

CHAPTER 9

Sample Implementation in TIMSS 2019

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Overview

Rigorous sampling of schools and students was a key component of the TIMSS 2019 project. Implementing the sampling plan was the responsibility of the National Research Coordinator (NRC) in each participating country. NRCs were supported in this endeavor by the TIMSS 2019 sampling consultants, Statistics Canada, and the Sampling Unit of IEA Hamburg. Sampling consultants conducted the school sampling for most countries and trained NRCs in using the Windows® Within-School Sampling Software (WinW3S) provided by IEA Hamburg to implement within-school sampling. As an essential part of their sampling activities, NRCs were responsible for providing detailed documentation describing their national sampling plans (sampling data, school sampling frames, and school sample selections). The documentation for each TIMSS participant was reviewed and completed by the sampling consultants, including detailed information on coverage and exclusion levels, stratification variables, sampling participation rates, and variance estimates. The TIMSS & PIRLS International Study Center and the TIMSS 2019 Sampling Referee, Dr. Keith Rust of Westat, Inc., used this information to evaluate the quality of the samples. TIMSS 2019 marked the beginning of the TIMSS transition to computer based assessment, with countries having the option of administering the new computer-based version of the 2019 assessment, known as eTIMSS, or the paper-and-pencil version as in previous assessment cycles (paperTIMSS). In order to control for mode effects while linking the two versions to the TIMSS achievement scales and to safeguard the measurement of trends from previous assessments, eTIMSS countries also provided a separate sample of bridge data (see [Chapter 3](#) of this volume).

This chapter gives a summary of the major characteristics of the national samples for TIMSS 2019, followed by a summary of the major characteristics of the bridge samples for trend countries that participated in eTIMSS. More detailed descriptions of the sample design for each country, including details of population coverage and exclusions, stratification variables, and schools' sampling allocations, are provided in Appendix 9A: Characteristics of National Samples.

Target Population

As described in [Chapter 3](#) (Sample Design), the international target populations for the TIMSS 2019 fourth and eighth grade assessments were defined as the grades that represented 4 and 8 years of formal schooling, respectively, counting from the first year of primary or elementary schooling. Countries could assess either one or both student populations. In addition, at the fourth grade for the TIMSS 2019 cycle, countries could administer a less difficult mathematics assessment, consisting of one third of the items from the regular assessment and two-thirds less difficult items, along with the regular fourth grade science assessment.

Albania, Bosnia and Herzegovina, Kosovo, Kuwait, Morocco, North Macedonia, Montenegro, Pakistan, Philippines, and Saudi Arabia chose to administer the less difficult mathematics assessment at the fourth grade while South Africa administered the less difficult mathematics assessment at the fifth grade.

Exhibits 9.1 and 9.2 present the grades identified as the target grades for sampling by each country, and include the number of years of formal schooling that the grades represent and the average age of students in the target grades at the time of testing.

For most countries, the target grades did indeed turn out to be the grades with 4 and 8 years of schooling, i.e., fourth and eighth grades, respectively. However, in England and New Zealand, children begin primary school at an early age.¹ Therefore, these countries administered the TIMSS fourth grade assessment in the fifth year of schooling. The TIMSS eighth grade assessment for England and New Zealand was administered in the ninth year of schooling. Norway chose to assess its fifth and ninth grades to obtain better comparisons with Sweden and Finland.

To provide a better match with the demands of the assessments, South Africa and Turkey availed themselves of the option to assess students at a higher grade. South Africa administered the TIMSS fourth grade with less difficult mathematics assessment at the fifth grade and Turkey administered the TIMSS fourth grade assessment at the fifth grade. South Africa administered the eighth grade assessment at the ninth grade, as did its benchmarking provinces of Gauteng and Western Cape.

Exhibit 9.1: National Grade Definition – TIMSS 2019 – Fourth Grade

Country	Country's Name for Grade Tested	Years of Formal Schooling	Average Age at Time of Testing
Albania	Grade 4	4	10.0
Armenia	Grade 4	4	9.9
Australia	Year 4	4	10.1
Austria	Grade 4	4	10.4

¹ Given the cognitive demands of the assessments, TIMSS wants to avoid assessing very young students. Thus, TIMSS recommends assessing the next higher grade (i.e., fifth grade for fourth grade TIMSS and ninth grade for eighth grade TIMSS) if, for fourth grade students, the average age at the time of testing would be less than 9.5 years and, for eighth grade students, less than 13.5 years.

Exhibit 9.1: National Grade Definition – TIMSS 2019 – Fourth Grade (continued)

Country	Country's Name for Grade Tested	Years of Formal Schooling	Average Age at Time of Testing
Azerbaijan	Grade 4	4	10.3
Bahrain	Grade 4	4	9.8
Belgium (Flemish)	Grade 4	4	10.0
Bosnia and Herzegovina	Grade 4	4	10.1
Bulgaria	Grade 4	4	10.7
Canada	Grade 4	4	9.9
Chile	Basic 4	4	10.1
Chinese Taipei	Grade 4	4	10.2
Croatia	Grade 4	4	10.5
Cyprus	Grade 4	4	9.8
Czech Republic	Grade 4	4	10.4
Denmark	Grade 4	4	10.9
England	Year 5	5	10.2
Finland	Grade 4	4	10.8
France	CM1	4	9.9
Georgia	Grade 4	4	10.1
Germany	Grade 4	4	10.4
Hong Kong SAR	Primary 4	4	10.1
Hungary	Grade 4	4	10.5
Iran, Islamic Rep. of	Grade 4	4	10.2
Ireland	Fourth Class	4	10.4
Italy	Primary Grade 4	4	9.6
Japan	Grade 4	4	10.4
Kazakhstan	Grade 4	4	10.4
Korea, Rep. of	Elementary School Grade 4	4	10.5
Kosovo	Grade 4	4	9.9
Kuwait	Grade 4	4	9.7
Latvia	Grade 4	4	10.8
Lithuania	Grade 4	4	10.7
Malta	Year 5	4	9.8
Montenegro	Grade 4	4	9.8
Morocco	Grade 4	4	10.1
Netherlands	Group 6	4	10.1
New Zealand	Year 5	4.5 - 5.5	10.0
North Macedonia	Grade 4	4	9.8

Exhibit 9.1: National Grade Definition – TIMSS 2019 – Fourth Grade (continued)

Country	Country's Name for Grade Tested	Years of Formal Schooling	Average Age at Time of Testing
Northern Ireland	Year 6	4	10.4
Norway (5)	Grade 5	5	10.7
Oman	Grade 4	4	9.7
Pakistan	Grade 4	4	10.6
Philippines	Grade 4	4	10.1
Poland	Primary 4	4	10.3
Portugal	Grade 4	4	10.0
Qatar	Grade 4	4	9.9
Russian Federation	Grade 4	4	10.8
Saudi Arabia	Grade 4	4	9.9
Serbia	Grade 4	4	10.6
Singapore	Primary 4	4	10.4
Slovak Republic	Grade 4	4	10.4
South Africa (5)	Grade 5	5	11.5
Spain	Grade 4	4	9.9
Sweden	Grade 4	4	10.8
Turkey (5)	Grade 4	5	10.6
United Arab Emirates	Grade 4	4	9.7
United States	Grade 4	4	10.2
Benchmarking Participants			
Ontario, Canada	Grade 4	4	9.8
Quebec, Canada	Grade 4	4	10.1
Moscow City, Russian Fed.	Grade 4	4	10.8
Madrid, Spain	Grade 4	4	9.9
Abu Dhabi, UAE	Grade 4	4	9.7
Dubai, UAE	Grade 4	4	9.9

Exhibit 9.2: National Grade Definition – TIMSS 2019 – Eighth Grade

Country	Country's Name for Grade Tested	Years of Formal Schooling	Average Age at Time of Testing
Australia	Year 8	8	14.1
Bahrain	Intermediate 2	8	13.8
Chile	Grade 8	8	14.2
Chinese Taipei	Grade 8	8	14.3
Cyprus	Grade 8	8	13.8
Egypt	Grade 8	8	13.9
England	Year 9	9	14.0
Finland	Grade 8	8	14.8
France	Quatrième	8	13.9
Georgia	Grade 8	8	13.8
Hong Kong SAR	Secondary 2	8	14.1
Hungary	Grade 8	8	14.6
Iran, Islamic Rep. of	Grade 8	8	14.1
Ireland	Second Year	8	14.4
Israel	Grade 8	8	14.0
Italy	Lower Secondary Grade 3	8	13.7
Japan	Lower Secondary Grade 2	8	14.4
Jordan	Grade 8	8	13.9
Kazakhstan	Grade 8	8	14.3
Korea, Rep. of	Middle School Grade 2	8	14.5
Kuwait	Grade 8	8	13.8
Lebanon	Grade 8	8	14.0
Lithuania	Grade 8	8	14.7
Malaysia	Form 2	8	14.3
Morocco	Middle School Year 2	8	14.5
New Zealand	Year 9	8.5 - 9.5	13.9
Norway (9)	Grade 9	9	14.7
Oman	Grade 8	8	13.9
Portugal	Grade 8	8	14.0
Qatar	Grade 8	8	14.0
Romania	Grade 8	8	14.8
Russian Federation	Grade 8	8	14.8
Saudi Arabia	Grade 8	8	13.9
Singapore	Secondary 2	8	14.3

Exhibit 9.2: National Grade Definition – TIMSS 2019 – Eighth Grade (continued)

Country	Country's Name for Grade Tested	Years of Formal Schooling	Average Age at Time of Testing
South Africa (9)	Grade 9	9	15.5
Sweden	Grade 8	8	14.8
Turkey	Secondary 4	8	13.9
United Arab Emirates	Grade 8	8	13.7
United States	Grade 8	8	14.2
Benchmarking Participants			
Ontario, Canada	Grade 8	8	13.8
Quebec, Canada	Secondary 2	8	14.2
Moscow City, Russian Fed.	Grade 8	8	14.8
Gauteng, RSA (9)	Grade 9	9	15.3
Western Cape, RSA (9)	Grade 9	9	15.5
Abu Dhabi, UAE	Grade 8	8	13.7
Dubai, UAE	Grade 8	8	13.9

National Coverage and Exclusions of the TIMSS 2019 National Samples

Exhibits 9.3 and 9.4 summarize population coverage and exclusions for the TIMSS 2019 target populations.

