

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 | |
| Sixth Grade Participants | | | | | | | |
| 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) |
| Benchmarking Participants | | | | | | | |
| 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

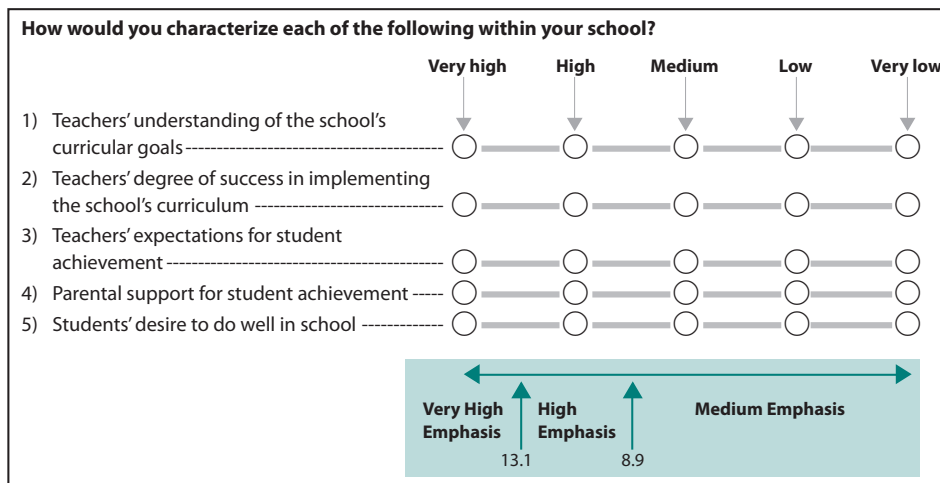


Exhibit 6.2: School Emphasis on Academic Success - Principal Reports

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 | |
| Ninth Grade Participants | | | | | | | |
| 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) |
| Benchmarking Participants | | | | | | | |
| 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

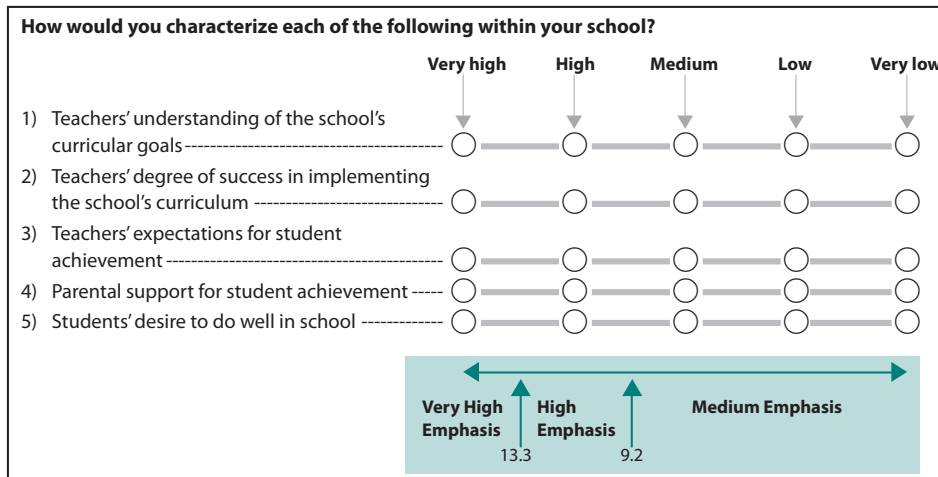


Exhibit 6.3: School Emphasis on Academic Success - Teacher Reports

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 | |
| Sixth Grade Participants | | | | | | | |
| 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) |
| Benchmarking Participants | | | | | | | |
| 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

