

Section Two

Teachers as Professionals

A number of factors help define the professional lives of teachers. Among these are the collegiality within their schools, the amount of control they feel over their work, and the opportunities they have to participate in professional development. The 1993 and 2000 National Surveys collected data on each of these factors.

Data on science teacher collegiality indicate only a few changes since 1993 (see Tables 2.1 and 2.2). A larger percentage of teachers in each grade range reported in 2000 having time during the school week to collaborate with their colleagues. But even with the increase, only about 1 in 4 teachers agreed that they had such time. Apparently, this increased collaboration was not focused on decisions related to curriculum. Grade 1–4 and 9–12 teachers were less likely in 2000 than in 1993 to report that science teachers in their school contributed to such decisions.

Table 2.1
Science Teachers Agreeing[§] with Each of a Number of
Statements Related to Teacher Collegiality, by Grade Range: 1993 and 2000

	Percent of Teachers			
	1993		2000	
Grades 1–4				
My colleagues and I regularly share ideas and materials related to science teaching ¹¹	55	(2.5)	53	(2.8)
Most science teachers in this school contribute actively to making decisions about the science curriculum	44	(2.8)	29*	(2.8)
I have time during the regular school week to work with my colleagues on science curriculum and teaching	14	(1.6)	22*	(2.6)
Science teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies	11	(1.8)	4*	(1.0)
Grades 5–8				
My colleagues and I regularly share ideas and materials related to science teaching ¹¹	56	(3.1)	59	(4.2)
Most science teachers in this school contribute actively to making decisions about the science curriculum	47	(3.8)	48	(3.6)
I have time during the regular school week to work with my colleagues on science curriculum and teaching	14	(2.4)	25*	(2.7)
Science teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies	11	(1.8)	5*	(1.2)
Grades 9–12				
My colleagues and I regularly share ideas and materials related to science teaching ¹¹	72	(2.1)	66	(2.3)
Most science teachers in this school contribute actively to making decisions about the science curriculum	66	(2.3)	56*	(2.5)
I have time during the regular school week to work with my colleagues on science curriculum and teaching	16	(3.6)	27*	(2.4)
Science teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies	14	(3.1)	10	(1.1)

* $p < 0.05$

§ Includes teachers responding “strongly agree” or “agree” to each statement.

The picture is quite similar for mathematics teachers. Again, grade 1–4 and 9–12 teachers were less likely to report in 2000 that teachers contribute to decisions about the mathematics curriculum, while teachers in grades 5–8 and 9–12 were more likely to report having time to collaborate with other teachers on mathematics curriculum and teaching.

Table 2.2
Mathematics Teachers Agreeing[§] with Each of a Number of
Statements Related to Teacher Collegiality, by Grade Range: 1993 and 2000

	Percent of Teachers			
	1993		2000	
Grades 1–4				
My colleagues and I regularly share ideas and materials related to mathematics teaching ¹²	65	(2.3)	56*	(2.7)
Most mathematics teachers in this school contribute actively to making decisions about the mathematics curriculum	47	(1.8)	37*	(2.7)
I have time during the regular school week to work with my colleagues on mathematics curriculum and teaching	21	(1.9)	24	(2.3)
Mathematics teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies	12	(1.8)	6*	(1.3)
Grades 5–8				
My colleagues and I regularly share ideas and materials related to mathematics teaching ¹²	52	(3.2)	54	(3.5)
Most mathematics teachers in this school contribute actively to making decisions about the mathematics curriculum	46	(2.8)	40	(3.0)
I have time during the regular school week to work with my colleagues on mathematics curriculum and teaching	17	(1.8)	30*	(4.0)
Mathematics teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies	10	(2.1)	7	(1.3)
Grades 9–12				
My colleagues and I regularly share ideas and materials related to mathematics teaching ¹²	67	(2.8)	62	(2.4)
Most mathematics teachers in this school contribute actively to making decisions about the mathematics curriculum	69	(2.6)	58*	(2.1)
I have time during the regular school week to work with my colleagues on mathematics curriculum and teaching	16	(1.6)	28*	(1.6)
Mathematics teachers in this school regularly observe each other teaching classes as part of sharing and improving instructional strategies	11	(1.8)	8	(1.0)

* $p < 0.05$

§ Includes teachers responding “strongly agree” or “agree” to each statement.

