

**Exhibit 10.1: Students' Views on Engaging Teaching in Mathematics Lessons**

Reported by Students

Students were scored according to their degree of agreement with ten statements on the *Students' Views on Engaging Teaching in Mathematics Lessons* scale. Students who experienced **Very Engaging Teaching** in mathematics lessons had a score on the scale of at least 9.0, which corresponds to their "agreeing a lot" with five of the ten statements and "agreeing a little" with the other five, on average. Students who experienced teaching that was **Less than Engaging** had a score no higher than 7.0, which corresponds to their "disagreeing a little" with five of the ten statements and "agreeing a little" with the other five, on average. All other students experienced **Engaging Teaching** in mathematics lessons.

Country	Very Engaging Teaching		Engaging Teaching		Less than Engaging Teaching		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Portugal	88 (0.7)	543 (2.3)	11 (0.7)	535 (4.3)	1 (0.2)	~ ~	10.9 (0.04)
Bulgaria	87 (1.0)	530 (5.1)	11 (0.9)	503 (8.0)	2 (0.3)	~ ~	11.2 (0.06)
Iran, Islamic Rep. of	86 (0.8)	436 (3.5)	11 (0.7)	419 (7.0)	2 (0.2)	~ ~	11.1 (0.05)
Serbia	85 (0.9)	520 (3.7)	14 (0.8)	513 (5.5)	2 (0.2)	~ ~	11.0 (0.06)
Turkey	83 (0.7)	495 (3.0)	15 (0.6)	438 (5.7)	2 (0.2)	~ ~	10.7 (0.05)
Indonesia	83 (0.7)	405 (3.7)	15 (0.6)	381 (5.9)	2 (0.3)	~ ~	10.8 (0.05)
Jordan	83 (1.3)	399 (3.1)	14 (1.1)	359 (8.3)	3 (0.4)	332 (12.9)	10.9 (0.07)
Morocco	82 (1.0)	386 (3.6)	15 (0.9)	359 (6.5)	3 (0.3)	311 (12.1)	10.8 (0.06)
Oman	82 (0.9)	435 (2.6)	15 (0.7)	393 (4.2)	3 (0.4)	364 (8.1)	10.7 (0.05)
Spain	82 (1.3)	506 (2.5)	15 (0.9)	509 (3.2)	3 (0.5)	493 (7.1)	10.7 (0.07)
Russian Federation	77 (1.1)	566 (3.6)	21 (1.0)	560 (4.5)	2 (0.2)	~ ~	10.3 (0.06)
Hungary	77 (1.0)	532 (3.3)	20 (0.9)	523 (4.3)	3 (0.3)	504 (12.8)	10.4 (0.05)
Cyprus	77 (1.2)	527 (2.6)	18 (0.9)	521 (4.6)	6 (0.7)	509 (7.2)	10.4 (0.06)
Bahrain	75 (0.8)	460 (1.8)	20 (0.6)	436 (2.2)	6 (0.4)	413 (5.7)	10.4 (0.05)
Lithuania	75 (1.0)	538 (2.7)	23 (0.9)	527 (3.9)	3 (0.3)	534 (6.8)	10.1 (0.05)
Northern Ireland	74 (1.2)	572 (3.4)	22 (1.0)	570 (4.7)	4 (0.5)	549 (13.0)	10.2 (0.07)
Kazakhstan	73 (1.6)	551 (4.5)	25 (1.5)	529 (5.6)	1 (0.2)	~ ~	10.4 (0.08)
Ireland	73 (1.3)	550 (2.2)	23 (1.1)	545 (4.0)	4 (0.4)	525 (7.3)	10.2 (0.06)
Kuwait	73 (1.3)	359 (5.0)	21 (1.0)	343 (5.8)	6 (0.5)	321 (8.9)	10.3 (0.07)
Chile	73 (1.3)	465 (2.6)	22 (0.9)	451 (3.8)	6 (0.5)	430 (6.8)	10.3 (0.07)
England	73 (1.3)	548 (3.3)	24 (1.2)	545 (3.7)	4 (0.4)	527 (8.1)	10.1 (0.06)
United States	73 (0.7)	545 (2.3)	22 (0.6)	535 (2.9)	5 (0.3)	510 (4.7)	10.2 (0.04)
Saudi Arabia	73 (1.1)	396 (3.9)	21 (0.9)	370 (5.4)	6 (0.5)	342 (8.6)	10.3 (0.06)
Canada	72 (0.8)	514 (2.0)	24 (0.7)	511 (2.7)	4 (0.3)	487 (6.8)	10.1 (0.04)
Slovak Republic	70 (1.4)	495 (2.9)	26 (1.1)	507 (3.2)	5 (0.4)	499 (8.4)	10.0 (0.06)
Qatar	70 (1.1)	452 (3.5)	23 (0.8)	429 (4.7)	8 (0.6)	387 (5.6)	10.1 (0.06)
United Arab Emirates	70 (0.7)	465 (2.5)	25 (0.6)	431 (3.2)	6 (0.4)	402 (8.0)	10.1 (0.04)
Norway (5)	70 (1.2)	552 (2.6)	26 (1.0)	545 (3.6)	4 (0.5)	533 (8.4)	9.9 (0.05)
Italy	69 (1.2)	510 (2.7)	28 (1.0)	506 (3.6)	3 (0.4)	479 (10.7)	9.8 (0.05)
South Africa (5)	68 (1.3)	396 (3.8)	25 (1.0)	345 (4.1)	6 (0.5)	314 (5.6)	10.1 (0.06)
Germany	67 (1.2)	526 (2.3)	29 (1.0)	526 (2.9)	4 (0.4)	512 (6.3)	9.8 (0.05)
Belgium (Flemish)	66 (1.5)	544 (2.0)	32 (1.4)	550 (2.9)	2 (0.3)	~ ~	9.7 (0.06)
Croatia	64 (1.3)	505 (2.0)	33 (1.2)	498 (2.5)	3 (0.4)	490 (11.2)	9.9 (0.07)
France	64 (1.2)	488 (2.7)	33 (1.1)	491 (4.0)	3 (0.3)	464 (8.3)	9.8 (0.05)
Netherlands	64 (1.3)	533 (1.9)	33 (1.2)	527 (2.7)	4 (0.4)	513 (6.2)	9.6 (0.04)
Australia	63 (1.2)	519 (3.5)	31 (0.9)	520 (3.5)	6 (0.4)	492 (6.8)	9.7 (0.05)
New Zealand	63 (1.1)	489 (2.6)	31 (0.9)	498 (3.2)	6 (0.4)	482 (6.6)	9.7 (0.04)
Sweden	60 (1.1)	518 (3.1)	35 (1.0)	521 (3.1)	5 (0.4)	512 (6.6)	9.5 (0.04)
Czech Republic	59 (1.4)	525 (2.5)	35 (1.1)	534 (2.9)	6 (0.5)	522 (5.2)	9.4 (0.05)
Georgia	58 (1.3)	474 (4.0)	40 (1.3)	461 (4.3)	2 (0.3)	~ ~	9.9 (0.06)
Finland	58 (1.1)	540 (2.3)	37 (1.0)	532 (2.8)	5 (0.5)	516 (6.2)	9.4 (0.04)
Slovenia	58 (1.4)	521 (2.3)	37 (1.1)	522 (2.3)	5 (0.7)	503 (6.2)	9.6 (0.06)
Poland	57 (1.3)	535 (2.3)	35 (1.0)	538 (2.9)	8 (0.8)	522 (5.6)	9.5 (0.06)
Singapore	55 (1.0)	625 (4.0)	37 (0.7)	613 (4.3)	7 (0.5)	592 (6.7)	9.3 (0.04)
Denmark	53 (1.6)	547 (3.1)	38 (1.2)	533 (3.0)	9 (0.8)	522 (5.3)	9.1 (0.06)
Chinese Taipei	51 (1.2)	603 (2.2)	37 (0.9)	595 (2.5)	11 (0.8)	576 (4.2)	9.2 (0.05)
Hong Kong SAR	50 (1.3)	621 (3.3)	38 (1.0)	612 (3.5)	11 (0.8)	591 (4.6)	9.2 (0.06)
Korea, Rep. of	28 (1.3)	620 (2.9)	55 (1.1)	606 (2.4)	17 (1.3)	597 (4.4)	8.2 (0.05)
Japan	26 (1.2)	597 (2.7)	54 (1.0)	595 (2.1)	20 (1.2)	583 (3.8)	8.2 (0.05)
International Avg.	68 (0.2)	510 (0.4)	26 (0.1)	498 (0.6)	5 (0.1)	481 (1.2)	

