

Exhibit 14.9: Students Take Mathematics Tests on Computers or Tablets
Students' Results based on Teachers' Reports

Country	Once a Month or More		Once or Twice a Year		Never	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Albania	6 (2.1)	515 (12.1)	11 (2.5)	513 (10.8)	83 (3.3)	490 (3.6)
Armenia	16 (2.8)	501 (7.3)	16 (3.2)	500 (6.3)	68 (3.5)	498 (3.3)
Australia	21 (2.6)	528 (8.0)	56 (4.0)	521 (4.2)	23 (3.0)	503 (7.2)
Austria	4 (1.4)	553 (16.3)	2 (0.8)	~ ~	94 (1.7)	539 (2.0)
Azerbaijan	28 (3.5)	513 (4.3)	6 (1.8)	509 (9.0)	66 (3.8)	518 (3.5)
Bahrain	10 (2.0)	500 (5.8)	28 (2.9)	484 (5.2)	63 (3.2)	476 (3.2)
Belgium (Flemish)	4 (1.2)	532 (9.3)	11 (2.6)	543 (4.9)	85 (2.9)	532 (2.2)
Bosnia and Herzegovina	5 (1.5)	464 (12.0)	4 (1.6)	480 (8.0)	91 (2.0)	450 (2.5)
Bulgaria	16 (3.0)	517 (9.2)	9 (2.5)	512 (12.0)	75 (3.3)	515 (5.7)
Canada	13 (1.5)	500 (7.5)	9 (1.1)	508 (7.2)	79 (1.9)	515 (2.3)
Chile	11 (2.7)	437 (8.5)	22 (3.5)	426 (7.0)	67 (4.0)	446 (3.5)
Chinese Taipei	13 (2.6)	599 (5.0)	11 (2.1)	589 (9.8)	75 (3.0)	601 (2.1)
Croatia	7 (1.9)	498 (9.7)	5 (1.4)	506 (6.3)	88 (2.4)	510 (2.4)
Cyprus	13 (2.6)	530 (7.2)	8 (1.8)	548 (8.8)	78 (3.0)	533 (2.9)
Czech Republic	17 (2.7)	529 (7.2)	26 (3.3)	542 (4.4)	57 (3.9)	529 (3.7)
Denmark	18 (3.2)	524 (5.8)	64 (4.4)	526 (2.7)	18 (3.4)	518 (6.2)
Finland	14 (2.2)	538 (5.5)	26 (3.1)	531 (4.4)	60 (3.3)	531 (2.5)
France	2 (0.9)	~ ~	4 (1.2)	483 (11.3)	94 (1.5)	486 (3.3)
Georgia	55 (3.7)	475 (5.5)	19 (2.8)	489 (5.9)	26 (3.5)	491 (7.4)
Germany	8 (2.2)	522 (11.1)	4 (1.4)	506 (11.4)	88 (2.5)	521 (2.4)
Hong Kong SAR	30 (4.5)	601 (6.1)	25 (3.6)	593 (5.9)	45 (4.9)	607 (6.4)
Hungary	3 (1.1)	530 (7.1)	20 (3.2)	517 (7.3)	78 (3.3)	526 (3.8)
Iran, Islamic Rep. of	14 (2.0)	446 (9.8)	10 (2.4)	447 (14.2)	76 (2.8)	442 (5.0)
Ireland	8 (2.5)	554 (6.6)	10 (2.8)	546 (12.9)	82 (3.5)	548 (2.5)
Italy	21 (3.1)	516 (4.6)	18 (3.2)	506 (6.3)	61 (3.6)	517 (3.0)
Japan	3 (1.1)	586 (14.8)	5 (1.9)	589 (7.5)	92 (2.2)	593 (1.9)
Kazakhstan	48 (4.1)	510 (4.2)	15 (2.7)	497 (6.9)	37 (3.9)	520 (5.7)
Korea, Rep. of	2 (0.9)	~ ~	6 (1.8)	592 (11.3)	93 (2.1)	600 (2.4)
Kosovo	19 (3.1)	444 (7.9)	12 (3.0)	437 (10.3)	69 (3.8)	445 (3.7)
Kuwait	25 (3.4)	379 (9.0)	13 (2.6)	385 (12.4)	62 (3.8)	385 (7.6)
Latvia	22 (3.2)	551 (6.0)	30 (3.7)	540 (5.5)	47 (3.5)	549 (3.5)
Lithuania	19 (2.8)	537 (8.3)	29 (3.3)	535 (5.5)	52 (3.7)	546 (4.3)