One of the most obvious differences between 1993 and 2000 is the amount of control science and mathematics teachers perceive themselves to have over decisions related to curriculum. (See Tables 2.3 and 2.4.) In each subject and grade range category, teachers were less likely in 2000 to report strong control over determining course goals and objectives. There was a similar trend in most groups toward less control over selecting the content, topics, and skills to be taught.

Table 2.3
Science Classes Where Teachers Report Having Strong Control[§] Over
Various Curriculum and Instructional Decisions, by Grade Range: 1993 and 2000

	Percent of Classes			
	1993		2000	
Grades 1–4				
Determining the amount of homework to be assigned	72	(2.1)	67	(2.6)
Selecting teaching techniques	66	(2.1)	56*	(3.4)
Choosing criteria for grading students	60	(3.4)	49*	(2.7)
Setting the pace for covering topics	56	(2.5)	44*	(3.3)
Selecting the sequence in which topics are covered	56	(2.0)	43*	(3.4)
Selecting other instructional materials [besides textbooks]	30	(2.0)	27	(2.3)
Determining course goals and objectives	32	(1.9)	13*	(2.1)
Selecting content, topics, and skills to be taught	27	(2.5)	13*	(2.1)
Selecting textbooks/instructional programs ¹³	11	(1.5)	7	(1.7)
Grades 5–8				
Determining the amount of homework to be assigned	75	(3.1)	75	(2.4)
Selecting teaching techniques	72	(3.0)	68	(2.6)
Choosing criteria for grading students	66	(3.1)	63	(3.0)
Setting the pace for covering topics	63	(2.8)	56	(2.6)
Selecting the sequence in which topics are covered	62	(3.0)	59	(2.9)
Selecting other instructional materials [besides textbooks]	42	(2.8)	40	(2.8)
Determining course goals and objectives	40	(3.0)	24*	(2.6)
Selecting content, topics, and skills to be taught	36	(2.6)	22*	(2.4)
Selecting textbooks/instructional programs ¹³	25	(2.3)	22	(2.4)
Grades 9–12				
Determining the amount of homework to be assigned	81	(2.5)	83	(1.5)
Selecting teaching techniques	79	(3.0)	80	(1.6)
Choosing criteria for grading students	69	(2.5)	71	(1.7)
Setting the pace for covering topics	71	(2.6)	63*	(2.2)
Selecting the sequence in which topics are covered	68	(2.7)	64	(2.1)
Selecting other instructional materials [besides textbooks]	55	(3.8)	52	(2.5)
Determining course goals and objectives	53	(3.7)	39*	(2.5)
Selecting content, topics, and skills to be taught	50	(3.3)	42	(2.6)
Selecting textbooks/instructional programs ¹³	45	(4.2)	36	(2.4)

* $p < 0.05$

§ Includes teachers selecting “5” on a five-point scale with “1” labeled as “no control” and “5” labeled as “strong control.”

Teachers are much more likely to perceive control over decisions related to pedagogy, and these levels have stayed fairly constant since 1993. One exception concerns the pace of instruction; grade 1–4 and 9–12 science and mathematics teachers were less likely in 2000 than in 1993 to report strong control over setting the pace for covering topics, perhaps reflecting the general loss of control they feel over curriculum. This loss is also evident in the decreasing percent of mathematics classes in all three grade ranges where teachers report having strong control over selecting textbooks/instructional programs, especially in grades 9–12. Grade 1–4 science and mathematics teachers appear the most likely to report a loss of control over aspects of pedagogy. (See Tables 2.3 and 2.4.) Otherwise, the majority of teachers appear still to have strong control over most decisions about how they teach their subject.

