

**Exhibit 4.7: Students Attended Preprimary Education**

*Policies Reported by National Research Coordinators and Preprimary Attendance Reported by Parents*

Country	Country Provides Universal Preprimary Coverage	National Preprimary Curriculum Includes Science	Students Attended Preprimary Education							
			3 Years or More		2 Years		1 Year or Less		Did Not Attend	
			Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Hungary	●	○	93 (0.7)	546 (2.9)	4 (0.6)	495 (10.5)	2 (0.2)	~ ~	0 (0.1)	~ ~
Denmark	●	●	93 (0.5)	531 (2.2)	5 (0.5)	517 (6.5)	2 (0.2)	~ ~	1 (0.1)	~ ~
Italy	●	●	89 (0.6)	521 (2.4)	7 (0.4)	511 (6.0)	2 (0.3)	~ ~	2 (0.3)	~ ~
Sweden	●	●	89 (1.2)	551 (3.2)	5 (0.6)	533 (11.0)	4 (0.6)	510 (9.4)	2 (0.4)	~ ~
Belgium (Flemish)	●	●	88 (0.6)	520 (2.2)	5 (0.4)	491 (6.4)	3 (0.3)	478 (7.6)	3 (0.3)	453 (6.8)
France	●	●	88 (0.7)	494 (2.7)	6 (0.5)	482 (6.9)	4 (0.4)	465 (8.6)	3 (0.3)	470 (11.1)
Korea, Rep. of	●	●	86 (0.7)	591 (2.1)	11 (0.7)	584 (3.5)	2 (0.2)	~ ~	1 (0.2)	~ ~
Slovenia	s	●	80 (1.3)	554 (3.1)	9 (0.7)	551 (5.3)	5 (0.6)	535 (8.1)	5 (0.7)	547 (8.1)
Singapore	●	●	80 (0.6)	601 (3.4)	12 (0.5)	563 (5.5)	4 (0.2)	549 (9.6)	4 (0.3)	545 (9.8)
Czech Republic	●	●	78 (0.9)	540 (2.2)	14 (0.8)	522 (4.1)	5 (0.4)	518 (5.6)	3 (0.3)	496 (12.2)
Portugal	●	●	74 (1.0)	514 (2.3)	14 (0.8)	502 (2.6)	7 (0.4)	491 (5.0)	4 (0.4)	482 (5.7)
Slovak Republic	●	●	73 (1.4)	535 (2.4)	12 (0.7)	510 (4.8)	10 (1.0)	494 (12.1)	5 (0.6)	412 (11.7)
Hong Kong SAR	●	●	72 (0.9)	562 (3.0)	5 (0.4)	556 (8.5)	12 (0.5)	548 (5.5)	10 (0.8)	540 (5.7)
Finland	●	●	69 (1.4)	554 (2.8)	12 (0.8)	555 (4.9)	18 (1.0)	561 (3.8)	1 (0.2)	~ ~
Bulgaria	●	●	68 (1.8)	551 (4.4)	10 (1.2)	507 (10.4)	17 (1.1)	515 (14.8)	5 (0.7)	481 (16.3)
Lithuania	●	●	68 (1.2)	539 (2.8)	8 (0.6)	516 (6.2)	20 (1.0)	511 (4.0)	4 (0.4)	515 (8.8)
Germany	s	●	66 (1.1)	550 (2.6)	8 (0.6)	530 (5.5)	15 (0.7)	530 (4.3)	10 (0.8)	509 (6.4)
Poland	●	●	63 (1.5)	558 (2.5)	17 (0.8)	532 (3.5)	19 (1.5)	529 (3.6)	0 (0.1)	~ ~
Russian Federation	●	●	59 (1.7)	576 (3.8)	10 (0.5)	560 (5.2)	13 (0.7)	564 (3.9)	19 (1.1)	550 (3.5)
Georgia	●	●	59 (1.5)	454 (4.2)	21 (0.9)	454 (4.7)	10 (0.6)	459 (7.8)	11 (1.2)	432 (8.2)
Croatia	●	●	58 (1.6)	543 (2.6)	10 (0.8)	525 (3.9)	12 (0.8)	520 (3.5)	20 (1.7)	519 (3.6)
Spain	r	○	57 (0.9)	532 (2.6)	18 (0.8)	518 (3.4)	13 (0.6)	513 (4.3)	12 (0.5)	498 (5.3)
Cyprus	●	●	57 (1.0)	496 (2.7)	24 (0.8)	476 (3.3)	12 (0.6)	469 (4.2)	8 (0.6)	457 (5.9)
New Zealand	s	●	56 (1.2)	534 (3.1)	31 (1.0)	527 (3.5)	8 (0.6)	503 (6.3)	5 (0.5)	469 (9.9)
Chinese Taipei	●	●	52 (1.0)	559 (2.0)	40 (1.0)	555 (2.3)	7 (0.4)	542 (5.5)	1 (0.2)	~ ~
Kazakhstan	●	●	47 (1.7)	559 (5.5)	12 (1.1)	556 (7.5)	20 (1.1)	546 (5.6)	21 (1.4)	529 (6.9)
Serbia	●	●	46 (1.5)	546 (2.9)	12 (0.8)	526 (6.6)	38 (1.6)	506 (7.2)	4 (0.5)	480 (14.8)
Canada	r	●	44 (1.4)	537 (2.5)	25 (0.6)	535 (3.1)	20 (1.1)	522 (2.3)	11 (0.6)	517 (3.4)
Chile	r	○	42 (1.1)	489 (3.3)	35 (1.1)	485 (4.1)	15 (0.7)	474 (3.8)	7 (0.6)	470 (6.0)
Bahrain	●	●	34 (0.8)	474 (3.6)	33 (0.8)	472 (5.2)	17 (0.8)	454 (4.5)	16 (0.6)	432 (5.7)
Ireland	●	●	33 (1.0)	542 (2.6)	36 (1.0)	536 (3.2)	25 (0.9)	518 (3.8)	5 (0.5)	498 (6.6)
Morocco	●	●	28 (1.2)	383 (7.5)	22 (0.7)	359 (6.2)	17 (1.0)	326 (7.2)	32 (1.5)	343 (9.5)
United Arab Emirates	●	●	21 (0.4)	477 (4.0)	44 (0.6)	448 (3.1)	21 (0.4)	469 (3.6)	14 (0.5)	438 (4.9)
Qatar	r	●	20 (0.8)	462 (6.5)	33 (1.0)	459 (4.3)	25 (0.8)	451 (5.3)	22 (1.2)	411 (6.4)
Kuwait	r	○	19 (1.1)	362 (8.8)	41 (1.2)	340 (6.0)	19 (1.1)	358 (10.4)	21 (1.5)	339 (9.7)
Indonesia	●	●	19 (1.2)	406 (7.8)	28 (1.7)	427 (5.8)	26 (1.4)	404 (6.0)	27 (2.2)	360 (7.2)
Iran, Islamic Rep. of	●	●	17 (1.2)	444 (6.2)	13 (0.8)	449 (7.0)	49 (1.7)	423 (5.0)	21 (1.4)	384 (10.4)
Oman	○	n/a	15 (0.5)	451 (5.6)	27 (0.8)	456 (4.1)	29 (0.6)	438 (4.3)	29 (0.9)	402 (4.7)
Turkey	●	●	11 (0.9)	500 (7.5)	11 (0.7)	523 (6.1)	50 (0.9)	492 (3.2)	28 (1.1)	450 (4.9)
Saudi Arabia	●	●	6 (0.6)	415 (9.8)	18 (1.2)	393 (7.5)	31 (1.4)	404 (5.8)	45 (1.8)	380 (6.4)
Australia	●	●	x x	x x	x x	x x	x x	x x	x x	x x
Netherlands	○	n/a	x x	x x	x x	x x	x x	x x	x x	x x
Norway (5)	●	●	x x	x x	x x	x x	x x	x x	x x	x x
England	●	●	--	--	--	--	--	--	--	--
Japan	●	●	--	--	--	--	--	--	--	--
Northern Ireland	●	●	--	--	--	--	--	--	--	--
United States	Varies by state	n/a	--	--	--	--	--	--	--	--
International Avg.			56 (0.2)	514 (0.7)	18 (0.1)	501 (0.9)	16 (0.1)	489 (1.1)	11 (0.1)	463 (1.5)

