

Exhibit 8.1 and 8.2: Teachers' Formal Education

Exhibit 8.1 presents teachers' reports about their highest level of formal education. On average, 26 percent of the fourth grade students had teachers with a postgraduate university degree, 60 percent had teachers with a bachelor's degree (or equivalent) but not a postgraduate degree, 11 percent had teachers with post-secondary education but not a bachelor's degree, and 3 percent had teachers with an upper-secondary degree.

Exhibit 8.2 presents the percentages of students whose teacher had various areas of specialization in their formal education. Seventy percent of the students had teachers whose education included an emphasis on language, 64 percent had teachers with an emphasis on pedagogy/teaching reading, and 32 percent had teachers with an emphasis on reading theory. The PIRLS results do not show any relationship between emphasis on these specializations and students' average reading achievement. This was consistent across the three areas of emphasis (language, pedagogy, and reading theory).

Exhibit 8.1: Teachers' Formal Education*

Students Categorized by Teachers' Reports

Country	Percent of Students by Teacher Education Level			
	Completed Postgraduate University Degree**	Completed Bachelor's Degree or Equivalent but Not a Postgraduate Degree	Completed Post-Secondary Education but Not a Bachelor's Degree	No Further than Upper-Secondary Education
Australia	12 (2.3)	82 (2.8)	7 (2.0)	0 (0.0)
Austria	5 (1.2)	26 (3.0)	68 (2.9)	0 (0.3)
Azerbaijan	12 (2.6)	46 (3.9)	41 (3.8)	1 (0.6)
Bahrain	17 (3.5)	81 (3.6)	1 (0.5)	1 (0.7)
Belgium (Flemish)	2 (0.8)	96 (1.2)	2 (0.8)	0 (0.4)
Belgium (French)	2 (0.9)	98 (1.0)	0 (0.0)	0 (0.4)
Bulgaria	76 (3.0)	18 (2.7)	6 (1.6)	0 (0.0)
Canada	16 (1.8)	84 (1.8)	0 (0.0)	0 (0.0)
Chile	10 (2.5)	65 (4.3)	25 (3.9)	0 (0.0)
Chinese Taipei	42 (4.1)	58 (4.1)	0 (0.0)	0 (0.0)
Czech Republic	92 (1.5)	2 (0.7)	2 (0.7)	5 (1.1)
Denmark	4 (1.5)	79 (3.0)	15 (2.7)	2 (1.0)
Egypt	1 (0.8)	71 (3.9)	24 (3.8)	3 (1.1)
England	8 (2.2)	92 (2.1)	0 (0.0)	0 (0.3)
Finland	92 (1.8)	6 (1.5)	1 (0.5)	1 (0.4)
France	42 (4.0)	44 (3.8)	11 (2.4)	3 (1.1)
Georgia	82 (2.9)	9 (2.2)	9 (2.1)	0 (0.0)
Germany	90 (2.2)	2 (1.2)	7 (1.9)	0 (0.5)
Hong Kong SAR	37 (3.5)	59 (3.5)	4 (1.7)	0 (0.0)
Hungary	5 (1.7)	95 (1.8)	0 (0.2)	0 (0.0)
Iran, Islamic Rep. of	5 (1.5)	58 (4.1)	26 (3.1)	11 (2.8)
Ireland	26 (3.6)	74 (3.6)	0 (0.0)	0 (0.0)
Israel	34 (3.9)	61 (3.9)	4 (1.3)	0 (0.0)
Italy	2 (1.1)	16 (2.6)	19 (2.9)	63 (3.8)
Kazakhstan	1 (0.7)	84 (2.7)	12 (2.3)	3 (1.1)
Kuwait	9 (2.5)	89 (2.7)	2 (1.0)	0 (0.3)
Latvia	51 (4.1)	44 (4.2)	4 (1.6)	1 (0.2)
Lithuania	27 (3.6)	70 (3.8)	3 (1.2)	0 (0.0)
Macao SAR	9 (0.1)	81 (0.1)	9 (0.0)	1 (0.0)
Malta	7 (0.1)	84 (0.1)	6 (0.1)	3 (0.1)
Morocco	0 (0.4)	42 (3.4)	13 (2.4)	44 (3.5)
Netherlands	4 (1.4)	91 (2.1)	4 (1.4)	1 (0.7)
New Zealand	5 (1.3)	82 (2.4)	13 (2.3)	0 (0.0)
Northern Ireland	19 (3.4)	80 (3.5)	1 (0.7)	0 (0.0)
Norway (5)	22 (3.2)	73 (3.2)	4 (1.4)	0 (0.3)
Oman	11 (1.8)	73 (3.1)	12 (2.4)	3 (1.0)
Poland	100 (0.3)	0 (0.0)	0 (0.3)	0 (0.0)
Portugal	13 (2.5)	83 (2.7)	5 (1.2)	0 (0.0)
Qatar	25 (2.0)	71 (2.1)	3 (0.7)	1 (0.6)
Russian Federation	43 (3.5)	37 (3.3)	19 (2.6)	0 (0.0)
Saudi Arabia	4 (1.7)	77 (3.6)	13 (2.7)	6 (1.8)
Singapore	9 (1.5)	72 (2.7)	18 (2.4)	1 (0.5)
Slovak Republic	98 (1.3)	2 (1.1)	1 (0.7)	0 (0.0)
Slovenia	2 (0.9)	62 (3.2)	36 (3.2)	0 (0.0)
South Africa	1 (0.9)	46 (4.0)	45 (3.9)	7 (1.8)
Spain	24 (2.9)	76 (2.9)	0 (0.1)	0 (0.0)
Sweden	13 (2.8)	81 (3.1)	5 (1.7)	0 (0.2)
Trinidad and Tobago	9 (2.2)	62 (4.0)	24 (3.5)	5 (1.9)
United Arab Emirates	22 (2.4)	71 (2.1)	7 (1.6)	0 (0.0)
United States	55 (4.0)	45 (4.0)	0 (0.0)	0 (0.0)
International Avg.	26 (0.3)	60 (0.4)	11 (0.3)	3 (0.1)

