

# Chapter 6

## School Climate

Students with the highest science 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, the environment in a school with 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 the communication of a school's academic emphasis through clear and rigorous academic goals. The effect on achievement is greatest when there is a collective influence, including a school administration and teachers that support and trust in students' capability to achieve. In addition to making it clear that academic success is important, principals and teachers must emphasize that it can be achieved. Parents' support for their children's learning also contributes to a school's collective efficacy and the 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.

Information was collected from 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 attended schools with a **High Emphasis**, and 34 percent attended a school with a **Medium Emphasis**. However, there was considerable variation across countries, with as few as 28 percent of students, and as many as 99 percent of students, attending schools with a very high or high emphasis on academic success. On average across fourth grade countries, there was a distinct direct correspondence between average science achievement and principals' reports, with higher emphasis on academic success related to higher average science achievement. The results were similar for most of the sixth grade countries 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). Similar to the fourth grade, there was considerable variation across countries, from as little 19 percent to as much as 93 percent of students attending schools with a very high or high emphasis on academic success. At the eighth grade, there was also a somewhat greater difference in average science achievement (44 points) between students attending **Very High Emphasis** schools (504) and students attending **Medium Emphasis** schools (460); this difference was 37 points at the fourth grade (508 vs. 471 for **Very High Emphasis** and **Medium Emphasis** schools, respectively).

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,

## 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)	532 (4.2)	60 (4.3)	511 (3.9)	7 (2.5)	495 (12.1)	12.0 (0.19)
Qatar	31 (2.9)	418 (12.1)	54 (3.2)	393 (6.2)	15 (2.4)	349 (12.7)	11.6 (0.14)
Ireland	28 (4.0)	532 (5.1)	67 (3.9)	512 (4.6)	4 (1.7)	493 (7.8)	11.9 (0.17)
United States	22 (2.5)	566 (4.5)	60 (2.7)	546 (3.3)	18 (2.1)	520 (5.0)	11.2 (0.13)
New Zealand	22 (3.0)	517 (4.4)	67 (3.3)	497 (3.4)	11 (2.1)	459 (11.2)	11.5 (0.14)
Korea, Rep. of	22 (3.5)	597 (3.4)	58 (4.3)	586 (2.5)	20 (3.4)	576 (3.1)	11.1 (0.19)
United Arab Emirates	21 (1.6)	461 (5.9)	61 (2.0)	422 (3.6)	18 (1.7)	390 (7.1)	11.2 (0.09)
Chinese Taipei	17 (3.0)	551 (6.0)	71 (3.7)	553 (2.7)	12 (2.5)	543 (4.6)	11.3 (0.15)
Australia	16 (3.0)	544 (7.3)	64 (3.8)	519 (3.4)	21 (3.0)	487 (5.1)	10.9 (0.14)
Malta	13 (0.1)	462 (4.0)	69 (0.1)	455 (2.2)	18 (0.1)	402 (3.4)	11.1 (0.00)
Bahrain	11 (2.5)	498 (9.3)	68 (3.7)	447 (4.9)	21 (2.8)	430 (9.1)	10.6 (0.16)
England	10 (2.9)	539 (7.0)	72 (4.7)	531 (4.3)	17 (3.8)	508 (8.5)	10.8 (0.18)
Iran, Islamic Rep. of	9 (2.0)	464 (14.9)	70 (3.4)	459 (5.1)	21 (2.7)	428 (7.0)	10.6 (0.12)
Saudi Arabia	9 (2.7)	480 (20.9)	59 (4.1)	439 (4.6)	32 (3.4)	397 (10.9)	10.2 (0.18)
Croatia	9 (2.5)	525 (5.4)	70 (3.8)	518 (2.4)	21 (3.4)	507 (4.7)	10.7 (0.14)
Sweden	9 (2.7)	556 (9.0)	59 (4.8)	533 (3.4)	32 (4.9)	527 (5.4)	10.3 (0.17)
Kuwait	9 (2.0)	355 (16.7)	65 (3.8)	355 (6.3)	27 (3.8)	329 (9.3)	10.4 (0.17)
Oman	9 (1.8)	368 (10.8)	73 (3.0)	377 (5.7)	18 (2.2)	348 (7.8)	10.6 (0.10)
Austria	8 (2.1)	534 (9.0)	75 (4.4)	535 (2.6)	17 (3.9)	515 (8.2)	10.4 (0.14)
Singapore	8 (0.0)	611 (12.9)	62 (0.0)	589 (4.6)	31 (0.0)	565 (6.6)	10.2 (0.00)
Finland	6 (1.9)	585 (3.3)	71 (4.2)	572 (2.9)	24 (4.2)	561 (4.5)	10.4 (0.16)
Lithuania	6 (2.0)	529 (11.9)	65 (3.6)	521 (3.0)	29 (3.4)	499 (5.5)	10.0 (0.13)
Kazakhstan	5 (1.9)	483 (29.5)	65 (4.4)	497 (7.1)	30 (4.1)	491 (9.9)	10.2 (0.12)
Chile	5 (1.9)	533 (15.9)	30 (3.3)	498 (6.1)	65 (3.8)	471 (4.0)	8.8 (0.19)
Denmark	r 5 (1.3)	537 (4.7)	65 (3.6)	530 (3.9)	30 (3.3)	530 (4.8)	10.1 (0.11)
Portugal	4 (2.0)	540 (8.5)	64 (5.0)	526 (5.6)	31 (4.5)	511 (6.4)	10.0 (0.13)
Azerbaijan	4 (1.7)	465 (17.3)	44 (3.8)	443 (10.6)	53 (3.8)	431 (6.3)	9.2 (0.15)
Romania	4 (1.6)	558 (22.5)	55 (4.1)	520 (7.0)	41 (4.1)	480 (10.0)	9.5 (0.15)
Poland	3 (1.6)	551 (17.0)	70 (3.5)	507 (2.9)	26 (3.7)	495 (4.7)	9.8 (0.15)
Morocco	3 (1.0)	349 (20.6)	25 (3.1)	292 (12.5)	72 (3.0)	252 (5.9)	8.0 (0.14)
Yemen	2 (1.2)	~ ~	35 (4.2)	225 (10.4)	62 (4.5)	201 (9.7)	8.7 (0.18)
Tunisia	2 (1.3)	~ ~	37 (4.3)	361 (6.6)	60 (4.2)	334 (6.8)	8.8 (0.16)
Spain	2 (1.3)	~ ~	58 (4.1)	513 (3.2)	40 (3.9)	493 (5.1)	9.6 (0.12)
Turkey	2 (1.0)	~ ~	33 (3.3)	484 (7.7)	65 (3.1)	449 (5.6)	8.6 (0.14)
Thailand	2 (1.1)	~ ~	52 (4.8)	478 (7.1)	46 (4.8)	461 (9.2)	9.5 (0.14)
Serbia	2 (1.2)	~ ~	52 (4.0)	520 (3.8)	46 (4.0)	507 (4.6)	9.4 (0.13)
Slovenia	2 (0.8)	~ ~	63 (2.9)	520 (3.0)	35 (3.1)	520 (4.0)	9.6 (0.10)
Russian Federation	2 (0.9)	~ ~	50 (4.4)	559 (4.4)	48 (4.3)	546 (4.2)	9.2 (0.11)
Hong Kong SAR	1 (0.9)	~ ~	60 (4.5)	536 (3.8)	38 (4.6)	534 (7.5)	9.7 (0.16)
Japan	1 (1.0)	~ ~	48 (4.5)	565 (2.5)	51 (4.5)	552 (2.8)	9.0 (0.16)
Italy	1 (0.8)	~ ~	52 (3.7)	523 (3.7)	46 (3.7)	525 (4.2)	9.4 (0.10)
Hungary	1 (0.9)	~ ~	49 (3.9)	556 (4.4)	50 (3.9)	515 (5.6)	9.0 (0.13)
Czech Republic	1 (0.9)	~ ~	45 (3.9)	538 (4.0)	54 (4.0)	535 (3.2)	8.9 (0.13)
Armenia	1 (0.8)	~ ~	56 (4.3)	422 (4.6)	43 (4.3)	409 (5.9)	9.6 (0.12)
Norway	1 (0.1)	~ ~	64 (4.7)	497 (3.1)	34 (4.7)	486 (3.3)	9.8 (0.13)
Germany	1 (0.8)	~ ~	66 (3.4)	539 (2.6)	33 (3.3)	508 (5.3)	9.9 (0.11)
Netherlands	r 1 (1.0)	~ ~	50 (6.0)	536 (3.4)	49 (6.0)	528 (3.3)	9.3 (0.18)
Georgia	1 (0.9)	~ ~	46 (3.9)	460 (6.2)	53 (3.6)	450 (5.3)	9.1 (0.11)
Slovak Republic	1 (0.7)	~ ~	41 (3.4)	545 (4.5)	58 (3.4)	521 (5.6)	8.8 (0.10)
Belgium (Flemish)	1 (0.0)	~ ~	70 (3.7)	513 (2.1)	30 (3.7)	500 (4.3)	9.9 (0.11)
International Avg.	8 (0.3)	508 (2.3)	58 (0.5)	492 (0.7)	34 (0.5)	471 (1.0)	

Centerpoint of scale set at 10.

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

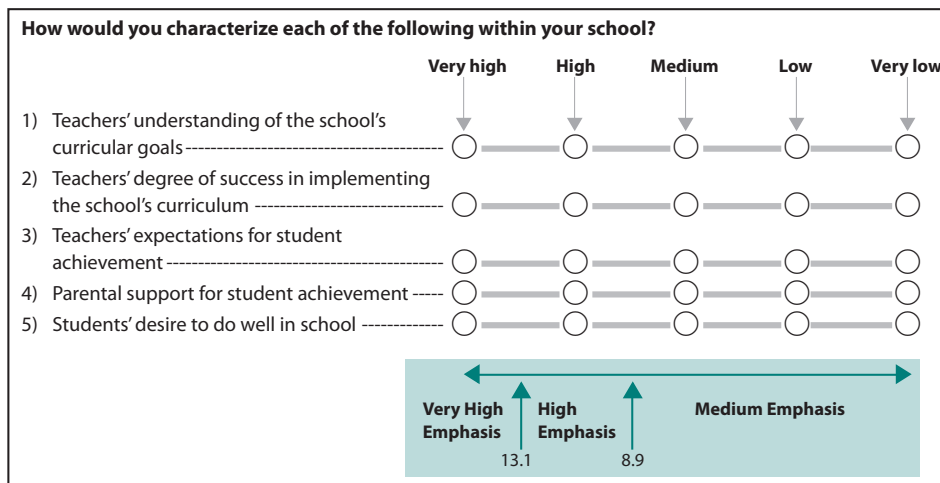
A tilde (~) indicates insufficient data to report achievement.

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 6.1: 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	
<b>Sixth Grade Participants</b>							
Honduras	10 (2.5)	415 (16.3)	61 (4.5)	431 (9.4)	29 (4.1)	439 (6.9)	10.2 (0.17)
Botswana	5 (1.8)	498 (34.3)	29 (3.8)	397 (12.3)	66 (4.1)	344 (5.4)	8.8 (0.18)
Yemen	2 (1.2)	~ ~	33 (4.2)	372 (10.8)	65 (4.2)	331 (8.9)	8.7 (0.17)
<b>Benchmarking Participants</b>							
Dubai, UAE	35 (0.3)	494 (3.3)	49 (0.5)	459 (3.1)	16 (0.4)	380 (7.0)	11.8 (0.01)
Alberta, Canada	31 (4.4)	551 (3.6)	58 (4.9)	541 (3.3)	12 (2.8)	524 (10.6)	11.8 (0.17)
Florida, US	27 (5.0)	582 (7.3)	58 (5.3)	530 (4.9)	15 (4.4)	528 (9.1)	11.5 (0.27)
Abu Dhabi, UAE	17 (3.4)	431 (11.1)	68 (3.8)	408 (5.7)	15 (3.0)	379 (15.6)	11.0 (0.17)
Ontario, Canada	12 (2.9)	546 (7.0)	65 (4.3)	532 (3.6)	23 (4.1)	508 (4.6)	10.6 (0.20)
North Carolina, US	7 (4.2)	589 (7.6)	76 (7.1)	542 (5.7)	17 (5.6)	514 (8.3)	10.8 (0.27)
Quebec, Canada	5 (1.6)	549 (10.2)	75 (3.6)	518 (3.0)	21 (3.4)	503 (5.2)	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 **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)	461 (7.0)	57 (0.3)	404 (5.2)	16 (0.1)	388 (4.7)	11.5 (0.02)
England	26 (3.5)	553 (11.3)	56 (4.7)	534 (7.7)	19 (3.4)	506 (14.1)	11.6 (0.18)
Australia	20 (2.7)	567 (12.6)	48 (3.8)	522 (5.6)	32 (3.1)	495 (8.0)	10.8 (0.16)
New Zealand	19 (3.8)	546 (5.1)	61 (4.9)	509 (6.8)	20 (3.3)	496 (7.0)	11.1 (0.15)
United Arab Emirates	17 (1.6)	505 (6.8)	63 (2.0)	463 (3.1)	20 (1.8)	433 (4.9)	11.1 (0.09)
Korea, Rep. of	16 (3.2)	577 (5.4)	56 (4.3)	560 (2.7)	28 (3.6)	550 (2.8)	10.7 (0.19)
United States	15 (2.0)	546 (7.4)	61 (2.7)	531 (3.8)	24 (2.1)	500 (5.6)	10.9 (0.09)
Chinese Taipei	12 (2.8)	598 (10.8)	81 (3.3)	560 (2.9)	7 (1.7)	543 (7.2)	11.4 (0.11)
Iran, Islamic Rep. of	12 (2.5)	517 (12.1)	62 (3.6)	478 (5.8)	27 (2.6)	447 (5.6)	10.7 (0.13)
Singapore	11 (0.0)	638 (13.7)	60 (0.0)	594 (4.8)	29 (0.0)	560 (9.0)	10.8 (0.00)
Israel	9 (2.4)	517 (14.1)	75 (3.6)	527 (4.9)	17 (3.0)	477 (12.5)	11.0 (0.13)
Indonesia	8 (2.2)	430 (17.7)	60 (4.8)	407 (6.8)	32 (4.4)	398 (6.1)	10.4 (0.16)
Oman	7 (1.4)	453 (11.0)	67 (2.8)	429 (4.3)	25 (2.6)	383 (5.7)	10.5 (0.10)
Saudi Arabia	7 (2.3)	466 (11.6)	48 (4.5)	439 (5.6)	45 (4.1)	428 (6.4)	9.9 (0.16)
Ghana	6 (1.7)	366 (13.7)	53 (4.6)	314 (8.7)	41 (4.3)	286 (7.5)	10.0 (0.13)
Malaysia	6 (1.9)	463 (28.5)	65 (3.1)	442 (7.8)	29 (2.7)	384 (9.1)	10.4 (0.12)
Kazakhstan	5 (1.8)	522 (23.1)	60 (4.2)	483 (6.4)	35 (4.1)	497 (6.8)	10.2 (0.13)
Jordan	5 (1.6)	479 (9.7)	56 (3.5)	459 (5.5)	39 (3.6)	431 (6.1)	10.0 (0.14)
Chile	5 (1.8)	505 (11.8)	27 (3.3)	489 (5.5)	68 (3.3)	449 (3.4)	8.7 (0.17)
Sweden	5 (2.1)	518 (9.9)	62 (4.6)	517 (4.0)	34 (4.4)	499 (5.0)	10.3 (0.15)
Romania	4 (1.6)	514 (13.0)	55 (4.6)	476 (5.6)	41 (4.6)	446 (5.3)	9.8 (0.16)
Finland	4 (1.8)	571 (8.8)	71 (4.1)	555 (2.9)	25 (3.9)	541 (4.0)	10.4 (0.13)
Syrian Arab Republic	4 (1.7)	402 (18.8)	39 (3.7)	439 (5.2)	57 (3.9)	420 (5.6)	9.3 (0.19)
Bahrain	4 (0.1)	552 (6.3)	57 (0.3)	468 (2.5)	40 (0.3)	420 (3.3)	10.3 (0.01)
Macedonia, Rep. of	3 (1.1)	426 (23.8)	64 (3.6)	422 (6.4)	33 (3.7)	383 (11.8)	10.2 (0.15)
Morocco	3 (0.9)	442 (22.7)	26 (2.7)	394 (5.0)	71 (2.7)	367 (2.7)	8.7 (0.12)
Hong Kong SAR	3 (1.6)	590 (31.2)	51 (4.1)	552 (5.1)	47 (4.3)	512 (6.6)	9.8 (0.15)
Palestinian Nat'l Auth.	3 (1.4)	410 (9.7)	52 (4.1)	423 (5.1)	46 (4.2)	418 (6.3)	9.7 (0.14)
Thailand	3 (1.4)	475 (15.5)	47 (3.9)	458 (7.2)	50 (4.1)	443 (5.7)	9.7 (0.15)
Lebanon	2 (1.2)	~ ~	59 (4.1)	431 (7.0)	39 (3.9)	371 (7.2)	9.8 (0.16)
Slovenia	2 (1.1)	~ ~	62 (3.4)	546 (3.3)	35 (3.5)	538 (4.8)	9.8 (0.12)
Turkey	2 (0.9)	~ ~	33 (3.1)	519 (7.9)	65 (3.0)	463 (4.0)	8.9 (0.11)
Norway	2 (1.1)	~ ~	63 (4.6)	499 (3.5)	35 (4.5)	485 (3.2)	10.1 (0.13)
Lithuania	2 (1.1)	~ ~	56 (3.9)	522 (3.8)	42 (3.9)	503 (4.5)	9.7 (0.12)
Japan	2 (1.1)	~ ~	52 (4.4)	566 (3.3)	47 (4.3)	548 (3.2)	9.7 (0.14)
Hungary	1 (1.0)	~ ~	48 (4.2)	538 (3.6)	51 (4.1)	507 (5.2)	9.3 (0.15)
Tunisia	1 (0.4)	~ ~	18 (3.1)	452 (8.3)	82 (3.0)	436 (2.6)	8.0 (0.14)
Italy	0 (0.0)	~ ~	47 (3.6)	506 (3.7)	53 (3.6)	497 (4.2)	9.4 (0.13)
Armenia	0 (0.0)	~ ~	41 (4.2)	450 (6.2)	59 (4.2)	428 (4.4)	9.3 (0.10)
Georgia	0 (0.0)	~ ~	30 (3.3)	431 (7.0)	70 (3.3)	416 (3.8)	8.7 (0.11)
Russian Federation	0 (0.0)	~ ~	28 (3.0)	561 (6.9)	72 (3.0)	535 (3.4)	8.8 (0.08)
Ukraine	0 (0.0)	~ ~	31 (3.5)	520 (5.2)	69 (3.5)	493 (4.2)	9.0 (0.10)
International Avg.	7 (0.3)	504 (2.8)	53 (0.6)	486 (0.9)	41 (0.5)	460 (1.0)	

