, or training as a presenter	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Principal built professional community among faculty and other staff																		
Never	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
1 or 2 times a month	0.13	0.26	0.13	0.20	0.15	0.20	0.11	0.19	0.10	0.21	0.11	0.20	0.14	0.22	0.23	0.27	0.16	0.20
1 or 2 times a week/daily	0.13	0.26	0.13	0.20	0.15	0.20	0.11	0.18	0.09	0.20	0.12	0.20	0.13	0.22	0.23	0.28	0.15	0.20
Teacher influence in determining the content of in-service professional development programs																		
No/little	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Somewhat	0.11	0.16	0.11	0.23	0.13	0.20	0.07	0.18	0.12	0.19	0.12	0.14	0.09	0.19	0.33	0.25	0.12	0.26
A great deal	0.11	0.17	0.10	0.22	0.11	0.20	0.07	0.17	0.12	0.19	0.12	0.15	0.09	0.20	0.33	0.25	0.10	0.25
Professional development at this school was planned by teachers																		
Never/rarely	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Sometimes	0.09	0.11	0.09	0.12	0.08	0.10	0.07	0.09	0.09	0.10	0.10	0.11	0.10	0.14	0.14	0.16	0.11	0.12
Frequently/always	0.09	0.13	0.10	0.12	0.08	0.11	0.08	0.09	0.09	0.12	0.10	0.11	0.11	0.14	0.16	0.18	0.11	0.13
Professional development at this school was presented by teachers																		
Never/rarely	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Sometimes	0.08	0.09	0.08	0.10	0.08	0.09	0.07	0.07	0.08	0.08	0.08	0.07	0.08	0.09	0.14	0.13	0.09	0.11
Frequently/always	0.09	0.12	0.08	0.12	0.08	0.10	0.07	0.09	0.09	0.09	0.07	0.09	0.08	0.11	0.16	0.16	0.10	0.14
Professional development was considered part of teachers' regular work																		
Never/rarely	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Sometimes	0.08	0.23	0.09	0.21	0.08	0.16	0.06	0.13	0.07	0.12	0.08	0.13	0.09	0.15	0.13	0.22	0.09	0.20
Frequently/always	0.08	0.21	0.08	0.21	0.08	0.13	0.05	0.13	0.07	0.13	0.07	0.12	0.09	0.14	0.14	0.19	0.08	0.19

See notes at end of table.

Table A17. Standard errors for table 17: Logistic regression results (in odds ratios) predicting whether teachers participated in various professional development activities in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	University courses for recertification/ advanced certification		University courses in the main teaching field		Observational visits to other schools		Individual/ collaborative research on a topic of interest		Regularly scheduled collaboration with other teachers		Mentoring and/or peer observation and coaching		Participating in a network of teachers		Attending workshops, conferences, or training		Attending workshops, conferences, or training as a presenter	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Teacher characteristics																		
Years of teaching experience																		
3 or fewer	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
4–9	0.06	0.08	0.06	0.09	0.05	0.07	0.05	0.07	0.06	0.08	0.06	0.07	0.06	0.09	0.11	0.13	0.08	0.12
10–19	0.05	0.08	0.06	0.08	0.06	0.08	0.06	0.07	0.05	0.07	0.05	0.08	0.07	0.09	0.12	0.14	0.08	0.11
20 or more	0.06	0.08	0.06	0.09	0.06	0.08	0.06	0.07	0.05	0.07	0.05	0.07	0.07	0.10	0.11	0.13	0.07	0.11
Highest degree earned																		
Bachelor's degree or lower	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Master's degree	0.04	0.07	0.04	0.08	0.04	0.06	0.04	0.06	0.04	0.05	0.04	0.06	0.04	0.07	0.08	0.10	0.04	0.07
Doctoral/ first-professional/ education specialist	0.08	0.15	0.09	0.14	0.08	0.10	0.07	0.12	0.08	0.12	0.07	0.12	0.08	0.13	0.18	0.18	0.07	0.14
Employment status																		
Full-time	0.07	0.10	0.07	0.11	0.07	0.08	0.06	0.08	0.07	0.08	0.07	0.08	0.07	0.07	0.11	0.13	0.07	0.09
Part-time	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Main assignment field																		
K–general elementary	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†
Math or science	0.06	0.10	0.07	0.10	0.07	0.09	0.07	0.08	0.07	0.09	0.06	0.09	0.06	0.10	0.15	0.14	0.06	0.14
English or language arts	0.08	0.13	0.07	0.12	0.07	0.12	0.07	0.10	0.08	0.11	0.07	0.11	0.08	0.14	0.18	0.18	0.08	0.14
Social studies	0.07	0.12	0.09	0.13	0.08	0.11	0.07	0.09	0.09	0.11	0.08	0.12	0.09	0.12	0.17	0.18	0.09	0.16
Special education	0.05	0.19	0.07	0.18	0.07	0.14	0.07	0.15	0.07	0.14	0.06	0.13	0.08	0.17	0.16	0.28	0.08	0.19
Bilingual education or ESL	0.97	‡	0.77	‡	1.04	‡	1.14	‡	0.62	‡	0.73	‡	1.30	‡	1.55	‡	1.37	‡
Vocational education	0.08	0.31	0.08	0.34	0.07	0.21	0.07	0.21	0.08	0.19	0.09	0.22	0.08	0.29	0.19	0.33	0.10	0.28
Other field	0.06	0.10	0.07	0.09	0.06	0.08	0.06	0.07	0.07	0.07	0.06	0.08	0.06	0.09	0.15	0.14	0.07	0.12

† Not applicable.

‡ Reporting standards not met. Too few cases for a reliable estimate.