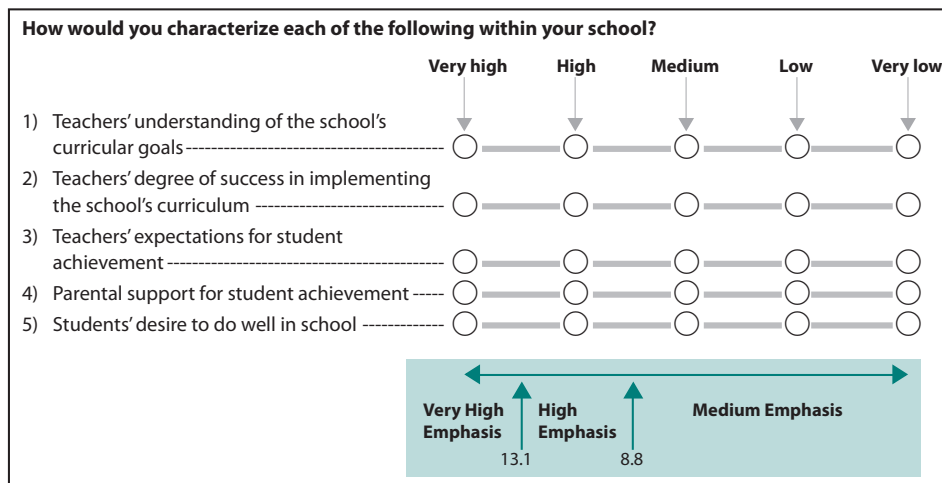


Exhibit 6.4: School Emphasis on Academic Success - Teacher Reports

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.

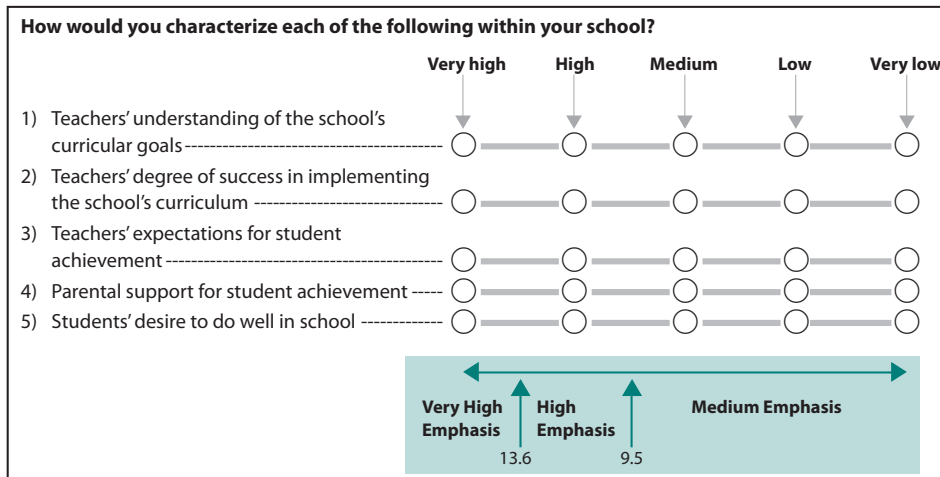
An "r" indicates data are available for at least 70% but less than 85% of the students. An "s" indicates data are available for at least 50% but less than 70% of the students.

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 | |
| Ninth Grade Participants | | | | | | | |
| 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) |
| Benchmarking Participants | | | | | | | |
| 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)

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

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

Exhibit 6.6: Principals Spend Time on Leadership Activities

Reported by Principals

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

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

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

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

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

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

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) | |

Centerpoint of scale set at 10.

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

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

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

Exhibit 6.7: Safe and Orderly School (Continued)

| Country | Safe and Orderly | | Somewhat Safe and Orderly | | Not Safe and Orderly | | Average Scale Score |
|----------------------------------|---------------------|---------------------|---------------------------|---------------------|----------------------|---------------------|---------------------|
| | Percent of Students | Average Achievement | Percent of Students | Average Achievement | Percent of Students | Average Achievement | |
| Sixth Grade Participants | | | | | | | |
| Honduras | 62 (4.4) | 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) |
| Benchmarking Participants | | | | | | | |
| 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