Centerpoint of scale set at 10.

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

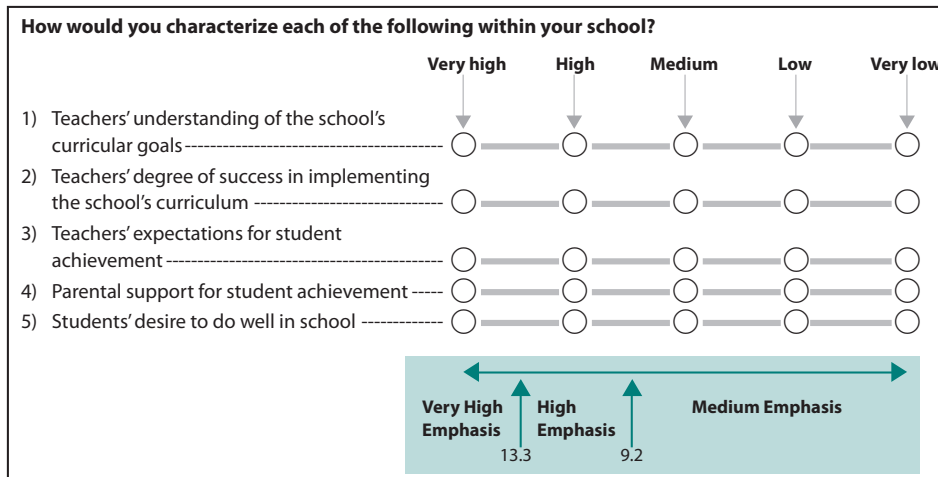
A tilde (~) indicates insufficient data to report achievement.

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

**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	
<b>Ninth Grade Participants</b>							
South Africa	4 (1.0)	470 (57.6)	31 (3.1)	359 (11.1)	66 (3.0)	310 (4.7)	8.9 (0.12)
Honduras	2 (1.0)	~ ~	52 (4.6)	370 (6.7)	47 (4.7)	364 (6.1)	9.4 (0.18)
Botswana	1 (0.8)	~ ~	20 (3.2)	429 (9.0)	79 (3.2)	395 (4.1)	8.2 (0.13)
<b>Benchmarking Participants</b>							
Dubai, UAE	28 (0.4)	528 (4.6)	59 (0.4)	480 (3.5)	13 (0.3)	417 (6.3)	11.8 (0.02)
Massachusetts, US	27 (6.1)	586 (11.1)	51 (6.7)	560 (10.8)	22 (5.8)	550 (14.8)	11.4 (0.34)
Connecticut, US	22 (5.6)	560 (15.9)	54 (6.9)	545 (10.2)	24 (5.7)	485 (13.8)	11.2 (0.29)
Alberta, Canada	19 (3.1)	562 (5.0)	68 (4.0)	543 (2.8)	13 (2.7)	536 (5.6)	11.5 (0.15)
Colorado, US	18 (4.6)	568 (9.5)	52 (7.2)	544 (8.1)	30 (5.7)	520 (14.4)	10.9 (0.26)
California, US	14 (3.0)	546 (12.8)	63 (5.9)	499 (7.8)	23 (4.9)	468 (10.6)	10.8 (0.21)
Indiana, US	13 (5.6)	547 (14.7)	68 (7.0)	535 (7.1)	18 (5.5)	534 (9.0)	11.1 (0.32)
Abu Dhabi, UAE	13 (3.4)	501 (18.3)	64 (4.4)	463 (5.2)	22 (3.9)	433 (6.7)	10.9 (0.18)
Ontario, Canada	13 (3.1)	525 (6.6)	62 (4.4)	527 (2.7)	25 (3.6)	507 (7.0)	10.7 (0.17)
Minnesota, US	12 (5.1)	546 (41.5)	68 (6.0)	557 (5.1)	20 (5.4)	548 (13.1)	11.1 (0.24)
Alabama, US	11 (2.8)	530 (26.3)	56 (9.0)	489 (8.1)	33 (9.0)	465 (11.5)	10.6 (0.27)
Florida, US	10 (4.9)	522 (40.8)	66 (8.2)	536 (10.2)	24 (6.9)	511 (13.8)	10.6 (0.31)
North Carolina, US	9 (4.2)	552 (10.5)	46 (7.4)	545 (9.6)	45 (6.6)	514 (11.1)	10.1 (0.25)
Quebec, Canada	7 (1.8)	561 (9.6)	62 (4.1)	525 (3.2)	31 (3.7)	501 (5.2)	10.4 (0.13)

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



### 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 28 (4.2)	527 (6.6)	66 (4.3)	514 (3.8)	6 (1.9)	496 (9.8)	11.8 (0.18)
Ireland	22 (3.4)	537 (5.0)	70 (3.5)	514 (4.5)	8 (1.8)	481 (8.9)	11.5 (0.15)
Croatia	21 (3.0)	515 (3.8)	69 (3.6)	516 (2.5)	10 (2.2)	520 (5.6)	11.4 (0.12)
England	17 (2.9)	554 (8.0)	67 (4.4)	529 (4.1)	16 (3.4)	504 (7.6)	11.1 (0.14)
United States	r 17 (2.1)	563 (4.3)	68 (2.7)	547 (2.5)	15 (1.8)	514 (5.3)	11.0 (0.11)
Korea, Rep. of	17 (3.4)	600 (6.1)	65 (3.7)	587 (2.1)	18 (3.4)	574 (3.7)	10.9 (0.19)
United Arab Emirates	17 (2.2)	461 (6.8)	66 (2.8)	429 (3.6)	17 (1.8)	402 (6.8)	11.0 (0.10)
Qatar	16 (3.9)	405 (20.8)	57 (5.2)	401 (7.5)	27 (4.1)	373 (10.7)	10.6 (0.19)
Australia	r 16 (2.9)	548 (11.3)	64 (4.4)	520 (4.1)	20 (3.1)	494 (5.4)	10.8 (0.16)
New Zealand	14 (2.1)	522 (7.1)	69 (2.9)	497 (2.8)	17 (2.5)	478 (6.4)	10.9 (0.12)
Malta	14 (0.1)	467 (3.5)	69 (0.1)	448 (2.1)	17 (0.1)	423 (3.3)	10.7 (0.00)
Kazakhstan	12 (2.3)	479 (13.4)	68 (3.4)	495 (6.5)	20 (2.9)	506 (11.9)	10.7 (0.13)
Chinese Taipei	11 (2.7)	562 (6.4)	73 (3.1)	554 (2.5)	17 (2.7)	538 (6.2)	10.6 (0.15)
Saudi Arabia	10 (2.2)	466 (12.1)	56 (4.3)	437 (6.0)	35 (4.0)	406 (10.9)	10.1 (0.16)
Austria	10 (2.1)	542 (4.6)	72 (2.8)	534 (3.4)	19 (2.5)	517 (6.1)	10.5 (0.12)
Oman	9 (1.8)	390 (13.4)	59 (3.3)	390 (4.8)	32 (2.9)	351 (6.5)	10.1 (0.11)
Iran, Islamic Rep. of	9 (1.8)	473 (14.5)	68 (3.5)	460 (5.4)	23 (3.0)	422 (7.9)	10.5 (0.13)
Bahrain	9 (2.6)	499 (17.5)	57 (4.3)	454 (4.6)	34 (3.9)	429 (6.9)	10.3 (0.16)
Romania	9 (2.3)	497 (20.9)	61 (3.7)	521 (6.3)	30 (3.3)	472 (11.7)	10.2 (0.16)
Azerbaijan	8 (2.4)	459 (19.6)	43 (3.7)	444 (7.5)	49 (4.2)	429 (8.1)	9.6 (0.18)
Poland	7 (2.0)	501 (7.4)	76 (3.2)	507 (2.9)	17 (2.8)	496 (4.3)	10.3 (0.12)
Spain	7 (2.1)	515 (10.2)	54 (4.4)	517 (3.2)	39 (4.1)	488 (4.2)	9.7 (0.16)
Denmark	7 (1.9)	544 (8.2)	64 (3.5)	536 (3.0)	29 (2.9)	514 (6.1)	10.1 (0.11)
Chile	6 (2.0)	540 (5.7)	43 (3.7)	492 (4.6)	51 (4.0)	464 (4.7)	9.2 (0.16)
Yemen	6 (2.4)	188 (26.0)	46 (4.6)	205 (9.3)	48 (4.7)	215 (10.9)	9.4 (0.22)
Hong Kong SAR	6 (2.1)	536 (10.1)	63 (4.6)	538 (5.0)	31 (4.4)	529 (8.7)	9.8 (0.18)
Kuwait	5 (1.9)	378 (20.9)	66 (3.5)	348 (6.1)	28 (3.4)	337 (8.4)	10.2 (0.15)
Serbia	5 (1.9)	553 (13.7)	69 (3.6)	520 (3.5)	25 (3.3)	495 (6.8)	10.1 (0.13)
Finland	5 (1.7)	577 (8.6)	63 (3.2)	575 (2.6)	33 (3.4)	561 (4.4)	9.9 (0.12)
Portugal	4 (1.7)	577 (16.8)	56 (4.7)	531 (3.7)	40 (4.6)	503 (5.6)	9.9 (0.18)
Sweden	r 4 (1.7)	570 (10.3)	63 (4.8)	541 (3.0)	33 (4.6)	519 (5.0)	9.9 (0.17)
Singapore	4 (1.1)	619 (19.2)	62 (2.7)	589 (5.0)	34 (2.5)	569 (5.8)	9.8 (0.09)
Georgia	4 (1.4)	476 (16.9)	61 (3.6)	461 (4.5)	36 (3.6)	442 (6.7)	9.8 (0.12)
Turkey	4 (1.1)	525 (12.0)	39 (3.3)	481 (8.4)	57 (3.3)	445 (5.0)	8.8 (0.14)
Thailand	3 (1.4)	444 (11.9)	55 (4.2)	485 (7.2)	42 (4.3)	460 (9.5)	9.5 (0.16)
Tunisia	3 (1.2)	413 (16.7)	38 (3.3)	365 (7.9)	59 (3.2)	330 (7.4)	8.9 (0.14)
Armenia	3 (1.2)	427 (22.7)	57 (3.2)	421 (4.9)	40 (3.2)	409 (5.4)	9.6 (0.12)
Lithuania	3 (0.9)	512 (13.8)	74 (3.2)	517 (3.2)	23 (3.2)	506 (5.6)	10.2 (0.09)
Belgium (Flemish)	2 (1.1)	~ ~	67 (3.4)	514 (2.2)	31 (3.3)	498 (4.1)	9.8 (0.10)
Slovenia	2 (1.1)	~ ~	66 (3.7)	524 (3.3)	32 (3.5)	513 (4.0)	9.7 (0.10)
Norway	2 (1.2)	~ ~	73 (4.3)	496 (2.5)	25 (4.4)	486 (4.5)	9.9 (0.16)
Czech Republic	2 (0.9)	~ ~	44 (4.2)	539 (3.6)	54 (4.2)	534 (3.8)	9.0 (0.14)
Japan	1 (1.1)	~ ~	56 (3.9)	561 (2.1)	42 (3.9)	555 (3.1)	9.4 (0.14)
Slovak Republic	1 (0.7)	~ ~	49 (3.4)	537 (3.3)	50 (3.3)	524 (6.8)	9.1 (0.13)
Italy	1 (0.4)	~ ~	55 (3.9)	531 (3.6)	44 (3.9)	518 (4.5)	9.3 (0.13)
Morocco	1 (0.5)	~ ~	25 (2.5)	279 (11.3)	74 (2.6)	257 (5.8)	7.9 (0.10)
Russian Federation	1 (0.0)	~ ~	52 (4.0)	554 (3.5)	47 (4.1)	550 (5.2)	9.3 (0.12)
Hungary	0 (0.3)	~ ~	56 (3.7)	552 (4.3)	44 (3.7)	511 (6.0)	9.3 (0.12)
Germany	0 (0.0)	~ ~	59 (3.5)	541 (2.8)	41 (3.5)	510 (4.2)	9.3 (0.11)
Netherlands	r 0 (0.0)	~ ~	40 (4.2)	537 (4.0)	60 (4.2)	526 (3.0)	9.0 (0.13)
International Avg.	8 (0.3)	499 (2.2)	60 (0.5)	492 (0.7)	33 (0.5)	472 (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.