[1] Too few private schools participated to provide sufficient variation for analysis.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys" and "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table A18. Standard errors for table 18: Logistic regression results (in odds ratios) predicting whether teachers participated in professional development programs that focused on various topics in the past 12 months: 1999–2000

District, school, principal, or teacher characteristic	In-depth study of content in the main teaching field		Content and performance standards in the main teaching field		Methods of teaching		Uses of computers for instruction		Student assessment		Student discipline and classroom management	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Intercept	0.21	0.33	0.31	0.32	0.25	0.37	0.30	0.39	0.28	0.42	0.29	0.47
District characteristic												
District size												
Less than 450	†	†	†	†	†	†	†	†	†	†	†	†
450–999	0.11	†	0.11	†	0.13	†	0.15	†	0.12	†	0.12	†
1,000–4,999	0.09	†	0.08	†	0.11	†	0.12	†	0.11	†	0.09	†
5,000–9,999	0.10	†	0.11	†	0.13	†	0.14	†	0.13	†	0.09	†
10,000 or more	0.10	†	0.10	†	0.12	†	0.14	†	0.13	†	0.09	†
School characteristics												
School level												
Elementary	†	†	†	†	†	†	†	†	†	†	†	†
Secondary	0.05	0.07	0.05	0.07	0.06	0.08	0.05	0.10	0.06	0.08	0.06	0.08
Combined	0.07	0.08	0.07	0.07	0.07	0.08	0.06	0.09	0.07	0.08	0.06	0.08
School size												
Less than 150	†	†	†	†	†	†	†	†	†	†	†	†
150–499	0.10	0.07	0.09	0.07	0.11	0.08	0.11	0.09	0.10	0.08	0.09	0.08
500–999	0.11	0.09	0.09	0.09	0.10	0.10	0.11	0.12	0.10	0.09	0.10	0.10
1,000 or more	0.10	0.13	0.10	0.12	0.11	0.21	0.13	0.17	0.11	0.20	0.10	0.16
Percent minority enrollment												
None	†	†	†	†	†	†	†	†	†	†	†	†
1–10	0.08	0.12	0.10	0.09	0.09	0.12	0.10	0.14	0.10	0.10	0.10	0.12
11–30	0.09	0.12	0.10	0.11	0.10	0.13	0.11	0.14	0.10	0.11	0.11	0.13
31–50	0.10	0.15	0.11	0.13	0.10	0.13	0.11	0.19	0.10	0.15	0.12	0.15
More than 50	0.10	0.15	0.10	0.11	0.10	0.16	0.11	0.16	0.10	0.15	0.12	0.15

See notes at end of table.

Table A18. Standard errors for table 18: Logistic regression results (in odds ratios) predicting whether teachers participated in professional development programs that focused on various topics in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	In-depth study of content in the main teaching field		Content and performance standards in the main teaching field		Methods of teaching		Uses of computers for instruction		Student assessment		Student discipline and classroom management	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Percent eligible for free/ reduced-price lunch												
0–5	†	(1)	†	(1)	†	(1)	†	(1)	†	(1)	†	(1)
6–20	0.06	(1)	0.05	(1)	0.07	(1)	0.08	(1)	0.06	(1)	0.07	(1)
21–40	0.06	(1)	0.06	(1)	0.06	(1)	0.09	(1)	0.07	(1)	0.08	(1)
More than 40	0.06	(1)	0.06	(1)	0.06	(1)	0.09	(1)	0.06	(1)	0.08	(1)
Affiliation												
Catholic	†	0.10	†	0.08	†	0.10	†	0.10	†	0.10	†	0.09
Other religious	†	0.10	†	0.08	†	0.09	†	0.10	†	0.10	†	0.09
Nonsectarian	†	†	†	†	†	†	†	†	†	†	†	†
School has own professional development budget												
Yes	0.04	†	0.05	†	0.04	†	0.04	†	0.04	†	0.04	†
No	†	†	†	†	†	†	†	†	†	†	†	†
Professional development at this school was accompanied by the resources that teachers need												
Never/rarely	†	†	†	†	†	†	†	†	†	†	†	†
Sometimes	0.06	0.10	0.07	0.10	0.08	0.13	0.07	0.12	0.07	0.11	0.06	0.13
Frequently/always	0.06	0.11	0.07	0.10	0.07	0.12	0.07	0.12	0.07	0.10	0.06	0.12
School provided teachers with time for professional development during regular contract hours												
Yes	0.06	0.10	0.09	0.10	0.08	0.13	0.13	0.12	0.09	0.10	0.09	0.15
No	†	†	†	†	†	†	†	†	†	†	†	†

See notes at end of table.

Table A18. Standard errors for table 18: Logistic regression results (in odds ratios) predicting whether teachers participated in professional development programs that focused on various topics in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	In-depth study of content in the main teaching field		Content and performance standards in the main teaching field		Methods of teaching		Uses of computers for instruction		Student assessment		Student discipline and classroom management	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Principal characteristics												
Years of experience as principal												
3 or fewer	†	†	†	†	†	†	†	†	†	†	†	†
4–9	0.04	0.08	0.05	0.08	0.06	0.09	0.06	0.10	0.05	0.07	0.05	0.09
10–19	0.04	0.08	0.05	0.07	0.06	0.08	0.07	0.09	0.05	0.07	0.05	0.08
20 or more	0.05	0.09	0.06	0.08	0.07	0.09	0.08	0.10	0.07	0.10	0.06	0.09
Principal influence in determining the content of in-service professional development programs												
No/little	†	†	†	†	†	†	†	†	†	†	†	†
Somewhat	0.11	0.30	0.13	0.35	0.11	0.33	0.15	0.30	0.14	0.45	0.12	0.41
A great deal	0.10	0.26	0.12	0.31	0.11	0.27	0.16	0.31	0.14	0.42	0.13	0.39
Principal provided professional development activities and engaged staff in them												
Never	†	†	†	†	†	†	†	†	†	†	†	†
1 or 2 times a month	0.09	0.18	0.19	0.18	0.12	0.20	0.19	0.21	0.18	0.15	0.18	0.21
1 or 2 times a week/daily	0.09	0.19	0.19	0.18	0.12	0.21	0.19	0.22	0.19	0.16	0.18	0.21
Principal built professional community among faculty and other staff												
Never	†	†	†	†	†	†	†	†	†	†	†	†
1 or 2 times a month	0.09	0.17	0.15	0.14	0.13	0.20	0.17	0.22	0.14	0.16	0.13	0.19
1 or 2 times a week/daily	0.10	0.17	0.15	0.16	0.13	0.21	0.17	0.20	0.13	0.16	0.13	0.19

See notes at end of table.

