

Chapter 6

School Climate

Students with the highest mathematics achievement typically attend schools that emphasize academic success, as indicated by rigorous curricular goals, effective teachers, students that desire to do well, and parental support. In contrast, schools with discipline and safety problems are not conducive to high achievement. Students that attended schools with disorderly environments and reported more frequent bullying had much lower achievement than their counterparts in safe and orderly schools.

The school's educational values are reflected by the teachers, school leadership, the students themselves, and their parents. A school with a positive atmosphere toward high achievement and a rigorous academic program can overcome resource shortages and encourage students toward excellent performance. By contrast, a school with more disciplinary problems is not conducive to higher student achievement. When students are fearful and worried about their safety, for example, it is difficult to focus on academics. Chapter 6 presents the TIMSS 2011 results about positive and negative aspects of the atmosphere in schools around the world.

Schools Emphasize Academic Success

Studies of academic optimism show that a positive school atmosphere emphasizing academic achievement can even overcome socioeconomic disadvantages (McGuigan & Hoy, 2006). There are several dimensions of academic optimism, including a school communicating its academic emphasis through clear and rigorous academic goals. However, because individuals are the actors within schools, the effect on achievement is greatest when there is a collective influence. This includes a school administration and teachers that support and trust in students' achievement. In addition to making it clear that academic success is important, principals and teachers need to emphasize it can be achieved. Parents' support for their children's learning also contributes to a schools' collective efficacy or belief that the school's academic goals can be implemented.

School Emphasis on Academic Success

The TIMSS 2011 School Emphasis on Academic Success scale characterizes five aspects of academic optimism:

- ◆ Teachers' understanding of the school's curricular goals;
- ◆ Teachers' degree of success in implementing the school's curriculum;
- ◆ Teachers' expectations for student achievement;
- ◆ Parental support for student achievement; and
- ◆ Students' desire to do well in school.

This set of questions was given to both students' principals and teachers, with the respective responses used to create scales.

Exhibit 6.1 shows the principals' reports on the School Emphasis on Academic Success scale for the TIMSS 2011 fourth grade assessment. As might be anticipated, principals had very positive attitudes about the emphasis on

academics in their schools, so the three regions of the scale have been described as **Very High**, **High**, and **Medium**. Students were scored according to their principals' characterization of their school in terms of the five aspects. Students in schools with **Very High Emphasis** on academic success had principals characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in **Medium Emphasis** schools had principals characterizing three of the five aspects as "medium" and the other two as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

On average, across the fourth grade countries, 8 percent of the students attended schools where the principal reported a **Very High Emphasis** on academic success, 58 percent a school with a **High Emphasis**, and 34 percent a school with a **Medium Emphasis**. Although the results were not entirely consistent from country to country, internationally at the fourth grade, on average, there was a direct correspondence between average mathematics achievement and principals' reports, with higher emphasis on academic success related to higher average mathematics achievement. The results were similar for the sixth grade and benchmarking participants.

Exhibit 6.2 shows the principals' reports on the School Emphasis on Academic Success scale for the TIMSS 2011 eighth grade assessment. Although similar to the fourth grade results, principals of the eighth grade schools reported slightly less emphasis on academic success, with 7 percent of the students attending a school where the principal reported a **Very High Emphasis** on academic success, 53 percent a school with a **High Emphasis**, and 41 percent a school with a **Medium Emphasis** (compared to 8%, 58%, and 34%, respectively, at the fourth grade). There was also a somewhat greater difference in average mathematics achievement (46 points) between students attending **Very High Emphasis** schools and students attending **Medium Emphasis** schools (495 vs. 449).

Exhibits 6.3 and 6.4 show the teachers' reports on the School Emphasis on Academic Success scale for the fourth and eighth grade assessments, respectively. The teachers' reports were remarkably similar to those of the principals for both assessments, and with each reported decrease in academic emphasis, the students had progressively lower average mathematics achievement. Similar to their principals, the eighth grade mathematics teachers reported a little less emphasis on academic success than the fourth grade teachers, but the achievement gap between students in very high and medium emphasis schools was greater at the eighth grade (54 points) than at the fourth grade (26 points).

Exhibit 6.1: School Emphasis on Academic Success - Principal Reports

Reported by Principals

Students were scored according to their principals' responses characterizing five aspects on the *School Emphasis on Academic Success* scale. Students in schools where their principals reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.1, which corresponds to their principals characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 8.9, which corresponds to their principals characterizing three of the five aspects as "medium" and the other two as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Northern Ireland	33 (4.2)	577 (4.9)	60 (4.3)	558 (4.1)	7 (2.5)	540 (13.6)	12.0 (0.19)
Qatar	31 (2.9)	435 (10.3)	54 (3.2)	411 (5.3)	15 (2.4)	374 (8.2)	11.6 (0.14)
Ireland	28 (4.0)	543 (4.8)	67 (3.9)	523 (3.7)	4 (1.7)	508 (9.6)	11.9 (0.17)
United States	22 (2.5)	561 (4.4)	60 (2.7)	543 (2.9)	18 (2.1)	519 (4.7)	11.2 (0.13)
New Zealand	22 (3.0)	506 (4.7)	67 (3.3)	487 (3.4)	11 (2.1)	448 (11.0)	11.5 (0.14)
Korea, Rep. of	22 (3.5)	612 (4.4)	58 (4.3)	606 (2.7)	20 (3.4)	594 (3.3)	11.1 (0.19)
United Arab Emirates	21 (1.6)	463 (5.7)	61 (2.0)	429 (3.4)	18 (1.7)	401 (6.2)	11.2 (0.09)
Chinese Taipei	17 (3.0)	592 (5.7)	71 (3.7)	592 (2.4)	12 (2.5)	584 (4.6)	11.3 (0.15)
Australia	16 (3.0)	544 (7.6)	64 (3.8)	519 (3.7)	21 (3.0)	488 (5.6)	10.9 (0.14)
Malta	13 (0.1)	507 (3.8)	69 (0.1)	502 (1.5)	18 (0.1)	466 (3.1)	11.1 (0.00)
Bahrain	11 (2.5)	483 (9.7)	68 (3.7)	433 (4.6)	21 (2.8)	418 (7.6)	10.6 (0.16)
England	10 (2.9)	554 (6.0)	72 (4.7)	546 (4.9)	17 (3.8)	517 (9.9)	10.8 (0.18)
Iran, Islamic Rep. of	9 (2.0)	442 (14.6)	70 (3.4)	436 (4.6)	21 (2.7)	408 (6.1)	10.6 (0.12)
Saudi Arabia	9 (2.7)	453 (23.3)	59 (4.1)	412 (4.4)	32 (3.4)	394 (11.2)	10.2 (0.18)
Croatia	9 (2.5)	499 (6.4)	70 (3.8)	492 (2.2)	21 (3.4)	479 (5.2)	10.7 (0.14)
Sweden	9 (2.7)	522 (10.0)	59 (4.8)	505 (2.8)	32 (4.9)	497 (3.8)	10.3 (0.17)
Kuwait	9 (2.0)	349 (12.4)	65 (3.8)	348 (4.5)	27 (3.8)	327 (6.9)	10.4 (0.17)
Oman	9 (1.8)	376 (7.9)	73 (3.0)	383 (3.9)	18 (2.2)	362 (6.5)	10.6 (0.10)
Austria	8 (2.1)	511 (8.5)	75 (4.4)	511 (2.4)	17 (3.9)	493 (7.4)	10.4 (0.14)
Singapore	8 (0.0)	627 (12.2)	62 (0.0)	610 (4.3)	31 (0.0)	591 (6.3)	10.2 (0.00)
Finland	6 (1.9)	561 (2.1)	71 (4.2)	548 (2.5)	24 (4.2)	536 (5.9)	10.4 (0.16)
Lithuania	6 (2.0)	547 (13.2)	65 (3.6)	541 (3.0)	29 (3.4)	517 (5.6)	10.0 (0.13)
Kazakhstan	5 (1.9)	495 (26.2)	65 (4.4)	506 (6.3)	30 (4.1)	492 (8.5)	10.2 (0.12)
Chile	5 (1.9)	516 (17.1)	30 (3.3)	481 (5.8)	65 (3.8)	452 (4.2)	8.8 (0.19)
Denmark	5 (1.3)	543 (4.5)	65 (3.6)	539 (3.6)	30 (3.3)	540 (3.9)	10.1 (0.11)
Portugal	4 (2.0)	543 (8.6)	64 (5.0)	537 (4.9)	31 (4.5)	522 (6.5)	10.0 (0.13)
Azerbaijan	4 (1.7)	478 (15.9)	44 (3.8)	467 (10.9)	53 (3.8)	456 (6.3)	9.2 (0.15)
Romania	4 (1.6)	547 (13.3)	55 (4.1)	495 (6.8)	41 (4.1)	459 (9.7)	9.5 (0.15)
Poland	3 (1.6)	525 (20.1)	70 (3.5)	484 (2.6)	26 (3.7)	470 (4.1)	9.8 (0.15)
Morocco	3 (1.0)	408 (16.9)	25 (3.1)	357 (10.5)	72 (3.0)	325 (5.5)	8.0 (0.14)
Yemen	2 (1.2)	~ ~	35 (4.2)	260 (8.5)	62 (4.5)	242 (8.5)	8.7 (0.18)
Tunisia	2 (1.3)	~ ~	37 (4.3)	372 (5.6)	60 (4.2)	350 (5.0)	8.8 (0.16)
Spain	2 (1.3)	~ ~	58 (4.1)	491 (3.1)	40 (3.9)	471 (5.2)	9.6 (0.12)
Turkey	2 (1.0)	~ ~	33 (3.3)	493 (8.4)	65 (3.1)	455 (5.7)	8.6 (0.14)
Thailand	2 (1.1)	~ ~	52 (4.8)	463 (5.7)	46 (4.8)	449 (7.9)	9.5 (0.14)
Serbia	2 (1.2)	~ ~	52 (4.0)	521 (4.0)	46 (4.0)	507 (4.5)	9.4 (0.13)
Slovenia	2 (0.8)	~ ~	63 (2.9)	514 (2.8)	35 (3.1)	511 (3.1)	9.6 (0.10)
Russian Federation	2 (0.9)	~ ~	50 (4.4)	547 (5.1)	48 (4.3)	538 (4.5)	9.2 (0.11)
Hong Kong SAR	1 (0.9)	~ ~	60 (4.5)	602 (3.5)	38 (4.6)	601 (6.6)	9.7 (0.16)
Japan	1 (1.0)	~ ~	48 (4.5)	592 (2.7)	51 (4.5)	579 (2.7)	9.0 (0.16)
Italy	1 (0.8)	~ ~	52 (3.7)	507 (3.6)	46 (3.7)	508 (3.9)	9.4 (0.10)
Hungary	1 (0.9)	~ ~	49 (3.9)	537 (4.1)	50 (3.9)	495 (6.0)	9.0 (0.13)
Czech Republic	1 (0.9)	~ ~	45 (3.9)	513 (4.3)	54 (4.0)	509 (2.9)	8.9 (0.13)
Armenia	1 (0.8)	~ ~	56 (4.3)	457 (4.3)	43 (4.3)	446 (6.0)	9.6 (0.12)
Norway	1 (0.1)	~ ~	64 (4.7)	500 (3.5)	34 (4.7)	484 (3.9)	9.8 (0.13)
Germany	1 (0.8)	~ ~	66 (3.4)	537 (2.3)	33 (3.3)	512 (4.1)	9.9 (0.11)
Netherlands	1 (1.0)	~ ~	50 (6.0)	544 (3.0)	49 (6.0)	538 (3.2)	9.3 (0.18)
Georgia	1 (0.9)	~ ~	46 (3.9)	457 (7.1)	53 (3.6)	443 (4.9)	9.1 (0.11)
Slovak Republic	1 (0.7)	~ ~	41 (3.4)	520 (4.7)	58 (3.4)	496 (5.3)	8.8 (0.10)
Belgium (Flemish)	1 (0.0)	~ ~	70 (3.7)	553 (2.2)	30 (3.7)	543 (3.8)	9.9 (0.11)
International Avg.	8 (0.3)	511 (2.2)	58 (0.5)	496 (0.7)	34 (0.5)	477 (0.9)	

Centerpoint of scale set at 10.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

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

An "r" indicates data are available for at least 70% but less than 85% of the students.

Exhibit 6.1: School Emphasis on Academic Success - Principal Reports (Continued)

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sixth Grade Participants							
Honduras	10 (2.5)	385 (14.7)	61 (4.5)	395 (8.9)	29 (4.1)	403 (6.3)	10.2 (0.17)
Botswana	5 (1.8)	505 (24.5)	29 (3.8)	438 (8.1)	66 (4.1)	404 (3.7)	8.8 (0.18)
Yemen	2 (1.2)	~ ~	33 (4.2)	369 (9.0)	65 (4.2)	337 (7.1)	8.7 (0.17)
Benchmarking Participants							
Dubai, UAE	35 (0.3)	495 (3.1)	49 (0.5)	467 (2.3)	16 (0.4)	397 (5.2)	11.8 (0.01)
Alberta, Canada	31 (4.4)	515 (3.5)	58 (4.9)	507 (3.0)	12 (2.8)	490 (9.8)	11.8 (0.17)
Florida, US	27 (5.0)	580 (6.7)	58 (5.3)	532 (4.4)	15 (4.4)	529 (7.2)	11.5 (0.27)
Abu Dhabi, UAE	17 (3.4)	435 (12.5)	68 (3.8)	413 (5.7)	15 (3.0)	393 (13.6)	11.0 (0.17)
Ontario, Canada	12 (2.9)	534 (6.5)	65 (4.3)	522 (3.8)	23 (4.1)	499 (4.2)	10.6 (0.20)
North Carolina, US	7 (4.2)	599 (6.9)	76 (7.1)	558 (5.3)	17 (5.6)	530 (9.0)	10.8 (0.27)
Quebec, Canada	5 (1.6)	563 (11.1)	75 (3.6)	535 (2.4)	21 (3.4)	519 (5.5)	10.4 (0.12)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

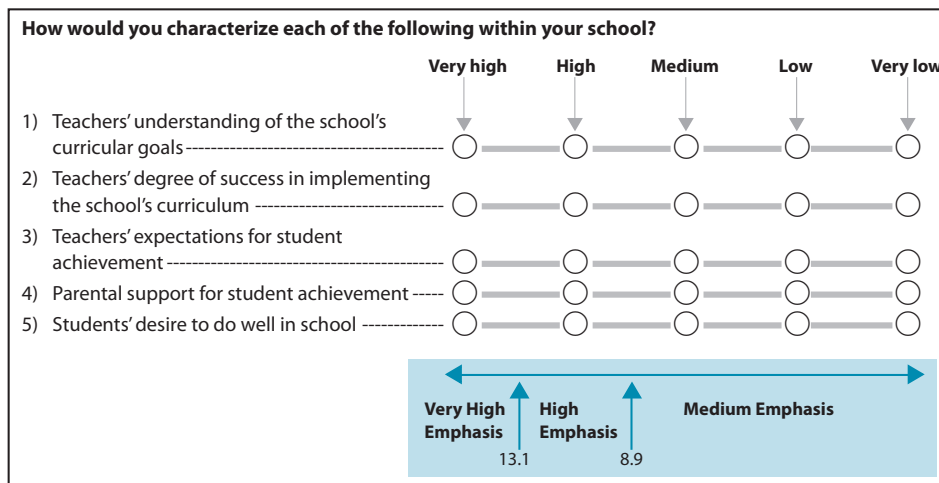


Exhibit 6.2: School Emphasis on Academic Success - Principal Reports

Reported by Principals

Students were scored according to their principals' responses characterizing five aspects on the *School Emphasis on Academic Success* scale. Students in schools where their principals reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.3, which corresponds to their principals characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 9.2, which corresponds to their principals characterizing three of the five aspects as "medium" and the other two as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Qatar	27 (0.3)	453 (4.6)	57 (0.3)	395 (5.0)	16 (0.1)	378 (5.7)	11.5 (0.02)
England	26 (3.5)	525 (12.3)	56 (4.7)	509 (8.2)	19 (3.4)	477 (14.7)	11.6 (0.18)
Australia	20 (2.7)	558 (15.8)	48 (3.8)	509 (5.9)	32 (3.1)	476 (7.4)	10.8 (0.16)
New Zealand	19 (3.8)	524 (9.2)	61 (4.9)	484 (7.1)	20 (3.3)	467 (6.7)	11.1 (0.15)
United Arab Emirates	17 (1.6)	497 (6.5)	63 (2.0)	453 (2.7)	20 (1.8)	426 (4.7)	11.1 (0.09)
Korea, Rep. of	16 (3.2)	637 (7.3)	56 (4.3)	613 (3.8)	28 (3.6)	597 (3.8)	10.7 (0.19)
United States	15 (2.0)	532 (8.0)	61 (2.7)	515 (3.7)	24 (2.1)	486 (5.4)	10.9 (0.09)
Chinese Taipei	12 (2.8)	657 (15.1)	81 (3.3)	605 (3.8)	7 (1.7)	579 (7.7)	11.4 (0.11)
Iran, Islamic Rep. of	12 (2.5)	462 (15.1)	62 (3.6)	418 (6.4)	27 (2.6)	387 (5.7)	10.7 (0.13)
Singapore	11 (0.0)	651 (11.2)	60 (0.0)	614 (4.2)	29 (0.0)	586 (7.8)	10.8 (0.00)
Israel	9 (2.4)	515 (18.7)	75 (3.6)	529 (5.1)	17 (3.0)	471 (13.6)	11.0 (0.13)
Indonesia	8 (2.2)	417 (18.8)	60 (4.8)	387 (6.7)	32 (4.4)	377 (5.9)	10.4 (0.16)
Oman	7 (1.4)	407 (10.7)	67 (2.8)	373 (3.8)	25 (2.6)	332 (4.7)	10.5 (0.10)
Saudi Arabia	7 (2.3)	442 (17.8)	48 (4.5)	396 (6.4)	45 (4.1)	383 (7.6)	9.9 (0.16)
Ghana	6 (1.7)	374 (8.7)	53 (4.6)	337 (7.0)	41 (4.3)	315 (5.7)	10.0 (0.13)
Malaysia	6 (1.9)	467 (25.6)	65 (3.1)	453 (6.7)	29 (2.7)	405 (8.4)	10.4 (0.12)
Kazakhstan	5 (1.8)	513 (22.8)	60 (4.2)	483 (6.3)	35 (4.1)	489 (6.8)	10.2 (0.13)
Jordan	5 (1.6)	439 (10.9)	56 (3.5)	415 (5.1)	39 (3.6)	389 (5.6)	10.0 (0.14)
Chile	5 (1.8)	467 (11.9)	27 (3.3)	451 (5.4)	68 (3.3)	401 (3.7)	8.7 (0.17)
Sweden	5 (2.1)	488 (5.5)	62 (4.6)	491 (3.0)	34 (4.4)	475 (3.6)	10.3 (0.15)
Romania	4 (1.6)	531 (18.0)	55 (4.6)	473 (6.3)	41 (4.6)	432 (6.9)	9.8 (0.16)
Finland	4 (1.8)	530 (8.2)	71 (4.1)	517 (2.8)	25 (3.9)	501 (4.3)	10.4 (0.13)
Syrian Arab Republic	4 (1.7)	350 (20.6)	39 (3.7)	394 (6.1)	57 (3.9)	373 (5.8)	9.3 (0.19)
Bahrain	4 (0.1)	522 (8.0)	57 (0.3)	425 (2.4)	40 (0.3)	375 (3.3)	10.3 (0.01)
Macedonia, Rep. of	3 (1.1)	439 (18.9)	64 (3.6)	440 (6.1)	33 (3.7)	403 (11.7)	10.2 (0.15)
Morocco	3 (0.9)	450 (28.5)	26 (2.7)	393 (5.5)	71 (2.7)	360 (2.5)	8.7 (0.12)
Hong Kong SAR	3 (1.6)	662 (40.2)	51 (4.1)	608 (5.9)	47 (4.3)	554 (7.7)	9.8 (0.15)
Palestinian Nat'l Auth.	3 (1.4)	404 (10.8)	52 (4.1)	408 (5.0)	46 (4.2)	400 (6.5)	9.7 (0.14)
Thailand	3 (1.4)	445 (17.9)	47 (3.9)	436 (8.2)	50 (4.1)	418 (6.2)	9.7 (0.15)
Lebanon	2 (1.2)	~ ~	59 (4.1)	467 (5.4)	39 (3.9)	424 (5.0)	9.8 (0.16)
Slovenia	2 (1.1)	~ ~	62 (3.4)	508 (2.8)	35 (3.5)	499 (4.4)	9.8 (0.12)
Turkey	2 (0.9)	~ ~	33 (3.1)	495 (8.8)	65 (3.0)	429 (4.5)	8.9 (0.11)
Norway	2 (1.1)	~ ~	63 (4.6)	479 (3.3)	35 (4.5)	466 (3.3)	10.1 (0.13)
Lithuania	2 (1.1)	~ ~	56 (3.9)	512 (3.8)	42 (3.9)	489 (5.0)	9.7 (0.12)
Japan	2 (1.1)	~ ~	52 (4.4)	580 (4.0)	47 (4.3)	556 (3.8)	9.7 (0.14)
Hungary	1 (1.0)	~ ~	48 (4.2)	524 (4.1)	51 (4.1)	486 (6.0)	9.3 (0.15)
Tunisia	1 (0.4)	~ ~	18 (3.1)	443 (10.4)	82 (3.0)	421 (3.0)	8.0 (0.14)
Italy	0 (0.0)	~ ~	47 (3.6)	502 (3.6)	53 (3.6)	495 (4.0)	9.4 (0.13)
Armenia	0 (0.0)	~ ~	41 (4.2)	479 (5.3)	59 (4.2)	459 (4.5)	9.3 (0.10)
Georgia	0 (0.0)	~ ~	30 (3.3)	450 (10.7)	70 (3.3)	424 (4.5)	8.7 (0.11)
Russian Federation	0 (0.0)	~ ~	28 (3.0)	563 (7.8)	72 (3.0)	530 (4.0)	8.8 (0.08)
Ukraine	0 (0.0)	~ ~	31 (3.5)	505 (6.2)	69 (3.5)	468 (4.5)	9.0 (0.10)
International Avg.	7 (0.3)	495 (3.1)	53 (0.6)	477 (0.9)	41 (0.5)	449 (1.0)	

