

Chapter 4



Home Environment Support for Reading Achievement

A supportive home environment and an early start are crucial in shaping children's reading literacy. In PIRLS 2011, at the fourth grade, sixth grade, and for the benchmarking participants and prePIRLS, students had higher reading achievement if their parents reported that they themselves liked reading, often engaged in early literacy activities with their children, had more home resources for learning, and that their children had attended preprimary education. Children also had higher achievement if their parents reported that their children started school able to do early literacy tasks (e.g., read sentences and write some words).

Considerable research supports the fundamental importance of a supportive home environment in shaping children’s reading literacy. Internationally, IEA studies over the past 20 years, beginning with the 1991 Reading Literacy Study and through three cycles of PIRLS, have found a strong positive relationship between students’ reading achievement at the fourth grade and home experiences that foster literacy learning.

This chapter presents the PIRLS 2011 reading achievement results in relation to parents’ reports about their children’s home resources for learning and early literacy experiences. The parents’ data were collected using the *PIRLS 2011 Learning to Read Survey* in which students’ parents or primary caregivers were asked to provide information about their child’s experiences in learning to read.

Home Resources for Learning

PIRLS 2011 asked students’ parents to report on the availability of three key home resources highly related to reading achievement:

- ◆ Parents’ education;
- ◆ Parents’ occupation; and
- ◆ Number of children’s books in the home.
- ◆ In addition, students were asked about:
 - ◆ Number of books in the home; and
 - ◆ Availability of two study supports—an Internet connection and their own room.

Research consistently shows a strong positive relationship between achievement and socioeconomic status (SES), or indicators of socioeconomic status such as parents’ or caregivers’ level of education or occupation. Both PIRLS and PISA have found strong positive relationships between level of parents’ education and occupation and their children’s educational attainment. In general, higher levels of education can lead to careers in higher paying professions, higher socioeconomic status, and more home resources. Family income also has been shown to have a powerful influence on students’ achievement in reading and mathematics (Dahl & Lochner, 2005). However, the benefits of higher levels of parents’ education can extend to having more positive beliefs and higher expectations toward educational achievement transfer to their children. Availability of reading material in the home likewise is strongly related

to achievement in mathematics and science as well as in reading. IEA's TIMSS studies have consistently shown that students with a large number of books in the home have higher achievement in mathematics and science.

Exhibit 4.1 presents the results for the PIRLS 2011 Home Resources for Learning scale, which was created based on parents' and students' reports about the five types of home resources described above. The second page of the exhibit provides detail about the questions forming the scale and the categorization of responses. Students were scored according to the availability of the five home supports for learning, with **Many Resources** corresponding to more than 100 books in the home, having both their own room and an Internet connection, more than 25 children's books, at least one parent having completed university, and one with a professional occupation, on average. **Few Resources** corresponds, on average, to having 25 or fewer books, neither of the home study supports (own room or Internet), 10 or fewer children's books, neither parent having gone beyond upper secondary school, and neither had a business, clerical, or professional occupation.

Countries are ordered by the percentage of students in the **Many Resources** category, with the fourth grade countries on the first page of the exhibit and the sixth grade, benchmarking, and prePIRLS participants on the second page. Internationally, on average, almost three-quarters of fourth grade students (73%) were assigned to the **Some Resources** category. Eighteen percent, on average, were in the **Many Resources** category and nine percent internationally were in the **Few Resources** category, with a 123-point difference in their average reading achievement (571 vs. 448). Compared to the fourth grade countries, students had fewer home resources in the countries participating at the sixth grade and in prePIRLS.

Exhibit 4.2 provides supporting detail about the availability of the specific home resources included in the Home Resources for Learning scale. Across the countries participating in PIRLS 2011 at the fourth grade, on average, 31 percent of the students had at least one parent that had earned a university degree. Similarly, 36 percent had at least one parent in a professional occupation. PIRLS routinely shows that both number of books in the home and number of children's books in the home are related to higher achievement. On average, across the countries participating at the fourth grade, the majority of students (59%) were from homes with more than 25 children's books, and approximately one-fourth (27%) were from homes with more than 100 books in total. Interestingly, similar percentages of fourth grade students had computer

Exhibit 4.1: Home Resources for Learning

Reported by Parents, except Number of Books and Study Supports Reported by Students

Students were scored according to their own and their parents' responses concerning the availability of five resources on the *Home Resources for Learning* scale. Students with **Many Resources** had a score of at least 11.9, which is the point on the scale corresponding to students reporting they had more than 100 books in the home and two home study supports, and parents reporting that they had more than 25 children's books in the home, that at least one parent had finished university, and that at least one parent had a professional occupation, on average. Students with **Few Resources** had a score no higher than 7.3, which is the scale point corresponding to students reporting that they had 25 or fewer books in the home and neither of the two home study supports, and parents reporting that they had 10 or fewer children's books in the home, that neither parent had gone beyond upper-secondary education, and that neither parent was a small business owner or had a clerical or professional occupation, on average. All other students were assigned to the **Some Resources** category.

Country	Many Resources		Some Resources		Few Resources		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Norway	42 (1.6)	531 (2.6)	57 (1.6)	494 (2.0)	0 (0.1)	~ ~	11.5 (0.05)
Australia	s 41 (1.5)	575 (3.2)	59 (1.5)	520 (2.5)	0 (0.2)	~ ~	11.5 (0.06)
Sweden	39 (1.7)	575 (2.2)	61 (1.7)	529 (1.9)	1 (0.2)	~ ~	11.4 (0.05)
Denmark	38 (1.2)	581 (1.8)	61 (1.2)	541 (1.9)	1 (0.2)	~ ~	11.3 (0.05)
New Zealand	s 37 (1.4)	592 (2.4)	61 (1.3)	528 (2.4)	2 (0.3)	~ ~	11.3 (0.05)
Canada	r 35 (1.2)	580 (2.4)	65 (1.1)	540 (1.5)	0 (0.1)	~ ~	11.3 (0.04)
Finland	33 (1.3)	595 (2.0)	67 (1.3)	557 (1.9)	0 (0.1)	~ ~	11.2 (0.04)
Northern Ireland	s 30 (1.6)	607 (4.2)	68 (1.6)	560 (3.2)	2 (0.3)	~ ~	10.9 (0.07)
Netherlands	s 27 (1.9)	578 (2.8)	72 (1.9)	546 (2.0)	1 (0.2)	~ ~	10.9 (0.07)
Belgium (French)	27 (1.8)	549 (3.0)	70 (1.5)	495 (3.0)	3 (0.5)	457 (7.3)	10.7 (0.08)
Ireland	27 (1.2)	601 (2.4)	71 (1.2)	542 (2.0)	2 (0.3)	~ ~	10.8 (0.06)
Germany	r 24 (1.5)	591 (2.7)	75 (1.5)	538 (2.0)	2 (0.3)	~ ~	10.7 (0.07)
Singapore	24 (0.9)	617 (3.3)	74 (0.9)	559 (3.3)	2 (0.3)	~ ~	10.7 (0.03)
France	23 (1.4)	567 (2.2)	74 (1.3)	511 (2.4)	2 (0.4)	~ ~	10.6 (0.07)
Israel	r 22 (1.2)	602 (3.9)	75 (1.2)	542 (2.7)	3 (0.4)	456 (13.4)	10.8 (0.06)
Hungary	21 (1.5)	601 (2.9)	69 (1.4)	538 (2.1)	11 (1.1)	464 (8.5)	10.1 (0.10)
Spain	19 (1.2)	552 (3.3)	76 (1.1)	511 (2.3)	5 (0.4)	475 (6.5)	10.3 (0.05)
Chinese Taipei	18 (1.0)	591 (2.6)	76 (1.0)	548 (1.8)	6 (0.5)	515 (5.1)	10.2 (0.06)
Czech Republic	18 (1.1)	584 (3.1)	81 (1.0)	540 (2.2)	1 (0.2)	~ ~	10.5 (0.05)
Slovenia	17 (0.8)	577 (3.0)	82 (0.8)	524 (1.8)	1 (0.2)	~ ~	10.4 (0.04)
Austria	17 (1.0)	572 (2.7)	82 (0.9)	524 (1.9)	2 (0.3)	~ ~	10.4 (0.06)
Russian Federation	16 (1.0)	611 (3.7)	82 (1.1)	562 (2.7)	3 (0.4)	520 (7.6)	10.4 (0.05)
Portugal	16 (1.0)	578 (3.3)	75 (1.0)	541 (2.3)	9 (0.8)	508 (6.6)	9.9 (0.06)
Malta	15 (0.6)	553 (3.3)	84 (0.6)	476 (1.8)	1 (0.2)	~ ~	10.3 (0.02)
Poland	15 (1.0)	584 (3.4)	79 (1.0)	521 (1.7)	6 (0.6)	467 (6.3)	10.0 (0.06)
Slovak Republic	13 (0.8)	586 (3.5)	81 (1.1)	536 (1.9)	6 (1.0)	466 (9.0)	10.0 (0.06)
Qatar	r 12 (0.9)	502 (8.7)	84 (0.9)	427 (3.6)	4 (0.4)	348 (10.3)	10.2 (0.05)
Georgia	12 (1.0)	535 (4.0)	80 (1.2)	488 (2.9)	8 (1.0)	441 (8.0)	9.9 (0.07)
Hong Kong SAR	12 (1.0)	589 (4.3)	80 (0.8)	573 (2.3)	8 (0.7)	556 (4.7)	9.8 (0.07)
Bulgaria	11 (1.0)	593 (3.5)	71 (1.6)	543 (3.0)	18 (1.9)	466 (10.0)	9.4 (0.11)
Lithuania	11 (0.9)	583 (3.5)	83 (1.0)	527 (1.9)	6 (0.5)	474 (6.2)	9.8 (0.05)
United Arab Emirates	10 (0.6)	533 (4.9)	84 (0.7)	437 (2.2)	6 (0.4)	378 (5.2)	9.9 (0.03)
Trinidad and Tobago	9 (1.1)	546 (6.5)	85 (1.1)	473 (3.7)	6 (0.6)	411 (6.8)	9.8 (0.06)
Italy	8 (0.7)	588 (4.6)	85 (0.7)	544 (2.1)	7 (0.6)	504 (4.9)	9.7 (0.05)
Croatia	8 (0.6)	597 (4.2)	88 (0.7)	552 (1.7)	5 (0.6)	514 (7.0)	9.7 (0.05)
Romania	7 (0.7)	593 (5.2)	67 (1.8)	518 (3.4)	26 (1.7)	442 (7.1)	8.7 (0.09)
Iran, Islamic Rep. of	4 (0.5)	549 (4.8)	57 (1.7)	477 (2.8)	39 (1.9)	422 (3.6)	8.1 (0.09)
Saudi Arabia	4 (0.6)	480 (8.8)	79 (1.2)	437 (4.0)	17 (1.2)	398 (9.3)	9.0 (0.07)
Oman	3 (0.3)	469 (7.9)	75 (0.8)	402 (3.0)	23 (0.8)	357 (4.1)	8.7 (0.04)
Colombia	1 (0.3)	~ ~	55 (2.1)	469 (5.1)	44 (2.2)	426 (4.3)	7.7 (0.10)
Morocco	s 1 (0.2)	~ ~	46 (2.1)	343 (4.5)	53 (2.1)	306 (7.2)	7.2 (0.10)
Azerbaijan	1 (0.1)	~ ~	77 (1.3)	468 (3.4)	22 (1.3)	454 (4.6)	8.5 (0.04)
Indonesia	0 (0.1)	~ ~	55 (2.7)	442 (4.3)	44 (2.7)	416 (4.4)	7.6 (0.10)
International Avg.	18 (0.2)	571 (0.7)	73 (0.2)	510 (0.4)	9 (0.1)	448 (1.4)	

England and the United States did not administer the Home Questionnaire.

Centerpoint of scale set at 10.

