

CHAPTER 7

School Contexts for Learning and Instruction

Chapter 7 presents findings about the school contexts for learning and instruction in science, including school characteristics, policies, and practices. Information is presented about the percentage of students eligible for free or reduced-price lunch for each Benchmarking participant, and about the extent of school resources, including computers and Internet access, for the Benchmarking participants and for selected reference countries. Data are also provided on the role of the school principal and on issues related to school climate and environment, including attendance problems and school safety.



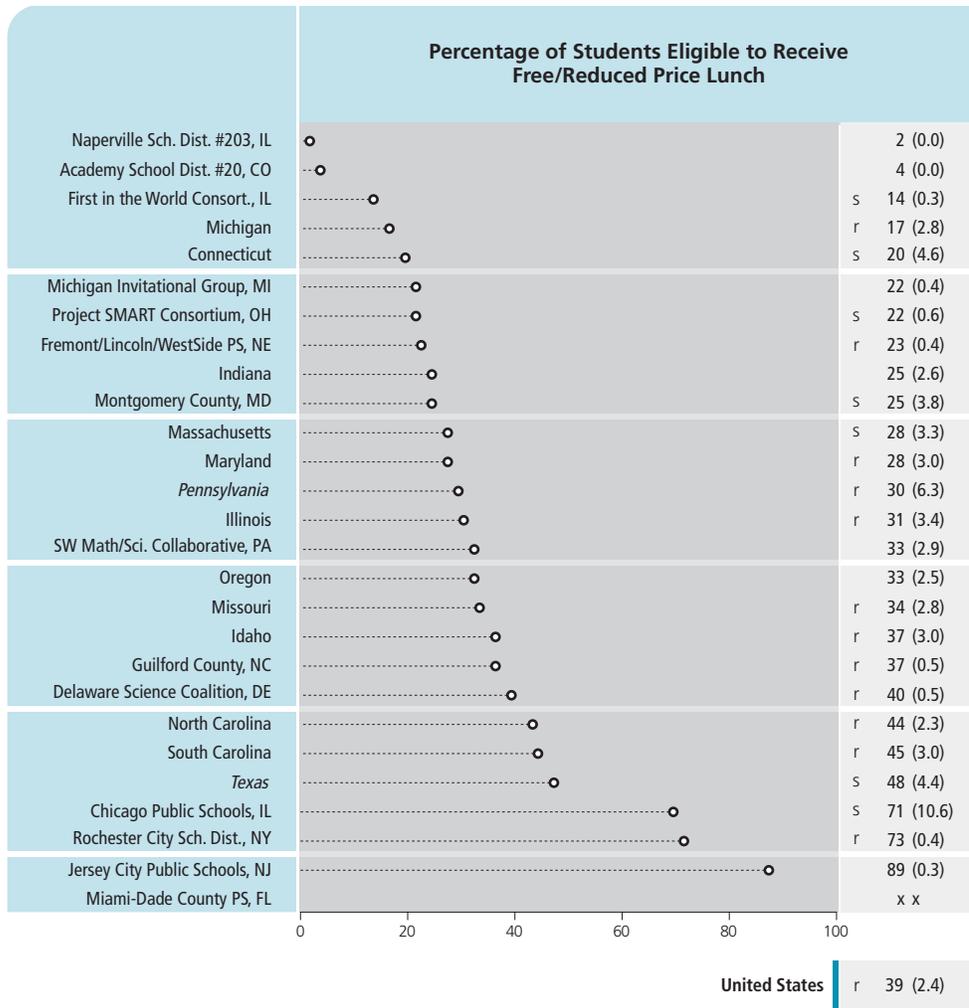
What Is the Economic Composition of the Student Body?

There is considerable evidence that student achievement is greater in schools with higher proportions of students from advantaged socioeconomic backgrounds.¹ To provide information on the composition of the student body, schools' reports on the percentage of their students that are eligible to receive free or reduced-price lunch are summarized in Exhibit 7.1 for each of the Benchmarking participants.² The Benchmarking participants span almost the complete range on this factor, from the Naperville School District and the Academy School District, with just a few percent of low-income students, to the Jersey City Public Schools, where almost all students (89 percent) were eligible to receive free or reduced-price lunch. Although science achievement was not perfectly correlated with the percentage of students eligible for free or reduced-price lunch, it is noticeable that several high-performing jurisdictions had low percentages of eligible students, and that three of the four lowest-performing³ – the Chicago Public Schools, the Rochester City School District, and the Jersey City Public Schools – had the highest percentages of such students.

¹ Data on this issue from TIMSS 1995 are presented in Martin, M.O., Mullis, I.V.S., Gregory, K.D., Hoyle, C.D., and Shen, C. (2000), *Effective Schools in Science and Mathematics: IEA's Third International Mathematics and Science Study*, Chestnut Hill, MA: Boston College.

² These data were collected only in the United States and in the Benchmarking jurisdictions.

³ The response rate from schools in the Miami-Dade County Public Schools was insufficient for reliable reporting.



SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by schools.

States in *italics* did not fully satisfy guidelines for sample participation rates (see Appendix A for details).

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

An "r" indicates school response data available for 70-84% of students. An "s" indicates school response data available for 50-69% of students. An "x" indicates school response data available for <50% of students.

What School Resources Are Available to Support Science Learning?

TIMSS collected data on a range of school resources, including those of a general nature such as buildings and infrastructure, as well as laboratory equipment and other materials specifically related to science learning. To measure the extent of school resources in each participating entity, TIMSS created an index of availability of school resources for science instruction (ASRSI). As described in Exhibit 7.2, the index is based on schools' average response to five questions about shortages that affect their general capacity to provide instruction and six questions about shortages that affect science instruction in particular. Students were placed in the high category if principals reported that shortages, both general and for science in particular, had no or little effect on instructional capacity. The medium level indicates that one type of shortage affects instruction some or a lot, and the low level that both shortages affect it some or a lot.

Schools in the United States appear to be fairly well-resourced in comparison with the TIMSS 1999 countries. Across the United States as a whole, 34 percent of students were in schools reporting that resource shortages had little effect on instruction, compared with 18 percent on average internationally. Of the reference countries, only Belgium (Flemish), Singapore, and the Czech Republic reported higher percentages in this category. Across the Benchmarking participants, reports varied widely. In the Academy School District, the First in the World Consortium, and Naperville, more than 75 percent of students were in well-resourced schools, whereas in South Carolina, Oregon, and North Carolina 15 percent or less were in such schools.

In many of the Benchmarking jurisdictions and TIMSS 1999 countries, students in schools in the high category had higher average science achievement than those in the low category. For example, in the United States 34 percent of the students were in the high category with an average science achievement of 531, compared with six percent in the low category with an average of 512. However, the relationship between a country's average science achievement and availability of instructional resources is complex. For example, in some countries that performed significantly above the international average, including Korea, Chinese Taipei, and the Russian Federation, few students (seven percent or less) were in schools with high availability of resources for

science instruction. In contrast, in other high-performing countries such as Belgium (Flemish), the Czech Republic, England, Japan, the Netherlands, and Singapore, five percent or less of the students were in schools with low availability of resources.

Exhibit R4.1 in the reference section shows the results for each of the types of facilities and materials summarized in the general capacity part of the index. There was substantial variation across countries, but internationally on average, nearly half the students were in schools where science instruction was negatively affected by shortages or inadequacies in instructional materials, the budget for supplies, school buildings, and instructional space. Generally, the Benchmarking participants reported fewer students in schools where science instruction was negatively affected by resource shortages, but again the situation varied widely across jurisdictions. Shortage of instructional space was a problem in Oregon, the Fremont/Lincoln/Westside Public Schools, Jersey City, Miami-Dade, and Montgomery County, where more than half of the eighth-grade students were affected. Inadequate school buildings or grounds were also a problem in Miami-Dade, and Oregon had more than half its students in schools that reported shortages of instructional materials and budget for supplies.

Exhibit R4.2, also in the reference section, shows the results for each of the types of equipment and materials summarized in the science instructional capacity part of the index. About 60 percent of the students, on average across all the TIMSS 1999 countries, were in schools where shortages or inadequacies in computers and computer software affected the capacity to provide science instruction. Although the Benchmarking entities generally reported fewer students affected by such shortages, Idaho, North Carolina, Oregon, the Delaware Science Coalition, and Rochester were similar to the international average. Shortages of both computers and computer software were also reported for a majority of the students in Maryland, Missouri, and Texas. The United States as a whole reported that 38 percent of the students were in schools where shortages in science laboratory equipment and materials affected the capacity to provide instruction, compared with 58 percent internationally. However, a majority of the students in Idaho, North Carolina, Oregon, Chicago, and the Delaware Science Coalition were in such schools. North Carolina also reported shortages in library materials and audio-visual resources for science instruction.

Exhibits R4.3 and R4.4 in the reference section present more data on access to computers and the Internet for instructional purposes. Benchmarking participants appear to be relatively well equipped with computers, compared with countries internationally, as almost all students



were in schools with fewer than 15 students per computer. Internet access was also widespread across Benchmarking entities. In all states except Indiana, Missouri, and Pennsylvania, more than 90 percent of students were in schools with Internet access. School districts with relatively low levels of Internet access were those in Rochester (69 percent) and Chicago (just 44 percent).

