

### Exhibit 4.6 and 4.7: Attended Preprimary Education

There was a positive relationship for fourth grade students between the number of years students attended preprimary education and their reading achievement. According to their parents, across countries a majority of the PIRLS 2016 students had attended 3 years or more of preprimary school—59 percent. Beyond that, on average 18 percent had attended 2 years, 12 percent attended 1 year or less, and only 11 percent had not attended preprimary school. The students who attended 3 years or more had the highest average reading achievement (520), with those with less preprimary school attendance having successively lower average achievement (507, 498, and 472, respectively).

Although there is considerable variation across countries, according to the [PIRLS 2016 Encyclopedia](#), some countries already have mandatory preprimary education (e.g., Denmark, Latvia, Macao, and Trinidad and Tobago), some have nearly 100 percent enrollment even though attendance is not mandatory (e.g., Ireland, Czech Republic, and France), and a number of the remaining countries are working to increase enrollment in preprimary education. Of course, school policies of entering primary school at older ages (e.g., age 7 in Finland, Lithuania, South Africa, and Sweden) permit opportunities for more years of preschool attendance than when children start primary school at younger ages (e.g., age 4 or 5 in Malta, England, and Northern Ireland). Exhibit 2 in About PIRLS contains information across countries about the different policies and practices about the age of entry to primary school.

The results in Exhibit 4.7 indicate, however, that preprimary education cannot completely replace parental involvement in developing children's reading literacy. At each level of preprimary attendance from 3 years or more down through 1 year or less, the students whose parents **Often** engaged them in early literacy activities had higher average reading achievement than those engaged only **Sometimes** or **Never**.