Coverage

National coverage of the international target population was generally comprehensive, with some exceptions. At the fourth grade, these exceptions included Canada (assessed students only from the provinces of Alberta, Manitoba, Newfoundland, Ontario and Quebec) and Georgia (assessed only students taught in Georgian). These participants chose a national target population that was less than the international target population. At the eighth grade, all countries except Georgia (assessed only students taught in Georgian) sampled from 100 percent of their international desired population. For the exceptions where coverage was below 100 percent, the results were footnoted in the TIMSS 2019 international reports.

School-Level and Student-Level Exclusions

Within the national target population, it was possible to exclude certain types of schools and students. For the most part, school-level exclusions consisted of schools for students with disabilities and very small or remote schools. Occasionally, schools were excluded for other reasons, as documented in Appendix 9A: Characteristics of National Samples.

Student-level, or within-school, exclusions generally consisted of students with disabilities or students who could not be assessed in the language of the test. For most participants, the overall percentage of excluded students (combining school and within-school levels) was 5 percent or less after rounding. However, at the fourth grade, Canada, England, Kazakhstan, Kosovo, Latvia, Lithuania, New Zealand, Pakistan, Philippines, Portugal, Russian Federation, Saudi Arabia, Serbia, Slovak Republic, Turkey (5), United States, and the benchmarking participants Ontario and Dubai had exclusions accounting for between 5 and 10 percent of the desired population after rounding, and Singapore had exclusions exceeding 10 percent. At the eighth grade, Egypt, Kazakhstan, Russian Federation, Saudi Arabia, Singapore, Sweden, and the benchmarking participant Dubai had exclusions accounting for between 5 and 10 percent of the national target population after rounding. Israel had exclusions exceeding 10 percent.

Results for participants with an exclusion rate of more than 5 percent after rounding were annotated in the international reports.

Exhibit 9.3: Coverage of TIMSS 2019 – Fourth Grade Target Population

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
Albania	100%		2.6%	1.6%	4.2%
Armenia	100%		0.9%	0.4%	1.2%
Australia	100%		1.9%	2.9%	4.8%
Austria	100%		0.9%	4.5%	5.4%
Azerbaijan	100%		2.3%	0.3%	2.6%
Bahrain	100%		0.4%	0.4%	0.8%
Belgium (Flemish)	100%		0.8%	2.2%	3.0%
Bosnia and Herzegovina	100%		0.6%	1.4%	2.0%
Bulgaria	100%		0.8%	2.6%	3.4%
¹² Canada	79%	Students from the provinces of Alberta, Manitoba, Newfoundland, Ontario, and Quebec	3.1%	3.9%	7.0%

Exhibit 9.3: Coverage of TIMSS 2019 – Fourth Grade Target Population (continued)

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
Chile	100%		1.2%	2.6%	3.8%
Chinese Taipei	100%		0.3%	1.6%	2.0%
Croatia	100%		1.1%	3.1%	4.2%
Cyprus	100%		1.1%	3.4%	4.6%
Czech Republic	100%		2.5%	2.2%	4.7%
Denmark	100%		1.6%	1.5%	3.1%
² England	100%		2.2%	3.6%	5.8%
Finland	100%		1.8%	1.5%	3.3%
France	100%		2.5%	1.9%	4.4%
¹ Georgia	92%	Students taught in Georgian	2.8%	1.8%	4.7%
Germany	100%		1.7%	2.2%	3.9%
Hong Kong SAR	100%		1.1%	2.4%	3.5%
Hungary	100%		2.1%	2.0%	4.1%
Iran, Islamic Rep. of	100%		3.0%	1.2%	4.2%
Ireland	100%		1.9%	1.1%	3.0%
Italy	100%		0.9%	4.1%	4.9%
Japan	100%		0.6%	1.5%	2.2%
² Kazakhstan	100%		2.7%	3.0%	5.8%
Korea, Rep. of	100%		0.9%	1.5%	2.3%
² Kosovo	100%		5.3%	3.3%	8.6%
Kuwait	100%		1.0%	0.7%	1.7%
² Latvia	100%		3.9%	3.0%	6.9%
² Lithuania	100%		2.6%	4.1%	6.7%
Malta	100%		1.4%	3.1%	4.5%
Montenegro	100%		1.3%	3.3%	4.6%
Morocco	100%		1.8%	0.0%	1.8%
Netherlands	100%		2.6%	0.9%	3.5%
² New Zealand	100%		2.6%	4.2%	6.9%
North Macedonia	100%		1.2%	2.5%	3.8%
Northern Ireland	100%		2.2%	0.6%	2.8%
Norway (5)	100%		1.4%	3.3%	4.7%
Oman	100%		1.4%	0.8%	2.2%
² Pakistan	100%		7.5%	0.0%	7.5%

Exhibit 9.3: Coverage of TIMSS 2019 – Fourth Grade Target Population (continued)

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
² Philippines	100%		6.1%	1.6%	7.7%
Poland	100%		1.1%	2.0%	3.1%
² Portugal	100%		0.9%	6.9%	7.8%
Qatar	100%		1.2%	1.0%	2.2%
² Russian Federation	100%		2.4%	3.9%	6.3%
² Saudi Arabia	100%		10.1%	0.4%	10.5%
² Serbia	100%		4.0%	4.2%	8.2%
³ Singapore	100%		12.5%	0.4%	12.8%
² Slovak Republic	100%		3.6%	1.9%	5.5%
South Africa (5)	100%		1.1%	0.0%	1.1%
Spain	100%		1.6%	3.8%	5.4%
Sweden	100%		1.6%	3.8%	5.4%
² Turkey (5)	100%		1.0%	5.9%	7.0%
United Arab Emirates	100%		1.1%	2.0%	3.2%
² United States	100%		0.0%	7.2%	7.2%
Benchmarking Participants					
² Ontario, Canada	100%		2.3%	4.7%	7.0%
Quebec, Canada	100%		3.3%	1.2%	4.4%
Moscow City, Russian Fed.	100%		0.7%	1.4%	2.1%
Madrid, Spain	100%		0.5%	3.1%	3.6%
Abu Dhabi, UAE	100%		1.1%	2.5%	3.6%
² Dubai, UAE	100%		2.6%	3.0%	5.6%

1 National Target Population does not include all of the International Target Population.

2 National Defined Population covers 90% to 95% of National Target Population.

3 National Defined Population covers less than 90% of National Target Population (but at least 77%).

Exhibit 9.4: Coverage of TIMSS 2019 – Eighth Grade Target Population

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
Australia	100%		1.7%	2.1%	3.8%
Bahrain	100%		0.3%	0.2%	0.6%
Chile	100%		0.3%	1.9%	2.2%
Chinese Taipei	100%		0.1%	1.3%	1.5%
Cyprus	100%		0.5%	2.3%	2.8%
² Egypt	100%		7.6%	1.5%	9.1%
England	100%		2.9%	2.0%	4.8%
Finland	100%		1.5%	1.5%	3.1%
France	100%		2.8%	1.0%	3.8%
¹ Georgia	91%	Students taught in Georgian	2.2%	2.1%	4.3%
Hong Kong SAR	100%		1.2%	2.1%	3.3%
Hungary	100%		2.5%	1.9%	4.4%
Iran, Islamic Rep. of	100%		0.4%	0.5%	0.9%
Ireland	100%		0.0%	0.9%	1.0%
³ Israel	100%		19.5%	3.8%	23.2%
Italy	100%		0.8%	3.6%	4.3%
Japan	100%		0.9%	1.0%	1.8%
Jordan	100%		0.0%	0.2%	0.2%
² Kazakhstan	100%		2.9%	2.9%	5.8%
Korea, Rep. of	100%		0.7%	0.9%	1.6%
Kuwait	100%		1.0%	1.0%	2.0%
Lebanon	100%		1.2%	0.0%	1.2%
Lithuania	100%		3.2%	2.0%	5.3%
Malaysia	100%		1.9%	1.3%	3.2%
Morocco	100%		0.0%	0.0%	0.0%
New Zealand	100%		1.5%	2.7%	4.2%
Norway (9)	100%		1.4%	2.5%	4.0%
Oman	100%		0.5%	1.6%	2.2%
Portugal	100%		1.0%	4.5%	5.5%
Qatar	100%		1.3%	0.9%	2.2%
Romania	100%		2.7%	0.5%	3.2%
² Russian Federation	100%		2.8%	2.9%	5.7%
² Saudi Arabia	100%		9.1%	0.9%	10.0%

Exhibit 9.4: Coverage of TIMSS 2019 – Eighth Grade Target Population (continued)

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
² Singapore	100%		10.1%	0.2%	10.3%
South Africa (9)	100%		1.0%	0.1%	1.1%
² Sweden	100%		1.7%	4.6%	6.3%
Turkey	100%		1.1%	2.4%	3.4%
United Arab Emirates	100%		1.1%	1.3%	2.4%
United States	100%		0.0%	3.9%	3.9%
Benchmarking Participants					
Ontario, Canada	100%		2.1%	3.4%	5.5%
Quebec, Canada	100%		3.3%	0.9%	4.2%
Moscow City, Russian Fed.	100%		0.7%	0.8%	1.5%
Gauteng, RSA (9)	100%		1.8%	0.2%	2.1%
Western Cape, RSA (9)	100%		0.8%	0.3%	1.1%
Abu Dhabi, UAE	100%		0.9%	0.8%	1.7%
² Dubai, UAE	100%		3.0%	2.5%	5.5%

- 1 National Target Population does not include all of the International Target Population.
- 2 National Defined Population covers 90% to 95% of National Target Population.
- 3 National Defined Population covers less than 90% of National Target Population (but at least 77%).