Table A18. Standard errors for table 18: Logistic regression results (in odds ratios) predicting whether teachers participated in professional development programs that focused on various topics in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	In-depth study of content in the main teaching field		Content and performance standards in the main teaching field		Methods of teaching		Uses of computers for instruction		Student assessment		Student discipline and classroom management	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Teacher influence in determining the content of in-service professional development programs												
No/little	†	†	†	†	†	†	†	†	†	†	†	†
Somewhat	0.09	0.16	0.11	0.16	0.11	0.16	0.15	0.18	0.10	0.18	0.09	0.16
A great deal	0.09	0.16	0.11	0.16	0.09	0.16	0.15	0.16	0.10	0.19	0.08	0.17
Professional development at this school was planned by teachers												
Never/rarely	†	†	†	†	†	†	†	†	†	†	†	†
Sometimes	0.07	0.10	0.09	0.09	0.09	0.12	0.09	0.10	0.09	0.10	0.08	0.10
Frequently/always	0.07	0.11	0.09	0.10	0.09	0.12	0.10	0.12	0.10	0.11	0.08	0.13
Professional development at this school was presented by teachers												
Never/rarely	†	†	†	†	†	†	†	†	†	†	†	†
Sometimes	0.07	0.07	0.07	0.08	0.07	0.09	0.09	0.09	0.09	0.08	0.08	0.08
Frequently/always	0.08	0.10	0.08	0.09	0.07	0.11	0.10	0.11	0.08	0.10	0.09	0.09
Professional development was considered part of teachers' regular work												
Never/rarely	†	†	†	†	†	†	†	†	†	†	†	†
Sometimes	0.07	0.13	0.09	0.13	0.08	0.15	0.09	0.18	0.08	0.13	0.08	0.16
Frequently/always	0.07	0.12	0.09	0.13	0.08	0.14	0.08	0.16	0.07	0.12	0.07	0.15

See notes at end of table.

Table A18. Standard errors for table 18: Logistic regression results (in odds ratios) predicting whether teachers participated in professional development programs that focused on various topics in the past 12 months: 1999–2000—Continued

District, school, principal, or teacher characteristic	In-depth study of content in the main teaching field		Content and performance standards in the main teaching field		Methods of teaching		Uses of computers for instruction		Student assessment		Student discipline and classroom management	
	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private	Public	Private
Teacher characteristics												
Years of teaching experience												
3 or fewer	†	†	†	†	†	†	†	†	†	†	†	†
4–9	0.06	0.08	0.06	0.08	0.07	0.07	0.05	0.08	0.05	0.08	0.06	0.07
10–19	0.05	0.07	0.05	0.08	0.07	0.07	0.06	0.08	0.06	0.07	0.05	0.07
20 or more	0.06	0.08	0.06	0.08	0.06	0.07	0.05	0.08	0.06	0.08	0.05	0.07
Highest degree earned												
Bachelor's degree or lower	†	†	†	†	†	†	†	†	†	†	†	†
Master's degree	0.04	0.06	0.04	0.06	0.04	0.06	0.04	0.07	0.04	0.07	0.04	0.06
Doctoral/first-professional/ education specialist	0.07	0.12	0.08	0.11	0.08	0.12	0.09	0.12	0.07	0.13	0.08	0.11
Employment status												
Full-time	0.07	0.07	0.08	0.08	0.06	0.07	0.06	0.08	0.06	0.07	0.07	0.08
Part-time	†	†	†	†	†	†	†	†	†	†	†	†
Main assignment field												
K–general elementary	†	†	†	†	†	†	†	†	†	†	†	†
Math or science	0.07	0.08	0.07	0.09	0.07	0.08	0.07	0.10	0.07	0.08	0.06	0.10
English or language arts	0.06	0.10	0.07	0.11	0.08	0.10	0.08	0.11	0.07	0.09	0.07	0.11
Social studies	0.08	0.11	0.07	0.10	0.08	0.10	0.08	0.14	0.07	0.10	0.07	0.11
Special education	0.07	0.15	0.08	0.14	0.06	0.15	0.07	0.17	0.06	0.12	0.06	0.14
Bilingual education or ESL	0.11	‡	0.15	‡	0.15	‡	0.12	‡	0.12	‡	0.11	‡
Vocational education	0.07	0.22	0.07	0.19	0.09	0.22	0.09	0.28	0.08	0.24	0.08	0.25
Other field	0.06	0.08	0.06	0.08	0.06	0.07	0.06	0.08	0.07	0.07	0.05	0.07

† Not applicable.

‡ Reporting standards not met. Too few cases for a reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys" and "Public, Private, and Charter School Principal Surveys," 1999–2000.

Table A19. Standard errors for table 19 and figure 13: Percentage distribution of teachers by their top priority for additional professional development, by sector, school level, and teacher experience: 1999-2000

Sector and school or teacher characteristic	Main subject field	Uses of computers for instruction	Student discipline and behavior problems	Teaching students with special needs	Content and performance standards in subject area	Methods of teaching	Student assessment
All schools	0.26	0.26	0.24	0.22	0.22	0.17	0.13
				Public			
Total	0.30	0.28	0.29	0.26	0.24	0.18	0.14
School level							
Elementary	0.44	0.41	0.43	0.37	0.36	0.29	0.20
Secondary	0.28	0.31	0.25	0.22	0.28	0.21	0.12
Combined	1.04	0.80	0.75	0.62	0.81	0.35	0.40
Years of teaching experience							
3 or fewer	0.64	0.53	0.67	0.67	0.60	0.51	0.41
4–9	0.62	0.62	0.57	0.62	0.46	0.41	0.30
10–19	0.55	0.61	0.46	0.53	0.44	0.43	0.28
20 or more	0.49	0.59	0.46	0.40	0.46	0.30	0.19
				Private			
Total	0.66	0.46	0.50	0.39	0.32	0.39	0.33
School level							
Elementary	0.79	0.68	0.63	0.54	0.45	0.59	0.42
Secondary	0.90	0.76	0.72	0.83	0.60	0.65	0.41
Combined	1.33	0.83	0.88	0.86	0.65	0.60	0.57
Years of teaching experience							
3 or fewer	1.17	0.81	1.06	0.76	0.67	0.82	0.56
4–9	1.16	0.73	1.00	0.71	0.63	0.77	0.71
10–19	1.30	0.93	0.80	0.75	0.74	0.73	0.59
20 or more	0.95	0.98	0.71	0.71	0.79	0.56	0.46

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A20. Standard errors for table 20: Percentage of teachers who thought that various professional development activities in which they had participated in the past 12 months were very useful, by sector and time spent on the corresponding topic: 1999–2000