() 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 4.1: Home Resources for Learning (Continued)

Country		Many Resources		Some Resources		Few Resources		Average Scale Score
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sixth Grade Participants								
Kuwait	s	3 (0.4)	499 (14.6)	92 (0.8)	431 (6.5)	5 (0.7)	380 (19.7)	9.6 (0.05)
Botswana	r	1 (0.4)	~ ~	57 (1.7)	455 (6.0)	42 (1.9)	394 (4.4)	7.7 (0.10)
Morocco	r	1 (0.2)	~ ~	49 (1.7)	454 (4.4)	49 (1.8)	416 (5.1)	7.3 (0.08)
Honduras	s	0 (0.1)	~ ~	44 (2.5)	485 (6.9)	56 (2.4)	440 (5.3)	7.1 (0.12)
Benchmarking Participants^o								
Ontario, Canada	r	37 (1.9)	581 (3.1)	62 (1.9)	542 (2.8)	0 (0.1)	~ ~	11.4 (0.07)
Alberta, Canada	r	37 (1.8)	579 (4.0)	63 (1.8)	543 (3.0)	1 (0.2)	~ ~	11.4 (0.06)
Quebec, Canada		29 (1.6)	567 (3.0)	71 (1.6)	530 (2.1)	0 (0.1)	~ ~	11.1 (0.05)
Dubai, UAE		21 (0.5)	557 (3.1)	77 (0.6)	469 (2.3)	3 (0.2)	382 (9.1)	10.6 (0.02)
Andalusia, Spain		13 (0.9)	561 (4.0)	79 (0.9)	515 (2.2)	7 (0.6)	474 (6.4)	9.8 (0.06)
Maltese - Malta	r	9 (0.5)	499 (5.3)	90 (0.5)	462 (1.6)	1 (0.2)	~ ~	10.1 (0.02)
Abu Dhabi, UAE		8 (1.2)	519 (14.3)	85 (1.3)	425 (4.0)	6 (0.7)	373 (7.6)	9.8 (0.07)
Eng/Afr (5) - RSA	r	6 (1.4)	596 (11.5)	71 (2.2)	432 (6.6)	23 (2.0)	377 (11.5)	8.8 (0.12)

^o Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country		Many Resources		Some Resources		Few Resources		Average Scale Score
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
South Africa	s	2 (0.7)	~ ~	65 (1.4)	484 (4.8)	33 (1.3)	448 (4.8)	8.2 (0.07)
Colombia		1 (0.3)	~ ~	55 (2.1)	593 (3.9)	44 (2.2)	559 (3.7)	7.7 (0.10)
Botswana	s	1 (0.2)	~ ~	62 (1.8)	489 (6.0)	38 (1.9)	451 (3.3)	7.9 (0.10)

<p>Number of books in the home (students):</p> <ol style="list-style-type: none"> 1) 0-10 2) 11-25 3) 26-100 4) 101-200 5) More than 200 <p>Number of home study supports (students):</p> <ol style="list-style-type: none"> 1) None 2) Internet connection or own room 3) Both <p>Highest level of occupation of either parent (parents):</p> <ol style="list-style-type: none"> 1) Has never worked outside home for pay, general laborer, or semi-professional (skilled agricultural or fishery worker, craft or trade worker, plant or machine operator) 2) Clerical (clerk or service or sales worker) 3) Small business owner 4) Professional (corporate manager or senior official, professional, or technician or associate professional) 	<p>Number of children's books in the home (parents):</p> <ol style="list-style-type: none"> 1) 0-10 2) 11-25 3) 26-50 4) 51-100 5) More than 100 <p>Highest level of education of either parent (parents):</p> <ol style="list-style-type: none"> 1) Finished some primary or lower secondary or did not go to school 2) Finished lower secondary 3) Finished upper secondary 4) Finished post-secondary education 5) Finished university or higher
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Exhibit 4.2: Components of the Home Resources for Learning Scale*

Columns 1-3 Reported by Parents and Columns 4-5 Reported by Students

Country	Percent of Students with								
	At Least One Parent with a University Degree or Higher	At Least One Parent in a Professional Occupation**	More than 25 Children's Books in Their Home	More than 100 Books in Their Home	Own Room and Internet Connection in Home				
Australia	s	42 (1.5)	s	54 (1.5)	s	89 (1.0)	41 (1.0)	74 (1.0)	
Austria		21 (1.1)		27 (1.0)		76 (1.8)	28 (1.3)	70 (1.0)	
Azerbaijan		25 (1.1)		18 (0.9)		15 (1.1)	8 (0.7)	10 (0.6)	
Belgium (French)	r	50 (1.9)	r	38 (1.7)		75 (1.5)	32 (1.7)	59 (1.3)	
Bulgaria		29 (1.6)		25 (1.4)		43 (1.8)	23 (1.3)	55 (1.6)	
Canada	r	45 (1.4)	r	56 (1.0)	r	84 (0.7)	35 (0.9)	77 (0.6)	
Chinese Taipei		23 (1.3)		35 (1.1)		59 (1.3)	30 (1.1)	53 (0.9)	
Colombia		15 (1.5)	r	18 (1.8)		9 (0.8)	6 (0.5)	20 (1.5)	
Croatia		18 (1.0)		29 (1.2)		43 (1.1)	16 (0.8)	64 (1.2)	
Czech Republic		23 (1.3)		35 (1.3)		79 (0.9)	34 (1.1)	58 (1.2)	
Denmark		56 (1.2)		57 (1.3)		81 (0.9)	37 (1.1)	90 (0.8)	
England							36 (1.6)	73 (1.1)	
Finland		42 (1.4)		50 (1.2)		88 (0.7)	38 (1.3)	79 (1.0)	
France		30 (1.6)		39 (1.5)		75 (1.3)	33 (1.3)	64 (1.2)	
Georgia		36 (1.3)		31 (1.1)		38 (1.5)	35 (1.4)	35 (1.3)	
Germany	r	28 (1.6)	r	30 (1.3)	r	81 (1.1)	35 (1.5)	71 (1.0)	
Hong Kong SAR		18 (1.5)		28 (1.6)		52 (1.7)	25 (1.2)	56 (1.3)	
Hungary		26 (1.6)		27 (1.4)		68 (1.4)	33 (1.5)	62 (1.4)	
Indonesia		10 (1.2)	r	8 (1.2)		15 (0.9)	5 (0.5)	10 (0.8)	
Iran, Islamic Rep. of		15 (1.4)		13 (1.1)		25 (1.2)	14 (0.8)	23 (1.4)	
Ireland		33 (1.3)		43 (1.4)		78 (1.1)	33 (1.3)	72 (1.0)	
Israel	r	46 (1.6)	r	50 (1.7)	r	69 (1.3)	34 (1.4)	--	
Italy		20 (1.2)		25 (1.1)		55 (1.1)	23 (1.0)	38 (0.8)	
Lithuania		30 (1.4)		29 (1.2)		46 (1.2)	15 (0.8)	48 (1.0)	
Malta	r	18 (0.6)	r	32 (0.9)		87 (0.5)	24 (0.7)	67 (0.7)	
Morocco	r	11 (0.9)	s	9 (0.7)	r	14 (0.8)	r	9 (0.6)	16 (0.9)
Netherlands	s	41 (1.7)	s	48 (1.4)	s	76 (1.3)	27 (1.6)	87 (0.8)	
New Zealand	s	39 (1.6)	s	54 (1.3)	s	87 (0.8)	38 (1.1)	68 (0.9)	
Northern Ireland	s	35 (1.7)	s	49 (1.6)	s	83 (1.2)	31 (1.4)	70 (1.1)	
Norway		58 (2.0)		66 (1.6)		86 (1.2)	36 (1.4)	87 (0.8)	
Oman		22 (0.7)	r	33 (0.8)		19 (0.6)	22 (0.9)	19 (0.7)	
Poland		30 (1.4)		30 (1.3)		65 (1.0)	24 (0.9)	52 (1.0)	
Portugal		25 (1.1)		33 (1.4)		63 (1.5)	21 (1.1)	63 (1.3)	
Qatar	r	59 (1.5)	r	58 (1.5)		36 (1.1)	27 (0.9)	52 (1.1)	
Romania		13 (1.1)		15 (1.2)		33 (1.4)	15 (1.0)	42 (1.5)	
Russian Federation		46 (1.4)		41 (1.2)		65 (1.0)	25 (0.9)	40 (1.6)	
Saudi Arabia		35 (1.5)		36 (1.4)		17 (1.0)	20 (1.2)	28 (1.4)	
Singapore		33 (0.9)		56 (0.7)		72 (0.8)	31 (0.9)	49 (0.7)	
Slovak Republic		26 (1.2)		31 (1.2)		58 (1.3)	26 (1.0)	47 (1.1)	
Slovenia		24 (1.1)		40 (1.1)		69 (1.1)	27 (1.0)	67 (1.2)	
Spain		33 (1.4)		34 (1.4)		69 (1.1)	30 (1.3)	65 (1.0)	
Sweden	r	43 (1.7)		59 (1.5)		86 (0.8)	39 (1.4)	84 (0.8)	
Trinidad and Tobago	r	14 (1.2)	r	27 (1.4)		61 (1.3)	26 (1.2)	36 (1.1)	
United Arab Emirates		54 (0.8)	r	49 (0.9)		33 (0.8)	22 (0.6)	42 (0.8)	
United States							28 (0.8)	64 (0.7)	
International Avg.		31 (0.2)		36 (0.2)		59 (0.2)	27 (0.2)	55 (0.2)	

* Data reported in columns 1-3 were from the Home Questionnaire completed by parents; England and the United States did not administer the Home Questionnaire.

** Includes corporate manager or senior official, professional, and technician or associate professional.

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

A dash (-) indicates comparable data not available.

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.

Exhibit 4.2: Components of the Home Resources for Learning Scale* (Continued)

Country	Percent of Students with								
	At Least One Parent with a University Degree or Higher	At Least One Parent in a Professional Occupation**	More than 25 Children's Books in Their Home	More than 100 Books in Their Home	Own Room and Internet Connection in Home				
Sixth Grade Participants									
Botswana	s	10 (1.5)	s	22 (1.7)	14 (0.8)	10 (0.7)	11 (1.0)		
Honduras	s	9 (2.4)	s	13 (1.8)	11 (0.9)	6 (0.6)	17 (1.5)		
Kuwait	s	37 (2.1)	s	52 (1.9)	s	18 (1.1)	r	16 (0.8)	56 (1.2)
Morocco	r	12 (0.8)	s	9 (0.5)	14 (0.7)	6 (0.5)	16 (1.0)		
Benchmarking Participants[◇]									
Alberta, Canada	r	43 (2.2)	s	54 (1.8)	r	88 (1.2)	37 (1.5)	77 (1.1)	
Ontario, Canada	r	47 (1.9)	r	57 (1.6)	r	84 (1.2)	37 (1.7)	74 (1.1)	
Quebec, Canada		45 (2.0)		55 (1.4)		78 (1.1)	28 (1.2)	82 (1.0)	
Maltese - Malta	r	18 (0.6)	r	31 (0.7)		87 (0.6)	15 (0.6)	67 (0.8)	
Eng/Afr (5) - RSA	r	18 (1.9)	s	33 (2.2)	r	22 (1.9)	15 (1.4)	29 (1.5)	
Andalusia, Spain		25 (1.4)		28 (1.3)		61 (1.4)	25 (1.2)	62 (1.0)	
Abu Dhabi, UAE		52 (1.8)		47 (1.8)		29 (1.7)	22 (1.1)	41 (1.5)	
Dubai, UAE		67 (1.0)	r	64 (0.8)		50 (0.6)	26 (0.6)	49 (0.8)	
Florida, US							21 (1.2)	66 (1.3)	

[◇] Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Percent of Students with								
	At Least One Parent with a University Degree or Higher	At Least One Parent in a Professional Occupation**	More than 25 Children's Books in Their Home	More than 100 Books in Their Home	Own Room and Internet Connection in Home				
Botswana	s	9 (1.6)	s	21 (1.8)	r	14 (0.8)	16 (1.1)	12 (1.0)	
Colombia		15 (1.5)	r	18 (1.9)		9 (0.8)	6 (0.5)	20 (1.4)	
South Africa	s	10 (1.0)	x x		r	17 (1.0)	r	13 (0.9)	17 (0.9)

supports for studying and access to a supply of children's books. Students were asked about whether they had their own room and an Internet connection at home, and more than half (55%) reported having both of these.

Students Spoke the Language of the Test Before Starting School

Because learning to read is dependent on children's early language experiences, the language or languages spoken at home and how they are used are important factors in reading literacy development. As formal reading instruction begins, children are likely to be at an initial disadvantage if their knowledge of the language of instruction is substantially below the expected level for their age. As would be expected, students still learning the language of instruction generally struggle even more in content areas with higher language demand such as reading.