## Exhibit 4.6: Students Attended Preprimary Education

Students Categorized by Parents' Reports

Country	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
Denmark	96 (0.4)	552 (2.1)	3 (0.3)	521 (9.0)	1 (0.2)	~ ~	1 (0.2)	~ ~
Hungary	93 (0.8)	558 (2.8)	4 (0.6)	535 (8.0)	2 (0.2)	~ ~	1 (0.3)	~ ~
Belgium (French)	93 (0.4)	502 (2.6)	5 (0.4)	480 (6.1)	2 (0.3)	~ ~	0 (0.0)	~ ~
Sweden	91 (0.6)	563 (2.3)	3 (0.3)	542 (7.9)	3 (0.4)	528 (7.4)	2 (0.3)	~ ~
Belgium (Flemish)	89 (0.7)	532 (1.7)	5 (0.5)	506 (6.8)	3 (0.3)	508 (5.8)	3 (0.4)	488 (5.3)
Italy	87 (0.8)	555 (2.2)	8 (0.6)	528 (5.4)	3 (0.4)	531 (8.1)	3 (0.3)	530 (9.4)
Netherlands	84 (1.2)	555 (2.2)	11 (1.0)	538 (6.2)	3 (0.5)	538 (9.5)	2 (0.4)	~ ~
Hong Kong SAR	84 (0.7)	570 (2.8)	3 (0.3)	574 (6.3)	7 (0.5)	568 (5.7)	5 (0.5)	566 (5.7)
Israel	83 (0.9)	549 (2.6)	10 (0.7)	477 (5.6)	4 (0.4)	477 (10.1)	3 (0.3)	456 (14.0)
Latvia	83 (0.9)	562 (1.7)	10 (0.8)	540 (4.5)	5 (0.4)	541 (6.2)	1 (0.2)	~ ~
Norway (5)	82 (0.9)	565 (2.2)	5 (0.4)	530 (6.6)	10 (0.7)	549 (4.5)	3 (0.3)	537 (8.9)
Slovenia	81 (1.1)	549 (2.1)	9 (0.7)	524 (6.5)	5 (0.4)	525 (6.6)	5 (0.5)	512 (10.6)
Singapore	81 (0.6)	586 (2.9)	12 (0.4)	549 (5.0)	4 (0.2)	541 (6.8)	4 (0.3)	521 (8.0)
France	80 (0.8)	519 (2.5)	6 (0.5)	509 (5.7)	6 (0.4)	490 (5.1)	8 (0.5)	494 (5.6)
Czech Republic	80 (1.0)	549 (2.0)	13 (0.7)	542 (4.0)	5 (0.4)	523 (8.8)	3 (0.5)	481 (16.6)
Austria	79 (1.1)	548 (2.2)	14 (0.8)	533 (3.6)	5 (0.4)	524 (6.2)	2 (0.3)	~ ~
Bulgaria	79 (1.7)	564 (3.9)	8 (0.6)	527 (8.8)	10 (1.1)	511 (9.1)	3 (0.6)	489 (14.5)
Macao SAR	77 (0.7)	547 (1.3)	7 (0.3)	547 (4.4)	12 (0.5)	541 (2.9)	5 (0.3)	533 (5.2)
Slovak Republic	76 (1.5)	550 (2.4)	11 (0.8)	517 (7.0)	9 (0.8)	507 (8.4)	5 (1.0)	415 (27.8)
Russian Federation	75 (1.1)	586 (1.9)	7 (0.5)	581 (4.6)	5 (0.3)	573 (5.6)	13 (0.9)	553 (5.3)
Portugal	73 (1.0)	532 (2.5)	15 (0.8)	527 (3.8)	6 (0.5)	525 (5.6)	5 (0.4)	503 (5.6)
Lithuania	69 (1.3)	558 (2.4)	7 (0.5)	546 (8.1)	16 (0.8)	520 (5.5)	9 (0.7)	534 (8.5)
Finland	68 (1.1)	569 (1.9)	12 (0.6)	565 (3.7)	18 (1.0)	571 (3.4)	1 (0.2)	~ ~
Poland	65 (1.5)	572 (2.3)	19 (0.8)	556 (3.5)	16 (1.2)	546 (4.1)	0 (0.1)	~ ~
Germany	64 (1.1)	555 (2.7)	9 (0.6)	542 (5.5)	17 (0.9)	541 (6.3)	10 (0.7)	520 (6.4)
Spain	60 (0.8)	538 (1.6)	17 (0.6)	528 (2.5)	13 (0.5)	519 (3.5)	10 (0.5)	513 (3.6)
Georgia	56 (1.4)	496 (3.1)	20 (0.9)	492 (4.6)	9 (0.7)	488 (6.7)	16 (1.4)	468 (6.5)
Chile	53 (1.3)	499 (2.9)	28 (0.9)	495 (3.4)	12 (0.7)	486 (5.7)	6 (0.6)	493 (7.0)
Chinese Taipei	53 (1.0)	564 (2.2)	35 (0.8)	561 (2.4)	8 (0.5)	549 (5.1)	4 (0.3)	523 (7.1)
South Africa	47 (1.4)	337 (6.8)	16 (0.9)	337 (8.2)	22 (0.8)	319 (5.5)	15 (0.9)	311 (4.8)
Canada	43 (0.8)	558 (2.0)	25 (0.7)	550 (2.6)	15 (0.5)	542 (2.9)	16 (0.6)	534 (2.6)
Kazakhstan	38 (1.7)	550 (3.1)	14 (0.8)	533 (3.2)	22 (1.5)	533 (3.9)	26 (1.6)	522 (3.7)
Bahrain	32 (0.8)	455 (3.5)	32 (0.8)	451 (3.0)	17 (0.7)	451 (5.8)	20 (0.8)	431 (3.9)
Ireland	31 (0.8)	578 (3.0)	40 (1.1)	573 (3.1)	24 (1.0)	565 (3.4)	4 (0.4)	543 (7.9)
Egypt	31 (2.1)	359 (6.2)	26 (1.8)	355 (6.7)	10 (1.0)	312 (9.3)	33 (2.3)	290 (9.6)
Malta	28 (0.8)	464 (3.5)	59 (0.8)	462 (2.1)	9 (0.5)	445 (4.9)	5 (0.4)	442 (7.0)
Trinidad and Tobago	27 (1.0)	479 (4.6)	55 (1.2)	494 (3.6)	11 (0.9)	482 (7.8)	6 (0.5)	466 (8.4)
Morocco	27 (1.2)	397 (3.4)	22 (1.1)	385 (4.8)	16 (0.9)	352 (5.3)	35 (1.7)	324 (6.5)
Qatar	25 (0.4)	461 (2.3)	33 (0.6)	464 (2.7)	22 (0.7)	459 (3.6)	20 (0.4)	413 (3.6)
Kuwait	20 (1.1)	409 (5.2)	39 (1.2)	396 (5.2)	18 (1.1)	412 (8.4)	22 (1.4)	390 (6.1)
Azerbaijan	20 (1.2)	490 (5.0)	10 (0.7)	493 (5.7)	16 (0.8)	480 (6.3)	55 (1.8)	462 (5.5)
United Arab Emirates	18 (0.4)	483 (4.2)	42 (1.0)	450 (3.5)	21 (0.7)	463 (4.3)	19 (0.9)	434 (4.0)
Oman	14 (0.5)	443 (6.0)	31 (0.8)	442 (3.9)	28 (0.8)	420 (4.2)	28 (0.8)	385 (3.7)
Iran, Islamic Rep. of	12 (0.7)	469 (5.9)	16 (0.8)	454 (5.8)	49 (1.6)	429 (4.5)	22 (1.1)	387 (6.4)
Saudi Arabia	6 (0.5)	453 (8.9)	15 (1.1)	454 (5.7)	35 (1.2)	434 (4.6)	45 (1.6)	422 (5.7)
England	--	--	--	--	--	--	--	--
Northern Ireland	--	--	--	--	--	--	--	--
United States	--	--	--	--	--	--	--	--
New Zealand	x 60 (1.3)	549 (2.9)	31 (1.1)	544 (3.3)	6 (0.7)	525 (7.7)	3 (0.4)	507 (13.7)
Australia	x 41 (1.2)	565 (4.3)	33 (0.9)	568 (3.6)	22 (1.3)	565 (4.9)	5 (0.5)	525 (10.9)
International Avg.	59 (0.2)	520 (0.5)	18 (0.1)	507 (0.8)	12 (0.1)	498 (0.9)	11 (0.1)	472 (1.5)

SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2016

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

**Exhibit 4.6: Students Attended Preprimary Education (Continued)**

Country	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>								
Denmark (3)	96 (0.4)	504 (2.7)	2 (0.3)	~ ~	1 (0.2)	~ ~	1 (0.1)	~ ~
Norway (4)	82 (0.7)	522 (2.2)	4 (0.4)	499 (7.2)	11 (0.6)	511 (4.1)	3 (0.4)	497 (9.0)
Moscow City, Russian Fed.	78 (0.9)	613 (2.2)	9 (0.5)	610 (4.2)	6 (0.5)	608 (5.1)	8 (0.5)	609 (5.8)
Buenos Aires, Argentina	78 (1.1)	499 (3.4)	12 (0.8)	467 (6.7)	8 (0.5)	449 (6.5)	2 (0.4)	~ ~
Madrid, Spain	67 (1.0)	557 (2.0)	14 (0.5)	550 (3.1)	10 (0.6)	539 (4.2)	9 (0.6)	528 (4.1)
Quebec, Canada	58 (1.3)	557 (2.9)	14 (0.9)	545 (5.4)	11 (0.7)	551 (7.0)	17 (1.1)	534 (3.7)
Andalusia, Spain	56 (1.2)	537 (2.2)	19 (0.9)	528 (3.1)	16 (0.7)	514 (3.1)	9 (0.6)	504 (5.6)
Eng/Afr/Zulu - RSA (5)	47 (1.8)	436 (9.4)	18 (1.0)	423 (7.7)	22 (1.3)	393 (7.8)	13 (1.0)	378 (7.6)
Ontario, Canada	39 (1.6)	560 (4.3)	28 (1.0)	553 (4.3)	13 (0.8)	543 (5.6)	20 (1.3)	535 (3.7)
Dubai, UAE	23 (0.6)	539 (3.2)	38 (1.1)	519 (2.7)	22 (0.7)	523 (3.1)	17 (0.7)	490 (3.6)
Abu Dhabi, UAE	17 (0.8)	457 (7.5)	43 (1.3)	415 (5.1)	21 (0.9)	422 (5.9)	19 (1.1)	406 (5.5)

SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2016

**Exhibit 4.7: Early Preparation for School**

Students Categorized by Parents' Reports

Country	Attended Preprimary Education Program for 3 Years or More				Attended Preprimary Education Program for 2 Years				Attended Preprimary Education Program for 1 Year or Less Including Did Not Attend			
	Often Engaged in Early Literacy Activities		Sometimes or Never Engaged in Early Literacy Activities		Often Engaged in Early Literacy Activities		Sometimes or Never Engaged in Early Literacy Activities		Often Engaged in Early Literacy Activities		Sometimes or Never Engaged in Early Literacy Activities	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Russian Federation	51 (1.2)	591 (2.2)	24 (0.8)	576 (3.0)	5 (0.3)	588 (5.4)	3 (0.3)	571 (7.7)	10 (0.7)	568 (5.0)	7 (0.6)	543 (6.3)
Israel	44 (1.0)	555 (3.2)	40 (0.9)	542 (3.2)	4 (0.3)	494 (7.4)	6 (0.5)	466 (6.3)	3 (0.3)	495 (10.7)	4 (0.5)	454 (8.5)
Italy	43 (1.1)	562 (2.2)	43 (1.0)	548 (3.0)	3 (0.4)	533 (8.7)	4 (0.4)	523 (6.0)	2 (0.3)	~ ~	3 (0.4)	521 (8.7)
Latvia	42 (0.9)	569 (2.0)	42 (1.0)	556 (2.3)	5 (0.5)	549 (5.1)	5 (0.5)	531 (6.4)	3 (0.3)	549 (9.8)	3 (0.4)	536 (7.0)
Slovak Republic	40 (0.9)	556 (2.8)	36 (1.1)	543 (2.9)	5 (0.5)	531 (9.1)	6 (0.5)	504 (7.3)	6 (0.7)	508 (8.8)	7 (0.9)	448 (17.7)
Slovenia	40 (1.1)	561 (2.4)	42 (1.1)	538 (2.9)	4 (0.4)	541 (7.0)	5 (0.5)	510 (9.1)	4 (0.3)	540 (7.5)	6 (0.5)	505 (7.7)
Hungary	39 (0.9)	564 (3.6)	54 (1.1)	554 (2.8)	2 (0.4)	~ ~	2 (0.4)	~ ~	1 (0.2)	~ ~	2 (0.3)	~ ~
Czech Republic	37 (0.9)	555 (2.2)	43 (0.9)	543 (2.4)	6 (0.4)	554 (5.4)	7 (0.6)	533 (6.3)	3 (0.3)	518 (11.4)	4 (0.4)	502 (12.2)
Bulgaria	37 (1.3)	582 (3.1)	42 (1.3)	548 (5.2)	3 (0.3)	575 (7.2)	5 (0.5)	499 (11.3)	3 (0.4)	561 (10.7)	10 (1.4)	488 (11.1)
Netherlands	s 34 (1.3)	563 (2.9)	50 (1.4)	550 (2.8)	5 (0.7)	549 (9.0)	6 (0.7)	531 (7.4)	2 (0.4)	~ ~	3 (0.5)	524 (8.2)
Denmark	34 (1.1)	565 (2.7)	61 (1.1)	544 (2.2)	1 (0.2)	~ ~	2 (0.3)	~ ~	1 (0.1)	~ ~	1 (0.2)	~ ~
Georgia	34 (1.3)	499 (3.5)	21 (1.1)	492 (4.1)	11 (0.7)	501 (5.0)	9 (0.6)	481 (6.4)	11 (0.9)	484 (6.2)	14 (1.2)	468 (5.8)
Poland	34 (1.1)	579 (2.6)	31 (1.2)	566 (3.0)	9 (0.5)	563 (5.2)	10 (0.6)	550 (5.5)	8 (0.7)	553 (5.3)	9 (0.8)	541 (6.3)