Sector and time spent on topic	Methods of teaching	Content and performance standards in main teaching field	Uses of computer for instruction	Student assessment	In-depth study of content in main teaching field	Student discipline and classroom management
All schools	0.42	0.47	0.37	0.42	0.45	0.53
			Public			
Total	0.46	0.52	0.40	0.46	0.49	0.59
Time spent on the corresponding topic						
8 hours or less	0.62	0.75	0.53	0.51	1.19	0.68
9–16 hours	0.76	0.95	0.80	0.95	0.95	1.20
17–32 hours	0.87	0.99	1.03	1.41	0.83	1.72
33 hours or more	0.80	0.82	0.86	1.40	0.61	1.43
			Private			
Total	0.67	0.79	0.74	1.01	0.78	1.01
Time spent on the corresponding topic						
8 hours or less	1.04	1.38	0.94	1.13	1.66	1.07
9–16 hours	1.19	1.33	1.58	2.28	1.56	2.16
17–32 hours	1.55	1.73	1.92	3.14	1.55	2.78
33 hours or more	1.59	1.63	1.35	3.14	0.91	3.35

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A21. Standard errors for table 21: Percentage of teachers who reported that students used computers during class time, and of those, the percentage who reported that their students had used computers for various purposes in two or more class meetings during the past 2 weeks, by sector and time spent on a professional development program that focused on using computers for instruction: 1999–2000

Sector and time spent on professional development	Percent of teachers whose students used computers	Among teachers whose students used computers, percentage who used them for: Practicing and mastering skills	Learning about course subject matter	Working collaboratively with other students	Solving problems	Doing word processing	Producing multimedia	Corresponding with experts via e-mail/ the Internet	Other
All schools	0.34	0.42	0.48	0.40	0.47	0.46	0.30	0.22	0.38
Public									
Total	0.37	0.46	0.52	0.43	0.51	0.49	0.32	0.23	0.43
Time spent on uses of computer for instruction									
None	0.67	0.95	1.08	1.21	1.01	1.13	0.53	0.33	0.75
Some to 8 hours	0.59	0.80	0.88	0.66	0.89	0.82	0.51	0.39	0.73
9–16 hours	0.78	0.99	1.03	1.02	1.12	1.17	0.76	0.50	1.01
17–32 hours	1.04	1.65	1.49	1.63	1.54	1.57	1.26	0.79	1.31
33 hours or more	0.95	1.35	1.41	1.58	1.44	1.43	1.19	0.98	1.17
Private									
Total	0.72	0.96	1.02	0.97	1.05	0.89	0.80	0.45	0.67
Time spent on uses of computer for instruction									
None	0.95	1.57	1.62	1.66	1.73	1.39	1.32	0.58	1.07
Some to 8 hours	1.13	1.43	1.59	1.77	1.60	1.41	1.12	0.74	1.05
9–16 hours	1.67	2.84	2.72	2.43	2.60	2.48	2.65	1.36	1.53
17–32 hours	2.39	2.83	3.11	3.25	3.12	3.00	2.61	1.78	2.41
33 hours or more	2.41	2.38	2.68	2.92	3.08	3.50	2.68	2.30	2.28

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A22. Standard errors for figure 2: Percentage of public school principals who thought that various groups had a great deal of influence in determining the content of teacher in-service professional development activities in their school: 1993–94 and 1999–2000

Groups with influence on professional development	1993–94	1999–2000
Total		
State department of education	0.30	0.46
School district staff	0.59	0.70
Principal	0.67	0.68
Teachers	0.60	0.62

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public School Principal Surveys," 1993–94 and "Public and Charter School Principal Surveys," 1999–2000.

Table A23. Standard errors for figure 3: P

Table A24. Standard errors for figure 4: Percentage distributions of teachers and principals by the amount of influence they thought that teachers in their schools had in determining the content of in-service professional development programs, by sector and staff: 1999–2000

Sector and staff	A great deal	Some	Little or none
		Public	
Teachers	0.33	0.35	0.35
Principals	0.56	0.46	0.32
		Private	
Teachers	0.62	0.60	0.66
Principals	1.07	0.86	0.81

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "School District Survey," 1999–2000.

Table A25. Standard errors for figure 6: Percentage of teachers who strongly agreed with various statements about within-school collaboration between teachers and principals, by sector: 1993–94 and 1999–2000

	The principal talks with me frequently about my instructional practices		I make a conscious effort to coordinate the content of my courses with that of other teachers		There is a great deal of cooperative effort among the staff members	
Sector	1993–94	1999–2000	1993–94	1999–2000	1993–94	1999–2000
All schools	0.23	0.21	0.34	0.33	0.40	0.39
Public	0.26	0.24	0.38	0.37	0.45	0.43
Private	0.44	0.49	0.51	0.63	0.57	0.70

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public and Private Teacher Surveys," 1993–94 and "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A26. Standard errors for figure 9: Percentage of teachers with fewer than 5 years of teaching experience who participated in a teacher induction program during their first year of teaching, by sector: 1993–94 and 1999–2000

Sector	1993–94	1999–2000
All schools	1.05	0.62
Public	1.09	0.70
Private	1.01	1.06

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public and Private Teacher Surveys," 1993–94 and "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A27. Standard errors for figure 11: Percentage of teachers who participated in professional development programs that focused on various topics in the past 12 months, by sector: 1999–2000

Topic	All schools	Public	Private
Any of these topics	0.11	0.11	0.44
Methods of teaching	0.30	0.32	0.61
Content and performance standards in main teaching field	0.29	0.31	0.55
Use of technology in instruction	0.34	0.37	0.81
Student assessment	0.34	0.36	0.61
In-depth study of content in main teaching field	0.28	0.30	0.61
Student discipline and classroom management	0.36	0.39	0.68

SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Table A28. Standard errors for figure 12: Percentage distribution of teachers by the amount of time they spend on professional development programs, by sector and topic: 1999–2000