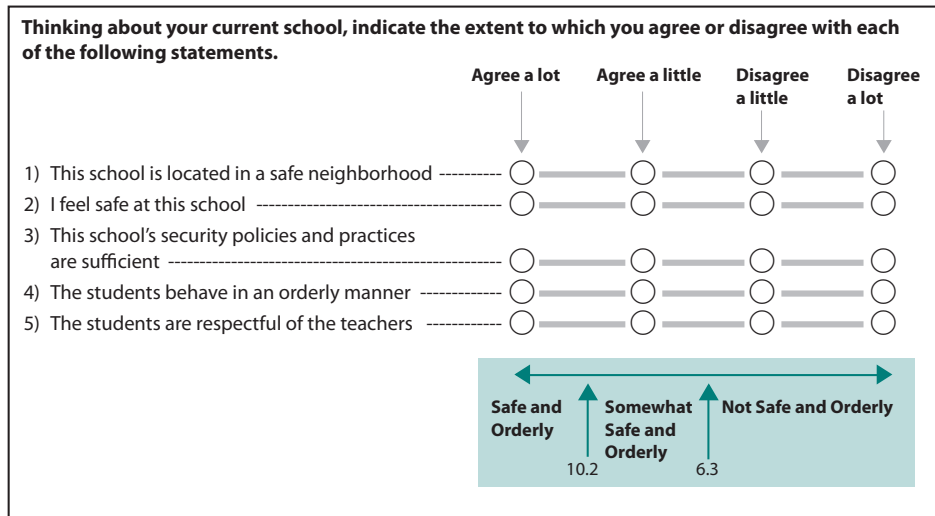


Exhibit 6.8: Safe and Orderly School

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 | 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 | 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 | 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.

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

Exhibit 6.8: Safe and Orderly School (Continued)

| Country | Safe and Orderly | | Somewhat Safe and Orderly | | Not Safe and Orderly | | Average Scale Score |
|----------------------------------|---------------------|---------------------|---------------------------|---------------------|----------------------|---------------------|---------------------|
| | Percent of Students | Average Achievement | Percent of Students | Average Achievement | Percent of Students | Average Achievement | |
| Ninth Grade Participants | | | | | | | |
| Honduras | 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) |
| Benchmarking Participants | | | | | | | |
| 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 |

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

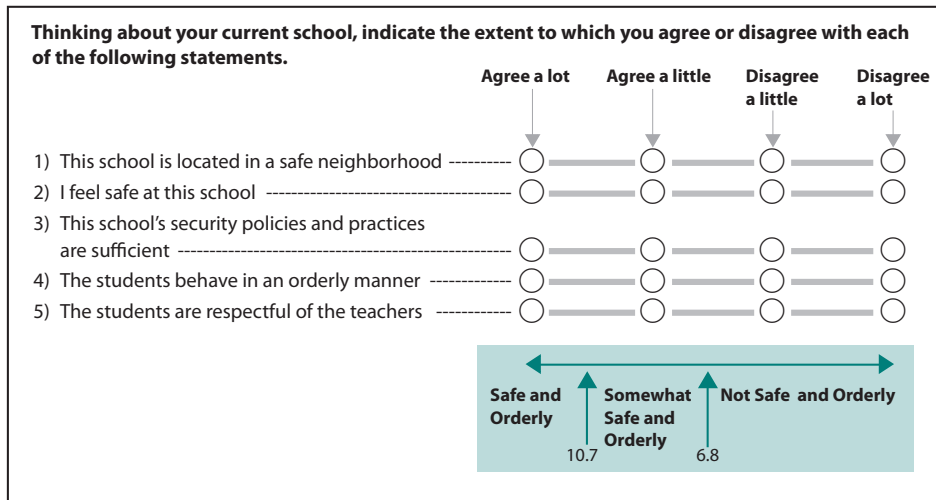


Exhibit 6.9: School Discipline and Safety

Reported by Principals

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

| Country | Hardly Any Problems | | Minor Problems | | Moderate Problems | | Average Scale Score |
|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | Percent of Students | Average Achievement | Percent of Students | Average Achievement | Percent of Students | Average Achievement | |
| Kazakhstan | 91 (2.2) | 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 | |
| Sixth Grade Participants | | | | | | | |
| 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) |
| Benchmarking Participants | | | | | | | |
| 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

