

Exhibit 4.2: Home Educational Resources

Reported by Students

Students were scored according to their responses concerning the availability of three home educational resources on the *Home Educational Resources* scale. Students with **Many Resources** had a score of at least 12.4, which is the point on the scale corresponding to students reporting that they had more than 100 books in the home, 2 home study supports, and that at least one parent had finished university, on average. Students with **Few Resources** had a score no higher than 8.3, which is the scale point corresponding to students reporting that they had 25 or fewer books in the home, neither of the 2 home study supports, and that neither parent had gone beyond upper-secondary education, on average. All other students were assigned to the **Some Resources** category.

Country	Many Resources		Some Resources		Few Resources		Average Scale Score	Difference in Average Scale Score from 2011	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement			
Korea, Rep. of	37 (1.3)	584 (3.2)	60 (1.2)	541 (2.1)	3 (0.2)	483 (9.1)	11.6 (0.05)	0.3 (0.07)	▲
Norway (9)	29 (1.2)	549 (3.3)	69 (1.1)	494 (2.6)	1 (0.2)	~ ~	11.5 (0.05)	◊ ◊	
Georgia	23 (1.1)	481 (3.8)	70 (1.1)	439 (3.6)	7 (0.6)	375 (7.9)	10.9 (0.06)	0.4 (0.08)	▲
Sweden	23 (1.1)	578 (4.0)	74 (1.2)	510 (3.1)	3 (0.5)	437 (12.2)	11.1 (0.04)	-0.2 (0.06)	▼
Australia	23 (0.9)	562 (2.8)	73 (0.9)	503 (2.5)	4 (0.4)	429 (8.4)	11.1 (0.04)	0.0 (0.07)	
Hungary	22 (1.5)	592 (3.9)	70 (1.3)	517 (2.8)	7 (0.7)	425 (7.9)	10.8 (0.07)	0.0 (0.09)	
United States	22 (0.9)	579 (3.2)	71 (0.9)	521 (2.6)	7 (0.5)	476 (4.6)	10.9 (0.04)	0.0 (0.06)	
Canada	21 (0.9)	567 (3.1)	76 (0.8)	518 (2.0)	2 (0.3)	~ ~	11.1 (0.04)	◊ ◊	
Ireland	20 (0.9)	580 (3.1)	74 (0.8)	523 (2.6)	6 (0.6)	445 (12.8)	10.9 (0.05)	◊ ◊	
Japan	19 (0.9)	610 (3.0)	77 (0.8)	564 (1.7)	4 (0.3)	511 (6.0)	11.0 (0.04)	0.2 (0.06)	▲
England	19 (1.0)	606 (4.6)	76 (1.0)	525 (3.6)	5 (0.4)	470 (7.1)	10.9 (0.05)	0.1 (0.07)	
New Zealand	19 (0.7)	575 (3.1)	75 (0.6)	505 (3.0)	6 (0.5)	430 (5.9)	10.9 (0.04)	0.0 (0.07)	
Israel	r 16 (0.7)	581 (4.4)	82 (0.7)	509 (4.2)	2 (0.3)	~ ~	11.1 (0.04)	r 0.1 (0.07)	
Chinese Taipei	15 (0.9)	625 (3.0)	73 (0.9)	570 (1.9)	12 (0.6)	501 (4.1)	10.4 (0.04)	0.0 (0.06)	