Centerpoint of scale set at 10.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

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

An "r" indicates data are available for at least 70% but less than 85% of the students.

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

Exhibit 6.2: School Emphasis on Academic Success - Principal Reports (Continued)

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Ninth Grade Participants							
South Africa	4 (1.0)	470 (45.6)	31 (3.1)	371 (7.6)	66 (3.0)	335 (3.2)	8.9 (0.12)
Honduras	2 (1.0)	~ ~	52 (4.6)	340 (6.3)	47 (4.7)	333 (5.8)	9.4 (0.18)
Botswana	1 (0.8)	~ ~	20 (3.2)	416 (7.0)	79 (3.2)	389 (2.7)	8.2 (0.13)
Benchmarking Participants							
Dubai, UAE	28 (0.4)	519 (5.2)	59 (0.4)	470 (2.6)	13 (0.3)	418 (5.4)	11.8 (0.02)
Massachusetts, US	27 (6.1)	576 (12.9)	51 (6.7)	556 (9.3)	22 (5.8)	546 (14.3)	11.4 (0.34)
Connecticut, US	r 22 (5.6)	542 (17.4)	54 (6.9)	531 (10.5)	24 (5.7)	471 (13.3)	11.2 (0.29)
Alberta, Canada	19 (3.1)	521 (7.5)	68 (4.0)	504 (2.9)	13 (2.7)	493 (5.5)	11.5 (0.15)
Colorado, US	18 (4.6)	546 (10.0)	52 (7.2)	520 (8.5)	30 (5.7)	495 (15.7)	10.9 (0.26)
California, US	r 14 (3.0)	542 (11.7)	63 (5.9)	492 (7.5)	23 (4.9)	462 (10.1)	10.8 (0.21)
Indiana, US	r 13 (5.6)	537 (16.5)	68 (7.0)	522 (7.8)	18 (5.5)	524 (10.6)	11.1 (0.32)
Abu Dhabi, UAE	13 (3.4)	495 (17.5)	64 (4.4)	449 (4.7)	22 (3.9)	422 (6.0)	10.9 (0.18)
Ontario, Canada	13 (3.1)	520 (6.5)	62 (4.4)	517 (2.9)	25 (3.6)	494 (6.9)	10.7 (0.17)
Minnesota, US	12 (5.1)	544 (33.9)	68 (6.0)	549 (5.8)	20 (5.4)	537 (10.7)	11.1 (0.24)
Alabama, US	r 11 (2.8)	512 (27.1)	56 (9.0)	469 (8.2)	33 (9.0)	447 (10.0)	10.6 (0.27)
Florida, US	10 (4.9)	502 (39.8)	66 (8.2)	518 (9.5)	24 (6.9)	502 (10.6)	10.6 (0.31)
North Carolina, US	9 (4.2)	549 (12.7)	46 (7.4)	549 (10.4)	45 (6.6)	520 (11.4)	10.1 (0.25)
Quebec, Canada	7 (1.8)	576 (8.5)	62 (4.1)	537 (3.1)	31 (3.7)	512 (5.0)	10.4 (0.13)

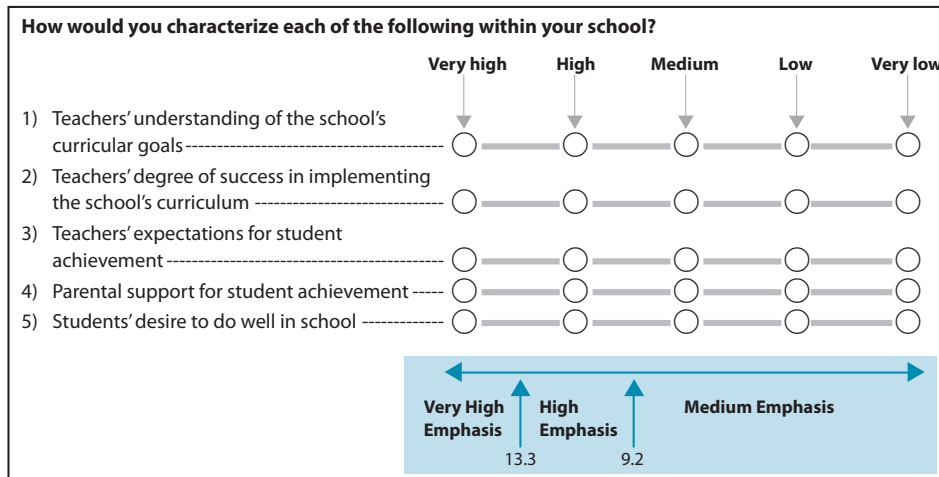


Exhibit 6.3: School Emphasis on Academic Success - Teacher Reports

Reported by Teachers

Students were scored according to their teachers' responses characterizing five aspects on the *School Emphasis on Academic Success* scale. Students in schools where their teachers reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.1, which corresponds to their teachers characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 8.8, which corresponds to their teachers characterizing three of the five aspects as "medium" and the other two as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Northern Ireland	r 31 (4.3)	573 (6.9)	65 (4.4)	559 (4.6)	5 (1.6)	550 (10.5)	11.9 (0.17)
Ireland	22 (3.4)	546 (5.1)	70 (3.5)	526 (3.6)	8 (1.8)	494 (7.6)	11.5 (0.15)
Croatia	21 (3.0)	490 (3.6)	69 (3.6)	489 (2.3)	10 (2.2)	496 (6.7)	11.4 (0.12)
United States	18 (2.1)	560 (4.6)	66 (2.5)	545 (2.2)	16 (1.8)	515 (5.1)	11.0 (0.10)
Korea, Rep. of	17 (3.4)	618 (5.8)	65 (3.8)	605 (2.4)	18 (3.5)	593 (3.3)	10.9 (0.19)
Australia	r 16 (3.0)	550 (12.3)	63 (4.2)	519 (4.4)	20 (3.0)	495 (5.8)	10.8 (0.16)
England	16 (3.0)	563 (7.5)	67 (4.5)	546 (4.7)	17 (3.4)	522 (9.0)	11.1 (0.16)
United Arab Emirates	15 (1.8)	464 (7.6)	66 (2.5)	436 (2.3)	19 (2.1)	409 (8.2)	10.9 (0.10)
New Zealand	14 (2.0)	509 (8.0)	69 (2.8)	487 (3.0)	17 (2.5)	465 (5.5)	10.9 (0.11)
Kazakhstan	12 (2.3)	489 (10.9)	68 (3.4)	504 (5.8)	20 (2.9)	502 (9.6)	10.7 (0.13)
Qatar	11 (2.6)	439 (21.8)	63 (4.8)	414 (5.5)	25 (4.5)	397 (10.1)	10.6 (0.19)
Malta	11 (0.1)	515 (2.7)	70 (0.1)	498 (1.7)	19 (0.1)	477 (2.7)	10.5 (0.00)
Saudi Arabia	11 (2.4)	440 (11.1)	63 (3.8)	419 (6.9)	26 (3.3)	377 (9.7)	10.4 (0.15)
Bahrain	9 (3.0)	499 (14.6)	63 (5.2)	435 (5.5)	28 (4.1)	418 (3.9)	10.3 (0.17)
Iran, Islamic Rep. of	9 (1.8)	452 (13.3)	68 (3.5)	436 (5.1)	23 (3.0)	404 (6.6)	10.5 (0.13)
Romania	9 (2.3)	476 (22.8)	61 (3.7)	498 (5.7)	30 (3.3)	449 (11.6)	10.2 (0.16)
Kuwait	9 (2.4)	343 (14.9)	65 (3.8)	342 (4.1)	26 (3.4)	340 (6.5)	10.2 (0.14)
Austria	8 (1.9)	521 (5.4)	74 (2.8)	510 (3.2)	18 (2.5)	495 (5.7)	10.4 (0.13)
Denmark	8 (2.2)	553 (6.9)	69 (3.4)	543 (2.8)	23 (2.9)	528 (5.2)	10.3 (0.11)
Oman	8 (1.6)	414 (7.9)	65 (2.8)	390 (3.4)	27 (2.6)	365 (5.3)	10.2 (0.10)
Azerbaijan	8 (2.1)	488 (24.2)	39 (3.5)	468 (8.0)	53 (3.5)	458 (6.8)	9.5 (0.14)
Chinese Taipei	7 (1.9)	589 (8.1)	67 (3.8)	594 (2.4)	26 (3.6)	585 (4.8)	10.1 (0.16)
Poland	7 (2.0)	479 (6.4)	76 (3.2)	483 (2.6)	17 (2.8)	472 (3.8)	10.3 (0.12)
Spain	7 (2.1)	496 (7.0)	54 (4.4)	495 (3.0)	39 (4.1)	462 (4.1)	9.7 (0.16)
Sweden	r 7 (1.7)	532 (6.4)	63 (4.3)	508 (2.7)	31 (4.3)	491 (4.3)	10.0 (0.16)
Chile	6 (2.0)	524 (8.0)	43 (3.7)	473 (4.5)	51 (4.0)	445 (4.9)	9.2 (0.16)
Serbia	5 (1.9)	558 (13.6)	69 (3.6)	521 (3.5)	25 (3.3)	493 (7.2)	10.1 (0.13)
Portugal	4 (1.7)	581 (17.2)	56 (4.7)	540 (3.3)	40 (4.6)	516 (6.0)	9.9 (0.18)
Finland	4 (1.6)	550 (9.8)	63 (3.2)	550 (2.4)	33 (3.4)	537 (4.3)	9.9 (0.12)
Turkey	4 (1.1)	532 (11.2)	39 (3.3)	490 (9.3)	57 (3.3)	450 (5.1)	8.8 (0.14)
Lithuania	3 (1.0)	532 (11.9)	74 (3.2)	536 (3.4)	23 (3.2)	526 (4.9)	10.2 (0.09)
Thailand	3 (1.4)	436 (8.6)	55 (4.2)	469 (6.5)	42 (4.3)	448 (7.8)	9.5 (0.16)
Singapore	3 (1.0)	619 (22.8)	61 (2.5)	610 (4.4)	36 (2.5)	597 (5.2)	9.6 (0.10)
Georgia	3 (1.2)	474 (21.5)	59 (4.0)	459 (4.4)	38 (4.0)	435 (6.9)	9.7 (0.13)
Armenia	3 (1.2)	452 (23.8)	57 (3.2)	458 (4.3)	40 (3.2)	445 (5.6)	9.6 (0.12)
Yemen	3 (1.5)	254 (89.1)	39 (4.5)	248 (9.7)	58 (4.4)	245 (7.6)	8.9 (0.18)
Hong Kong SAR	2 (1.3)	~ ~	73 (4.0)	606 (3.7)	25 (3.9)	590 (9.5)	9.9 (0.14)
Morocco	2 (0.8)	~ ~	16 (2.3)	382 (13.8)	82 (2.2)	328 (5.2)	7.6 (0.12)
Belgium (Flemish)	2 (1.1)	~ ~	67 (3.4)	554 (2.1)	31 (3.3)	539 (3.8)	9.8 (0.10)
Slovenia	2 (1.1)	~ ~	66 (3.7)	516 (2.7)	32 (3.5)	506 (3.2)	9.7 (0.10)
Czech Republic	2 (0.9)	~ ~	43 (4.5)	513 (3.3)	55 (4.5)	508 (3.6)	9.0 (0.14)
Tunisia	2 (0.8)	~ ~	42 (3.3)	371 (6.3)	57 (3.2)	349 (5.1)	8.9 (0.15)
Japan	1 (0.8)	~ ~	57 (3.5)	589 (2.1)	42 (3.5)	581 (2.6)	9.4 (0.12)
Norway	1 (0.7)	~ ~	74 (4.2)	496 (3.1)	24 (4.1)	488 (6.0)	9.9 (0.14)
Italy	1 (0.4)	~ ~	56 (3.8)	512 (3.6)	43 (3.9)	504 (4.1)	9.3 (0.12)
Germany	1 (0.8)	~ ~	61 (3.7)	540 (2.1)	38 (3.8)	510 (3.5)	9.4 (0.11)
Hungary	1 (0.7)	~ ~	59 (3.5)	533 (3.8)	40 (3.5)	486 (6.1)	9.4 (0.13)
Slovak Republic	1 (0.4)	~ ~	51 (3.5)	514 (3.4)	48 (3.5)	498 (6.0)	9.2 (0.12)
Russian Federation	1 (0.0)	~ ~	52 (3.9)	544 (3.7)	47 (4.0)	539 (5.9)	9.3 (0.12)
Netherlands	r 0 (0.0)	~ ~	40 (4.2)	545 (3.9)	60 (4.2)	535 (2.7)	9.0 (0.13)
International Avg.	7 (0.3)	503 (3.3)	60 (0.5)	496 (0.7)	33 (0.5)	477 (0.9)	

Centerpoint of scale set at 10.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

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

An "r" indicates data are available for at least 70% but less than 85% of the students.

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

Exhibit 6.3: School Emphasis on Academic Success - Teacher Reports (Continued)

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sixth Grade Participants							
Honduras	12 (3.0)	438 (18.2)	52 (4.4)	397 (6.5)	37 (4.4)	382 (9.4)	10.2 (0.21)
Botswana	4 (2.0)	503 (31.9)	35 (4.1)	432 (6.8)	61 (4.0)	408 (4.7)	8.9 (0.18)
Yemen	2 (1.2)	~ ~	43 (4.4)	355 (9.1)	55 (4.5)	341 (7.7)	8.8 (0.17)
Benchmarking Participants							
Dubai, UAE	24 (2.3)	505 (6.4)	63 (2.7)	465 (3.4)	14 (1.4)	437 (12.0)	11.2 (0.07)
Florida, US	20 (4.3)	563 (9.8)	59 (4.1)	542 (4.4)	22 (3.5)	531 (6.1)	10.9 (0.27)
Alberta, Canada	18 (4.1)	508 (6.1)	70 (3.7)	511 (2.9)	11 (2.7)	478 (10.5)	11.2 (0.17)
Abu Dhabi, UAE	13 (3.0)	441 (15.4)	66 (4.1)	421 (4.4)	20 (4.2)	394 (15.9)	11.0 (0.18)
Ontario, Canada	11 (2.3)	531 (7.7)	62 (3.7)	522 (3.3)	26 (3.4)	507 (6.3)	10.4 (0.16)
North Carolina, US	7 (3.1)	587 (18.1)	67 (4.6)	554 (5.1)	25 (5.2)	539 (6.4)	10.3 (0.24)
Quebec, Canada	5 (1.9)	555 (11.7)	67 (4.1)	535 (2.8)	28 (4.1)	523 (3.6)	10.2 (0.15)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