Sector and topic	None	Some to 8 hours	9–32 hours	33 hours or more
		All schools		
In-depth study of content in the main teaching field	0.28	0.21	0.29	0.26
Content and performance standards	0.29	0.27	0.32	0.24
Methods of teaching	0.30	0.32	0.31	0.20
Uses of computer for instruction	0.34	0.30	0.30	0.20
Student assessment	0.34	0.32	0.26	0.12
Student discipline and classroom management	0.36	0.33	0.22	0.10
		Public		
In-depth study of content in the main teaching field	0.30	0.24	0.33	0.29
Content and performance standards	0.31	0.31	0.36	0.27
Methods of teaching	0.32	0.36	0.34	0.23
Uses of computer for instruction	0.37	0.34	0.33	0.22
Student assessment	0.36	0.35	0.29	0.13
Student discipline and classroom management	0.39	0.36	0.26	0.11
		Private		
In-depth study of content in the main teaching field	0.61	0.39	0.51	0.36
Content and performance standards	0.55	0.48	0.51	0.29
Methods of teaching	0.61	0.56	0.56	0.33
Uses of computer for instruction	0.81	0.61	0.40	0.23
Student assessment	0.61	0.52	0.38	0.17
Student discipline and classroom management	0.68	0.62	0.43	0.17

NOTE: Detail may not sum to totals because of rounding.
SOURCE: U.S. Department of Education, National Center for Education Statistics, Schools and Staffing Survey (SASS), "Public, Private, and Charter School Teacher Surveys," 1999–2000.

Appendix B—Technical Notes

The Schools and Staffing Survey (SASS)

The Schools and Staffing Survey (SASS) is an integrated set of surveys sponsored by the National Center for Education Statistics (NCES) that is collected from public, private, public charter, and Bureau of Indian Affairs (BIA) schools nationwide. SASS provides information about teachers and administrators and the general condition of America's elementary and secondary schools. NCES initiated SASS in the mid-1980s in response to the need for information about critical aspects of teacher supply and demand, the qualifications and working conditions of teacher and principals, and the basic conditions in schools as workplaces and learning environments. SASS has been conducted four times: in school years 1987–88, 1990–91, 1993–94, and 1999–2000 by the United States Census Bureau. SASS was most recently conducted in 2003–04 and is on a four-year schedule in the future. Results from the 2003–04 SASS are scheduled to be released in the summer of 2006. For each administration of SASS, NCES has reviewed the content to expand, retain, or eliminate topics covered in the previous administration. In this way, the survey's capability for trend analysis is maintained, yet at the same time new topics are added to address current concerns.

The 1999–2000 SASS consisted of the following six survey components: the School District Survey, the Principal Survey, the School Survey, the Teacher Survey, the School Library Media Center Survey, and the Teacher Followup Survey. The Teacher Followup Survey, administered the year following the administration of the other five components, will be the subject of a future report and will not be discussed further in this report. The questionnaires were modified slightly to meet the needs of public, private, public charter, and BIA schools. This report uses items from the public school district survey; public and private school principal surveys; and public, charter, and private school teacher surveys.

Copies of the 1999–2000 SASS questionnaires may be obtained on the Internet at http://nces.ed.gov/surveys/sass or by e-mail to SASSdata@ed.gov.

Sample Design

The SASS sample design is described in detail in the data file user's manual (U.S. Department of Education 2004). The sampling frame and sample selection procedures are summarized briefly here.

Sampling Frame

The SASS was designed to support estimates at the national, regional, and state levels for public school districts, schools, principals, teachers, and school library media centers. The public school sampling frame was based on the 1997–98 school year Common Core of Data (CCD), a file of information collected annually by NCES from all state education agencies and believed to be the most complete public school listing available at the time of sample selection. The public school frame included 88,266 schools.

The universe of 1,122 public charter schools was identified from a list provided by the Office of Educational Research and Improvement (OERI) as described in *The State of Charter Schools 2000* (2000), which included public charter schools open during the 1998–99 school year; there were 1,122 schools on the public charter school frame. Deleting schools not open in 1999–2000 left 1,010 in-scope public charter schools.

The sampling frame for private schools was the 1997–98 Private School Survey (PSS), updated with more current information from 1998–99 private school association lists (Broughman and Colaciello 1999). A list frame consisting of 28,164 schools was the primary private school frame. An area frame was used to identify schools not included on the list frame and thereby compensate for the undercoverage of the list frame. The area frame consisted of 140 schools drawn from a sample of 3,142 counties throughout the nation, representing an estimated 1,760 schools.

Sample Selection

Schools are the primary sampling unit in SASS. Once schools were selected, school districts associated with the selected public schools were included in the sample as well. School districts associated with the public charter schools were not included in the sample, unless they were also associated with a public school in the sample. Hence, the sample consisted of the set of school districts that were associated with the SASS public school sample. Once schools were selected, principals were included in the sample.

Each selected school was asked to provide a list of their teachers and teacher assignments. These lists made up the teacher sampling frame. Based on the information collected on teachers from schools, teachers were assigned to strata depending on the following teacher characteristics: (1) teacher's race is reported as Asian or Pacific Islander; (2) teacher's race is reported as American Indian or Alaska Native; (3) teachers who teach classes designed for students with Limited-English Proficiency; (4) teachers in their first, second, or third year of teaching; or (5) teachers not classified in any of the above groups. This mutually exclusive assignment was done

in the order of priority from 1 to 5. The probability of selection of teachers within these strata varied, depending upon the number of teachers within each sector.

Data Collection Procedures

Data collection took place during the 1999–2000 school year. District office staff designated the respondents for the district questionnaire. School questionnaires were addressed to the "principal," but may have been completed by other staff. The principal and teacher

Table B1. Number of cases and weighted response rates, by sector: 1999–2000

Sector	District	School	Principal	Teacher
Sample				
Public	5,465	9,893	9,893	56,354
Private	†	3,558	3,558	10,760
Charter	†	1,122	1,122	4,438
In-scope cases				
Public	5,386	9,527	9,404	51,811
Private	†	3,233	3,185	9,472
Charter	†	1,010	988	3,617
Interviews				
Public	4,690	8,432	8,524	42,086
Private	†	2,611	2,734	7,098
Charter	†	870	891	2,847
Weighted response rates				
Public	88.6	88.5	90.0	83.1
Private	†	79.8	84.8	77.2
Charter	†	86.1	90.2	78.6
Weighted overall response rates[1]				
Public	†	†	†	76.6
Private	†	†	†	67.2
Charter	†	†	†	71.8

† Not applicable.

[1] Weighted teacher response rate times the rate of cooperation with the teacher listing operation.

NOTE: The number of in-scope cases in sample excludes out-of-scope or ineligible cases. Reasons for an out-of-scope designation include a school closure or a principal or teacher no longer employed by the school. Response rates weighted using inverse of the probability of selection.