Sweden	33 (0.9)	576 (2.8)	58 (0.9)	555 (2.5)	1 (0.2)	~ ~	2 (0.3)	~ ~	1 (0.2)	~ ~	4 (0.4)	513 (6.2)
Spain	32 (0.7)	548 (1.9)	28 (0.7)	525 (1.9)	8 (0.4)	538 (3.2)	9 (0.4)	518 (3.6)	10 (0.4)	529 (3.0)	13 (0.5)	506 (3.5)
France	31 (1.2)	526 (3.7)	49 (1.2)	515 (2.5)	2 (0.3)	~ ~	4 (0.3)	506 (7.3)	4 (0.4)	510 (5.9)	9 (0.6)	484 (4.6)
Norway (5)	31 (0.7)	578 (2.7)	51 (0.9)	557 (2.6)	2 (0.3)	~ ~	3 (0.3)	521 (7.8)	5 (0.4)	560 (6.0)	9 (0.5)	539 (4.6)
Austria	31 (0.9)	560 (3.1)	48 (1.0)	540 (2.2)	5 (0.4)	553 (5.4)	9 (0.7)	521 (3.8)	2 (0.2)	~ ~	5 (0.4)	511 (7.2)
Portugal	30 (0.9)	546 (3.1)	44 (0.9)	522 (2.7)	5 (0.4)	536 (5.6)	10 (0.6)	522 (4.6)	3 (0.3)	530 (7.3)	8 (0.5)	511 (4.7)
Lithuania	29 (0.9)	564 (2.7)	40 (1.2)	554 (2.9)	3 (0.3)	557 (10.9)	4 (0.4)	539 (10.7)	9 (0.7)	546 (7.8)	15 (0.9)	515 (4.7)
Belgium (French)	28 (0.8)	518 (3.0)	65 (0.8)	495 (3.0)	1 (0.2)	~ ~	4 (0.4)	477 (6.2)	1 (0.1)	~ ~	1 (0.2)	~ ~
Kazakhstan	28 (1.5)	552 (3.5)	11 (0.7)	544 (3.6)	9 (0.6)	533 (3.8)	5 (0.4)	534 (4.3)	28 (1.4)	529 (3.4)	20 (1.2)	524 (4.1)
Germany	r 26 (0.9)	568 (3.0)	38 (1.1)	546 (3.7)	3 (0.4)	556 (7.6)	5 (0.4)	533 (8.2)	10 (0.6)	545 (5.9)	18 (0.9)	527 (6.2)
Chile	25 (1.0)	516 (3.2)	28 (0.7)	486 (3.5)	13 (0.7)	512 (5.7)	16 (0.7)	483 (3.4)	7 (0.4)	507 (6.4)	11 (0.9)	478 (6.2)
Singapore	25 (0.7)	607 (2.8)	56 (0.7)	577 (3.2)	3 (0.2)	574 (7.3)	9 (0.4)	541 (5.3)	1 (0.1)	~ ~	6 (0.3)	523 (6.2)
Finland	22 (0.9)	584 (2.4)	46 (0.9)	563 (2.2)	4 (0.3)	570 (6.2)	8 (0.5)	563 (4.5)	6 (0.4)	590 (5.6)	13 (0.8)	562 (4.0)
Belgium (Flemish)	22 (0.6)	547 (2.9)	66 (0.8)	527 (1.7)	1 (0.2)	~ ~	4 (0.4)	504 (7.0)	2 (0.2)	~ ~	5 (0.3)	488 (5.4)
Canada	r 22 (0.7)	567 (2.5)	21 (0.5)	548 (2.6)	14 (0.5)	562 (3.3)	12 (0.4)	536 (3.1)	14 (0.5)	550 (2.9)	18 (0.6)	527 (2.7)
Ireland	19 (0.8)	592 (3.5)	13 (0.6)	558 (4.2)	22 (0.8)	587 (3.2)	18 (0.7)	556 (4.1)	14 (0.8)	577 (4.8)	15 (0.7)	547 (3.9)
South Africa	s 18 (1.4)	350 (11.0)	30 (1.1)	333 (6.4)	5 (0.4)	363 (14.5)	11 (0.9)	332 (8.5)	12 (0.6)	330 (6.6)	25 (1.1)	314 (4.3)
Malta	15 (0.7)	482 (4.0)	13 (0.6)	441 (5.0)	30 (0.8)	472 (3.2)	29 (0.8)	451 (2.9)	6 (0.5)	457 (5.8)	7 (0.5)	434 (5.4)