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

* Based on countries' categorizations according to UNESCO's International Standard Classification of Education (Operational Manual for ISCED-2011).

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

() 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 8.1: Teachers' Formal Education* (Continued)

Country	Percent of Students by Teacher Education Level			
	Completed Postgraduate University Degree**	Completed Bachelor's Degree or Equivalent but Not a Postgraduate Degree	Completed Post-Secondary Education but Not a Bachelor's Degree	No Further than Upper-Secondary Education
Benchmarking Participants				
Buenos Aires, Argentina	9 (2.2)	12 (2.7)	78 (3.5)	2 (0.9)
Ontario, Canada	15 (3.1)	85 (3.1)	0 (0.0)	0 (0.0)
Quebec, Canada	13 (3.4)	87 (3.4)	0 (0.0)	0 (0.0)
Denmark (3)	8 (2.5)	81 (3.6)	9 (2.2)	1 (1.3)
Norway (4)	20 (3.3)	75 (3.4)	4 (1.3)	0 (0.2)
Moscow City, Russian Fed.	63 (3.9)	33 (3.8)	4 (1.8)	0 (0.0)
Eng/Afr/Zulu - RSA (5)	0 (0.0)	55 (5.9)	38 (5.7)	7 (2.7)
Andalusia, Spain	18 (2.8)	82 (2.7)	1 (0.6)	0 (0.0)
Madrid, Spain	28 (4.3)	72 (4.3)	0 (0.3)	0 (0.0)
Abu Dhabi, UAE	16 (2.6)	78 (3.2)	6 (2.4)	0 (0.0)
Dubai, UAE	29 (4.0)	63 (3.0)	8 (2.6)	0 (0.0)

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

Exhibit 8.2: Emphasis on Language and Reading Areas in Teachers' Formal Education