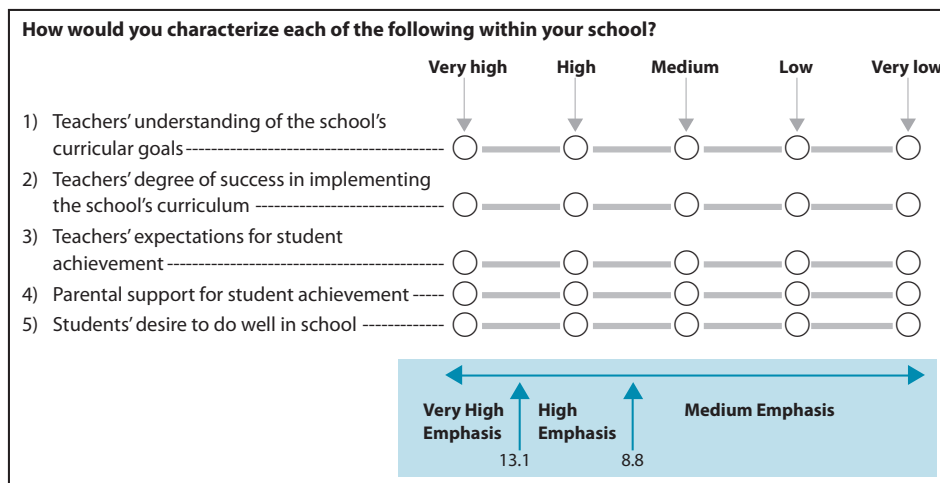


Exhibit 6.4: School Emphasis on Academic Success - Teacher Reports

Reported by Teachers

Students were scored according to their teachers' responses characterizing five aspects on the *School Emphasis on Academic Success* scale. Students in schools where their teachers reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.6, which corresponds to their teachers characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 9.5, which corresponds to their teachers characterizing three of the five aspects as "medium" and the other two as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Qatar	19 (4.2)	440 (15.5)	54 (4.5)	413 (6.0)	27 (3.2)	380 (8.4)	11.4 (0.17)
England	16 (2.4)	526 (11.0)	59 (4.1)	508 (7.3)	24 (3.9)	488 (12.2)	11.2 (0.19)
United States	13 (2.0)	538 (10.1)	55 (2.6)	517 (4.9)	32 (2.4)	494 (4.7)	10.8 (0.12)
Australia	13 (2.4)	569 (15.2)	50 (3.7)	515 (7.7)	37 (3.9)	475 (7.5)	10.4 (0.17)
United Arab Emirates	11 (1.6)	500 (9.0)	62 (2.3)	457 (2.5)	26 (2.2)	430 (4.2)	11.0 (0.09)
Chinese Taipei	11 (2.2)	659 (11.6)	63 (3.7)	612 (4.7)	26 (3.3)	583 (5.7)	11.0 (0.12)
Israel	10 (2.1)	561 (13.3)	61 (3.1)	528 (5.1)	29 (2.6)	485 (9.4)	10.8 (0.12)
Malaysia	9 (2.1)	473 (19.9)	59 (4.1)	447 (6.7)	32 (3.9)	419 (9.1)	10.7 (0.16)
New Zealand	9 (2.1)	520 (17.4)	59 (3.4)	491 (6.8)	32 (3.2)	468 (9.6)	10.7 (0.16)
Indonesia	9 (3.0)	388 (15.9)	55 (4.4)	391 (6.2)	36 (4.3)	377 (8.2)	10.7 (0.17)
Saudi Arabia	8 (2.4)	406 (19.0)	54 (4.1)	406 (5.8)	38 (3.8)	376 (6.6)	10.5 (0.16)
Korea, Rep. of	8 (1.5)	624 (8.2)	56 (3.3)	615 (4.4)	36 (3.1)	605 (4.3)	10.4 (0.13)
Bahrain	5 (0.1)	505 (6.2)	43 (3.1)	428 (4.4)	52 (3.1)	384 (3.1)	9.9 (0.08)
Oman	5 (1.5)	417 (12.7)	54 (3.0)	385 (4.2)	41 (2.7)	334 (4.9)	10.1 (0.12)
Jordan	5 (1.9)	447 (17.2)	50 (4.2)	416 (5.5)	45 (3.8)	390 (6.1)	10.1 (0.14)
Iran, Islamic Rep. of	5 (1.8)	484 (19.9)	47 (3.5)	424 (6.5)	48 (3.4)	399 (5.7)	9.9 (0.15)
Japan	5 (1.9)	599 (14.3)	52 (4.2)	578 (3.9)	43 (4.2)	557 (3.5)	10.0 (0.18)
Ghana	5 (1.7)	367 (23.9)	66 (3.8)	337 (5.8)	29 (3.6)	310 (5.0)	10.7 (0.14)
Turkey	4 (1.4)	586 (37.4)	27 (3.0)	481 (7.5)	69 (3.1)	433 (4.1)	8.7 (0.17)
Romania	4 (1.6)	523 (18.8)	47 (3.7)	473 (6.1)	49 (3.6)	438 (6.4)	10.0 (0.13)
Kazakhstan	4 (1.6)	503 (23.5)	69 (3.8)	484 (5.7)	27 (3.6)	493 (6.7)	10.6 (0.11)
Lebanon	4 (1.5)	496 (8.9)	53 (4.2)	465 (5.9)	43 (4.0)	427 (4.6)	10.1 (0.17)
Macedonia, Rep. of	4 (1.6)	420 (23.7)	45 (4.1)	435 (10.4)	51 (4.1)	414 (7.1)	9.8 (0.15)
Singapore	4 (1.1)	681 (12.8)	55 (2.6)	625 (5.1)	41 (2.4)	587 (6.2)	10.2 (0.09)
Sweden	3 (1.4)	517 (13.6)	55 (3.7)	492 (2.9)	42 (3.5)	475 (2.9)	10.2 (0.13)
Norway	3 (1.4)	501 (5.4)	61 (4.4)	482 (2.7)	36 (4.4)	462 (3.3)	10.4 (0.12)
Syrian Arab Republic	3 (1.4)	409 (37.0)	45 (4.5)	386 (5.8)	52 (4.5)	371 (6.7)	9.7 (0.18)
Chile	3 (1.1)	498 (16.1)	30 (3.4)	441 (6.6)	67 (3.5)	403 (3.4)	9.0 (0.15)
Hong Kong SAR	2 (1.4)	~ ~	50 (4.5)	615 (6.6)	47 (4.3)	553 (6.9)	10.0 (0.15)
Morocco	2 (0.9)	~ ~	23 (2.8)	393 (5.9)	76 (3.0)	363 (2.1)	8.5 (0.14)
Lithuania	2 (0.9)	~ ~	60 (3.6)	508 (4.0)	38 (3.6)	493 (4.1)	10.1 (0.11)
Thailand	2 (1.1)	~ ~	44 (3.6)	442 (7.4)	55 (3.7)	415 (5.8)	9.7 (0.13)
Palestinian Nat'l Auth.	1 (1.0)	~ ~	51 (4.3)	406 (4.9)	47 (4.1)	403 (5.8)	9.8 (0.12)
Finland	1 (0.9)	~ ~	51 (3.7)	518 (3.4)	47 (3.8)	510 (2.8)	10.1 (0.11)
Slovenia	1 (0.5)	~ ~	47 (3.0)	510 (2.9)	52 (3.0)	500 (2.7)	9.7 (0.09)
Hungary	1 (0.5)	~ ~	42 (3.7)	529 (5.3)	57 (3.7)	486 (5.1)	9.4 (0.13)
Georgia	0 (0.4)	~ ~	22 (3.5)	447 (10.7)	77 (3.5)	426 (4.2)	8.9 (0.11)
Tunisia	0 (0.2)	~ ~	24 (3.1)	437 (7.9)	76 (3.1)	421 (2.9)	8.7 (0.12)
Armenia	0 (0.0)	~ ~	26 (3.4)	482 (6.7)	74 (3.4)	460 (3.5)	9.0 (0.12)
Russian Federation	0 (0.2)	~ ~	31 (3.4)	568 (6.0)	69 (3.4)	527 (4.2)	9.0 (0.11)
Italy	0 (0.0)	~ ~	36 (3.9)	508 (4.3)	64 (3.9)	494 (3.7)	9.2 (0.12)
Ukraine	0 (0.0)	~ ~	33 (4.1)	505 (6.8)	67 (4.1)	467 (4.7)	9.3 (0.11)
International Avg.	5 (0.3)	506 (3.4)	48 (0.6)	478 (0.9)	47 (0.5)	452 (0.9)	

Centerpoint of scale set at 10.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

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

An "r" indicates data are available for at least 70% but less than 85% of the students.

SOURCE: IEA's Trends in International Mathematics and Science Study - TIMSS 2011

Exhibit 6.4: School Emphasis on Academic Success - Teacher Reports (Continued)

Country	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Ninth Grade Participants							
Honduras	5 (2.2)	349 (23.7)	42 (5.2)	338 (8.1)	53 (4.9)	336 (5.6)	9.7 (0.19)
South Africa	2 (0.6)	~ ~	39 (3.6)	368 (5.9)	59 (3.6)	339 (3.7)	9.4 (0.14)
Botswana	0 (0.0)	~ ~	32 (3.6)	415 (5.9)	67 (3.6)	387 (2.6)	9.0 (0.14)
Benchmarking Participants							
Alberta, Canada	18 (3.1)	517 (6.4)	64 (3.6)	503 (3.4)	17 (3.2)	498 (5.4)	11.4 (0.15)
Massachusetts, US	17 (3.6)	593 (12.3)	58 (5.7)	557 (8.3)	25 (4.7)	546 (17.0)	11.3 (0.20)
Abu Dhabi, UAE	15 (3.7)	499 (16.3)	54 (4.5)	444 (4.4)	30 (4.2)	434 (7.0)	11.0 (0.20)
California, US	r 13 (5.0)	534 (21.0)	55 (5.8)	504 (9.5)	32 (4.2)	462 (9.4)	10.5 (0.25)
Colorado, US	r 11 (4.4)	555 (16.1)	57 (6.8)	534 (6.9)	31 (6.0)	475 (12.2)	10.9 (0.26)
North Carolina, US	r 11 (4.1)	561 (36.0)	65 (6.3)	549 (8.7)	24 (5.6)	511 (8.9)	11.0 (0.23)
Dubai, UAE	11 (1.8)	533 (11.5)	66 (3.3)	479 (3.8)	23 (2.8)	436 (6.4)	11.2 (0.12)
Minnesota, US	10 (2.3)	584 (26.1)	59 (4.4)	544 (7.1)	32 (4.8)	537 (10.0)	10.8 (0.21)
Connecticut, US	9 (3.6)	539 (13.9)	68 (5.7)	528 (8.5)	22 (4.9)	490 (13.3)	10.9 (0.21)
Ontario, Canada	7 (2.0)	530 (9.7)	62 (3.9)	516 (3.5)	32 (3.9)	502 (3.8)	10.7 (0.16)
Alabama, US	r 5 (2.9)	565 (18.2)	56 (7.8)	468 (9.4)	39 (7.5)	454 (7.4)	10.3 (0.32)
Indiana, US	r 4 (2.1)	561 (18.5)	74 (5.4)	519 (6.0)	22 (5.0)	508 (11.7)	10.6 (0.18)
Quebec, Canada	4 (1.7)	568 (20.4)	46 (4.2)	542 (4.1)	50 (4.1)	520 (3.2)	9.6 (0.17)
Florida, US	r 2 (1.8)	~ ~	48 (7.3)	536 (10.9)	50 (7.6)	504 (11.1)	9.9 (0.33)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

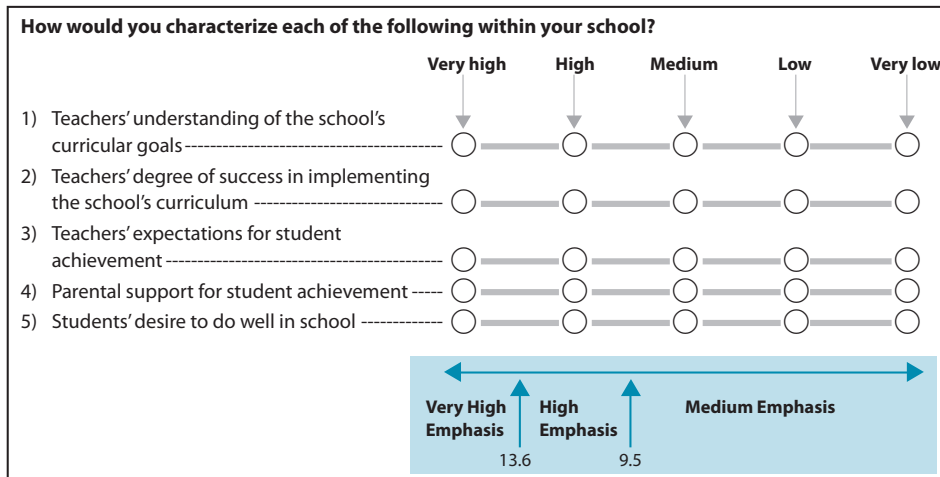


Exhibit 6.5: Principals Spend Time on Leadership Activities

Reported by Principals

Country	Percent of Students Whose Principals Spend "A Lot of Time"								
	Promoting the School's Educational Vision or Goals	Developing the School's Curricular and Educational Goals	Monitoring Teachers' Implementation of the School's Educational Goals in Their Teaching	Monitoring Students' Learning Progress to Ensure that the School's Educational Goals Are Reached	Keeping an Orderly Atmosphere in the School	Addressing Disruptive Student Behavior	Advising Teachers Who Have Questions or Problems with Their Teaching	Initiating Educational Projects or Improvements	Participating in Professional Development Activities Specifically for School Principals
Armenia	80 (3.4)	75 (4.0)	60 (4.3)	62 (3.8)	66 (4.3)	32 (4.2)	23 (3.7)	23 (3.4)	31 (4.0)
Australia	60 (4.1)	73 (3.8)	52 (4.6)	68 (3.8)	63 (3.6)	35 (3.8)	27 (3.4)	53 (4.4)	33 (3.7)
Austria	41 (3.9)	13 (3.0)	24 (3.4)	27 (3.2)	73 (4.3)	41 (4.6)	39 (4.5)	22 (3.6)	44 (3.9)
Azerbaijan	50 (4.4)	55 (4.3)	33 (4.0)	40 (4.8)	79 (3.7)	38 (4.4)	29 (3.3)	27 (3.9)	38 (4.0)
Bahrain	70 (4.6)	77 (4.2)	85 (2.9)	85 (3.1)	87 (3.0)	52 (4.8)	72 (4.4)	71 (4.6)	46 (5.8)
Belgium (Flemish)	35 (3.8)	30 (3.7)	24 (3.8)	22 (3.2)	36 (4.4)	31 (3.7)	28 (4.0)	29 (4.4)	34 (4.3)
Chile	59 (4.0)	75 (3.8)	55 (4.3)	63 (4.5)	74 (3.7)	62 (3.4)	39 (4.5)	45 (4.1)	37 (3.9)
Chinese Taipei	72 (3.6)	69 (3.8)	59 (3.9)	54 (3.6)	49 (4.4)	15 (3.0)	44 (4.2)	53 (4.2)	57 (4.4)
Croatia	64 (3.9)	69 (3.9)	39 (4.2)	41 (3.8)	84 (2.9)	50 (4.0)	43 (4.3)	32 (4.0)	70 (3.7)
Czech Republic	69 (3.9)	64 (4.0)	54 (4.3)	66 (3.8)	95 (1.7)	58 (4.2)	40 (4.5)	61 (3.7)	42 (4.1)
Denmark	r 28 (3.9)	r 24 (3.6)	r 6 (2.0)	r 9 (1.9)	r 62 (4.0)	r 26 (2.9)	r 24 (3.5)	r 24 (3.3)	r 17 (2.9)
England	61 (4.0)	62 (5.0)	56 (4.4)	76 (4.5)	53 (4.8)	25 (4.0)	17 (3.3)	37 (4.6)	17 (3.7)
Finland	36 (3.8)	34 (4.4)	18 (3.0)	12 (2.1)	33 (4.6)	26 (4.1)	16 (2.9)	28 (4.1)	23 (3.6)
Georgia	42 (4.8)	36 (4.5)	39 (4.0)	55 (3.7)	72 (3.9)	51 (4.2)	19 (3.5)	20 (3.3)	27 (3.5)
Germany	49 (3.4)	47 (3.3)	15 (2.6)	18 (2.6)	56 (3.6)	49 (3.5)	28 (3.2)	24 (3.2)	17 (2.6)
Hong Kong SAR	52 (4.5)	68 (4.3)	58 (4.4)	62 (4.0)	60 (4.1)	11 (2.6)	16 (3.4)	42 (4.8)	31 (4.3)
Hungary	80 (3.6)	72 (4.0)	59 (4.0)	62 (4.2)	79 (3.2)	59 (4.0)	34 (4.0)	41 (4.4)	35 (4.2)
Iran, Islamic Rep. of	77 (3.1)	88 (2.7)	79 (3.9)	86 (2.5)	89 (2.0)	82 (2.7)	61 (3.6)	44 (3.9)	67 (3.3)
Ireland	40 (4.5)	60 (4.5)	19 (3.2)	34 (4.4)	64 (3.9)	29 (4.0)	10 (2.4)	31 (3.8)	16 (2.8)
Italy	83 (3.6)	62 (3.8)	43 (3.9)	47 (4.2)	49 (3.7)	31 (3.3)	48 (3.7)	61 (3.7)	35 (3.3)
Japan	40 (4.0)	28 (3.8)	47 (4.1)	31 (4.2)	41 (4.0)	15 (3.0)	27 (3.6)	26 (3.9)	17 (3.1)
Kazakhstan	73 (3.0)	77 (3.5)	74 (3.9)	66 (3.9)	69 (3.5)	44 (3.9)	47 (3.6)	58 (4.4)	54 (4.4)
Korea, Rep. of	88 (2.5)	82 (3.5)	81 (3.7)	75 (4.0)	88 (2.9)	77 (3.6)	72 (3.8)	75 (4.0)	80 (2.9)
Kuwait	68 (4.0)	58 (4.1)	82 (3.2)	85 (3.0)	84 (3.2)	73 (3.5)	73 (3.7)	72 (3.6)	67 (4.2)
Lithuania	74 (3.7)	90 (2.4)	60 (3.6)	68 (4.0)	62 (4.5)	42 (3.8)	48 (4.3)	41 (4.3)	44 (3.9)
Malta	58 (0.1)	67 (0.1)	32 (0.1)	40 (0.1)	71 (0.1)	39 (0.1)	39 (0.1)	44 (0.1)	26 (0.1)
Morocco	64 (3.4)	58 (3.6)	63 (3.9)	59 (4.0)	91 (2.1)	66 (3.0)	56 (3.7)	43 (3.8)	42 (3.9)
Netherlands	r 33 (5.2)	r 49 (5.5)	r 48 (4.6)	r 44 (5.9)	r 14 (4.1)	r 15 (4.4)	r 31 (5.5)	r 43 (5.1)	r 23 (5.1)
New Zealand	65 (3.5)	70 (4.0)	45 (3.8)	71 (3.5)	47 (3.6)	21 (3.1)	24 (3.5)	41 (3.6)	18 (3.0)
Northern Ireland	47 (4.5)	73 (3.9)	r 35 (4.6)	61 (4.2)	54 (5.2)	13 (2.9)	r 7 (2.1)	r 35 (4.5)	r 23 (4.5)
Norway	27 (4.4)	19 (3.7)	17 (3.3)	17 (3.2)	56 (4.6)	31 (4.4)	16 (3.5)	23 (4.1)	24 (4.3)
Oman	40 (3.2)	r 18 (2.4)	75 (3.4)	80 (3.1)	82 (2.5)	45 (3.5)	51 (3.5)	36 (3.4)	24 (2.5)
Poland	56 (3.9)	49 (4.2)	59 (4.0)	75 (3.3)	76 (3.8)	40 (3.9)	29 (3.9)	51 (4.1)	54 (4.2)
Portugal	63 (4.4)	50 (5.4)	35 (4.7)	41 (4.9)	49 (4.9)	38 (5.3)	8 (2.6)	28 (5.4)	6 (1.8)
Qatar	70 (2.5)	81 (2.3)	81 (2.4)	81 (2.5)	85 (2.5)	64 (2.7)	69 (2.9)	61 (3.4)	54 (3.2)
Romania	84 (3.3)	84 (3.2)	81 (3.5)	84 (3.0)	87 (2.5)	73 (3.6)	57 (4.3)	63 (3.8)	69 (4.2)
Russian Federation	80 (2.8)	81 (2.6)	81 (2.6)	74 (2.9)	87 (2.1)	64 (3.1)	34 (3.1)	52 (3.6)	64 (4.0)
Saudi Arabia	48 (4.4)	61 (4.1)	77 (3.3)	76 (3.5)	78 (3.5)	57 (3.7)	52 (3.9)	45 (4.4)	40 (4.3)
Serbia	63 (3.3)	72 (3.9)	47 (4.8)	42 (4.6)	64 (3.7)	48 (4.0)	41 (4.1)	47 (4.2)	31 (3.7)
Singapore	76 (0.0)	80 (0.0)	66 (0.0)	77 (0.0)	66 (0.0)	32 (0.0)	33 (0.0)	58 (0.0)	47 (0.0)
Slovak Republic	56 (3.6)	69 (3.6)	45 (3.9)	42 (3.9)	60 (3.7)	55 (3.3)	34 (3.6)	46 (3.7)	46 (3.8)
Slovenia	68 (3.1)	62 (4.1)	61 (3.5)	69 (4.0)	92 (2.2)	59 (3.8)	53 (4.0)	62 (3.9)	73 (3.4)
Spain	58 (4.1)	62 (3.8)	40 (4.4)	47 (4.4)	68 (3.8)	39 (4.2)	19 (3.7)	47 (4.1)	33 (3.6)
Sweden	52 (4.4)	40 (4.8)	17 (3.2)	28 (4.2)	24 (3.7)	19 (3.6)	27 (4.0)	28 (4.1)	16 (3.6)
Thailand	68 (3.9)	74 (3.9)	76 (3.3)	77 (3.6)	94 (2.0)	51 (3.9)	74 (3.4)	68 (4.4)	69 (3.9)
Tunisia	49 (4.4)	52 (4.6)	54 (4.4)	61 (4.9)	86 (2.9)	61 (3.8)	49 (4.0)	26 (3.6)	18 (2.8)
Turkey	63 (3.2)	56 (3.7)	62 (3.6)	54 (3.6)	86 (2.4)	79 (2.8)	55 (3.7)	45 (3.4)	46 (3.2)
United Arab Emirates	69 (2.1)	77 (2.2)	82 (1.8)	85 (1.4)	82 (1.8)	55 (2.1)	62 (2.0)	65 (2.0)	47 (1.9)
United States	72 (2.8)	68 (2.3)	71 (2.4)	76 (2.1)	69 (3.0)	42 (2.8)	42 (2.6)	46 (2.9)	34 (2.7)
Yemen	48 (4.6)	47 (4.2)	71 (4.3)	64 (4.3)	84 (3.2)	64 (4.7)	52 (4.7)	18 (3.5)	28 (4.0)
International Avg.	59 (0.5)	60 (0.5)	53 (0.5)	57 (0.5)	68 (0.5)	44 (0.5)	39 (0.5)	43 (0.6)	39 (0.5)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent. An "r" indicates data are available for at least 70% but less than 85% of the students.