Exhibit 4.3 shows parents' reports about whether students spoke the language of the test before starting school. For students in the fourth grade, 92 percent across countries, on average, spoke the language of the test before starting school. However, the eight percent who did not speak the language of the test before starting school had much lower average achievement on PIRLS 2011 (479 vs. 516). The results for the sixth grade and benchmarking students as well as for prePIRLS show that only about one-fourth of the students in Botswana spoke the language of the test before starting school. Just over half (56%) of the fifth-grade South African students in schools with instruction in English or Afrikaans spoke those languages before starting school.

Parents Like Reading

For most children, the home provides modeling and direct guidance in effective literacy practices. Young children who see adults and older children reading or using texts in different ways are learning to appreciate and use printed materials. Research has shown that children socialized in reading retain or even increase their advantage in language performance compared to their classmates (Kloostermann, Notten, Tolsma, & Kraaykamp, 2011). Beyond modeling, parents or other caregivers can directly support reading development by expressing positive opinions about reading and literacy. Promoting reading as a valuable and meaningful activity can motivate children to read.

Exhibit 4.4 presents the PIRLS 2011 Parents Like Reading scale. Students were scored on the Parents Like Reading scale according to their parents' degree of agreement with seven statements about reading and how often they read for enjoyment. Parents who **Like** reading "agreed a lot" with four of the statements

and at least “a little” with the other three statements, on average, as well as reading daily for enjoyment (see the second page of the exhibit). Parents who **Do Not Like** reading “disagreed a little” with four of the statements, “agreed a little” with the other three, and report only monthly reading for enjoyment.

Internationally, on average, approximately one-third of the fourth grade students had parents that **Like** reading and another 57 percent had parents that **Somewhat Like** reading. In particular, students whose parents **Like** reading had substantially higher average reading achievement than the eleven percent of students whose parents reported they **Do Not Like** reading (535 vs. 487). In general, this pattern held across the sixth grade, the benchmarking participants, and prePIRLS. The majority of students in several countries had parents who **Like** reading, including Sweden, New Zealand, Northern Ireland, and Denmark.

Parents’ Educational Expectations for Their Children

Studies over the past several years have found a positive relationship between parental aspirations for their children and academic achievement. For example, researchers studying longitudinal effects in the United States found that more communication between parents and students and higher parents’ aspirations resulted in higher student achievement (Hong & Ho, 2005). Across four ethnic groups, parents’ educational aspiration was the most powerful predictor in increasing student educational aspiration; ultimately, the greater the student’s own educational expectations, the greater the student’s academic achievement.

Exhibit 4.5 contains parents’ reports about their educational expectations for their children according to four education levels from highest to lowest—postgraduate degree, university degree, post-secondary, and upper secondary (or lower). Across the PIRLS 2011 participants, parents have very high educational expectations for their children (to the extent that some parents may have misunderstood the question). Nearly one-third (31%) of the fourth grade students have parents who expect them to attain a postgraduate degree, and another third (34%) are expected to graduate from university. Still, there was considerable variation in results across and within countries.

Consistent with other research, the results show a positive relationship between parents’ aspirations and students average reading achievement. Across the fourth grade countries, the students had higher average reading achievement with each higher education level of expectation to the extent that there was a difference of 80 scale score points (nearly one standard deviation) between students whose parents expected a postgraduate degree at one end

Reported by Parents

Country	Spoke the Language		Did Not Speak the Language		
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Australia	s	95 (0.6)	542 (2.7)	5 (0.6)	538 (12.8)
Austria		93 (0.6)	533 (1.9)	7 (0.6)	490 (5.5)
Azerbaijan		96 (0.9)	465 (2.9)	4 (0.9)	441 (13.5)
Belgium (French)		95 (0.9)	509 (2.7)	5 (0.9)	467 (8.4)
Bulgaria		88 (1.5)	543 (3.2)	12 (1.5)	460 (15.0)
Canada	r	91 (0.6)	554 (1.6)	9 (0.6)	549 (3.4)
Chinese Taipei		97 (0.3)	555 (1.8)	3 (0.3)	517 (7.1)
Colombia		97 (0.4)	450 (4.2)	3 (0.4)	441 (11.6)
Croatia		100 (0.1)	553 (1.8)	0 (0.1)	~ ~
Czech Republic		99 (0.3)	547 (2.1)	1 (0.3)	~ ~
Denmark		98 (0.3)	556 (1.6)	2 (0.3)	~ ~
Finland		99 (0.2)	570 (1.8)	1 (0.2)	~ ~
France		98 (0.3)	523 (2.3)	2 (0.3)	~ ~
Georgia		98 (0.7)	490 (2.8)	2 (0.7)	~ ~
Germany	r	97 (0.3)	548 (2.2)	3 (0.3)	504 (5.5)
Hong Kong SAR		97 (0.4)	572 (2.3)	3 (0.4)	569 (5.9)
Hungary		99 (0.2)	542 (3.0)	1 (0.2)	~ ~
Indonesia		67 (2.2)	435 (4.4)	33 (2.2)	419 (4.8)
Iran, Islamic Rep. of		80 (1.5)	470 (2.7)	20 (1.5)	408 (5.6)
Ireland		93 (0.7)	558 (1.9)	7 (0.7)	519 (6.4)
Israel	r	97 (0.3)	548 (2.9)	3 (0.3)	534 (11.1)
Italy		94 (0.5)	546 (2.2)	6 (0.5)	515 (6.6)
Lithuania		98 (0.6)	530 (2.0)	2 (0.6)	~ ~
Malta		45 (0.9)	513 (2.2)	55 (0.9)	459 (2.1)
Morocco		83 (1.8)	314 (4.3)	17 (1.8)	301 (8.8)
Netherlands	s	97 (0.4)	554 (2.1)	3 (0.4)	531 (8.4)
New Zealand	s	94 (0.5)	552 (2.0)	6 (0.5)	500 (9.9)
Northern Ireland	s	98 (0.4)	573 (3.0)	2 (0.4)	~ ~
Norway		97 (0.5)	509 (2.0)	3 (0.5)	483 (10.5)
Oman		94 (0.3)	391 (3.2)	6 (0.3)	413 (5.9)
Poland		99 (0.1)	526 (2.1)	1 (0.1)	~ ~
Portugal		98 (0.3)	543 (2.5)	2 (0.3)	~ ~
Qatar	r	73 (1.7)	428 (4.9)	27 (1.7)	458 (6.8)
Romania		97 (1.1)	503 (4.3)	3 (1.1)	462 (11.2)
Russian Federation		96 (1.0)	570 (2.5)	4 (1.0)	538 (14.0)
Saudi Arabia		73 (1.4)	436 (4.6)	27 (1.4)	419 (5.8)
Singapore		82 (0.5)	575 (3.4)	18 (0.5)	542 (4.2)
Slovak Republic		98 (0.6)	538 (2.3)	2 (0.6)	~ ~
Slovenia		97 (0.3)	533 (1.8)	3 (0.3)	475 (7.1)
Spain		87 (0.8)	519 (2.4)	13 (0.8)	489 (5.0)
Sweden	r	95 (0.4)	548 (2.1)	5 (0.4)	493 (6.4)
Trinidad and Tobago		94 (0.4)	476 (3.9)	6 (0.4)	459 (8.8)
United Arab Emirates		77 (0.8)	437 (2.3)	23 (0.8)	458 (3.6)
International Avg.		92 (0.1)	516 (0.4)	8 (0.1)	479 (1.5)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

England and the United States did not administer the Home Questionnaire.

() 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.

Country	Spoke the Language		Did Not Speak the Language	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Sixth Grade Participants				
Botswana	26 (1.3)	458 (7.0)	74 (1.3)	410 (3.7)
Honduras	97 (0.5)	450 (4.8)	3 (0.5)	416 (18.4)
Kuwait	74 (1.2)	426 (7.1)	26 (1.2)	424 (7.4)
Morocco	83 (1.6)	430 (4.5)	17 (1.6)	414 (6.2)
Benchmarking Participants[◊]				
Alberta, Canada	92 (0.8)	556 (2.9)	8 (0.8)	546 (7.9)
Ontario, Canada	87 (1.2)	557 (2.6)	13 (1.2)	553 (5.9)
Quebec, Canada	94 (0.7)	541 (2.2)	6 (0.7)	534 (4.8)
Maltese - Malta	88 (0.6)	468 (1.5)	12 (0.6)	420 (5.4)
Eng/Afr (5) - RSA	56 (2.8)	457 (7.7)	44 (2.8)	373 (9.7)
Andalusia, Spain	97 (0.4)	518 (2.2)	3 (0.4)	498 (7.9)
Abu Dhabi, UAE	81 (1.4)	421 (4.8)	19 (1.4)	450 (6.9)
Dubai, UAE	68 (0.7)	485 (2.2)	32 (0.7)	475 (3.3)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

[◊] Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Spoke the Language		Did Not Speak the Language	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Botswana	27 (1.5)	494 (7.2)	73 (1.5)	458 (3.2)
Colombia	97 (0.4)	578 (3.5)	3 (0.4)	563 (9.9)
South Africa	79 (1.5)	465 (4.3)	21 (1.5)	462 (5.9)

Exhibit 4.4: Parents Like Reading

Reported by Parents

Students were scored on the *Parents Like Reading* scale according to their parents' responses to seven statements about reading and how often they read for enjoyment. Students whose parents **Like** reading had a score on the scale of at least 10.9, which corresponds to their parents "agreeing a lot" with four of the seven statements and "agreeing a little" with the other three, as well as reading for enjoyment "every day or almost every day," on average. Students whose parents **Do Not Like** reading had a score no higher than 7.9, which corresponds to their parents "disagreeing a little" with four of the seven statements and "agreeing a little" with the other three, as well as reading for enjoyment only "once or twice a month," on average. All other students had parents who **Somewhat Like** reading.