Students Categorized by Teachers' Reports

Country	Language			Pedagogy / Teaching Reading			Reading Theory		
	Percent of Students	Average Achievement		Percent of Students	Average Achievement		Percent of Students	Average Achievement	
	Area Emphasized	Area Emphasized	Area Not Emphasized	Area Emphasized	Area Emphasized	Area Not Emphasized	Area Emphasized	Area Emphasized	Area Not Emphasized
Australia	81 (2.8)	547 (3.1)	539 (6.7)	68 (3.2)	544 (3.1)	547 (4.8)	38 (3.1)	548 (4.0)	544 (3.5)
Austria	72 (3.1)	540 (2.9)	544 (4.3)	57 (3.4)	541 (3.4)	541 (3.2)	44 (3.2)	542 (3.5)	541 (3.0)
Azerbaijan	84 (2.4)	470 (5.0)	477 (9.2)	85 (2.8)	476 (4.0)	457 (17.5)	69 (3.3)	476 (5.0)	473 (7.6)
Bahrain	87 (2.4)	445 (2.9)	450 (11.8)	66 (4.2)	449 (3.5)	442 (7.2)	32 (3.8)	451 (6.0)	445 (3.5)
Belgium (Flemish)	77 (3.3)	526 (2.4)	523 (3.7)	63 (3.7)	525 (2.5)	525 (3.2)	43 (3.8)	529 (3.2)	523 (2.7)
Belgium (French)	76 (3.8)	496 (3.0)	505 (6.0)	57 (3.9)	501 (3.0)	494 (4.7)	25 (3.3)	498 (5.0)	498 (3.0)
Bulgaria	97 (1.1)	550 (4.3)	591 (16.0)	95 (1.7)	552 (4.4)	560 (12.6)	39 (3.8)	555 (6.4)	551 (6.3)
Canada	55 (2.3)	541 (2.3)	547 (2.3)	61 (2.2)	543 (2.3)	544 (2.7)	20 (1.8)	543 (3.9)	543 (2.1)
Chile	60 (4.6)	491 (4.2)	504 (4.8)	57 (4.8)	491 (4.4)	504 (5.4)	r 28 (4.3)	490 (6.9)	502 (3.6)
Chinese Taipei	22 (3.3)	556 (3.8)	560 (2.3)	48 (3.8)	560 (2.6)	558 (2.7)	14 (2.8)	555 (5.0)	559 (2.2)
Czech Republic	89 (2.0)	543 (2.2)	550 (6.0)	69 (3.2)	545 (2.3)	540 (3.9)	24 (2.2)	544 (3.9)	543 (2.3)
Denmark	77 (3.3)	548 (2.4)	545 (4.2)	57 (3.9)	547 (2.6)	548 (3.6)	42 (4.0)	548 (3.3)	548 (2.9)
Egypt	83 (3.6)	339 (6.5)	290 (18.4)	70 (4.1)	338 (7.5)	320 (11.2)	44 (4.5)	338 (11.0)	327 (8.2)
England	74 (3.5)	558 (2.3)	559 (4.1)	65 (3.5)	561 (2.8)	554 (4.2)	16 (2.6)	561 (7.7)	558 (2.5)
Finland	23 (2.9)	564 (3.3)	567 (2.1)	21 (2.5)	565 (3.0)	567 (2.2)	10 (2.1)	555 (5.1)	567 (2.1)
France	70 (3.6)	512 (2.6)	511 (4.8)	41 (3.8)	516 (3.9)	508 (2.5)	18 (3.3)	517 (6.7)	510 (2.3)
Georgia	73 (3.6)	491 (3.6)	489 (4.4)	82 (2.9)	488 (2.9)	498 (7.4)	58 (3.5)	486 (3.7)	497 (4.4)
Germany	60 (3.6)	542 (3.3)	530 (6.8)	44 (3.7)	537 (6.5)	538 (3.7)	24 (3.1)	540 (5.0)	537 (4.1)
Hong Kong SAR	79 (3.0)	571 (3.0)	559 (5.9)	58 (4.4)	572 (3.6)	564 (4.3)	14 (3.4)	568 (10.0)	570 (2.9)
Hungary	84 (2.8)	555 (3.1)	551 (10.8)	86 (3.0)	555 (3.3)	551 (11.2)	26 (3.5)	546 (5.6)	557 (3.9)
Iran, Islamic Rep. of	36 (3.1)	421 (7.8)	432 (5.4)	64 (3.4)	424 (5.9)	435 (6.0)	19 (3.2)	411 (9.9)	432 (5.0)
Ireland	69 (4.1)	568 (2.6)	563 (4.9)	76 (3.6)	567 (3.2)	565 (5.0)	36 (4.1)	565 (5.4)	567 (2.9)
Israel	66 (3.8)	519 (4.4)	551 (4.5)	68 (3.9)	529 (3.7)	530 (8.2)	42 (4.1)	520 (5.9)	538 (5.2)
Italy	33 (3.8)	554 (2.8)	546 (3.4)	30 (3.6)	548 (5.0)	549 (2.7)	13 (2.8)	553 (5.3)	548 (2.9)