Target Population Size of the TIMSS 2019 National Samples

Exhibits 9.5 and 9.6 show the number of schools and students in each participant’s target population² and sample, as well as an estimate of the student population size based on the sample data. The target population figures are derived from the sampling frame used to select the TIMSS 2019 samples, while the sample figures are based on the number of sampled schools and students that participated in the assessments. The student population sizes estimated from the sample were computed using sampling weights, which are explained in more detail in [Chapter 3](#). The student population size based on the sampling frame did not take into account the portion of the population excluded within sampled schools and made no adjustment for changes in the population between the date when the information in the sampling frame was collected and the date of the TIMSS 2019 data collection—usually a 2-year interval. Nevertheless, a comparison of the two figures of population size can be seen as a validity check on the sampling procedure. In most cases, the population size estimated from the sample closely matched the population size from the sampling frame.

2 After school-level exclusions.

Exhibit 9.5: Population and Sample Sizes – TIMSS 2019 – Fourth Grade

Country	Population		Sample		
	Schools	Students	Schools	Students	Student Population Size Estimated from Sample
Albania	1,604	33,144	167	4,426	31,609
Armenia	1,028	34,115	150	5,399	36,754
Australia	6,628	301,426	287	5,890	311,753
Austria	3,095	81,406	193	4,464	82,158
Azerbaijan	3,689	145,451	194	5,245	150,309
Bahrain	185	19,466	185	5,762	19,169
Belgium (Flemish)	2,401	78,062	147	4,655	77,006
Bosnia and Herzegovina	587	31,373	178	5,628	29,086
Bulgaria	1,679	63,094	151	4,268	64,338
Canada	9,796	304,798	704	13,653	306,137
Chile	6,081	252,190	169	4,174	250,230
Chinese Taipei	2,476	190,975	162	3,765	188,886
Croatia	1,571	39,244	153	3,785	39,860
Cyprus	289	9,119	151	4,062	9,453
Czech Republic	3,578	114,774	152	4,692	113,904
Denmark	1,644	66,225	166	3,227	66,950
England	15,349	644,127	139	3,396	667,451
Finland	1,840	59,755	158	4,730	59,198
France	31,716	822,438	155	4,186	827,474
Georgia	1,678	42,980	154	3,787	40,185
Germany	17,584	716,091	203	3,437	725,273
Hong Kong SAR	564	60,786	139	2,968	60,761
Hungary	2,888	94,673	149	4,571	89,198
Iran, Islamic Rep. of	38,645	1,334,250	224	6,010	1,261,874
Ireland	2,833	66,818	150	4,582	70,566
Italy	6,809	556,298	162	3,741	549,275
Japan	18,463	1,052,355	147	4,196	1,057,008
Kazakhstan	5,917	289,367	168	4,791	298,341
Korea, Rep. of	5,478	472,130	151	3,893	453,918
Kosovo	620	24,767	145	4,496	24,507
Kuwait	392	53,341	164	4,437	51,932
Latvia	608	20,799	154	4,481	20,657
Lithuania	827	28,035	207	3,741	28,383
Malta	98	4,429	98	3,630	4,461

Exhibit 9.5: Population and Sample Sizes – TIMSS 2019 – Fourth Grade (continued)

Country	Population		Sample		
	Schools	Students	Schools	Students	Student Population Size Estimated from Sample
Montenegro	140	8,034	140	5,076	7,994
Morocco	19,360	672,418	264	7,723	674,824
Netherlands	6,291	178,200	112	3,355	181,849
New Zealand	1,799	63,894	160	5,019	62,839
North Macedonia	326	20,149	150	3,270	19,595
Northern Ireland	771	24,818	134	3,497	25,017
Norway (5)	1,945	62,012	150	3,951	63,745
Oman	736	62,728	228	6,814	63,698
Pakistan	164,364	3,096,192	139	3,980	2,929,483
Philippines	37,092	2,301,861	180	5,515	1,933,761
Poland	12,218	500,265	149	4,882	489,880
Portugal	1,245	99,927	181	4,300	96,042
Qatar	247	25,506	242	4,933	24,518
Russian Federation	40,575	1,414,240	200	4,022	1,602,928
Saudi Arabia	11,216	457,552	220	5,453	455,724
Serbia	2,338	65,777	165	4,380	61,627
Singapore	187	39,934	187	5,986	40,099
Slovak Republic	2,000	52,222	157	4,247	51,506
South Africa (5)	16,254	943,115	297	11,891	1,009,289
Spain	12,861	489,765	501	9,555	493,083
Sweden	3,276	114,494	145	3,965	114,323
Turkey (5)	16,205	1,239,900	180	4,028	1,195,922
United Arab Emirates	754	85,609	688	25,834	85,132
United States	72,902	4,153,454	287	8,776	4,056,773
Benchmarking Participants					
Ontario, Canada	3,683	147,295	163	3,830	147,661
Quebec, Canada	1,764	85,132	148	3,837	88,299
Moscow City, Russian Fed.	695	92,630	150	3,843	102,549
Madrid, Spain	1,343	70,232	167	3,390	72,588
Abu Dhabi, UAE	285	29,938	247	9,037	29,215
Dubai, UAE	184	22,567	199	7,265	23,893

Exhibit 9.6: Population and Sample Sizes – TIMSS 2019 – Eighth Grade

Country	Population		Sample		
	Schools	Students	Schools	Students	Student Population Size Estimated from Sample
Australia	2,471	271,871	284	9,060	282,176
Bahrain	112	17,550	112	5,725	17,204
Chile	5,767	246,120	164	4,115	238,684
Chinese Taipei	931	214,516	203	4,915	205,439
Cyprus	98	8,901	98	3,521	8,856
Egypt	11,061	1,704,928	169	7,210	1,471,594
England	3,706	584,697	136	3,365	591,308
Finland	693	57,591	154	4,874	56,237
France	6,977	814,850	150	3,874	813,845
Georgia	1,837	45,339	145	3,315	44,727
Hong Kong SAR	478	54,160	136	3,265	55,130
Hungary	2,724	87,805	154	4,569	89,223
Iran, Islamic Rep. of	23,895	1,095,026	220	5,980	1,075,783
Ireland	704	65,084	149	4,118	65,561
Israel	979	106,971	157	3,731	108,119
Italy	5,775	566,636	158	3,619	553,839
Japan	10,138	1,098,159	142	4,446	1,094,387
Jordan	2,705	147,483	235	7,176	144,949
Kazakhstan	5,701	225,638	168	4,453	238,290
Korea, Rep. of	3,006	465,626	168	3,861	444,287
Kuwait	348	41,058	171	4,574	46,254
Lebanon	1,746	68,077	204	4,730	65,930
Lithuania	706	25,394	194	3,826	25,427
Malaysia	2,565	423,150	177	7,065	412,165
Morocco	3,469	506,427	251	8,458	479,968
New Zealand	523	58,683	134	6,051	59,650
Norway (9)	1,012	60,847	157	4,575	62,287
Oman	784	54,282	228	6,751	54,066
Portugal	1,039	108,807	156	3,377	106,814
Qatar	156	19,513	152	3,884	18,715
Romania	5,697	182,020	198	4,494	183,845
Russian Federation	37,308	1,326,933	204	3,901	1,392,266
Saudi Arabia	7,248	397,795	209	5,680	390,646
Singapore	153	38,517	153	4,853	38,595

Exhibit 9.6: Population and Sample Sizes – TIMSS 2019 – Eighth Grade (continued)

Country	Population		Sample		
	Schools	Students	Schools	Students	Student Population Size Estimated from Sample
South Africa (9)	8,340	887,952	519	20,829	877,201
Sweden	1,600	108,164	150	3,996	110,810
Turkey	16,179	1,204,063	181	4,077	1,158,547
United Arab Emirates	685	68,113	623	22,334	68,388
United States	48,557	4,059,757	273	8,698	3,799,856
Benchmarking Participants					
Ontario, Canada	2,896	143,484	158	3,776	140,990
Quebec, Canada	539	80,005	124	3,178	75,411
Moscow City, Russian Fed.	704	85,856	150	3,783	92,180
Gauteng, RSA (9)	988	167,128	150	5,633	170,315
Western Cape, RSA (9)	498	75,596	149	5,351	77,855
Abu Dhabi, UAE	266	24,654	230	8,204	23,805
Dubai, UAE	153	17,560	163	5,728	18,752

Stratification

TIMSS 2019 National Research Coordinators consulted with Statistics Canada and IEA Hamburg to identify the stratification variables to be included in their sampling plans. Exhibits 9.7 and 9.8 provide the list of explicit and implicit stratification variables implemented by the countries participating at the fourth grade at the eighth grade respectively.