This TIMSS questionnaire scale was established in 2015 based on the combined response distribution of all countries that participated in TIMSS 2015. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale score points corresponded to the standard deviation of the distribution.

( ) 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 2015

**Exhibit 10.1: Students' Views on Engaging Teaching in Mathematics Lessons (Continued)**

Country	Very Engaging Teaching		Engaging Teaching		Less than Engaging Teaching		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
<b>Benchmarking Participants</b>							
Buenos Aires, Argentina	79 (1.0)	439 (2.9)	17 (0.8)	437 (4.3)	4 (0.3)	434 (8.5)	10.5 (0.05)
Norway (4)	77 (1.3)	495 (2.3)	20 (1.1)	492 (3.9)	3 (0.4)	467 (11.1)	10.3 (0.06)
Florida, US	77 (1.1)	551 (4.9)	20 (1.0)	541 (5.5)	3 (0.4)	500 (11.5)	10.5 (0.06)
Dubai, UAE	76 (0.7)	519 (1.8)	20 (0.6)	490 (2.9)	4 (0.3)	473 (9.7)	10.5 (0.03)
Ontario, Canada	72 (1.1)	516 (2.3)	23 (1.0)	509 (3.2)	5 (0.5)	490 (6.5)	10.1 (0.05)
Quebec, Canada	69 (1.4)	536 (4.2)	28 (1.2)	538 (5.5)	3 (0.6)	523 (11.0)	10.0 (0.07)
Abu Dhabi, UAE	64 (1.4)	436 (5.2)	30 (1.3)	401 (6.7)	7 (0.7)	372 (10.0)	9.9 (0.06)

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