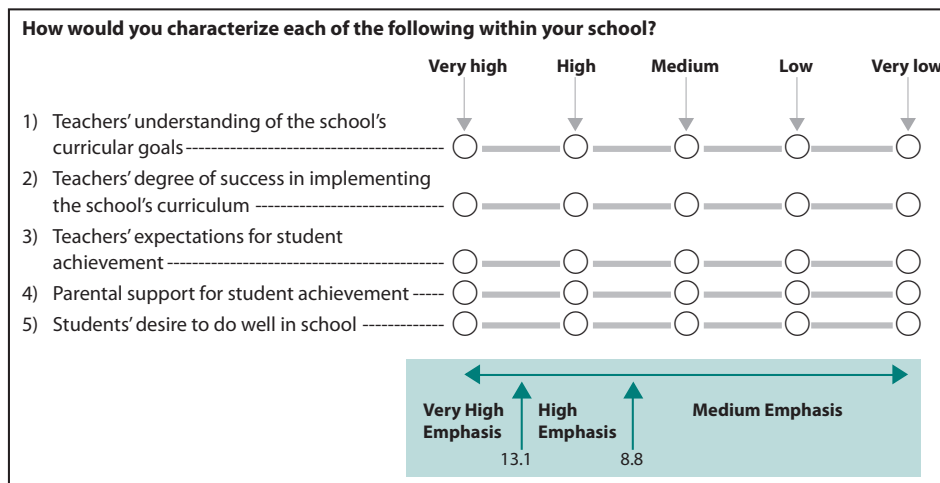
SOURCE: IEA's Trends in International Mathematics and Science Study - TIMSS 2011



**Exhibit 6.3: 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	
<b>Sixth Grade Participants</b>							
Honduras	12 (3.0)	473 (18.2)	52 (4.4)	435 (7.5)	37 (4.4)	414 (9.5)	10.2 (0.21)
Botswana	7 (2.3)	449 (33.1)	33 (3.8)	399 (11.6)	60 (3.9)	344 (6.5)	9.0 (0.18)
Yemen	5 (2.2)	305 (34.0)	42 (4.2)	345 (10.4)	53 (4.0)	349 (9.7)	9.2 (0.18)
<b>Benchmarking Participants</b>							
Florida, US	r 20 (4.5)	556 (8.2)	55 (4.5)	547 (5.8)	25 (3.3)	530 (7.0)	10.6 (0.24)
Alberta, Canada	r 19 (4.2)	542 (5.6)	68 (3.9)	547 (3.4)	13 (2.9)	509 (9.2)	11.2 (0.18)
Dubai, UAE	r 19 (3.9)	498 (10.8)	65 (3.9)	462 (6.2)	16 (1.4)	443 (8.9)	11.1 (0.13)
Abu Dhabi, UAE	16 (3.8)	456 (15.8)	65 (4.4)	407 (7.4)	18 (3.4)	400 (9.6)	11.0 (0.21)
Ontario, Canada	10 (2.1)	541 (7.8)	63 (3.8)	529 (3.3)	27 (3.5)	518 (6.1)	10.3 (0.16)
North Carolina, US	8 (3.2)	574 (14.2)	65 (4.6)	541 (6.0)	26 (4.5)	517 (5.4)	10.3 (0.27)
Quebec, Canada	5 (1.8)	530 (11.6)	66 (4.3)	518 (3.2)	29 (4.3)	510 (4.1)	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 **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	16 (1.7)	431 (14.9)	58 (3.6)	432 (7.8)	26 (3.6)	380 (11.1)	11.3 (0.14)
England	16 (2.5)	554 (14.5)	60 (3.6)	533 (5.9)	24 (3.2)	514 (12.0)	11.1 (0.15)
United States	r 10 (1.6)	563 (10.2)	54 (2.5)	536 (3.3)	36 (2.1)	503 (4.5)	10.5 (0.09)
Australia	s 10 (2.2)	570 (11.1)	51 (3.5)	535 (8.7)	39 (3.6)	501 (6.9)	10.4 (0.17)
Ghana	10 (2.4)	356 (18.0)	61 (3.7)	308 (7.7)	29 (3.5)	286 (7.9)	10.7 (0.16)
United Arab Emirates	9 (1.6)	490 (10.4)	66 (2.4)	465 (3.4)	25 (2.2)	440 (4.5)	11.0 (0.10)
Indonesia	9 (2.5)	387 (23.2)	56 (3.9)	408 (5.0)	35 (3.8)	405 (6.6)	10.7 (0.15)
Saudi Arabia	9 (2.5)	468 (8.6)	52 (4.0)	443 (4.4)	39 (4.0)	420 (6.2)	10.4 (0.16)
Bahrain	9 (2.3)	548 (6.1)	47 (3.6)	460 (4.9)	44 (2.8)	428 (4.4)	10.1 (0.12)
Chinese Taipei	8 (2.2)	582 (9.3)	66 (3.7)	567 (3.2)	26 (3.4)	551 (5.2)	10.8 (0.13)
New Zealand	8 (2.2)	518 (10.8)	62 (3.8)	518 (6.1)	30 (3.4)	494 (7.1)	10.6 (0.13)
Romania	7 (1.2)	496 (8.9)	55 (2.4)	471 (3.8)	37 (2.5)	449 (5.0)	10.4 (0.11)
Oman	7 (1.8)	454 (14.0)	53 (3.5)	440 (4.5)	40 (3.1)	388 (5.6)	10.1 (0.13)
Malaysia	7 (1.9)	460 (29.1)	64 (3.8)	439 (7.2)	30 (3.7)	389 (9.8)	10.6 (0.15)
Korea, Rep. of	5 (1.7)	569 (6.0)	56 (4.2)	564 (2.7)	39 (3.9)	554 (3.3)	10.3 (0.13)
Israel	5 (1.6)	549 (9.0)	60 (3.5)	528 (5.0)	35 (3.7)	492 (7.5)	10.5 (0.15)
Sweden	r 5 (2.1)	543 (10.5)	53 (3.7)	516 (3.9)	42 (3.4)	500 (3.7)	10.2 (0.13)
Lebanon	5 (1.4)	455 (13.8)	50 (3.4)	429 (7.0)	45 (3.4)	374 (6.0)	10.1 (0.14)
Kazakhstan	5 (0.8)	497 (11.2)	67 (2.7)	484 (5.0)	28 (2.7)	505 (6.0)	10.7 (0.09)
Macedonia, Rep. of	4 (1.0)	449 (14.1)	54 (2.1)	419 (5.6)	41 (2.2)	393 (7.6)	10.3 (0.10)
Hong Kong SAR	4 (1.9)	559 (21.3)	50 (4.5)	553 (5.2)	46 (4.5)	514 (6.7)	9.8 (0.20)
Syrian Arab Republic	4 (1.3)	429 (11.8)	46 (3.4)	436 (5.5)	50 (3.5)	417 (6.0)	9.8 (0.15)
Jordan	4 (1.7)	463 (15.0)	54 (4.2)	458 (5.4)	42 (4.0)	436 (6.6)	10.2 (0.14)
Japan	3 (1.5)	584 (23.1)	43 (4.2)	569 (3.3)	54 (4.1)	547 (2.9)	9.6 (0.16)
Iran, Islamic Rep. of	3 (1.2)	567 (22.4)	52 (3.5)	488 (5.0)	45 (3.5)	453 (4.7)	10.0 (0.12)
Chile	3 (1.2)	508 (21.4)	28 (3.7)	474 (6.8)	69 (3.8)	454 (3.0)	9.0 (0.17)
Singapore	3 (0.9)	624 (37.9)	54 (2.3)	616 (5.9)	43 (2.2)	554 (7.6)	10.1 (0.09)
Thailand	3 (1.4)	450 (24.2)	53 (4.1)	458 (7.2)	45 (4.2)	443 (5.5)	9.9 (0.15)
Norway	2 (1.2)	~ ~	64 (4.6)	499 (2.8)	34 (4.4)	483 (4.6)	10.4 (0.11)
Palestinian Nat'l Auth.	2 (1.2)	~ ~	52 (4.0)	423 (4.6)	46 (4.0)	417 (6.1)	10.0 (0.13)
Tunisia	2 (1.2)	~ ~	24 (3.5)	438 (5.3)	74 (3.8)	436 (2.8)	8.8 (0.14)
Lithuania	2 (0.5)	~ ~	57 (2.2)	522 (3.0)	41 (2.2)	503 (3.7)	10.1 (0.07)
Turkey	2 (0.9)	~ ~	33 (3.1)	510 (6.4)	65 (3.1)	466 (3.7)	9.1 (0.12)
Finland	2 (0.6)	~ ~	52 (2.6)	557 (3.0)	46 (2.6)	546 (3.0)	10.0 (0.09)
Morocco	1 (0.5)	~ ~	19 (2.3)	397 (4.9)	80 (2.4)	370 (2.6)	8.4 (0.09)
Russian Federation	1 (0.5)	~ ~	31 (2.0)	563 (3.6)	68 (2.2)	533 (3.7)	9.2 (0.09)
Slovenia	1 (0.6)	~ ~	44 (2.1)	544 (3.1)	54 (2.2)	541 (3.1)	9.5 (0.08)
Georgia	1 (0.5)	~ ~	31 (2.5)	437 (4.0)	68 (2.5)	412 (3.3)	9.0 (0.09)
Armenia	1 (0.4)	~ ~	34 (2.7)	448 (4.7)	65 (2.8)	433 (3.7)	9.2 (0.10)
Hungary	1 (0.2)	~ ~	42 (2.4)	541 (3.3)	58 (2.4)	509 (4.2)	9.3 (0.08)
Ukraine	0 (0.1)	~ ~	37 (3.0)	515 (4.9)	63 (3.0)	493 (4.1)	9.4 (0.08)
Italy	0 (0.0)	~ ~	36 (3.9)	509 (4.4)	64 (3.9)	498 (4.0)	9.2 (0.12)
International Avg.	5 (0.2)	504 (3.2)	50 (0.5)	487 (0.8)	46 (0.5)	463 (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.

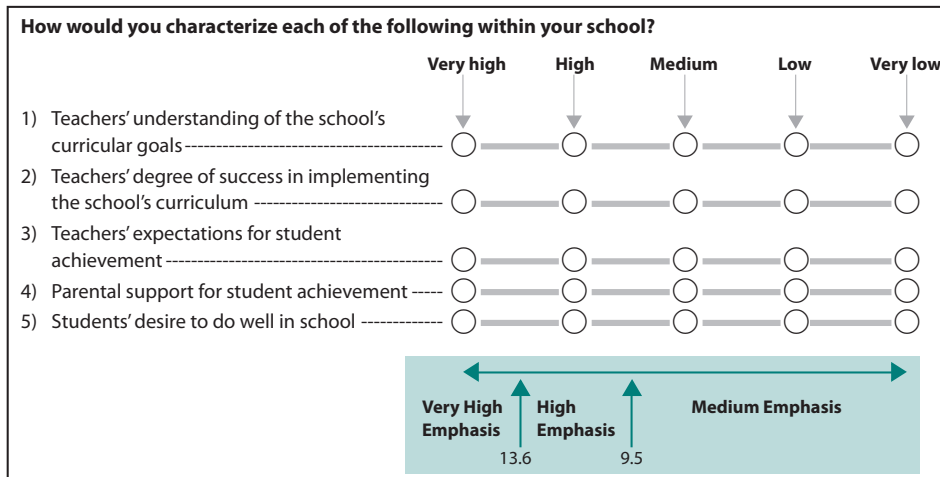
An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

An "x" indicates data are available for less than 50% of students.

**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	
<b>Ninth Grade Participants</b>							
Honduras	5 (2.1)	390 (19.6)	44 (4.8)	367 (5.9)	51 (4.9)	369 (7.0)	10.0 (0.20)
South Africa	5 (1.6)	329 (25.3)	31 (2.9)	366 (9.0)	64 (3.1)	312 (5.2)	9.4 (0.14)
Botswana	1 (0.9)	~ ~	27 (3.3)	422 (7.4)	72 (3.3)	395 (4.0)	8.8 (0.15)
<b>Benchmarking Participants</b>							
Alabama, US	r 15 (4.9)	506 (14.2)	43 (8.1)	487 (8.1)	42 (6.5)	470 (9.5)	10.6 (0.32)
Dubai, UAE	r 14 (4.2)	508 (10.6)	68 (4.3)	488 (4.9)	18 (1.9)	423 (10.6)	11.4 (0.20)
Alberta, Canada	13 (2.5)	565 (7.3)	68 (3.8)	544 (2.8)	18 (3.1)	540 (4.3)	11.4 (0.14)
Connecticut, US	r 13 (3.5)	590 (10.0)	45 (6.4)	541 (9.7)	42 (6.3)	509 (13.6)	10.5 (0.25)
Colorado, US	13 (4.6)	560 (13.5)	55 (6.4)	555 (7.4)	33 (5.3)	510 (11.0)	10.8 (0.26)
Massachusetts, US	r 11 (4.7)	603 (15.5)	70 (6.5)	561 (7.5)	18 (5.0)	547 (14.4)	11.3 (0.25)
Abu Dhabi, UAE	9 (2.6)	498 (15.8)	58 (4.6)	461 (5.7)	33 (4.6)	448 (7.4)	10.8 (0.17)
Ontario, Canada	9 (2.6)	532 (8.4)	68 (3.9)	526 (3.4)	23 (3.5)	504 (4.5)	11.0 (0.15)
California, US	s 9 (3.6)	509 (26.6)	53 (5.2)	514 (7.0)	39 (5.4)	478 (9.0)	10.5 (0.26)
North Carolina, US	s 7 (4.2)	576 (11.4)	76 (6.2)	529 (11.0)	17 (5.3)	492 (18.5)	10.8 (0.29)
Minnesota, US	r 7 (4.4)	582 (26.0)	69 (6.6)	554 (8.2)	24 (5.7)	544 (9.3)	10.6 (0.22)
Quebec, Canada	5 (2.2)	561 (11.6)	42 (4.2)	534 (4.3)	53 (3.6)	506 (4.2)	9.8 (0.15)
Indiana, US	r 4 (2.1)	580 (8.3)	62 (6.8)	536 (6.7)	34 (7.0)	527 (6.6)	10.4 (0.22)
Florida, US	x x	x x	x x	x x	x x	x x	x x

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



respectively. The teachers' reports were similar to those of the principals for both assessments. On average across countries, with each reported decrease in academic emphasis, the students had progressively lower average science achievement. Similar to the results from principals' reports, the eighth grade students had science teachers who reported slightly less emphasis on academic success than did the fourth grade students' teachers, but the achievement gap between students in **Very High Emphasis** and **Medium Emphasis** schools was greater at the eighth grade (41 points) than at the fourth grade (27 points).