Exhibit 6.5: Principals Spend Time on Leadership Activities (Continued)

Country	Percent of Students Whose Principals Spend "A Lot of Time"								
	Promoting the School's Educational Vision or Goals	Developing the School's Curricular and Educational Goals	Monitoring Teachers' Implementation of the School's Educational Goals in Their Teaching	Monitoring Students' Learning Progress to Ensure that the School's Educational Goals Are Reached	Keeping an Orderly Atmosphere in the School	Addressing Disruptive Student Behavior	Advising Teachers Who Have Questions or Problems with Their Teaching	Initiating Educational Projects or Improvements	Participating in Professional Development Activities Specifically for School Principals
Sixth Grade Participants									
Botswana	68 (3.7)	67 (3.9)	83 (2.8)	82 (3.0)	87 (2.5)	62 (4.6)	57 (3.6)	45 (4.2)	52 (4.7)
Honduras	58 (4.5)	63 (4.7)	51 (5.1)	65 (4.4)	90 (2.5)	72 (4.8)	56 (4.6)	63 (4.7)	51 (4.9)
Yemen	49 (4.6)	53 (4.3)	75 (3.9)	66 (4.2)	84 (2.9)	64 (4.6)	56 (4.3)	19 (3.8)	32 (4.3)
Benchmarking Participants									
Alberta, Canada	63 (4.3)	60 (4.7)	44 (4.6)	45 (4.8)	67 (4.1)	30 (4.4)	23 (4.1)	38 (4.4)	30 (4.0)
Ontario, Canada	65 (4.2)	76 (4.0)	53 (4.4)	61 (4.4)	75 (3.8)	52 (4.6)	32 (4.2)	43 (4.3)	44 (4.0)
Quebec, Canada	44 (4.7)	41 (4.3)	18 (3.4)	36 (3.8)	47 (4.3)	47 (4.7)	29 (4.0)	31 (4.0)	19 (3.2)
Abu Dhabi, UAE	78 (3.9)	79 (3.6)	83 (3.3)	87 (2.7)	82 (3.0)	51 (4.4)	66 (4.1)	64 (4.4)	59 (3.7)
Dubai, UAE	72 (0.4)	82 (0.4)	79 (0.4)	80 (0.4)	80 (0.2)	58 (0.5)	55 (0.5)	71 (0.4)	43 (0.3)
Florida, US	r 82 (4.1)	r 79 (5.5)	r 79 (5.0)	r 88 (2.8)	r 77 (6.1)	r 39 (6.5)	r 36 (6.0)	r 38 (5.9)	r 43 (6.3)
North Carolina, US	81 (5.9)	76 (6.8)	88 (4.7)	84 (5.9)	72 (7.2)	29 (7.5)	33 (6.7)	30 (7.9)	41 (7.8)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

Exhibit 6.6: Principals Spend Time on Leadership Activities

Reported by Principals

Country	Percent of Students Whose Principals Spend "A Lot of Time"								
	Promoting the School's Educational Vision or Goals	Developing the School's Curricular and Educational Goals	Monitoring Teachers' Implementation of the School's Educational Goals in Their Teaching	Monitoring Students' Learning Progress to Ensure that the School's Educational Goals Are Reached	Keeping an Orderly Atmosphere in the School	Addressing Disruptive Student Behavior	Advising Teachers Who Have Questions or Problems with Their Teaching	Initiating Educational Projects or Improvements	Participating in Professional Development Activities Specifically for School Principals
Armenia	79 (3.5)	75 (3.4)	66 (3.8)	59 (3.9)	69 (4.4)	31 (4.3)	26 (3.6)	23 (3.3)	32 (4.0)
Australia	64 (3.3)	63 (4.1)	34 (3.5)	53 (3.9)	55 (3.5)	35 (3.8)	19 (3.0)	52 (4.1)	30 (3.9)
Bahrain	60 (0.3)	71 (0.3)	78 (0.3)	81 (0.3)	88 (0.2)	70 (0.3)	67 (0.3)	61 (0.3)	46 (0.3)
Chile	65 (4.1)	78 (3.2)	54 (4.4)	58 (4.8)	78 (3.0)	66 (3.7)	37 (4.1)	46 (4.2)	38 (4.2)
Chinese Taipei	62 (3.8)	54 (3.8)	47 (4.0)	54 (4.0)	75 (3.5)	22 (3.6)	25 (3.7)	29 (3.6)	31 (4.2)
England	64 (4.6)	67 (4.4)	55 (4.5)	75 (3.8)	51 (4.6)	29 (4.0)	20 (3.1)	33 (4.7)	9 (2.7)
Finland	34 (4.4)	25 (3.9)	22 (3.8)	28 (4.0)	44 (4.3)	37 (4.1)	17 (3.1)	21 (3.9)	16 (3.2)
Georgia	76 (3.7)	71 (4.3)	72 (3.1)	75 (3.4)	84 (2.9)	68 (4.2)	50 (4.2)	38 (3.9)	52 (3.7)
Ghana	67 (3.9)	48 (4.5)	86 (3.0)	88 (2.8)	89 (2.8)	57 (3.8)	50 (4.4)	25 (3.7)	36 (4.1)
Hong Kong SAR	41 (4.9)	47 (5.1)	48 (4.9)	41 (5.3)	54 (4.9)	11 (2.9)	21 (3.9)	21 (4.4)	24 (4.2)
Hungary	78 (3.7)	71 (3.7)	57 (4.4)	63 (4.0)	78 (3.6)	58 (4.4)	40 (4.1)	39 (4.0)	44 (4.1)
Indonesia	85 (2.8)	85 (3.8)	80 (3.8)	85 (3.4)	95 (2.3)	87 (2.8)	76 (3.5)	38 (4.8)	75 (3.8)
Iran, Islamic Rep. of	84 (2.2)	91 (1.9)	81 (3.0)	92 (2.0)	93 (1.6)	80 (2.9)	48 (3.5)	48 (3.8)	61 (3.7)
Israel	80 (3.4)	71 (3.7)	62 (4.0)	75 (3.6)	85 (3.1)	76 (3.5)	64 (4.1)	67 (4.0)	64 (4.2)
Italy	79 (2.9)	61 (4.0)	40 (4.0)	56 (4.2)	64 (4.0)	49 (4.2)	39 (3.5)	61 (3.7)	29 (3.3)
Japan	31 (3.9)	21 (3.7)	32 (4.0)	19 (3.0)	48 (3.9)	21 (3.2)	18 (3.4)	21 (3.7)	11 (2.7)
Jordan	62 (3.9)	67 (3.8)	88 (2.7)	82 (3.3)	95 (2.0)	84 (2.8)	72 (3.6)	42 (3.6)	41 (3.9)
Kazakhstan	72 (3.8)	79 (3.0)	66 (4.1)	71 (3.7)	64 (4.2)	41 (4.0)	46 (4.1)	58 (4.0)	47 (4.3)
Korea, Rep. of	88 (3.1)	78 (3.7)	77 (3.2)	73 (3.5)	89 (2.5)	70 (3.1)	61 (3.7)	64 (3.7)	75 (3.1)
Lebanon	75 (3.7)	67 (3.8)	76 (4.1)	84 (3.0)	85 (3.2)	73 (3.9)	76 (3.7)	42 (3.9)	45 (4.2)
Lithuania	74 (3.8)	82 (3.4)	42 (4.2)	61 (4.3)	71 (3.9)	41 (4.1)	38 (4.2)	47 (4.5)	42 (4.2)
Macedonia, Rep. of	50 (4.0)	57 (3.7)	46 (3.9)	53 (4.2)	59 (3.7)	42 (3.9)	37 (3.7)	45 (3.7)	43 (3.7)
Malaysia	71 (3.7)	76 (2.9)	74 (3.5)	79 (2.7)	87 (2.4)	75 (3.4)	55 (4.1)	36 (3.5)	42 (3.8)
Morocco	61 (3.3)	48 (2.6)	58 (3.0)	59 (3.7)	92 (1.8)	75 (3.3)	51 (3.0)	55 (3.6)	39 (3.2)
New Zealand	57 (5.1)	59 (5.2)	30 (4.4)	42 (5.6)	54 (5.1)	31 (5.3)	16 (3.3)	37 (3.7)	20 (4.5)
Norway	29 (3.8)	20 (3.6)	20 (3.1)	22 (3.2)	54 (3.7)	45 (4.7)	20 (3.6)	15 (3.1)	16 (3.6)
Oman	52 (3.4)	21 (2.3)	79 (2.5)	77 (2.5)	86 (2.2)	47 (3.3)	56 (3.3)	28 (2.9)	28 (3.4)
Palestinian Nat'l Auth.	60 (4.1)	58 (3.8)	90 (1.5)	92 (2.0)	89 (2.5)	75 (3.3)	58 (3.9)	32 (3.8)	37 (3.8)
Qatar	72 (0.8)	78 (0.5)	79 (1.0)	83 (1.1)	82 (1.1)	69 (1.0)	66 (1.0)	57 (0.9)	54 (0.9)
Romania	87 (2.8)	86 (3.2)	85 (2.9)	84 (3.6)	92 (2.6)	69 (4.1)	55 (4.4)	65 (4.0)	71 (4.2)
Russian Federation	80 (2.7)	82 (2.6)	68 (3.4)	69 (2.8)	78 (2.7)	51 (3.6)	27 (2.8)	54 (3.7)	61 (3.5)
Saudi Arabia	53 (4.3)	59 (3.8)	81 (3.2)	72 (3.2)	88 (2.7)	70 (3.5)	56 (4.5)	37 (3.6)	34 (3.7)
Singapore	68 (0.0)	66 (0.0)	63 (0.0)	72 (0.0)	56 (0.0)	27 (0.0)	21 (0.0)	42 (0.0)	26 (0.0)
Slovenia	58 (3.6)	56 (4.2)	60 (3.9)	62 (3.6)	83 (3.1)	50 (3.9)	48 (4.5)	48 (3.9)	72 (3.5)
Sweden	r 45 (4.8)	r 44 (4.7)	r 20 (3.8)	r 35 (4.3)	r 45 (4.7)	r 29 (3.9)	r 21 (3.6)	r 22 (4.1)	r 24 (3.7)
Syrian Arab Republic	49 (4.3)	49 (4.5)	75 (3.7)	75 (3.6)	86 (3.0)	74 (3.6)	57 (4.5)	23 (3.4)	22 (3.5)
Thailand	72 (3.9)	78 (3.7)	69 (4.1)	68 (4.0)	85 (2.7)	51 (4.0)	61 (4.3)	57 (4.1)	76 (3.4)
Tunisia	39 (3.9)	39 (3.7)	51 (3.8)	59 (3.5)	89 (2.4)	75 (2.9)	44 (4.0)	21 (3.0)	14 (2.6)
Turkey	69 (2.7)	63 (2.9)	65 (3.2)	60 (3.6)	85 (2.4)	81 (2.7)	52 (3.5)	42 (3.1)	48 (3.4)
Ukraine	59 (4.3)	60 (4.0)	84 (3.6)	57 (4.4)	56 (4.1)	36 (4.0)	30 (3.9)	43 (4.2)	22 (3.4)
United Arab Emirates	67 (1.9)	76 (2.0)	83 (1.8)	81 (1.8)	80 (1.8)	56 (2.2)	57 (2.4)	59 (2.1)	48 (2.4)
United States	65 (2.6)	64 (2.2)	64 (2.2)	65 (2.3)	75 (2.2)	46 (2.5)	38 (2.2)	44 (2.5)	36 (2.6)
International Avg.	64 (0.6)	62 (0.5)	62 (0.5)	65 (0.5)	75 (0.5)	54 (0.5)	44 (0.6)	41 (0.6)	40 (0.5)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent. An "r" indicates data are available for at least 70% but less than 85% of the students.

Exhibit 6.6: Principals Spend Time on Leadership Activities (Continued)

Country	Percent of Students Whose Principals Spend "A Lot of Time"								
	Promoting the School's Educational Vision or Goals	Developing the School's Curricular and Educational Goals	Monitoring Teachers' Implementation of the School's Educational Goals in Their Teaching	Monitoring Students' Learning Progress to Ensure that the School's Educational Goals Are Reached	Keeping an Orderly Atmosphere in the School	Addressing Disruptive Student Behavior	Advising Teachers Who Have Questions or Problems with Their Teaching	Initiating Educational Projects or Improvements	Participating in Professional Development Activities Specifically for School Principals
Ninth Grade Participants									
Botswana	64 (4.1)	48 (4.4)	56 (4.2)	70 (4.0)	86 (3.2)	71 (4.1)	28 (3.9)	26 (3.7)	33 (4.2)
Honduras	49 (5.2)	53 (4.8)	43 (4.4)	46 (4.6)	86 (3.0)	66 (4.0)	48 (4.5)	35 (4.4)	39 (4.5)
South Africa	60 (3.8)	62 (3.4)	61 (4.0)	69 (3.9)	90 (2.6)	77 (3.5)	51 (3.6)	31 (3.4)	57 (3.9)
Benchmarking Participants									
Alberta, Canada	50 (4.0)	54 (4.0)	33 (3.8)	45 (4.5)	65 (4.4)	40 (4.3)	25 (3.4)	37 (4.9)	27 (4.0)
Ontario, Canada	61 (4.4)	69 (4.0)	49 (4.1)	45 (4.5)	78 (3.6)	44 (4.4)	34 (4.0)	32 (4.0)	38 (3.5)
Quebec, Canada	33 (3.9)	40 (4.0)	22 (2.8)	41 (3.9)	59 (4.3)	66 (4.5)	32 (4.0)	27 (3.5)	12 (2.9)
Abu Dhabi, UAE	70 (3.6)	74 (3.8)	79 (3.5)	78 (4.0)	84 (3.1)	55 (4.3)	62 (4.6)	65 (4.7)	59 (4.0)
Dubai, UAE	68 (0.4)	78 (0.4)	86 (0.2)	80 (0.4)	68 (0.4)	43 (0.5)	40 (0.4)	55 (0.5)	35 (0.5)
Alabama, US	r 53 (9.3)	r 50 (9.1)	r 65 (8.4)	r 73 (6.5)	r 78 (6.2)	r 57 (8.5)	r 25 (6.1)	r 24 (7.6)	r 29 (6.5)
California, US	r 71 (6.0)	r 71 (6.5)	r 76 (6.6)	r 73 (6.7)	r 78 (6.1)	r 52 (7.4)	r 43 (7.5)	r 49 (7.1)	r 45 (6.7)
Colorado, US	72 (7.2)	71 (5.1)	65 (7.1)	59 (6.3)	52 (7.2)	29 (7.7)	41 (6.9)	46 (6.8)	32 (6.9)
Connecticut, US	r 66 (7.7)	65 (6.2)	76 (6.2)	82 (4.8)	77 (5.2)	52 (6.6)	41 (6.6)	47 (8.2)	21 (5.7)
Florida, US	68 (7.0)	67 (7.5)	77 (6.5)	84 (5.6)	85 (5.4)	39 (7.3)	38 (7.6)	52 (7.9)	62 (8.0)
Indiana, US	r 60 (8.6)	r 59 (7.9)	r 61 (8.0)	r 64 (6.9)	r 71 (7.0)	r 33 (7.7)	r 28 (7.1)	r 45 (7.8)	r 22 (5.8)
Massachusetts, US	63 (6.6)	70 (6.5)	68 (7.6)	r 57 (6.5)	52 (7.3)	23 (6.2)	37 (7.5)	40 (7.6)	22 (5.7)
Minnesota, US	66 (7.7)	61 (7.1)	53 (7.8)	57 (7.3)	76 (7.0)	46 (6.0)	25 (6.2)	48 (7.7)	25 (6.1)
North Carolina, US	63 (7.3)	54 (7.9)	60 (7.0)	60 (6.8)	82 (5.6)	46 (7.0)	38 (5.6)	30 (7.0)	39 (6.7)

Principals Spend Time on Leadership Activities

The effectiveness of school leadership has become a central issue, as principals worldwide are held increasingly accountable for their students' achievement outcomes. However, the effects of principal leadership are often indirect and difficult to measure. A meta-analysis of multinational studies conducted between 1986 and 1996 found that “defining and communicating the school’s mission” had the largest direct effect on student achievement (Witziers, Bosker, & Kruger, 2003), whereas a different meta-analysis of 27 studies conducted between 1978 and 2006 found strong effects for promoting teacher learning and development, and establishing goals (Robinson, Lloyd, & Rowe, 2008).

TIMSS 2011 used research conducted in the Netherlands (ten Bruggencate, Luyten, Scheerens, & Slegers, 2012) to develop questions about principals' leadership styles. These questions were included in both the fourth and eighth grade assessments. Exhibit 6.5 presents principals' reports for the fourth grade about the various activities upon which they spend “a lot of time.” The pattern of varying reports from country to country held for the fourth grade, the sixth grade, and the benchmarking participants.

The results for the fourth grade were averaged across countries to provide some summary data. The first two questions related to defining and communicating the school’s mission, and on average, more than half of the fourth grade students (59% and 60%), were in schools where this occupied “a lot” of the principal’s time. The next two questions addressed monitoring whether goals are achieved by teachers and students, with just over half the students (53% and 57%) in schools where principals reported spending “a lot of time” on these activities. The next two categories asked about maintaining discipline: two-thirds of students were in schools where the principal spent “a lot of time” keeping an orderly atmosphere, and 44 percent had principals that needed to spend “a lot of time” addressing disruptive student behavior. The last three areas appear to occupy less time: advising teachers, initiating projects, and participating in professional development activities.