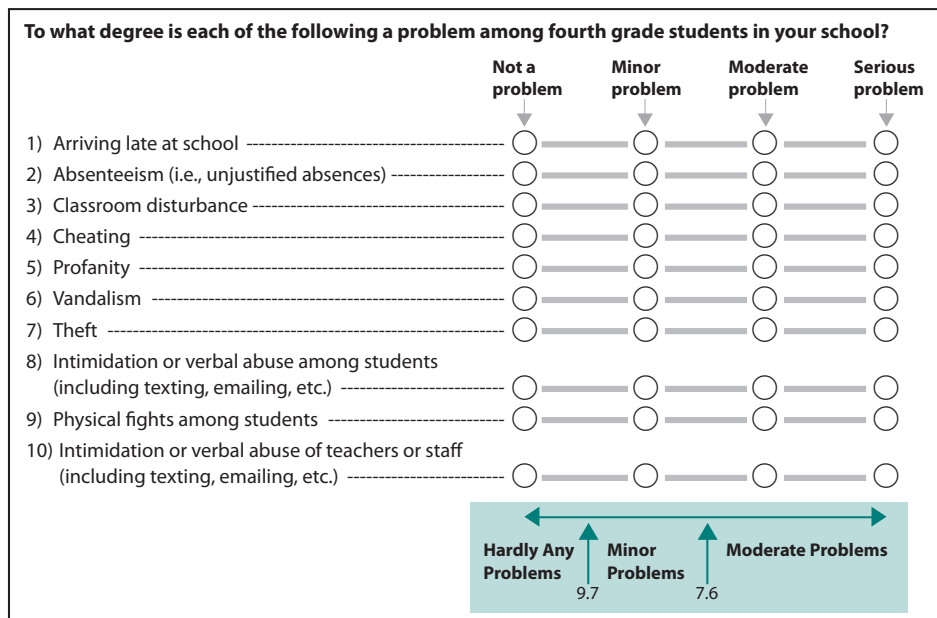


Exhibit 6.10: School Discipline and Safety

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 12.0, which corresponds to their principals reporting "not a problem" for six of the eleven discipline and safety issues and "minor problem" for the other five, on average. Students in schools with **Moderate Problems** had a score no higher than 8.4, which corresponds to their principals reporting "moderate problem" for six of the eleven issues and "minor problem" for the other five, on average. All other students attended schools with **Minor Problems**.