Table 2.4
Mathematics Classes Where Teachers Report Having Strong Control[§] Over
Various Curriculum and Instructional Decisions, by Grade Range: 1993 and 2000

	Percent of Classes			
	1993		2000	
Grades 1–4				
Determining the amount of homework to be assigned	68	(3.1)	67	(2.9)
Selecting teaching techniques	69	(2.7)	62	(2.8)
Choosing criteria for grading students	53	(2.7)	44*	(2.9)
Setting the pace for covering topics	60	(3.3)	44*	(3.1)
Selecting the sequence in which topics are covered	52	(2.1)	35*	(2.8)
Selecting other instructional materials [besides textbooks]	36	(2.3)	29*	(2.0)
Determining course goals and objectives	29	(3.1)	11*	(1.7)
Selecting content, topics, and skills to be taught	22	(2.0)	9*	(1.5)
Selecting textbooks/instructional programs ¹⁴	12	(1.4)	5*	(1.1)
Grades 5–8				
Determining the amount of homework to be assigned	72	(2.9)	72	(2.5)
Selecting teaching techniques	71	(2.7)	71	(2.7)
Choosing criteria for grading students	63	(2.7)	56*	(2.3)
Setting the pace for covering topics	55	(3.1)	49	(2.5)
Selecting the sequence in which topics are covered	52	(2.9)	50	(3.2)
Selecting other instructional materials [besides textbooks]	40	(2.1)	41	(2.4)
Determining course goals and objectives	33	(1.8)	20*	(2.6)
Selecting content, topics, and skills to be taught	27	(2.2)	20	(3.1)
Selecting textbooks/instructional programs ¹⁴	20	(2.0)	14*	(1.7)
Grades 9–12				
Determining the amount of homework to be assigned	79	(1.8)	82	(1.5)
Selecting teaching techniques	76	(1.4)	74	(1.6)
Choosing criteria for grading students	66	(2.3)	70	(1.7)
Setting the pace for covering topics	56	(2.4)	50*	(1.9)
Selecting the sequence in which topics are covered	54	(2.4)	52	(2.0)
Selecting other instructional materials [besides textbooks]	52	(2.2)	44*	(2.3)
Determining course goals and objectives	41	(2.4)	27*	(2.0)
Selecting content, topics, and skills to be taught	39	(2.4)	27*	(2.0)
Selecting textbooks/instructional programs ¹⁴	35	(2.6)	25*	(2.1)

* p < 0.05

§ Includes teachers selecting “5” on a five-point scale with “1” labeled as “no control” and “5” labeled as “strong control.”

A potential explanation for this change in teachers' perceptions lies in the increasing influence exerted by state testing programs. As shown in Table 2.5, teachers in both subjects and all grade ranges were much more likely in 2000 than in 1993 to agree that the testing program in their state/district dictates what they teach.

Table 2.5
Science and Mathematics Teachers Agreeing[§] That the State/District Testing Program Dictates What They Teach, by Grade Range: 1993 and 2000

	Percent of Teachers			
	1993 ¹⁵		2000	
Science				
Grades 1–4	38	(2.7)	58*	(2.9)
Grades 5–8	40	(3.4)	56*	(3.3)
Grades 9–12	30	(2.7)	57*	(2.4)
Mathematics				
Grades 1–4	60	(2.5)	79*	(1.8)
Grades 5–8	52	(3.7)	74*	(3.3)
Grades 9–12	40	(2.5)	65*	(2.4)

* p < 0.05

§ Includes teachers responding “strongly agree” or “agree” to each statement.

There has been little change since 1993 in participation in professional development. As shown in Tables 2.6 and 2.7, fewer than 25 percent of teachers in grades 1–4 and 5–8 report spending more than 35 hours in subject-specific professional development over the last three years, compared to more than 40 percent of high school teachers. For high school mathematics teachers, the increase was significant.

Table 2.6
Time Science Teachers Spent on In-Service Education in
Science in Last Three Years, by Grade Range: 1993 and 2000

	Percent of Teachers			
	1993		2000	
Grades 1-4				
None	26	(2.8)	26	(2.4)
Less than 6 hours	30	(1.8)	27	(2.3)
6-15 hours	22	(2.1)	25	(2.4)
16-35 hours	14	(1.9)	13	(2.0)
More than 35 hours	9	(1.8)	10	(1.6)
Grades 5-8				
None	17	(1.9)	15*	(2.4)
Less than 6 hours	22	(2.6)	15*	(2.4)
6-15 hours	27	(4.2)	27	(3.5)
16-35 hours	14	(2.8)	25*	(3.7)
More than 35 hours	20	(2.4)	18	(2.5)
Grades 9-12				
None	12	(1.5)	8*	(1.0)
Less than 6 hours	14	(1.8)	8*	(1.5)
6-15 hours	18	(3.0)	16	(1.3)
16-35 hours	19	(1.4)	23	(1.7)
More than 35 hours	38	(3.1)	45	(2.0)