Index of Availability of School Resources for Science Instruction

Index based on schools' average response to five questions about shortages that affect general capacity to provide instruction (instructional materials; budget for supplies; school buildings and grounds; heating/cooling and lighting systems; instructional space), and the average response to six questions about shortages that affect science instruction (laboratory equipment and materials; computers; computer software; calculators; library materials; audio-visual resources) (see reference exhibits R4.1-R4.2). High level indicates that both shortages, on average, affect instructional capacity none or a little. Medium level indicates that one shortage affects instructional capacity none or a little and the other shortage affects instructional capacity some or a lot. Low level indicates that both shortages affect instructional capacity some or a lot.

		High ASRSI		Medium ASRSI		Low ASRSI	
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Academy School Dist. #20, CO		83 (0.4)	561 (2.1)	17 (0.4)	546 (7.0)	0 (0.0)	~ ~
First in the World Consort., IL	r	79 (1.0)	565 (6.4)	21 (1.0)	539 (11.9)	0 (0.0)	~ ~
Naperville Sch. Dist. #203, IL		76 (1.5)	581 (5.0)	24 (1.5)	594 (5.7)	0 (0.0)	~ ~
Belgium (Flemish)		60 (4.5)	531 (4.8)	40 (4.5)	538 (8.1)	0 (0.0)	~ ~
Singapore		56 (3.9)	569 (11.8)	40 (4.1)	569 (9.8)	4 (1.4)	554 (25.1)
Connecticut	s	53 (11.0)	547 (18.2)	42 (10.8)	532 (10.4)	6 (3.9)	532 (18.9)
Miami-Dade County PS, FL	s	50 (13.9)	466 (9.6)	42 (13.8)	417 (18.7)	8 (7.4)	398 (12.2)
Montgomery County, MD	s	48 (13.6)	532 (7.4)	52 (13.6)	527 (7.8)	0 (0.0)	~ ~
Illinois		47 (6.5)	537 (9.1)	49 (6.8)	518 (8.6)	4 (2.8)	520 (24.0)
SW Math/Sci. Collaborative, PA		45 (9.0)	550 (10.5)	50 (9.3)	541 (13.2)	5 (3.4)	521 (6.9)
Czech Republic		43 (4.3)	542 (6.5)	57 (4.3)	538 (4.9)	0 (0.1)	~ ~
Rochester City Sch. Dist., NY	r	40 (1.6)	485 (13.7)	44 (1.6)	425 (12.9)	16 (0.5)	433 (15.3)
Michigan		40 (7.2)	574 (9.5)	55 (7.8)	544 (8.5)	6 (3.5)	537 (15.8)
Project SMART Consortium, OH		39 (1.5)	552 (15.4)	57 (1.5)	527 (10.7)	4 (0.5)	542 (34.7)
Indiana		39 (7.9)	535 (10.9)	58 (7.8)	534 (8.5)	3 (2.3)	539 (14.8)
Pennsylvania		39 (7.0)	545 (8.7)	60 (7.0)	529 (10.0)	1 (0.7)	~ ~
Fremont/Lincoln/WestSide PS, NE	r	36 (1.8)	529 (11.1)	52 (1.7)	491 (5.3)	11 (1.3)	577 (22.1)
Maryland	r	35 (6.5)	480 (12.4)	47 (7.2)	525 (10.1)	18 (5.8)	495 (16.6)
United States	r	34 (3.3)	531 (8.5)	60 (3.2)	508 (6.2)	6 (2.4)	512 (12.0)
Texas	r	33 (7.6)	498 (25.0)	63 (8.3)	521 (11.7)	4 (3.9)	478 (11.2)
Netherlands		33 (6.5)	542 (9.7)	66 (6.5)	547 (11.8)	1 (0.7)	~ ~
Delaware Science Coalition, DE	r	32 (1.5)	464 (8.3)	59 (1.9)	508 (13.3)	9 (1.8)	518 (54.9)
Massachusetts	s	31 (6.4)	552 (19.7)	68 (6.6)	534 (7.8)	2 (0.1)	~ ~
Japan		30 (3.7)	556 (3.5)	65 (4.1)	547 (3.1)	5 (1.9)	545 (6.6)
Idaho	r	28 (8.2)	524 (11.7)	65 (9.3)	534 (8.1)	7 (4.2)	487 (17.8)
Canada		28 (2.0)	542 (3.9)	66 (2.4)	529 (3.1)	6 (1.3)	540 (10.5)
England	r	27 (4.2)	572 (10.6)	68 (4.6)	530 (6.3)	5 (2.1)	547 (11.6)
Missouri		26 (6.3)	529 (7.9)	70 (6.6)	520 (8.6)	4 (2.4)	536 (22.5)
Michigan Invitational Group, MI		26 (1.3)	569 (14.0)	69 (1.5)	568 (6.6)	5 (1.2)	509 (19.8)
Jersey City Public Schools, NJ		25 (0.8)	438 (21.0)	63 (1.2)	444 (14.4)	12 (0.7)	437 (9.0)
Guilford County, NC	r	24 (1.2)	532 (11.6)	76 (1.2)	538 (11.3)	0 (0.0)	~ ~
Italy		23 (3.2)	495 (9.4)	71 (3.8)	494 (4.5)	7 (2.0)	483 (8.5)
Chicago Public Schools, IL	s	22 (10.9)	489 (21.5)	68 (10.2)	432 (8.6)	10 (6.7)	452 (51.5)
Hong Kong, SAR		19 (3.3)	524 (12.2)	73 (3.5)	533 (4.5)	8 (2.3)	521 (11.6)
South Carolina		15 (6.0)	505 (23.4)	79 (7.2)	507 (7.4)	6 (4.3)	542 (24.9)
Oregon		11 (5.0)	546 (15.5)	74 (7.9)	539 (7.4)	15 (6.2)	528 (15.3)
North Carolina	r	9 (4.3)	490 (6.5)	84 (5.9)	511 (6.4)	6 (4.3)	532 (16.2)
Korea, Rep. of		7 (2.2)	555 (12.1)	76 (3.7)	550 (2.7)	17 (3.2)	542 (5.5)
Chinese Taipei		5 (2.1)	567 (14.5)	78 (3.4)	571 (5.0)	17 (2.9)	562 (9.3)
Russian Federation		1 (0.9)	~ ~	46 (4.6)	539 (8.3)	52 (4.6)	521 (7.6)
International Avg. (All Countries)		18 (0.5)	498 (2.6)	63 (0.6)	487 (1.0)	20 (0.5)	476 (2.4)

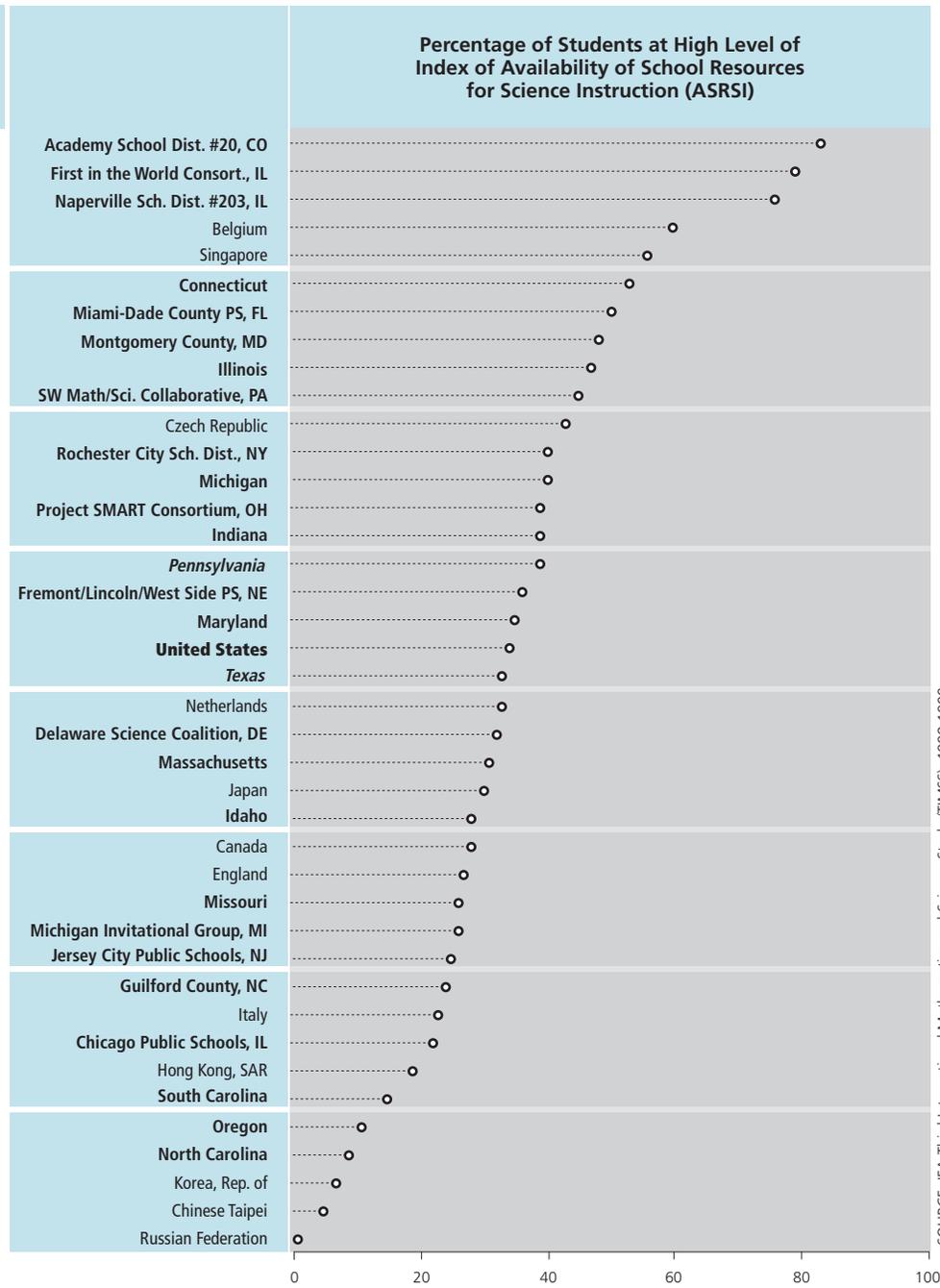
SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

States in *italics* did not fully satisfy guidelines for sample participation rates (see Appendix A for details).