Country	Like		Somewhat Like		Do Not Like		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sweden	52 (1.3)	562 (2.7)	42 (1.1)	528 (2.2)	7 (0.4)	513 (4.7)	10.9 (0.06)
New Zealand	s 51 (1.1)	571 (2.4)	41 (0.9)	531 (2.6)	8 (0.7)	509 (6.0)	10.8 (0.05)
Northern Ireland	s 50 (1.1)	583 (3.8)	41 (1.1)	563 (3.8)	9 (0.7)	552 (6.5)	10.8 (0.05)
Denmark	50 (0.9)	568 (1.7)	40 (0.9)	546 (2.6)	10 (0.5)	527 (4.0)	10.7 (0.04)
Australia	s 48 (1.6)	557 (3.5)	42 (1.5)	532 (3.2)	9 (0.7)	497 (5.9)	10.7 (0.07)
Ireland	48 (1.1)	571 (2.2)	43 (0.9)	544 (2.8)	9 (0.7)	524 (7.5)	10.7 (0.05)
Malta	46 (0.8)	499 (2.2)	45 (0.9)	470 (2.3)	8 (0.6)	460 (6.5)	10.7 (0.04)
Netherlands	s 45 (1.3)	563 (2.2)	45 (1.3)	547 (3.0)	11 (0.7)	541 (3.7)	10.4 (0.06)
Norway	44 (1.4)	522 (2.4)	46 (1.2)	501 (2.4)	10 (0.8)	482 (4.1)	10.5 (0.07)
Finland	43 (1.0)	582 (2.1)	48 (1.0)	562 (2.5)	9 (0.5)	545 (4.2)	10.6 (0.05)
Trinidad and Tobago	43 (0.9)	493 (4.3)	51 (1.0)	464 (4.2)	6 (0.5)	442 (9.4)	10.6 (0.04)
Israel	r 41 (1.0)	571 (2.9)	50 (0.9)	534 (3.4)	8 (0.6)	515 (6.3)	10.5 (0.04)
Canada	r 41 (0.7)	569 (2.1)	50 (0.6)	545 (1.7)	9 (0.4)	533 (2.7)	10.4 (0.03)
Austria	40 (1.2)	548 (2.3)	47 (1.0)	523 (2.1)	13 (0.7)	500 (3.7)	10.3 (0.06)
Germany	r 37 (1.2)	570 (2.6)	48 (1.1)	539 (2.7)	15 (0.9)	518 (3.2)	10.1 (0.06)
Croatia	36 (0.9)	567 (2.2)	51 (0.8)	547 (2.2)	13 (0.6)	537 (3.6)	10.1 (0.04)
Bulgaria	36 (1.5)	563 (2.9)	49 (1.1)	530 (3.6)	15 (1.5)	482 (10.8)	10.0 (0.10)
Poland	34 (0.8)	546 (2.8)	55 (0.8)	519 (2.3)	11 (0.6)	499 (4.1)	10.2 (0.04)
Spain	34 (0.9)	532 (3.0)	53 (0.9)	511 (2.7)	13 (0.5)	493 (3.8)	10.0 (0.04)
Czech Republic	33 (1.0)	561 (2.4)	53 (1.0)	545 (2.5)	14 (0.6)	520 (3.8)	10.0 (0.04)
Hungary	32 (1.0)	570 (2.7)	55 (0.9)	534 (2.8)	13 (0.9)	501 (8.4)	10.0 (0.05)
Slovak Republic	31 (0.9)	559 (2.7)	56 (1.1)	531 (2.4)	13 (0.8)	512 (5.4)	9.9 (0.05)
Belgium (French)	29 (1.2)	533 (2.9)	56 (1.2)	502 (3.5)	15 (0.8)	480 (4.3)	9.8 (0.06)
Georgia	27 (1.1)	512 (3.7)	67 (1.1)	482 (3.6)	5 (0.5)	453 (7.5)	10.1 (0.05)
Slovenia	26 (1.0)	556 (2.8)	65 (1.0)	527 (2.1)	9 (0.6)	497 (4.7)	9.8 (0.04)
Lithuania	25 (0.8)	548 (3.2)	57 (0.9)	527 (2.2)	17 (0.8)	509 (3.4)	9.6 (0.04)
Italy	24 (0.9)	565 (2.8)	66 (0.9)	539 (2.3)	10 (0.6)	528 (4.2)	9.8 (0.05)
Russian Federation	23 (0.8)	590 (3.4)	61 (0.8)	567 (3.0)	16 (0.8)	542 (3.9)	9.6 (0.04)
Iran, Islamic Rep. of	23 (0.8)	478 (3.1)	68 (0.8)	454 (3.0)	9 (0.6)	431 (6.8)	9.8 (0.04)
France	22 (1.0)	553 (2.8)	62 (0.9)	517 (2.5)	17 (0.7)	501 (3.8)	9.5 (0.04)
Colombia	22 (1.2)	475 (6.2)	68 (1.3)	443 (4.1)	11 (0.7)	438 (6.7)	9.7 (0.05)
Singapore	21 (0.6)	590 (4.0)	68 (0.6)	565 (3.4)	11 (0.5)	550 (5.1)	9.7 (0.02)
Romania	21 (1.1)	540 (4.5)	61 (1.4)	503 (4.7)	18 (1.5)	452 (7.3)	9.4 (0.08)
Qatar	21 (0.9)	459 (5.8)	70 (1.0)	424 (3.9)	10 (0.7)	403 (6.7)	9.7 (0.04)
Azerbaijan	21 (1.0)	477 (4.6)	70 (0.9)	462 (3.4)	9 (0.8)	443 (6.8)	9.7 (0.06)
Indonesia	21 (1.1)	448 (3.9)	68 (1.3)	427 (4.6)	12 (1.0)	415 (5.6)	9.6 (0.05)
Saudi Arabia	19 (1.0)	459 (7.0)	67 (1.0)	429 (4.1)	14 (0.8)	403 (8.7)	9.6 (0.05)
United Arab Emirates	19 (0.5)	490 (3.2)	71 (0.6)	434 (2.2)	10 (0.4)	412 (4.3)	9.6 (0.02)
Portugal	19 (1.0)	563 (3.5)	70 (1.0)	541 (2.4)	11 (0.7)	524 (6.5)	9.6 (0.04)
Morocco	18 (0.8)	353 (5.0)	62 (1.5)	310 (4.5)	20 (1.8)	288 (9.4)	9.3 (0.08)
Chinese Taipei	17 (0.7)	576 (3.3)	69 (0.7)	551 (1.8)	14 (0.6)	539 (3.5)	9.4 (0.03)
Oman	17 (0.5)	420 (4.1)	73 (0.7)	391 (2.9)	10 (0.5)	356 (7.0)	9.5 (0.02)
Hong Kong SAR	14 (0.6)	589 (2.9)	72 (0.9)	570 (2.3)	14 (0.7)	566 (3.8)	9.3 (0.03)
International Avg.	32 (0.2)	535 (0.5)	57 (0.2)	507 (0.5)	11 (0.1)	487 (0.9)	

England and the United States did not administer the Home Questionnaire.

Centerpoint of scale set at 10.

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

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 4.4: Parents Like Reading (Continued)

Country	Like		Somewhat Like		Do Not Like		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sixth Grade Participants							
Botswana	24 (1.1)	460 (5.2)	65 (1.0)	417 (4.6)	11 (0.8)	373 (7.3)	9.8 (0.05)
Morocco	22 (0.8)	464 (3.3)	64 (1.0)	423 (4.7)	14 (1.0)	398 (7.0)	9.6 (0.06)
Honduras	21 (1.0)	480 (6.0)	68 (1.1)	441 (4.8)	11 (0.7)	455 (9.6)	9.8 (0.05)
Kuwait	19 (1.0)	466 (8.3)	68 (1.3)	422 (7.2)	13 (1.2)	381 (14.3)	9.5 (0.04)
Benchmarking Participants^o							
Alberta, Canada	r 49 (1.3)	565 (3.6)	43 (1.2)	547 (3.4)	9 (0.5)	542 (5.1)	10.7 (0.05)
Maltese - Malta	46 (0.9)	473 (2.4)	45 (0.9)	456 (2.2)	9 (0.5)	441 (6.1)	10.7 (0.04)
Ontario, Canada	r 44 (1.3)	570 (3.6)	48 (1.3)	547 (2.8)	8 (0.5)	539 (5.8)	10.6 (0.06)
Eng/Afr (5) - RSA	r 31 (1.5)	472 (9.8)	58 (1.3)	401 (7.3)	11 (1.0)	393 (10.0)	10.1 (0.07)
Andalusia, Spain	29 (0.9)	536 (2.8)	54 (1.0)	514 (2.4)	16 (0.8)	494 (3.6)	9.8 (0.04)
Quebec, Canada	29 (1.0)	557 (2.9)	58 (0.8)	535 (2.3)	13 (0.8)	526 (4.3)	9.9 (0.05)
Dubai, UAE	26 (0.7)	530 (3.0)	66 (0.8)	467 (2.2)	9 (0.4)	449 (5.0)	9.9 (0.03)
Abu Dhabi, UAE	18 (1.0)	469 (7.7)	73 (1.0)	421 (4.3)	10 (0.5)	400 (7.7)	9.6 (0.04)

^o Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Like		Somewhat Like		Do Not Like		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	22 (1.3)	599 (4.5)	67 (1.4)	572 (3.5)	11 (0.7)	570 (5.4)	9.7 (0.05)
Botswana	r 22 (1.0)	506 (6.8)	66 (1.1)	463 (3.3)	13 (0.8)	433 (5.5)	9.8 (0.05)
South Africa	r 22 (0.7)	508 (6.2)	68 (0.9)	456 (4.1)	10 (0.7)	450 (5.8)	9.8 (0.04)

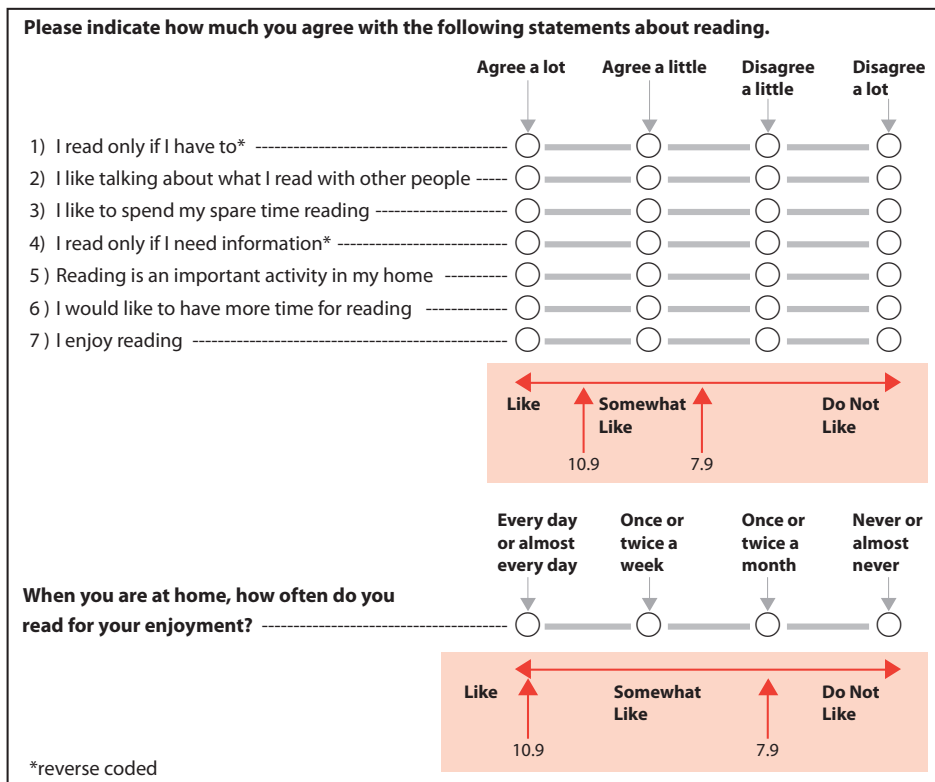


Exhibit 4.5: Parents' Educational Expectations for Their Children
Reported by Parents