Exhibit 9.7: Stratification Variables – TIMSS 2019 – Fourth Grade

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Albania	School type (2) Urbanization (2)	3	Urbanization (2)
Armenia	Region (10)	10	None
Australia	State or territory (8)	8	School type (3) Geographic location (3) Socioeconomic status (2)
Austria	Urbanization (2) Achievement (3) School size (2)	12	Region (9)

Exhibit 9.7: Stratification Variables – TIMSS 2019 – Fourth Grade (continued)

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Azerbaijan	Language (2) Urbanization (2) City (2)	4	None
Bahrain	School type (2) Governorate (4) Gender (2)	9	None
Belgium (Flemish)	Region (6) School type (2) Socioeconomic status (4)	20	None
Bosnia and Herzegovina	Region (12) Urbanization (2)	8	Urbanization (2)
Bulgaria	School type (3) Urbanization (3)	8	Score (3)
Canada	Province (5) Language (2) School type (2 or 3) School size (2)	25	Region (6)
Chile	Grade 4 / grade 4 and 8 schools (2) School type (3) Urbanization (2)	7	National assessment score level (4)
Chinese Taipei	Urbanization (4) Region (2) School size (2)	11	None
Croatia	Region (6) School type (2) School size (2)	13	Urbanization (2)
Cyprus	School type (2) Curriculum (2) District (4)	5	Urbanization (2)
Czech Republic	Region (14)	15	None
Denmark	School type (2) School size (2)	3	None
England	School type (3) Attainment level (5)	9	Attainment level (7)
Finland	Language (2) Major region (4) Urbanization (2)	8	Regional state administrative agency (6)
France	School type (3)	3	None
Georgia	Grade 4 only / grade 4 and 8 schools (2) Region (2) Math average score (3)	6	Urbanization (2) School type (2)

Exhibit 9.7: Stratification Variables – TIMSS 2019 – Fourth Grade (continued)

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Germany	School type (2) Socioeconomic status (3) school size (2)	8	None
Hong Kong SAR	School finance type (5)	5	None
Hungary	Grade 4 only / grade 4 and 8 schools (2) Type of community (4) National assessment score (3)	11	None
Iran, Islamic Rep. of	School type (2) Gender (3) Province or grouped provinces (7)	16	None
Ireland	School level socioeconomic status DEIS (3) Language of instruction (3) Gender (3)	8	Location (2)
Italy	Grade 4 only / grade 4 and 8 schools (2) School type (2) Region (5)	8	Region (5)
Japan	School location (4)	4	None
Kazakhstan	Grade 4 only / grade 4 and 8 schools (2) Region (4) Urbanization (2) Language (2)	18	None
Korea, Rep. of	Urbanization (3) School size (2)	8	None
Kosovo	Urbanization (2) Shifts (2)	4	None
Kuwait	Grade 4 only / grade 4 and 8 schools (2) School type (2) Region (6) Gender (2) Language (3)	15	None
Latvia	Urbanization (3) Language (2) School type (2)	7	None
Lithuania	Grade 4 / grade 4 and 8 schools (2) Languages (5)	6	Urbanization (4) School type (4)
Malta	School type (3)	3	None
Montenegro	Region (3)	3	Urbanization (2)

Exhibit 9.7: Stratification Variables – TIMSS 2019 – Fourth Grade (continued)

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Morocco	School type (2) Region (12)	14	Urbanization (2)
Netherlands	Socioeconomic status (3)	3	None
New Zealand	None	1	School type (2) Socioeconomic status (4) Urbanization (2)
North Macedonia	Urbanization (3) Language (3)	8	None
Northern Ireland	Region (5) Deprivation group (9)	14	None
Norway (5)	Grade 5 only / grade 5 and 9 schools (2) City (2) Municipality size (3)	8	National numeracy test score (4)
Oman	Governorates (11) School type (2)	13	None
Pakistan	School type (2) Region (5)	6	Region (7) Urbanization (2) Gender (2)
Philippines	School type (2) Socioeconomic index (3) Geographic location (2) Unknown (1)	10	None
Poland	Urbanization (4)	4	None
Portugal	School type (2) Region (8) School size (2)	10	NUTS 3 region (25) NUTS 2 region (8)
Qatar	Grade 4 only / grade 4 and 8 (2) Gender (3)	4	Gender (3) School type (4)
Russian Federation	Region (43)	43	None
Saudi Arabia	School type (3) Gender (2)	6	None
Serbia	Region (3) Urbanization (2) School hierarchy (2)	7	None
Singapore	None	1	None
Slovak Republic	Language (2) National testing score (4) School size (2)	8	None
South Africa (5)	School type (2) Province (9)	10	Performance level (5) Province (5)

Exhibit 9.7: Stratification Variables – TIMSS 2019 – Fourth Grade (continued)

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Spain	Region (9) School type (2) School funding (2) Bilingual status (2)	19	Region (12) School type (2)
Sweden	Average achievement (4) School type (2)	6	None
Turkey (5)	Grade 5 only / grade 5 and 8 School type (2) Region (13) School size (2)	25	None
United Arab Emirates	Grade 4 only / grade 4 and 8 schools (2) Emirate (3) School type (2) Main curriculum (2)	18	School size (2) Region (5) Language of test (3) Curriculum (3)
United States	Poverty level (2) School type (2) Census region of public school (4) Type of private school (2)	10	Urbanization (4) Ethnicity status (2) State (52)
Benchmarking Participants			
Ontario, Canada	Language (2) School type (3) School size (2)	6	Regional office (6)
Quebec, Canada	Language (2) School type (2) School size (2)	7	None
Moscow City, Russian Fed.	Grade 4 / grade 4 and 8 schools (2) School type (2)	3	School size (3)
Madrid, Spain	School type (3) Bilingual status (2)	5	None
Abu Dhabi, UAE	Grade 4 only / grade 4 and 8 schools (2) School type (2) Main curriculum (3)	7	School size (2) Region (3)
Dubai, UAE	Grade 4 only / grade 4 and 8 schools (2) School type (2)	4	School size (2) Language of test (3)

Exhibit 9.8: Stratification Variables – TIMSS 2019 – Eighth Grade

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Australia	State or territory (8)	8	School type (3) Geographic location (3) Socioeconomic status (2)
Bahrain	School type (2) Governorate (4) Gender (2)	9	None
Chile	Grade 8 / grade 4 and 8 schools (2) School type (3) Urbanization (2)	6	National assessment score level (4)
Chinese Taipei	Urbanization (4) Region (2) School size (2)	9	Performance (5)
Cyprus	School type (2) Curriculum (2) District (4)	5	Urbanization (2)
Egypt	Region (3) School type (4) Gender schools (3)	12	School shift (4)
England	School type (3) Attainment level (5)	9	Attainment level (7)
Finland	Language (2) Major region (4) Urbanization (2)	8	Regional state administrative agency (6)
France	School type (3)	3	None
Georgia	Grade 4 only / grade 4 and 8 schools (2) Region (2) Math average score (3)	6	Urbanization (2) School type (2)
Hong Kong SAR	School finance type (4)	4	Other school characteristic (3)
Hungary	Grade 8 only / grade 4 and 8 schools (2) Type of community (4) National assessment score (3)	11	None
Iran, Islamic Rep. of	School type (2) Gender (3) Province or grouped provinces (7)	16	None
Ireland	School sector (3) Socioeconomic status (3) Gender (3)	13	None
Israel	School sector (3) Socioeconomic status (3) Subgroups within Arab sector (3) School size (2)	11	Gender (3) Region (3)

Exhibit 9.8: Stratification Variables – TIMSS 2019 – Eighth Grade (continued)

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Italy	Grade 8 only / grade 4 and 8 schools (2) School type (2) Region (5)	8	Region (5)
Japan	School type (2) school location (4)	5	None
Jordan	School type (6) Achievement level (4)	24	Region (4)
Kazakhstan	Grade 8 only / grade 4 and 8 schools (2) Region (4) Urbanization (2) Language (2)	18	None
Korea, Rep. of	Urbanization (3) School gender (3) School size (2)	8	None
Kuwait	Grade 8 only / grade 4 and 8 schools (2) School type (2) Region (6) Gender (2) Language (3)	15	None
Lebanon	Regions or grouped regions (6) school type (2) school size (2)	24	None
Lithuania	Grade 8 / grade 4 and 8 schools (2) Languages (5)	6	Urbanization (4) School type (4)
Malaysia	School type (6) Score level (3) Urbanization (2)	12	None
Morocco	School type (2) Region (12)	14	Urbanization (2)
New Zealand	School type (2) Socioeconomic status (4) Urbanization (2)	9	Gender (3)
Norway (9)	Grade 8 only / grade 5 and 9 schools (2) City (2) Municipality size (3)	8	National numeracy test score (4)
Oman	Governorates (11) School type (2)	13	Gender (3)
Portugal	School type (2) Region (8)	9	NUTS 3 region (25) NUTS 2 region (5)

Exhibit 9.8: Stratification Variables – TIMSS 2019 – Eighth Grade (continued)

Country	Explicit Stratification Variables	Number of Explicit Strata	Implicit Stratification Variables
Qatar	Grade 4 only / grade 4 and 8 (2)	2	Gender (3) School type (4)
Romania	Urbanization (2) Region (5)	10	None
Russian Federation	Region (43)	43	None
Saudi Arabia	School type (3) Gender (2)	6	None
Singapore	None	1	None
South Africa (9)	School type (2) Province (9)	10	Performance level (5) Province (3)
Sweden	Average achievement (4) School type (2)	6	None
Turkey	Grade 8 only / grade 5 and 8 School type (2) Region (13) School size (2)	25	None
United Arab Emirates	Grade 8 only / grade 4 and 8 schools (2) Emirate (3) School type (2) Main curriculum (2)	14	School size (2) Region (5) Language of test (3) Curriculum (3)
United States	Poverty level (2) School type (2) Census region of public school (4) Type of private school (2)	10	Urbanization (4) Ethnicity status (2) State (52)
Benchmarking Participants			
Ontario, Canada	Language (2) School type (3) School size (2)	5	Regional office (6)
Quebec, Canada	Language (2) School type (2) School size (2)	5	Mathematics average score (4) Program (2)
Moscow City, Russian Fed.	Grade 8 / grade 4 and 8 schools (2) School type (2)	3	School size (3)
Gauteng, RSA (9)	School type (2)	2	Performance level (6)
Western Cape, RSA (9)	School type (2)	2	Performance level (6)
Abu Dhabi, UAE	School type (2) Main curriculum (3)	4	School size (2) Region (3)
Dubai, UAE	Grade 8 only / grade 4 and 8 schools (2) School type (2)	4	School size (2) Language of test (3)

Meeting TIMSS 2019 Standards for Sampling Participation

TIMSS 2019 participants understood that the goal for sampling participation was 100 percent for all sampled schools, classrooms, and students. Guidelines for reporting achievement data for participants securing less than full participation were modeled after IEA's previous TIMSS assessment cycles. As summarized below in Exhibit 9.9, countries were assigned to one of three categories on the basis of their sampling participation. Countries in Category 1 were considered to have met all TIMSS 2019 sampling requirements and to have acceptable participation rates. Countries in Category 2 met the participation requirements only after including replacement schools. Countries that failed to meet the participation requirements even with the use of replacement schools were assigned to Category 3. One of the main goals for quality data in TIMSS 2019 was to have as many countries as possible achieve Category 1 status.