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates school response data available for 70-84% of students. An "s" indicates school response data available for 50-69% of students.



What Is the Role of the School Principal?

To better understand the roles and responsibilities of schools across countries, TIMSS asked school principals how much time per month they spend on various school-related activities. Specifically, they were asked how much time they spend on instructional leadership activities, including discussing educational objectives with teachers, initiating curriculum revisions and planning, training teachers, and engaging in professional development activities. They were also asked how much time they spend talking with parents, counseling and disciplining students, and responding to requests from local, regional, or national education officials. Further, they responded to questions about how much time they spend on administrative duties, including hiring teachers, representing the school in the community and at official meetings, and doing internal tasks (e.g., regulations, school budget, timetable). Finally, they were asked how much time they spend teaching.

The results presented in Exhibit 7.3 show that principals reported spending per month, on average across all the TIMSS 1999 countries, 51 hours on administrative duties, 35 hours communicating with various constituents, 33 hours on instructional leadership activities, and 16 hours teaching.⁴ Compared with the international profile, principals in the United States reported spending more time communicating with students, parents, and education officials (over 50 hours per month, on average), and very little time teaching. Reports from principals in the Benchmarking jurisdictions generally resembled those of the United States overall. It is interesting to note that principals in Jersey City and Rochester reported spending 72 hours per month communicating with students, parents, and education officials, while principals in Indiana and the Michigan Invitational Group reported spending 74 hours per month on administrative duties.

A number of the comparison countries, such as Canada, Chinese Taipei, Hong Kong, and Singapore, have patterns of principals' use of time similar to that of the United States. For example, unlike in most European countries (e.g., the Czech Republic and Russian Federation among comparison countries), principals in these countries spend relatively little time teaching, and most of it on administrative duties, communicating with constituents, and engaging in instructional leadership activities.

⁴ Activities reported by principals are not necessarily exclusive; principals may have reported engaging in more than one activity at the same time.

	Average Total Hours Per Month Spent on Activities ¹			
	Instructional Leadership Activities ²	Communicating with Students, Parents, and Education Officials ³	Administrative Duties ⁴	Teaching (including preparation)
Countries				
United States	r 34 (1.9)	r 52 (2.4)	r 56 (3.2)	r 3 (0.6)
Belgium (Flemish)	29 (2.3)	27 (2.1)	56 (2.5)	0 (0.1)
Canada	25 (1.1)	54 (1.4)	54 (2.1)	5 (0.9)
Chinese Taipei	24 (1.4)	34 (1.7)	86 (4.1)	4 (0.6)
Czech Republic	32 (1.9)	33 (1.8)	44 (2.4)	36 (1.8)
England	--	--	--	--
Hong Kong, SAR	r 43 (3.2)	r 29 (1.8)	r 75 (4.2)	r 3 (0.6)
Italy	36 (1.4)	44 (2.1)	45 (1.7)	--
Japan	33 (2.0)	19 (1.3)	69 (3.6)	1 (0.8)
Korea, Rep. of	30 (2.1)	22 (1.6)	46 (3.6)	3 (0.5)
Netherlands	r 42 (4.0)	r 20 (2.0)	r 49 (5.6)	r 7 (1.7)
Russian Federation	r 44 (1.9)	r 33 (1.7)	r 65 (3.1)	r 46 (2.1)
Singapore	45 (2.2)	46 (1.9)	56 (3.1)	3 (0.6)
States				
Connecticut	s 38 (5.6)	s 55 (4.9)	s 51 (6.0)	s 1 (0.4)
Idaho	r 33 (2.2)	r 41 (3.3)	r 53 (6.1)	r 2 (0.9)
Illinois	r 36 (2.1)	r 49 (3.5)	r 61 (4.9)	r 2 (1.0)
Indiana	37 (3.9)	53 (5.8)	74 (6.0)	3 (1.0)
Maryland	r 38 (2.8)	r 60 (4.0)	r 56 (3.9)	r 1 (0.3)
Massachusetts	s 32 (3.1)	s 48 (4.1)	s 56 (6.6)	s 1 (0.4)
Michigan	35 (2.8)	53 (4.8)	61 (5.2)	3 (1.4)
Missouri	34 (3.3)	55 (4.9)	57 (4.9)	1 (0.5)
North Carolina	r 43 (3.7)	r 66 (6.5)	r 54 (5.0)	r 2 (0.8)
Oregon	38 (4.3)	51 (5.1)	58 (5.2)	2 (0.7)
Pennsylvania	r 27 (2.1)	r 57 (4.1)	r 59 (6.0)	r 2 (0.6)
South Carolina	r 35 (3.6)	r 62 (4.8)	r 53 (5.3)	r 2 (1.1)
Texas	s 35 (4.5)	s 57 (5.3)	s 64 (6.0)	s 2 (0.6)
Districts and Consortia				
Academy School Dist. #20, CO	25 (0.1)	45 (0.1)	46 (0.1)	1 (0.0)
Chicago Public Schools, IL	s 46 (9.0)	s 51 (5.5)	s 58 (8.9)	s 2 (0.8)
Delaware Science Coalition, DE	s 37 (1.2)	s 60 (1.3)	s 53 (2.4)	s 0 (0.0)
First in the World Consort., IL	r 32 (0.5)	r 48 (0.3)	r 47 (0.9)	r 1 (0.1)
Fremont/Lincoln/WestSide PS, NE	s 27 (0.3)	s 56 (0.5)	s 42 (0.5)	s 1 (0.1)
Guilford County, NC	r 41 (0.4)	r 65 (0.5)	r 56 (0.7)	r 1 (0.0)
Jersey City Public Schools, NJ	r 34 (0.7)	r 72 (0.6)	r 36 (0.7)	r 3 (0.1)
Miami-Dade County PS, FL	x x	x x	x x	x x
Michigan Invitational Group, MI	31 (0.5)	63 (1.0)	74 (1.4)	1 (0.0)
Montgomery County, MD	s 35 (6.2)	s 46 (4.3)	s 48 (6.4)	s 1 (0.4)
Naperville Sch. Dist. #203, IL	36 (0.7)	37 (0.7)	67 (0.8)	0 (0.0)
Project SMART Consortium, OH	r 31 (0.6)	r 58 (1.0)	r 54 (1.2)	r 1 (0.1)
Rochester City Sch. Dist., NY	r 35 (0.4)	r 72 (0.8)	r 51 (0.7)	r 8 (0.4)
SW Math/Sci. Collaborative, PA	33 (3.6)	62 (5.8)	40 (4.6)	4 (1.6)
International Avg. (All Countries)	33 (0.3)	35 (0.3)	51 (0.5)	16 (0.2)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by schools.

- Total hours reported for activities in each category averaged across schools. Activities are not necessarily exclusive; principals may have reported engaging in more than one activity at the same time.
- Includes discussing educational objectives with teachers; initiating curriculum revision and/or planning; training teachers; and professional development activities.
- Includes talking with parents, counseling and disciplining of students and responding to requests from local, regional, or national education officials.
- Includes hiring teachers; representing the school in the community; representing the school at official meetings; internal administrative tasks (e.g., regulations, school budget, timetable).

States in *italics* did not fully satisfy guidelines for sample participation rates (see Appendix A for details).

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates school response data available for 70-84% of students. An "s" indicates school response data available for 50-69% of students. An "x" indicates school response data available for <50% of students.

What Are the Schools' Expectations of Parents?

Schools' expectations for parental involvement are shown in Exhibit 7.4. Clearly schools expect help from parents. On average across all the TIMSS 1999 countries, 85 percent of the students attended schools expecting parents to ensure that their children complete their homework, and 79 percent attended schools expecting parents to volunteer for school projects or field trips. About half the students were in schools expecting parents to help raise funds and to serve on committees. Only 28 percent were in schools expecting parents to help as aides in the classroom.

In the United States, almost all students were in schools that expected parents to ensure that their children completed their homework and to volunteer for school projects, programs, or field trips. Parents generally were not often expected to serve as teacher aides (with the notable exception of the Chicago Public Schools, where 34 percent of students were in such schools), but were more often expected to serve on committees and to raise funds for the school. Schools in the Benchmarking jurisdictions generally resembled those in the United States overall, with few major differences.