### *Principals Spend Time on Leadership Activities*

The effectiveness of school leadership has become a central issue in education, and 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. In both the fourth and eighth grade assessments, principals were presented a list of nine leadership activities and asked to indicate on which activities they spent “a lot of time.”

Exhibit 6.5 presents principals' reports from the fourth grade assessment about the various activities on which they spend “a lot of time.” The pattern of varying reports from country to country can be observed among the fourth grade countries, sixth grade countries, and benchmarking participants. The first four activities about which principals were asked focused on school educational goals. On average across fourth grade countries, more than half of the students were in schools where promoting educational goals and developing educational goals occupied “a lot” of the principal’s time (59% and 60%, respectively). Also, more than half of the fourth grade students had principals who spent “a lot of time” monitoring whether teachers implemented educational goals and monitoring students' progress to ensure goals are reached (53% and 57%, respectively). Principals also were asked about maintaining school discipline.

Over two-thirds of students (68%) were in schools in which the principal spent “a lot of time” keeping an orderly atmosphere in the school and 44 percent had principals that spent “a lot of time” addressing disruptive student behavior. Exhibit 6.5 also shows that three other leadership activities were reported less frequently as occupying “a lot” of principals’ time: advising teachers, initiating projects or improvements, and participating in professional development for principals.

Exhibit 6.6 summarizes principals’ reports from the eighth grade assessment about time spent on leadership activities. As at the fourth grade, reports vary considerably from country to country; however, summary results indicate that about two-thirds of the eighth grade students were in schools where the principal reported spending “a lot of time” promoting and developing the school’s educational goals and monitoring whether those goals were implemented by teachers and achieved by 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 spent “a lot of time” addressing disruptive student behavior. Similar to the fourth grade, the last three areas—advising teachers, initiating projects or improvements, and participating in professional development for principals—less frequently occupy “a lot” of the principal’s time.

## 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 (3.2)	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
<b>Sixth Grade Participants</b>									
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)
<b>Benchmarking Participants</b>									
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
<b>Ninth Grade Participants</b>									
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)
<b>Benchmarking Participants</b>									
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)

## 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. TIMSS 2011 developed the Safe and Orderly School scale to provide information on the extent to which school safety might be related to science achievement. In both the fourth and eighth grade assessments, students' teachers were asked about 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. Students in **Not Safe and Orderly** schools had teachers that "disagreed a little" with three of the five statements and "agreed a little" with the other two, on average. All other students attended **Somewhat Safe and Orderly** schools. There was substantial variation across countries, but on average across the fourth grade countries, the majority of students (53%) were attending **Safe and Orderly** schools. Almost all of the remaining students (43%) were in schools judged to be **Somewhat Safe and Orderly**. Only a small percentage of students (4%, on average) were in schools

judged **Not Safe and Orderly**. On average across the fourth grade countries, the safer the school as reported by their teachers, the higher the students' average science achievement, with a 44-point difference between the average achievement of students at **Safe and Orderly** schools and that of students at **Not Safe and Orderly** schools (493 vs. 449).

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 eighth grade students, on average internationally, were in **Safe and Orderly** or **Somewhat Safe and Orderly** schools, the eighth grade science teachers were noticeably less positive in their reports. On average across the eighth grade countries, 45 percent of students (compared to 53% at fourth grade) were attending schools judged by their teachers to be **Safe and Orderly**, 50 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**. Similar to the fourth grade, on average across the eighth grade countries, the safer the school as reported by their teachers, the higher the students' average science achievement; however, the 31-point difference between the achievement of students in **Safe and Orderly** schools (488) and that of students in **Not Safe and Orderly** Schools (457) was less than at fourth grade.

### *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. The scale was based on principals' responses about the extent to which ten different discipline and safety problems existed at their school (see the second page of the exhibit for a 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 problems 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. All other students attended schools with **Minor Problems**.

## 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)	521 (3.5)	15 (2.6)	493 (7.2)	0 (0.4)	~ ~	11.5 (0.13)
Azerbaijan	85 (2.9)	437 (6.3)	14 (2.8)	444 (15.7)	1 (0.7)	~ ~	11.5 (0.13)
Georgia	82 (2.5)	456 (4.0)	17 (2.4)	454 (9.3)	1 (0.7)	~ ~	11.3 (0.12)
Ireland	78 (3.3)	527 (3.6)	20 (3.3)	482 (7.0)	2 (1.0)	~ ~	11.3 (0.15)
Australia	r 75 (3.5)	528 (3.5)	21 (3.2)	497 (7.8)	4 (1.4)	462 (15.4)	11.0 (0.17)
United Arab Emirates	74 (2.0)	434 (3.5)	25 (2.0)	421 (4.6)	0 (0.3)	~ ~	10.8 (0.08)
Croatia	73 (3.1)	514 (2.4)	26 (3.0)	520 (3.9)	1 (0.7)	~ ~	10.8 (0.12)
Thailand	72 (3.9)	477 (5.0)	26 (3.8)	478 (11.5)	3 (1.8)	338 (24.3)	11.0 (0.18)
Armenia	72 (2.7)	418 (4.3)	26 (2.6)	411 (7.3)	2 (1.1)	~ ~	10.9 (0.13)
New Zealand	70 (2.3)	512 (2.6)	29 (2.3)	466 (4.5)	1 (0.6)	~ ~	11.0 (0.10)
England	68 (4.0)	541 (3.8)	30 (3.9)	504 (7.0)	2 (1.2)	~ ~	10.8 (0.16)
Kazakhstan	67 (4.0)	498 (6.6)	33 (4.0)	489 (10.1)	1 (0.4)	~ ~	10.7 (0.15)
United States	r 65 (2.1)	556 (2.3)	30 (1.9)	530 (4.2)	5 (0.9)	497 (7.7)	10.5 (0.10)
Singapore	64 (2.1)	594 (4.1)	33 (2.1)	564 (5.3)	3 (0.5)	576 (17.5)	10.3 (0.09)
Qatar	62 (4.9)	398 (6.5)	34 (3.4)	392 (9.2)	4 (3.0)	362 (32.3)	10.3 (0.20)
Norway	62 (4.7)	500 (2.7)	38 (4.7)	485 (3.7)	0 (0.0)	~ ~	10.6 (0.15)
Denmark	61 (3.5)	533 (3.0)	38 (3.5)	531 (4.4)	1 (0.9)	~ ~	10.3 (0.11)
Iran, Islamic Rep. of	60 (3.5)	462 (4.4)	39 (3.4)	441 (6.6)	1 (0.8)	~ ~	10.3 (0.15)
Kuwait	60 (3.7)	352 (6.4)	38 (3.4)	337 (7.4)	3 (1.4)	353 (41.1)	10.1 (0.15)
Austria	58 (3.5)	538 (3.2)	39 (3.7)	525 (4.0)	2 (1.5)	~ ~	10.1 (0.13)
Netherlands	r 56 (4.6)	533 (2.9)	43 (4.6)	527 (4.0)	1 (0.8)	~ ~	10.2 (0.18)
Malta	56 (0.1)	456 (2.2)	43 (0.1)	437 (2.6)	2 (0.0)	~ ~	10.5 (0.00)
Poland	55 (3.4)	503 (3.3)	44 (3.4)	508 (3.8)	1 (0.6)	~ ~	10.0 (0.12)
Yemen	55 (4.2)	204 (7.8)	41 (4.1)	210 (13.1)	5 (1.8)	251 (23.2)	10.1 (0.18)
Bahrain	53 (5.4)	463 (5.0)	43 (5.3)	431 (7.1)	4 (1.9)	477 (10.0)	10.1 (0.19)
Hungary	52 (3.7)	543 (4.6)	44 (3.5)	526 (5.6)	4 (1.4)	491 (18.1)	9.8 (0.13)
Spain	51 (3.8)	518 (3.5)	45 (3.9)	495 (4.5)	5 (1.8)	472 (11.4)	9.7 (0.16)
Saudi Arabia	50 (4.6)	432 (7.0)	46 (4.5)	427 (9.5)	4 (1.8)	429 (29.2)	9.9 (0.17)
Russian Federation	49 (4.1)	554 (5.4)	49 (3.9)	551 (4.7)	2 (1.3)	~ ~	9.8 (0.17)
Hong Kong SAR	49 (5.0)	539 (3.8)	47 (4.9)	536 (6.4)	4 (1.8)	467 (60.0)	9.9 (0.17)
Oman	47 (2.5)	393 (6.2)	49 (2.6)	364 (4.7)	4 (1.4)	353 (21.1)	9.9 (0.10)
Lithuania	47 (3.2)	519 (3.4)	52 (3.1)	510 (3.4)	2 (0.9)	~ ~	9.7 (0.12)
Portugal	46 (5.1)	530 (8.0)	50 (4.9)	516 (4.5)	4 (1.3)	493 (14.4)	9.6 (0.20)
Belgium (Flemish)	46 (3.0)	516 (2.5)	52 (2.9)	504 (2.7)	1 (0.8)	~ ~	9.7 (0.11)
Germany	43 (3.7)	538 (3.7)	54 (3.7)	523 (3.5)	3 (1.3)	503 (10.8)	9.6 (0.12)
Slovak Republic	42 (3.3)	533 (5.9)	57 (3.3)	531 (5.2)	1 (0.7)	~ ~	9.4 (0.08)
Chile	41 (3.7)	503 (4.3)	46 (3.7)	469 (4.4)	13 (3.1)	449 (13.2)	9.2 (0.19)
Czech Republic	41 (3.9)	538 (4.3)	57 (3.8)	536 (3.3)	2 (0.9)	~ ~	9.4 (0.12)
Serbia	40 (4.2)	515 (4.7)	55 (4.1)	519 (3.8)	5 (1.6)	480 (17.5)	9.4 (0.16)
Romania	40 (3.6)	501 (10.1)	55 (3.7)	509 (7.3)	5 (1.6)	466 (22.0)	9.5 (0.14)
Sweden	r 39 (4.4)	551 (3.6)	57 (4.4)	529 (3.9)	4 (1.3)	465 (4.8)	9.5 (0.16)
Tunisia	38 (4.3)	359 (9.0)	52 (3.9)	340 (5.9)	9 (2.6)	322 (21.2)	9.3 (0.19)
Finland	38 (3.6)	581 (4.0)	57 (4.0)	566 (2.7)	6 (1.7)	548 (6.6)	9.4 (0.13)
Chinese Taipei	37 (4.1)	557 (3.7)	59 (4.1)	550 (2.5)	4 (1.5)	526 (15.7)	9.3 (0.15)
Turkey	37 (3.3)	487 (4.9)	45 (3.1)	455 (6.3)	18 (2.7)	432 (14.0)	8.9 (0.17)
Morocco	34 (3.4)	294 (6.8)	52 (3.9)	251 (8.1)	13 (2.4)	236 (10.8)	8.8 (0.14)
Slovenia	27 (3.1)	518 (4.0)	67 (3.2)	523 (3.5)	6 (1.6)	502 (9.1)	8.9 (0.11)
Korea, Rep. of	25 (3.7)	593 (5.0)	68 (3.7)	586 (2.1)	7 (2.1)	574 (5.4)	8.8 (0.18)
Italy	15 (2.2)	524 (7.3)	79 (2.9)	528 (2.9)	7 (2.0)	493 (16.8)	8.5 (0.11)
Japan	5 (1.8)	569 (10.5)	80 (3.4)	559 (2.1)	16 (2.8)	551 (4.3)	7.8 (0.10)
International Avg.	53 (0.5)	493 (0.7)	43 (0.5)	480 (0.9)	4 (0.2)	449 (4.0)	

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

Centerpoint of scale set at 10.

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

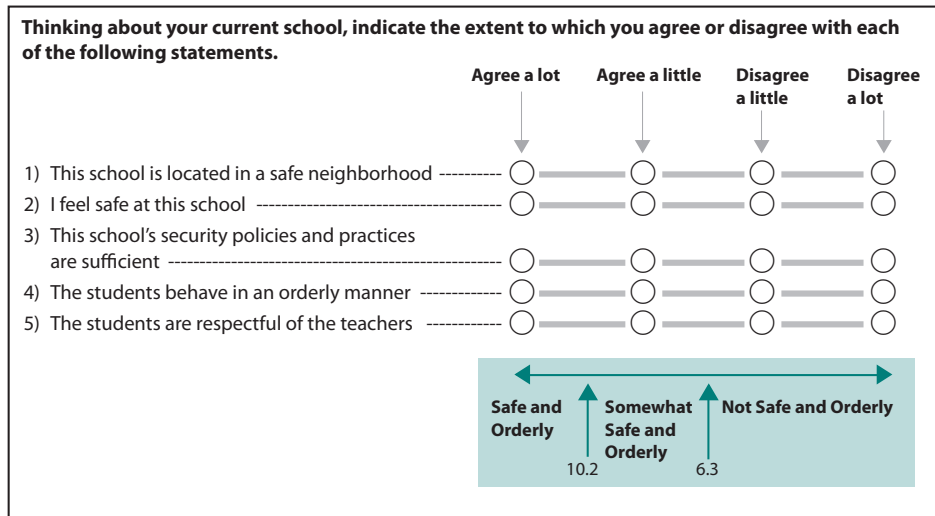
A tilde (~) indicates insufficient data to report achievement.