Lithuania	14 (1.1)	573 (5.6)	81 (1.2)	514 (2.4)	5 (0.4)	449 (8.9)	10.7 (0.05)	0.2 (0.06)	▲
Qatar	14 (0.6)	515 (4.3)	78 (0.8)	456 (3.2)	8 (0.5)	374 (6.2)	10.6 (0.03)	-0.1 (0.05)	
Slovenia	14 (0.7)	595 (3.4)	83 (0.7)	547 (2.3)	3 (0.4)	469 (10.6)	10.8 (0.04)	-0.1 (0.05)	
Malta	13 (0.5)	557 (4.0)	75 (0.7)	481 (1.7)	12 (0.5)	412 (4.7)	10.5 (0.03)	◊ ◊	
Italy	13 (0.9)	548 (4.1)	72 (1.0)	502 (2.0)	15 (0.9)	444 (5.5)	10.2 (0.05)	-0.1 (0.07)	
Russian Federation	12 (0.6)	576 (4.9)	83 (0.6)	541 (4.3)	5 (0.4)	509 (9.7)	10.7 (0.04)	-0.1 (0.06)	
United Arab Emirates	12 (0.4)	533 (3.8)	77 (0.4)	478 (2.2)	11 (0.4)	414 (4.2)	10.4 (0.03)	0.1 (0.04)	
Hong Kong SAR	12 (1.0)	584 (4.9)	74 (1.0)	546 (3.7)	15 (0.9)	513 (5.7)	10.2 (0.07)	0.3 (0.08)	▲
Singapore	12 (0.4)	654 (3.0)	77 (0.6)	598 (3.2)	11 (0.5)	532 (5.5)	10.3 (0.03)	0.0 (0.05)	
Kazakhstan	11 (1.1)	558 (10.0)	79 (1.1)	533 (4.2)	11 (0.9)	507 (9.6)	10.3 (0.07)	0.3 (0.10)	▲
Iran, Islamic Rep. of	9 (0.8)	532 (7.0)	55 (1.2)	469 (4.3)	36 (1.5)	418 (3.8)	9.3 (0.08)	0.7 (0.12)	▲
Bahrain	8 (0.4)	512 (6.5)	78 (0.7)	468 (2.6)	13 (0.6)	433 (4.7)	10.1 (0.03)	0.0 (0.04)	
Lebanon	7 (0.6)	436 (9.5)	73 (1.0)	407 (5.7)	20 (0.9)	363 (6.7)	9.9 (0.04)	0.5 (0.08)	▲
Turkey	7 (0.8)	593 (6.9)	54 (1.2)	510 (3.6)	40 (1.7)	455 (3.9)	9.1 (0.09)	0.7 (0.12)	▲
Chile	6 (0.5)	518 (5.9)	78 (0.9)	458 (3.1)	16 (0.9)	412 (4.4)	9.9 (0.04)	0.2 (0.06)	
Oman	6 (0.3)	496 (5.5)	66 (0.8)	460 (2.8)	28 (1.0)	438 (4.0)	9.5 (0.04)	0.5 (0.06)	▲
Saudi Arabia	6 (0.6)	442 (11.6)	69 (1.3)	404 (4.6)	25 (1.4)	370 (5.7)	9.6 (0.06)	0.2 (0.10)	
Jordan	5 (0.4)	477 (8.2)	73 (1.0)	439 (3.2)	22 (1.1)	382 (4.4)	9.6 (0.05)	0.1 (0.07)	
Kuwait	5 (0.7)	474 (15.2)	82 (1.0)	414 (5.4)	13 (0.8)	370 (6.1)	10.0 (0.05)	◊ ◊	
Egypt	5 (0.3)	413 (8.1)	67 (1.0)	383 (4.3)	28 (1.0)	341 (5.7)	9.4 (0.04)	◊ ◊	
Malaysia	4 (0.3)	544 (5.9)	72 (1.0)	480 (4.0)	24 (1.0)	432 (5.7)	9.5 (0.04)	0.4 (0.08)	▲
Thailand	3 (0.5)	551 (11.3)	60 (1.1)	464 (4.8)	37 (1.2)	434 (4.1)	9.1 (0.05)	0.6 (0.08)	▲
South Africa (9)	3 (0.4)	489 (24.1)	66 (1.1)	368 (6.5)	31 (1.2)	327 (3.9)	9.1 (0.06)	0.4 (0.07)	▲
Botswana (9)	2 (0.2)	~ ~	51 (1.1)	407 (3.5)	47 (1.2)	376 (2.7)	8.6 (0.05)	0.1 (0.06)	
Morocco	2 (0.2)	~ ~	43 (0.9)	401 (3.3)	55 (1.0)	386 (2.4)	8.2 (0.05)	0.2 (0.07)	
International Avg.	13 (0.1)	547 (1.2)	72 (0.2)	486 (0.6)	15 (0.1)	432 (1.1)			