Exhibit 6.6 summarizes principals' reports from the eighth grade assessment about time spent on leadership activities. About two-thirds of the eighth grade students were in schools where the principal reported spending “a lot of time” on defining and communicating the school’s mission and in monitoring whether goals were being achieved by teachers and students. Three-fourths of the eighth grade students were in schools where the principal devoted “a lot of time” to keeping an orderly atmosphere, and more than half

had principals that needed to spend “a lot of time” addressing disruptive student behavior. Similar to the fourth grade, the last three areas—advising teachers, initiating projects, and participating in professional development activities—appear to occupy less of the principal’s time.

Schools with Discipline and Safety Problems

The sense of security that comes from attending a school with few behavior problems and having little or no concern about student or teacher safety promotes a stable learning environment. There is increasing research showing that a safe school environment is important for students’ academic achievement. On the other hand, a general lack of discipline, especially if students and teachers are afraid for their safety, does not facilitate learning. Unfortunately, community and school violence are becoming an increasing problem, especially among urban youth.

Safe and Orderly School

There is growing evidence that students’ perceived school safety adversely affects academic performance, even for primary school children (Milam, Furr-Holden, & Leaf, 2010). It seems that safety at school can no longer be taken for granted, even at the fourth grade. To provide information on the extent to which school safety might be affecting mathematics achievement, TIMSS 2011 developed the Safe and Orderly School scale. Teachers in both the fourth and eighth grade assessments were asked the degree to which they agreed or disagreed with five statements:

- ◆ This school is located in a safe neighborhood;
- ◆ I feel safe at this school;
- ◆ This school’s security policies and practices are sufficient;
- ◆ The students behave in an orderly manner; and
- ◆ The students are respectful of the teachers.

Exhibit 6.7 presents the results for the Safe and Orderly School scale for the fourth grade assessment. Students were scored according to their teachers’ degree of agreement with the five statements. Students in **Safe and Orderly** schools had teachers that “agreed a lot” with three of the five qualities and “agreed a little” with the other two, on average. There was substantial variation across countries, but internationally, on average, across the fourth grade countries, the majority of students (53%) were attending schools judged by

their teachers to be **Safe and Orderly**. Almost all of the remaining students (43%) were in schools judged to be **Somewhat Safe and Orderly**. In general, only small percentages of students (4% on average) were in schools judged **Not Safe and Orderly** at best, their teachers “disagreed a little” with three of the five statements and “agreed a little” with the other two, on average. Across the fourth grade countries, on average, the safer the school as reported by their teachers, the higher the students’ average mathematics achievement.

Exhibit 6.8 presents the corresponding Safe and Orderly School scale results for the eighth grade assessment. Students were assigned to one of the three school orderliness categories using the same criteria as at the fourth grade, and with broadly similar results. Although almost all of the eighth grade students, on average internationally, were in **Safe and Orderly** or **Somewhat Safe and Orderly** schools, the eighth grade mathematics teachers were noticeably less positive in their reports. On average, across the eighth-grade countries, 45 percent of students (compared to 53% at the fourth grade) were attending schools judged by their teachers to be safe and orderly, 49 percent of students (compared to 43%) were in schools judged to be **Somewhat Safe and Orderly**, and 6 percent of students (compared to 4%) were in schools judged **Not Safe and Orderly**. The average mathematics achievement gap between students in the **Safe and Orderly** and **Not Safe and Orderly** schools also was greater at the eighth grade (34 points vs. 28 points).

School Discipline and Safety

Previous TIMSS assessments have asked principals for their perceptions about the degree to which a series of discipline, disorderly, and bullying behaviors are problems in their schools, and found that having fewer problems was related to higher average achievement. Exhibit 6.9 presents the TIMSS 2011 results for the fourth grade School Discipline and Safety scale based on asking principals about the extent of ten different discipline and school safety problems (see the second page of the exhibit for the complete list of problems). Countries are ordered by the percentage of students whose principals reported few student discipline and school safety problems. Principals in schools with **Hardly Any Problems** with discipline or safety reported “not a problem” for five of the ten discipline and safety issues and only “minor problem” for the other five, on average. Principals in schools with **Moderate Problems** reported “moderate problem” for five of the ten issues and “minor problem” for the other five, on average.

More than half of the students (61%), on average, across the fourth grade countries were in the **Hardly Any Problems** category and 29 percent were in the **Minor Problems** category. Only 11 percent, on average, attended schools where principals reported **Moderate Problems** with discipline and school safety. Students whose principals reported **Moderate Problems** in their schools had substantially lower mathematics achievement, by 45 points on average, than students whose principals reported **Hardly Any Problems** (451 vs. 496). The results for the sixth grade and benchmarking participants followed a similar pattern.

Exhibit 6.10 presents the results for the School Discipline and Safety scale for the TIMSS 2011 eighth grade assessment. This scale is based on eleven discipline and school safety problems, ten of which comprised the fourth grade scale plus one additional problem more suited to older students—“Physical injury to teachers or staff” (see the second page of the exhibit for the complete list of problems). Compared to the situation at the fourth grade, relatively speaking, there were far fewer eighth grade students in the **Hardly Any Problems** category (16% vs. 61%) and far more in the **Minor Problems** category (66% vs. 29%). There was also a greater percentage of eighth grade students in schools with **Moderate Problems** than at the fourth grade (18% vs. 11%). Looking more closely at the problems comprising the scales, the increase from fourth to eighth grade in the percentage of students in schools with discipline and safety problems is largely because eight of these problems (classroom disturbance, cheating, profanity, vandalism, theft, intimidation or verbal abuse among students, students fighting, and intimidation or verbal abuse of teachers) often were “not a problem” for fourth grade principals but more often were a “minor problem” for principals of eighth grade schools.

Exhibit 6.7: Safe and Orderly School

Reported by Teachers

Students were scored according to their teachers' degree of agreement with five statements on the *Safe and Orderly School* scale. Students in **Safe and Orderly** schools had a score on the scale of at least 10.2, which corresponds to their teachers "agreeing a lot" with three of the five qualities of a safe and orderly school and "agreeing a little" with the other two, on average. Students in **Not Safe and Orderly** schools had a score no higher than 6.3, which corresponds to their teachers "disagreeing a little" with three of the five qualities and "agreeing a little" with the other two, on average. All other students attended **Somewhat Safe and Orderly** schools.

Country	Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Northern Ireland	r 85 (2.7)	568 (4.0)	15 (2.6)	537 (8.6)	0 (0.4)	~ ~	11.5 (0.14)
Georgia	83 (2.5)	453 (3.9)	16 (2.4)	442 (10.4)	1 (0.7)	~ ~	11.3 (0.12)
Azerbaijan	83 (2.9)	465 (6.5)	16 (2.8)	459 (16.7)	1 (0.7)	~ ~	11.4 (0.13)
Ireland	78 (3.3)	537 (3.0)	20 (3.3)	497 (6.0)	2 (1.0)	~ ~	11.3 (0.15)
Australia	r 76 (3.1)	529 (3.7)	20 (3.0)	491 (7.9)	4 (1.4)	460 (12.4)	11.1 (0.16)
United Arab Emirates	76 (2.2)	440 (3.0)	24 (2.2)	418 (5.7)	0 (0.2)	~ ~	10.8 (0.08)
Croatia	73 (3.1)	489 (2.2)	26 (3.0)	495 (4.2)	1 (0.7)	~ ~	10.8 (0.12)
Thailand	72 (3.9)	462 (4.5)	26 (3.8)	462 (10.1)	3 (1.8)	352 (15.0)	11.0 (0.18)
Armenia	72 (2.7)	455 (4.2)	26 (2.6)	447 (6.6)	2 (1.1)	~ ~	10.9 (0.13)
Kuwait	70 (3.1)	346 (3.9)	30 (3.1)	331 (6.3)	0 (0.0)	~ ~	10.4 (0.10)
New Zealand	70 (2.3)	501 (2.9)	29 (2.3)	456 (4.8)	1 (0.5)	~ ~	11.0 (0.10)
Denmark	68 (3.5)	544 (2.7)	32 (3.5)	534 (4.6)	0 (0.0)	~ ~	10.6 (0.12)
Kazakhstan	67 (4.0)	505 (5.8)	33 (4.0)	495 (9.2)	1 (0.4)	~ ~	10.7 (0.15)
England	67 (4.3)	557 (3.8)	31 (4.1)	519 (7.9)	2 (1.3)	~ ~	10.7 (0.18)
United States	66 (2.4)	553 (2.3)	30 (2.3)	526 (3.4)	4 (0.8)	503 (8.4)	10.5 (0.09)
Qatar	65 (3.6)	421 (6.1)	34 (3.7)	393 (8.1)	1 (0.0)	~ ~	10.5 (0.11)
Norway	64 (4.6)	501 (3.5)	36 (4.6)	484 (4.6)	0 (0.0)	~ ~	10.7 (0.17)
Saudi Arabia	62 (4.4)	425 (7.2)	36 (4.4)	389 (7.2)	2 (0.9)	~ ~	10.4 (0.16)
Singapore	61 (2.5)	613 (3.8)	37 (2.5)	595 (5.6)	2 (0.7)	~ ~	10.3 (0.10)
Iran, Islamic Rep. of	60 (3.5)	440 (4.2)	39 (3.4)	419 (6.1)	1 (0.8)	~ ~	10.3 (0.15)
Bahrain	57 (4.2)	446 (4.0)	42 (4.3)	423 (4.9)	1 (0.0)	~ ~	10.3 (0.17)
Austria	57 (3.4)	513 (3.0)	40 (3.5)	504 (3.3)	2 (1.5)	~ ~	10.0 (0.13)
Netherlands	r 56 (4.6)	541 (2.6)	43 (4.6)	536 (3.8)	1 (0.8)	~ ~	10.2 (0.18)
Poland	r 55 (3.4)	478 (2.8)	44 (3.4)	485 (3.3)	1 (0.6)	~ ~	10.0 (0.12)
Hong Kong SAR	55 (4.7)	603 (4.6)	44 (4.8)	602 (6.0)	1 (0.6)	~ ~	10.2 (0.17)
Hungary	52 (3.8)	525 (4.9)	46 (3.6)	506 (5.6)	3 (1.3)	452 (24.4)	9.7 (0.14)
Spain	51 (3.8)	497 (3.2)	45 (3.9)	470 (4.4)	5 (1.8)	449 (14.4)	9.7 (0.16)
Russian Federation	49 (4.0)	546 (5.0)	48 (3.8)	539 (5.4)	2 (1.3)	~ ~	9.9 (0.17)
Malta	49 (0.1)	503 (1.8)	46 (0.1)	488 (2.1)	5 (0.1)	500 (5.9)	9.9 (0.01)
Lithuania	47 (3.2)	538 (3.7)	51 (3.1)	530 (3.2)	2 (0.9)	~ ~	9.7 (0.12)
Germany	47 (3.8)	533 (3.0)	52 (3.7)	525 (3.1)	2 (0.9)	~ ~	9.8 (0.13)
Portugal	46 (5.1)	541 (6.9)	50 (4.9)	527 (4.6)	4 (1.3)	507 (12.7)	9.6 (0.20)
Belgium (Flemish)	46 (3.0)	555 (2.6)	52 (2.9)	545 (2.3)	1 (0.8)	~ ~	9.7 (0.11)
Oman	46 (2.6)	400 (3.7)	52 (2.7)	374 (4.1)	2 (0.9)	~ ~	9.8 (0.09)
Yemen	46 (4.4)	257 (8.4)	52 (4.5)	235 (7.9)	2 (0.9)	~ ~	9.9 (0.15)
Czech Republic	45 (3.8)	512 (3.7)	53 (3.6)	510 (3.5)	2 (0.9)	~ ~	9.6 (0.12)
Sweden	r 41 (4.8)	516 (3.4)	54 (4.9)	501 (3.2)	5 (1.3)	453 (3.6)	9.6 (0.16)
Chile	41 (3.7)	484 (4.6)	46 (3.7)	451 (4.2)	13 (3.1)	430 (13.1)	9.2 (0.19)
Slovak Republic	40 (3.6)	509 (5.9)	58 (3.6)	506 (4.8)	1 (0.7)	~ ~	9.4 (0.09)
Serbia	40 (4.2)	515 (4.8)	55 (4.1)	520 (3.9)	5 (1.6)	478 (20.5)	9.4 (0.16)
Romania	40 (3.6)	480 (9.7)	55 (3.7)	483 (7.4)	5 (1.6)	459 (17.9)	9.5 (0.14)
Tunisia	40 (3.9)	367 (6.9)	51 (3.8)	355 (4.8)	10 (2.6)	347 (17.0)	9.3 (0.16)
Turkey	37 (3.3)	495 (4.8)	45 (3.1)	461 (6.8)	18 (2.7)	438 (15.9)	8.9 (0.17)
Finland	36 (3.5)	554 (3.5)	59 (4.0)	544 (2.7)	6 (1.7)	519 (8.8)	9.4 (0.12)
Chinese Taipei	31 (3.8)	590 (2.4)	62 (3.7)	594 (2.7)	7 (2.0)	575 (5.2)	9.0 (0.15)
Morocco	29 (3.7)	363 (8.8)	53 (4.4)	331 (7.0)	17 (3.0)	321 (11.7)	8.8 (0.18)
Slovenia	27 (3.1)	511 (3.6)	67 (3.2)	515 (2.8)	6 (1.6)	498 (9.0)	8.9 (0.11)
Korea, Rep. of	24 (3.7)	615 (5.0)	69 (3.8)	603 (2.2)	7 (2.2)	593 (4.5)	8.7 (0.18)
Italy	18 (2.6)	508 (5.6)	75 (2.8)	511 (3.4)	6 (2.0)	487 (12.1)	8.6 (0.12)
Japan	5 (1.7)	589 (5.7)	83 (3.1)	587 (1.9)	12 (2.6)	574 (5.6)	7.9 (0.09)
International Avg.	53 (0.5)	498 (0.7)	43 (0.5)	483 (0.8)	4 (0.2)	470 (2.9)	

Centerpoint of scale set at 10.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

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

An "r" indicates data are available for at least 70% but less than 85% of the students.

Exhibit 6.7: Safe and Orderly School (Continued)

Country	Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sixth Grade Participants							
Honduras	62 (4.4)	392 (7.8)	33 (4.2)	404 (8.3)	5 (1.7)	393 (22.7)	10.5 (0.19)
Yemen	48 (3.6)	346 (8.5)	49 (3.6)	348 (7.7)	3 (1.4)	360 (25.0)	9.7 (0.13)
Botswana	22 (3.8)	455 (10.3)	56 (4.4)	412 (5.9)	22 (3.5)	405 (6.1)	8.2 (0.18)
Benchmarking Participants							
Dubai, UAE	r 84 (1.9)	474 (3.1)	15 (1.9)	453 (10.1)	0 (0.3)	~ ~	11.4 (0.09)
Alberta, Canada	r 80 (3.5)	510 (3.1)	19 (3.6)	497 (5.9)	1 (0.8)	~ ~	11.3 (0.16)
Abu Dhabi, UAE	78 (4.0)	422 (5.4)	21 (3.9)	404 (11.7)	0 (0.5)	~ ~	10.8 (0.14)
Florida, US	r 65 (4.4)	553 (4.3)	28 (4.3)	527 (4.6)	7 (2.7)	523 (23.8)	10.4 (0.25)
Ontario, Canada	62 (3.9)	526 (3.0)	35 (3.9)	506 (5.6)	3 (0.9)	513 (14.1)	10.5 (0.16)
North Carolina, US	59 (6.5)	564 (4.6)	34 (5.7)	537 (7.8)	7 (3.5)	530 (21.3)	10.2 (0.28)
Quebec, Canada	45 (4.5)	533 (2.9)	50 (4.4)	533 (3.5)	5 (1.9)	519 (9.3)	9.8 (0.17)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

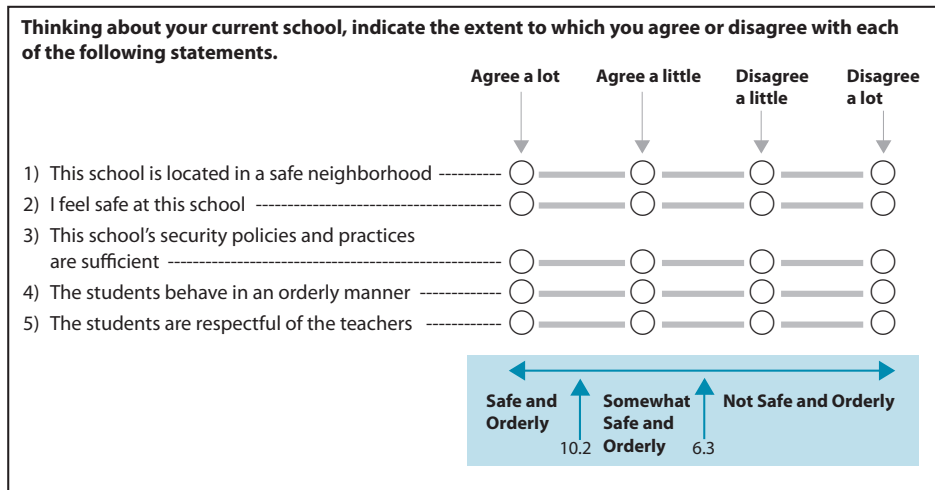


Exhibit 6.8 Safe and Orderly School

Reported by Teachers

Students were scored according to their teachers' degree of agreement with five statements on the *Safe and Orderly School* scale. Students in **Safe and Orderly** schools had a score on the scale of at least 10.7, which corresponds to their teachers "agreeing a lot" with three of the five qualities of a safe and orderly school and "agreeing a little" with the other two, on average. Students in **Not Safe and Orderly** schools had a score no higher than 6.8, which corresponds to their teachers "disagreeing a little" with three of the five qualities and "agreeing a little" with the other two, on average. All other students attended **Somewhat Safe and Orderly** schools.