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	
<b>Sixth Grade Participants</b>							
Honduras	62 (4.4)	427 (8.3)	33 (4.2)	442 (9.0)	5 (1.7)	427 (30.2)	10.5 (0.19)
Yemen	48 (4.1)	342 (9.9)	46 (4.4)	348 (10.9)	6 (2.0)	350 (19.7)	9.7 (0.14)
Botswana	22 (3.9)	405 (15.2)	60 (4.1)	367 (8.5)	19 (3.2)	337 (10.1)	8.2 (0.19)
<b>Benchmarking Participants</b>							
Alberta, Canada	r 81 (3.5)	544 (3.2)	19 (3.6)	532 (5.8)	1 (0.8)	~ ~	11.3 (0.16)
Dubai, UAE	r 79 (1.9)	471 (3.6)	20 (1.9)	452 (10.1)	1 (0.0)	~ ~	11.2 (0.08)
Abu Dhabi, UAE	74 (3.7)	415 (6.3)	26 (3.7)	412 (8.5)	0 (0.0)	~ ~	10.8 (0.15)
North Carolina, US	65 (6.0)	549 (4.7)	30 (5.3)	513 (9.0)	5 (2.7)	530 (19.0)	10.4 (0.25)
Florida, US	r 63 (4.5)	555 (5.2)	28 (4.0)	527 (6.3)	9 (2.1)	520 (18.7)	10.3 (0.24)
Ontario, Canada	61 (3.9)	535 (3.1)	36 (3.9)	515 (5.2)	3 (1.0)	517 (11.3)	10.5 (0.17)
Quebec, Canada	43 (4.3)	518 (3.2)	53 (4.4)	517 (3.8)	4 (1.9)	498 (9.3)	9.8 (0.16)

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 (2.4)	422 (3.4)	25 (2.5)	416 (4.5)	2 (0.8)	~ ~	11.2 (0.10)
Norway	66 (4.2)	495 (3.1)	34 (4.2)	491 (4.5)	0 (0.0)	~ ~	11.1 (0.13)
Armenia	64 (2.9)	440 (3.7)	34 (2.9)	436 (4.6)	1 (0.6)	~ ~	10.9 (0.11)
United Arab Emirates	64 (2.4)	469 (3.1)	34 (2.2)	448 (4.1)	2 (0.7)	~ ~	10.7 (0.09)
Qatar	63 (3.9)	430 (7.6)	35 (3.9)	398 (9.2)	2 (0.0)	~ ~	10.9 (0.13)
Kazakhstan	63 (2.7)	495 (5.0)	36 (2.6)	483 (5.9)	1 (0.8)	~ ~	11.0 (0.11)
Ukraine	63 (3.0)	507 (4.4)	37 (3.0)	491 (4.7)	0 (0.0)	~ ~	10.7 (0.09)
Singapore	61 (2.8)	603 (5.7)	35 (2.8)	572 (8.2)	5 (0.9)	558 (21.0)	10.6 (0.10)
Syrian Arab Republic	60 (3.5)	428 (4.8)	37 (3.4)	424 (6.4)	3 (1.4)	425 (25.8)	10.7 (0.12)
Macedonia, Rep. of	59 (2.5)	416 (6.9)	38 (2.6)	400 (6.7)	3 (0.8)	407 (17.0)	10.6 (0.10)
Thailand	57 (4.3)	445 (6.2)	40 (4.5)	458 (5.9)	3 (1.4)	472 (3.8)	10.5 (0.15)
Romania	57 (2.3)	471 (4.1)	40 (2.3)	457 (4.4)	3 (0.9)	440 (10.8)	10.6 (0.10)
Iran, Islamic Rep. of	55 (3.0)	485 (5.2)	41 (3.1)	465 (5.7)	4 (1.2)	433 (14.4)	10.5 (0.11)
Australia <sup>s</sup>	53 (3.8)	542 (8.4)	38 (3.2)	510 (7.1)	9 (2.8)	488 (13.8)	10.4 (0.21)
New Zealand	53 (3.7)	528 (4.5)	42 (4.0)	491 (9.1)	6 (1.8)	498 (11.7)	10.3 (0.13)
Israel	50 (3.9)	530 (5.3)	45 (4.0)	509 (6.4)	5 (1.5)	455 (13.0)	10.2 (0.16)
Lebanon	49 (3.2)	426 (5.7)	46 (3.4)	393 (7.7)	5 (1.7)	338 (10.9)	10.2 (0.13)
United States <sup>r</sup>	49 (2.1)	545 (4.2)	44 (2.1)	511 (4.1)	7 (1.3)	493 (8.8)	10.2 (0.10)
Hong Kong SAR	49 (4.1)	550 (6.1)	48 (4.2)	524 (6.2)	2 (0.7)	~ ~	10.3 (0.17)
Saudi Arabia	49 (4.0)	443 (4.9)	48 (4.2)	433 (5.4)	3 (1.7)	391 (16.2)	10.2 (0.14)
England	46 (3.0)	544 (7.3)	46 (3.0)	522 (7.1)	8 (1.6)	516 (15.1)	10.2 (0.13)
Russian Federation	45 (2.6)	552 (3.4)	52 (2.4)	535 (3.8)	3 (0.8)	530 (9.5)	10.1 (0.09)
Oman	44 (2.9)	432 (5.0)	52 (3.0)	415 (5.4)	3 (1.1)	350 (9.7)	10.0 (0.10)
Hungary	44 (2.4)	533 (2.8)	51 (2.5)	515 (4.0)	5 (1.2)	510 (12.4)	9.8 (0.09)
Indonesia	43 (4.3)	400 (8.1)	55 (4.4)	410 (5.2)	2 (1.0)	~ ~	10.2 (0.15)
Malaysia	43 (3.8)	437 (9.1)	52 (3.6)	417 (9.0)	5 (1.5)	421 (22.1)	9.9 (0.15)
Bahrain	42 (2.6)	490 (4.5)	56 (2.6)	428 (3.2)	2 (0.1)	~ ~	10.0 (0.08)
Turkey	38 (3.3)	501 (7.6)	50 (3.4)	479 (4.6)	12 (2.1)	440 (8.6)	9.4 (0.14)
Palestinian Nat'l Auth.	37 (3.9)	423 (5.4)	57 (4.0)	422 (5.1)	5 (1.9)	370 (19.0)	9.7 (0.14)
Lithuania	37 (2.2)	518 (3.0)	61 (2.2)	512 (3.2)	3 (0.6)	515 (10.4)	9.7 (0.07)
Jordan	36 (4.0)	466 (6.5)	53 (3.9)	446 (6.1)	11 (2.1)	406 (17.6)	9.4 (0.16)
Ghana	34 (3.8)	335 (9.0)	57 (4.1)	295 (7.6)	9 (2.4)	267 (16.7)	9.5 (0.16)
Morocco	31 (2.5)	392 (4.0)	54 (2.6)	371 (2.8)	15 (1.7)	367 (5.3)	9.2 (0.12)
Chile	30 (3.0)	490 (4.8)	52 (4.1)	456 (4.0)	18 (3.7)	428 (6.1)	9.2 (0.19)
Sweden <sup>r</sup>	29 (3.2)	525 (4.5)	67 (3.1)	507 (3.4)	4 (1.1)	470 (11.0)	9.5 (0.13)
Finland	26 (2.7)	562 (3.9)	68 (2.6)	550 (2.5)	6 (1.2)	535 (7.8)	9.2 (0.09)
Chinese Taipei	25 (3.0)	581 (6.2)	68 (3.8)	559 (3.2)	8 (2.2)	548 (8.6)	9.2 (0.12)
Tunisia	22 (3.3)	447 (7.2)	59 (4.1)	437 (3.1)	18 (3.3)	435 (6.6)	8.7 (0.16)
Slovenia	20 (1.9)	546 (3.6)	72 (2.1)	542 (2.9)	8 (1.3)	540 (5.0)	9.0 (0.08)
Italy	17 (2.9)	512 (5.0)	75 (3.1)	502 (3.3)	8 (2.1)	475 (12.9)	8.9 (0.13)
Korea, Rep. of	13 (2.6)	568 (5.4)	75 (3.4)	558 (2.2)	11 (2.6)	565 (6.3)	8.4 (0.13)
Japan	10 (2.4)	583 (7.4)	73 (3.4)	557 (3.0)	17 (3.1)	548 (4.6)	8.3 (0.12)
International Avg.	45 (0.5)	488 (0.9)	50 (0.5)	470 (0.8)	6 (0.3)	457 (2.3)	

Centerpoint of scale set at 10.

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

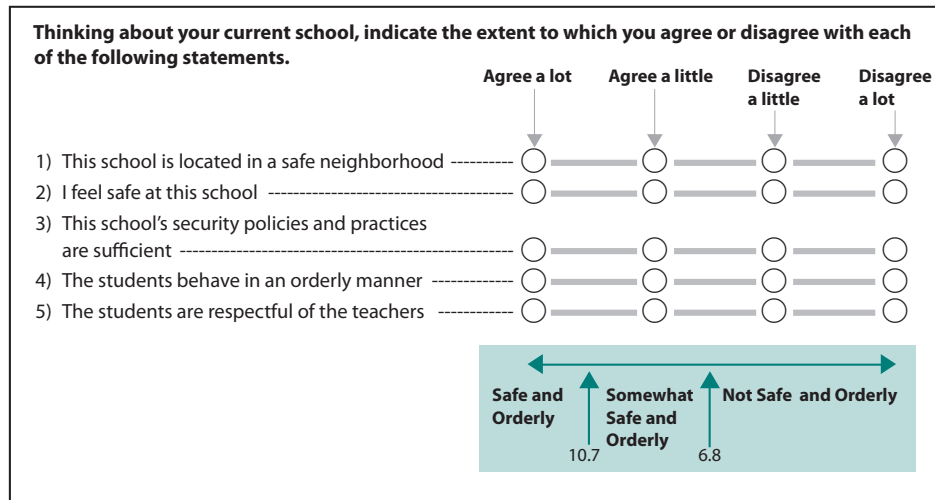
A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

An "x" indicates data are available for less than 50% of students.

**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	
<b>Ninth Grade Participants</b>							
Honduras	48 (5.0)	367 (6.1)	43 (5.1)	373 (7.6)	8 (2.1)	362 (9.0)	9.9 (0.21)
South Africa	23 (3.2)	349 (12.7)	51 (3.6)	325 (6.3)	26 (2.7)	320 (8.0)	8.6 (0.18)
Botswana	11 (2.7)	427 (14.4)	62 (3.8)	407 (4.0)	27 (3.5)	388 (7.0)	7.9 (0.15)
<b>Benchmarking Participants</b>							
Dubai, UAE	r 75 (1.6)	495 (3.6)	24 (1.6)	431 (6.1)	1 (0.0)	~ ~	11.1 (0.08)
Alberta, Canada	r 75 (3.6)	548 (2.9)	23 (3.3)	541 (3.9)	2 (1.0)	~ ~	11.3 (0.15)
Minnesota, US	r 69 (5.7)	556 (4.1)	30 (5.9)	547 (17.5)	1 (1.0)	~ ~	11.5 (0.25)
Colorado, US	r 66 (5.6)	551 (5.5)	26 (5.0)	520 (12.9)	7 (2.5)	527 (33.1)	10.8 (0.26)
Indiana, US	r 62 (5.6)	543 (5.4)	34 (5.2)	522 (7.1)	3 (2.1)	521 (40.3)	10.9 (0.23)
Massachusetts, US	r 61 (7.1)	575 (7.4)	35 (7.3)	550 (12.1)	4 (3.0)	490 (42.2)	10.9 (0.31)
North Carolina, US	s 58 (7.7)	544 (13.3)	32 (7.1)	510 (9.3)	10 (4.7)	475 (21.8)	10.6 (0.37)
Abu Dhabi, UAE	r 57 (4.4)	464 (6.3)	40 (4.4)	456 (6.7)	3 (1.5)	442 (8.7)	10.4 (0.17)
Ontario, Canada	r 54 (4.2)	529 (3.0)	41 (4.2)	514 (4.6)	5 (1.7)	500 (4.9)	10.6 (0.18)
Connecticut, US	r 50 (7.2)	565 (7.9)	44 (7.1)	508 (12.8)	5 (3.0)	445 (28.6)	10.5 (0.26)
Quebec, Canada	r 44 (3.7)	532 (3.6)	54 (3.6)	511 (4.4)	2 (1.1)	~ ~	10.0 (0.12)
Alabama, US	r 41 (8.4)	502 (13.0)	49 (8.3)	478 (7.3)	10 (3.9)	432 (16.7)	9.7 (0.27)
California, US	s 34 (4.8)	534 (12.1)	58 (4.3)	482 (7.7)	8 (2.8)	480 (17.9)	9.8 (0.25)
Florida, US	x x	x x	x x	x x	x x	x x	x x