SOURCE: Gruber, K.J., Wiley, S.D., Broughman, S.P., Strizek, G.A., and Burian-Fitzgerald, M. (2002). *Schools and Staffing Survey, 1999–2000: Overview of the Data for Public, Private, Public Charter, and Bureau of Indian Affairs Elementary and Secondary Schools* (NCES 2002–313), tables B-2, B-3, B-4, and B-5.

Table B2. Items used in this report with weighted response rates of less than 95 percent, by survey: 1999–2000

Survey item	Description	Sector
Response rate less than 75 percent		
School		
8B	Number of White, not Hispanic students	Private
9A	Number of Hispanic students	Charter
9B	Number of White, not Hispanic students	Public, charter
School principal		
10C(5)	Amount of influence that curriculum specialists had in determining the content of in-service professional development programs for teachers in the school	Public, charter
Teacher		
50E(8)	Number of class meetings in the past 2 weeks in which students had used computers for "other" purposes (among teachers whose classes used computers).	Public, charter, private
Response rate 76–95 percent		
School		
8A,C,D,E	Number of students who were Hispanic; Black, not Hispanic; American Indian/Alaska Native; or Asian/Pacific Islander	Private
9A,C,D,E	Number of students who were Hispanic; Black, not Hispanic; American Indian/Alaska Native; or Asian/Pacific Islander	Public
9C,D,E	Number of students who were Black, not Hispanic; American Indian/Alaska Native; or Asian/Pacific Islander	Charter
39B	Number eligible for free or reduced-price lunch	Public, charter
Teacher Survey		
2	Employment status (full or part time teacher)	Public, charter, private
6A,B	Years of teaching experience in private schools	Private
7A,B	Years of teaching experience in private schools	Charter
30A–F	Types of support received for professional development activities	Private
31A,B,C	Rewards received for completing professional development activities	Private
50E(1–7)	Number of class meetings in the past 2 weeks in which students had used computers for various purposes (among teachers whose classes used computers)	Public, charter, private

SOURCE: U.S. Department of Education, National Center for Education Statistics. (2004). *1999–2000 Schools and Staffing Survey (SASS) Data File User's Manual* (NCES 2004-303), tables C-15 to C-17, C19 to C-21, C-23 to C-25, and C-27.

Imputation Procedures

For questionnaire items that should have been answered but were not, values were imputed by (1) using data from other items on the questionnaire; (2) extracting data from a related component of the SASS; (3) imputing data from the Office of Educational Research and Improvement (OERI) charter school list and the National Charter School Directory (NCSD) for public charter schools only; (4) extracting data from the sample frame file; and (5) extracting data from a respondent with similar characteristics, using a sequential hot-deck imputation procedure.[3]

Definitions of Measures

The study focuses on seven sets of outcome measures relevant to teachers' professional development and six sets of predictor measures describing characteristics of teachers, principals, and schools. The specifics of how these measures were constructed, along with the SASS items from which they were drawn, are described below.

Outcome measures. Seven sets of outcome measures describing teachers' professional development were examined in the study. They are: (1) participants in planning and implementation of professional development (D0599, A0076 to A0083, T0288);[4] (2) basis for selecting and evaluating professional development activities (A0148 to A0153, A0157, A0158); (3) school environment for professional development (T0307, T0311, T0316, A0159 to A0162, A0201, A0202); (4) support for teacher professional development (D0602 to D0610, A0164, A0165 to A0171, T0179 to T0184, D0611, D0613, T0185 to T0187); (5) delivery of professional development activities (T0136, T0147 to T0149, T0150 to T0158); (6) content or topics of programs and duration of programs on various topics (T0159, T0162, T0165, T0168, T0171, T0174, T0160, T0163, T0166, T0169, T0172, T0175, T0188); and (7) teachers' perceived usefulness of activities (T0161, T0164, T0167, T0170, T0173, T0176). These outcome measures were the focus of this study.

Predictor measures. These measures were used as classification variables in bivariate tabulations of the outcome measures described above or as predictor variables in the multivariate analyses of the outcome measures:

[3] For more information about item response rates, see U.S. Department of Education 2004.

[4] Numbers in parentheses refer to variable names corresponding to the 1999–2000 SASS Questionnaire items. Variable names beginning with "D" come from the District Questionnaire; those beginning with "A "come from the school or principal questionnaire; and those beginning with "T" come from the teacher questionnaire.

Teacher Characteristics

Main Assignment field. Teachers' responses to items asking for their main assignment fields (T0102) were aggregated into eight categories as follows:

- Kindergarten/general elementary–Kindergarten or general elementary (T0102 = 2 or 3)
- Mathematics or science–Computer science, mathematics, physical science, biology/life science, chemistry, geology/earth science/space science, physics, general or all other science (T0102 = 9, 16, 32 to 38)
- English/language arts–English/language arts or reading (T0102 = 23 or 25)
- Social studies–Social studies/social science (including history) (T0102 = 22)
- Special education–Special education, general, emotionally disturbed, mentally retarded, speech/language impaired, deaf and hard-of-hearing, visually handicapped, orthopedically impaired, mildly handicapped, severely handicapped, specific learning disabilities, or other special education (T0102 = 49 to 63)
- Bilingual/ESL–Bilingual education or English as a second language (T0102 = 8 or 12)
- Vocational education–Accounting, agriculture, business, marketing, health occupations, home economics, industrial arts, technical, or other vocational/technical education (T0102 = 39 to 48)
- Other–American Indian/Native American studies, architecture/environmental design, art, basic skills and remedial education, dance, drama/theater, gifted, health education, journalism, family and consumer science, military science, music, philosophy, physical education, health education, religion, French, German, Latin, Russian, Spanish, other foreign language, or all others (T0102 = 4 to 7, 10, 11, 13 to 15, 17 to 21, 24, 26 to 31, or 64).

Teaching status. Teachers were classified into two categories—part-time and full-time—based on their responses to items asking them about their main assignment at the school (T0051) and the amount of time they worked as a teacher (T0054). Regular teachers, itinerant teachers, and long-term substitutes were included in the survey, but not short-term substitutes, student teachers, and teachers aides. Individuals who reported a main assignment of administrator, library or media specialist, other professional staff (e.g. counselor, curriculum coordinator, social worker), or support staff but who taught regularly scheduled classes were considered teachers. (Approximately 2 percent of all teachers had a nonteaching main assignment, primarily as other professional staff.) Part-time teachers were those who reported working less than full time as a teacher at their school.