Exhibit 9.9: Categories of Sampling Participation

Category 1	<p>Acceptable sampling participation rate without the use of replacement schools.</p> <p>In order to be placed in this category, a country had to have:</p> <ul style="list-style-type: none"> • An unweighted school response rate without replacement of at least 85% (after rounding to nearest whole percent) AND an unweighted student response rate (after rounding) of at least 85% <p>OR</p> <ul style="list-style-type: none"> • A weighted school response rate without replacement of at least 85% (after rounding to nearest whole percent) AND a weighted student response rate (after rounding) of at least 85% <p>OR</p> <ul style="list-style-type: none"> • The product of the (unrounded) weighted school response rate without replacement and the (unrounded) weighted student response rate of at least 75% (after rounding to the nearest whole percent). <p>Countries in this category would appear in the tables and figures in international reports without annotation, and will be ordered by achievement as appropriate.</p>
Category 2	<p>Acceptable sampling participation rate only when replacement schools are included. A country would be placed in this category 2 if:</p> <ul style="list-style-type: none"> • It failed to meet the requirements for Category 1 but had a weighted school response rate without replacement of at least 50% (after rounding to the nearest percent) <p>AND HAD EITHER</p> <ul style="list-style-type: none"> • A weighted school response rate with replacement of at least 85% (after rounding to nearest whole percent) AND a weighted student response rate (after rounding) of at least 85% <p>OR</p> <ul style="list-style-type: none"> • The product of the (unrounded) weighted school response rate with replacement and the (unrounded) weighted student response rate of at least 75% (after rounding to the nearest whole percent). <p>Countries in this category would be annotated with † in the tables and figures in international reports, and ordered by achievement as appropriate.</p>

Exhibit 9.9: Categories of Sampling Participation (continued)

Category 3	<p>Unacceptable sampling response rate even when replacement schools are included. Countries that could provide documentation to show that they complied with PIRLS sampling procedures and requirements but did not meet the requirements for Category 1 or Category 2 would be placed in Category 3.</p> <p>Countries in this category would be annotated with ‡ if they nearly met the requirements for Category 2. Countries would be annotated with ≡ if they failed to meet the participation requirements but had a school participation rate of at least 50% before the use of replacement schools. At last, if none of these conditions are met, countries would appear in a separate section of the achievement tables, below the other countries, in international reports. These countries would be presented in alphabetical order.</p>
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Participation Rates of the TIMSS 2019 National Samples

Exhibits 9.10 through 9.13 present the school, classroom, student, and overall weighted and unweighted participation rates for each of the participants in the TIMSS 2019 fourth and eighth grade assessments, respectively. Almost all participants had excellent participation rates and belonged in Category 1. At the fourth grade, Belgium (Flemish), Denmark, Hong Kong SAR, Northern Ireland, Norway (5), and the United States achieved the minimum acceptable participation rate only after including replacement schools, and therefore their results were annotated with a dagger (†) in the achievement exhibits of the international reports (Category 2). Despite efforts to secure full participation, Netherlands did not meet the required sampling participation rate even with the use of replacement schools and were annotated with a triple-dagger (≡) in the achievement exhibits of the international reports.

At the eighth grade, Hong Kong SAR, New Zealand, Norway (9), the United States achieved the minimum acceptable participation rates only after including replacement schools, and therefore their results were annotated with a dagger (†) in the achievement exhibits of the international reports (Category 2). Finally, the benchmarking participant of Quebec, Canada, nearly met the required sampling participation rate at the fourth and eighth grades with the use of replacement schools and were annotated with a double-dagger (‡) in the achievement exhibits of the international reports (Category 3).

Exhibit 9.10: Participation Rates (Weighted) – TIMSS 2019 – Fourth Grade

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Albania	99%	99%	100%	99%	98%	98%
Armenia	100%	100%	100%	97%	97%	97%
Australia	99%	100%	100%	94%	93%	94%
Austria	99%	99%	100%	97%	97%	97%

Exhibit 9.10: Participation Rates (Weighted) – TIMSS 2019 – Fourth Grade (continued)

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Azerbaijan	94%	98%	100%	95%	89%	92%
Bahrain	100%	100%	100%	98%	98%	98%
† Belgium (Flemish)	66%	95%	100%	93%	62%	89%
Bosnia and Herzegovina	100%	100%	99%	96%	95%	95%
Bulgaria	97%	100%	100%	95%	92%	95%
Canada	86%	90%	100%	95%	82%	86%
Chile	89%	99%	100%	96%	86%	95%
Chinese Taipei	95%	99%	100%	99%	94%	98%
Croatia	95%	97%	99%	91%	85%	87%
Cyprus	99%	100%	100%	97%	96%	97%
Czech Republic	99%	100%	100%	96%	95%	96%
† Denmark	70%	95%	99%	87%	61%	83%
England	86%	93%	100%	96%	82%	89%
Finland	99%	100%	100%	97%	96%	97%
France	100%	100%	100%	98%	98%	98%
Georgia	97%	99%	100%	97%	94%	96%
Germany	97%	100%	100%	97%	94%	97%
† Hong Kong SAR	67%	88%	100%	90%	60%	79%
Hungary	93%	99%	100%	97%	90%	96%
Iran, Islamic Rep. of	100%	100%	100%	99%	99%	99%
Ireland	100%	100%	100%	91%	91%	91%
Italy	96%	100%	100%	97%	92%	97%
Japan	84%	98%	100%	97%	82%	95%
Kazakhstan	100%	100%	100%	99%	99%	99%
Korea, Rep. of	99%	99%	100%	98%	97%	97%
Kosovo	100%	100%	100%	97%	97%	97%
Kuwait	97%	98%	100%	96%	93%	94%
Latvia	92%	99%	100%	94%	87%	93%
Lithuania	100%	100%	100%	94%	94%	94%
Malta	100%	100%	100%	96%	96%	96%
Montenegro	100%	100%	100%	98%	98%	98%
Morocco	100%	100%	100%	99%	99%	99%
≡ Netherlands	46%	75%	100%	97%	45%	73%
New Zealand	87%	99%	100%	94%	81%	93%

Exhibit 9.10: Participation Rates (Weighted) – TIMSS 2019 – Fourth Grade (continued)

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
North Macedonia	98%	100%	100%	95%	94%	95%
† Northern Ireland	60%	86%	100%	91%	55%	78%
† Norway (5)	70%	90%	100%	94%	66%	84%
Oman	99%	100%	100%	98%	98%	98%
Pakistan	77%	99%	100%	98%	75%	96%
Philippines	100%	100%	100%	98%	98%	98%
Poland	96%	100%	100%	93%	89%	93%
Portugal	87%	100%	99%	94%	81%	94%
Qatar	100%	100%	100%	97%	97%	97%
Russian Federation	99%	99%	100%	98%	97%	97%
Saudi Arabia	98%	99%	100%	99%	97%	98%
Serbia	97%	100%	100%	97%	95%	97%
Singapore	100%	100%	100%	97%	97%	97%
Slovak Republic	97%	99%	100%	97%	93%	96%
South Africa (5)	96%	99%	100%	98%	94%	97%
Spain	97%	99%	100%	95%	92%	95%
Sweden	100%	100%	100%	95%	95%	95%
Turkey (5)	99%	100%	100%	99%	98%	99%
United Arab Emirates	100%	100%	100%	96%	96%	96%
† United States	76%	88%	100%	96%	73%	84%
Benchmarking Participants						
Ontario, Canada	93%	95%	100%	95%	88%	90%
Quebec, Canada	82%	86%	100%	96%	79%	83%
Moscow City, Russian Fed.	99%	100%	100%	98%	97%	97%
Madrid, Spain	100%	100%	100%	96%	96%	96%
Abu Dhabi, UAE	100%	100%	100%	95%	95%	95%
Dubai, UAE	100%	100%	100%	97%	97%	97%

TIMSS guidelines for sampling participation: The minimum acceptable participation rates were 85 percent of both schools and students, or a combined rate (the product of school and student participation) of 75 percent.

Participants not meeting these guidelines were annotated as follows:

- † Met guidelines for sample participation rates only after replacement schools were included
- ‡ Nearly satisfied guidelines for sample participation rates after replacement schools were included
- ≡ Did not satisfy guidelines for sample participation rates

Exhibit 9.11: Participation Rates (Weighted) – TIMSS 2019 – Eighth Grade

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Australia	98%	100%	100%	91%	89%	91%
Bahrain	100%	100%	100%	97%	97%	97%
Chile	90%	99%	100%	96%	86%	95%
Chinese Taipei	98%	99%	100%	98%	96%	97%
Cyprus	100%	100%	100%	96%	96%	96%
Egypt	99%	100%	100%	97%	96%	97%
England	83%	90%	100%	95%	79%	85%
Finland	100%	100%	100%	96%	95%	95%
France	100%	100%	100%	97%	97%	97%
Georgia	90%	92%	100%	97%	88%	89%
† Hong Kong SAR	70%	86%	100%	94%	66%	81%
Hungary	95%	99%	100%	97%	92%	96%
Iran, Islamic Rep. of	100%	100%	100%	98%	98%	98%
Ireland	97%	98%	100%	88%	85%	86%
Israel	95%	98%	100%	93%	88%	91%
Italy	97%	100%	100%	97%	94%	97%
Japan	83%	94%	100%	94%	77%	88%
Jordan	100%	100%	100%	98%	98%	98%
Kazakhstan	100%	100%	100%	99%	99%	99%
Korea, Rep. of	100%	100%	100%	98%	98%	98%
Kuwait	99%	99%	100%	97%	96%	96%
Lebanon	82%	93%	100%	95%	78%	88%
Lithuania	99%	99%	100%	93%	92%	92%
Malaysia	99%	100%	100%	98%	97%	98%
Morocco	100%	100%	100%	98%	98%	98%
† New Zealand	77%	89%	100%	91%	70%	81%
† Norway (9)	79%	95%	99%	89%	70%	84%
Oman	99%	100%	100%	99%	97%	99%
Portugal	95%	99%	99%	96%	90%	94%
Qatar	100%	100%	100%	97%	97%	97%
Romania	95%	100%	100%	94%	89%	94%
Russian Federation	99%	100%	100%	97%	97%	97%
Saudi Arabia	100%	100%	100%	99%	99%	99%
Singapore	100%	100%	100%	96%	96%	96%
South Africa (9)	99%	100%	100%	96%	95%	96%