	Percentage of Students Whose Schools Reported That They Expect Parents to Be Involved in the School-Related Activity				
	Be Sure Child Completes Homework	Serve as Teacher Aides in Classroom	Volunteer for School Projects, Programs, or Field Trips	Raise Funds for the School	Serve on Committees ¹
Countries					
United States	r 99 (0.7)	r 15 (3.0)	r 94 (1.7)	r 55 (4.7)	r 68 (4.1)
Belgium (Flemish)	94 (2.1)	19 (3.7)	39 (4.3)	9 (2.7)	10 (2.7)
Canada	99 (0.6)	15 (1.7)	82 (2.2)	52 (3.4)	55 (2.7)
Chinese Taipei	97 (1.3)	58 (4.2)	90 (2.5)	41 (4.2)	56 (4.4)
Czech Republic	91 (3.1)	7 (2.7)	80 (3.8)	32 (4.7)	35 (4.9)
England	--	--	--	--	--
Hong Kong, SAR	96 (1.8)	30 (4.2)	77 (3.8)	60 (4.6)	21 (3.7)
Italy	91 (2.3)	9 (2.2)	70 (3.4)	25 (3.1)	42 (3.7)
Japan	43 (4.4)	5 (2.0)	81 (2.8)	6 (2.0)	8 (2.2)
Korea, Rep. of	64 (3.9)	33 (4.1)	71 (3.8)	31 (3.8)	44 (4.2)
Netherlands	r 81 (5.6)	r 46 (6.2)	r 61 (6.2)	r 16 (5.2)	r 46 (6.5)
Russian Federation	78 (3.1)	36 (3.3)	91 (1.7)	59 (2.8)	59 (4.1)
Singapore	95 (1.8)	6 (2.2)	44 (4.5)	51 (4.3)	41 (4.3)
States					
Connecticut	s 100 (0.0)	s 7 (4.4)	s 83 (6.6)	s 54 (8.6)	s 42 (8.9)
Idaho	r 97 (0.3)	r 7 (4.2)	r 86 (5.3)	r 20 (6.9)	r 43 (8.8)
Illinois	97 (2.5)	13 (4.4)	85 (6.5)	41 (6.8)	47 (6.9)
Indiana	100 (0.0)	8 (4.1)	87 (4.3)	50 (7.6)	42 (6.9)
Maryland	r 95 (3.5)	r 16 (5.4)	r 93 (4.0)	r 68 (7.8)	r 60 (7.8)
Massachusetts	s 100 (0.0)	s 8 (4.5)	s 91 (5.3)	s 65 (7.9)	s 86 (6.2)
Michigan	98 (1.8)	13 (5.0)	98 (1.6)	47 (7.6)	63 (6.6)
Missouri	96 (3.1)	5 (3.5)	73 (7.7)	33 (8.2)	50 (8.5)
North Carolina	r 100 (0.0)	r 22 (7.5)	r 95 (3.2)	r 76 (7.4)	r 61 (7.8)
Oregon	98 (2.3)	22 (8.0)	91 (3.4)	58 (7.6)	72 (6.1)
<i>Pennsylvania</i>	100 (0.0)	14 (6.3)	84 (5.3)	52 (6.5)	34 (6.2)
South Carolina	100 (0.0)	27 (7.5)	100 (0.0)	77 (7.2)	91 (4.4)
Texas	r 97 (2.7)	r 9 (5.1)	r 94 (3.9)	r 36 (8.7)	r 65 (6.9)
Districts and Consortia					
Academy School Dist. #20, CO	100 (0.0)	0 (0.0)	100 (0.0)	46 (0.4)	75 (0.3)
Chicago Public Schools, IL	r 100 (0.0)	r 34 (8.8)	r 94 (6.0)	r 68 (11.8)	r 80 (8.9)
Delaware Science Coalition, DE	r 98 (0.1)	r 9 (0.5)	r 90 (0.5)	r 53 (1.9)	r 60 (2.0)
First in the World Consort., IL	r 100 (0.0)	r 20 (1.5)	r 98 (0.1)	r 56 (1.2)	r 37 (1.3)
Fremont/Lincoln/WestSide PS, NE	r 100 (0.0)	r 0 (0.0)	r 72 (1.9)	r 33 (1.2)	r 48 (1.6)
Guilford County, NC	r 100 (0.0)	s 0 (0.0)	r 100 (0.0)	r 88 (1.0)	r 77 (0.7)
Jersey City Public Schools, NJ	100 (0.0)	6 (0.2)	90 (0.6)	54 (1.4)	77 (0.8)
Miami-Dade County PS, FL	x x	x x	x x	x x	x x
Michigan Invitational Group, MI	85 (1.5)	4 (0.3)	73 (1.2)	34 (1.3)	76 (1.4)
Montgomery County, MD	s 100 (0.0)	s 20 (11.3)	s 100 (0.0)	s 88 (2.3)	s 59 (12.3)
Naperville Sch. Dist. #203, IL	100 (0.0)	0 (0.0)	81 (0.6)	36 (1.8)	36 (1.8)
Project SMART Consortium, OH	93 (1.0)	14 (0.5)	80 (1.4)	45 (1.4)	52 (1.4)
Rochester City Sch. Dist., NY	r 100 (0.0)	r 19 (1.3)	r 90 (0.9)	r 57 (1.6)	r 100 (0.0)
SW Math/Sci. Collaborative, PA	100 (0.0)	7 (4.0)	88 (6.2)	48 (8.0)	41 (8.2)
International Avg. (All Countries)	85 (0.5)	28 (0.6)	79 (0.5)	51 (0.6)	47 (0.6)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by schools.

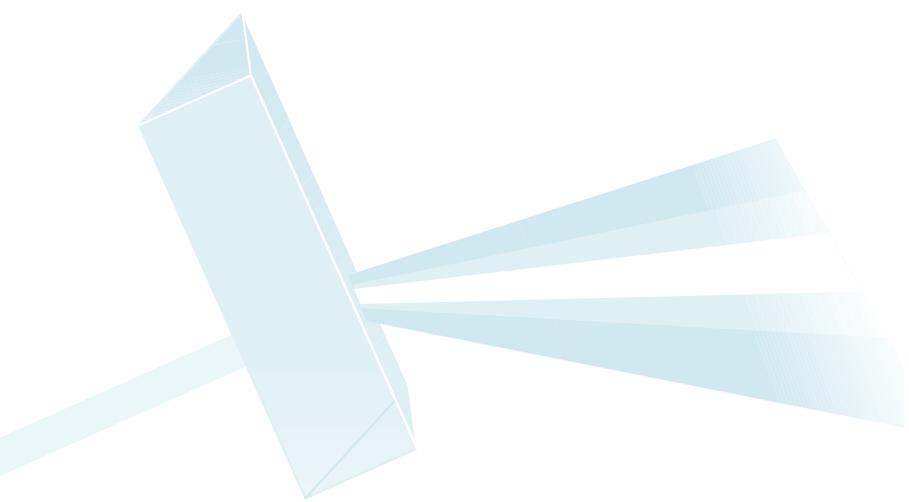
¹ Serve on committees which select school personnel or review school finances.

States in *italics* did not fully satisfy guidelines for sample participation rates (see Appendix A for details).

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates school response data available for 70-84% of students. An "s" indicates school response data available for 50-69% of students. An "x" indicates school response data available for <50% of students.



How Serious Are School Attendance Problems?

In some countries, schools are confronted with high rates of absenteeism, which can influence instructional continuity and reduce the time for learning. In general, research has shown that greater truancy is related to less serious attitudes towards school and lower academic achievement. To examine this issue, TIMSS developed an index of good school and class attendance (SCA) based on schools' responses to three questions about the seriousness of students' absenteeism, arriving late at school, and skipping class. The high index level indicates that schools reported that all three types of behavior are not a problem. The low level indicates that two or more are a serious problem, or that two are minor problems and one a serious problem. The medium category includes all other combinations of responses.

The results of the index are presented in Exhibit 7.5. Sixty percent of students on average across all the TIMSS 1999 countries were in the medium category, where principals had judged their schools to have a moderate attendance problem. Exactly one-fifth of the students were in schools at the high level of the index, and another 19 percent were in schools at the low level. Although countries varied considerably, there was a modest positive relationship between good attendance and science achievement on average across countries.

The results for the United States resemble the international averages, and also show a positive relationship between attendance and science achievement. Across the Benchmarking entities, the situation varied considerably. Participants with the highest percentages of students in schools with good attendance included Naperville and the Academy School District, with more than 40 percent of the students in this category. Jurisdictions with less than 10 percent of students in this category included Pennsylvania, Jersey City, Oregon, the Delaware Science Coalition, and Rochester.

The information used to compute this index appears in Exhibit 7.6, together with data showing the percentages of students in schools where the behavior occurs at least weekly. Arriving late and absenteeism were more common in the United States than in the TIMSS 1999 countries generally, but were not usually considered to be serious problems. Among Benchmarking participants, Naperville had the fewest students in schools that reported attendance problems. In contrast, Rochester reported the most problems, with almost all students in schools where tardiness, absenteeism, and skipping class are frequent occurrences and sometimes constitute serious problems.

Index of Good School and Class Attendance

Index based on schools' responses to three questions about the seriousness of attendance problems in school: arriving late at school; absenteeism; skipping class (see exhibit 7.6). High level indicates that all three behaviors are reported to be not a problem. Low level indicates that two or more behaviors are reported to be a serious problem, or two behaviors are reported to be minor problems and the third a serious problem. Medium level includes all other possible combinations of responses.