## 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)	498 (5.6)	9 (2.4)	463 (17.7)	1 (0.6)	~ ~	11.1 (0.10)
Armenia	87 (2.7)	414 (4.0)	8 (2.3)	422 (13.9)	4 (1.7)	445 (20.7)	11.1 (0.12)
Northern Ireland	85 (3.7)	520 (3.4)	15 (3.7)	502 (7.3)	0 (0.0)	~ ~	11.0 (0.13)
Netherlands	85 (3.6)	536 (2.7)	15 (3.6)	516 (6.5)	0 (0.0)	~ ~	11.3 (0.16)
Hong Kong SAR	84 (2.9)	540 (3.0)	15 (2.8)	505 (19.5)	1 (0.0)	~ ~	11.2 (0.12)
Ireland	83 (3.1)	521 (3.5)	16 (3.0)	499 (11.2)	1 (1.0)	~ ~	11.1 (0.13)
Georgia	81 (2.8)	454 (4.7)	13 (2.4)	454 (9.5)	6 (1.4)	470 (10.8)	10.7 (0.15)
Spain	80 (3.3)	510 (2.9)	12 (2.8)	486 (8.7)	8 (2.3)	498 (13.8)	10.7 (0.17)
Chinese Taipei	77 (3.3)	552 (2.7)	23 (3.3)	551 (4.4)	0 (0.0)	~ ~	11.4 (0.13)
England	77 (4.1)	537 (3.5)	20 (4.2)	500 (10.0)	3 (1.6)	486 (7.3)	10.6 (0.11)
Korea, Rep. of	76 (3.6)	588 (2.3)	18 (3.4)	580 (3.6)	6 (2.0)	582 (7.0)	10.9 (0.15)
Lithuania	75 (3.5)	518 (2.8)	25 (3.5)	505 (5.3)	0 (0.0)	~ ~	10.5 (0.11)
Iran, Islamic Rep. of	74 (3.9)	458 (5.0)	25 (3.9)	440 (8.7)	0 (0.0)	~ ~	10.7 (0.11)
Japan	72 (3.2)	559 (2.1)	24 (3.3)	558 (4.2)	4 (1.6)	557 (8.2)	10.5 (0.12)
New Zealand	69 (3.4)	512 (3.1)	28 (3.2)	469 (6.0)	3 (1.3)	428 (14.4)	10.7 (0.12)
Czech Republic	68 (3.6)	539 (2.9)	29 (3.5)	529 (5.1)	2 (1.0)	~ ~	10.2 (0.11)
Belgium (Flemish)	67 (4.4)	512 (2.3)	32 (4.3)	504 (4.4)	1 (0.0)	~ ~	10.4 (0.13)
Singapore	67 (0.0)	584 (4.1)	33 (0.0)	581 (6.5)	0 (0.0)	~ ~	10.7 (0.00)
Croatia	66 (4.0)	517 (2.6)	31 (4.0)	512 (3.6)	2 (1.2)	~ ~	10.4 (0.12)
Portugal	66 (5.4)	527 (4.3)	30 (5.5)	512 (8.6)	5 (1.7)	519 (20.6)	10.3 (0.17)
Russian Federation	65 (3.9)	555 (4.4)	35 (3.8)	549 (5.1)	0 (0.5)	~ ~	10.1 (0.09)
United States	64 (2.7)	555 (3.0)	34 (2.6)	532 (3.6)	2 (0.7)	~ ~	10.3 (0.09)
Australia	64 (3.9)	523 (4.1)	34 (3.8)	510 (5.0)	2 (1.0)	~ ~	10.4 (0.12)
Finland	64 (4.5)	574 (2.9)	34 (4.4)	565 (3.8)	2 (1.2)	~ ~	10.2 (0.12)
Romania	64 (4.1)	519 (6.1)	23 (3.4)	501 (12.0)	13 (2.9)	446 (23.8)	10.2 (0.17)
Malta	64 (0.1)	457 (2.3)	30 (0.1)	429 (2.7)	6 (0.1)	419 (7.2)	10.1 (0.00)
Bahrain	63 (4.2)	453 (5.3)	25 (4.1)	437 (9.7)	12 (4.7)	452 (7.3)	10.1 (0.30)
Qatar	63 (3.2)	414 (5.9)	23 (2.6)	366 (11.8)	14 (2.3)	347 (14.8)	9.9 (0.14)
Azerbaijan	62 (4.2)	438 (7.2)	8 (2.3)	431 (12.8)	30 (3.9)	440 (10.6)	9.5 (0.26)
United Arab Emirates	61 (2.3)	438 (3.1)	24 (2.0)	402 (5.1)	15 (1.7)	411 (7.7)	9.9 (0.11)
Denmark	60 (4.0)	534 (3.3)	40 (4.0)	525 (5.1)	1 (0.0)	~ ~	10.0 (0.09)
Norway	58 (4.4)	494 (3.1)	39 (4.2)	492 (3.3)	3 (1.6)	483 (10.2)	9.9 (0.13)
Thailand	58 (4.6)	484 (5.5)	36 (4.4)	457 (10.7)	6 (2.3)	444 (24.5)	10.1 (0.16)
Slovak Republic	57 (3.6)	537 (3.5)	35 (3.4)	529 (7.4)	9 (2.0)	503 (18.4)	9.9 (0.12)
Italy	56 (3.9)	525 (4.0)	25 (3.8)	526 (6.1)	19 (2.9)	520 (6.6)	9.5 (0.14)
Serbia	55 (4.7)	513 (4.7)	30 (4.2)	524 (5.3)	15 (3.2)	506 (7.3)	9.7 (0.18)
Slovenia	53 (3.7)	519 (3.9)	42 (3.6)	523 (4.2)	4 (1.4)	503 (8.3)	10.0 (0.12)
Poland	51 (3.9)	505 (3.4)	46 (4.2)	505 (3.6)	3 (1.4)	518 (14.9)	9.7 (0.09)
Hungary	50 (4.2)	550 (5.0)	45 (4.2)	528 (5.8)	5 (1.5)	456 (21.6)	9.7 (0.13)
Sweden	49 (4.7)	547 (3.1)	45 (4.7)	522 (4.8)	6 (1.2)	504 (11.0)	9.7 (0.13)
Austria	46 (4.3)	538 (3.7)	42 (4.1)	529 (4.4)	12 (3.3)	515 (8.0)	9.4 (0.14)
Saudi Arabia	45 (3.9)	439 (6.1)	25 (3.8)	409 (15.0)	30 (3.8)	433 (10.2)	9.1 (0.18)
Germany	41 (3.3)	541 (3.4)	53 (3.5)	526 (4.0)	6 (1.5)	475 (10.7)	9.5 (0.08)
Chile	39 (3.4)	498 (5.1)	43 (4.1)	477 (4.5)	18 (2.9)	459 (6.4)	9.2 (0.14)
Turkey	38 (2.9)	486 (6.7)	35 (3.4)	458 (6.9)	26 (3.4)	436 (10.5)	8.9 (0.14)
Oman	28 (2.9)	378 (6.4)	37 (3.1)	366 (5.8)	35 (3.0)	372 (8.9)	8.4 (0.15)
Tunisia	26 (3.3)	345 (9.3)	27 (3.2)	343 (10.1)	46 (4.0)	348 (8.2)	8.0 (0.19)
Kuwait	24 (3.5)	358 (9.6)	48 (4.2)	351 (7.5)	29 (3.6)	334 (9.6)	8.4 (0.15)
Morocco	14 (2.4)	271 (12.0)	24 (3.1)	244 (8.6)	62 (3.9)	271 (6.3)	7.2 (0.15)
Yemen	13 (2.8)	226 (14.4)	33 (4.1)	217 (12.0)	54 (4.0)	201 (11.4)	7.5 (0.16)
International Avg.	61 (0.5)	492 (0.7)	29 (0.5)	477 (1.2)	11 (0.3)	448 (2.2)	

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

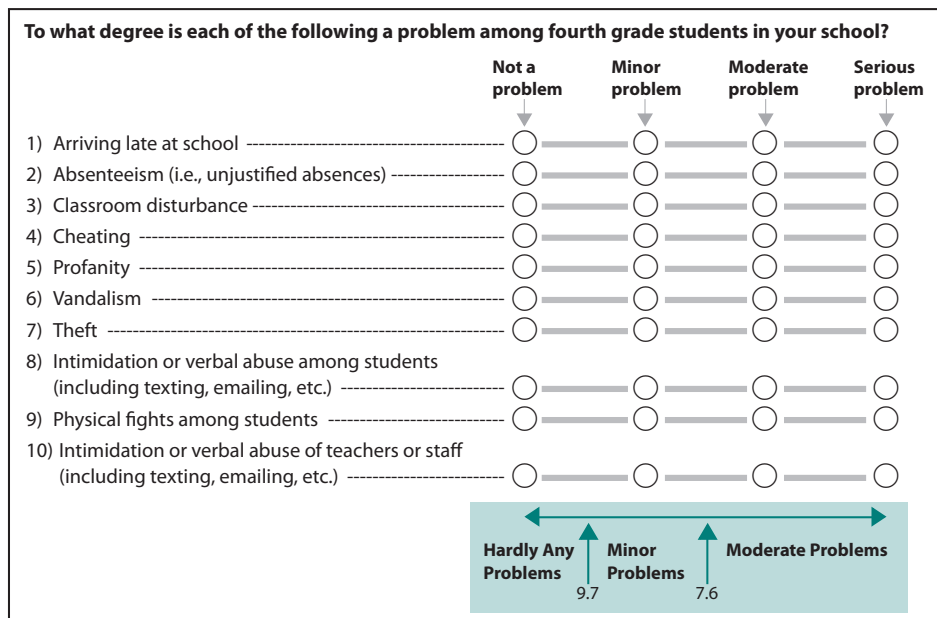
Centerpoint of scale set at 10.  
 (.) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.  
 A tilde (~) indicates insufficient data to report achievement.  
 An "r" indicates data are available for at least 70% but less than 85% of the students.



**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	
<b>Sixth Grade Participants</b>							
Honduras	44 (4.5)	441 (10.5)	37 (4.9)	428 (10.9)	19 (3.3)	417 (9.2)	9.1 (0.17)
Botswana	27 (3.9)	403 (16.3)	58 (4.2)	363 (6.8)	14 (2.9)	315 (12.9)	9.0 (0.12)
Yemen	13 (3.0)	377 (17.2)	34 (4.3)	341 (9.6)	53 (4.0)	336 (10.6)	7.5 (0.15)
<b>Benchmarking Participants</b>							
Dubai, UAE	74 (0.4)	474 (2.3)	17 (0.4)	411 (7.4)	10 (0.1)	437 (4.2)	10.6 (0.01)
Alberta, Canada	68 (4.3)	546 (3.1)	32 (4.3)	535 (4.2)	0 (0.0)	~ ~	10.5 (0.13)
Ontario, Canada	66 (4.5)	531 (3.4)	33 (4.6)	524 (4.8)	1 (0.9)	~ ~	10.4 (0.13)
Abu Dhabi, UAE	63 (4.2)	421 (6.0)	25 (4.0)	384 (9.8)	12 (2.8)	384 (12.1)	9.9 (0.18)
Florida, US	60 (6.5)	553 (6.6)	40 (6.5)	530 (4.7)	0 (0.0)	~ ~	10.3 (0.21)
North Carolina, US	59 (7.5)	550 (5.5)	41 (7.5)	527 (10.0)	0 (0.0)	~ ~	10.1 (0.23)
Quebec, Canada	56 (4.3)	521 (3.1)	40 (4.1)	511 (4.1)	4 (1.9)	496 (12.6)	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 10.7, 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 8.0, 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	81 (3.5)	488 (5.2)	19 (3.5)	497 (8.6)	0 (0.0)	~ ~	11.8 (0.11)
Iran, Islamic Rep. of	66 (3.3)	481 (5.6)	33 (3.3)	462 (4.8)	1 (0.6)	~ ~	11.4 (0.11)
Armenia	66 (4.0)	440 (4.0)	29 (3.9)	429 (7.8)	6 (1.9)	439 (15.2)	11.0 (0.13)
Chinese Taipei	64 (4.1)	565 (3.4)	35 (4.2)	562 (4.8)	1 (0.8)	~ ~	11.4 (0.15)
Georgia	61 (3.2)	417 (3.9)	35 (3.3)	425 (5.5)	3 (1.4)	437 (20.9)	10.8 (0.10)
Ukraine	59 (4.5)	505 (5.2)	33 (4.3)	497 (4.8)	7 (2.4)	487 (12.5)	10.7 (0.16)
Qatar	52 (0.6)	424 (5.9)	36 (0.3)	412 (3.5)	12 (0.4)	399 (7.5)	10.6 (0.04)
Singapore	51 (0.0)	604 (5.2)	49 (0.0)	574 (6.6)	0 (0.0)	~ ~	10.9 (0.00)
Hong Kong SAR	51 (4.6)	558 (5.7)	49 (4.7)	510 (6.4)	1 (0.0)	~ ~	10.9 (0.15)
Russian Federation	50 (3.4)	552 (4.6)	50 (3.5)	533 (4.8)	0 (0.4)	~ ~	10.5 (0.07)
Romania	50 (3.9)	468 (5.0)	41 (3.7)	467 (6.5)	9 (2.6)	434 (13.3)	10.5 (0.17)
Indonesia	47 (4.0)	413 (6.0)	39 (4.7)	401 (8.3)	14 (3.1)	392 (11.1)	10.3 (0.13)
United Arab Emirates	47 (2.0)	477 (3.4)	36 (2.4)	450 (5.0)	17 (1.4)	458 (5.4)	10.2 (0.08)
Lebanon	47 (4.4)	422 (7.8)	39 (4.4)	395 (9.2)	14 (2.9)	380 (11.3)	10.2 (0.20)
Saudi Arabia	46 (4.6)	435 (4.6)	26 (3.8)	444 (8.7)	29 (3.9)	436 (7.6)	9.7 (0.22)
Japan	45 (4.1)	567 (4.0)	35 (4.1)	555 (3.4)	20 (3.3)	542 (3.8)	10.0 (0.18)
Oman	43 (3.3)	445 (4.3)	33 (3.2)	394 (6.9)	25 (2.9)	410 (7.9)	9.8 (0.19)
England	41 (4.6)	558 (8.7)	58 (4.7)	518 (8.0)	1 (0.0)	~ ~	10.6 (0.14)
Macedonia, Rep. of	38 (3.9)	416 (8.4)	49 (4.0)	413 (7.7)	13 (2.1)	377 (18.8)	10.0 (0.15)
Korea, Rep. of	38 (3.7)	564 (2.7)	50 (4.2)	560 (2.7)	13 (3.0)	548 (5.4)	10.1 (0.17)
Bahrain	37 (0.3)	457 (3.1)	49 (0.3)	449 (2.8)	14 (0.2)	452 (6.4)	10.0 (0.01)
Thailand	34 (4.1)	452 (8.4)	61 (4.3)	449 (5.8)	5 (1.8)	463 (21.1)	10.1 (0.13)
Australia	33 (3.8)	548 (9.1)	62 (3.9)	511 (5.7)	5 (1.5)	484 (22.0)	10.1 (0.10)
Ghana	33 (4.3)	335 (10.0)	62 (4.2)	294 (7.3)	6 (1.9)	266 (13.7)	10.0 (0.13)
Slovenia	32 (3.5)	537 (4.1)	61 (4.0)	549 (2.9)	7 (2.3)	520 (7.9)	9.9 (0.11)
Norway	32 (4.7)	501 (4.6)	64 (4.7)	492 (3.2)	4 (1.7)	473 (7.2)	10.1 (0.13)
United States	30 (2.3)	536 (4.6)	66 (2.3)	523 (3.7)	4 (0.8)	485 (21.0)	10.1 (0.07)
Italy	30 (3.3)	512 (4.3)	48 (3.3)	501 (4.8)	23 (2.7)	488 (5.2)	9.4 (0.13)
Chile	29 (3.9)	488 (7.3)	54 (4.5)	458 (3.6)	16 (3.4)	433 (4.6)	9.6 (0.15)
Palestinian Nat'l Auth.	27 (3.7)	427 (6.4)	44 (3.7)	419 (6.4)	29 (3.4)	416 (7.6)	9.1 (0.20)
Finland	27 (4.1)	564 (4.6)	70 (4.1)	548 (2.6)	3 (1.5)	542 (9.9)	9.9 (0.11)
Turkey	26 (3.1)	513 (8.7)	49 (3.4)	475 (4.5)	25 (2.7)	466 (7.2)	9.2 (0.14)
Lithuania	26 (3.5)	502 (6.9)	72 (3.7)	519 (2.8)	2 (1.1)	~ ~	10.1 (0.11)
Israel	26 (3.9)	531 (7.3)	58 (4.2)	523 (5.3)	16 (2.6)	478 (14.3)	9.4 (0.16)
Malaysia	25 (3.8)	459 (11.4)	72 (4.0)	420 (7.2)	3 (1.2)	319 (18.0)	9.9 (0.10)
New Zealand	23 (3.5)	528 (8.8)	74 (3.9)	510 (5.5)	3 (1.7)	494 (29.4)	9.7 (0.09)
Jordan	22 (3.0)	460 (9.0)	51 (4.0)	449 (5.6)	27 (3.6)	439 (7.8)	9.1 (0.14)
Hungary	22 (3.5)	538 (6.3)	68 (3.9)	524 (3.7)	10 (2.5)	475 (12.7)	9.6 (0.11)
Sweden	18 (4.1)	530 (6.4)	80 (4.4)	507 (3.3)	3 (1.5)	479 (13.8)	9.5 (0.10)
Morocco	13 (2.0)	393 (7.0)	38 (3.6)	365 (4.5)	49 (3.4)	380 (3.5)	8.2 (0.13)
Syrian Arab Republic	11 (2.5)	437 (14.4)	21 (3.8)	437 (8.1)	68 (4.1)	421 (4.4)	7.4 (0.19)
Tunisia	9 (1.8)	437 (5.7)	44 (3.9)	436 (3.4)	47 (3.9)	442 (3.7)	8.1 (0.12)
International Avg.	38 (0.5)	488 (1.0)	49 (0.6)	473 (0.9)	13 (0.4)	446 (2.2)	

Centerpoint of scale set at 10.