| Country | Hardly Any Problems | | Minor Problems | | Moderate Problems | | Average Scale Score |
|-------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | Percent of Students | Average Achievement | Percent of Students | Average Achievement | Percent of Students | Average Achievement | |
| Kazakhstan | 44 (4.1) | 484 (7.4) | 56 (4.1) | 495 (5.6) | 0 (0.0) | ~ ~ | 11.8 (0.11) |
| Chinese Taipei | 41 (4.2) | 564 (4.7) | 58 (4.3) | 564 (3.4) | 1 (0.8) | ~ ~ | 11.4 (0.15) |
| Iran, Islamic Rep. of | 37 (3.8) | 480 (7.3) | 59 (3.8) | 472 (4.5) | 3 (1.3) | 460 (11.5) | 11.4 (0.11) |
| Qatar | 34 (0.5) | 437 (7.1) | 52 (0.3) | 406 (4.6) | 14 (0.4) | 408 (6.2) | 10.7 (0.04) |
| Armenia | 27 (3.7) | 445 (6.2) | 67 (4.0) | 434 (4.2) | 6 (1.9) | 439 (15.2) | 11.0 (0.13) |
| Hong Kong SAR | 26 (4.3) | 567 (4.6) | 73 (4.5) | 525 (5.3) | 1 (1.0) | ~ ~ | 10.9 (0.15) |
| Singapore | 25 (0.0) | 630 (7.9) | 74 (0.0) | 576 (5.0) | 1 (0.0) | ~ ~ | 10.9 (0.00) |
| United Arab Emirates | 25 (1.8) | 491 (4.4) | 56 (2.5) | 456 (4.3) | 19 (1.6) | 452 (5.5) | 10.2 (0.08) |
| Ukraine | 23 (3.6) | 511 (8.0) | 65 (4.3) | 501 (4.3) | 11 (2.9) | 485 (8.5) | 10.7 (0.16) |
| Oman | 23 (2.9) | 451 (6.1) | 49 (3.2) | 412 (4.6) | 28 (3.0) | 408 (7.6) | 9.8 (0.19) |
| Japan | 23 (3.9) | 575 (5.9) | 56 (4.8) | 557 (3.1) | 21 (3.5) | 541 (3.9) | 10.0 (0.18) |
| Saudi Arabia | 23 (3.7) | 439 (6.9) | 47 (4.5) | 440 (5.1) | 30 (3.8) | 432 (8.3) | 9.8 (0.21) |
| Korea, Rep. of | 22 (3.4) | 566 (3.0) | 61 (4.4) | 560 (2.4) | 17 (3.3) | 551 (4.7) | 10.1 (0.17) |
| Georgia | 21 (3.1) | 430 (8.9) | 73 (3.5) | 417 (3.7) | 6 (1.7) | 433 (11.6) | 10.8 (0.11) |
| Romania | 20 (3.7) | 482 (7.7) | 67 (4.2) | 464 (4.7) | 13 (3.0) | 439 (10.7) | 10.5 (0.17) |
| Lebanon | 20 (3.5) | 406 (11.3) | 63 (4.4) | 411 (6.8) | 17 (3.3) | 383 (12.7) | 10.2 (0.19) |
| England | 19 (3.9) | 548 (12.2) | 76 (4.3) | 534 (6.8) | 5 (2.3) | 484 (42.6) | 10.6 (0.14) |
| Indonesia | 19 (2.8) | 439 (9.2) | 65 (4.6) | 399 (5.8) | 16 (3.4) | 394 (10.1) | 10.3 (0.13) |
| Macedonia, Rep. of | 16 (3.0) | 411 (14.1) | 64 (3.7) | 415 (6.7) | 19 (2.6) | 391 (14.1) | 10.0 (0.15) |
| Bahrain | 16 (0.3) | 480 (4.6) | 61 (0.3) | 450 (2.5) | 23 (0.2) | 441 (4.2) | 10.0 (0.01) |
| United States | 13 (1.9) | 543 (7.6) | 78 (2.1) | 527 (3.3) | 9 (1.3) | 488 (10.9) | 10.1 (0.07) |
| Australia | 13 (2.3) | 576 (16.8) | 76 (3.0) | 515 (4.6) | 11 (1.9) | 504 (12.2) | 10.0 (0.10) |
| Norway | 13 (3.0) | 510 (5.4) | 79 (3.7) | 494 (3.0) | 8 (2.5) | 477 (7.5) | 10.1 (0.13) |
| Thailand | 12 (2.6) | 446 (14.2) | 77 (3.8) | 455 (4.5) | 11 (2.9) | 429 (13.7) | 10.0 (0.13) |
| Palestinian Nat'l Auth. | 12 (2.7) | 443 (7.7) | 56 (3.9) | 418 (5.3) | 32 (3.7) | 417 (7.6) | 9.2 (0.20) |
| Chile | 12 (2.8) | 493 (11.1) | 62 (4.5) | 469 (3.9) | 26 (3.9) | 434 (4.5) | 9.6 (0.16) |
| Turkey | 11 (2.2) | 527 (18.1) | 55 (3.1) | 485 (4.8) | 34 (2.9) | 465 (5.8) | 9.2 (0.14) |
| Slovenia | 10 (2.3) | 540 (6.5) | 74 (3.5) | 545 (3.0) | 16 (2.8) | 539 (6.0) | 9.9 (0.12) |
| Russian Federation | 10 (1.9) | 559 (10.5) | 89 (2.1) | 541 (3.4) | 2 (0.9) | ~ ~ | 10.5 (0.07) |
| Italy | 9 (2.1) | 514 (7.3) | 63 (2.8) | 508 (3.0) | 28 (2.6) | 483 (5.7) | 9.4 (0.13) |
| Ghana | 9 (2.7) | 362 (16.7) | 82 (3.0) | 303 (5.9) | 10 (2.3) | 277 (14.7) | 10.0 (0.13) |
| Lithuania | 8 (2.4) | 503 (9.0) | 87 (3.0) | 515 (3.1) | 5 (1.9) | 511 (10.5) | 10.0 (0.11) |
| Jordan | 8 (2.0) | 463 (13.3) | 54 (4.1) | 452 (5.9) | 38 (3.8) | 442 (6.6) | 9.1 (0.14) |
| Israel | 6 (2.0) | 515 (17.1) | 76 (3.1) | 527 (4.5) | 18 (2.9) | 480 (13.4) | 9.4 (0.16) |
| Morocco | 6 (1.2) | 416 (12.2) | 39 (3.4) | 365 (4.2) | 55 (3.3) | 380 (3.3) | 8.2 (0.13) |
| New Zealand | 6 (1.5) | 554 (10.5) | 85 (2.9) | 513 (5.0) | 9 (2.5) | 492 (16.4) | 9.7 (0.09) |
| Malaysia | 6 (2.0) | 472 (22.4) | 87 (2.7) | 428 (6.5) | 8 (1.7) | 375 (19.5) | 9.9 (0.10) |
| Hungary | 5 (1.9) | 558 (10.1) | 75 (3.7) | 528 (3.1) | 20 (3.2) | 491 (8.5) | 9.5 (0.11) |
| Tunisia | 4 (1.2) | 434 (8.8) | 37 (4.0) | 435 (3.4) | 60 (3.9) | 442 (3.3) | 8.1 (0.13) |
| Syrian Arab Republic | 3 (1.3) | 404 (13.7) | 27 (4.2) | 441 (8.4) | 70 (4.0) | 422 (4.2) | 7.5 (0.19) |
| Finland | 2 (1.5) | ~ ~ | 89 (2.7) | 553 (2.6) | 9 (2.3) | 541 (7.2) | 9.9 (0.11) |
| Sweden | 1 (0.0) | ~ ~ | 83 (3.2) | 516 (3.3) | 16 (3.1) | 481 (8.0) | 9.5 (0.10) |
| International Avg. | 16 (0.4) | 492 (1.7) | 66 (0.5) | 477 (0.7) | 18 (0.4) | 452 (2.0) | |