Malta	50 (0.4)	505 (1.9)	21 (0.3)	497 (2.7)	30 (0.4)	525 (2.5)
Montenegro	5 (0.6)	446 (9.2)	6 (1.1)	464 (4.9)	90 (1.2)	452 (2.1)
Morocco	3 (1.4)	419 (41.7)	1 (0.8)	~ ~	96 (1.6)	381 (4.4)
Netherlands	30 (4.8)	539 (3.4)	2 (1.3)	~ ~	68 (4.8)	535 (3.3)
New Zealand	14 (2.4)	496 (9.4)	45 (4.0)	494 (5.6)	41 (4.0)	478 (6.1)
North Macedonia	22 (3.4)	465 (9.6)	23 (3.6)	451 (13.0)	55 (4.3)	483 (6.9)
Northern Ireland	8 (2.4)	567 (8.0)	70 (3.9)	564 (3.7)	23 (3.6)	568 (6.3)
Norway (5)	8 (1.7)	534 (11.1)	74 (3.7)	546 (2.6)	18 (3.5)	540 (8.0)
Oman	8 (2.0)	447 (20.5)	17 (2.6)	444 (12.3)	74 (2.9)	425 (3.7)
Pakistan	24 (4.9)	306 (18.0)	5 (3.1)	277 (12.5)	71 (5.8)	340 (15.5)
Philippines	15 (2.8)	314 (13.8)	6 (2.0)	294 (21.1)	79 (2.9)	293 (7.9)
Poland	9 (2.0)	510 (8.7)	20 (3.0)	518 (6.6)	71 (3.6)	522 (3.1)
Portugal	6 (1.5)	539 (7.9)	3 (0.9)	527 (11.4)	91 (1.8)	525 (2.8)
Qatar	43 (4.2)	427 (5.1)	19 (3.2)	464 (10.7)	38 (3.5)	469 (6.7)
Russian Federation	35 (3.7)	569 (5.4)	25 (3.0)	561 (4.7)	40 (4.1)	569 (5.5)
Saudi Arabia	38 (3.3)	421 (7.1)	9 (2.1)	394 (15.4)	53 (3.5)	381 (6.6)
Serbia	6 (1.9)	515 (13.5)	5 (1.9)	508 (10.0)	89 (2.1)	507 (3.4)
Singapore	14 (1.5)	625 (8.7)	31 (2.5)	626 (6.5)	54 (2.4)	625 (5.5)
Slovak Republic	15 (2.0)	515 (9.6)	27 (2.8)	510 (5.7)	58 (2.9)	508 (4.2)
South Africa (5)	10 (1.9)	372 (14.3)	2 (0.8)	~ ~	88 (2.0)	373 (4.2)
Spain	12 (2.4)	498 (8.2)	10 (1.7)	512 (6.5)	78 (2.8)	501 (2.7)
Sweden	20 (3.5)	521 (5.5)	9 (2.3)	517 (7.2)	71 (4.2)	522 (4.0)
Turkey (5)	4 (1.7)	572 (11.9)	4 (1.7)	547 (14.9)	92 (2.1)	520 (4.8)
United Arab Emirates	45 (1.9)	499 (2.6)	35 (2.1)	474 (3.4)	20 (1.6)	456 (5.5)
United States	50 (2.7)	530 (3.5)	38 (2.8)	539 (3.9)	12 (1.6)	549 (9.0)
England	11 (3.9)	545 (5.5)	27 (5.2)	564 (11.5)	62 (5.6)	559 (6.1)
International Average	17 (0.4)	502 (1.4)	18 (0.4)	504 (1.2)	64 (0.4)	501 (0.7)
Benchmarking Participants						
Ontario, Canada	14 (2.9)	494 (10.4)	8 (1.6)	521 (11.9)	78 (3.3)	514 (4.2)
Quebec, Canada	10 (2.6)	533 (5.8)	5 (2.1)	527 (9.1)	85 (3.2)	533 (2.4)
Moscow City, Russian Fed.	49 (4.2)	594 (3.1)	29 (4.1)	594 (4.3)	22 (3.2)	589 (4.3)
Madrid, Spain	13 (3.1)	519 (5.9)	5 (2.6)	527 (7.4)	82 (3.9)	517 (2.6)
Abu Dhabi, UAE	38 (2.7)	461 (4.9)	40 (2.7)	429 (4.7)	23 (2.4)	436 (10.3)
Dubai, UAE	67 (1.6)	547 (2.8)	30 (1.7)	548 (3.1)	4 (0.9)	532 (12.6)