Trinidad and Tobago	r 14 (0.7)	492 (6.0)	13 (0.7)	464 (5.6)	30 (1.2)	511 (4.1)	25 (0.9)	474 (4.3)	9 (0.6)	507 (7.6)	9 (0.7)	447 (8.3)
Hong Kong SAR	12 (0.6)	581 (3.8)	73 (0.9)	568 (3.0)	0 (0.1)	~ ~	3 (0.3)	575 (6.5)	1 (0.2)	~ ~	11 (0.6)	566 (4.8)
Bahrain	12 (0.5)	476 (5.2)	20 (0.6)	443 (3.9)	11 (0.4)	476 (5.0)	22 (0.7)	438 (3.7)	9 (0.5)	476 (5.5)	27 (0.9)	429 (4.5)
Egypt	10 (1.3)	397 (6.9)	21 (1.5)	342 (6.3)	6 (0.7)	388 (8.2)	20 (1.4)	344 (7.2)	5 (0.5)	353 (9.9)	38 (2.2)	289 (9.0)
Chinese Taipei	9 (0.6)	590 (3.3)	44 (0.9)	559 (2.3)	6 (0.4)	583 (4.3)	29 (0.9)	557 (2.5)	2 (0.3)	~ ~	10 (0.6)	533 (4.5)
Qatar	r 8 (0.4)	495 (5.2)	16 (0.5)	445 (3.0)	11 (0.4)	492 (4.1)	23 (0.5)	452 (3.6)	10 (0.5)	468 (4.5)	32 (0.6)	427 (3.1)
Azerbaijan	8 (0.7)	506 (6.4)	12 (0.8)	480 (5.4)	3 (0.4)	507 (6.4)	6 (0.5)	485 (7.3)	16 (0.8)	480 (6.6)	54 (1.6)	462 (5.2)
Macao SAR	8 (0.4)	562 (4.6)	69 (0.7)	546 (1.4)	1 (0.1)	~ ~	6 (0.4)	546 (5.4)	1 (0.2)	~ ~	15 (0.6)	537 (2.5)
Kuwait	r 6 (0.6)	428 (9.5)	13 (0.8)	401 (5.1)	11 (0.7)	427 (6.0)	28 (1.1)	385 (6.3)	10 (0.6)	426 (11.1)	31 (1.2)	392 (6.3)
United Arab Emirates	6 (0.3)	512 (5.8)	11 (0.3)	468 (4.6)	13 (0.6)	483 (4.5)	29 (0.6)	434 (3.6)	12 (0.4)	482 (4.4)	29 (0.8)	437 (3.9)
Morocco	5 (0.4)	414 (7.1)	22 (1.0)	394 (3.3)	3 (0.2)	408 (9.4)	19 (1.0)	382 (4.8)	3 (0.5)	335 (11.3)	48 (1.7)	333 (5.4)
Oman	5 (0.2)	465 (8.0)	9 (0.4)	432 (7.0)	8 (0.4)	466 (5.1)	22 (0.7)	434 (4.4)	10 (0.5)	441 (5.1)	46 (1.0)	394 (3.7)
Iran, Islamic Rep. of	4 (0.4)	477 (8.0)	9 (0.6)	465 (7.3)	4 (0.3)	466 (9.3)	12 (0.7)	451 (5.9)	12 (0.7)	440 (6.4)	59 (1.4)	412 (4.7)
Saudi Arabia	2 (0.3)	~ ~	4 (0.4)	440 (11.0)	5 (0.5)	465 (7.9)	10 (0.8)	447 (6.2)	17 (0.8)	450 (5.3)	62 (1.2)	421 (4.6)
England	--	--	--	--	--	--	--	--	--	--	--	--
Northern Ireland	--	--	--	--	--	--	--	--	--	--	--	--
United States	--	--	--	--	--	--	--	--	--	--	--	--
New Zealand	x 35 (1.1)	565 (3.7)	25 (0.9)	528 (4.1)	18 (1.0)	560 (4.9)	13 (0.7)	521 (5.2)	4 (0.5)	547 (6.5)	5 (0.6)	497 (8.6)
Australia	x 24 (1.0)	571 (5.1)	16 (0.8)	556 (5.9)	19 (1.0)	575 (5.0)	13 (0.8)	558 (4.7)	13 (0.9)	573 (5.5)	14 (1.0)	542 (6.9)
International Avg.	24 (0.1)	535 (0.7)	34 (0.1)	511 (0.6)	7 (0.1)	518 (1.1)	11 (0.1)	496 (0.9)	7 (0.1)	500 (1.2)	16 (0.1)	481 (1.0)