Teaching experience. This measure was a sum of total number of years that teachers had taught full time and part time in public and private schools (T0065 to T0069). The measure was classified into four categories: 3 or fewer years, 4–9 years, 10–19 years, and 20 years or more.

Highest degree earned. This measure was drawn from teachers' responses to items asking them about the type of degrees they had earned (T0070, T0080, T0084, T0087, T0090, T0093, T0096, and T0099). Three categories were used: bachelor's degree or less; master's degree or educational specialist or professional diploma (at least one year beyond a master's degree); and doctorate or first-professional degree.

School Structure

Schools were categorized according to sector, level, district size (public schools only), school size, percent minority enrollment, percent eligible for free or reduced-price lunch (public schools only), and affiliation (private schools only). The categories are described below.

Sector. This measure identified public schools and private schools. A public school was defined as an institution that provides educational services for at least one of grades 1–12 (or comparable ungraded classes), has one or more teachers who provide instruction, is located in one or more buildings, receives public funds as primary support, has an assigned administrator, and is operated by an education agency. Schools in juvenile detention centers and schools located on military bases and operated by the Department of Defense were included. For this report, charter schools, although surveyed separately, were included with public schools.

A private school was defined as an institution not in the public system that provided educational services for at least one of grades 1–12 (or comparable ungraded levels), had one or more teachers to give instruction, and was located in one or more buildings. The instruction must have been given in a building that was not used primarily as a private home. If it could not be determined whether a school operated in a private home, it had to have at least 10 students or more than one teacher to be included in SASS. Schools that taught only prekindergarten, kindergarten, or adult education were not included.

School level: School level was classified as elementary, secondary, or combined on the basis of the grades the school offered (S0058 to S0090). Elementary schools were defined as those with one or more grades K–6 and no grade higher than the 8th grade. Secondary schools have grades 7 or higher and no grade lower than the 7th grade. Combined schools have grades higher than the 8th and lower than the 7th grade.

District size. Public school district size categories were based on the number of students (by head count) who were enrolled in the district on or about October 1, 1999 (D0457). Five categories were classified: below 450, 450–999, 1,000–4,999, 5,000–9,999, and 10,000 or more.

School size. Size categories were based on the number of students (in head count) who were enrolled in grades K–12 in the school on or about October 1, 1999 (ENRK12UG). Four

categories were classified for elementary and combined schools: less than 150, 150–499, 500 or more; and four for secondary schools: less than 400, 400–749, and 750 or more.

Percent minority enrollment. This measure was the proportion of a school's total enrollment who were American Indian or Alaskan Native (S0099); Asian or Pacific Islander (S0100); Hispanic, regardless of race (Mexican, Puerto Rican, Cuban, Central or South American, or other culture or origin) (S0096); and Black (not of Hispanic origin) (S0098). Five categories were classified: None, 1–10 percent, 11–30 percent, 31–50 percent, and more than 50 percent.

Percent eligible for free or reduced-price lunch. The proportion of students who were eligible for free or reduced-price lunch was computed for public schools (S0284). Four categories were classified: None, 6–20 percent, 21–40 percent, and more than 40 percent. This variable was not computed for private schools because very few private schools participate in the National School Lunch Program.

Private school affiliation. This measure was drawn from the SASS School Survey. It has three categories: Catholic, other religious, and nonsectarian (RELIG).

School Resources for Professional Development

School had own professional development budget. This measure was created for public schools only and based on an item in the School Principal Survey that asked principals to indicate whether their school had its own budget for professional development (A0172). This question was not asked of private school principals.

Professional development at the school was accompanied by the resources that teachers need. This measure was recoded from an item in the School Principal Survey that asked principals to indicate how often professional development for teachers at their schools was accompanied by the resources that teachers need (A0162). Three categories were classified: frequently or always, sometimes, and never or rarely.

School Support for Professional Development

School provides teachers with time for professional development during regular contract hours. This measure was based on an item in the School Principal Survey that asked principals to indicate whether their school provides teachers with time for professional development during regular contract hours (A0164).

Principal Experience, Influence, and Engagement

Years of experience as a principal. This measure was a sum of the total number of years that principals reported serving as a principal in their current school and in other schools (A0053 and A0054). Four categories were classified: 0–3 years, 4–9 years, 10–19 years, and 20 years or more.

Principal influence in determining the content of in-service professional development programs. This measure was drawn from an item in the School Principal Survey that asked principals to indicate the extent to which they had influence in determining the content of in-service professional development programs for teachers at their schools (A0095). The measure was classified into three categories: a great deal if they rated their influence as 4 or 5 on a 5-point scale, somewhat if they rated their influence as 3, and no or little if they rated their influence as 1 or 2.

Principal provided and engaged staff in professional development activities. This measure was recoded from an item in the School Principal Survey that asked principals to indicate how often they provided and engaged staff in professional development activities (A0201). Three categories were classified: daily or once or twice a week, once or twice a month, and never.

Principal built professional community among faculty and other staff. This measure was recoded from an item in the School Principal Survey that asked principals to indicate how often they built professional community among faculty and other staff (A0202). Three categories were classified: daily or once or twice a week, once or twice a month, and never.

Teacher Influence and Engagement

Teacher influence in determining the content of in-service professional development programs. This measure was drawn from an item in the Teacher Survey that asked teachers to indicate the extent to which they had influence in determining the content of in-service professional development programs (T0288). The measure was classified into three categories: a great deal if they rated their influence as 4 or 5 on a 5-point scale, somewhat if they rated their influence as 3, and no or little if they rated their influence as 1 or 2.

Professional development at the school was planned by teachers. This measure was recoded from an item in the School Principal Survey that asked principals to indicate how often professional development for teachers was planned by teachers at their schools or districts (A0160). Three categories were classified: frequently or always, sometimes, and never or rarely.

Professional development at the school was presented by teachers. This measure was recoded from an item in the School Principal Survey that asked principals to indicate how often professional development for teachers was presented by teachers at their schools or districts (A0161). Three categories were classified: frequently or always, sometimes, and never or rarely.