	High SCA		Medium SCA		Low SCA	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Naperville Sch. Dist. #203, IL	55 (1.5)	576 (5.4)	45 (1.5)	593 (5.7)	0 (0.0)	~ ~
Belgium (Flemish)	52 (4.4)	550 (5.2)	45 (4.5)	520 (6.6)	3 (1.0)	539 (10.1)
Academy School Dist. #20, CO	42 (0.4)	551 (4.5)	58 (0.4)	565 (2.9)	0 (0.0)	~ ~
Czech Republic	36 (5.8)	544 (6.7)	56 (6.0)	538 (5.6)	8 (2.3)	555 (17.7)
Michigan Invitational Group, MI	34 (1.4)	567 (9.2)	66 (1.4)	564 (8.1)	0 (0.0)	~ ~
Italy	33 (3.3)	508 (5.0)	58 (3.6)	494 (5.4)	9 (2.4)	442 (14.3)
Singapore	32 (4.1)	599 (15.4)	64 (4.0)	553 (8.9)	3 (1.6)	552 (22.5)
Korea, Rep. of	31 (3.7)	547 (3.7)	61 (4.0)	549 (3.2)	9 (2.4)	557 (7.5)
Netherlands	30 (7.3)	531 (10.2)	46 (7.3)	560 (6.2)	24 (7.5)	519 (28.3)
First in the World Consort., IL	28 (1.4)	577 (14.5)	72 (1.4)	551 (6.9)	0 (0.0)	~ ~
Chinese Taipei	28 (3.7)	591 (8.3)	61 (3.6)	558 (4.1)	11 (2.7)	576 (9.1)
Michigan	28 (6.7)	563 (11.8)	69 (6.2)	554 (9.7)	3 (2.5)	510 (95.6)
Chicago Public Schools, IL	27 (13.5)	484 (20.2)	65 (13.2)	431 (11.2)	8 (1.2)	436 (15.9)
Indiana	27 (7.8)	564 (11.4)	66 (8.4)	525 (8.7)	7 (3.7)	525 (8.2)
Hong Kong, SAR	25 (3.9)	540 (7.9)	68 (4.3)	531 (5.6)	7 (2.5)	500 (10.8)
Project SMART Consortium, OH	25 (1.2)	553 (22.6)	71 (1.2)	530 (11.0)	4 (0.2)	504 (12.3)
Illinois	22 (6.5)	534 (13.5)	73 (6.7)	521 (7.0)	5 (0.4)	555 (5.7)
Connecticut	22 (6.6)	559 (30.4)	78 (6.6)	530 (13.0)	0 (0.0)	~ ~
United States	19 (3.0)	553 (10.2)	68 (3.4)	512 (6.5)	13 (2.5)	480 (11.8)
Fremont/Lincoln/WestSide PS, NE	18 (0.6)	526 (9.2)	69 (1.5)	499 (7.9)	13 (1.5)	577 (22.1)
Canada	18 (2.2)	536 (5.7)	73 (3.0)	533 (2.5)	9 (2.0)	535 (11.8)
Texas	15 (7.0)	538 (20.2)	81 (7.3)	510 (13.2)	4 (2.8)	430 (18.9)
Montgomery County, MD	15 (11.0)	558 (10.3)	85 (11.0)	523 (5.2)	0 (0.0)	~ ~
Massachusetts	14 (5.1)	559 (11.9)	74 (6.2)	536 (9.8)	11 (5.4)	536 (10.6)
Idaho	14 (6.7)	537 (10.9)	78 (7.6)	528 (7.4)	8 (3.6)	510 (25.8)
SW Math/Sci. Collaborative, PA	13 (3.6)	563 (8.7)	78 (6.2)	551 (8.0)	9 (4.6)	463 (19.3)
Guilford County, NC	13 (0.6)	580 (14.0)	79 (1.0)	538 (9.8)	8 (0.9)	459 (39.4)
South Carolina	11 (4.0)	490 (20.0)	75 (5.4)	516 (6.6)	13 (4.0)	489 (29.4)
Maryland	11 (4.5)	534 (10.4)	80 (6.1)	504 (9.2)	10 (5.1)	481 (24.6)
Russian Federation	10 (1.7)	538 (16.1)	70 (3.8)	535 (7.4)	20 (3.4)	505 (8.5)
Missouri	10 (5.0)	553 (8.2)	80 (7.0)	527 (8.0)	10 (5.1)	451 (31.4)
North Carolina	10 (4.2)	513 (14.6)	84 (5.7)	513 (5.6)	6 (4.0)	454 (9.5)
Pennsylvania	9 (5.1)	538 (11.5)	83 (6.6)	540 (6.1)	8 (4.1)	474 (11.2)
Japan	7 (2.4)	560 (5.0)	47 (4.1)	551 (4.1)	46 (3.9)	546 (2.7)
Jersey City Public Schools, NJ	7 (0.3)	463 (15.6)	90 (0.4)	437 (11.9)	3 (0.1)	409 (13.2)
Oregon	4 (3.0)	500 (9.9)	84 (5.9)	537 (7.0)	12 (4.8)	521 (15.4)
Delaware Science Coalition, DE	0 (0.0)	~ ~	88 (2.0)	488 (10.0)	12 (2.0)	519 (35.7)
Rochester City Sch. Dist., NY	0 (0.0)	~ ~	50 (1.5)	463 (13.4)	50 (1.5)	431 (13.0)
Miami-Dade County PS, FL	x x	x x	x x	x x	x x	x x
England	--	--	--	--	--	--
International Avg. (All Countries)	20 (0.6)	498 (2.5)	60 (0.7)	487 (1.0)	19 (0.5)	474 (2.0)

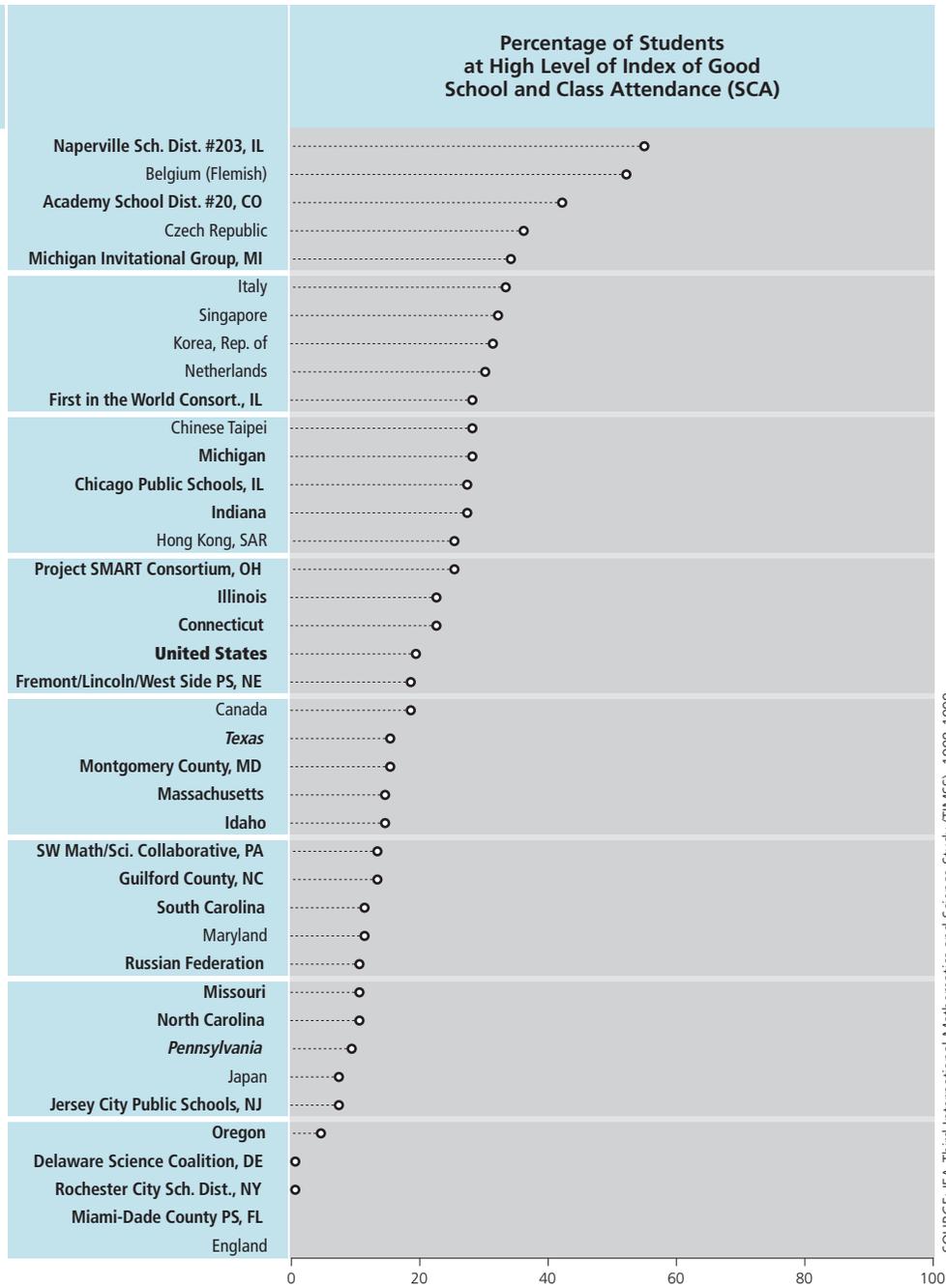
SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

States in *italics* did not fully satisfy guidelines for sample participation rates (see Appendix A for details).