Centerpoint of scale set at 10.

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

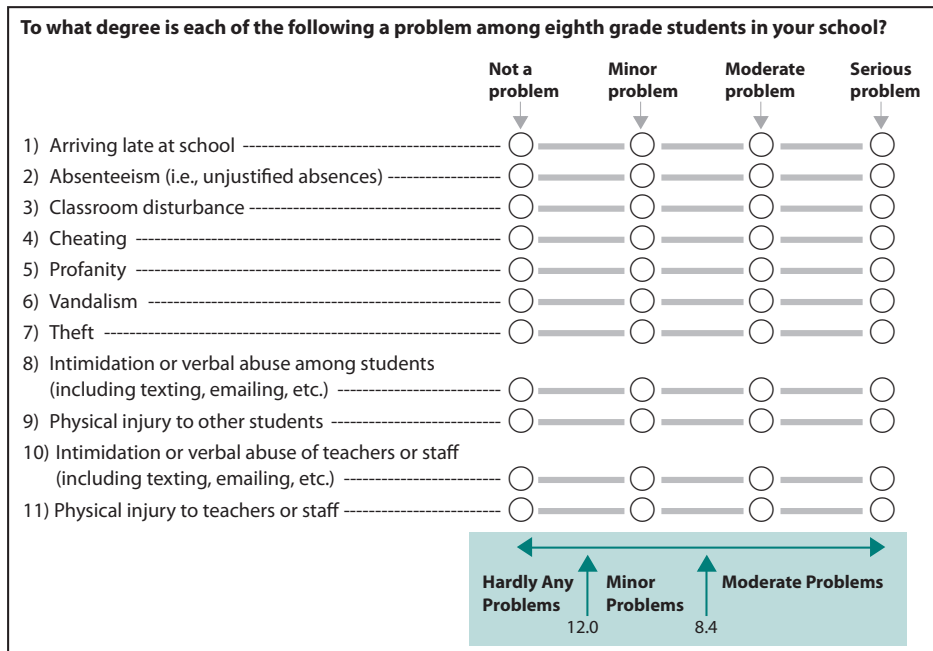
A tilde (~) indicates insufficient data to report achievement.