Exhibit 9.11: Participation Rates (Weighted) – TIMSS 2019 – Eighth Grade (continued)

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Sweden	98%	99%	100%	92%	90%	91%
Turkey	100%	100%	100%	99%	98%	99%
United Arab Emirates	100%	100%	100%	96%	96%	96%
†United States	72%	85%	100%	94%	67%	79%
Benchmarking Participants						
Ontario, Canada	93%	93%	100%	94%	87%	88%
‡Quebec, Canada	74%	77%	99%	95%	70%	73%
Moscow City, Russian Fed.	99%	100%	100%	97%	96%	97%
Gauteng, RSA (9)	99%	100%	100%	97%	95%	97%
Western Cape, RSA (9)	99%	100%	100%	95%	95%	95%
Abu Dhabi, UAE	100%	100%	100%	96%	96%	96%
Dubai, UAE	100%	100%	100%	96%	96%	96%

TIMSS guidelines for sampling participation: The minimum acceptable participation rates were 85 percent of both schools and students, or a combined rate (the product of school and student participation) of 75 percent.

Participants not meeting these guidelines were annotated as follows:

- † Met guidelines for sample participation rates only after replacement schools were included
- ‡ Nearly satisfied guidelines for sample participation rates after replacement schools were included
- ≡ Did not satisfy guidelines for sample participation rates

Exhibit 9.12: Participation Rates (Unweighted) – TIMSS 2019 – Fourth Grade

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Albania	99%	99%	100%	99%	97%	97%
Armenia	100%	100%	100%	97%	97%	97%
Australia	99%	100%	100%	94%	93%	93%
Austria	99%	99%	100%	97%	96%	96%
Azerbaijan	93%	97%	99%	94%	87%	91%
Bahrain	100%	100%	100%	98%	98%	98%
Belgium (Flemish)	65%	94%	100%	94%	61%	88%
Bosnia and Herzegovina	100%	100%	99%	95%	95%	95%
Bulgaria	97%	100%	100%	95%	92%	95%
Canada	86%	91%	100%	94%	81%	85%
Chile	88%	98%	100%	95%	83%	93%
Chinese Taipei	95%	99%	100%	98%	94%	98%
Croatia	95%	97%	98%	89%	83%	85%
Cyprus	99%	100%	100%	97%	96%	97%
Czech Republic	99%	100%	100%	95%	94%	95%
Denmark	71%	95%	99%	86%	60%	81%
England	86%	93%	99%	96%	82%	88%
Finland	99%	100%	100%	96%	96%	96%
France	100%	100%	100%	97%	97%	97%
Georgia	96%	98%	100%	97%	93%	95%
Germany	98%	100%	100%	96%	94%	96%
Hong Kong SAR	69%	87%	100%	89%	61%	78%
Hungary	93%	99%	100%	96%	89%	96%
Iran, Islamic Rep. of	100%	100%	100%	99%	99%	99%
Ireland	100%	100%	100%	91%	91%	91%
Italy	94%	100%	100%	96%	91%	96%
Japan	84%	98%	100%	97%	82%	95%
Kazakhstan	100%	100%	100%	99%	99%	99%
Korea, Rep. of	99%	99%	100%	98%	97%	97%
Kosovo	100%	100%	100%	97%	97%	97%
Kuwait	98%	98%	100%	96%	93%	94%
Latvia	91%	99%	100%	93%	85%	92%
Lithuania	100%	100%	100%	94%	94%	94%
Malta	100%	100%	100%	96%	96%	96%
Montenegro	100%	100%	100%	98%	98%	98%
Morocco	100%	100%	100%	99%	99%	99%

Exhibit 9.12: Participation Rates (Unweighted) – TIMSS 2019 – Fourth Grade (continued)

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Netherlands	48%	75%	100%	97%	46%	73%
New Zealand	86%	99%	100%	94%	80%	93%
North Macedonia	97%	100%	100%	95%	92%	95%
Northern Ireland	61%	86%	99%	91%	55%	78%
Norway (5)	71%	90%	100%	93%	66%	83%
Oman	99%	100%	100%	98%	97%	98%
Pakistan	85%	98%	100%	96%	82%	94%
Philippines	100%	100%	100%	98%	98%	98%
Poland	96%	100%	100%	92%	88%	92%
Portugal	87%	100%	99%	93%	81%	93%
Qatar	100%	100%	100%	97%	97%	97%
Russian Federation	99%	99%	100%	97%	96%	96%
Saudi Arabia	97%	100%	100%	98%	96%	98%
Serbia	96%	100%	100%	97%	93%	97%
Singapore	100%	100%	100%	97%	97%	97%
Slovak Republic	97%	99%	100%	96%	93%	95%
South Africa (5)	96%	100%	100%	98%	94%	97%
Spain	98%	100%	100%	95%	94%	95%
Sweden	99%	100%	100%	94%	93%	94%
Turkey (5)	99%	100%	100%	98%	98%	98%
United Arab Emirates	100%	100%	100%	96%	95%	95%
United States	77%	88%	100%	95%	73%	84%
Benchmarking Participants						
Ontario, Canada	94%	96%	100%	94%	89%	90%
Quebec, Canada	81%	86%	100%	96%	78%	83%
Moscow City, Russian Fed.	98%	99%	100%	97%	95%	97%
Madrid, Spain	100%	100%	100%	96%	96%	96%
Abu Dhabi, UAE	100%	100%	100%	95%	95%	95%
Dubai, UAE	100%	100%	100%	96%	96%	96%

Exhibit 9.13: Participation Rates (Unweighted) – TIMSS 2019 – Eighth Grade

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Australia	99%	100%	100%	91%	90%	91%
Bahrain	100%	100%	100%	97%	97%	97%
Chile	88%	98%	100%	95%	84%	93%
Chinese Taipei	98%	99%	100%	98%	95%	97%
Cyprus	100%	100%	100%	96%	96%	96%
Egypt	99%	100%	100%	96%	96%	96%
England	83%	90%	100%	94%	78%	85%
Finland	100%	100%	100%	95%	95%	95%
France	100%	100%	100%	96%	96%	96%
Georgia	90%	92%	100%	97%	87%	89%
Hong Kong SAR	71%	86%	100%	93%	66%	80%
Hungary	94%	99%	100%	96%	91%	96%
Iran, Islamic Rep. of	100%	100%	100%	98%	98%	98%
Ireland	97%	98%	100%	88%	85%	86%
Israel	94%	98%	100%	92%	87%	89%
Italy	97%	100%	100%	97%	94%	97%
Japan	83%	95%	100%	94%	78%	89%
Jordan	100%	100%	100%	98%	98%	98%
Kazakhstan	100%	100%	100%	98%	98%	98%
Korea, Rep. of	100%	100%	100%	97%	97%	97%
Kuwait	99%	99%	100%	97%	96%	96%
Lebanon	88%	94%	100%	95%	83%	90%
Lithuania	99%	99%	100%	92%	92%	92%
Malaysia	99%	100%	100%	98%	97%	98%
Morocco	100%	100%	100%	97%	97%	97%
New Zealand	76%	89%	100%	92%	70%	81%
Norway (9)	80%	95%	98%	89%	70%	83%
Oman	98%	100%	100%	98%	96%	98%
Portugal	94%	99%	99%	95%	88%	92%
Qatar	100%	100%	100%	96%	96%	96%
Romania	95%	100%	100%	94%	90%	94%
Russian Federation	100%	100%	100%	97%	97%	97%
Saudi Arabia	100%	100%	100%	99%	99%	99%
Singapore	100%	100%	100%	96%	96%	96%
South Africa (9)	99%	100%	100%	96%	95%	96%
Sweden	99%	99%	100%	91%	89%	90%

Exhibit 9.13: Participation Rates (Unweighted) – TIMSS 2019 – Eighth Grade (continued)

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Turkey	99%	100%	100%	98%	98%	98%
United Arab Emirates	100%	100%	100%	95%	95%	95%
United States	72%	85%	100%	93%	67%	79%
Benchmarking Participants						
Ontario, Canada	92%	93%	100%	93%	86%	87%
Quebec, Canada	74%	77%	99%	94%	69%	72%
Moscow City, Russian Fed.	97%	99%	100%	96%	94%	96%
Gauteng, RSA (9)	99%	100%	100%	97%	95%	97%
Western Cape, RSA (9)	99%	100%	100%	95%	95%	95%
Abu Dhabi, UAE	100%	100%	100%	95%	95%	95%
Dubai, UAE	100%	100%	100%	96%	96%	96%

TIMSS 2019 National Samples – Achieved Sample Sizes

Exhibits 9.14 through 9.17 show the achieved sample sizes in terms of schools and students for each of the participants in the TIMSS 2019 fourth and eighth grade assessments, respectively.