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

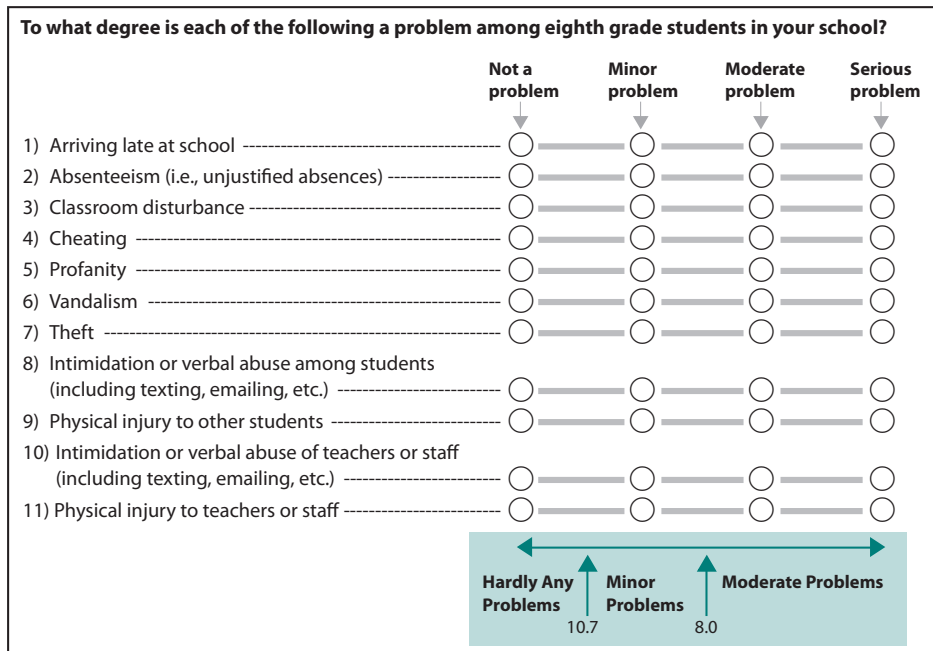
A tilde (~) indicates insufficient data to report achievement.

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

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	
<b>Ninth Grade Participants</b>							
Honduras	35 (4.2)	380 (8.9)	51 (4.8)	363 (4.6)	14 (3.2)	355 (8.2)	9.8 (0.15)
South Africa	8 (2.1)	338 (28.1)	63 (3.6)	336 (6.1)	29 (3.3)	317 (7.2)	8.8 (0.10)
Botswana	5 (1.8)	416 (18.7)	70 (3.7)	408 (4.4)	25 (3.6)	389 (7.9)	8.8 (0.09)
<b>Benchmarking Participants</b>							
Dubai, UAE	62 (0.4)	493 (3.5)	25 (0.4)	478 (4.7)	13 (0.1)	457 (4.3)	10.9 (0.01)
Massachusetts, US	49 (7.2)	590 (7.8)	41 (7.0)	543 (8.9)	9 (4.4)	529 (20.7)	10.6 (0.20)
Abu Dhabi, UAE	41 (3.9)	480 (6.1)	43 (4.5)	448 (9.5)	16 (3.2)	453 (9.1)	10.1 (0.18)
Minnesota, US	37 (6.3)	560 (12.8)	59 (6.9)	549 (4.3)	4 (3.5)	569 (19.3)	10.2 (0.22)
Ontario, Canada	36 (4.3)	527 (3.5)	58 (4.3)	521 (3.5)	6 (2.2)	496 (12.3)	10.2 (0.14)
Alberta, Canada	32 (3.9)	558 (4.6)	68 (3.9)	540 (2.7)	0 (0.0)	~ ~	10.3 (0.12)
Quebec, Canada	31 (3.7)	534 (4.0)	63 (4.2)	514 (4.1)	6 (2.0)	516 (11.3)	10.0 (0.11)
Florida, US	27 (7.4)	526 (20.6)	69 (7.7)	531 (8.7)	4 (2.5)	504 (25.7)	9.8 (0.22)
Indiana, US	r 27 (7.1)	554 (9.0)	71 (7.5)	532 (6.6)	2 (0.1)	~ ~	10.2 (0.18)
Colorado, US	25 (6.3)	560 (7.3)	72 (7.0)	535 (7.2)	3 (0.2)	528 (6.2)	9.8 (0.18)
Connecticut, US	r 24 (4.7)	572 (11.4)	76 (4.7)	522 (7.5)	0 (0.0)	~ ~	10.1 (0.11)
Alabama, US	r 23 (7.5)	507 (12.8)	72 (7.4)	483 (9.2)	5 (2.9)	429 (20.6)	9.9 (0.23)
North Carolina, US	17 (5.2)	537 (16.1)	82 (5.4)	530 (8.7)	1 (0.1)	~ ~	9.7 (0.19)
California, US	r 14 (6.1)	513 (12.4)	77 (6.2)	505 (6.2)	8 (2.6)	412 (15.9)	9.6 (0.20)



On average across fourth grade countries, more than half of the students (61%) attended schools in which principals reported **Hardly Any Problems** with discipline and safety and 29 percent attended schools in which principals reported **Minor Problems**. Only 11 percent attended schools in which principals reported **Moderate Problems**. Students whose principals reported **Moderate Problems** had substantially lower science achievement, by 44 points on average, than students whose principals reported **Hardly Any Problems** (448 vs. 492). The results for the sixth grade countries 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 a complete list of the problems). Compared to the fourth grade, fewer eighth grade students attend schools in which principals reported **Hardly Any Problems** (38% vs. 61%) and more attended schools in which principals reported **Minor Problems** (49% vs. 29%). There were similar percentages of students in schools with **Moderate Problems** at the fourth and eighth grades (11% and 13%). Further examination of the principals’ reports of each of the discipline and safety problems indicates that the increase in the percentage of students attending schools with **Moderate Problems** and **Minor 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” at the fourth grade schools but were more often a “minor problem” at the eighth grade schools. Similar to fourth grade, the eighth grade students whose principals reported **Moderate Problems** in their schools had substantially lower science achievement, by 40 points on average, than those students whose principals reported **Hardly Any Problems**. The results for the ninth grade countries and benchmarking participants followed a similar pattern.

### *Students Bullied at School*

Bullying typically 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. Students bullied **About Weekly** experienced each of three of the six behaviors “once or twice a month” and each of the other three “a few times a year.” All other students were bullied **About Monthly**. On average across the fourth grade countries, 48 percent of the students **Almost Never** experienced these bullying behaviors; across countries the percentages ranged from 17 to 80 percent.

The majority of the 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**.

The fourth grade students' reports about being bullied were related to their average science achievement on TIMSS 2011. Each successive category of increased bullying was related to a decrease in average science achievement; there was a 33-point difference in achievement between students who were **Almost Never** bullied and those who were bullied **About Weekly** (497 vs. 464).

Exhibit 6.12 provides the results for the TIMSS 2011 eighth grade assessment for the Students Bullied at School scale, which was based on

## 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)	422 (3.9)	13 (0.7)	413 (6.3)	7 (0.5)	374 (5.8)	11.5 (0.05)
Azerbaijan	75 (1.5)	459 (5.8)	16 (1.0)	432 (6.8)	9 (0.7)	391 (8.3)	11.4 (0.08)
Sweden	68 (1.0)	540 (2.9)	25 (1.0)	529 (3.5)	7 (0.5)	500 (6.7)	10.9 (0.04)
Georgia	66 (1.2)	469 (3.2)	23 (0.8)	457 (5.3)	11 (0.8)	405 (9.9)	10.9 (0.06)
Kazakhstan	64 (1.7)	496 (4.8)	23 (1.2)	506 (7.5)	13 (0.9)	485 (8.8)	10.8 (0.08)
Ireland	64 (1.3)	528 (3.4)	25 (1.0)	511 (3.9)	12 (0.9)	474 (6.1)	10.7 (0.06)
Croatia	61 (1.1)	523 (2.2)	28 (0.9)	512 (2.8)	11 (0.6)	492 (4.6)	10.6 (0.05)
Finland	61 (1.2)	574 (2.7)	30 (0.9)	572 (3.5)	9 (0.6)	547 (4.9)	10.5 (0.04)
Poland	61 (0.9)	511 (3.1)	26 (0.7)	506 (3.2)	13 (0.6)	482 (4.4)	10.6 (0.04)
Denmark	60 (1.1)	535 (2.6)	31 (0.8)	526 (3.5)	9 (0.7)	503 (6.4)	10.5 (0.04)
Serbia	57 (1.2)	523 (3.2)	30 (0.9)	519 (4.2)	13 (0.7)	481 (5.8)	10.5 (0.06)
Northern Ireland	57 (1.3)	523 (2.6)	29 (1.0)	519 (3.2)	14 (1.0)	490 (6.7)	10.4 (0.06)
Austria	53 (1.3)	536 (3.4)	30 (0.9)	532 (3.3)	17 (0.9)	519 (3.9)	10.2 (0.05)
Norway	53 (1.8)	499 (2.7)	33 (1.1)	493 (3.3)	14 (0.9)	482 (4.4)	10.2 (0.06)
Korea, Rep. of	53 (1.2)	587 (2.3)	32 (0.8)	592 (2.4)	15 (0.6)	577 (3.7)	10.3 (0.05)
Chinese Taipei	53 (1.3)	558 (2.5)	30 (0.8)	551 (2.8)	17 (0.8)	535 (4.1)	10.2 (0.05)
United States	51 (0.7)	552 (2.5)	29 (0.5)	547 (2.1)	20 (0.6)	525 (3.6)	10.1 (0.03)
Italy	51 (1.2)	529 (2.9)	33 (1.0)	528 (3.6)	16 (0.7)	508 (4.7)	10.2 (0.05)
Slovenia	50 (1.3)	526 (3.2)	32 (0.8)	526 (3.3)	18 (1.0)	496 (3.9)	10.0 (0.05)
Japan	50 (1.2)	559 (2.2)	33 (0.8)	563 (2.6)	17 (0.8)	550 (3.8)	10.1 (0.05)
Hong Kong SAR	50 (1.2)	540 (3.8)	33 (0.9)	538 (3.7)	17 (0.7)	516 (8.8)	10.1 (0.04)
Portugal	49 (1.4)	526 (4.4)	35 (1.2)	525 (4.4)	17 (0.9)	503 (5.6)	10.1 (0.06)
Germany	48 (1.2)	539 (3.6)	36 (0.9)	530 (2.9)	16 (0.8)	507 (4.3)	10.1 (0.05)
Lithuania	48 (1.3)	524 (2.7)	36 (0.9)	516 (3.1)	17 (0.8)	490 (3.8)	10.0 (0.05)
Romania	47 (1.8)	525 (5.7)	32 (1.5)	504 (7.0)	21 (1.1)	474 (9.0)	9.9 (0.07)
Slovak Republic	46 (1.1)	541 (3.4)	34 (0.8)	532 (4.6)	20 (0.9)	514 (5.0)	9.9 (0.05)
Czech Republic	46 (1.2)	545 (2.8)	34 (1.0)	540 (3.3)	20 (0.8)	514 (5.1)	10.0 (0.05)
Netherlands	46 (1.2)	534 (2.4)	37 (1.1)	535 (2.4)	17 (0.9)	518 (3.7)	9.9 (0.05)
Russian Federation	45 (1.4)	558 (3.8)	35 (1.0)	552 (3.9)	19 (1.0)	543 (4.8)	10.0 (0.06)
England	45 (1.3)	537 (3.6)	36 (1.0)	533 (3.8)	20 (0.8)	505 (5.1)	9.8 (0.05)
Spain	44 (1.3)	512 (3.2)	34 (0.9)	509 (3.4)	23 (1.0)	492 (3.7)	9.8 (0.05)
Yemen	42 (2.1)	218 (8.2)	31 (1.4)	217 (9.0)	27 (1.8)	199 (9.6)	9.7 (0.11)
Malta	42 (0.7)	458 (2.8)	36 (0.7)	448 (3.2)	22 (0.6)	421 (3.5)	9.7 (0.03)
Iran, Islamic Rep. of	41 (1.7)	450 (5.4)	35 (1.2)	456 (5.0)	23 (1.3)	456 (5.0)	9.8 (0.07)
Hungary	40 (1.1)	539 (5.2)	36 (0.8)	543 (3.9)	24 (0.8)	518 (4.5)	9.7 (0.04)
Singapore	39 (0.9)	595 (3.5)	38 (0.6)	587 (3.5)	23 (0.8)	560 (4.4)	9.7 (0.03)
Saudi Arabia	39 (1.7)	450 (6.0)	33 (1.2)	437 (5.7)	27 (1.2)	397 (7.1)	9.6 (0.08)
Tunisia	39 (1.4)	369 (6.3)	37 (1.1)	348 (5.7)	24 (1.2)	312 (7.0)	9.7 (0.06)
Belgium (Flemish)	39 (1.1)	515 (2.2)	41 (0.9)	512 (2.4)	20 (0.8)	490 (3.1)	9.7 (0.04)
Chile	38 (1.1)	494 (2.8)	31 (0.9)	486 (2.8)	31 (1.0)	463 (3.5)	9.5 (0.05)
Australia	38 (1.1)	525 (2.9)	38 (1.0)	519 (3.3)	25 (0.7)	501 (4.1)	9.5 (0.04)
Turkey	37 (0.9)	485 (4.0)	33 (0.7)	470 (4.5)	30 (0.9)	437 (5.6)	9.5 (0.04)
Kuwait	37 (1.5)	372 (6.0)	33 (1.0)	367 (5.5)	30 (1.3)	319 (6.0)	9.5 (0.07)
Morocco	35 (1.9)	286 (7.5)	33 (1.1)	267 (4.9)	32 (1.6)	243 (5.5)	9.4 (0.08)
United Arab Emirates	34 (0.8)	451 (3.1)	35 (0.5)	433 (2.8)	31 (0.8)	402 (3.8)	9.4 (0.04)
New Zealand	32 (1.0)	509 (3.4)	37 (1.0)	505 (3.0)	31 (0.9)	479 (3.1)	9.3 (0.04)
Bahrain	31 (1.1)	479 (4.5)	33 (1.1)	456 (4.5)	36 (1.3)	431 (4.1)	9.2 (0.06)
Oman	31 (1.2)	395 (5.0)	37 (0.9)	379 (4.5)	31 (1.0)	361 (5.6)	9.3 (0.05)
Qatar	30 (1.1)	434 (6.3)	32 (1.0)	411 (5.1)	38 (1.0)	364 (5.4)	9.1 (0.05)
Thailand	17 (1.2)	489 (6.2)	35 (1.2)	477 (6.2)	48 (1.6)	464 (6.2)	8.6 (0.06)
International Avg.	48 (0.2)	497 (0.6)	32 (0.1)	489 (0.6)	20 (0.1)	464 (0.8)	

Centerpoint of scale set at 10.