Kazakhstan	60 (3.5)	543 (3.9)	528 (3.6)	74 (3.2)	539 (3.0)	531 (5.4)	56 (4.6)	540 (3.9)	533 (4.1)
Kuwait	81 (3.1)	396 (4.6)	388 (14.6)	r 64 (5.7)	395 (7.0)	399 (12.5)	r 32 (4.5)	383 (11.3)	401 (6.6)
Latvia	67 (3.6)	557 (2.1)	559 (3.9)	73 (3.6)	560 (2.1)	557 (4.1)	33 (3.6)	557 (3.3)	559 (2.4)
Lithuania	64 (3.7)	551 (3.2)	542 (5.1)	80 (3.1)	550 (3.0)	541 (6.9)	56 (4.2)	548 (3.7)	548 (4.2)
Macao SAR	53 (0.1)	554 (1.4)	535 (1.6)	38 (0.1)	561 (1.7)	536 (1.2)	9 (0.1)	548 (3.6)	545 (1.0)
Malta	71 (0.1)	453 (1.9)	449 (3.0)	80 (0.1)	454 (2.0)	444 (3.4)	28 (0.1)	460 (2.7)	449 (2.1)
Morocco	85 (2.4)	362 (4.4)	339 (13.1)	74 (3.3)	353 (5.9)	371 (9.6)	r 35 (3.4)	363 (7.7)	356 (6.3)
Netherlands	35 (4.4)	540 (3.9)	547 (2.3)	59 (4.0)	543 (2.8)	546 (2.5)	29 (3.4)	545 (5.0)	544 (2.0)
New Zealand	70 (2.9)	525 (2.7)	532 (4.8)	73 (2.6)	531 (2.9)	515 (6.3)	39 (3.1)	528 (4.2)	525 (4.2)
Northern Ireland	69 (3.8)	564 (2.9)	564 (4.8)	r 56 (5.0)	567 (3.6)	561 (3.7)	r 26 (4.3)	571 (5.9)	561 (2.8)
Norway (5)	57 (3.5)	560 (2.7)	558 (3.2)	47 (4.0)	562 (3.4)	556 (2.8)	12 (2.3)	560 (6.2)	559 (2.4)
Oman	86 (2.2)	419 (3.7)	417 (7.8)	75 (3.0)	423 (4.1)	406 (5.3)	32 (2.9)	420 (6.7)	419 (4.1)
Poland	94 (1.8)	565 (2.3)	564 (9.5)	50 (4.0)	561 (3.2)	569 (3.1)	30 (3.8)	557 (4.4)	568 (2.5)
Portugal	67 (3.4)	527 (2.7)	532 (5.0)	63 (3.6)	527 (2.9)	530 (4.9)	29 (3.2)	529 (4.4)	528 (3.1)
Qatar	90 (1.4)	439 (2.4)	465 (13.8)	75 (2.3)	446 (2.7)	435 (7.0)	37 (3.0)	436 (6.5)	447 (4.7)
Russian Federation	75 (3.1)	583 (2.7)	571 (4.9)	85 (2.2)	582 (2.5)	574 (6.4)	46 (3.9)	579 (4.3)	582 (3.2)
Saudi Arabia	72 (3.5)	438 (5.1)	420 (9.1)	r 70 (4.1)	434 (6.2)	433 (9.2)	s 32 (4.7)	434 (9.2)	433 (7.8)
Singapore	83 (2.2)	578 (3.4)	567 (8.5)	80 (2.0)	580 (3.4)	560 (7.5)	28 (2.4)	591 (5.8)	571 (3.8)
Slovak Republic	93 (1.7)	535 (3.1)	532 (13.3)	76 (2.6)	536 (3.1)	532 (8.4)	36 (3.3)	535 (4.5)	535 (4.2)
Slovenia	59 (4.0)	544 (2.3)	540 (3.6)	24 (3.0)	543 (2.8)	542 (2.4)	6 (2.1)	544 (5.1)	542 (2.1)
South Africa	r 71 (3.7)	328 (6.7)	313 (10.2)	s 58 (4.1)	320 (7.8)	330 (9.7)	s 36 (4.1)	313 (6.3)	330 (8.7)
Spain	82 (2.5)	529 (2.0)	526 (4.9)	58 (3.4)	531 (2.0)	523 (3.4)	15 (2.2)	538 (3.3)	526 (2.1)
Sweden	82 (3.0)	555 (2.6)	559 (5.8)	56 (4.1)	556 (3.2)	555 (3.5)	46 (4.6)	556 (3.8)	555 (3.1)
Trinidad and Tobago	77 (3.1)	484 (4.3)	464 (6.5)	72 (3.7)	478 (4.7)	480 (7.7)	49 (4.3)	477 (5.1)	480 (6.6)
United Arab Emirates	85 (1.8)	450 (3.8)	470 (9.3)	69 (2.5)	454 (4.6)	457 (6.9)	43 (2.7)	456 (6.4)	454 (5.5)
United States	45 (3.7)	552 (4.9)	548 (4.1)	76 (3.0)	550 (3.5)	548 (7.2)	39 (3.4)	558 (4.1)	545 (4.3)
International Avg.	70 (0.4)	512 (0.5)	510 (1.1)	64 (0.5)	512 (0.6)	509 (0.9)	32 (0.5)	511 (0.8)	511 (0.6)