● Yes  
○ No

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

A dash (-) indicates comparable data are 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.

An "x" indicates data are available for less than 50% of students.

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

**Exhibit 4.7: Students Attended Preprimary Education (Continued)**

Country	Country Provides Universal Preprimary Coverage	National Preprimary Curriculum Includes Science	Students Attended Preprimary Education							
			3 Years or More		2 Years		1 Year or Less		Did Not Attend	
			Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Benchmarking Participants</b>										
Quebec, Canada	r ●	●	62 (1.6)	531 (4.3)	15 (0.8)	533 (6.0)	17 (1.3)	518 (4.7)	7 (0.9)	519 (9.3)
Ontario, Canada	r ●	○	40 (1.9)	544 (3.0)	29 (1.0)	539 (3.5)	17 (1.9)	530 (3.7)	14 (0.9)	519 (4.1)
Dubai, UAE	●	○	27 (0.6)	528 (2.9)	41 (0.7)	516 (2.5)	21 (0.6)	542 (3.5)	11 (0.5)	503 (4.7)
Abu Dhabi, UAE	r ●	●	19 (1.0)	451 (9.0)	45 (1.2)	410 (5.9)	22 (1.2)	435 (7.2)	14 (0.8)	416 (9.0)
Buenos Aires, Argentina	○	n/a	x x	x x	x x	x x	x x	x x	x x	x x
Norway (4)	●	●	x x	x x	x x	x x	x x	x x	x x	x x
Florida, US	●	●	--	--	--	--	--	--	--	--

● Yes  
 ○ No

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