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

Significantly higher than 2011 ▲  
Significantly lower than 2011 ▼

This TIMSS questionnaire scale was established in 2011 based on the combined response distribution of all countries that participated in TIMSS 2011. 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 diamond (◊) indicates the country did not participate in the 2011 assessment.

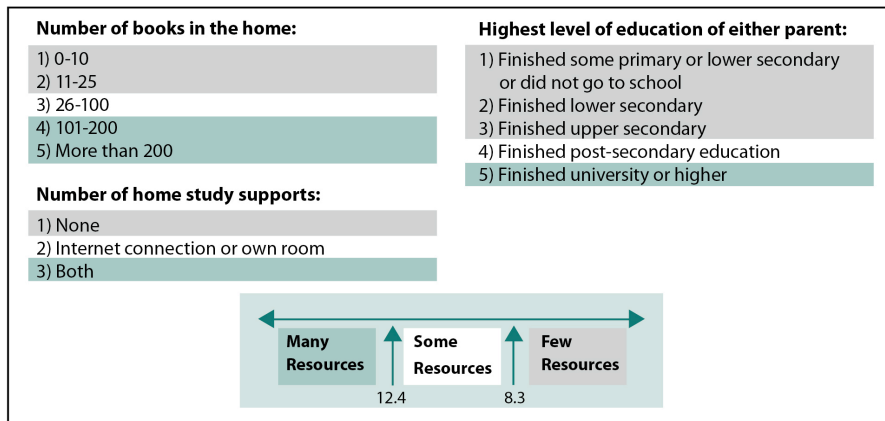
A tilde (~) indicates insufficient data to report achievement.

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

Exhibit 4.2: Home Educational Resources (Continued)

Country	Many Resources		Some Resources		Few Resources		Average Scale Score	Difference in Average Scale Score from 2011
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
<b>Benchmarking Participants</b>								
Norway (8)	25 (1.1)	527 (3.0)	74 (1.1)	479 (2.3)	1 (0.2)	~ ~	11.4 (0.05)	-0.2 (0.06) ▼
Ontario, Canada	24 (1.3)	566 (3.9)	74 (1.2)	514 (2.1)	2 (0.3)	~ ~	11.3 (0.05)	-0.1 (0.08)
Dubai, UAE	18 (0.6)	570 (4.4)	77 (0.7)	521 (2.1)	6 (0.5)	445 (8.1)	10.8 (0.03)	0.2 (0.04) ▲
Quebec, Canada	18 (1.0)	572 (5.0)	80 (1.1)	525 (4.0)	3 (0.6)	467 (12.0)	10.9 (0.06)	-0.1 (0.07)
Florida, US	13 (1.4)	570 (6.6)	77 (1.2)	506 (5.8)	10 (1.4)	451 (7.7)	10.4 (0.10)	-0.2 (0.13)
Abu Dhabi, UAE	11 (1.0)	518 (10.2)	77 (1.0)	456 (5.3)	12 (0.8)	397 (7.1)	10.3 (0.06)	0.0 (0.08)
Buenos Aires, Argentina	9 (0.9)	461 (6.7)	72 (1.3)	390 (4.4)	18 (1.3)	334 (6.8)	10.0 (0.07)	0 0