Country	Parents Expect Their Child to Complete							
	Postgraduate Degree*		University but Not Postgraduate Degree		Post-secondary but Not University		Upper Secondary Education or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement
Iran, Islamic Rep. of	75 (0.9)	472 (3.2)	12 (0.5)	446 (4.2)	10 (0.6)	404 (4.7)	3 (0.4)	376 (11.0)
United Arab Emirates	59 (0.7)	464 (2.4)	31 (0.6)	422 (2.7)	6 (0.3)	411 (5.3)	5 (0.2)	359 (5.4)
Qatar	58 (1.1)	455 (4.2)	33 (1.1)	409 (4.6)	3 (0.3)	359 (10.4)	6 (0.4)	352 (7.7)
Trinidad and Tobago	r 54 (1.2)	496 (4.0)	23 (0.9)	480 (4.4)	12 (0.9)	435 (6.1)	10 (0.7)	413 (6.4)
Poland	52 (1.2)	552 (2.5)	25 (0.8)	523 (2.1)	6 (0.4)	494 (4.2)	18 (0.9)	464 (3.1)
Israel	r 50 (1.1)	579 (2.8)	31 (1.0)	553 (3.7)	10 (0.7)	484 (5.7)	9 (0.7)	452 (8.9)
Saudi Arabia	49 (1.8)	452 (4.3)	32 (1.2)	427 (5.6)	8 (0.8)	384 (12.8)	11 (1.0)	391 (9.5)
Slovak Republic	48 (1.4)	568 (2.0)	6 (0.4)	541 (4.6)	13 (0.5)	529 (3.2)	33 (1.4)	496 (3.4)
Portugal	48 (1.0)	562 (2.8)	36 (0.9)	537 (2.2)	6 (0.6)	501 (8.2)	10 (0.7)	502 (5.4)
Bulgaria	44 (1.9)	574 (2.9)	7 (0.4)	549 (4.4)	30 (1.2)	516 (3.6)	18 (1.9)	465 (10.0)
Oman	43 (0.7)	424 (3.1)	40 (0.7)	387 (3.1)	6 (0.3)	350 (6.5)	12 (0.4)	317 (6.3)
Morocco	r 43 (1.3)	348 (4.9)	21 (0.9)	312 (5.3)	0 (0.0)	~ ~	36 (1.6)	285 (8.1)
Chinese Taipei	42 (1.0)	575 (2.2)	44 (0.7)	548 (1.8)	9 (0.5)	527 (4.9)	5 (0.5)	472 (6.8)
France	40 (1.5)	554 (2.5)	6 (0.4)	531 (4.7)	27 (1.0)	519 (2.6)	27 (1.2)	479 (3.8)
Colombia	35 (2.0)	478 (6.7)	48 (1.7)	441 (4.2)	8 (0.6)	437 (8.5)	10 (1.1)	410 (7.6)
Singapore	34 (0.8)	589 (3.6)	47 (0.8)	580 (3.1)	18 (0.9)	515 (3.6)	2 (0.2)	~ ~
Canada	r 32 (1.0)	571 (2.5)	41 (0.8)	562 (1.7)	23 (1.0)	522 (2.5)	3 (0.3)	504 (3.6)
Georgia	32 (1.4)	531 (2.5)	20 (1.0)	501 (4.1)	24 (1.2)	469 (3.5)	24 (1.2)	443 (4.8)
Indonesia	30 (1.5)	447 (4.5)	32 (1.3)	441 (4.8)	10 (0.7)	423 (5.2)	29 (1.8)	405 (5.0)
Denmark	30 (1.1)	583 (2.7)	32 (0.8)	561 (2.1)	24 (0.9)	536 (2.5)	14 (0.6)	526 (3.2)
Spain	28 (1.0)	534 (3.1)	52 (1.0)	523 (2.6)	7 (0.4)	485 (4.0)	13 (0.6)	469 (4.0)
Ireland	27 (0.8)	582 (3.1)	42 (1.2)	566 (3.0)	26 (1.3)	526 (3.1)	5 (0.4)	492 (7.2)
Azerbaijan	27 (1.2)	479 (3.3)	40 (1.3)	467 (4.2)	15 (1.1)	447 (6.2)	18 (1.2)	448 (5.4)
Hong Kong SAR	27 (1.1)	584 (3.0)	62 (0.9)	574 (2.3)	6 (0.5)	549 (5.0)	6 (0.5)	532 (6.1)
Finland	26 (1.3)	597 (2.7)	29 (0.8)	576 (2.5)	12 (0.7)	558 (3.8)	33 (1.2)	546 (2.5)
New Zealand	s 26 (1.0)	559 (3.5)	41 (1.1)	573 (2.8)	26 (1.1)	525 (2.7)	8 (0.6)	491 (6.5)
Lithuania	23 (1.0)	570 (2.5)	32 (1.0)	546 (2.2)	34 (1.0)	509 (2.7)	11 (0.7)	458 (5.2)
Czech Republic	22 (1.0)	585 (2.7)	14 (0.7)	572 (3.5)	6 (0.4)	564 (4.3)	58 (1.3)	526 (2.4)
Romania	21 (1.3)	550 (3.7)	29 (1.5)	535 (3.9)	16 (1.0)	509 (5.4)	34 (2.1)	440 (6.3)
Germany	r 20 (1.1)	595 (2.8)	9 (0.5)	576 (4.3)	16 (0.8)	528 (3.1)	55 (1.3)	531 (2.5)
Australia	s 18 (1.1)	572 (5.1)	42 (1.5)	567 (3.3)	25 (1.2)	511 (4.3)	15 (0.9)	491 (4.9)
Northern Ireland	s 18 (1.1)	612 (3.9)	37 (1.3)	597 (4.0)	14 (0.9)	559 (4.9)	32 (1.5)	531 (5.4)
Hungary	16 (1.2)	606 (3.3)	30 (1.0)	574 (2.4)	24 (0.8)	537 (2.7)	30 (1.3)	479 (5.3)
Italy	15 (0.7)	553 (4.2)	49 (0.9)	560 (2.4)	12 (0.6)	521 (3.9)	24 (0.9)	523 (3.2)
Netherlands	s 14 (1.3)	587 (4.6)	21 (0.9)	572 (2.6)	5 (0.5)	555 (6.3)	59 (1.7)	539 (2.0)
Malta	13 (0.5)	548 (4.3)	25 (0.7)	530 (2.7)	29 (0.9)	492 (2.6)	33 (0.8)	416 (3.1)
Belgium (French)	r 11 (0.7)	525 (6.6)	63 (1.4)	522 (2.8)	10 (0.7)	466 (3.9)	16 (0.9)	465 (5.6)
Croatia	9 (0.4)	581 (4.8)	34 (1.1)	577 (2.1)	48 (1.0)	542 (2.1)	9 (0.6)	497 (3.5)
Slovenia	7 (0.5)	571 (4.0)	42 (1.1)	557 (2.4)	36 (0.9)	517 (2.1)	15 (0.8)	475 (3.9)
Norway	6 (0.5)	503 (6.9)	63 (1.6)	522 (2.5)	26 (1.4)	489 (2.5)	5 (0.5)	464 (7.8)
Russian Federation	3 (0.3)	608 (8.1)	69 (1.2)	584 (2.6)	23 (1.0)	530 (3.3)	6 (0.6)	530 (6.2)
Austria	--	--	--	--	--	--	--	--
Sweden	--	--	--	--	--	--	--	--
International Avg.	31 (0.2)	541 (0.6)	34 (0.2)	522 (0.5)	16 (0.1)	493 (0.8)	19 (0.2)	461 (0.9)

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

England and the United States did not administer the Home Questionnaire.

* For example, doctorate, master's, or other postgraduate degree or diploma.

(.) 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.

Exhibit 4.5: Parents' Educational Expectations for Their Children (Continued)

Country	Parents Expect Their Child to Complete							
	Postgraduate Degree*		University but Not Postgraduate Degree		Post-secondary but Not University		Upper Secondary Education or Less	
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement

Sixth Grade Participants

Botswana	r	52 (1.9)	447 (6.2)	15 (0.8)	428 (6.2)	19 (1.1)	396 (4.8)	14 (1.0)	377 (4.0)
Morocco	r	48 (1.5)	459 (3.6)	20 (1.1)	429 (4.6)	0 (0.0)	~ ~	32 (1.5)	393 (5.2)
Honduras	r	35 (1.8)	481 (7.3)	22 (1.3)	468 (6.6)	14 (0.9)	446 (4.8)	28 (1.6)	413 (6.6)
Kuwait	s	34 (1.3)	463 (7.1)	40 (1.6)	440 (6.3)	14 (0.9)	373 (10.2)	12 (1.0)	341 (12.6)

Benchmarking Participants[◇]

Dubai, UAE		65 (0.8)	500 (2.4)	25 (0.7)	461 (3.6)	6 (0.5)	446 (8.7)	3 (0.3)	379 (8.2)
Abu Dhabi, UAE		59 (1.3)	448 (4.6)	32 (1.0)	408 (5.7)	5 (0.5)	384 (7.3)	5 (0.5)	353 (8.1)
Eng/Afr (5) - RSA	r	54 (1.7)	440 (8.7)	10 (1.0)	471 (14.1)	19 (1.2)	404 (7.8)	17 (1.6)	368 (8.5)
Ontario, Canada	r	42 (1.7)	569 (3.1)	39 (1.2)	563 (3.0)	18 (1.4)	517 (6.2)	2 (0.3)	~ ~
Alberta, Canada	r	31 (1.4)	567 (4.7)	42 (1.5)	565 (3.4)	22 (1.4)	531 (3.3)	5 (0.6)	512 (8.2)
Andalusia, Spain		25 (0.9)	537 (3.2)	50 (1.1)	529 (2.2)	8 (0.5)	493 (4.6)	17 (0.8)	471 (3.5)
Quebec, Canada		18 (1.4)	567 (3.7)	43 (1.3)	554 (2.4)	34 (1.6)	517 (2.5)	6 (0.7)	497 (6.9)
Maltese - Malta		13 (0.6)	489 (4.3)	24 (0.8)	489 (3.3)	30 (0.7)	477 (2.8)	33 (0.8)	421 (3.2)

[◇] Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

Country	Parents Expect Their Child to Complete								
	Postgraduate Degree*		University but Not Postgraduate Degree		Post-secondary but Not University		Upper Secondary Education or Less		
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Botswana	r	54 (1.8)	488 (5.5)	15 (0.8)	473 (4.9)	18 (0.9)	440 (3.8)	13 (1.0)	432 (5.1)
South Africa	s	52 (1.1)	477 (5.1)	9 (0.9)	506 (10.2)	23 (0.7)	457 (4.5)	16 (0.8)	446 (4.8)
Colombia		35 (2.0)	602 (4.3)	47 (1.7)	573 (3.4)	8 (0.6)	561 (6.9)	10 (1.1)	538 (5.9)

of the continuum and those expecting upper secondary school (or lower) at the other end of the continuum. The results for the sixth grade, benchmarking participants, and prePIRLS mirror the results at the fourth grade.

Children Were Engaged In Literacy Activities Before Beginning Primary School

Throughout a child's development, the time devoted to literacy related activities remains essential to the acquisition of reading literacy skills and the effects can be long lasting (Levy, Gong, Hessels, Evans, & Jared, 2006). A large study in England recently found that a composite variable of seven home activities—being read to, going to the library, playing with numbers, painting and drawing, being taught letters, being taught numbers, and singing or reciting songs/poems/rhymes—had greater predictive power for literacy and numeracy achievement than any other variables studied, including SES, parents' education, and household income (Melhuish et al., 2008).

To examine children's early literacy experiences, PIRLS has included an Early Literacy Activities scale in each assessment, and the results consistently show a strong positive relationship with achievement. In PIRLS 2006, there was a positive relationship between engaging in early literacy activities and performance in every country. For PIRLS 2011, the scale was enhanced to include several oral language activities because as children develop their capacity for oral language, they are learning the rules of language use. As with the other scales developed for PIRLS 2011, IRT was used to summarize the results.

Exhibit 4.6 presents the results for the PIRLS 2011 Early Literacy Activities scale. Students were scored according their parents' frequency of doing nine activities with them: reading books, telling stories, singing songs, playing with alphabet toys, talking about things done, talking about things read, playing word games, writing letters or words, and reading aloud signs and labels. Students **Often** engaged in early literacy activities had parents who reported "often" doing five of the nine activities with them and "sometimes" doing the other four, on average. Students **Never or Almost Never** engaged in such activities had parents "never or almost never" doing five of the nine activities with them and "sometimes" doing the other four, on average.

Internationally, across the countries at the fourth grade, 37 percent of the students had parents that **Often** engaged them early literacy activities, and an additional 60 percent had parents that **Sometimes** engaged them early literacy activities. The fourth grade students whose parents **Often** engaged them had higher average achievement than the students whose parents only **Sometimes**

engaged them in literacy activities (529 vs. 506). In several countries, a small percentage of students had parents who rarely did any of the literacy activities with them, and these students typically had low average reading achievement. Compared to the fourth grade PIRLS students, somewhat larger percentages of the sixth grade and prePIRLS students had parents who **Never or Almost Never** engaged them in early literacy activities.

Students Attended Preprimary Education

Preprimary education, in the form of preschool, kindergarten, or an early childhood education program, plays an important role in preparing children for primary school. PIRLS 2006 found a positive relationship between years of preprimary education and reading achievement in the fourth grade. Also, recent analyses of longitudinal data in the United States and England found that preschool attendance was positively related to enhanced school performance, and that the duration of attendance was associated with greater academic improvement (Tucker-Drob, 2012; Sammons et al., 2002). Besides giving students an early start in school and life, there are also broader reasons for countries to invest in preschool (Economist Intelligence Unit, 2012). For example, preprimary education provides an avenue for overcoming children's disadvantages and can help to break the generational repetitive cycle of poverty and low achievement.

Although there is considerable variation across countries, according to the *PIRLS 2011 Encyclopedia*, some countries already have mandatory preprimary education (e.g., Austria, Hungary, and the Netherlands), some have nearly 100 percent enrollment even though attendance is not mandatory (e.g., Australia, Croatia, and Singapore), 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, 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 England, Ireland, the Netherlands, New Zealand, and Northern Ireland). Exhibit C.1 in Appendix C contains information across countries about the different policies and practices about the age of entry to primary school.