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available. A tilde (~) indicates insufficient data to report achievement.

An "r" indicates school response data available for 70-84% of students. An "s" indicates school response data available for 50-69% of students. An "x" indicates school response data available for <50% of students.



	Percentage of Students Whose Schools Reported the Behavior					
	Arriving Late		Absenteeism		Skipping Class	
	Occurs at Least Weekly	Is a Serious Problem	Occurs at Least Weekly	Is a Serious Problem	Occurs at Least Weekly	Is a Serious Problem
Countries						
United States	r 71 (3.7)	r 12 (2.3)	r 60 (4.2)	r 12 (2.7)	r 29 (3.6)	r 4 (1.8)
Belgium (Flemish)	44 (4.7)	3 (1.4)	11 (2.4)	4 (1.8)	4 (1.3)	2 (1.0)
Canada	58 (2.7)	7 (1.7)	45 (3.1)	7 (1.6)	22 (2.3)	3 (1.0)
Chinese Taipei	43 (4.1)	2 (1.1)	32 (4.0)	10 (2.7)	30 (3.8)	11 (2.8)
Czech Republic	21 (3.8)	0 (0.3)	9 (2.8)	8 (2.5)	5 (2.2)	8 (2.4)
England	--	--	--	--	--	--
Hong Kong, SAR	r 61 (4.8)	9 (2.8)	r 34 (4.5)	3 (1.6)	r 10 (2.8)	r 1 (0.9)
Italy	32 (3.6)	4 (1.6)	11 (2.2)	9 (2.3)	8 (2.2)	7 (2.0)
Japan	55 (4.1)	20 (3.4)	63 (4.1)	76 (3.9)	14 (3.2)	27 (3.8)
Korea, Rep. of	32 (4.0)	1 (1.0)	31 (4.1)	12 (2.9)	21 (3.6)	5 (1.8)
Netherlands	r 76 (4.9)	r 18 (6.8)	r 35 (5.9)	r 12 (6.4)	r 44 (6.5)	r 15 (7.1)
Russian Federation	41 (3.8)	14 (3.5)	22 (2.9)	12 (2.2)	32 (4.2)	10 (2.2)
Singapore	51 (4.8)	3 (1.6)	40 (4.4)	3 (1.5)	23 (4.0)	0 (0.0)
States						
Connecticut	s 67 (9.4)	s 0 (0.0)	s 48 (9.5)	s 4 (0.5)	s 20 (6.7)	s 0 (0.0)
Idaho	r 72 (8.9)	r 5 (2.7)	r 67 (8.5)	r 8 (3.6)	r 31 (7.3)	r 1 (0.1)
Illinois	57 (8.4)	5 (3.0)	42 (7.4)	7 (1.2)	r 9 (4.0)	0 (0.0)
Indiana	64 (7.9)	7 (3.5)	55 (7.9)	9 (4.2)	20 (4.5)	0 (0.0)
Maryland	r 63 (7.1)	r 10 (5.1)	r 51 (6.9)	r 10 (5.1)	r 21 (6.0)	r 0 (0.0)
Massachusetts	s 59 (8.9)	s 16 (7.5)	s 62 (7.6)	s 14 (6.1)	s 17 (6.6)	s 0 (0.0)
Michigan	48 (7.1)	r 1 (1.0)	37 (7.3)	r 5 (3.4)	11 (4.5)	r 0 (0.0)
Missouri	76 (6.0)	2 (1.7)	69 (6.7)	13 (5.6)	33 (6.5)	r 9 (5.0)
North Carolina	r 54 (8.3)	r 3 (0.2)	r 52 (9.0)	r 11 (5.0)	r 16 (6.2)	r 0 (0.0)
Oregon	81 (6.5)	r 8 (3.0)	75 (7.6)	19 (5.3)	43 (8.1)	5 (1.8)
Pennsylvania	73 (7.2)	8 (4.1)	50 (6.7)	8 (4.1)	17 (5.0)	1 (0.0)
South Carolina	r 73 (6.5)	r 10 (4.9)	r 67 (7.8)	r 20 (5.1)	16 (4.4)	r 0 (0.0)
Texas	r 81 (7.3)	s 4 (2.8)	r 68 (7.6)	s 1 (1.4)	r 39 (6.1)	s 0 (0.0)
Districts and Consortia						
Academy School Dist. #20, CO	54 (0.4)	0 (0.0)	29 (0.4)	0 (0.0)	46 (0.4)	0 (0.0)
Chicago Public Schools, IL	s 66 (8.3)	s 8 (1.2)	s 49 (11.4)	s 10 (7.8)	s 14 (6.1)	r 0 (0.0)
Delaware Science Coalition, DE	r 84 (2.0)	r 0 (0.0)	r 90 (0.6)	r 12 (2.0)	s 54 (1.7)	r 0 (0.0)
First in the World Consort., IL	r 62 (1.4)	r 0 (0.0)	r 15 (0.4)	r 0 (0.0)	r 0 (0.0)	r 0 (0.0)
Fremont/Lincoln/WestSide PS, NE	r 68 (1.1)	s 0 (0.0)	r 58 (1.4)	s 13 (1.5)	r 48 (1.7)	s 0 (0.0)
Guilford County, NC	r 77 (0.9)	r 0 (0.0)	r 88 (0.6)	r 8 (0.9)	r 36 (1.1)	r 0 (0.0)
Jersey City Public Schools, NJ	66 (1.0)	r 12 (0.8)	50 (1.4)	r 0 (0.0)	0 (0.0)	r 0 (0.0)
Miami-Dade County PS, FL	x x	x x	x x	x x	x x	x x
Michigan Invitational Group, MI	48 (1.5)	9 (0.8)	40 (1.6)	0 (0.0)	31 (1.5)	0 (0.0)
Montgomery County, MD	s 83 (9.6)	s 0 (0.0)	s 61 (12.2)	s 0 (0.0)	s 12 (7.2)	s 0 (0.0)
Naperville Sch. Dist. #203, IL	39 (1.9)	0 (0.0)	15 (2.1)	0 (0.0)	0 (0.0)	0 (0.0)
Project SMART Consortium, OH	r 73 (1.1)	s 4 (0.2)	r 47 (1.6)	s 4 (0.2)	r 33 (1.6)	s 0 (0.0)
Rochester City Sch. Dist., NY	r 100 (0.0)	s 19 (0.6)	r 100 (0.0)	s 19 (0.6)	r 84 (0.5)	s 30 (1.5)
SW Math/Sci. Collaborative, PA	68 (7.7)	9 (4.6)	62 (6.2)	7 (4.3)	26 (8.7)	3 (2.9)
International Avg. (All Countries)	49 (0.6)	11 (0.4)	38 (0.6)	17 (0.5)	27 (0.6)	13 (0.5)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by schools.

States in *italics* did not fully satisfy guidelines for sample participation rates (see Appendix A for details).

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates school response data available for 70-84% of students. An "s" indicates school response data available for 50-69% of students. An "x" indicates school response data available for <50% of students.

How Safe and Orderly Are Schools?

Discipline that maintains an orderly atmosphere conducive to learning is very important to school quality, and research indicates that urban schools have conditions less conducive to learning than non-urban schools.⁵ For example, urban schools report more crime against students and teachers at school and that physical conflict among students is a serious or moderate problem. Among the Benchmarking participants there was considerable variation in principals' reports about the seriousness of a variety of potential discipline problems.

The frequency and seriousness of student behavior threatening an orderly school environment are presented in Exhibit 7.7. The three types of behavior are violating the dress code, creating a classroom disturbance, and cheating. Violation of dress code is likely to reflect, at least partially, whether there is a uniform requirement. For many countries, violating the dress code was not reported to be a serious problem; on average internationally only six percent of the students were in schools where it was a serious problem. Dress code violations were more frequently reported in the United States, where 42 percent of students were in schools where this occurs at least weekly, compared with 24 percent internationally. This was also a frequent problem in Texas and in Rochester, with 79 and 59 percent of students, respectively, in such schools.

Classroom disturbance was a more frequent problem in schools in the United States, as well as a more serious one. More than two-thirds of U.S. eighth-grade students were in schools where disturbances occur at least weekly, and 11 percent where these are a serious problem. Benchmarking jurisdictions where classroom disturbances were both more frequent and more serious than in the United States generally included Maryland, Missouri, North Carolina, Pennsylvania, the Delaware Science Coalition, Guilford County, the Michigan Invitational Group, Montgomery County, and Rochester.

The frequency and seriousness of student behavior threatening a safe school environment are shown in Exhibit 7.8. The five types of behavior are vandalism, theft, physical injury to other students, intimidation or verbal abuse of other students, and intimidation or verbal abuse of teachers or staff. As in other reports of student behavior, cross-national comparisons are difficult because of differing perceptions of what constitutes a serious problem. However, with only a few exceptions, the overwhelming majority of students attend schools judged to have few serious problems. The incidence of such student behavior was

⁵ Mayer, D.P., Mullens, J.E., and Moore, M.T. (2000), *Monitoring School Quality: An Indicators Report*, NCES 2001-030, Washington, DC: National Center for Education Statistics; Kaufman, P., Chen, X., Choy, S.P., Ruddy, S.A., Miller, A.K., Fleury, J.K., Chandler, K.A., Rand, M.R., Klaus, P., and Planty, M.G. (2000), *Indicators of School Crime and Safety, 2000*, NCES 2001-017/NCJ-184176, Washington, DC: U.S. Departments of Education and Justice.

generally low in most countries. The exception was intimidation or verbal abuse of other students. Some countries had relatively high percentages of students in schools where this occurs at least weekly; in Canada, the Netherlands, and the United States, more than 40 percent of the students were in such schools. Among Benchmarking participants, intimidation or verbal abuse of other students was a frequent and serious problem in Idaho, Maryland, Oregon, Pennsylvania, the Delaware Science Coalition, the Fremont/Lincoln/Westside Public Schools, the Project SMART Consortium, and Rochester. Vandalism was a frequent and serious problem in Rochester.