Country	Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Georgia	73 (3.2)	435 (4.6)	26 (3.1)	417 (7.8)	1 (0.6)	~ ~	11.2 (0.12)
Qatar	68 (3.2)	421 (5.9)	29 (3.0)	384 (9.8)	3 (1.1)	396 (25.6)	11.0 (0.11)
United Arab Emirates	68 (2.2)	465 (3.0)	31 (2.2)	435 (4.4)	1 (0.2)	~ ~	10.9 (0.07)
Ukraine	66 (3.9)	477 (5.0)	34 (3.9)	484 (7.1)	0 (0.0)	~ ~	10.7 (0.10)
Kazakhstan	65 (4.1)	489 (5.1)	34 (4.1)	483 (7.6)	1 (0.7)	~ ~	11.0 (0.14)
Israel	64 (2.9)	532 (5.5)	32 (2.9)	496 (8.6)	3 (1.4)	488 (31.6)	10.8 (0.13)
Armenia	63 (3.7)	471 (3.9)	35 (3.5)	457 (4.9)	2 (0.8)	~ ~	10.9 (0.14)
Norway	62 (4.4)	479 (3.2)	38 (4.4)	470 (3.8)	0 (0.0)	~ ~	10.9 (0.14)
Syrian Arab Republic	60 (4.3)	386 (5.5)	38 (4.4)	366 (7.6)	2 (1.3)	~ ~	10.6 (0.15)
Singapore	58 (2.4)	623 (5.1)	39 (2.4)	596 (5.8)	2 (0.7)	~ ~	10.7 (0.10)
Iran, Islamic Rep. of	55 (3.5)	424 (6.8)	42 (3.5)	406 (5.7)	3 (1.0)	377 (14.0)	10.6 (0.12)
Australia ^r	55 (4.2)	530 (8.3)	36 (3.9)	482 (7.0)	9 (2.3)	465 (17.0)	10.5 (0.20)
New Zealand	55 (3.3)	495 (6.9)	40 (3.5)	475 (10.2)	5 (1.8)	486 (16.8)	10.5 (0.15)
Thailand	54 (3.6)	436 (6.7)	41 (3.8)	415 (8.3)	4 (1.7)	432 (16.0)	10.4 (0.14)
United States ^r	54 (2.5)	526 (4.3)	38 (2.1)	494 (4.6)	8 (1.7)	500 (13.2)	10.4 (0.13)
Romania	54 (4.2)	463 (6.8)	45 (4.1)	455 (6.8)	1 (0.6)	~ ~	10.5 (0.15)
Hong Kong SAR	54 (4.7)	599 (6.8)	45 (4.7)	564 (8.2)	1 (0.0)	~ ~	10.5 (0.16)
Macedonia, Rep. of ^r	53 (3.7)	441 (8.0)	44 (3.9)	402 (8.7)	3 (1.4)	436 (33.5)	10.5 (0.16)
England	53 (4.5)	521 (7.2)	42 (4.2)	487 (10.3)	6 (1.9)	505 (19.1)	10.6 (0.19)
Saudi Arabia	51 (3.8)	405 (6.4)	46 (4.0)	386 (6.3)	2 (1.2)	~ ~	10.3 (0.14)
Bahrain	49 (3.1)	429 (4.4)	47 (3.3)	396 (4.3)	4 (1.2)	345 (4.8)	10.2 (0.11)
Hungary	48 (3.5)	515 (4.7)	47 (3.6)	501 (5.8)	5 (1.7)	439 (18.8)	9.9 (0.11)
Malaysia	44 (4.3)	459 (8.6)	53 (3.9)	425 (6.3)	3 (1.4)	429 (19.2)	10.2 (0.17)
Russian Federation	42 (3.6)	547 (5.1)	56 (3.6)	533 (4.6)	2 (0.9)	~ ~	10.0 (0.14)
Lithuania	40 (3.7)	504 (6.0)	59 (3.7)	501 (3.5)	1 (0.4)	~ ~	9.9 (0.10)
Lebanon	39 (4.1)	466 (6.1)	53 (4.3)	443 (5.2)	8 (2.6)	411 (12.7)	9.8 (0.19)
Turkey	38 (3.2)	483 (8.3)	49 (3.3)	441 (5.8)	13 (2.1)	407 (7.6)	9.3 (0.12)
Indonesia	37 (4.1)	387 (6.3)	61 (4.2)	386 (6.2)	2 (1.0)	~ ~	10.0 (0.16)
Oman	37 (3.0)	384 (4.9)	61 (3.0)	357 (4.1)	2 (1.1)	~ ~	9.9 (0.12)
Ghana	36 (3.6)	355 (8.6)	55 (3.8)	316 (5.3)	9 (2.0)	320 (12.7)	9.6 (0.17)
Palestinian Nat'l Auth.	36 (4.4)	403 (6.1)	54 (4.2)	407 (5.3)	10 (2.6)	385 (14.5)	9.5 (0.18)
Jordan	36 (3.6)	418 (5.6)	59 (3.7)	403 (5.7)	5 (1.5)	355 (21.9)	9.6 (0.13)
Chile	34 (3.4)	447 (6.5)	51 (4.1)	408 (4.0)	15 (3.1)	376 (6.9)	9.4 (0.18)
Finland	31 (3.4)	519 (4.4)	63 (3.6)	512 (2.6)	6 (1.6)	508 (9.3)	9.4 (0.11)
Chinese Taipei	31 (3.7)	627 (6.7)	57 (3.8)	603 (5.0)	12 (2.7)	593 (10.9)	9.1 (0.15)
Sweden ^r	31 (3.3)	495 (4.1)	67 (3.2)	483 (2.7)	3 (0.8)	446 (13.9)	9.5 (0.12)
Morocco	26 (2.3)	399 (6.0)	59 (3.3)	364 (2.8)	16 (2.4)	355 (5.5)	9.0 (0.10)
Tunisia	22 (3.1)	419 (6.4)	61 (3.4)	427 (4.5)	17 (2.8)	424 (6.1)	8.8 (0.15)
Slovenia	19 (2.4)	511 (4.9)	75 (2.5)	503 (2.6)	7 (1.6)	502 (9.3)	9.0 (0.10)
Italy	17 (2.9)	509 (4.2)	76 (3.1)	499 (3.3)	8 (2.1)	474 (11.1)	8.9 (0.12)
Japan	14 (3.0)	593 (10.5)	71 (3.6)	567 (3.1)	15 (2.6)	560 (5.1)	8.5 (0.13)
Korea, Rep. of	13 (2.4)	624 (8.3)	74 (2.9)	611 (3.6)	13 (2.3)	607 (8.5)	8.5 (0.11)
International Avg.	45 (0.5)	479 (1.0)	49 (0.6)	458 (0.9)	6 (0.3)	445 (3.1)	

Centerpoint of scale set at 10.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

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

An "r" indicates data are available for at least 70% but less than 85% of the students.

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

Exhibit 6.8: Safe and Orderly School (Continued)

Country	Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Ninth Grade Participants							
Honduras	36 (4.2)	346 (9.0)	51 (4.5)	331 (5.1)	13 (2.6)	339 (8.9)	9.6 (0.20)
South Africa	21 (2.8)	379 (11.0)	55 (3.7)	347 (4.2)	24 (3.0)	341 (5.3)	8.5 (0.15)
Botswana	12 (3.0)	414 (10.4)	55 (4.2)	398 (3.5)	33 (3.9)	390 (3.8)	8.0 (0.17)
Benchmarking Participants							
Dubai, UAE	80 (2.3)	483 (3.3)	18 (2.2)	453 (9.4)	2 (0.4)	~ ~	11.3 (0.09)
Minnesota, US	69 (5.2)	552 (6.0)	31 (5.2)	529 (11.2)	0 (0.0)	~ ~	11.4 (0.20)
Alberta, Canada	68 (3.9)	508 (3.5)	27 (3.6)	496 (4.1)	5 (1.8)	501 (9.7)	11.1 (0.18)
Massachusetts, US	65 (4.7)	573 (6.9)	27 (3.9)	546 (13.3)	7 (2.8)	490 (13.9)	11.0 (0.24)
Colorado, US	r 62 (5.6)	538 (5.0)	33 (5.6)	490 (12.3)	4 (1.7)	460 (37.2)	11.0 (0.22)
Abu Dhabi, UAE	62 (3.7)	457 (5.9)	38 (3.7)	439 (5.7)	0 (0.3)	~ ~	10.7 (0.13)
North Carolina, US	r 58 (7.0)	539 (8.4)	36 (6.5)	535 (9.4)	6 (3.2)	605 (28.6)	10.6 (0.29)
Indiana, US	r 55 (7.5)	526 (7.6)	43 (7.6)	511 (9.3)	2 (1.4)	~ ~	10.6 (0.25)
Connecticut, US	54 (5.2)	549 (7.3)	39 (5.6)	483 (9.8)	7 (3.7)	504 (54.7)	10.5 (0.25)
Ontario, Canada	52 (4.4)	524 (3.2)	44 (4.5)	501 (3.8)	4 (1.5)	492 (5.7)	10.6 (0.19)
California, US	r 49 (5.7)	512 (6.8)	37 (5.5)	476 (12.9)	14 (4.6)	466 (19.6)	10.1 (0.30)
Alabama, US	r 44 (7.3)	492 (11.3)	47 (7.4)	451 (8.3)	9 (3.6)	435 (31.4)	9.8 (0.29)
Quebec, Canada	38 (3.8)	545 (5.1)	59 (3.7)	525 (3.1)	3 (1.2)	526 (17.6)	9.9 (0.15)
Florida, US	r 37 (6.4)	533 (10.4)	52 (6.2)	511 (9.7)	11 (4.4)	531 (37.5)	9.5 (0.24)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

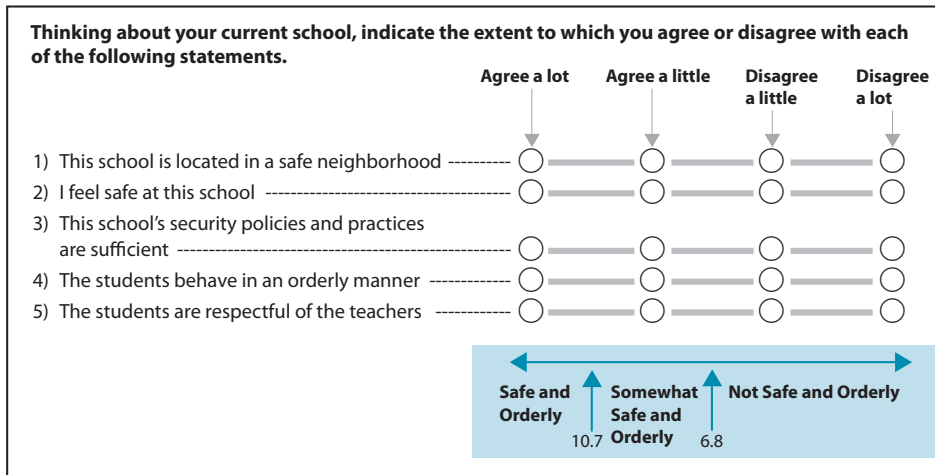


Exhibit 6.9: School Discipline and Safety

Reported by Principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline and Safety* scale. Students in schools with **Hardly Any Problems** had a score on the scale of at least 9.7, which corresponds to their principals reporting "not a problem" for five of the ten discipline and safety issues and "minor problem" for the other five, on average. Students in schools with **Moderate Problems** had a score no higher than 7.6, which corresponds to their principals reporting "moderate problem" for five of the ten issues and "minor problem" for the other five, on average. All other students attended schools with **Minor Problems**.

Country	Hardly Any Problems		Minor Problems		Moderate Problems		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Kazakhstan	91 (2.2)	505 (5.0)	9 (2.4)	465 (13.3)	1 (0.6)	~ ~	11.1 (0.10)
Armenia	87 (2.7)	450 (3.8)	8 (2.3)	460 (11.8)	4 (1.7)	479 (20.6)	11.1 (0.12)
Northern Ireland	85 (3.7)	566 (3.8)	15 (3.7)	542 (7.7)	0 (0.0)	~ ~	11.0 (0.13)
Netherlands	85 (3.6)	544 (2.2)	15 (3.6)	524 (6.9)	0 (0.0)	~ ~	11.3 (0.16)
Hong Kong SAR	84 (2.9)	606 (3.0)	15 (2.8)	574 (16.0)	1 (0.0)	~ ~	11.2 (0.12)
Ireland	83 (3.1)	532 (2.9)	16 (3.0)	512 (9.9)	1 (1.0)	~ ~	11.1 (0.13)
Georgia	81 (2.8)	449 (4.7)	13 (2.4)	447 (9.8)	6 (1.4)	471 (14.3)	10.7 (0.15)
Spain	80 (3.3)	487 (2.7)	12 (2.8)	459 (10.1)	8 (2.3)	481 (14.2)	10.7 (0.17)
Chinese Taipei	77 (3.3)	591 (2.5)	23 (3.3)	591 (4.2)	0 (0.0)	~ ~	11.4 (0.13)
England	77 (4.1)	551 (4.2)	20 (4.2)	515 (11.0)	3 (1.6)	495 (10.9)	10.6 (0.11)
Korea, Rep. of	76 (3.6)	606 (2.3)	18 (3.4)	599 (3.9)	6 (2.0)	596 (7.5)	10.9 (0.15)
Lithuania	75 (3.5)	538 (2.8)	25 (3.5)	523 (5.8)	0 (0.0)	~ ~	10.5 (0.11)
Iran, Islamic Rep. of	74 (3.9)	437 (4.6)	25 (3.9)	417 (7.8)	0 (0.0)	~ ~	10.7 (0.11)
Japan	72 (3.2)	585 (1.9)	24 (3.3)	587 (4.8)	4 (1.6)	582 (10.4)	10.5 (0.12)
New Zealand	69 (3.4)	502 (3.3)	28 (3.2)	458 (5.5)	3 (1.3)	419 (15.2)	10.7 (0.12)
Czech Republic	68 (3.6)	512 (3.0)	29 (3.5)	506 (5.1)	2 (1.0)	~ ~	10.2 (0.11)
Belgium (Flemish)	67 (4.4)	553 (2.2)	32 (4.3)	545 (3.9)	1 (0.0)	~ ~	10.4 (0.13)
Singapore	67 (0.0)	606 (3.9)	33 (0.0)	603 (6.0)	0 (0.0)	~ ~	10.7 (0.00)
Croatia	66 (4.0)	492 (2.6)	31 (4.0)	484 (3.8)	2 (1.2)	~ ~	10.4 (0.12)
Portugal	66 (5.4)	536 (4.1)	30 (5.5)	525 (7.9)	5 (1.7)	529 (18.7)	10.3 (0.17)
Russian Federation	65 (3.9)	545 (4.5)	35 (3.8)	536 (5.4)	0 (0.5)	~ ~	10.1 (0.09)
United States	64 (2.7)	551 (3.0)	34 (2.6)	531 (3.3)	2 (0.7)	~ ~	10.3 (0.09)
Australia	64 (3.9)	523 (4.1)	34 (3.8)	511 (5.3)	2 (1.0)	~ ~	10.4 (0.12)
Finland	64 (4.5)	549 (2.5)	34 (4.4)	540 (4.8)	2 (1.2)	~ ~	10.2 (0.12)
Romania	64 (4.1)	495 (5.6)	23 (3.4)	478 (12.3)	13 (2.9)	430 (27.6)	10.2 (0.17)
Malta	64 (0.1)	503 (1.8)	30 (0.1)	486 (2.4)	6 (0.1)	473 (4.9)	10.1 (0.00)
Bahrain	63 (4.2)	438 (4.8)	25 (4.1)	430 (9.2)	12 (4.7)	437 (7.4)	10.1 (0.30)
Qatar	63 (3.2)	430 (5.1)	23 (2.6)	391 (10.1)	14 (2.3)	373 (10.2)	9.9 (0.14)
Azerbaijan	62 (4.2)	461 (7.6)	8 (2.3)	462 (13.8)	30 (3.9)	466 (9.3)	9.5 (0.26)
United Arab Emirates	61 (2.3)	444 (2.9)	24 (2.0)	411 (4.6)	15 (1.7)	415 (6.8)	9.9 (0.11)
Denmark	60 (4.0)	543 (3.4)	40 (4.0)	535 (4.1)	1 (0.0)	~ ~	10.0 (0.09)
Norway	58 (4.4)	495 (3.7)	39 (4.2)	492 (4.0)	3 (1.6)	485 (10.1)	9.9 (0.13)
Thailand	58 (4.6)	469 (4.8)	36 (4.4)	444 (9.0)	6 (2.3)	442 (21.5)	10.1 (0.16)
Slovak Republic	57 (3.6)	513 (3.7)	35 (3.4)	503 (7.5)	9 (2.0)	477 (16.9)	9.9 (0.12)
Italy	56 (3.9)	509 (3.8)	25 (3.8)	509 (5.9)	19 (2.9)	505 (6.3)	9.5 (0.14)
Serbia	55 (4.7)	514 (4.8)	30 (4.2)	524 (5.8)	15 (3.2)	506 (6.9)	9.7 (0.18)
Slovenia	53 (3.7)	512 (3.4)	42 (3.6)	516 (3.6)	4 (1.4)	500 (5.6)	10.0 (0.12)
Poland	51 (3.9)	481 (3.0)	46 (4.2)	481 (3.2)	3 (1.4)	493 (14.4)	9.7 (0.09)
Hungary	50 (4.2)	530 (4.8)	45 (4.2)	509 (6.0)	5 (1.5)	433 (24.6)	9.7 (0.13)
Sweden	49 (4.7)	514 (2.8)	45 (4.7)	495 (3.7)	6 (1.2)	479 (12.7)	9.7 (0.13)
Austria	46 (4.3)	513 (3.4)	42 (4.1)	508 (3.7)	12 (3.3)	492 (9.1)	9.4 (0.14)
Saudi Arabia	45 (3.9)	417 (6.2)	25 (3.8)	395 (13.8)	30 (3.8)	414 (9.8)	9.1 (0.18)
Germany	41 (3.3)	539 (3.1)	53 (3.5)	526 (3.0)	6 (1.5)	487 (7.8)	9.5 (0.08)
Chile	39 (3.4)	481 (5.0)	43 (4.1)	459 (4.6)	18 (2.9)	439 (6.4)	9.2 (0.14)
Turkey	38 (2.9)	491 (6.8)	35 (3.4)	464 (7.2)	26 (3.4)	445 (12.0)	8.9 (0.14)
Oman	28 (2.9)	385 (4.8)	37 (3.1)	374 (4.6)	35 (3.0)	380 (6.2)	8.4 (0.15)
Tunisia	26 (3.3)	362 (7.1)	27 (3.2)	357 (7.9)	46 (4.0)	359 (6.2)	8.0 (0.19)
Kuwait	24 (3.5)	348 (6.8)	48 (4.2)	345 (5.0)	29 (3.6)	332 (7.3)	8.4 (0.15)
Morocco	14 (2.4)	340 (9.1)	24 (3.1)	317 (7.6)	62 (3.9)	342 (6.1)	7.2 (0.15)
Yemen	13 (2.8)	263 (12.4)	33 (4.1)	259 (10.5)	54 (4.0)	238 (9.7)	7.5 (0.16)
International Avg.	61 (0.5)	496 (0.7)	29 (0.5)	482 (1.1)	11 (0.3)	451 (2.2)	

Centerpoint of scale set at 10.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

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

An "r" indicates data are available for at least 70% but less than 85% of the students.