Exhibit 4.7 presents the PIRLS 2011 parents' reports on the number of years their children participated in preprimary education. In addition, the exhibit presents National Research Coordinators' reports of whether or not there was a national preprimary curriculum that includes language, reading, and writing

Exhibit 4.6: Early Literacy Activities Before Beginning Primary School

Reported by Parents

Students were scored according to their parents' frequency of doing the nine activities on the *Early Literacy Activities* scale. Students **Often** engaged in early literacy activities had a score on the scale of at least 10.7, which corresponds to their parents "often" doing five of the nine activities with them and "sometimes" doing the other four, on average. Students **Never or Almost Never** engaged in such activities had a score no higher than 6.2, which corresponds to parents "never or almost never" doing five of the nine activities with them and "sometimes" doing the other four, on average. All other students had parents who **Sometimes** engaged them in early literacy activities.

Country	Often		Sometimes		Never or Almost Never		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Russian Federation	61 (1.3)	576 (2.7)	38 (1.2)	558 (3.4)	1 (0.3)	~ ~	11.1 (0.06)
Northern Ireland s	59 (1.3)	582 (3.5)	41 (1.4)	559 (3.7)	0 (0.2)	~ ~	11.2 (0.06)
New Zealand s	55 (1.0)	567 (2.7)	44 (1.0)	529 (2.5)	1 (0.1)	~ ~	11.0 (0.05)
Australia s	52 (1.4)	555 (3.0)	46 (1.3)	528 (3.4)	1 (0.3)	~ ~	10.8 (0.06)
Georgia	52 (1.4)	498 (2.6)	47 (1.3)	479 (4.0)	1 (0.2)	~ ~	10.7 (0.06)
Canada r	51 (0.9)	566 (1.9)	48 (0.9)	541 (1.8)	1 (0.1)	~ ~	10.7 (0.04)
Ireland	50 (0.9)	569 (2.3)	49 (0.8)	542 (2.6)	1 (0.1)	~ ~	10.8 (0.04)
Croatia	50 (0.9)	562 (2.2)	49 (0.9)	544 (1.9)	0 (0.1)	~ ~	10.7 (0.03)
Slovenia	48 (1.2)	543 (2.3)	51 (1.2)	522 (2.6)	0 (0.1)	~ ~	10.6 (0.04)
Israel r	48 (1.0)	563 (3.0)	51 (1.0)	534 (3.5)	1 (0.2)	~ ~	10.6 (0.04)
Italy	48 (0.9)	553 (2.4)	51 (1.0)	537 (2.6)	1 (0.2)	~ ~	10.5 (0.03)
Slovak Republic	47 (0.9)	547 (2.9)	51 (0.9)	530 (2.5)	2 (0.6)	~ ~	10.5 (0.05)
Trinidad and Tobago	47 (1.1)	497 (4.0)	52 (1.1)	456 (4.1)	1 (0.3)	~ ~	10.5 (0.05)
Malta	45 (0.9)	507 (1.9)	54 (0.9)	463 (2.7)	1 (0.2)	~ ~	10.4 (0.04)
Spain	44 (1.0)	528 (2.7)	55 (1.0)	507 (2.7)	1 (0.2)	~ ~	10.4 (0.03)
Poland	43 (0.8)	544 (2.8)	56 (0.8)	514 (2.1)	1 (0.3)	~ ~	10.4 (0.03)
Hungary	43 (0.8)	553 (2.8)	56 (0.8)	535 (3.2)	1 (0.4)	~ ~	10.3 (0.04)
Czech Republic	40 (1.0)	555 (2.6)	60 (1.0)	542 (2.3)	1 (0.2)	~ ~	10.3 (0.03)
Netherlands s	40 (0.8)	559 (3.1)	60 (0.8)	551 (2.0)	1 (0.2)	~ ~	10.2 (0.03)
Bulgaria	39 (1.4)	559 (3.1)	51 (1.0)	529 (3.7)	9 (1.4)	455 (15.3)	9.7 (0.12)
Romania	38 (1.5)	529 (4.1)	54 (1.3)	494 (4.5)	8 (1.0)	423 (8.9)	9.9 (0.09)
Germany r	38 (0.9)	555 (2.8)	61 (0.9)	543 (2.2)	1 (0.2)	~ ~	10.2 (0.03)
Norway	37 (1.4)	524 (2.5)	63 (1.4)	500 (2.2)	1 (0.2)	~ ~	10.0 (0.06)
France	36 (0.7)	536 (2.6)	63 (0.7)	515 (2.7)	1 (0.2)	~ ~	10.0 (0.03)
Lithuania	36 (0.9)	541 (1.9)	63 (0.9)	524 (2.5)	2 (0.2)	~ ~	10.0 (0.03)
Austria	35 (1.0)	543 (2.1)	63 (1.1)	523 (2.5)	1 (0.2)	~ ~	10.0 (0.03)
Portugal	35 (1.1)	558 (2.8)	63 (1.1)	535 (2.6)	2 (0.4)	~ ~	10.0 (0.05)
Sweden	34 (1.0)	562 (2.9)	64 (1.0)	537 (2.2)	2 (0.2)	~ ~	9.9 (0.04)
Colombia	34 (1.1)	457 (5.7)	63 (1.0)	448 (3.8)	3 (0.4)	409 (11.0)	9.9 (0.06)
Denmark	32 (0.9)	567 (2.2)	67 (0.9)	550 (1.9)	1 (0.2)	~ ~	9.9 (0.03)
Belgium (French)	30 (0.8)	524 (2.9)	67 (0.7)	501 (3.2)	3 (0.4)	482 (10.3)	9.7 (0.04)
Qatar	28 (1.0)	458 (6.0)	69 (1.0)	420 (3.1)	3 (0.3)	390 (11.7)	9.7 (0.05)
Finland	27 (0.9)	583 (2.9)	72 (0.9)	564 (1.9)	1 (0.1)	~ ~	9.7 (0.03)
United Arab Emirates	27 (0.5)	480 (2.8)	71 (0.5)	430 (2.3)	3 (0.2)	392 (7.4)	9.6 (0.03)
Saudi Arabia	26 (1.3)	455 (5.2)	70 (1.4)	426 (4.2)	4 (0.8)	360 (16.2)	9.5 (0.06)
Singapore	26 (0.7)	595 (3.6)	69 (0.7)	561 (3.3)	5 (0.3)	543 (6.2)	9.4 (0.03)
Azerbaijan	23 (1.3)	467 (4.8)	72 (1.3)	463 (3.5)	4 (0.7)	439 (7.6)	9.5 (0.07)
Indonesia	23 (1.3)	445 (5.8)	72 (1.3)	427 (4.1)	4 (0.5)	409 (6.5)	9.4 (0.07)
Oman	19 (0.4)	429 (3.6)	76 (0.5)	385 (3.2)	5 (0.4)	354 (7.2)	9.2 (0.03)
Morocco	17 (0.9)	321 (5.6)	64 (1.5)	314 (4.5)	19 (1.9)	302 (13.6)	8.4 (0.13)
Iran, Islamic Rep. of	15 (0.6)	474 (3.6)	77 (0.8)	460 (3.0)	8 (0.8)	411 (8.0)	8.9 (0.05)
Chinese Taipei	14 (0.6)	577 (3.5)	76 (0.8)	553 (1.8)	10 (0.6)	526 (4.8)	8.7 (0.04)
Hong Kong SAR	12 (0.6)	588 (3.7)	80 (0.6)	571 (2.3)	8 (0.5)	560 (3.7)	8.7 (0.03)
International Avg.	37 (0.2)	529 (0.5)	60 (0.2)	506 (0.5)	3 (0.1)	430 (2.6)	

England and the United States did not administer the Home Questionnaire. Centerpoint of scale set at 10.

() 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.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Exhibit 4.6: Early Literacy Activities Before Beginning Primary School (Continued)

Country	Often		Sometimes		Never or Almost Never		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sixth Grade Participants							
Honduras	30 (1.5)	461 (8.3)	63 (1.3)	447 (4.2)	7 (0.7)	426 (12.2)	9.6 (0.08)
Kuwait	23 (1.2)	448 (9.3)	73 (1.2)	420 (6.5)	4 (0.5)	378 (14.2)	9.4 (0.06)
Morocco	16 (0.7)	437 (6.7)	67 (1.2)	432 (4.2)	16 (1.3)	406 (7.5)	8.5 (0.08)
Botswana	15 (1.1)	464 (8.7)	74 (1.2)	420 (3.9)	11 (1.0)	388 (6.2)	8.6 (0.08)
Benchmarking Participants^o							
Ontario, Canada	54 (1.3)	566 (3.1)	45 (1.3)	545 (3.2)	1 (0.2)	~ ~	10.9 (0.05)
Alberta, Canada	52 (1.3)	568 (3.6)	47 (1.3)	542 (3.7)	1 (0.2)	~ ~	10.8 (0.05)
Maltese - Malta	45 (0.8)	481 (2.0)	54 (0.8)	447 (1.9)	1 (0.2)	~ ~	10.4 (0.03)
Andalusia, Spain	43 (0.9)	530 (2.5)	56 (0.9)	508 (2.7)	1 (0.2)	~ ~	10.3 (0.04)
Quebec, Canada	40 (1.0)	554 (3.0)	59 (1.0)	531 (2.4)	2 (0.3)	~ ~	10.2 (0.04)
Eng/Afr (5) - RSA	34 (1.5)	465 (8.5)	61 (1.4)	405 (7.2)	4 (0.7)	358 (14.5)	9.8 (0.09)
Dubai, UAE	34 (0.8)	521 (2.4)	64 (0.8)	463 (2.6)	2 (0.2)	~ ~	9.9 (0.03)
Abu Dhabi, UAE	24 (1.1)	466 (6.4)	73 (1.0)	416 (4.4)	3 (0.4)	379 (9.6)	9.5 (0.05)

^o Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Often		Sometimes		Never or Almost Never		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
South Africa	34 (0.8)	482 (5.4)	62 (0.8)	458 (3.7)	4 (0.6)	451 (8.7)	9.9 (0.05)
Colombia	34 (1.2)	583 (4.4)	63 (1.0)	577 (3.3)	3 (0.4)	536 (10.2)	9.9 (0.06)
Botswana	14 (0.9)	512 (7.7)	76 (1.0)	464 (3.8)	10 (0.9)	442 (5.7)	8.7 (0.06)

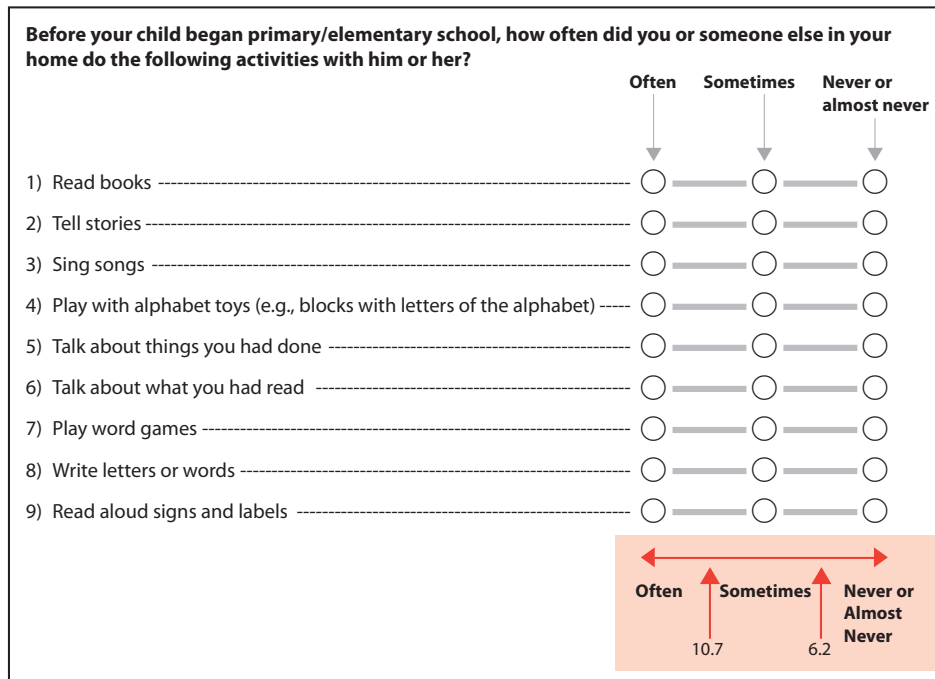


Exhibit 4.7: Students Attended Preprimary Education

Curriculum Reported by National Research Coordinators and Preprimary Attendance Reported by Parents