	Percentage of Students Whose Schools Reported the Behavior					
	Violating Dress Code		Classroom Disturbance		Cheating	
	Occurs at Least Weekly	Is a Serious Problem	Occurs at Least Weekly	Is a Serious Problem	Occurs at Least Weekly	Is a Serious Problem
Countries						
United States	r 42 (4.0)	r 3 (1.2)	r 69 (4.3)	r 11 (2.6)	r 12 (2.8)	r 1 (0.0)
Belgium (Flemish)	6 (2.1)	0 (0.0)	40 (5.4)	7 (2.5)	14 (2.7)	1 (0.0)
Canada	22 (1.8)	2 (0.8)	60 (2.6)	21 (2.3)	4 (1.4)	2 (0.9)
Chinese Taipei	41 (4.1)	3 (1.5)	30 (3.8)	4 (1.6)	9 (2.1)	8 (2.3)
Czech Republic	3 (1.7)	0 (0.0)	63 (4.7)	21 (4.4)	9 (4.3)	11 (3.5)
England	--	--	--	--	--	--
Hong Kong, SAR	r 42 (4.6)	r 7 (2.5)	36 (4.7)	r 9 (2.9)	4 (1.7)	r 4 (1.9)
Italy	--	--	47 (4.0)	32 (3.6)	13 (2.7)	5 (1.4)
Japan	30 (4.0)	18 (3.5)	5 (1.5)	23 (3.7)	2 (1.1)	13 (2.8)
Korea, Rep. of	37 (4.3)	3 (1.4)	43 (4.2)	7 (1.8)	3 (1.3)	8 (2.5)
Netherlands	r 10 (4.2)	r 0 (0.0)	r 76 (5.5)	r 14 (5.4)	r 60 (6.5)	r 1 (0.8)
Russian Federation	7 (2.2)	0 (0.0)	13 (2.8)	4 (1.6)	1 (0.5)	2 (1.2)
Singapore	36 (4.8)	2 (1.3)	32 (3.9)	3 (1.7)	3 (1.4)	0 (0.0)
States						
Connecticut	s 22 (7.5)	s 0 (0.0)	s 71 (10.3)	s 11 (5.8)	s 8 (4.9)	s 7 (4.6)
Idaho	r 21 (8.2)	r 0 (0.0)	r 76 (6.8)	r 8 (3.9)	r 15 (5.4)	r 0 (0.0)
Illinois	16 (5.9)	2 (1.1)	65 (8.0)	6 (3.4)	10 (3.9)	0 (0.0)
Indiana	19 (6.2)	3 (0.2)	70 (5.5)	11 (4.8)	12 (5.0)	1 (1.2)
Maryland	r 36 (7.4)	r 4 (3.0)	r 84 (5.8)	r 26 (7.9)	r 9 (4.3)	r 0 (0.0)
Massachusetts	s 15 (5.5)	s 0 (0.0)	s 73 (8.4)	s 11 (4.4)	s 8 (4.8)	s 3 (2.6)
Michigan	16 (6.2)	r 2 (0.2)	68 (6.7)	r 7 (3.6)	5 (2.8)	r 0 (0.0)
Missouri	33 (7.6)	r 0 (0.0)	83 (5.1)	r 13 (4.7)	12 (4.1)	r 0 (0.0)
North Carolina	r 31 (8.6)	r 0 (0.0)	r 86 (5.7)	r 15 (6.3)	r 8 (4.4)	r 0 (0.0)
Oregon	21 (6.3)	0 (0.0)	77 (6.3)	6 (3.7)	4 (2.9)	0 (0.0)
Pennsylvania	34 (5.2)	6 (5.9)	82 (4.7)	15 (7.5)	5 (2.2)	1 (0.1)
South Carolina	r 47 (8.8)	r 5 (3.3)	86 (6.5)	r 10 (4.6)	13 (5.8)	r 1 (1.4)
Texas	r 79 (3.7)	s 11 (6.6)	r 79 (6.0)	s 8 (5.2)	r 12 (6.1)	s 0 (0.0)
Districts and Consortia						
Academy School Dist. #20, CO	0 (0.0)	0 (0.0)	100 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Chicago Public Schools, IL	r 40 (9.7)	r 10 (7.5)	s 62 (9.0)	s 0 (0.0)	s 19 (10.2)	s 0 (0.0)
Delaware Science Coalition, DE	r 39 (2.0)	r 6 (0.5)	r 96 (0.4)	r 23 (1.8)	r 18 (0.8)	r 0 (0.0)
First in the World Consort., IL	r 0 (0.0)	r 0 (0.0)	r 44 (1.1)	r 0 (0.1)	r 0 (0.1)	r 0 (0.0)
Fremont/Lincoln/WestSide PS, NE	r 43 (1.8)	s 0 (0.0)	r 65 (1.3)	s 9 (0.5)	r 13 (0.9)	s 0 (0.0)
Guilford County, NC	r 42 (1.2)	r 0 (0.0)	r 88 (1.0)	r 17 (0.9)	r 19 (1.2)	s 0 (0.0)
Jersey City Public Schools, NJ	r 19 (1.1)	r 6 (0.9)	44 (1.6)	r 9 (0.8)	11 (1.0)	r 0 (0.0)
Miami-Dade County PS, FL	x x	x x	x x	x x	x x	x x
Michigan Invitational Group, MI	31 (1.5)	0 (0.0)	84 (1.4)	15 (1.5)	25 (1.2)	2 (0.1)
Montgomery County, MD	s 38 (12.6)	s 0 (0.0)	s 86 (9.8)	s 13 (8.1)	s 7 (1.1)	s 0 (0.0)
Naperville Sch. Dist. #203, IL	0 (0.0)	0 (0.0)	15 (2.1)	0 (0.0)	21 (1.0)	0 (0.0)
Project SMART Consortium, OH	r 27 (1.3)	s 0 (0.0)	r 65 (1.4)	s 14 (0.8)	r 0 (0.0)	s 0 (0.0)
Rochester City Sch. Dist., NY	r 59 (1.5)	s 0 (0.0)	r 100 (0.0)	s 50 (1.7)	s 0 (0.0)	s 0 (0.0)
SW Math/Sci. Collaborative, PA	47 (9.1)	2 (2.1)	67 (7.2)	11 (5.4)	7 (2.9)	0 (0.0)
International Avg. (All Countries)	24 (0.6)	6 (0.3)	39 (0.6)	13 (0.5)	11 (0.4)	7 (0.3)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by schools.

States in *italics* did not fully satisfy guidelines for sample participation rates (see Appendix A for details).

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An "r" indicates school response data available for 70-84% of students. An "s" indicates school response data available for 50-69% of students. An "x" indicates school response data available for <50% of students.

