

Exhibit 12.8: Instructional Clarity in Mathematics Lessons – Students’ Reports

Students’ Reports

About the Scale

Students were scored according to their responses to seven statements on the *Instructional Clarity in Mathematics Lessons* scale. Cut scores divide the scale into three categories. Students who reported **High Clarity of Instruction** in their mathematics lessons had a score at or above the cut score corresponding to “agreeing a lot” with four of the seven statements and “agreeing a little” with the other three, on average. Students who reported **Low Clarity of Instruction** in their mathematics lessons had a score at or below the cut score corresponding to “disagreeing a little” with four of the seven statements and “agreeing a little” with the other three, on average. All other students reported **Moderate Clarity of Instruction** in their mathematics lessons.

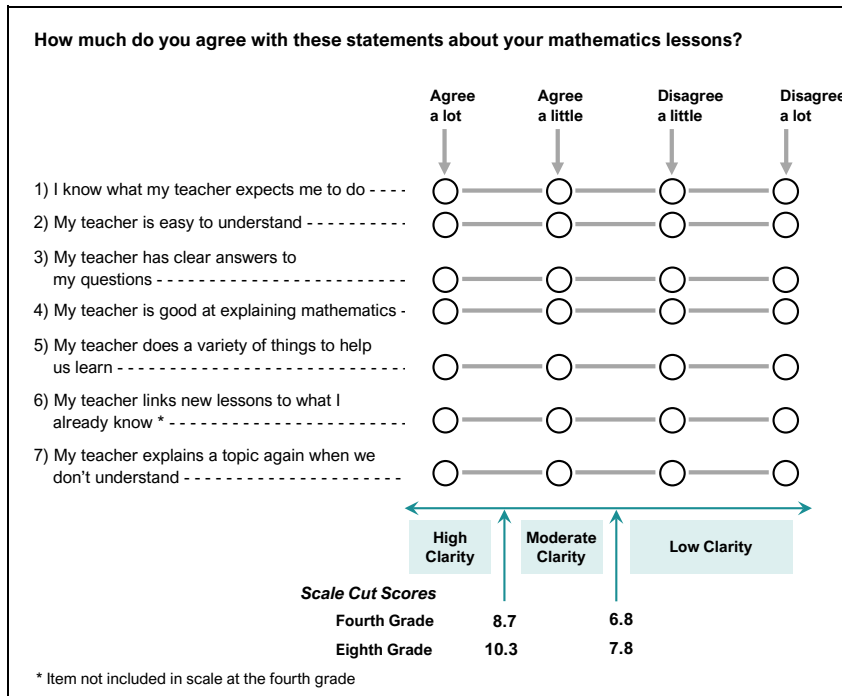


Exhibit 12.9: Instructional Clarity in Mathematics Lessons – Students’ Reports

Students’ Reports

Country	High Clarity of Instruction		Moderate Clarity of Instruction		Low Clarity of Instruction		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Albania	98 (0.2)	497 (3.4)	2 (0.2)	~ ~	0 (0.1)	~ ~	11.7 (0.04)
Kosovo	95 (0.5)	449 (2.8)	3 (0.4)	402 (11.1)	1 (0.2)	~ ~	11.3 (0.05)
North Macedonia	93 (0.6)	480 (5.1)	6 (0.6)	421 (11.0)	1 (0.2)	~ ~	11.3 (0.05)
Montenegro	90 (0.6)	458 (2.0)	8 (0.5)	432 (5.1)	2 (0.2)	~ ~	11.1 (0.03)
Azerbaijan	88 (0.7)	527 (2.4)	9 (0.6)	493 (5.0)	2 (0.3)	~ ~	10.8 (0.05)
Iran, Islamic Rep. of	88 (0.9)	450 (3.5)	9 (0.7)	416 (8.8)	4 (0.5)	380 (9.6)	10.8 (0.06)
Georgia	88 (1.0)	483 (4.1)	11 (0.9)	473 (6.5)	1 (0.3)	~ ~	10.8 (0.06)
Bosnia and Herzegovina	87 (0.7)	458 (2.2)	10 (0.6)	429 (4.6)	3 (0.3)	385 (7.8)	10.8 (0.04)
Bulgaria	87 (1.1)	520 (3.6)	11 (0.9)	499 (9.4)	2 (0.3)	~ ~	10.7 (0.06)
Armenia	85 (0.6)	505 (2.6)	12 (0.6)	483 (4.2)	3 (0.4)	471 (7.7)	10.8 (0.05)
Portugal	85 (0.9)	528 (2.7)	13 (0.8)	514 (4.6)	2 (0.2)	~ ~	10.4 (0.05)
Malta	82 (0.7)	513 (1.4)	16 (0.7)	495 (3.6)	3 (0.3)	469 (9.8)	10.3 (0.03)