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 6.10: School Discipline and Safety (Continued)

| Country | Hardly Any Problems | | Minor Problems | | Moderate Problems | | Average Scale Score |
|----------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | Percent of Students | Average Achievement | Percent of Students | Average Achievement | Percent of Students | Average Achievement | |
| Ninth Grade Participants | | | | | | | |
| Honduras | 10 (2.7) | 398 (19.4) | 68 (4.2) | 367 (5.0) | 21 (3.7) | 357 (6.7) | 9.8 (0.16) |
| South Africa | 4 (1.2) | 391 (34.6) | 55 (3.6) | 329 (6.4) | 41 (3.4) | 326 (6.3) | 8.8 (0.10) |
| Botswana | 1 (0.0) | ~ ~ | 64 (3.9) | 408 (4.6) | 36 (3.8) | 396 (6.9) | 8.8 (0.09) |
| Benchmarking Participants | | | | | | | |
| Dubai, UAE | 43 (0.5) | 500 (4.5) | 44 (0.4) | 480 (3.5) | 13 (0.1) | 452 (4.1) | 10.9 (0.01) |
| Massachusetts, US | 23 (5.9) | 581 (9.7) | 66 (7.1) | 568 (8.8) | 11 (4.7) | 513 (25.7) | 10.6 (0.20) |
| Abu Dhabi, UAE | 19 (3.4) | 494 (11.0) | 64 (4.3) | 455 (6.3) | 17 (3.3) | 449 (9.3) | 10.1 (0.17) |
| Alberta, Canada | 15 (3.2) | 563 (6.5) | 82 (3.5) | 544 (2.4) | 3 (1.3) | 518 (8.7) | 10.3 (0.12) |
| Quebec, Canada | 14 (2.6) | 544 (6.2) | 73 (3.9) | 518 (3.3) | 13 (2.8) | 506 (8.2) | 10.0 (0.11) |
| Minnesota, US | 14 (5.3) | 574 (8.7) | 81 (6.4) | 551 (6.0) | 6 (3.8) | 554 (23.8) | 10.3 (0.21) |
| Ontario, Canada | 13 (3.0) | 520 (4.1) | 77 (3.9) | 525 (3.0) | 10 (2.8) | 498 (8.4) | 10.2 (0.15) |
| Florida, US | 11 (4.8) | 553 (40.4) | 71 (6.8) | 534 (7.0) | 18 (5.5) | 494 (14.5) | 9.8 (0.22) |
| Indiana, US | r 9 (4.2) | 555 (7.8) | 86 (4.3) | 537 (5.8) | 5 (0.3) | 502 (6.4) | 10.2 (0.19) |
| Colorado, US | 7 (4.3) | 556 (10.4) | 79 (6.4) | 545 (6.8) | 14 (4.8) | 510 (24.5) | 9.8 (0.18) |
| North Carolina, US | 7 (3.6) | 537 (13.3) | 85 (5.1) | 535 (7.7) | 8 (3.8) | 485 (31.5) | 9.7 (0.19) |
| California, US | r 7 (5.4) | 528 (21.7) | 82 (5.8) | 503 (5.7) | 12 (3.4) | 445 (28.3) | 9.6 (0.20) |
| Alabama, US | r 6 (1.9) | 551 (5.7) | 87 (4.3) | 487 (8.1) | 7 (3.8) | 422 (11.4) | 9.9 (0.23) |
| Connecticut, US | r 5 (3.2) | 576 (23.3) | 89 (4.4) | 535 (7.2) | 5 (3.0) | 462 (46.4) | 10.1 (0.12) |



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, many fewer eighth grade students attend schools in which principals reported **Hardly Any Problems** (16% vs. 61%) and more attended schools in which principals reported **Minor Problems** (66% vs. 29%) or **Moderate Problems** (18% vs. 11%). 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 the same six bullying behaviors as the fourth grade scale. In contrast to the