() 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 "x" indicates data are available for at least 40% but less than 50% of the students—interpret with caution.

Exhibit 14.10: Students Take Science Tests on Computers or Tablets
Students' Results based on Teachers' Reports

Country	Once a Month or More		Once or Twice a Year		Never	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Albania	3 (1.6)	503 (9.6)	12 (2.6)	512 (10.6)	85 (3.0)	486 (4.0)
Armenia	16 (2.9)	483 (8.6)	17 (3.0)	461 (7.0)	67 (3.8)	464 (4.3)
Australia	7 (2.3)	545 (12.5)	21 (3.0)	540 (6.9)	73 (3.8)	531 (3.1)
Austria	4 (1.3)	524 (13.3)	3 (0.8)	530 (11.7)	93 (1.6)	522 (2.8)
Azerbaijan	31 (3.0)	424 (5.4)	7 (2.0)	408 (15.7)	62 (3.6)	432 (4.4)
Bahrain	18 (2.0)	494 (8.2)	25 (2.5)	493 (7.2)	58 (2.7)	490 (4.4)
Belgium (Flemish)	11 (2.4)	501 (6.1)	12 (2.6)	512 (5.1)	77 (3.3)	500 (2.5)
Bosnia and Herzegovina	5 (1.2)	450 (12.4)	6 (1.7)	485 (6.8)	89 (2.1)	457 (3.1)
Bulgaria	27 (3.3)	535 (8.0)	11 (2.7)	513 (15.7)	62 (3.7)	516 (7.7)
Canada	11 (1.5)	520 (4.3)	10 (1.5)	536 (5.3)	79 (2.1)	524 (2.3)
Chile	13 (3.2)	469 (6.5)	19 (3.6)	462 (8.5)	69 (4.1)	469 (3.8)
Chinese Taipei	17 (2.8)	555 (3.6)	11 (2.4)	560 (7.0)	72 (3.6)	558 (2.2)
Croatia	14 (2.8)	518 (6.1)	5 (1.3)	520 (6.9)	81 (3.2)	525 (2.3)
Cyprus	10 (2.9)	520 (11.0)	13 (2.7)	494 (7.3)	77 (3.6)	514 (3.3)
Czech Republic	10 (2.2)	531 (7.6)	19 (2.6)	536 (5.8)	71 (3.1)	533 (2.9)
Denmark	11 (2.7)	521 (7.8)	25 (3.7)	518 (5.7)	64 (4.3)	523 (3.2)
Finland	21 (2.4)	550 (5.8)	35 (3.3)	560 (3.0)	45 (3.3)	553 (3.2)
France	1 (0.5)	--	5 (2.1)	478 (14.9)	94 (2.1)	489 (3.2)
Georgia	56 (3.9)	453 (6.0)	21 (3.4)	451 (6.8)	23 (2.9)	463 (7.3)
Germany	6 (1.9)	518 (7.2)	9 (2.3)	530 (8.1)	86 (2.7)	517 (2.6)
Hong Kong SAR	31 (4.2)	529 (6.2)	26 (3.1)	527 (5.7)	43 (4.7)	538 (5.3)
Hungary	3 (1.3)	483 (27.1)	17 (2.8)	507 (6.1)	80 (2.9)	534 (3.3)
Iran, Islamic Rep. of	18 (2.7)	452 (8.1)	9 (2.3)	448 (14.6)	73 (3.4)	437 (5.3)
Ireland	2 (0.9)	--	5 (1.6)	521 (19.1)	93 (1.8)	528 (2.8)
Italy	25 (3.0)	506 (5.3)	19 (3.2)	510 (4.8)	56 (3.5)	511 (3.9)
Japan	3 (1.5)	576 (13.8)	2 (1.2)	--	94 (1.9)	561 (1.8)
Kazakhstan	58 (4.1)	490 (4.3)	10 (2.5)	488 (9.9)	32 (3.7)	501 (6.9)
Korea, Rep. of	9 (2.3)	584 (8.2)	9 (2.3)	585 (7.3)	82 (3.2)	588 (2.1)
Kosovo	16 (2.8)	411 (9.7)	13 (2.8)	407 (10.3)	71 (3.6)	413 (4.5)
Kuwait	34 (3.9)	385 (12.2)	17 (3.4)	414 (11.5)	49 (4.0)	387 (9.1)