Lithuania	82 (1.1)	543 (2.9)	17 (1.0)	539 (5.2)	1 (0.2)	~ ~	10.2 (0.06)
Cyprus	81 (1.3)	536 (2.8)	15 (1.0)	521 (4.9)	4 (0.4)	504 (7.7)	10.4 (0.07)
Morocco	81 (1.3)	391 (4.6)	15 (1.0)	363 (6.3)	3 (0.3)	310 (12.5)	10.3 (0.07)
Spain	80 (1.1)	508 (2.4)	16 (0.9)	490 (4.2)	4 (0.4)	472 (8.1)	10.2 (0.05)
Northern Ireland	80 (1.2)	571 (2.9)	17 (1.0)	552 (5.3)	3 (0.4)	527 (9.8)	10.2 (0.05)
Oman	78 (1.0)	443 (4.0)	17 (0.8)	404 (4.6)	5 (0.4)	377 (7.0)	10.1 (0.05)
Serbia	78 (1.3)	513 (3.5)	20 (1.1)	493 (6.6)	2 (0.4)	~ ~	10.2 (0.07)
Hungary	77 (1.1)	530 (2.8)	19 (0.9)	503 (4.2)	4 (0.5)	493 (8.0)	10.2 (0.06)
Turkey (5)	77 (1.2)	538 (3.9)	18 (0.9)	485 (7.3)	5 (0.4)	448 (9.0)	10.1 (0.06)
United Arab Emirates	77 (0.6)	493 (1.9)	17 (0.4)	460 (2.7)	6 (0.2)	420 (4.7)	10.2 (0.03)
Ireland	77 (1.2)	551 (2.5)	20 (0.9)	544 (3.9)	3 (0.5)	528 (8.9)	10.1 (0.06)
Bahrain	77 (1.2)	487 (2.6)	18 (0.8)	462 (4.3)	5 (0.6)	450 (5.0)	10.1 (0.07)
Kazakhstan	77 (1.1)	516 (2.7)	22 (1.1)	502 (3.3)	1 (0.2)	~ ~	10.1 (0.06)
Austria	77 (1.2)	542 (2.1)	20 (1.0)	535 (3.1)	3 (0.3)	512 (6.6)	10.0 (0.05)
United States	76 (0.9)	543 (2.6)	19 (0.7)	524 (4.0)	4 (0.3)	488 (6.4)	10.1 (0.04)
Belgium (Flemish)	76 (1.0)	534 (2.0)	22 (0.9)	529 (2.8)	2 (0.3)	~ ~	9.8 (0.04)
England	76 (1.1)	561 (3.6)	21 (0.9)	548 (4.5)	4 (0.5)	524 (9.4)	10.0 (0.05)
Canada	75 (0.8)	514 (2.1)	21 (0.7)	505 (3.0)	4 (0.3)	481 (4.8)	10.0 (0.04)
Slovak Republic	75 (1.2)	511 (3.7)	21 (0.9)	512 (4.8)	4 (0.4)	491 (8.8)	9.9 (0.06)
Australia	74 (1.2)	522 (2.9)	21 (0.9)	505 (3.4)	5 (0.5)	473 (7.6)	9.9 (0.06)
Saudi Arabia	74 (1.0)	413 (3.7)	19 (0.8)	374 (5.0)	7 (0.5)	355 (7.9)	10.1 (0.06)
Pakistan	74 (2.9)	342 (12.1)	18 (2.2)	285 (12.4)	8 (1.3)	310 (13.3)	10.2 (0.14)
Russian Federation	74 (1.1)	570 (3.8)	24 (0.9)	563 (3.5)	3 (0.4)	540 (8.0)	9.8 (0.05)
Netherlands	73 (1.1)	540 (2.2)	23 (1.0)	536 (3.1)	4 (0.4)	506 (8.9)	9.8 (0.05)
Czech Republic	71 (1.2)	536 (3.0)	24 (0.9)	533 (3.0)	5 (0.5)	504 (8.0)	9.8 (0.05)
Germany	71 (1.1)	528 (2.3)	24 (0.9)	517 (3.7)	5 (0.5)	500 (8.2)	9.7 (0.05)
Qatar	71 (1.2)	465 (3.4)	21 (0.9)	427 (6.0)	8 (0.5)	401 (6.9)	9.8 (0.06)