Country	National Preprimary Curriculum Includes Language, Reading, and Writing Skills	Students Attended Preprimary Education								
		3 Years or More		Less than 3 Years but More than 1 Year		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	●	86 (0.9)	548 (2.5)	13 (0.7)	505 (5.6)	1 (0.3)	~ ~	0 (0.1)	~ ~	
Denmark	●	81 (0.6)	558 (1.6)	17 (0.6)	544 (3.1)	2 (0.2)	~ ~	0 (0.1)	~ ~	
Belgium (French)	●	76 (1.3)	513 (2.8)	22 (1.1)	494 (4.4)	1 (0.1)	~ ~	1 (0.4)	~ ~	
France	●	76 (0.9)	524 (2.7)	24 (0.9)	514 (3.4)	0 (0.1)	~ ~	1 (0.2)	~ ~	
Italy	●	75 (0.9)	549 (2.3)	23 (0.8)	530 (3.1)	1 (0.2)	~ ~	1 (0.2)	~ ~	
Germany	r ○	74 (0.9)	551 (2.4)	23 (0.9)	540 (2.9)	1 (0.2)	~ ~	1 (0.2)	~ ~	
Sweden	●	74 (1.1)	551 (2.2)	20 (1.0)	536 (2.8)	2 (0.4)	~ ~	3 (0.4)	517 (11.1)	
Norway	○	71 (1.5)	512 (2.4)	24 (1.4)	500 (3.3)	2 (0.2)	~ ~	3 (0.6)	494 (11.9)	
Austria	○	69 (1.5)	532 (2.1)	27 (1.3)	530 (3.1)	3 (0.7)	518 (6.3)	1 (0.1)	~ ~	
Russian Federation	○	69 (1.3)	572 (2.9)	14 (0.8)	570 (4.4)	3 (0.3)	559 (7.2)	15 (1.0)	553 (5.3)	
Hong Kong SAR	●	68 (1.0)	573 (2.4)	32 (1.0)	572 (2.9)	1 (0.1)	~ ~	0 (0.1)	~ ~	
Czech Republic	○	68 (1.1)	549 (2.4)	28 (0.9)	543 (2.6)	3 (0.4)	551 (5.5)	1 (0.2)	~ ~	
Spain	●	66 (0.9)	522 (2.3)	28 (0.9)	505 (3.0)	4 (0.4)	494 (6.3)	3 (0.3)	493 (9.2)	
Slovak Republic	●	65 (1.3)	546 (2.1)	24 (0.8)	530 (3.3)	8 (0.7)	515 (5.8)	4 (0.7)	489 (10.7)	
Singapore	○	64 (0.7)	580 (3.3)	34 (0.7)	554 (3.7)	1 (0.1)	~ ~	1 (0.1)	~ ~	
Israel	r ●	60 (1.1)	563 (3.0)	36 (1.0)	532 (3.9)	3 (0.3)	460 (10.3)	1 (0.2)	~ ~	
Slovenia	●	59 (1.3)	537 (2.0)	26 (1.1)	526 (3.4)	5 (0.5)	524 (5.0)	9 (0.7)	519 (5.0)	
Bulgaria	●	58 (1.8)	546 (3.3)	26 (1.2)	530 (5.1)	6 (0.6)	495 (8.1)	10 (1.1)	497 (10.3)	
Romania	●	57 (1.9)	523 (3.9)	33 (1.3)	490 (5.0)	4 (0.7)	445 (13.8)	6 (1.0)	412 (12.2)	
Lithuania	●	53 (1.2)	539 (2.2)	17 (0.6)	530 (3.8)	7 (0.5)	524 (5.6)	23 (1.3)	507 (4.5)	
Finland	●	46 (1.3)	569 (2.2)	31 (1.0)	566 (2.6)	21 (1.1)	572 (3.1)	1 (0.2)	~ ~	
Portugal	○	45 (1.3)	549 (2.7)	37 (1.3)	544 (3.1)	8 (0.6)	533 (5.4)	9 (0.8)	522 (5.6)	
Croatia	○	44 (1.6)	567 (2.2)	19 (0.8)	551 (2.9)	10 (1.2)	538 (4.8)	27 (1.6)	540 (2.2)	
Georgia	●	42 (1.3)	495 (3.3)	29 (0.9)	495 (3.9)	7 (0.6)	493 (5.8)	21 (1.3)	471 (4.5)	
New Zealand	s ●	38 (1.1)	555 (3.1)	54 (0.9)	552 (2.8)	4 (0.5)	522 (13.0)	4 (0.5)	496 (13.9)	
Chinese Taipei	●	38 (0.9)	561 (2.6)	56 (0.8)	551 (1.9)	4 (0.4)	538 (8.1)	1 (0.2)	~ ~	
Poland	○	34 (1.3)	545 (2.9)	23 (1.0)	529 (3.1)	16 (1.1)	513 (4.5)	28 (1.8)	509 (3.1)	
Morocco	r ●	22 (0.8)	339 (5.3)	39 (1.6)	324 (4.8)	17 (1.0)	298 (6.1)	22 (1.6)	293 (9.9)	
Colombia	○	20 (1.4)	466 (8.0)	37 (1.6)	457 (5.2)	33 (1.7)	435 (4.3)	11 (0.9)	439 (6.2)	
Trinidad and Tobago	●	17 (0.7)	456 (5.6)	73 (0.9)	480 (4.1)	6 (0.6)	473 (8.0)	3 (0.4)	444 (12.8)	
Canada	r	Varies by province	17 (0.6)	566 (3.2)	53 (1.0)	557 (2.0)	25 (0.9)	542 (1.9)	5 (0.3)	543 (4.2)
Australia	s	Varies by state	15 (1.0)	550 (5.1)	55 (1.4)	547 (3.3)	26 (1.2)	531 (3.2)	5 (0.5)	520 (8.0)
Qatar	●	12 (0.9)	428 (7.2)	51 (1.5)	450 (4.4)	19 (0.8)	420 (4.5)	18 (1.2)	389 (7.1)	
United Arab Emirates	●	12 (0.3)	433 (4.6)	49 (0.9)	445 (2.2)	16 (0.4)	454 (3.5)	22 (0.7)	436 (3.6)	
Malta	●	11 (0.5)	490 (5.5)	86 (0.5)	481 (1.8)	3 (0.3)	496 (10.0)	1 (0.1)	~ ~	
Iran, Islamic Rep. of	●	10 (0.8)	472 (6.3)	29 (1.1)	473 (3.2)	40 (1.2)	461 (3.1)	21 (1.5)	426 (5.6)	
Oman	●	8 (0.4)	397 (5.5)	36 (0.8)	412 (3.6)	25 (0.6)	385 (3.7)	31 (0.8)	374 (3.8)	
Azerbaijan	○	7 (0.6)	466 (4.0)	20 (1.3)	465 (4.2)	8 (0.6)	457 (5.3)	64 (1.8)	464 (4.0)	
Ireland	●	7 (0.6)	544 (7.2)	57 (1.3)	562 (2.3)	25 (1.2)	554 (3.6)	12 (0.7)	534 (8.3)	
Indonesia	○	6 (0.7)	408 (9.8)	45 (2.7)	445 (4.8)	20 (1.8)	435 (6.0)	29 (2.7)	411 (5.2)	
Northern Ireland	s ○	5 (0.5)	591 (10.2)	49 (1.7)	575 (3.9)	44 (1.7)	570 (3.5)	3 (0.4)	540 (9.4)	
Saudi Arabia	●	3 (0.3)	437 (11.1)	20 (1.4)	454 (4.8)	25 (1.3)	442 (4.7)	52 (2.2)	416 (6.4)	
Netherlands	s ●	3 (0.4)	538 (7.2)	91 (0.8)	556 (2.1)	3 (0.4)	531 (8.3)	3 (0.5)	533 (7.5)	
England	●									
United States		Varies by state								
International Avg.		42 (0.2)	519 (0.7)	36 (0.2)	513 (0.5)	11 (0.1)	493 (1.1)	11 (0.1)	475 (1.5)	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

● Yes ○ No

England and the United States did not administer the Home Questionnaire.

() 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 4.7: Students Attended Preprimary Education (Continued)

Country	National Preprimary Curriculum Includes Language, Reading, and Writing Skills	Students Attended Preprimary Education							
		3 Years or More		Less than 3 Years but More than 1 Year		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
Sixth Grade Participants									
Morocco	●	22 (0.8)	450 (4.7)	40 (1.5)	439 (3.5)	16 (0.9)	409 (5.3)	22 (1.7)	404 (7.3)
Honduras	○	21 (1.6)	429 (9.0)	36 (1.6)	464 (6.4)	28 (1.6)	455 (5.1)	15 (1.0)	443 (5.6)
Botswana	r ●	15 (0.8)	458 (7.9)	22 (1.2)	468 (7.4)	7 (0.6)	443 (8.2)	56 (1.9)	395 (3.6)
Kuwait	s ○	6 (0.7)	388 (15.1)	78 (1.3)	430 (6.7)	7 (0.7)	424 (12.8)	8 (1.0)	424 (12.5)
Benchmarking Participants[◇]									
Andalusia, Spain	●	68 (1.0)	524 (2.4)	28 (0.8)	505 (3.5)	2 (0.3)	~ ~	1 (0.2)	~ ~
Eng/Afr (5) - RSA	r ●	37 (1.8)	440 (11.2)	36 (1.2)	430 (8.3)	18 (1.6)	392 (7.8)	9 (1.0)	364 (10.2)
Ontario, Canada	r ●	20 (1.1)	567 (4.7)	67 (1.1)	556 (2.7)	8 (0.6)	538 (6.1)	5 (0.6)	550 (7.5)
Alberta, Canada	r ●	16 (1.0)	563 (5.2)	51 (1.1)	560 (3.2)	30 (1.4)	547 (3.4)	3 (0.5)	522 (11.8)
Dubai, UAE	●	14 (0.6)	474 (5.2)	46 (0.8)	491 (2.7)	17 (0.5)	498 (4.5)	23 (1.0)	464 (4.5)
Abu Dhabi, UAE	●	11 (0.6)	419 (8.9)	50 (1.6)	432 (4.6)	18 (0.9)	432 (6.4)	21 (1.0)	419 (6.0)
Quebec, Canada	●	11 (0.7)	555 (4.2)	32 (1.5)	540 (2.8)	51 (1.6)	539 (2.4)	5 (0.5)	528 (7.2)
Maltese - Malta	●	10 (0.5)	454 (4.7)	87 (0.6)	464 (1.7)	3 (0.3)	435 (9.6)	1 (0.1)	~ ~
Florida, US	●								

[◇] Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	National Preprimary Curriculum Includes Language, Reading, and Writing Skills	Students Attended Preprimary Education							
		3 Years or More		Less than 3 Years but More than 1 Year		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
South Africa	r ●	30 (0.8)	481 (5.8)	35 (0.8)	468 (4.9)	17 (0.7)	459 (5.3)	18 (1.0)	436 (5.1)
Colombia	○	20 (1.4)	590 (5.6)	37 (1.6)	585 (4.5)	33 (1.7)	565 (3.9)	11 (0.9)	569 (4.4)
Botswana	r ●	14 (0.9)	509 (7.0)	24 (1.4)	503 (7.8)	6 (0.6)	471 (6.6)	55 (2.1)	445 (2.8)

● Yes ○ No

skills. It is noted that these preprimary curricula may concentrate on expression, using new language, and developing concepts in the primary written language(s) of communication, yet two-thirds of the PIRLS 2011 countries indicated that their preprimary curriculum made such provision, as did Morocco and Botswana among sixth grade countries, and all the benchmarking participants.

Although attendance in preprimary education differed dramatically from country to country, on average, 42 percent of the fourth grade students had at least three years of preprimary education and another 36 percent had more than one year. These students had higher average achievement than the eleven percent with only one year or less of preprimary education (519 and 513 vs. 493, respectively). Most notably, however, the remaining eleven percent of students, on average, that did not attend preschool had much lower average reading achievement (475). There was a range across countries, but the majority of students did not attend preschool in Azerbaijan (64%) and Saudi Arabia (52%). Also, several of the sixth grade, benchmarking, and prePIRLS participants had higher than average percentages of students that had not attended preprimary education, particularly Botswana (55%).