Latvia	10 (2.4)	531 (8.6)	35 (3.4)	538 (5.6)	55 (3.2)	546 (2.8)
Lithuania	23 (2.6)	527 (7.1)	27 (3.6)	537 (5.9)	50 (3.4)	542 (4.1)
Malta	22 (0.3)	480 (2.8)	24 (0.4)	488 (2.3)	54 (0.4)	505 (1.8)
Montenegro	9 (1.6)	450 (8.4)	4 (0.2)	460 (12.7)	88 (1.6)	452 (2.7)
Morocco	2 (1.0)	--	2 (1.3)	--	96 (1.7)	373 (5.5)
Netherlands	16 (4.5)	516 (5.6)	4 (1.7)	483 (15.6)	80 (4.7)	520 (3.5)
New Zealand	2 (0.8)	--	14 (2.5)	504 (7.7)	85 (2.6)	503 (2.8)
North Macedonia	28 (3.8)	422 (11.3)	20 (3.9)	410 (14.7)	52 (4.8)	435 (7.7)
Northern Ireland	0 (0.0)	--	1 (0.8)	--	99 (0.8)	519 (2.5)
Norway (5)	9 (2.9)	528 (12.7)	27 (3.7)	535 (5.5)	64 (4.4)	543 (3.3)
Oman	7 (1.8)	430 (12.5)	15 (2.3)	462 (17.3)	78 (2.8)	431 (4.3)
Pakistan	21 (8.1)	256 (29.3)	3 (1.9)	234 (28.7)	76 (8.2)	306 (17.2)
Philippines	20 (2.8)	244 (14.1)	8 (2.4)	217 (17.2)	71 (3.2)	253 (10.1)
Poland	5 (1.5)	556 (8.7)	20 (3.4)	524 (5.4)	76 (3.7)	532 (3.0)
Portugal	5 (1.4)	518 (7.4)	4 (1.1)	497 (8.0)	91 (1.8)	504 (2.7)
Qatar	45 (3.3)	428 (5.2)	11 (2.5)	443 (11.6)	44 (3.0)	474 (8.0)
Russian Federation	34 (3.3)	566 (4.6)	26 (3.5)	572 (5.0)	40 (4.4)	566 (4.9)
Saudi Arabia	37 (3.4)	418 (6.6)	9 (2.0)	394 (14.1)	54 (3.5)	394 (6.7)
Serbia	15 (2.5)	518 (8.2)	8 (2.4)	521 (7.3)	78 (3.2)	516 (3.8)
Singapore	9 (1.3)	573 (12.0)	27 (2.1)	597 (5.6)	64 (2.3)	596 (4.5)
Slovak Republic	17 (2.6)	514 (7.8)	24 (2.8)	530 (5.4)	60 (3.4)	519 (5.1)
South Africa (5)	8 (1.8)	345 (30.2)	0 (0.2)	--	92 (1.8)	324 (5.6)
Spain	19 (3.0)	503 (7.8)	9 (1.8)	510 (6.0)	73 (3.2)	513 (2.5)
Sweden	19 (3.7)	535 (7.3)	19 (3.8)	535 (7.1)	63 (4.3)	542 (4.1)
Turkey (5)	6 (2.0)	498 (18.4)	4 (1.5)	538 (23.6)	90 (2.6)	528 (4.8)
United Arab Emirates	43 (2.1)	500 (3.8)	34 (1.8)	468 (4.5)	24 (2.3)	434 (5.0)
United States	22 (1.8)	540 (4.9)	18 (1.9)	546 (4.4)	61 (2.2)	536 (3.8)
England	--	--	--	--	--	--
International Average	17 (0.4)	489 (1.5)	14 (0.3)	491 (1.5)	69 (0.4)	491 (0.7)
Benchmarking Participants						
Ontario, Canada	8 (2.0)	520 (7.5)	9 (2.5)	537 (11.6)	83 (3.2)	527 (4.2)
Quebec, Canada	14 (2.9)	516 (6.2)	7 (2.0)	523 (8.1)	79 (3.5)	524 (2.8)
Moscow City, Russian Fed.	45 (4.0)	594 (3.6)	29 (3.6)	598 (3.0)	25 (3.7)	590 (3.7)
Madrid, Spain	14 (3.3)	532 (3.3)	7 (2.0)	530 (4.5)	78 (3.6)	520 (2.4)
Abu Dhabi, UAE	37 (2.5)	451 (7.1)	34 (2.5)	402 (9.2)	29 (2.4)	391 (7.8)
Dubai, UAE	60 (2.4)	553 (3.4)	32 (2.4)	547 (3.8)	7 (1.1)	518 (7.8)