Exhibit 6.9: School Discipline and Safety (Continued)

Country	Hardly Any Problems		Minor Problems		Moderate Problems		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sixth Grade Participants							
Honduras	44 (4.5)	403 (9.9)	37 (4.9)	395 (10.2)	19 (3.3)	382 (8.1)	9.1 (0.17)
Botswana	27 (3.9)	443 (10.9)	58 (4.2)	416 (4.4)	14 (2.9)	385 (8.2)	9.0 (0.12)
Yemen	13 (3.0)	372 (14.2)	34 (4.3)	345 (7.7)	53 (4.0)	341 (9.1)	7.5 (0.15)
Benchmarking Participants							
Dubai, UAE	74 (0.4)	481 (1.9)	17 (0.4)	420 (5.1)	10 (0.1)	443 (4.1)	10.6 (0.01)
Alberta, Canada	68 (4.3)	511 (3.2)	32 (4.3)	500 (3.7)	0 (0.0)	~ ~	10.5 (0.13)
Ontario, Canada	66 (4.5)	522 (3.5)	33 (4.6)	512 (5.1)	1 (0.9)	~ ~	10.4 (0.13)
Abu Dhabi, UAE	63 (4.2)	427 (5.9)	25 (4.0)	392 (8.0)	12 (2.8)	386 (10.7)	9.9 (0.18)
Florida, US	60 (6.5)	552 (5.7)	40 (6.5)	533 (4.0)	0 (0.0)	~ ~	10.3 (0.21)
North Carolina, US	59 (7.5)	564 (5.6)	41 (7.5)	544 (9.1)	0 (0.0)	~ ~	10.1 (0.23)
Quebec, Canada	56 (4.3)	538 (3.3)	40 (4.1)	528 (3.7)	4 (1.9)	509 (12.1)	9.9 (0.12)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

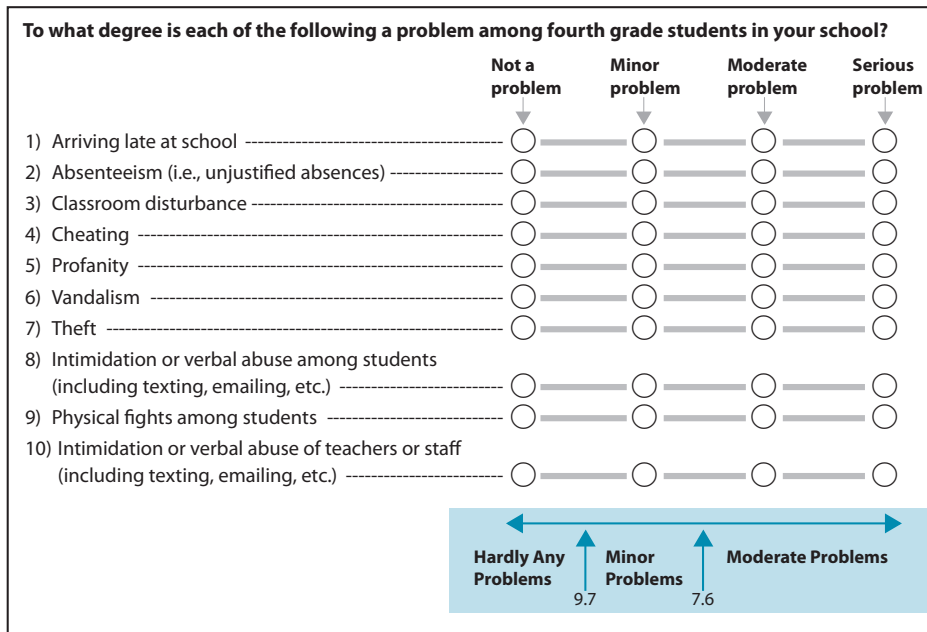


Exhibit 6.10: School Discipline and Safety

Reported by Principals

Students were scored according to their principals' responses concerning eleven potential school problems on the *School Discipline and Safety* scale. Students in schools with **Hardly Any Problems** had a score on the scale of at least 12.0, which corresponds to their principals reporting "not a problem" for six of the eleven discipline and safety issues and "minor problem" for the other five, on average. Students in schools with **Moderate Problems** had a score no higher than 8.4, which corresponds to their principals reporting "moderate problem" for six of the eleven issues and "minor problem" for the other five, on average. All other students attended schools with **Minor Problems**.

Country	Hardly Any Problems		Minor Problems		Moderate Problems		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Kazakhstan	44 (4.1)	488 (6.9)	56 (4.1)	486 (5.4)	0 (0.0)	~ ~	11.8 (0.11)
Chinese Taipei	41 (4.2)	611 (6.6)	58 (4.3)	609 (4.8)	1 (0.8)	~ ~	11.4 (0.15)
Iran, Islamic Rep. of	37 (3.8)	421 (8.1)	59 (3.8)	413 (4.9)	3 (1.3)	395 (12.3)	11.4 (0.11)
Qatar	34 (0.5)	420 (6.0)	52 (0.3)	402 (4.0)	14 (0.4)	401 (6.4)	10.7 (0.04)
Armenia	27 (3.7)	470 (6.3)	67 (4.0)	466 (3.7)	6 (1.9)	469 (10.8)	11.0 (0.13)
Hong Kong SAR	26 (4.3)	629 (6.4)	73 (4.5)	572 (6.0)	1 (1.0)	~ ~	10.9 (0.15)
Singapore	25 (0.0)	645 (6.6)	74 (0.0)	599 (4.5)	1 (0.0)	~ ~	10.9 (0.00)
United Arab Emirates	25 (1.8)	482 (4.1)	56 (2.5)	448 (4.0)	19 (1.6)	442 (5.0)	10.2 (0.08)
Ukraine	23 (3.6)	491 (8.8)	65 (4.3)	477 (4.9)	11 (2.9)	466 (11.1)	10.7 (0.16)
Oman	23 (2.9)	395 (5.7)	49 (3.2)	357 (3.8)	28 (3.0)	355 (6.5)	9.8 (0.19)
Japan	23 (3.9)	587 (7.9)	56 (4.8)	570 (4.2)	21 (3.5)	550 (4.4)	10.0 (0.18)
Saudi Arabia	23 (3.7)	400 (8.3)	47 (4.5)	395 (6.3)	30 (3.8)	391 (10.1)	9.8 (0.21)
Korea, Rep. of	22 (3.4)	617 (4.3)	61 (4.4)	614 (3.3)	17 (3.3)	601 (6.9)	10.1 (0.17)
Georgia	21 (3.1)	444 (12.9)	73 (3.5)	427 (4.4)	6 (1.7)	443 (17.2)	10.8 (0.11)
Romania	20 (3.7)	477 (10.3)	67 (4.2)	459 (5.8)	13 (3.0)	422 (12.9)	10.5 (0.17)
Lebanon	20 (3.5)	449 (7.8)	63 (4.4)	454 (5.1)	17 (3.3)	432 (10.0)	10.2 (0.19)
England	19 (3.9)	519 (13.0)	76 (4.3)	508 (7.4)	5 (2.3)	456 (31.6)	10.6 (0.14)
Indonesia	19 (2.8)	424 (10.2)	65 (4.6)	378 (5.4)	16 (3.4)	371 (9.6)	10.3 (0.13)
Macedonia, Rep. of	16 (3.0)	432 (12.1)	64 (3.7)	432 (6.9)	19 (2.6)	411 (12.2)	10.0 (0.15)
Bahrain	16 (0.3)	436 (4.2)	61 (0.3)	406 (2.3)	23 (0.2)	399 (4.6)	10.0 (0.01)
United States	13 (1.9)	524 (7.5)	78 (2.1)	512 (3.3)	9 (1.3)	477 (10.4)	10.1 (0.07)
Australia	13 (2.3)	569 (20.1)	76 (3.0)	502 (4.7)	11 (1.9)	479 (11.4)	10.0 (0.10)
Norway	13 (3.0)	490 (4.6)	79 (3.7)	474 (2.7)	8 (2.5)	461 (8.1)	10.1 (0.13)
Thailand	12 (2.6)	420 (15.7)	77 (3.8)	431 (4.9)	11 (2.9)	410 (15.6)	10.0 (0.13)
Palestinian Nat'l Auth.	12 (2.7)	426 (8.1)	56 (3.9)	402 (5.5)	32 (3.7)	400 (7.8)	9.2 (0.20)
Chile	12 (2.8)	452 (12.2)	62 (4.5)	425 (4.2)	26 (3.9)	383 (5.3)	9.6 (0.16)
Turkey	11 (2.2)	502 (20.2)	55 (3.1)	455 (5.5)	34 (2.9)	433 (6.5)	9.2 (0.14)
Slovenia	10 (2.3)	504 (5.8)	74 (3.5)	507 (2.6)	16 (2.8)	500 (4.6)	9.9 (0.12)
Russian Federation	10 (1.9)	547 (9.6)	89 (2.1)	539 (3.9)	2 (0.9)	~ ~	10.5 (0.07)
Italy	9 (2.1)	510 (6.6)	63 (2.8)	505 (3.1)	28 (2.6)	481 (5.5)	9.4 (0.13)
Ghana	9 (2.7)	374 (11.8)	82 (3.0)	329 (4.9)	10 (2.3)	309 (10.8)	10.0 (0.13)
Lithuania	8 (2.4)	494 (8.3)	87 (3.0)	503 (3.1)	5 (1.9)	503 (11.3)	10.0 (0.11)
Jordan	8 (2.0)	416 (14.1)	54 (4.1)	409 (5.2)	38 (3.8)	400 (6.3)	9.1 (0.14)
Israel	6 (2.0)	515 (19.0)	76 (3.1)	530 (4.7)	18 (2.9)	467 (14.3)	9.4 (0.16)
Morocco	6 (1.2)	414 (13.2)	39 (3.4)	360 (4.4)	55 (3.3)	375 (3.2)	8.2 (0.13)
New Zealand	6 (1.5)	529 (9.9)	85 (2.9)	487 (5.8)	9 (2.5)	477 (15.7)	9.7 (0.09)
Malaysia	6 (2.0)	483 (18.6)	87 (2.7)	442 (5.6)	8 (1.7)	390 (16.2)	9.9 (0.10)
Hungary	5 (1.9)	540 (12.4)	75 (3.7)	512 (3.5)	20 (3.2)	468 (9.7)	9.5 (0.11)
Tunisia	4 (1.2)	414 (9.5)	37 (4.0)	421 (4.0)	60 (3.9)	428 (3.9)	8.1 (0.13)
Syrian Arab Republic	3 (1.3)	349 (13.9)	27 (4.2)	394 (9.4)	70 (4.0)	376 (5.3)	7.5 (0.19)
Finland	2 (1.5)	~ ~	89 (2.7)	514 (2.6)	9 (2.3)	501 (6.9)	9.9 (0.11)
Sweden	1 (0.0)	~ ~	83 (3.2)	488 (2.4)	16 (3.1)	466 (6.3)	9.5 (0.10)
International Avg.	16 (0.4)	483 (1.7)	66 (0.5)	467 (0.7)	18 (0.4)	437 (1.8)	

Centerpoint of scale set at 10.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

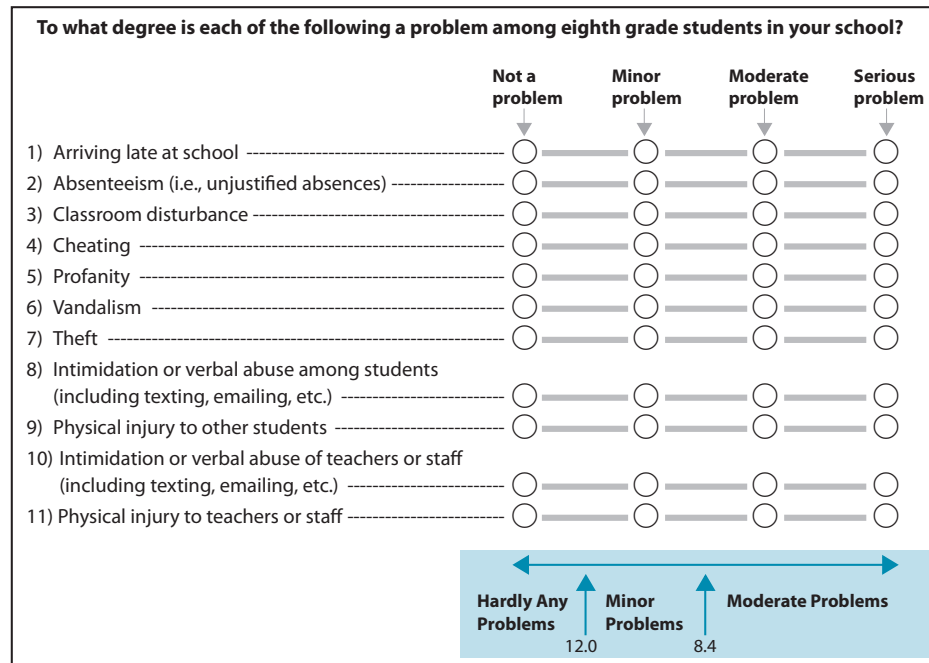
A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students.

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

Exhibit 6.10: School Discipline and Safety (Continued)

Country	Hardly Any Problems		Minor Problems		Moderate Problems		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Ninth Grade Participants							
Honduras	10 (2.7)	369 (20.3)	68 (4.2)	335 (4.7)	21 (3.7)	327 (6.4)	9.8 (0.16)
South Africa	4 (1.2)	406 (26.9)	55 (3.6)	352 (4.1)	41 (3.4)	345 (4.6)	8.8 (0.10)
Botswana	1 (0.0)	~ ~	64 (3.9)	400 (3.4)	36 (3.8)	389 (5.0)	8.8 (0.09)
Benchmarking Participants							
Dubai, UAE	43 (0.5)	491 (3.5)	44 (0.4)	474 (3.4)	13 (0.1)	443 (3.3)	10.9 (0.01)
Massachusetts, US	23 (5.9)	571 (10.9)	66 (7.1)	562 (7.9)	11 (4.7)	516 (20.7)	10.6 (0.20)
Abu Dhabi, UAE	19 (3.4)	481 (11.1)	64 (4.3)	443 (6.0)	17 (3.3)	434 (8.2)	10.1 (0.17)
Alberta, Canada	15 (3.2)	524 (7.3)	82 (3.5)	503 (2.7)	3 (1.3)	473 (8.2)	10.3 (0.12)
Quebec, Canada	14 (2.6)	557 (5.7)	73 (3.9)	529 (3.2)	13 (2.8)	518 (7.1)	10.0 (0.11)
Minnesota, US	14 (5.3)	567 (7.0)	81 (6.4)	543 (5.9)	6 (3.8)	536 (18.5)	10.3 (0.21)
Ontario, Canada	13 (3.0)	515 (4.8)	77 (3.9)	514 (3.0)	10 (2.8)	488 (11.2)	10.2 (0.15)
Florida, US	11 (4.8)	539 (35.3)	71 (6.8)	515 (7.0)	18 (5.5)	489 (13.3)	9.8 (0.22)
Indiana, US	r 9 (4.2)	542 (11.5)	86 (4.3)	524 (6.2)	5 (0.3)	496 (18.9)	10.2 (0.19)
Colorado, US	7 (4.3)	528 (14.6)	79 (6.4)	522 (7.1)	14 (4.8)	483 (28.0)	9.8 (0.18)
North Carolina, US	7 (3.6)	545 (24.0)	85 (5.1)	540 (7.9)	8 (3.8)	481 (37.4)	9.7 (0.19)
California, US	r 7 (5.4)	505 (6.4)	82 (5.8)	498 (5.8)	12 (3.4)	442 (30.3)	9.6 (0.20)
Alabama, US	r 6 (1.9)	533 (17.1)	87 (4.3)	467 (7.7)	7 (3.8)	412 (7.1)	9.9 (0.23)
Connecticut, US	r 5 (3.2)	565 (24.0)	89 (4.4)	520 (7.3)	5 (3.0)	449 (37.7)	10.1 (0.12)



Students Bullied at School

In general, bullying involves aggression or negative behavior intended to harm or bother less physically or psychologically powerful persons, although a New Zealand review of the literature found a range of definitions and terminology relating bullying to violence and abuse (Carroll-Lind, 2009). There is growing evidence that bullying in schools is on the rise, especially with the emergence of cyber-bullying, and that bullying does have a negative impact on students' educational achievement. To provide data about bullying in the participating countries, TIMSS 2011 created the Students Bullied at School scale, based on how often students experienced six bullying behaviors:

- ◆ I was made fun of or called names;
- ◆ I was left out of games or activities by other students;
- ◆ Someone spread lies about me;
- ◆ Something was stolen from me;
- ◆ I was hit or hurt by other student(s); and
- ◆ I was made to do things I didn't want to do by other students.

Exhibit 6.11 provides the results for the Students Bullied at School scale for the TIMSS 2011 fourth grade assessment. Students were scored according to their responses to how often they experienced six bullying behaviors (detailed on the second page of the exhibit). Students bullied **Almost Never** reported never experiencing three of six bullying behaviors and each of the other three behaviors “a few times a year,” on average. Internationally, across the fourth-grade countries, 48 percent of the students, on average, **Almost Never** experienced these bullying behaviors. However, the percentages ranged from 17 to 80 percent.

The majority of fourth grade students reported being bullied either **About Monthly** or **About Weekly**. Internationally, on average across the fourth grade countries, 32 percent of the students were reportedly bullied **About Monthly** and 20 percent were bullied **About Weekly**. Students bullied **About Weekly** reported experiencing each of three of the six behaviors “once or twice a month” (bullied 3–6 times a month) and, in addition, each of the other three “a few times a year,” on average.

The fourth grade students' reports about being bullied were related to their average mathematics achievement on TIMSS 2011. Each successive category of increased bullying was related to a decrease in average mathematics

achievement to the extent that there was a 32-point difference in achievement between **Almost Never** being bullied and being bullied **About Weekly** (501 vs. 469).

Exhibit 6.12 provides the results for the TIMSS 2011 eighth grade assessment for the Students Bullied at School scale, which was based on the same six bullying behaviors (detailed on the second page of the exhibit) as the fourth grade scale. In contrast to the previous section, where principals reported more school discipline and safety problems at the eighth than at the fourth grade, the eighth grade students reported experiencing somewhat less bullying behavior than the fourth grade students. On average internationally, the majority of eighth grade students (59%) **Almost Never** experienced these bullying behaviors, compared to 48 percent at the fourth grade, whereas just 12 percent of the eighth grade students reported being bullied **About Weekly**, compared to 20 percent at the fourth grade. Similar to the fourth grade, there was a negative relationship between eighth grade students' reports about being bullied and average mathematics achievement, with students who were **Almost Never** bullied having achievement 32 points higher than students who reported being bullied **About Weekly** (473 vs. 441).

Exhibit 6.11: Students Bullied at School

Reported by Students

Students were scored according to their responses to how often they experienced six bullying behaviors on the *Students Bullied at School* scale. Students bullied **Almost Never** had a score on the scale of at least 10.1, which corresponds to “never” experiencing three of the six bullying behaviors and each of the other three behaviors “a few times a year,” on average. Students bullied **About Weekly** had a score no higher than 8.3, which corresponds to their experiencing each of three of the six behaviors “once or twice a month” and each of the other three “a few times a year,” on average. All other students were bullied **About Monthly**.