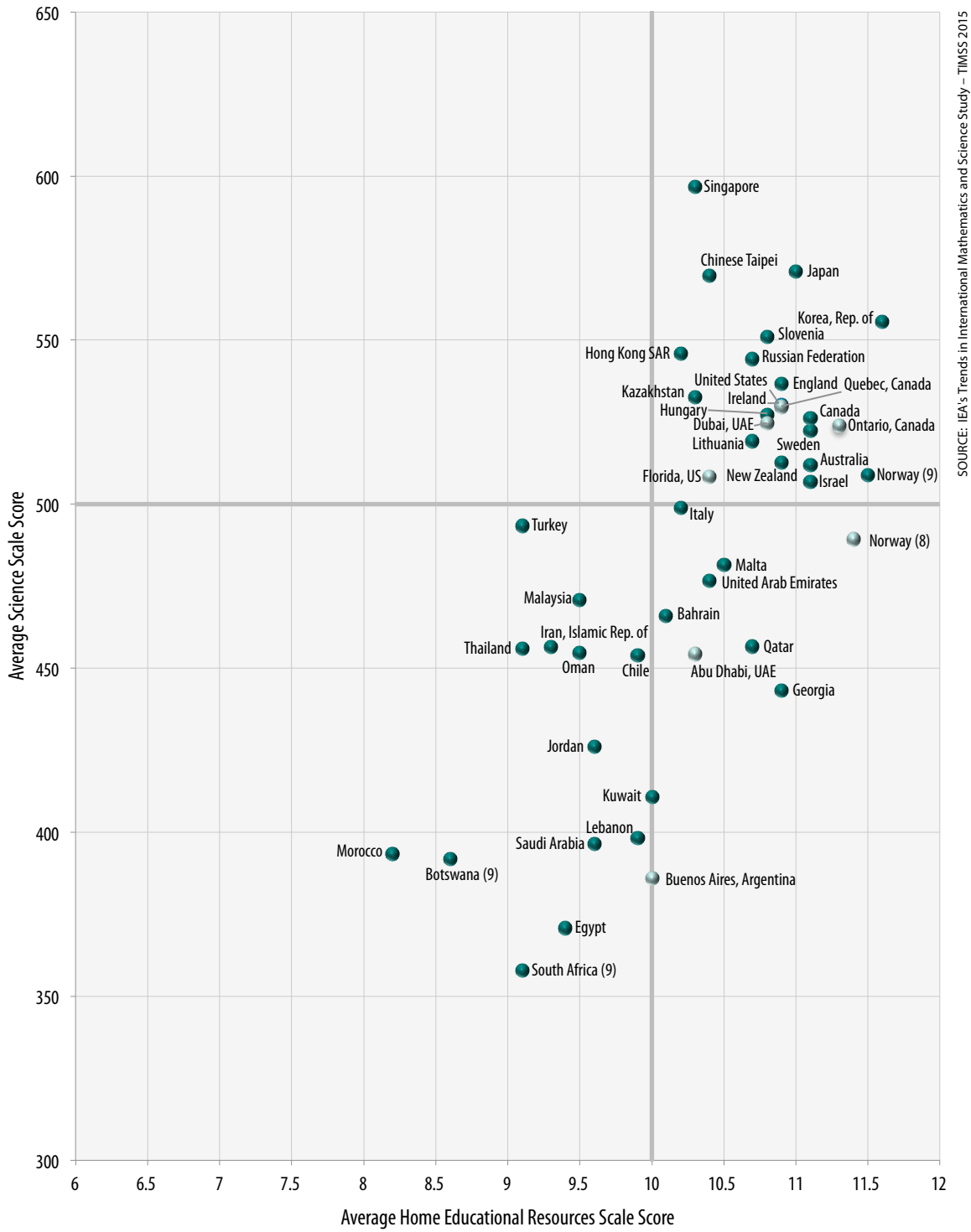
Significantly higher than 2011 ▲  
Significantly lower than 2011 ▼



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

Exhibit 4.2: Home Educational Resources (Continued)

Average Science Achievement by Home Educational Resources



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