Students Could Do Early Literacy Tasks When Began Primary School

Considering that 1) parents are students' first teachers and many parents have concentrated on literacy skills, and 2) substantial percentages of students in some countries have attended several years of preprimary education, it is not surprising that many students begin primary school with some literacy skills. Again, however, it is recognized that the earlier students start primary school, the fewer years they will have had available for preprimary education.

To provide information about the extent to which students enter primary school equipped with some basic skills as a foundation for formal reading instruction, the PIRLS assessments have included a set of questions asking parents how well their child could do the following early literacy activities when he or she first entered primary school: recognize most of the alphabet, write letters of the alphabet, read some words, write some words, and read sentences. In keeping with considerable research, PIRLS has consistently shown a positive relationship between early reading skills and average reading achievement at the fourth grade. A recent Canadian meta-analysis of six longitudinal studies found school entry reading skills to be among the strongest predictors of later achievement across gender and socioeconomic backgrounds (Duncan et al., 2007).

Exhibit 4.8 presents the PIRLS 2011 results for the Early Literacy Tasks scale, created using IRT for the first time. Students were scored according to their parents' responses to how well their children could do the five tasks, with some being able to do the tasks **Very Well**, on average, and some doing the tasks **Not Well**, on average. According to their parents, on average across the fourth grade countries, about a quarter (26%) of the students entered school able to perform the five early literacy tasks **Very Well** and another 42 percent **Moderately Well**. Parents' assessments of their children's early literacy skills corresponded well with reading achievement at the fourth grade. Internationally, reading achievement at the fourth grade was substantially higher for those students whose parents reported their children could perform the activities **Very Well** than for the students whose parents reported **Moderately Well** (537 vs. 511). Average achievement was much lower (489) for students whose parents reported "not very well" or "not at all" to all five literacy tasks. This pattern also was evident across the sixth grade, benchmarking, and prePIRLS participants.

Exhibit 4.8: Could Do Early Literacy Tasks When Began Primary School

Reported by Parents

Students were scored according to their parents' responses to how well their children could do the five tasks on the *Early Literacy Tasks* scale. Students who could do literacy tasks **Very Well** had a score on the scale of at least 11.5, which corresponds to their parents reporting that the students could do three literacy tasks "very well" and the other two "moderately well," on average. Students doing the tasks **Not Well** had a score no higher than 8.9, which corresponds to parents reporting that students could do three tasks "not very well" and the other two "moderately well," on average. All other students could do the literacy tasks **Moderately Well** when they began primary school.

Country	Very Well		Moderately Well		Not Well		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Trinidad and Tobago	49 (1.3)	499 (3.6)	43 (1.1)	458 (4.7)	8 (0.6)	411 (7.5)	11.3 (0.04)
Israel	46 (1.2)	555 (3.5)	36 (0.7)	538 (3.8)	18 (0.9)	551 (5.0)	10.9 (0.05)
Colombia	46 (1.4)	462 (5.5)	40 (1.2)	446 (4.5)	14 (1.1)	422 (5.1)	11.0 (0.05)
Qatar	45 (0.9)	456 (3.5)	39 (1.0)	422 (5.0)	16 (0.7)	378 (6.4)	11.0 (0.03)
Singapore	44 (1.2)	598 (3.1)	45 (1.0)	557 (3.3)	11 (0.6)	499 (4.7)	11.1 (0.04)
Saudi Arabia	44 (1.4)	454 (4.0)	36 (1.1)	424 (4.4)	20 (1.3)	393 (9.3)	10.7 (0.09)
Spain	44 (0.9)	538 (2.7)	40 (0.7)	506 (2.6)	16 (0.7)	478 (3.9)	10.9 (0.04)
Hong Kong SAR	41 (1.1)	594 (2.1)	50 (0.9)	564 (2.3)	10 (0.6)	525 (4.6)	11.0 (0.04)
Oman	41 (0.7)	429 (3.2)	44 (0.6)	374 (3.4)	15 (0.7)	347 (4.5)	10.8 (0.04)
United Arab Emirates	36 (0.7)	470 (2.2)	43 (0.6)	436 (2.3)	21 (0.5)	408 (4.3)	10.5 (0.03)
Croatia	34 (0.8)	576 (2.2)	46 (0.8)	548 (1.9)	19 (0.6)	528 (3.8)	10.6 (0.03)
Morocco	32 (1.2)	353 (5.2)	42 (1.1)	305 (4.5)	26 (1.8)	282 (8.5)	10.1 (0.11)
Finland	31 (0.9)	602 (2.7)	33 (0.7)	566 (2.3)	35 (0.9)	542 (2.8)	10.2 (0.04)
Sweden	30 (1.1)	574 (2.9)	45 (1.0)	540 (2.4)	25 (1.0)	520 (3.0)	10.3 (0.05)
Chinese Taipei	30 (0.6)	576 (2.8)	58 (0.7)	551 (2.0)	12 (0.6)	511 (4.2)	10.6 (0.02)
Malta	28 (0.8)	515 (2.9)	50 (0.9)	480 (2.1)	22 (0.8)	448 (3.7)	10.3 (0.04)
Bulgaria	27 (1.1)	563 (4.0)	40 (1.2)	543 (3.2)	33 (1.7)	499 (7.0)	9.8 (0.10)
Denmark	26 (0.8)	585 (2.1)	52 (0.9)	552 (1.9)	23 (0.8)	526 (2.7)	10.3 (0.03)
Poland	26 (0.7)	558 (2.7)	45 (0.8)	526 (2.2)	29 (0.8)	499 (3.2)	10.0 (0.04)
France	24 (0.8)	543 (3.4)	51 (0.7)	522 (2.3)	25 (0.9)	502 (3.8)	10.2 (0.04)
Iran, Islamic Rep. of	23 (0.8)	476 (3.5)	40 (0.8)	456 (3.3)	37 (1.1)	450 (4.1)	9.6 (0.06)
Georgia	23 (0.9)	513 (4.0)	37 (1.1)	492 (3.7)	40 (1.3)	473 (3.9)	9.6 (0.05)
Indonesia	22 (2.3)	455 (4.3)	52 (1.9)	433 (3.7)	26 (2.3)	404 (6.2)	10.0 (0.11)
Russian Federation	22 (0.8)	599 (2.7)	44 (1.1)	574 (3.2)	34 (1.4)	541 (3.4)	9.8 (0.06)
Azerbaijan	22 (1.1)	471 (4.7)	39 (1.2)	462 (3.7)	39 (1.7)	461 (4.4)	9.5 (0.08)
Canada	22 (0.7)	581 (2.3)	46 (0.6)	554 (1.6)	32 (0.6)	535 (1.9)	9.9 (0.03)
Lithuania	21 (0.7)	570 (2.7)	55 (1.0)	532 (2.1)	24 (0.9)	488 (3.3)	10.1 (0.03)
Czech Republic	20 (0.7)	568 (3.5)	43 (0.9)	546 (2.2)	36 (0.9)	537 (3.1)	9.7 (0.03)
New Zealand	18 (1.2)	568 (4.8)	47 (1.1)	556 (2.9)	35 (1.0)	531 (2.8)	9.8 (0.05)
Australia	17 (0.9)	571 (3.8)	44 (1.1)	544 (3.2)	39 (1.1)	526 (3.6)	9.7 (0.04)
Slovenia	16 (0.7)	570 (3.8)	36 (0.7)	539 (2.3)	48 (0.8)	513 (2.2)	9.3 (0.04)
Norway	16 (0.8)	534 (3.3)	28 (0.9)	518 (2.8)	55 (1.2)	496 (2.5)	9.1 (0.05)
Romania	16 (1.0)	538 (6.0)	39 (1.3)	517 (4.7)	45 (1.6)	477 (5.2)	9.2 (0.09)
Austria	14 (0.7)	543 (3.9)	36 (1.0)	530 (2.9)	50 (1.1)	527 (2.1)	9.1 (0.04)
Hungary	13 (0.6)	568 (5.0)	31 (0.9)	542 (3.2)	56 (0.9)	536 (3.4)	8.8 (0.04)
Italy	13 (0.6)	563 (4.5)	44 (0.8)	545 (2.6)	43 (0.8)	539 (2.4)	9.3 (0.03)
Belgium (French)	12 (0.8)	522 (4.4)	45 (0.9)	508 (3.3)	42 (1.0)	503 (3.5)	9.4 (0.04)
Portugal	12 (0.7)	561 (5.5)	45 (1.1)	549 (2.7)	42 (1.0)	532 (3.1)	9.4 (0.05)
Germany	12 (0.7)	560 (3.5)	39 (1.0)	548 (2.6)	50 (1.0)	544 (2.7)	9.1 (0.04)
Netherlands	11 (0.8)	573 (5.1)	41 (1.0)	558 (2.7)	48 (1.1)	546 (2.5)	9.2 (0.05)
Northern Ireland	10 (0.8)	595 (5.3)	45 (1.3)	575 (3.7)	45 (1.2)	564 (4.0)	9.2 (0.04)
Slovak Republic	9 (0.6)	558 (7.5)	26 (0.7)	548 (3.1)	65 (0.8)	531 (2.2)	8.5 (0.04)
Ireland	--	--	--	--	--	--	--
International Avg.	26 (0.1)	537 (0.6)	42 (0.2)	511 (0.5)	32 (0.2)	489 (0.7)	--

England and the United States did not administer the Home Questionnaire.

Centerpoint of scale set at 10.

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

A dash (-) indicates comparable data not available.

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.

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Exhibit 4.8: Could Do Early Literacy Tasks When Began Primary School (Continued)

Country	Very Well		Moderately Well		Not Well		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Sixth Grade Participants							
Honduras	50 (1.3)	461 (5.7)	36 (1.1)	448 (4.6)	14 (0.9)	424 (9.1)	11.1 (0.04)
Kuwait	38 (1.2)	461 (6.5)	37 (1.3)	413 (7.5)	25 (1.3)	388 (10.1)	10.5 (0.07)
Morocco	38 (1.1)	456 (4.0)	44 (1.2)	419 (4.5)	18 (1.0)	396 (8.2)	10.6 (0.06)
Botswana	30 (1.1)	451 (5.0)	41 (1.2)	430 (5.3)	29 (1.5)	385 (4.8)	10.1 (0.08)
Benchmarking Participants^o							
Andalusia, Spain	42 (1.1)	540 (2.4)	42 (0.9)	508 (2.4)	16 (0.6)	483 (3.7)	10.9 (0.04)
Abu Dhabi, UAE	36 (1.0)	459 (4.5)	41 (1.0)	421 (4.6)	22 (1.0)	386 (8.0)	10.5 (0.05)
Dubai, UAE	36 (1.0)	503 (2.6)	44 (0.8)	476 (2.5)	20 (0.6)	459 (4.6)	10.6 (0.03)
Eng/Afr (5) - RSA	30 (1.6)	448 (8.4)	47 (1.9)	425 (7.7)	23 (2.0)	396 (11.2)	10.4 (0.08)
Ontario, Canada	27 (1.4)	582 (3.2)	45 (1.1)	557 (2.7)	28 (1.2)	531 (4.0)	10.2 (0.06)
Maltese - Malta	25 (0.8)	486 (2.8)	47 (0.8)	465 (2.2)	28 (0.7)	439 (3.2)	10.0 (0.03)
Alberta, Canada	23 (1.1)	584 (4.5)	49 (1.1)	554 (3.2)	28 (1.0)	537 (4.1)	10.0 (0.04)
Quebec, Canada	15 (0.8)	567 (3.4)	45 (0.9)	542 (2.6)	40 (1.0)	529 (2.5)	9.5 (0.04)

^o Republic of South Africa (RSA) tested 5th grade students receiving instruction in English (ENG) or Afrikaans (AFR).

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2011

Country	Very Well		Moderately Well		Not Well		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Colombia	46 (1.4)	588 (4.1)	40 (1.1)	576 (3.6)	14 (1.1)	551 (4.9)	11.0 (0.05)
South Africa	31 (0.9)	479 (4.9)	44 (0.9)	471 (4.7)	25 (0.9)	448 (4.2)	10.3 (0.04)
Botswana	25 (0.9)	506 (5.1)	43 (1.2)	469 (4.9)	32 (1.3)	439 (3.4)	9.9 (0.06)