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

A dash (-) indicates comparable data not available. 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.

A "y" indicates data are available for less than 40% of the students.

Exhibit 14.11: Students Take Mathematics Tests on Computers or Tablets

Students' Results based on Teachers' Reports

Country	Once a Month or More		Once or Twice a Year		Never	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	25 (3.0)	515 (8.6)	32 (2.8)	518 (5.8)	43 (3.1)	522 (6.8)
Bahrain	19 (2.4)	489 (5.4)	27 (2.7)	478 (3.6)	53 (2.4)	481 (2.8)
Chile	11 (2.7)	434 (9.4)	29 (3.9)	434 (6.3)	60 (4.3)	444 (4.7)
Chinese Taipei	7 (1.6)	579 (10.2)	25 (3.3)	607 (6.1)	68 (3.6)	617 (3.3)
Cyprus s	6 (2.3)	531 (11.1)	1 (0.6)	~ ~	94 (2.2)	503 (2.2)
Egypt	24 (3.7)	438 (10.1)	7 (2.2)	404 (20.3)	69 (3.6)	406 (6.0)
England s	11 (3.9)	501 (17.7)	18 (3.9)	521 (11.0)	71 (5.4)	523 (10.4)
Finland	15 (2.2)	506 (6.1)	31 (3.0)	510 (4.4)	55 (3.2)	509 (3.3)
France r	22 (3.8)	479 (4.8)	47 (4.3)	481 (4.3)	30 (4.4)	487 (6.3)
Georgia	29 (3.3)	479 (8.9)	27 (3.4)	449 (7.1)	44 (3.8)	460 (6.9)
Hong Kong SAR	11 (2.6)	551 (17.3)	24 (4.0)	576 (12.5)	65 (4.3)	582 (6.4)
Hungary	11 (2.1)	518 (12.2)	21 (3.1)	497 (10.3)	67 (3.4)	520 (4.6)
Iran, Islamic Rep. of	7 (2.1)	454 (21.2)	18 (2.9)	453 (13.4)	75 (3.2)	444 (4.0)
Ireland	7 (1.5)	511 (9.4)	9 (1.7)	531 (5.4)	84 (2.3)	525 (3.0)
Israel	15 (2.1)	479 (13.7)	14 (2.3)	523 (15.9)	70 (3.1)	527 (5.5)
Italy	23 (3.3)	486 (6.2)	28 (2.8)	496 (4.9)	49 (3.8)	504 (3.6)
Japan	2 (0.9)	~ ~	1 (0.8)	~ ~	97 (1.2)	595 (2.8)
Jordan	10 (2.5)	401 (17.9)	20 (3.6)	426 (11.9)	70 (4.0)	420 (4.8)
Kazakhstan	71 (3.9)	482 (4.5)	9 (2.2)	517 (12.9)	20 (3.4)	480 (9.5)
Korea, Rep. of	1 (0.7)	~ ~	5 (1.5)	605 (13.3)	94 (1.7)	607 (3.0)
Kuwait	25 (3.4)	405 (8.8)	27 (3.7)	407 (8.1)	47 (3.8)	399 (7.7)