	Percentage of Students Whose Schools Reported the Behavior					
	Vandalism		Theft		Physical Injury to Other Students	
	Occurs at Least Weekly	Is a Serious Problem	Occurs at Least Weekly	Is a Serious Problem	Occurs at Least Weekly	Is a Serious Problem
Countries						
United States	r 11 (2.3)	r 1 (0.8)	r 10 (2.5)	r 2 (1.1)	r 10 (2.4)	r 3 (1.8)
Belgium (Flemish)	8 (2.4)	9 (2.6)	7 (2.2)	9 (2.5)	8 (1.9)	6 (2.1)
Canada	15 (1.5)	6 (2.0)	7 (1.4)	6 (1.9)	6 (1.8)	4 (1.5)
Chinese Taipei	14 (3.1)	11 (2.5)	7 (2.2)	16 (2.9)	8 (2.3)	21 (3.2)
Czech Republic	13 (2.7)	21 (3.6)	3 (1.9)	17 (3.8)	2 (1.7)	17 (3.7)
England	--	--	--	--	--	--
Hong Kong, SAR	18 (3.7)	r 6 (2.3)	8 (2.6)	r 5 (2.2)	5 (2.1)	r 3 (1.6)
Italy	7 (1.9)	18 (2.8)	4 (1.4)	16 (2.8)	9 (2.1)	19 (3.0)
Japan	3 (1.3)	23 (3.5)	1 (0.9)	25 (3.7)	1 (0.9)	22 (3.6)
Korea, Rep. of	12 (2.8)	10 (2.5)	9 (2.5)	13 (3.0)	10 (2.6)	9 (2.6)
Netherlands	r 45 (7.6)	r 28 (7.4)	r 22 (5.9)	r 19 (6.4)	r 2 (1.3)	r 4 (2.0)
Russian Federation	0 (0.4)	3 (1.5)	1 (0.5)	6 (2.0)	2 (1.1)	4 (1.3)
Singapore	5 (1.8)	2 (1.3)	5 (2.0)	2 (1.4)	1 (0.7)	0 (0.0)
States						
Connecticut	s 12 (6.0)	s 0 (0.0)	s 12 (6.0)	s 0 (0.0)	s 25 (8.2)	s 13 (6.1)
Idaho	r 15 (5.6)	r 0 (0.0)	r 17 (5.9)	r 4 (3.2)	r 25 (8.2)	r 0 (0.0)
Illinois	3 (0.9)	2 (0.1)	5 (2.4)	0 (0.0)	9 (3.8)	4 (3.0)
Indiana	2 (0.1)	0 (0.0)	6 (3.7)	2 (2.2)	8 (4.0)	2 (2.2)
Maryland	r 7 (3.7)	r 3 (0.2)	r 6 (3.4)	r 0 (0.0)	r 33 (8.3)	r 9 (5.1)
Massachusetts	s 6 (3.5)	s 0 (0.0)	s 6 (3.8)	s 3 (2.4)	s 9 (4.5)	s 0 (0.0)
Michigan	6 (3.2)	r 2 (0.2)	3 (2.1)	r 2 (0.1)	6 (2.7)	r 4 (2.7)
Missouri	9 (5.0)	r 2 (2.2)	7 (3.9)	r 7 (3.9)	8 (4.9)	r 5 (3.6)
North Carolina	r 20 (7.3)	r 0 (0.0)	r 20 (7.1)	r 3 (2.5)	r 8 (4.4)	r 0 (0.0)
Oregon	7 (3.9)	2 (1.7)	12 (4.9)	0 (0.0)	7 (4.4)	2 (2.3)
Pennsylvania	7 (2.9)	r 1 (0.9)	6 (2.9)	r 2 (1.8)	9 (3.6)	5 (3.1)
South Carolina	5 (3.6)	r 0 (0.0)	18 (5.9)	r 0 (0.0)	8 (4.6)	r 3 (2.5)
Texas	r 12 (6.2)	s 0 (0.0)	r 16 (7.3)	s 0 (0.0)	r 9 (5.1)	s 0 (0.0)
Districts and Consortia						
Academy School Dist. #20, CO	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	r 0 (0.0)
Chicago Public Schools, IL	s 6 (1.0)	s 0 (0.0)	s 6 (1.0)	s 0 (0.0)	s 6 (1.0)	s 0 (0.0)
Delaware Science Coalition, DE	r 6 (0.5)	r 6 (0.5)	r 5 (2.1)	r 0 (0.0)	s 28 (2.6)	r 6 (0.5)
First in the World Consort., IL	r 13 (0.4)	r 0 (0.0)	r 13 (0.4)	r 0 (0.0)	r 0 (0.0)	r 0 (0.0)
Fremont/Lincoln/WestSide PS, NE	r 0 (0.0)	s 0 (0.0)	r 25 (1.4)	s 0 (0.0)	r 25 (1.4)	s 13 (1.5)
Guilford County, NC	r 0 (0.0)	r 0 (0.0)	r 0 (0.0)	s 0 (0.0)	r 7 (0.4)	s 0 (0.0)
Jersey City Public Schools, NJ	11 (0.9)	r 0 (0.0)	0 (0.0)	r 6 (0.4)	10 (0.3)	r 9 (0.8)
Miami-Dade County PS, FL	x x	x x	x x	x x	x x	x x
Michigan Invitational Group, MI	19 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	11 (0.8)	0 (0.0)
Montgomery County, MD	s 12 (7.2)	s 0 (0.0)	s 7 (1.1)	s 0 (0.0)	s 0 (0.0)	s 0 (0.0)
Naperville Sch. Dist. #203, IL	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
Project SMART Consortium, OH	r 16 (1.2)	s 0 (0.0)	r 23 (1.5)	s 0 (0.0)	r 16 (0.8)	s 10 (0.8)
Rochester City Sch. Dist., NY	r 60 (1.6)	s 36 (1.7)	r 19 (1.8)	s 0 (0.0)	r 30 (1.3)	s 0 (0.0)
SW Math/Sci. Collaborative, PA	14 (5.8)	4 (0.4)	14 (4.7)	4 (0.4)	17 (6.7)	2 (2.1)
International Avg. (All Countries)	11 (0.4)	13 (0.5)	6 (0.3)	12 (0.5)	6 (0.3)	10 (0.4)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

Background data provided by schools.

States in *italics* did not fully satisfy guidelines for sample participation rates (see Appendix A for details).

() Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available.

An “r” indicates school response data available for 70-84% of students. An “s” indicates school response data available for 50-69% of students. An “x” indicates school response data available for <50% of students.

	Percentage of Students Whose Schools Reported the Behavior			
	Intimidation or Verbal Abuse of Other Students		Intimidation or Verbal Abuse of Teachers or Staff	
	Occurs at Least Weekly	Is a Serious Problem	Occurs at Least Weekly	Is a Serious Problem
Countries				
United States	r 46 (4.3)	r 16 (3.6)	r 7 (2.0)	r 3 (1.5)
Belgium (Flemish)	23 (3.4)	15 (3.7)	5 (1.5)	3 (1.2)
Canada	42 (3.0)	22 (2.5)	4 (1.2)	3 (1.1)
Chinese Taipei	11 (2.7)	18 (3.1)	1 (1.0)	17 (3.0)
Czech Republic	5 (1.5)	17 (3.6)	0 (0.0)	9 (2.6)
England	--	--	--	--
Hong Kong, SAR	r 8 (2.7)	r 4 (1.8)	r 3 (1.5)	r 2 (1.3)
Italy	14 (2.3)	23 (3.0)	4 (1.7)	13 (2.7)
Japan	3 (1.5)	25 (3.8)	2 (1.2)	23 (3.7)
Korea, Rep. of	12 (2.9)	12 (2.8)	8 (2.3)	9 (2.5)
Netherlands	r 49 (7.3)	r 23 (6.9)	r 17 (6.6)	r 16 (6.4)
Russian Federation	3 (1.3)	7 (2.1)	1 (0.5)	1 (0.6)
Singapore	7 (2.3)	2 (1.2)	1 (0.7)	1 (0.9)
States				
Connecticut	s 53 (11.3)	s 14 (6.2)	s 5 (3.9)	s 6 (4.5)
Idaho	r 62 (9.7)	r 29 (7.3)	r 13 (3.5)	r 2 (0.1)
Illinois	42 (7.2)	11 (4.6)	6 (3.3)	3 (2.6)
Indiana	35 (7.1)	7 (2.0)	2 (0.1)	0 (0.0)
Maryland	r 66 (7.1)	r 25 (7.3)	r 36 (6.5)	r 16 (6.1)
Massachusetts	s 52 (9.2)	s 15 (7.2)	s 9 (4.4)	s 4 (2.7)
Michigan	46 (5.1)	r 16 (5.4)	0 (0.0)	r 2 (0.1)
Missouri	49 (7.7)	r 13 (3.9)	21 (5.9)	r 5 (3.4)
North Carolina	r 49 (6.8)	r 18 (5.8)	r 12 (5.1)	r 0 (0.1)
Oregon	67 (7.8)	23 (7.9)	4 (2.7)	2 (2.3)
Pennsylvania	53 (8.2)	21 (7.3)	13 (4.0)	9 (4.9)
South Carolina	47 (8.9)	r 9 (4.3)	8 (4.6)	r 3 (2.5)
Texas	r 43 (5.1)	s 12 (6.3)	r 2 (2.5)	s 0 (0.0)
Districts and Consortia				
Academy School Dist. #20, CO	25 (0.3)	0 (0.0)	0 (0.0)	0 (0.0)
Chicago Public Schools, IL	s 30 (12.5)	s 0 (0.0)	s 0 (0.0)	s 0 (0.0)
Delaware Science Coalition, DE	r 83 (0.9)	r 13 (0.7)	r 16 (1.9)	r 10 (0.6)
First in the World Consort., IL	r 37 (1.0)	r 0 (0.1)	r 0 (0.1)	r 0 (0.1)
Fremont/Lincoln/WestSide PS, NE	r 51 (1.6)	s 24 (1.1)	r 43 (1.8)	s 0 (0.0)
Guilford County, NC	r 46 (1.2)	s 6 (0.5)	r 9 (0.4)	s 10 (0.5)
Jersey City Public Schools, NJ	36 (1.3)	r 19 (1.0)	35 (1.3)	r 9 (0.8)
Miami-Dade County PS, FL	x x	x x	x x	x x
Michigan Invitational Group, MI	50 (1.5)	14 (0.7)	12 (0.8)	0 (0.0)
Montgomery County, MD	s 48 (8.8)	s 23 (11.1)	s 28 (14.9)	x x
Naperville Sch. Dist. #203, IL	21 (1.0)	0 (0.0)	0 (0.0)	0 (0.0)
Project SMART Consortium, OH	r 61 (1.6)	s 26 (1.0)	r 16 (0.8)	s 18 (0.9)
Rochester City Sch. Dist., NY	r 100 (0.0)	s 36 (1.7)	r 50 (1.7)	s 0 (0.0)
SW Math/Sci. Collaborative, PA	52 (9.4)	14 (6.3)	22 (7.7)	4 (3.3)
International Avg. (All Countries)	16 (0.5)	14 (0.5)	4 (0.3)	9 (0.4)

SOURCE: IEA Third International Mathematics and Science Study (TIMSS), 1998-1999.