Norway (5)	70 (1.3)	547 (2.6)	25 (1.1)	540 (3.5)	5 (0.7)	523 (9.5)	9.6 (0.06)
Italy	70 (1.1)	519 (2.6)	26 (0.8)	508 (3.3)	3 (0.5)	478 (7.5)	9.6 (0.05)
Kuwait	70 (1.3)	402 (5.5)	22 (1.0)	368 (5.8)	8 (0.7)	337 (8.1)	9.9 (0.08)
New Zealand	70 (1.3)	491 (2.7)	25 (1.0)	487 (3.7)	5 (0.5)	465 (7.9)	9.7 (0.05)
South Africa (5)	70 (1.4)	396 (3.6)	21 (1.0)	344 (4.1)	10 (0.6)	306 (4.1)	9.8 (0.07)
Latvia	68 (1.2)	551 (2.7)	27 (1.0)	541 (3.6)	5 (0.5)	520 (5.8)	9.5 (0.05)
Singapore	66 (1.0)	637 (3.7)	28 (0.8)	608 (4.6)	6 (0.4)	582 (6.4)	9.6 (0.05)
Chile	66 (1.1)	450 (2.9)	27 (1.0)	436 (3.4)	7 (0.5)	397 (7.4)	9.6 (0.05)
Croatia	65 (1.2)	513 (2.1)	32 (1.2)	503 (4.0)	3 (0.3)	506 (8.5)	9.6 (0.05)
Finland	65 (1.1)	538 (2.4)	30 (1.0)	526 (3.6)	5 (0.4)	506 (5.8)	9.5 (0.05)
Sweden	64 (1.6)	524 (3.5)	31 (1.3)	522 (3.3)	5 (0.6)	491 (7.7)	9.5 (0.06)
France	62 (1.1)	486 (3.5)	34 (0.9)	487 (3.8)	4 (0.5)	459 (8.7)	9.4 (0.04)
Chinese Taipei	62 (1.2)	608 (2.2)	30 (0.9)	590 (2.3)	8 (0.7)	564 (5.9)	9.4 (0.05)
Poland	60 (1.1)	527 (3.0)	32 (0.9)	517 (3.1)	8 (0.5)	498 (4.9)	9.2 (0.05)
Denmark	58 (1.4)	533 (2.3)	35 (1.2)	520 (3.2)	7 (0.6)	492 (5.5)	9.1 (0.06)
Hong Kong SAR	55 (1.5)	613 (3.9)	33 (1.0)	592 (3.5)	12 (1.0)	573 (7.6)	9.2 (0.07)
Philippines	48 (2.0)	333 (7.2)	37 (1.3)	280 (6.6)	15 (1.0)	245 (5.9)	8.8 (0.09)
Japan	43 (1.3)	597 (2.4)	47 (1.0)	591 (2.1)	10 (0.7)	587 (4.9)	8.5 (0.05)
Korea, Rep. of	43 (1.4)	614 (2.5)	50 (1.1)	592 (2.6)	7 (0.7)	570 (5.8)	8.5 (0.05)
International Average	74 (0.2)	508 (0.5)	21 (0.1)	488 (0.7)	5 (0.1)	466 (1.2)	
Benchmarking Participants							
Madrid, Spain	83 (0.9)	521 (2.2)	15 (0.8)	508 (3.7)	2 (0.3)	~ ~	10.3 (0.04)
Dubai, UAE	82 (0.7)	548 (1.8)	15 (0.7)	532 (3.2)	3 (0.3)	504 (9.5)	10.4 (0.04)
Ontario, Canada	75 (1.1)	517 (3.7)	21 (0.9)	502 (4.5)	4 (0.4)	482 (8.0)	10.0 (0.05)
Quebec, Canada	74 (1.5)	533 (2.7)	22 (1.3)	530 (4.7)	4 (0.5)	496 (8.2)	9.9 (0.07)
Abu Dhabi, UAE	71 (0.9)	454 (2.5)	21 (0.6)	425 (3.4)	9 (0.5)	391 (5.9)	9.8 (0.05)
Moscow City, Russian Fed.	69 (1.3)	597 (2.4)	27 (1.1)	588 (2.8)	5 (0.4)	565 (7.3)	9.6 (0.05)