Professional development was considered part of teachers' regular work. This measure was recoded from an item in the School Principal Survey that asked principals to indicate how often professional development for teachers was considered part of teachers' regular work (A0159). Three categories were classified: frequently or always, sometimes, and never or rarely.

Accuracy of Estimates

The estimates in this report are derived from a survey sample and are subject to two broad classes of error—nonsampling and sampling errors. Nonsampling errors occur not only in sample surveys but also in complete censuses of entire populations. Nonsampling errors can be attributed to a number of sources: inability to obtain complete information about all schools, teachers, and principals in the sample (for example, some teachers refused to participate, or teachers participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and imputing missing data. Although nonsampling errors due to questionnaire and item nonresponse can be reduced somewhat by the adjustment of sample weights and imputation procedures, correcting nonsampling errors or gauging the effects of these errors is usually difficult.

The samples selected for SASS are just one of many possible samples that could have been selected. Therefore, estimates produced from the SASS samples may differ from estimates that would have been produced from other samples. This type of variability is called sampling error.

The standard error is a measure of the variability due to sampling when estimating a statistic. Standard errors can be used as a measure of the precision expected from a particular sample. The probability that a complete census count would be 1 standard error above and below the sample estimate is about 68 percent. The chance that a complete census count would be 1.96 standard errors above and below the sample estimate is about 95 percent. Standard errors for tables and figures are presented in appendix A.

Complex sample designs, like that used in the SASS, typically result in sampling errors of the estimates larger than would be expected if the sample was a simple random sample and the observations were independent and identically distributed random variables. For this study,

standard errors were estimated using the jackknife replication method in SUDAAN software that incorporates the design features of the complex survey sample design.

Statistical Tests

The Student's *t* statistic was used to test the likelihood that the differences between the two estimates were larger than would be expected due to sampling error. The Student's *t* values can be computed for comparisons using the estimates in the tables with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{(se_1)^2 + (se_2)^2}} \quad (1)$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. This formula is valid only for independent estimates. When the estimates are not independent (for example, when comparing any estimates that are parts of a percentage distribution to the whole), a covariance term must be added to the denominator of the *t*-test formula. Because the actual covariances were not known, it was assumed that the estimates were perfectly negatively correlated. Assuming perfectly negative correlation maximizes the covariance of two correlated variables. This is a very conservative approach and may miss some differences, but it also helps avoid finding differences that are not "true." Consequently, $2*(se_1*se_2)$ was added to the denominator of the *t*-test formula for dependent estimates.

$$t = \frac{E_1 - E_2}{\left(\sqrt{(se_1)^2 + (se_2)^2 + 2(se_1 * se_2)}\right)} \quad (2)$$

Generally, whether a difference is considered statistically significant is determined by calculating a *t* value for the difference between a pair of proportions or means, and comparing this value to published tables of values at certain critical levels, called *alpha* levels. The *alpha* level is an *a priori* statement of the probability of inferring that a difference exists when, in fact, it does not. The *alpha* level used in this report is .05; differences discussed in the text have been tested and found significant at this level. For proportions, this report has adopted the simple convention of reporting differences only if they are 5 percentage points or more.

In order to make proper inferences and interpretations from the statistics, several points must be kept in mind. First, comparisons resulting in large *t* statistics may appear to merit special note. However, this is not always the case, because the size of the *t* statistic depends not only on the observed differences in the two estimates being compared, but also on the standard error of the difference. Thus, a small difference between two groups with a much smaller standard error

could result in a large *t* statistic, but this small difference is not necessarily substantively noteworthy.

Second, when multiple statistical comparisons are made, it becomes increasingly likely that a finding of a statistically significant difference is erroneous. Even when there is no difference in the population, at an *alpha* level of .05, there is still a 5 percent chance of concluding that an observed *t* value representing one comparison in the sample is large enough to be statistically significant. As the number of comparisons increases, so does the risk of making such an error in inference.

Analysis of Variance (ANOVA)

When averages of a continuous variable were examined relative to a variable with ordered categories, Analysis of Variance (ANOVA) was used to test for a linear relationship between the two variables. To do this, ANOVA equations included orthogonal linear contrasts corresponding to successive levels of the independent variable. The variance between the means, and the unweighted sample sizes were used to partition total sum of squares into within- and between-group sums of squares. These were used to create mean squares for the within- and between-group variance components and their corresponding *F* statistics, which were then compared with published values of *F* for a significance level of .05.[5] Significant values of both the overall *F* and the *F* associated with the linear contrast term were required as evidence of a linear relationship between the two variables.

Multivariate Analysis

Many of the independent variables included in the analyses in this report are interrelated, and to some extent, the pattern of differences found in the descriptive analyses reflects this covariation. To take into account the interrelationship of the independent variables, a multivariate analysis was performed to examine the independent contributions of various teacher, school, and principal variables to the prediction of teacher participation in professional development. Because all outcome variables of interest are dichotomous variables (1 = participated and 0 = did not participate), a logistic regression was used for the multivariate analysis. In order to take into account the complex sampling of SASS, the Taylor series approximation method in SUDAAN was used for the logistic regressions. Examining the correlation coefficients among all the independent variables revealed that multicollinearity did not appear to be a problem. The highest correlation observed was between professional

[5] More information about ANOVA and significance testing using the *F* statistic can be found in any standard textbook on statistical methods in the social and behavioral sciences. See, for example, Snedecor and Cochran 1980.

development planned by teachers and professional development presented by teachers (r = 0.54 among public school teachers and 0.55 among private school teachers).

The odds ratio (the odds are produced by exponentiation of the estimated logistic regression coefficients) generated by a logistic regression can be used to estimate the probability of some types of individuals having an outcome (e.g., teachers who participated in professional development) compared to a control group of people (e.g., teachers who did not participate). Odds ratios of greater than 1 mean that those in the noncontrol group are more likely to have the outcome than those in the control group and odds ratios of less than 1 mean those in the noncontrol group are less likely to have the outcome than those in the control group. For example, table 17 shows the odds ratios for teachers participating in various professional development activities. The first column shows that teachers with 4–9 years of teaching experience had an odds ratio of 1.37, meaning they were more likely than those in the control group—teachers with 3 years of experience or less—to take university courses for recertificaiton or advanced certification. Another interpretation is that the odds of teachers with 4–9 years of experience taking university courses for recertification or advanced certification were 37 percent higher than the odds of teachers with 3 years of experience or less (Menard 1995).