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Armenia	80 (0.8)	459 (3.5)	13 (0.7)	447 (5.6)	7 (0.5)	408 (6.4)	11.5 (0.05)
Azerbaijan	75 (1.5)	483 (6.0)	16 (1.0)	454 (6.5)	9 (0.7)	418 (7.8)	11.4 (0.08)
Sweden	68 (1.0)	509 (2.1)	25 (1.0)	498 (3.4)	7 (0.5)	483 (5.8)	10.9 (0.04)
Georgia	66 (1.2)	464 (3.0)	23 (0.8)	451 (5.6)	11 (0.8)	407 (8.8)	10.9 (0.06)
Kazakhstan	64 (1.7)	503 (4.2)	23 (1.2)	512 (6.4)	13 (0.9)	489 (8.0)	10.8 (0.08)
Ireland	64 (1.3)	539 (2.7)	25 (1.0)	522 (3.4)	12 (0.9)	486 (5.0)	10.7 (0.06)
Croatia	61 (1.1)	497 (2.3)	28 (0.9)	487 (3.0)	11 (0.6)	462 (4.8)	10.6 (0.05)
Finland	61 (1.2)	549 (2.5)	30 (0.9)	546 (3.4)	9 (0.6)	523 (5.0)	10.5 (0.04)
Poland	61 (0.9)	487 (2.4)	26 (0.7)	481 (2.9)	13 (0.6)	462 (4.1)	10.6 (0.04)
Denmark	60 (1.1)	544 (2.4)	31 (0.8)	535 (3.2)	9 (0.7)	513 (5.7)	10.5 (0.04)
Serbia	57 (1.2)	523 (3.4)	30 (0.9)	520 (4.1)	13 (0.7)	484 (7.1)	10.5 (0.06)
Northern Ireland	57 (1.3)	571 (3.4)	29 (1.0)	565 (4.1)	14 (1.0)	528 (7.3)	10.4 (0.06)
Austria	53 (1.3)	513 (3.0)	30 (0.9)	510 (3.5)	17 (0.9)	493 (3.4)	10.2 (0.05)
Norway	53 (1.8)	502 (3.1)	33 (1.1)	493 (3.6)	14 (0.9)	473 (7.0)	10.2 (0.06)
Korea, Rep. of	53 (1.2)	608 (2.2)	32 (0.8)	608 (2.3)	15 (0.6)	592 (3.9)	10.3 (0.05)
Chinese Taipei	53 (1.3)	597 (2.1)	30 (0.8)	592 (2.7)	17 (0.8)	573 (3.6)	10.2 (0.05)
United States	51 (0.7)	549 (2.1)	29 (0.5)	544 (2.0)	20 (0.6)	520 (3.2)	10.1 (0.03)
Italy	51 (1.2)	514 (3.1)	33 (1.0)	509 (3.0)	16 (0.7)	491 (3.9)	10.2 (0.05)
Slovenia	50 (1.3)	520 (2.5)	32 (0.8)	517 (2.7)	18 (1.0)	488 (3.5)	10.0 (0.05)
Japan	50 (1.2)	588 (2.1)	33 (0.8)	589 (2.8)	17 (0.8)	574 (3.3)	10.1 (0.05)
Hong Kong SAR	50 (1.2)	608 (3.1)	33 (0.9)	604 (3.5)	17 (0.7)	582 (7.1)	10.1 (0.04)
Portugal	49 (1.4)	536 (4.0)	35 (1.2)	535 (3.8)	17 (0.9)	515 (4.8)	10.1 (0.06)
Germany	48 (1.2)	537 (2.7)	36 (0.9)	530 (2.4)	16 (0.8)	511 (4.0)	10.1 (0.05)
Lithuania	48 (1.3)	543 (3.0)	36 (0.9)	534 (2.6)	17 (0.8)	508 (4.1)	10.0 (0.05)
Romania	47 (1.8)	504 (5.9)	32 (1.5)	475 (6.4)	21 (1.1)	450 (8.7)	9.9 (0.07)
Slovak Republic	46 (1.1)	517 (3.4)	34 (0.8)	505 (4.6)	20 (0.9)	488 (4.8)	9.9 (0.05)
Czech Republic	46 (1.2)	519 (2.8)	34 (1.0)	514 (3.1)	20 (0.8)	488 (4.5)	10.0 (0.05)
Netherlands	46 (1.2)	543 (1.7)	37 (1.1)	543 (2.3)	17 (0.9)	526 (3.1)	9.9 (0.05)
Russian Federation	45 (1.4)	549 (4.3)	35 (1.0)	540 (4.0)	19 (1.0)	530 (4.9)	10.0 (0.06)
England	45 (1.3)	549 (4.2)	36 (1.0)	548 (4.5)	20 (0.8)	519 (5.3)	9.8 (0.05)
Spain	44 (1.3)	488 (3.1)	34 (0.9)	487 (3.3)	23 (1.0)	469 (3.8)	9.8 (0.05)
Yemen	42 (2.1)	260 (6.8)	31 (1.4)	256 (6.9)	27 (1.8)	233 (8.7)	9.7 (0.11)
Malta	42 (0.7)	507 (1.7)	36 (0.7)	499 (2.5)	22 (0.6)	471 (2.6)	9.7 (0.03)
Iran, Islamic Rep. of	41 (1.7)	431 (5.0)	35 (1.2)	434 (4.0)	23 (1.3)	428 (5.0)	9.8 (0.07)
Hungary	40 (1.1)	521 (5.6)	36 (0.8)	525 (3.3)	24 (0.8)	497 (4.4)	9.7 (0.04)
Singapore	39 (0.9)	618 (3.3)	38 (0.6)	610 (3.3)	23 (0.8)	582 (4.2)	9.7 (0.03)
Saudi Arabia	39 (1.7)	422 (5.6)	33 (1.2)	419 (6.2)	27 (1.2)	386 (6.7)	9.6 (0.08)
Tunisia	39 (1.4)	377 (4.8)	37 (1.1)	362 (4.1)	24 (1.2)	333 (5.4)	9.7 (0.06)
Belgium (Flemish)	39 (1.1)	556 (2.6)	41 (0.9)	552 (2.2)	20 (0.8)	533 (2.7)	9.7 (0.04)
Chile	38 (1.1)	478 (2.4)	31 (0.9)	467 (2.6)	31 (1.0)	441 (3.2)	9.5 (0.05)
Australia	38 (1.1)	525 (2.9)	38 (1.0)	521 (3.7)	25 (0.7)	498 (4.2)	9.5 (0.04)
Turkey	37 (0.9)	494 (3.8)	33 (0.7)	477 (4.6)	30 (0.9)	442 (5.7)	9.5 (0.04)
Kuwait	37 (1.5)	362 (3.4)	33 (1.0)	358 (4.2)	30 (1.3)	319 (5.5)	9.5 (0.07)
Morocco	35 (1.9)	354 (6.7)	33 (1.1)	338 (4.0)	32 (1.6)	317 (4.8)	9.4 (0.08)
United Arab Emirates	34 (0.8)	454 (2.8)	35 (0.5)	439 (2.6)	31 (0.8)	412 (2.9)	9.4 (0.04)
New Zealand	32 (1.0)	499 (3.4)	37 (1.0)	494 (2.9)	31 (0.9)	468 (4.1)	9.3 (0.04)
Bahrain	31 (1.1)	460 (3.9)	33 (1.1)	442 (4.0)	36 (1.3)	421 (3.9)	9.2 (0.06)
Oman	31 (1.2)	399 (3.3)	37 (0.9)	387 (3.9)	31 (1.0)	372 (4.0)	9.3 (0.05)
Qatar	30 (1.1)	441 (5.4)	32 (1.0)	425 (4.5)	38 (1.0)	392 (3.9)	9.1 (0.05)
Thailand	17 (1.2)	476 (5.9)	35 (1.2)	461 (5.0)	48 (1.6)	451 (5.4)	8.6 (0.06)
International Avg.	48 (0.2)	501 (0.5)	32 (0.1)	493 (0.6)	20 (0.1)	469 (0.7)	

Centerpoint of scale set at 10.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Exhibit 6.11: Students Bullied at School (Continued)

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sixth Grade Participants							
Yemen	43 (1.9)	355 (8.0)	34 (1.3)	358 (6.1)	23 (1.3)	330 (7.1)	9.8 (0.08)
Honduras	38 (1.2)	405 (6.3)	32 (0.9)	404 (5.9)	30 (1.2)	384 (5.9)	9.5 (0.06)
Botswana	12 (0.7)	449 (7.5)	41 (0.9)	427 (4.4)	47 (1.1)	410 (3.9)	8.6 (0.03)
Benchmarking Participants							
Florida, US	50 (1.4)	552 (3.6)	29 (0.9)	550 (3.7)	21 (1.1)	526 (4.0)	10.1 (0.06)
North Carolina, US	49 (1.5)	563 (4.6)	32 (1.2)	556 (4.7)	19 (1.1)	534 (5.9)	10.0 (0.06)
Quebec, Canada	44 (1.4)	540 (2.4)	37 (1.1)	534 (3.3)	19 (1.1)	515 (3.5)	9.8 (0.05)
Alberta, Canada	42 (1.3)	514 (3.1)	35 (0.9)	509 (3.2)	22 (1.0)	489 (3.2)	9.7 (0.05)
Ontario, Canada	42 (1.1)	523 (3.2)	36 (0.9)	525 (3.5)	22 (1.0)	501 (4.2)	9.7 (0.04)
Dubai, UAE	37 (1.6)	489 (2.6)	35 (0.9)	476 (3.4)	28 (1.2)	440 (3.8)	9.5 (0.06)
Abu Dhabi, UAE	33 (1.4)	436 (6.1)	36 (0.8)	422 (5.3)	31 (1.4)	398 (5.3)	9.4 (0.07)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

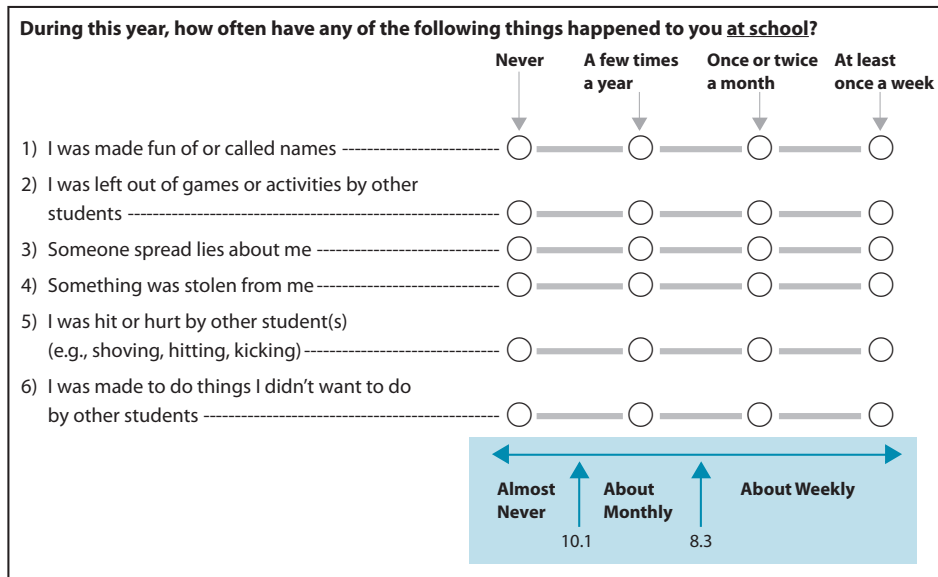


Exhibit 6.12: Students Bullied at School

Reported by Students

Students were scored according to their responses to how often they experienced six bullying behaviors on the *Students Bullied at School* scale. Students bullied **Almost Never** had a score on the scale of at least 9.6, which corresponds to “never” experiencing three of the six bullying behaviors and each of the other three behaviors “a few times a year,” on average. Students bullied **About Weekly** had a score no higher than 7.7, which corresponds to their experiencing each of three of the six behaviors “once or twice a month” and each of the other three “a few times a year,” on average. All other students were bullied **About Monthly**.

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Armenia	87 (0.7)	472 (2.7)	11 (0.6)	462 (5.7)	3 (0.3)	418 (9.7)	11.5 (0.04)
Sweden	79 (0.6)	487 (2.0)	18 (0.5)	482 (2.8)	3 (0.3)	454 (7.6)	10.9 (0.03)
Georgia	79 (0.9)	443 (4.0)	17 (0.8)	425 (5.0)	4 (0.4)	374 (10.0)	11.2 (0.05)
Norway	77 (0.8)	477 (2.6)	19 (0.7)	473 (4.2)	4 (0.3)	446 (10.3)	10.8 (0.04)
Italy	76 (1.1)	502 (2.4)	19 (0.9)	492 (3.7)	5 (0.4)	468 (7.8)	10.7 (0.05)
Kazakhstan	73 (1.1)	487 (4.0)	21 (1.0)	496 (5.2)	5 (0.5)	472 (7.6)	11.0 (0.06)
Finland	71 (0.9)	517 (2.5)	24 (0.8)	509 (3.5)	5 (0.4)	502 (5.0)	10.5 (0.04)
Ukraine	70 (1.2)	486 (4.3)	24 (1.1)	478 (4.4)	6 (0.5)	442 (7.6)	10.4 (0.05)
Russian Federation	69 (0.9)	542 (3.5)	25 (0.7)	538 (4.0)	6 (0.4)	522 (8.5)	10.4 (0.04)
England	68 (1.1)	509 (5.6)	24 (0.7)	511 (6.0)	7 (0.6)	486 (11.1)	10.4 (0.05)
Macedonia, Rep. of	68 (0.9)	445 (5.4)	22 (0.7)	422 (5.6)	10 (0.6)	377 (8.5)	10.3 (0.05)
Chinese Taipei	67 (1.0)	612 (3.7)	26 (0.8)	611 (3.8)	7 (0.4)	580 (5.7)	10.4 (0.05)
Lithuania	65 (1.1)	507 (2.5)	28 (1.0)	504 (3.3)	7 (0.5)	465 (5.1)	10.2 (0.05)
Korea, Rep. of	65 (1.1)	613 (3.1)	28 (0.9)	616 (3.7)	7 (0.5)	603 (5.7)	10.3 (0.05)
Japan	63 (1.2)	566 (3.2)	28 (0.8)	576 (3.4)	9 (0.6)	562 (6.0)	10.3 (0.05)
United States	63 (0.7)	513 (2.7)	28 (0.6)	510 (3.5)	9 (0.3)	496 (3.3)	10.1 (0.02)
Chile	62 (0.9)	423 (2.8)	30 (0.8)	410 (3.2)	9 (0.5)	394 (4.9)	9.9 (0.03)
Hungary	61 (1.2)	508 (3.8)	31 (0.9)	505 (4.3)	8 (0.5)	487 (6.1)	10.0 (0.05)
Saudi Arabia	60 (1.2)	400 (5.1)	30 (1.0)	393 (4.9)	10 (0.6)	372 (6.5)	10.1 (0.06)
Slovenia	59 (1.0)	504 (2.5)	32 (1.0)	509 (2.9)	8 (0.5)	499 (5.1)	9.9 (0.04)
Australia	58 (1.1)	511 (5.3)	31 (1.0)	504 (5.3)	11 (0.7)	480 (7.3)	9.9 (0.05)
Tunisia	58 (1.0)	426 (2.7)	31 (0.7)	426 (3.2)	11 (0.7)	419 (5.2)	9.9 (0.04)
Iran, Islamic Rep. of	56 (1.1)	420 (4.8)	33 (0.8)	415 (4.8)	12 (0.6)	395 (5.8)	9.9 (0.05)
New Zealand	55 (0.9)	495 (5.3)	33 (0.7)	489 (5.9)	12 (0.5)	471 (6.3)	9.8 (0.04)
Bahrain	55 (1.1)	422 (2.7)	29 (1.0)	411 (3.1)	16 (0.6)	370 (5.6)	9.8 (0.04)
Syrian Arab Republic	54 (1.4)	392 (5.0)	31 (1.0)	375 (4.6)	14 (0.8)	361 (5.9)	9.8 (0.06)
Hong Kong SAR	54 (1.3)	585 (4.2)	36 (1.0)	589 (3.8)	10 (0.7)	582 (8.4)	9.7 (0.05)
Lebanon	53 (1.9)	464 (4.4)	30 (1.1)	444 (4.7)	17 (1.3)	418 (3.6)	9.7 (0.08)
Romania	53 (1.2)	476 (4.6)	34 (0.9)	457 (4.2)	13 (0.7)	411 (5.8)	9.7 (0.05)
Turkey	52 (1.1)	466 (4.7)	33 (0.8)	454 (4.2)	15 (0.7)	413 (5.5)	9.7 (0.05)
Singapore	52 (0.8)	618 (3.9)	36 (0.6)	609 (4.0)	12 (0.5)	589 (5.4)	9.7 (0.03)
United Arab Emirates	51 (0.9)	468 (2.2)	33 (0.6)	456 (2.4)	16 (0.5)	420 (3.3)	9.6 (0.04)
Qatar	51 (1.6)	426 (4.5)	31 (1.2)	409 (5.2)	18 (0.8)	374 (6.1)	9.6 (0.06)
Malaysia	49 (1.2)	444 (5.2)	39 (0.9)	442 (5.8)	12 (0.8)	418 (9.3)	9.6 (0.05)
Morocco	49 (1.1)	375 (2.3)	36 (0.8)	377 (2.5)	15 (0.7)	359 (3.6)	9.6 (0.04)
Jordan	48 (1.2)	426 (3.4)	33 (1.0)	412 (4.2)	19 (0.7)	362 (5.7)	9.5 (0.05)
Palestinian Nat'l Auth.	46 (1.2)	426 (3.2)	38 (0.9)	399 (4.0)	16 (0.8)	363 (7.0)	9.5 (0.05)
Indonesia	45 (1.4)	382 (4.1)	34 (0.9)	392 (5.0)	21 (0.9)	387 (6.7)	9.5 (0.07)
Oman	41 (0.9)	389 (3.0)	37 (0.7)	370 (3.4)	21 (0.7)	330 (4.2)	9.2 (0.03)
Thailand	30 (0.8)	426 (4.7)	43 (0.7)	431 (4.8)	27 (0.8)	424 (4.5)	8.8 (0.04)
Ghana	22 (1.0)	349 (6.0)	38 (1.0)	342 (4.6)	40 (1.2)	317 (4.7)	8.4 (0.05)
Israel	--	--	--	--	--	--	--
International Avg.	59 (0.2)	473 (0.6)	29 (0.1)	467 (0.7)	12 (0.1)	441 (1.0)	

Centerpoint of scale set at 10.

() Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A dash (–) indicates comparable data are not available.

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

Exhibit 6.12: Students Bullied at School (Continued)

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Ninth Grade Participants							
Honduras	49 (1.1)	340 (4.5)	36 (0.9)	346 (4.3)	15 (0.6)	325 (4.8)	9.6 (0.04)
South Africa	25 (0.7)	393 (3.9)	42 (0.8)	362 (2.3)	33 (1.0)	322 (3.0)	8.5 (0.04)
Botswana	19 (0.7)	424 (3.6)	48 (0.7)	403 (2.7)	33 (0.7)	379 (3.2)	8.4 (0.02)
Benchmarking Participants							
Quebec, Canada	73 (0.9)	533 (2.4)	22 (0.7)	531 (3.0)	5 (0.4)	521 (5.9)	10.5 (0.04)
Massachusetts, US	71 (1.0)	563 (5.7)	23 (1.0)	562 (6.1)	6 (0.6)	533 (7.1)	10.5 (0.05)
California, US	67 (1.7)	496 (5.2)	24 (1.3)	493 (5.6)	9 (0.6)	477 (7.3)	10.3 (0.07)
Florida, US	64 (1.5)	517 (6.7)	27 (1.4)	519 (7.3)	9 (0.9)	488 (8.8)	10.1 (0.07)
North Carolina, US	64 (1.0)	540 (6.6)	28 (1.0)	537 (6.7)	8 (0.8)	515 (17.6)	10.1 (0.06)
Connecticut, US	63 (1.4)	520 (4.9)	28 (1.0)	523 (5.9)	9 (0.8)	511 (8.2)	10.1 (0.06)
Minnesota, US	61 (1.6)	550 (5.2)	30 (1.4)	539 (5.2)	9 (0.7)	532 (5.2)	10.0 (0.06)
Indiana, US	59 (1.5)	523 (5.4)	30 (1.3)	523 (5.5)	11 (0.9)	517 (7.2)	9.9 (0.07)
Colorado, US	58 (1.8)	520 (5.1)	31 (1.5)	519 (5.9)	11 (1.0)	506 (8.0)	9.9 (0.07)
Ontario, Canada	58 (1.2)	515 (3.1)	31 (0.9)	508 (3.4)	12 (0.8)	496 (3.4)	9.9 (0.05)
Alabama, US	57 (1.9)	469 (6.7)	32 (1.5)	467 (5.9)	11 (0.8)	455 (7.8)	9.9 (0.07)
Dubai, UAE	54 (2.1)	491 (2.7)	32 (1.3)	475 (4.1)	14 (1.1)	439 (5.2)	9.7 (0.09)
Alberta, Canada	52 (1.1)	511 (3.0)	35 (0.8)	505 (2.7)	14 (0.8)	485 (3.3)	9.6 (0.05)
Abu Dhabi, UAE	50 (1.4)	456 (4.2)	33 (0.9)	455 (3.8)	17 (1.0)	418 (5.6)	9.6 (0.06)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011