Exhibit 9.14: School Sample Sizes – TIMSS 2019 – Fourth Grade

Country	Number of Schools in Original Sample	Number of Eligible Schools in Original Sample	Number of Schools in Original Sample that Participated	Number of Replacement Schools that Participated	Total Number of Schools that Participated
Albania	180	169	167	0	167
Armenia	150	150	150	0	150
Australia	290	288	285	2	287
Austria	197	194	193	0	193
Azerbaijan	200	199	186	8	194
Bahrain	185	185	185	0	185
Belgium (Flemish)	160	156	101	46	147
Bosnia and Herzegovina	178	178	178	0	178
Bulgaria	151	151	146	5	151
Canada	788	777	669	35	704
Chile	174	172	151	18	169
Chinese Taipei	163	163	155	7	162

Exhibit 9.14: School Sample Sizes – TIMSS 2019 – Fourth Grade (continued)

Country	Number of Schools in Original Sample	Number of Eligible Schools in Original Sample	Number of Schools in Original Sample that Participated	Number of Replacement Schools that Participated	Total Number of Schools that Participated
Croatia	159	158	150	3	153
Cyprus	152	151	150	1	151
Czech Republic	156	152	151	1	152
Denmark	175	174	123	43	166
England	150	150	129	10	139
Finland	159	158	157	1	158
France	156	155	155	0	155
Georgia	158	157	151	3	154
Germany	206	203	198	5	203
Hong Kong SAR	159	159	109	30	139
Hungary	151	150	139	10	149
Iran, Islamic Rep. of	224	224	224	0	224
Ireland	151	150	150	0	150
Italy	162	162	153	9	162
Japan	150	150	126	21	147
Kazakhstan	169	168	168	0	168
Korea, Rep. of	152	152	151	0	151
Kosovo	150	145	145	0	145
Kuwait	170	167	163	1	164
Latvia	156	156	142	12	154
Lithuania	208	207	207	0	207
Malta	99	98	98	0	98
Montenegro	140	140	140	0	140
Morocco	265	264	264	0	264
Netherlands	151	149	71	41	112
New Zealand	164	161	138	22	160
North Macedonia	150	150	146	4	150
Northern Ireland	156	156	95	39	134
Norway (5)	167	167	119	31	150
Oman	228	228	226	2	228
Pakistan	150	142	121	18	139
Philippines	184	180	180	0	180
Poland	150	149	143	6	149
Portugal	182	181	158	23	181
Qatar	242	242	242	0	242

Exhibit 9.14: School Sample Sizes – TIMSS 2019 – Fourth Grade (continued)

Country	Number of Schools in Original Sample	Number of Eligible Schools in Original Sample	Number of Schools in Original Sample that Participated	Number of Replacement Schools that Participated	Total Number of Schools that Participated
Russian Federation	202	202	200	0	200
Saudi Arabia	222	221	215	5	220
Serbia	170	165	159	6	165
Singapore	187	187	187	0	187
Slovak Republic	159	158	153	4	157
South Africa (5)	300	298	286	11	297
Spain	502	502	494	7	501
Sweden	150	145	144	1	145
Turkey (5)	181	180	179	1	180
United Arab Emirates	697	688	688	0	688
United States	329	325	249	38	287
Benchmarking Participants					
Ontario, Canada	171	170	160	3	163
Quebec, Canada	172	172	140	8	148
Moscow City, Russian Fed.	152	151	148	2	150
Madrid, Spain	167	167	167	0	167
Abu Dhabi, UAE	249	247	247	0	247
Dubai, UAE	205	199	199	0	199

Exhibit 9.15: School Sample Sizes – TIMSS 2019 – Eighth Grade

Country	Number of Schools in Original Sample	Number of Eligible Schools in Original Sample	Number of Schools in Original Sample that Participated	Number of Replacement Schools that Participated	Total Number of Schools that Participated
Australia	289	284	282	2	284
Bahrain	112	112	112	0	112
Chile	169	167	147	17	164
Chinese Taipei	206	205	200	3	203
Cyprus	99	98	98	0	98
Egypt	174	169	168	1	169
England	151	151	125	11	136
Finland	158	154	154	0	154
France	150	150	150	0	150
Georgia	158	157	142	3	145
Hong Kong SAR	158	158	112	24	136
Hungary	155	155	146	8	154
Iran, Islamic Rep. of	220	220	220	0	220
Ireland	152	152	147	2	149
Israel	161	161	152	5	157
Italy	158	158	153	5	158
Japan	150	150	125	17	142
Jordan	248	235	235	0	235
Kazakhstan	169	168	168	0	168
Korea, Rep. of	168	168	168	0	168
Kuwait	178	172	171	0	171
Lebanon	218	216	189	15	204
Lithuania	195	195	194	0	194
Malaysia	178	177	175	2	177
Morocco	253	251	251	0	251
New Zealand	154	151	115	19	134
Norway (9)	166	165	132	25	157
Oman	230	228	223	5	228
Portugal	158	158	149	7	156
Qatar	152	152	152	0	152
Romania	198	198	189	9	198
Russian Federation	204	204	203	1	204
Saudi Arabia	212	209	208	1	209
Singapore	153	153	153	0	153

Exhibit 9.15: School Sample Sizes – TIMSS 2019 – Eighth Grade (continued)

Country	Number of Schools in Original Sample	Number of Eligible Schools in Original Sample	Number of Schools in Original Sample that Participated	Number of Replacement Schools that Participated	Total Number of Schools that Participated
South Africa (9)	524	520	516	3	519
Sweden	153	151	149	1	150
Turkey	181	181	180	1	181
United Arab Emirates	631	623	623	0	623
United States	325	321	231	42	273
Benchmarking Participants					
Ontario, Canada	172	170	157	1	158
Quebec, Canada	166	161	119	5	124
Moscow City, Russian Fed.	152	151	147	3	150
Gauteng, RSA (9)	150	150	148	2	150
Western Cape, RSA (9)	150	149	148	1	149
Abu Dhabi, UAE	230	230	230	0	230
Dubai, UAE	171	163	163	0	163

Exhibit 9.16: Student Sample Sizes – TIMSS 2019 – Fourth Grade

Country	Within-School Student Participation (Weighted Percentage)	Number of Students Sampled in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Students Eligible	Number of Students Absent	Number of Students Assessed
Albania	99%	4,548	31	25	4,492	66	4,426
Armenia	97%	5,612	32	0	5,580	181	5,399
Australia	94%	6,517	110	128	6,279	389	5,890
Austria	97%	4,901	33	256	4,612	148	4,464
Azerbaijan	95%	5,600	17	19	5,564	319	5,245
Bahrain	98%	5,903	25	22	5,856	94	5,762
Belgium (Flemish)	93%	5,113	26	114	4,973	318	4,655
Bosnia and Herzegovina	96%	6,048	61	74	5,913	285	5,628
Bulgaria	95%	4,632	70	88	4,474	206	4,268
Canada	95%	15,164	199	429	14,536	883	13,653
Chile	96%	4,578	77	112	4,389	215	4,174
Chinese Taipei	99%	3,958	65	65	3,828	63	3,765
Croatia	91%	4,395	8	148	4,239	454	3,785
Cyprus	97%	4,353	14	150	4,189	127	4,062
Czech Republic	96%	5,054	48	53	4,953	261	4,692
Denmark	87%	3,881	67	48	3,766	539	3,227
England	96%	3,759	78	127	3,554	158	3,396
Finland	97%	4,987	37	45	4,905	175	4,730
France	98%	4,456	35	104	4,317	131	4,186
Georgia	97%	4,019	28	83	3,908	121	3,787
Germany	97%	3,706	51	89	3,566	129	3,437
Hong Kong SAR	90%	3,461	18	101	3,342	374	2,968
Hungary	97%	4,867	34	89	4,744	173	4,571
Iran, Islamic Rep. of	99%	6,194	46	76	6,072	62	6,010
Ireland	91%	5,126	22	52	5,052	470	4,582
Italy	97%	4,109	22	199	3,888	147	3,741
Japan	97%	4,358	15	34	4,309	113	4,196
Kazakhstan	99%	4,932	37	38	4,857	66	4,791
Korea, Rep. of	98%	4,105	50	63	3,992	99	3,893
Kosovo	97%	4,757	43	95	4,619	123	4,496
Kuwait	96%	4,731	83	14	4,634	197	4,437
Latvia	94%	4,886	15	68	4,803	322	4,481
Lithuania	94%	4,198	12	186	4,000	259	3,741
Malta	96%	3,914	17	115	3,782	152	3,630
Montenegro	98%	5,248	49	37	5,162	86	5,076

Exhibit 9.16: Student Sample Sizes – TIMSS 2019 – Fourth Grade (continued)

Country	Within-School Student Participation (Weighted Percentage)	Number of Students Sampled in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Students Eligible	Number of Students Absent	Number of Students Assessed
Morocco	99%	8,051	217	0	7,834	111	7,723
Netherlands	97%	3,562	69	27	3,466	111	3,355
New Zealand	94%	5,611	100	164	5,347	328	5,019
North Macedonia	95%	3,531	32	44	3,455	185	3,270
Northern Ireland	91%	3,877	21	23	3,833	336	3,497
Norway (5)	94%	4,410	27	149	4,234	283	3,951
Oman	98%	7,079	94	57	6,928	114	6,814
Pakistan	98%	4,453	315	0	4,138	158	3,980
Philippines	98%	5,693	89	0	5,604	89	5,515
Poland	93%	5,427	44	100	5,283	401	4,882
Portugal	94%	5,015	35	366	4,614	314	4,300
Qatar	97%	5,251	127	60	5,064	131	4,933
Russian Federation	98%	4,282	8	144	4,130	108	4,022
Saudi Arabia	99%	5,585	23	25	5,537	84	5,453
Serbia	97%	4,667	53	93	4,521	141	4,380
Singapore	97%	6,209	22	0	6,187	201	5,986
Slovak Republic	97%	4,477	26	24	4,427	180	4,247
South Africa (5)	98%	12,289	107	0	12,182	291	11,891
Spain	95%	10,497	48	421	10,028	473	9,555
Sweden	95%	4,407	31	160	4,216	251	3,965
Turkey (5)	99%	4,554	142	319	4,093	65	4,028
United Arab Emirates	96%	28,029	414	564	27,051	1,217	25,834
United States	96%	9,955	152	601	9,202	426	8,776
Benchmarking Participants							
Ontario, Canada	95%	4,251	83	95	4,073	243	3,830
Quebec, Canada	96%	4,047	9	37	4,001	164	3,837
Moscow City, Russian Fed.	98%	3,992	11	35	3,946	103	3,843
Madrid, Spain	96%	3,666	17	123	3,526	136	3,390
Abu Dhabi, UAE	95%	9,822	38	239	9,545	508	9,037
Dubai, UAE	97%	8,125	362	213	7,550	285	7,265

Students attending a sampled class at the time the sample was chosen but leaving the class before the assessment was administered were classified as withdrawn.