Lebanon	11 (2.3)	431 (15.0)	13 (2.9)	425 (10.6)	76 (3.4)	429 (3.7)
Lithuania	23 (4.1)	525 (9.7)	43 (4.4)	517 (4.8)	35 (4.2)	524 (5.5)
Malaysia	24 (3.1)	466 (7.9)	39 (3.4)	453 (6.0)	38 (3.3)	465 (7.4)
Morocco	2 (1.0)	~ ~	2 (0.9)	~ ~	96 (1.2)	387 (2.7)
New Zealand	25 (3.8)	477 (6.2)	43 (4.3)	477 (6.9)	32 (3.8)	494 (6.0)
Norway (9) s	15 (3.3)	517 (4.5)	66 (4.3)	504 (3.9)	19 (3.6)	500 (5.0)
Oman	9 (2.0)	409 (11.9)	10 (2.0)	439 (10.3)	82 (2.4)	408 (3.1)
Portugal	2 (1.1)	~ ~	4 (1.5)	501 (18.2)	95 (1.9)	500 (3.3)
Qatar	39 (4.6)	417 (7.2)	19 (3.7)	452 (13.3)	42 (4.4)	465 (9.5)
Romania	6 (1.9)	500 (25.9)	10 (2.5)	477 (17.0)	84 (3.3)	477 (4.7)
Russian Federation	25 (2.7)	551 (7.4)	28 (3.8)	557 (7.8)	47 (3.6)	531 (7.7)
Saudi Arabia	42 (3.9)	400 (4.0)	5 (1.7)	403 (13.8)	53 (3.9)	391 (3.5)
Singapore	11 (1.6)	595 (15.2)	36 (2.7)	617 (6.8)	53 (2.6)	620 (5.0)
South Africa (9)	8 (1.3)	409 (10.5)	2 (1.0)	~ ~	90 (1.7)	388 (2.5)
Sweden	13 (2.6)	493 (7.9)	13 (2.5)	502 (5.6)	74 (3.3)	506 (3.1)
Turkey	2 (0.9)	~ ~	4 (1.5)	521 (42.8)	95 (1.7)	496 (5.1)
United Arab Emirates r	54 (1.8)	462 (3.4)	28 (1.9)	495 (5.6)	18 (1.8)	481 (5.1)
United States	49 (2.6)	502 (5.6)	34 (2.4)	529 (7.0)	17 (2.2)	533 (9.9)
International Average	18 (0.4)	482 (2.0)	21 (0.5)	494 (2.1)	61 (0.5)	491 (0.9)
Benchmarking Participants						
Ontario, Canada	15 (3.4)	528 (11.3)	19 (4.2)	545 (14.8)	66 (5.0)	530 (4.5)
Quebec, Canada	14 (3.0)	560 (7.1)	15 (3.6)	559 (11.7)	71 (4.3)	536 (5.3)
Moscow City, Russian Fed.	19 (3.2)	574 (9.2)	35 (4.1)	581 (6.3)	46 (4.1)	572 (6.7)
Gauteng, RSA (9)	14 (2.8)	427 (10.2)	2 (1.1)	~ ~	84 (2.9)	420 (3.6)
Western Cape, RSA (9)	3 (1.3)	503 (37.0)	4 (1.3)	458 (24.4)	93 (1.7)	438 (5.1)
Abu Dhabi, UAE r	60 (2.6)	426 (5.5)	25 (2.4)	445 (7.9)	15 (1.8)	451 (8.3)
Dubai, UAE	56 (1.7)	525 (3.9)	34 (2.0)	553 (6.6)	10 (1.9)	554 (14.7)