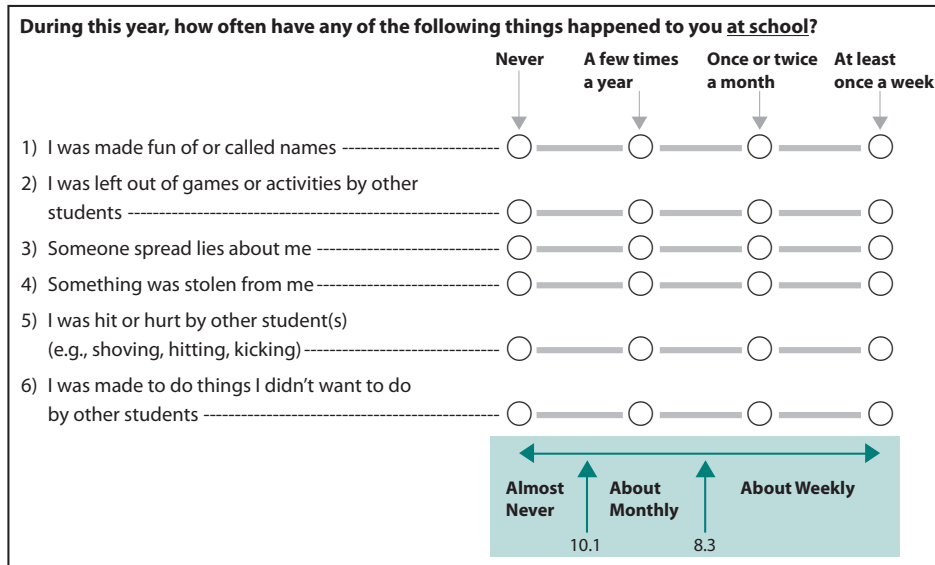
( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

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

**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	
<b>Sixth Grade Participants</b>							
Yemen	43 (1.9)	354 (8.9)	34 (1.3)	357 (8.0)	23 (1.3)	323 (8.1)	9.8 (0.08)
Honduras	38 (1.2)	439 (6.6)	32 (0.9)	441 (6.1)	30 (1.2)	421 (6.8)	9.5 (0.06)
Botswana	12 (0.7)	416 (10.3)	41 (0.9)	376 (6.6)	47 (1.1)	352 (5.6)	8.6 (0.03)
<b>Benchmarking Participants</b>							
Florida, US	50 (1.4)	553 (4.5)	29 (0.9)	547 (4.1)	21 (1.1)	526 (5.1)	10.1 (0.06)
North Carolina, US	49 (1.5)	547 (4.7)	32 (1.2)	541 (4.5)	19 (1.1)	519 (6.6)	10.0 (0.06)
Quebec, Canada	44 (1.4)	523 (2.9)	37 (1.1)	515 (3.6)	19 (1.1)	502 (3.5)	9.8 (0.05)
Alberta, Canada	42 (1.3)	552 (3.1)	35 (0.9)	543 (3.3)	22 (1.0)	520 (3.3)	9.7 (0.05)
Ontario, Canada	42 (1.1)	533 (3.5)	36 (0.9)	533 (3.5)	22 (1.0)	513 (4.4)	9.7 (0.04)
Dubai, UAE	37 (1.6)	486 (3.6)	35 (0.9)	470 (3.6)	28 (1.2)	431 (5.4)	9.5 (0.06)
Abu Dhabi, UAE	33 (1.4)	434 (6.4)	36 (0.8)	416 (5.5)	31 (1.4)	390 (6.2)	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)	443 (3.2)	11 (0.6)	439 (6.2)	3 (0.3)	373 (13.6)	11.5 (0.04)
Sweden	79 (0.6)	512 (2.5)	18 (0.5)	512 (3.5)	3 (0.3)	476 (9.1)	10.9 (0.03)
Georgia	79 (0.9)	432 (2.8)	17 (0.8)	415 (4.5)	4 (0.4)	374 (11.8)	11.2 (0.05)
Norway	77 (0.8)	497 (2.6)	19 (0.7)	490 (5.2)	4 (0.3)	464 (11.6)	10.8 (0.04)
Italy	76 (1.1)	503 (2.7)	19 (0.9)	497 (3.4)	5 (0.4)	480 (7.8)	10.7 (0.05)
Kazakhstan	73 (1.1)	489 (4.4)	21 (1.0)	505 (5.7)	5 (0.5)	480 (7.7)	11.0 (0.06)
Finland	71 (0.9)	554 (2.5)	24 (0.8)	551 (3.7)	5 (0.4)	545 (5.5)	10.5 (0.04)
Ukraine	70 (1.2)	506 (3.7)	24 (1.1)	499 (4.6)	6 (0.5)	472 (7.8)	10.4 (0.05)
Russian Federation	69 (0.9)	543 (3.3)	25 (0.7)	546 (3.7)	6 (0.4)	531 (8.3)	10.4 (0.04)
England	68 (1.1)	535 (5.1)	24 (0.7)	537 (5.5)	7 (0.6)	515 (10.9)	10.4 (0.05)
Macedonia, Rep. of	68 (0.9)	426 (5.4)	22 (0.7)	404 (5.7)	10 (0.6)	357 (8.9)	10.3 (0.05)
Chinese Taipei	67 (1.0)	565 (2.7)	26 (0.8)	567 (3.1)	7 (0.4)	547 (4.8)	10.4 (0.05)
Lithuania	65 (1.1)	517 (2.7)	28 (1.0)	518 (3.4)	7 (0.5)	483 (4.8)	10.2 (0.05)
Korea, Rep. of	65 (1.1)	559 (2.2)	28 (0.9)	564 (2.8)	7 (0.5)	555 (4.5)	10.3 (0.05)
Japan	63 (1.2)	555 (2.7)	28 (0.8)	563 (3.3)	9 (0.6)	559 (5.2)	10.3 (0.05)
United States	63 (0.7)	527 (2.7)	28 (0.6)	526 (3.6)	9 (0.3)	518 (3.1)	10.1 (0.02)
Chile	62 (0.9)	468 (2.6)	30 (0.8)	456 (3.1)	9 (0.5)	446 (4.7)	9.9 (0.03)
Hungary	61 (1.2)	525 (3.3)	31 (0.9)	523 (4.1)	8 (0.5)	514 (5.9)	10.0 (0.05)
Saudi Arabia	60 (1.2)	442 (4.0)	30 (1.0)	436 (4.7)	10 (0.6)	412 (5.8)	10.1 (0.06)
Slovenia	59 (1.0)	540 (2.9)	32 (1.0)	550 (3.5)	8 (0.5)	541 (5.8)	9.9 (0.04)
Australia	58 (1.1)	523 (5.0)	31 (1.0)	521 (5.1)	11 (0.7)	502 (6.7)	9.9 (0.05)
Tunisia	58 (1.0)	440 (2.4)	31 (0.7)	439 (3.2)	11 (0.7)	434 (4.5)	9.9 (0.04)
Iran, Islamic Rep. of	56 (1.1)	480 (4.4)	33 (0.8)	474 (4.4)	12 (0.6)	453 (5.2)	9.9 (0.05)
New Zealand	55 (0.9)	517 (4.5)	33 (0.7)	515 (5.5)	12 (0.5)	501 (6.0)	9.8 (0.04)
Bahrain	55 (1.1)	466 (2.6)	29 (1.0)	454 (3.2)	16 (0.6)	415 (5.8)	9.8 (0.04)
Syrian Arab Republic	54 (1.4)	437 (4.4)	31 (1.0)	425 (3.7)	14 (0.8)	402 (5.0)	9.8 (0.06)
Hong Kong SAR	54 (1.3)	536 (3.6)	36 (1.0)	536 (3.2)	10 (0.7)	531 (8.6)	9.7 (0.05)
Lebanon	53 (1.9)	430 (5.8)	30 (1.1)	398 (6.0)	17 (1.3)	351 (5.8)	9.7 (0.08)
Romania	53 (1.2)	478 (3.8)	34 (0.9)	465 (3.7)	13 (0.7)	428 (6.2)	9.7 (0.05)
Turkey	52 (1.1)	495 (4.0)	33 (0.8)	486 (3.8)	15 (0.7)	445 (4.9)	9.7 (0.05)
Singapore	52 (0.8)	596 (4.6)	36 (0.6)	590 (4.6)	12 (0.5)	566 (6.4)	9.7 (0.03)
United Arab Emirates	51 (0.9)	479 (2.5)	33 (0.6)	465 (2.4)	16 (0.5)	424 (3.8)	9.6 (0.04)
Qatar	51 (1.6)	437 (5.7)	31 (1.2)	419 (4.5)	18 (0.8)	380 (6.0)	9.6 (0.06)
Malaysia	49 (1.2)	431 (6.2)	39 (0.9)	431 (6.6)	12 (0.8)	401 (11.2)	9.6 (0.05)
Morocco	49 (1.1)	381 (2.8)	36 (0.8)	382 (2.8)	15 (0.7)	360 (4.0)	9.6 (0.04)
Jordan	48 (1.2)	473 (3.5)	33 (1.0)	457 (4.1)	19 (0.7)	399 (6.1)	9.5 (0.05)
Palestinian Nat'l Auth.	46 (1.2)	446 (2.9)	38 (0.9)	415 (3.6)	16 (0.8)	371 (7.4)	9.5 (0.05)
Indonesia	45 (1.4)	403 (4.2)	34 (0.9)	413 (5.3)	21 (0.9)	402 (5.9)	9.5 (0.07)
Oman	41 (0.9)	445 (2.7)	37 (0.7)	425 (3.7)	21 (0.7)	380 (5.2)	9.2 (0.03)
Thailand	30 (0.8)	451 (4.4)	43 (0.7)	454 (4.4)	27 (0.8)	449 (4.3)	8.8 (0.04)
Ghana	22 (1.0)	327 (5.9)	38 (1.0)	321 (5.6)	40 (1.2)	289 (6.0)	8.4 (0.05)
Israel	--	--	--	--	--	--	--
International Avg.	59 (0.2)	483 (0.6)	29 (0.1)	478 (0.7)	12 (0.1)	452 (1.1)	

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.

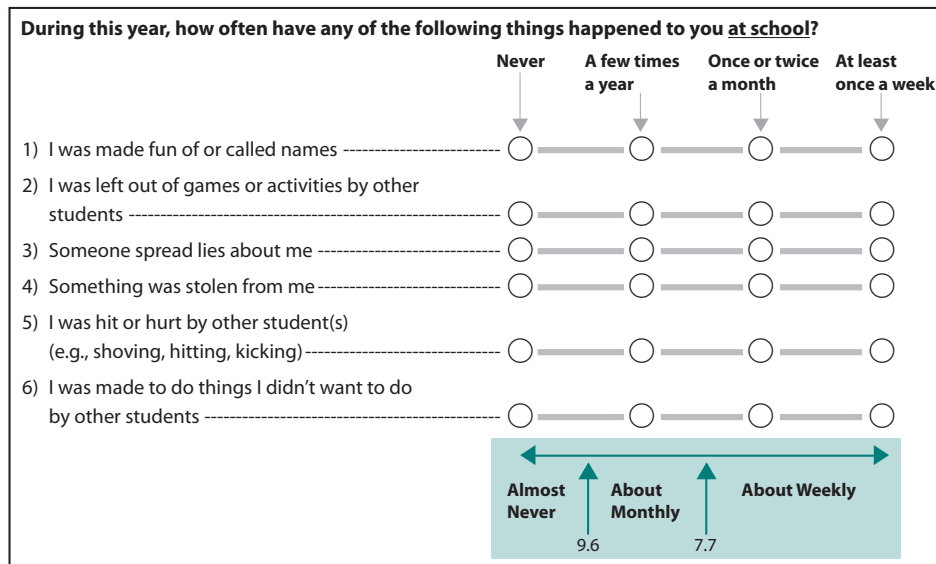
SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2011



**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	
<b>Ninth Grade Participants</b>							
Honduras	49 (1.1)	369 (4.6)	36 (0.9)	379 (4.7)	15 (0.6)	356 (4.6)	9.6 (0.04)
South Africa	25 (0.7)	392 (5.1)	42 (0.8)	346 (3.4)	33 (1.0)	287 (4.4)	8.5 (0.04)
Botswana	19 (0.7)	442 (4.0)	48 (0.7)	414 (4.0)	33 (0.7)	377 (4.7)	8.4 (0.02)
<b>Benchmarking Participants</b>							
Quebec, Canada	73 (0.9)	521 (2.7)	22 (0.7)	520 (3.2)	5 (0.4)	515 (5.8)	10.5 (0.04)
Massachusetts, US	71 (1.0)	569 (5.5)	23 (1.0)	567 (6.5)	6 (0.6)	543 (8.7)	10.5 (0.05)
California, US	67 (1.7)	501 (5.0)	24 (1.3)	500 (5.4)	9 (0.6)	486 (7.3)	10.3 (0.07)
Florida, US	64 (1.5)	534 (7.8)	27 (1.4)	536 (7.9)	9 (0.9)	508 (12.3)	10.1 (0.07)
North Carolina, US	64 (1.0)	531 (6.0)	28 (1.0)	536 (6.4)	8 (0.8)	523 (15.8)	10.1 (0.06)
Connecticut, US	63 (1.4)	535 (5.1)	28 (1.0)	535 (5.3)	9 (0.8)	526 (7.0)	10.1 (0.06)
Minnesota, US	61 (1.6)	557 (5.4)	30 (1.4)	548 (5.2)	9 (0.7)	548 (6.5)	10.0 (0.06)
Indiana, US	59 (1.5)	533 (4.9)	30 (1.3)	536 (6.6)	11 (0.9)	530 (6.4)	9.9 (0.07)
Colorado, US	58 (1.8)	543 (4.6)	31 (1.5)	544 (6.0)	11 (1.0)	534 (7.7)	9.9 (0.07)
Ontario, Canada	58 (1.2)	525 (3.3)	31 (0.9)	520 (3.5)	12 (0.8)	506 (3.5)	9.9 (0.05)
Alabama, US	57 (1.9)	489 (6.6)	32 (1.5)	485 (7.7)	11 (0.8)	477 (8.6)	9.9 (0.07)
Dubai, UAE	54 (2.1)	501 (2.9)	32 (1.3)	482 (4.3)	14 (1.1)	439 (6.3)	9.7 (0.09)
Alberta, Canada	52 (1.1)	550 (2.8)	35 (0.8)	547 (2.9)	14 (0.8)	530 (4.0)	9.6 (0.05)
Abu Dhabi, UAE	50 (1.4)	471 (4.4)	33 (0.9)	467 (4.1)	17 (1.0)	427 (6.1)	9.6 (0.06)

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



the same six bullying behaviors as the fourth grade scale. In contrast to the previous section, in which principals reported more school discipline and safety problems at the eighth grade than at the fourth grade, the eighth grade students reported experiencing somewhat less bullying behavior than did the fourth grade students. On average across countries, 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 the eighth grade students' reports about being bullied and average science achievement, with students who were **Almost Never** bullied having achievement 31 points higher than those students who reported being bullied **About Weekly** (483 vs. 452).