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 | |
| Sixth Grade Participants | | | | | | | |
| 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) |
| Benchmarking Participants | | | | | | | |
| 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

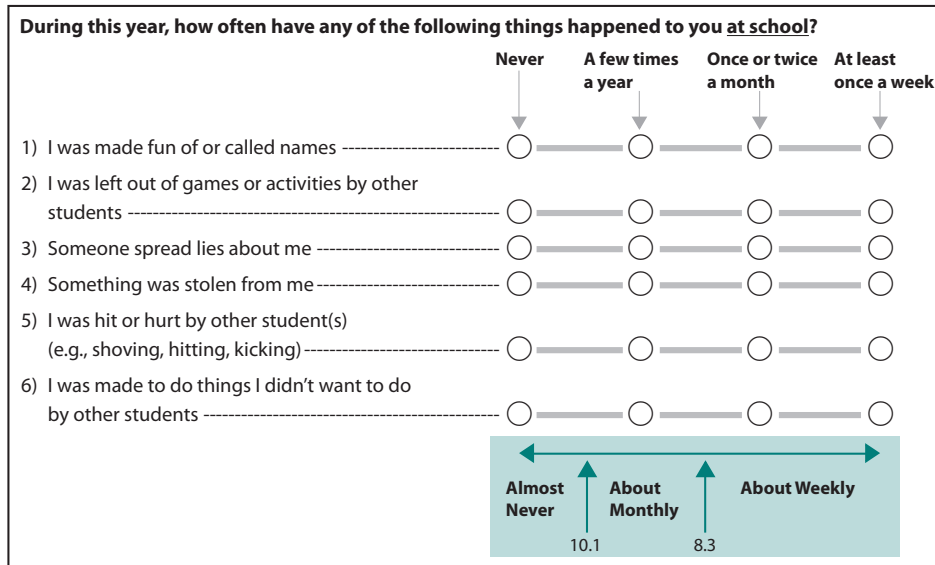


Exhibit 6.12: Students Bullied at School

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) | |

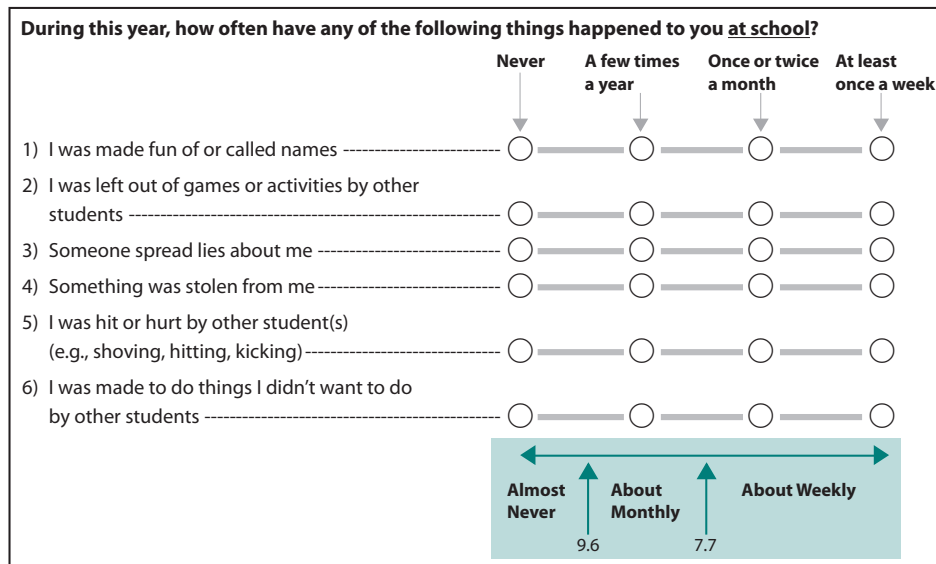
Centerpoint of scale set at 10.

() 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 | |
| Ninth Grade Participants | | | | | | | |
| 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) |
| Benchmarking Participants | | | | | | | |
| 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) |



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).