* p < 0.05

Table 2.7
Time Mathematics Teachers Spent on In-Service Education in
Mathematics in Last Three Years, by Grade Range: 1993 and 2000

	Percent of Teachers			
	1993		2000	
Grades 1-4				
None	17	(1.5)	15	(2.0)
Less than 6 hours	22	(2.0)	21	(2.3)
6-15 hours	29	(2.4)	31	(2.4)
16-35 hours	18	(2.4)	18	(1.8)
More than 35 hours	15	(2.0)	15	(2.0)
Grades 5-8				
None	15	(1.5)	14	(3.3)
Less than 6 hours	22	(3.5)	15	(2.7)
6-15 hours	23	(2.5)	29	(3.0)
16-35 hours	24	(2.5)	19	(2.3)
More than 35 hours	17	(2.0)	23	(2.5)
Grades 9-12				
None	10	(1.8)	7	(1.3)
Less than 6 hours	14	(2.8)	8	(1.4)
6-15 hours	21	(1.8)	17	(1.7)
16-35 hours	24	(2.6)	25	(1.8)
More than 35 hours	31	(2.2)	43*	(2.2)

* p < 0.05

As can be seen in Tables 2.8 and 2.9, teachers' participation in various professional activities has also remained fairly constant from 1993 to 2000.

Table 2.8
Science Teachers Participating in Various Science-Related
Professional Activities in Last Twelve Months, by Grade Range: 1993 and 2000

	Percent of Teachers			
	1993		2000	
Grades 1-4				
Served on a school or district science curriculum committee	17	(3.4)	14	(1.7)
Served on a school or district science textbook selection committee	14	(2.0)	13	(1.8)
Taught any in-service workshops in science or science teaching	5	(1.1)	2*	(0.6)
Received any local, state, or national grants or awards for science teaching	3	(0.7)	2	(0.7)
Grades 5-8				
Served on a school or district science curriculum committee	26	(2.3)	35*	(3.1)
Served on a school or district science textbook selection committee	19	(2.1)	28*	(2.9)
Taught any in-service workshops in science or science teaching	9	(1.2)	10	(2.2)
Received any local, state, or national grants or awards for science teaching	8	(1.3)	6	(1.6)
Grades 9-12				
Served on a school or district science curriculum committee	40	(2.7)	41	(2.1)
Served on a school or district science textbook selection committee	37	(2.9)	37	(2.1)
Taught any in-service workshops in science or science teaching	16	(2.0)	15	(1.3)
Received any local, state, or national grants or awards for science teaching	17	(0.7)	16	(1.3)

* p < 0.05

Table 2.9
Mathematics Teachers Participating in Various Mathematics-Related
Professional Activities in Last Twelve Months, by Grade Range: 1993 and 2000

	Percent of Teachers			
	1993		2000	
Grades 1-4				
Served on a school or district mathematics curriculum committee	18	(1.9)	15	(1.8)
Served on a school or district mathematics textbook selection committee	16	(2.0)	15	(2.0)
Taught any in-service workshops in mathematics or mathematics teaching	6	(1.4)	3	(0.8)
Received any local, state, or national grants or awards for mathematics teaching	3	(0.7)	1*	(0.5)
Grades 5-8				
Served on a school or district mathematics curriculum committee	25	(2.6)	29	(2.5)
Served on a school or district mathematics textbook selection committee	31	(2.7)	28	(3.0)
Taught any in-service workshops in mathematics or mathematics teaching	6	(0.8)	13*	(2.0)
Received any local, state, or national grants or awards for mathematics teaching	3	(0.8)	4	(0.9)
Grades 9-12				
Served on a school or district mathematics curriculum committee	51	(2.5)	38*	(2.1)
Served on a school or district mathematics textbook selection committee	47	(2.9)	41	(2.2)
Taught any in-service workshops in mathematics or mathematics teaching	13	(1.2)	14	(1.2)
Received any local, state, or national grants or awards for mathematics teaching	8	(0.6)	7	(0.8)

* p < 0.05