This TIMSS context questionnaire scale was established in 2019 based on the combined response distribution of all countries that participated in TIMSS 2019. 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.

Exhibit 12.10: Instructional Clarity in Mathematics Lessons – Students’ Reports

Students’ Reports

Country	High Clarity of Instruction		Moderate Clarity of Instruction		Low Clarity of Instruction		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Jordan	70 (1.5)	431 (3.5)	24 (1.1)	404 (7.1)	6 (0.6)	395 (9.4)	11.0 (0.07)
Turkey	68 (1.4)	510 (4.4)	26 (1.0)	469 (5.5)	6 (0.7)	452 (10.2)	10.9 (0.07)
Egypt	66 (1.2)	424 (5.2)	27 (0.8)	401 (6.0)	6 (0.6)	391 (8.5)	10.8 (0.06)
Georgia	63 (1.8)	470 (4.6)	30 (1.4)	447 (5.1)	6 (0.8)	449 (10.0)	10.8 (0.08)
Lebanon	61 (1.9)	441 (3.2)	32 (1.6)	416 (4.3)	7 (0.6)	403 (6.4)	10.7 (0.07)
Saudi Arabia	60 (1.2)	404 (2.8)	32 (1.0)	382 (3.1)	8 (0.5)	374 (5.4)	10.6 (0.05)
Romania	60 (1.6)	491 (4.9)	27 (1.1)	468 (5.7)	12 (1.3)	457 (6.6)	10.5 (0.08)
Iran, Islamic Rep. of	60 (1.2)	457 (4.1)	30 (0.8)	432 (4.5)	10 (0.8)	424 (6.4)	10.6 (0.06)
Oman	56 (1.4)	433 (3.0)	35 (0.9)	390 (3.6)	9 (0.9)	380 (8.3)	10.3 (0.06)
United States	55 (1.4)	531 (4.7)	33 (0.9)	510 (5.0)	12 (1.0)	491 (6.1)	10.4 (0.07)
United Arab Emirates	55 (0.7)	494 (2.1)	33 (0.5)	460 (2.4)	12 (0.4)	429 (3.6)	10.3 (0.03)
Morocco	52 (1.5)	396 (3.1)	34 (0.9)	380 (2.2)	14 (0.9)	382 (3.8)	10.1 (0.07)
South Africa (9)	52 (0.9)	395 (2.2)	38 (0.7)	386 (2.8)	10 (0.5)	387 (4.3)	10.2 (0.04)
Bahrain	52 (1.4)	493 (2.5)	35 (0.8)	473 (2.6)	13 (0.9)	457 (4.0)	10.2 (0.07)
Kuwait	51 (1.5)	413 (5.8)	35 (0.9)	398 (5.2)	14 (1.1)	386 (5.9)	10.1 (0.07)
Israel	50 (1.6)	529 (5.6)	36 (1.0)	516 (4.6)	14 (1.0)	505 (6.7)	10.1 (0.07)
Malaysia	47 (1.5)	470 (3.6)	46 (1.2)	455 (3.8)	7 (0.8)	439 (6.3)	10.1 (0.06)
Portugal	46 (2.2)	509 (4.1)	39 (1.3)	495 (3.6)	15 (1.8)	488 (7.5)	9.9 (0.11)
England	45 (1.7)	528 (5.5)	40 (1.3)	512 (7.1)	15 (1.1)	507 (6.8)	9.9 (0.08)
Qatar	45 (1.6)	456 (4.7)	39 (1.2)	445 (5.4)	17 (1.3)	413 (5.6)	9.8 (0.08)
Cyprus	45 (1.5)	519 (2.7)	38 (1.2)	494 (2.6)	18 (1.1)	475 (3.3)	9.8 (0.07)
Ireland	44 (1.4)	527 (3.1)	38 (1.1)	523 (3.3)	18 (1.2)	522 (5.1)	9.8 (0.07)
Kazakhstan	44 (1.3)	502 (4.1)	52 (1.2)	477 (3.7)	4 (0.6)	474 (11.1)	10.1 (0.05)
Finland	42 (1.3)	526 (3.0)	45 (1.0)	502 (2.8)	13 (1.0)	481 (4.3)	9.9 (0.06)