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

SOURCE: IEA's Progress in International Reading Literacy Study - PIRLS 2016

**Exhibit 4.7: Early Preparation for School (Continued)**

Country	Attended Preprimary Education Program for 3 Years or More				Attended Preprimary Education Program for 2 Years				Attended Preprimary Education Program for 1 Year or Less Including Did Not Attend			
	Often Engaged in Early Literacy Activities		Sometimes or Never Engaged in Early Literacy Activities		Often Engaged in Early Literacy Activities		Sometimes or Never Engaged in Early Literacy Activities		Often Engaged in Early Literacy Activities		Sometimes or Never Engaged in Early Literacy Activities	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
<b>Benchmarking Participants</b>												
Moscow City, Russian Fed.	56 (0.9)	616 (2.2)	22 (0.8)	603 (3.1)	6 (0.4)	619 (4.6)	3 (0.3)	591 (7.2)	9 (0.6)	621 (4.2)	4 (0.4)	584 (6.7)
Buenos Aires, Argentina	41 (1.3)	515 (3.4)	37 (1.2)	481 (4.3)	5 (0.5)	477 (9.9)	7 (0.6)	459 (8.1)	4 (0.4)	467 (8.8)	6 (0.5)	432 (7.4)
Madrid, Spain	40 (1.0)	564 (2.2)	27 (0.7)	547 (3.0)	8 (0.5)	556 (4.5)	6 (0.4)	542 (4.0)	9 (0.6)	542 (3.6)	10 (0.7)	526 (4.7)
Denmark (3)	34 (0.9)	519 (3.6)	62 (0.9)	496 (3.0)	1 (0.2)	~ ~	2 (0.2)	~ ~	1 (0.1)	~ ~	1 (0.2)	~ ~
Andalusia, Spain	32 (1.1)	547 (2.4)	24 (0.8)	523 (3.1)	10 (0.7)	535 (3.9)	10 (0.6)	520 (4.4)	11 (0.6)	520 (4.1)	14 (0.8)	502 (4.0)
Norway (4)	31 (0.8)	538 (2.4)	51 (0.9)	512 (2.6)	1 (0.2)	~ ~	3 (0.3)	493 (9.1)	4 (0.4)	524 (6.9)	10 (0.5)	501 (3.7)
Quebec, Canada	24 (1.1)	569 (3.7)	34 (1.0)	549 (3.5)	6 (0.6)	555 (7.8)	8 (0.9)	539 (5.1)	11 (0.6)	553 (5.5)	17 (0.9)	533 (4.1)
Ontario, Canada	22 (1.2)	566 (4.6)	17 (1.1)	550 (6.0)	17 (0.9)	566 (4.8)	11 (0.6)	534 (5.7)	16 (1.1)	549 (4.8)	17 (1.0)	528 (4.4)
Eng/Afr/Zulu - RSA (5)	18 (1.3)	462 (10.6)	29 (1.3)	426 (9.8)	6 (0.4)	455 (10.1)	13 (1.0)	412 (9.2)	10 (0.7)	402 (9.7)	24 (1.5)	385 (7.1)
Dubai, UAE	9 (0.4)	561 (4.0)	13 (0.6)	525 (4.3)	14 (0.9)	550 (4.0)	24 (0.6)	500 (3.0)	13 (0.7)	537 (3.5)	26 (0.8)	495 (2.9)
Abu Dhabi, UAE	6 (0.5)	486 (11.1)	11 (0.5)	442 (7.3)	12 (0.7)	446 (7.4)	31 (1.1)	403 (6.0)	11 (0.7)	441 (7.1)	30 (1.1)	404 (5.1)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016