() 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.

Exhibit 14.12: Students Take Science Tests on Computers or Tablets
Students' Results based on Teachers' Reports

Country		Once a Month or More		Once or Twice a Year		Never	
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Australia	r	16 (2.8)	539 (11.5)	32 (3.0)	534 (6.5)	53 (3.3)	530 (5.0)
Bahrain		29 (2.6)	471 (4.6)	31 (2.6)	485 (4.8)	41 (2.5)	498 (4.7)
Chile		11 (2.5)	452 (8.3)	25 (3.0)	473 (5.9)	63 (3.3)	461 (3.8)
Chinese Taipei		10 (2.0)	555 (5.6)	10 (2.4)	571 (8.7)	80 (3.0)	577 (2.4)
Cyprus	s	3 (0.7)	483 (7.1)	8 (0.6)	502 (6.8)	89 (0.9)	485 (2.6)
Egypt		23 (3.8)	402 (12.7)	5 (2.1)	437 (17.0)	72 (4.1)	384 (6.0)
England	s	5 (2.6)	546 (22.5)	13 (3.5)	487 (13.8)	82 (4.3)	527 (7.4)
Finland		24 (1.9)	546 (5.1)	41 (1.9)	538 (3.4)	35 (2.1)	546 (4.1)
France	r	10 (1.8)	495 (6.5)	35 (3.1)	491 (4.2)	55 (3.1)	486 (3.7)
Georgia		34 (2.2)	446 (5.4)	30 (2.3)	444 (4.5)	37 (2.6)	449 (4.9)
Hong Kong SAR		14 (2.8)	486 (15.6)	25 (4.2)	510 (13.9)	61 (4.8)	506 (7.1)
Hungary		7 (1.1)	514 (9.0)	16 (1.8)	528 (7.2)	77 (2.0)	531 (3.1)
Iran, Islamic Rep. of		18 (2.5)	476 (12.2)	13 (2.3)	453 (10.5)	69 (3.4)	442 (3.7)
Ireland		10 (1.8)	520 (5.8)	12 (2.4)	516 (8.4)	78 (2.7)	530 (3.0)
Israel		17 (2.8)	500 (11.0)	35 (3.4)	521 (7.5)	48 (2.9)	513 (6.0)
Italy		16 (2.9)	493 (7.6)	18 (3.0)	489 (7.7)	66 (3.9)	506 (2.7)
Japan		4 (1.5)	568 (3.8)	4 (1.7)	564 (6.1)	92 (2.3)	570 (2.3)
Jordan		13 (2.4)	462 (12.8)	18 (2.9)	464 (8.7)	70 (3.7)	447 (6.1)
Kazakhstan		81 (2.4)	469 (3.8)	6 (1.3)	478 (6.3)	13 (2.2)	488 (8.1)
Korea, Rep. of		7 (1.6)	552 (7.8)	10 (1.9)	558 (6.6)	83 (2.3)	562 (2.2)
Kuwait		38 (3.8)	452 (7.4)	24 (4.1)	435 (10.1)	38 (3.7)	442 (9.4)
Lebanon		16 (2.1)	379 (10.1)	11 (2.0)	381 (18.8)	73 (2.5)	376 (5.3)
Lithuania		21 (1.8)	525 (4.3)	46 (2.6)	535 (3.6)	33 (2.5)	536 (3.5)
Malaysia		25 (2.8)	463 (7.6)	35 (3.4)	453 (8.5)	40 (3.8)	464 (7.2)