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

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Exhibit 8.2: Emphasis on Language and Reading Areas in Teachers' Formal Education (Continued)

Country	Language			Pedagogy / Teaching Reading			Reading Theory			
	Percent of Students	Average Achievement		Percent of Students	Average Achievement		Percent of Students	Average Achievement		
	Area Emphasized	Area Emphasized	Area Not Emphasized	Area Emphasized	Area Emphasized	Area Not Emphasized	Area Emphasized	Area Emphasized	Area Not Emphasized	
Benchmarking Participants										
Buenos Aires, Argentina	r 43 (4.4)	488 (6.0)	477 (4.9)	61 (4.3)	481 (4.8)	482 (6.4)	r 31 (4.0)	482 (5.4)	483 (4.7)	
Ontario, Canada	51 (4.4)	545 (4.3)	545 (4.4)	63 (4.0)	545 (4.1)	542 (4.0)	19 (3.3)	539 (6.4)	544 (3.7)	
Quebec, Canada	74 (4.5)	546 (2.9)	549 (6.2)	68 (4.5)	545 (3.1)	550 (5.8)	18 (4.0)	543 (7.6)	547 (3.2)	
Denmark (3)	78 (3.2)	503 (3.2)	498 (5.4)	66 (3.5)	503 (3.7)	497 (4.6)	52 (4.4)	504 (4.0)	498 (3.8)	
Norway (4)	45 (3.7)	516 (3.1)	518 (2.5)	46 (3.5)	515 (2.8)	519 (2.5)	13 (2.4)	510 (7.3)	518 (2.0)	
Moscow City, Russian Fed.	69 (3.6)	615 (2.6)	606 (3.7)	85 (3.0)	614 (2.5)	605 (4.9)	39 (3.7)	615 (3.6)	610 (2.6)	
Eng/Afr/Zulu - RSA (5)	s 77 (4.8)	423 (8.4)	403 (14.8)	s 61 (6.5)	406 (11.9)	440 (14.9)	s 40 (6.3)	387 (11.3)	440 (11.0)	
Andalusia, Spain	84 (2.8)	526 (1.9)	515 (7.3)	59 (4.3)	527 (2.7)	521 (3.8)	17 (2.9)	534 (3.2)	522 (2.5)	
Madrid, Spain	81 (3.0)	548 (2.3)	552 (3.8)	66 (3.8)	548 (2.4)	551 (3.0)	24 (3.4)	550 (5.3)	549 (2.1)	
Abu Dhabi, UAE	87 (2.6)	412 (5.3)	446 (15.3)	69 (4.2)	415 (6.6)	423 (11.2)	36 (4.6)	412 (9.9)	420 (7.4)	
Dubai, UAE	85 (1.9)	515 (2.5)	527 (6.0)	64 (2.0)	520 (2.6)	515 (4.7)	37 (3.3)	520 (4.6)	515 (3.6)	

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