Russian Federation	42 (1.3)	557 (5.7)	49 (1.0)	536 (4.3)	9 (0.8)	526 (6.5)	9.9 (0.05)
Italy	42 (1.7)	504 (3.7)	46 (1.3)	495 (2.9)	12 (1.2)	486 (4.7)	9.8 (0.07)
Lithuania	41 (1.8)	538 (4.7)	47 (1.1)	511 (3.0)	12 (1.2)	502 (5.1)	9.8 (0.08)
Singapore	40 (1.2)	632 (4.0)	48 (0.9)	609 (4.4)	11 (0.8)	586 (7.6)	9.9 (0.05)
Norway (9)	40 (1.7)	521 (3.2)	45 (1.1)	501 (2.5)	15 (1.0)	468 (5.6)	9.8 (0.07)
Australia	40 (1.5)	540 (4.3)	42 (1.0)	511 (3.8)	18 (1.3)	487 (4.4)	9.7 (0.08)
New Zealand	39 (1.4)	495 (3.6)	43 (0.9)	480 (3.7)	18 (1.3)	464 (6.5)	9.7 (0.07)
Hungary	38 (1.6)	539 (3.8)	42 (1.0)	508 (3.4)	20 (1.5)	492 (5.8)	9.6 (0.08)
Chinese Taipei	38 (1.2)	639 (3.4)	50 (1.0)	604 (3.2)	12 (0.8)	565 (5.7)	9.8 (0.06)
Sweden	35 (1.7)	511 (3.2)	48 (1.2)	503 (3.5)	17 (1.4)	490 (4.4)	9.5 (0.08)
Chile	33 (1.3)	451 (3.7)	54 (1.0)	440 (3.4)	13 (1.2)	424 (4.7)	9.6 (0.06)
France	32 (1.8)	491 (3.9)	55 (1.5)	483 (2.7)	14 (1.3)	464 (4.1)	9.5 (0.08)
Hong Kong SAR	28 (1.6)	601 (5.3)	51 (1.4)	578 (5.3)	21 (1.5)	554 (6.5)	9.2 (0.08)
Japan	18 (1.0)	618 (3.8)	60 (1.1)	596 (3.4)	22 (1.5)	573 (3.3)	8.8 (0.06)
Korea, Rep. of	18 (1.0)	650 (3.8)	63 (1.1)	608 (3.2)	19 (1.1)	564 (4.8)	8.8 (0.05)
International Average	46 (0.2)	504 (0.6)	41 (0.2)	482 (0.7)	13 (0.2)	467 (1.0)	
Benchmarking Participants							
Dubai, UAE	61 (0.9)	549 (2.5)	31 (0.9)	522 (2.9)	8 (0.5)	501 (4.5)	10.6 (0.04)
Ontario, Canada	59 (2.2)	542 (5.0)	33 (1.5)	516 (4.1)	8 (1.0)	507 (7.2)	10.6 (0.10)
Western Cape, RSA (9)	54 (1.7)	441 (5.0)	36 (1.1)	441 (4.8)	10 (0.9)	450 (8.7)	10.3 (0.07)
Gauteng, RSA (9)	50 (1.7)	425 (3.6)	38 (1.1)	416 (3.3)	13 (1.3)	424 (5.2)	10.1 (0.08)
Abu Dhabi, UAE	47 (1.1)	464 (3.4)	37 (0.8)	422 (3.2)	15 (0.8)	396 (5.5)	10.0 (0.06)
Quebec, Canada	46 (2.1)	551 (3.8)	43 (1.4)	542 (4.1)	11 (1.1)	521 (8.5)	10.1 (0.09)
Moscow City, Russian Fed.	41 (1.7)	588 (4.9)	49 (1.4)	569 (4.5)	10 (1.0)	555 (7.7)	9.8 (0.07)

This TIMSS context questionnaire scale was established in 2019 based on the combined response distribution of all countries that participated in TIMSS 2019. 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.

SOURCE: IEA's Trends in International Mathematics and Science Study - TIMSS 2019
 Downloaded from <http://timss2019.org/download>



TIMSS & PIRLS
 International Study Center
 Lynch School of Education
 BOSTON COLLEGE