Morocco		1 (0.5)	~ ~	3 (1.1)	417 (13.1)	96 (1.2)	393 (2.9)
New Zealand		22 (3.1)	503 (7.1)	28 (3.4)	503 (7.5)	50 (4.0)	500 (7.0)
Norway (9)	s	8 (2.5)	499 (9.0)	59 (5.3)	498 (4.3)	33 (5.0)	496 (6.9)
Oman		7 (1.4)	447 (18.4)	7 (1.8)	463 (13.2)	87 (2.3)	458 (3.1)
Portugal		3 (1.1)	507 (13.2)	5 (1.3)	529 (9.1)	92 (1.8)	519 (2.8)
Qatar		46 (3.3)	461 (5.8)	12 (2.5)	461 (15.5)	41 (3.0)	493 (7.6)
Romania		6 (1.3)	469 (12.0)	24 (3.1)	481 (9.0)	70 (2.9)	468 (4.5)
Russian Federation		32 (1.9)	546 (4.9)	21 (2.3)	542 (5.9)	47 (2.7)	541 (5.2)
Saudi Arabia		41 (4.0)	439 (5.0)	7 (2.0)	419 (13.5)	52 (4.1)	428 (4.4)
Singapore		5 (1.1)	596 (21.4)	21 (2.2)	601 (8.7)	74 (2.4)	610 (4.7)
South Africa (9)		7 (1.7)	381 (19.1)	2 (0.7)	~ ~	90 (1.8)	370 (3.5)
Sweden		26 (3.5)	519 (6.5)	22 (2.5)	526 (6.1)	52 (3.9)	521 (5.6)
Turkey		5 (1.8)	555 (28.1)	6 (1.8)	531 (24.7)	90 (2.5)	512 (4.0)
United Arab Emirates	r	52 (1.7)	469 (3.9)	25 (1.7)	478 (6.0)	23 (1.5)	486 (5.5)
United States	r	52 (3.0)	524 (4.8)	18 (2.1)	551 (8.3)	30 (2.5)	516 (11.1)
International Average		20 (0.4)	492 (1.8)	20 (0.4)	496 (1.6)	61 (0.5)	491 (0.9)
Benchmarking Participants							
Ontario, Canada	s	23 (4.8)	514 (6.0)	18 (4.1)	504 (10.1)	59 (5.2)	530 (6.1)
Moscow City, Russian Fed.		27 (2.1)	563 (4.1)	22 (1.8)	571 (4.5)	51 (2.2)	566 (3.3)
Gauteng, RSA (9)		4 (1.6)	512 (23.7)	4 (2.0)	451 (57.9)	93 (2.5)	417 (4.7)
Western Cape, RSA (9)		7 (3.0)	430 (34.0)	7 (2.1)	511 (34.7)	86 (3.4)	435 (6.2)
Abu Dhabi, UAE	r	59 (2.3)	399 (5.9)	20 (1.8)	419 (9.9)	21 (1.8)	469 (8.8)
Dubai, UAE	r	55 (3.3)	558 (4.2)	29 (3.4)	541 (7.2)	16 (2.0)	555 (8.2)
Quebec, Canada	y	- -	- -	- -	- -	- -	- -

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

A dash (-) indicates comparable data not available. 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.

A "y" indicates data are available for less than 40% of the students.