Students with a disability or language barrier that prevented them from participating in the assessment were classified as excluded.

Students not present when the assessment was administered, and not subsequently assessed in a make-up session, were classified as absent.

Exhibit 9.17: Student Sample Sizes – TIMSS 2019 – Eighth Grade

Country	Within-School Student Participation (Weighted Percentage)	Number of Students Sampled in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Students Eligible	Number of Students Absent	Number of Students Assessed
Australia	91%	10,383	213	161	10,009	949	9,060
Bahrain	97%	5,947	44	12	5,891	166	5,725
Chile	96%	4,469	68	76	4,325	210	4,115
Chinese Taipei	98%	5,185	106	42	5,037	122	4,915
Cyprus	96%	3,800	23	94	3,683	162	3,521
Egypt	97%	7,700	214	0	7,486	276	7,210
England	95%	3,785	140	70	3,575	210	3,365
Finland	96%	5,252	62	62	5,128	254	4,874
France	97%	4,122	53	49	4,020	146	3,874
Georgia	97%	3,540	37	73	3,430	115	3,315
Hong Kong SAR	94%	3,612	12	73	3,527	262	3,265
Hungary	97%	4,862	23	86	4,753	184	4,569
Iran, Islamic Rep. of	98%	6,242	110	35	6,097	117	5,980
Ireland	88%	4,763	46	39	4,678	560	4,118
Israel	93%	4,154	36	51	4,067	336	3,731
Italy	97%	3,919	22	153	3,744	125	3,619
Japan	94%	4,763	3	17	4,743	297	4,446
Jordan	98%	7,856	484	13	7,359	183	7,176
Kazakhstan	99%	4,587	34	28	4,525	72	4,453
Korea, Rep. of	98%	4,025	18	37	3,970	109	3,861
Kuwait	97%	4,818	92	0	4,726	152	4,574
Lebanon	95%	5,117	151	0	4,966	236	4,730
Lithuania	93%	4,262	19	98	4,145	319	3,826
Malaysia	98%	7,323	120	0	7,203	138	7,065
Morocco	98%	9,081	395	0	8,686	228	8,458
New Zealand	91%	6,775	119	79	6,577	526	6,051
Norway (9)	89%	5,335	41	141	5,153	578	4,575
Oman	99%	7,024	132	37	6,855	104	6,751
Portugal	96%	3,752	32	152	3,568	191	3,377
Qatar	97%	4,196	138	32	4,026	142	3,884
Romania	94%	4,803	13	15	4,775	281	4,494
Russian Federation	97%	4,125	28	76	4,021	120	3,901
Saudi Arabia	99%	5,762	19	13	5,730	50	5,680
Singapore	96%	5,074	19	0	5,055	202	4,853
South Africa (9)	96%	22,658	921	0	21,737	908	20,829

Exhibit 9.17: Student Sample Sizes – TIMSS 2019 – Eighth Grade (continued)

Country	Within-School Student Participation (Weighted Percentage)	Number of Students Sampled in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Students Eligible	Number of Students Absent	Number of Students Assessed
Sweden	92%	4,683	64	213	4,406	410	3,996
Turkey	99%	4,377	111	123	4,143	66	4,077
United Arab Emirates	96%	23,974	251	315	23,408	1,074	22,334
United States	94%	9,924	307	242	9,375	677	8,698
Benchmarking Participants							
Ontario, Canada	94%	4,194	63	75	4,056	280	3,776
Quebec, Canada	95%	3,411	28	7	3,376	198	3,178
Moscow City, Russian Fed.	97%	3,963	21	19	3,923	140	3,783
Gauteng, RSA (9)	97%	6,025	188	0	5,837	204	5,633
Western Cape, RSA (9)	95%	5,901	284	0	5,617	266	5,351
Abu Dhabi, UAE	96%	8,770	41	86	8,643	439	8,204
Dubai, UAE	96%	6,308	199	141	5,968	240	5,728

Students attending a sampled class at the time the sample was chosen but leaving the class before the assessment was administered were classified as withdrawn.

Students with a disability or language barrier that prevented them from participating in the assessment were classified as excluded.

Students not present when the assessment was administered, and not subsequently assessed in a make-up session, were classified as absent.

TIMSS 2019 Trends in Student Populations

Because an important goal of the TIMSS 2019 assessment was to measure changes in students' mathematics and science achievement across assessment cycles, it was important to track any changes over time in population composition and coverage that might be related to student achievement. Exhibits 9.18 and 9.19 present, for each country, trends across cycles (2019, 2015, 2011, 2007, 2003, and 1995 at the fourth grade and 2019, 2015, 2011, 2007, 2003, 1999, and 1995 at the eighth grade) in four important characteristics of the assessment populations: number of years of formal schooling, average student age, percent of students in the national target population excluded from the assessment, and overall participation rates after using replacements. Most countries and benchmarking participants were very similar with regard to these characteristics across the assessment cycles, although there have been changes in some countries in the age and grade structure of the assessed populations, in the target population coverage, and in the exclusion rate.

In terms of changes in age structure, the Russian Federation has undergone changes in the age at which children enter schools that are reflected in their samples. In 2003, the Russian fourth grade sample contained third grade students from some regions and fourth grade students from others, whereas all

students were in the fourth grade by 2007. At the eighth grade, there was still a mixture of seventh and eighth grade students in 2007, but by 2011 the sample was all eighth grade students, with correspondingly a higher average age. Turkey chose to assess students at the fifth grade in 2019, breaking the trend with previous cycles.

National coverage of the international target population was generally comprehensive for most countries and has not changed across assessments, with just a few exceptions. At the fourth grade, Kuwait assessed students from both the public and private schools in the 2019 and 2015 cycles while they assessed only students from the public schools in prior cycles. As a result, the 2019 trend is only with the 2015 data.

In most countries, exclusion rates did not exceed the TIMSS 2019 guidelines of 5 percent, and have not changed very much across assessments cycles. At the fourth grade, Denmark reduced its overall exclusion rate of 4.4 percent between 2015 and 2019 by providing more precise guidelines on within-school exclusions of special needs students. During that same period, Serbia also decreased its overall exclusion rate by reducing their within-school exclusion of non-native language speakers and by excluding less very small schools. On the other hand, the student exclusion rate was higher in 2019 than in 2015 at the fourth grade by more than 1.5 percentage points in Belgium (Flemish), England, New Zealand, Russian Federation, Saudi Arabia, and Singapore. At the eighth grade, those with increases of more than 1.5 percentage points in their exclusions since 2015 included Egypt, England, Hong Kong SAR, Oman, Russian Federation, Saudi Arabia, Singapore, and Turkey.

Exhibit 9.18: Trends in Student Populations – TIMSS 2019 – Fourth Grade

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Armenia				
2019	4	9.9	1.2%	97%
^b 2015	4	9.9	1.0%	96%
2011	4	10.0	2.0%	98%
2003	4	10.9	2.9%	90%
Australia				
2019	4	10.1	4.8%	94%
2015	4	10.0	4.2%	94%
2011	4	10.0	4.4%	93%
2007	4	9.9	4.0%	95%
[†] 2003	4	9.9	2.7%	85%
[≡] 1995	4 or 5	10.2	1.8%	66%

Exhibit 9.18: Trends in Student Populations – TIMSS 2019 – Fourth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Austria				
2019	4	10.4	5.4%	97%
2011	4	10.3	5.1%	98%
2007	4	10.3	5.0%	97%
[≡] 1995	4	10.5	2.8%	69%
Azerbaijan				
2019	4	10.3	2.6%	92%
² 2011	4	10.2	7.2%	100%
Bahrain				
2019	4	9.8	0.8%	98%
² 2015	4	9.9	5.6%	99%
^b 2011	4	10.4	1.1%	90%
Belgium (Flemish)				
[†] 2019	4	10.0	3.0%	89%
[†] 2015	4	10.1	1.4%	95%
2011	4	10.0	5.0%	92%
² 2003	4	10.0	6.3%	97%
Bulgaria				
2019	4	10.7	3.4%	95%
2015	4	10.8	2.9%	93%
Canada				
^{1,2} 2019	4	9.9	7.0%	86%
^{1,2} [†] 2015	4	9.9	6.1%	80%
Chile				
2019	4	10.1	3.8%	95%
2015	4	10.2	3.7%	88%
2011	4	10.1	3.7%	95%
Chinese Taipei				
2019	4	10.2	2.0%	98%
2015	4	10.2	2.4%	99%
2011	4	10.2	1.4%	99%
2007	4	10.2	2.8%	100%
2003	4	10.2	3.1%	99%

Exhibit 9.18: Trends in Student Populations – TIMSS 2019 – Fourth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Croatia				
2019	4	10.5	4.2%	87%
2015	4	10.6	4.4%	94%
² 2011	4	10.7	7.9%	95%
Cyprus				
2019	4	9.8	4.6%	97%
2015	4	9.8	4.6%	98%
2003	4	9.9	2.9%	97%
1995	4	9.8	3.2%	83%
Czech Republic				
2019	4	10.4	4.7%	96%
2015	4	10.4	4.2%	95%
2011	4	10.4	5.1%	94%
2007	4	10.3	4.9%	92%
1995	4	10.4	4.1%	86%
Denmark				
[†] 2019	4	10.9	3.1%	83%
² [†] 2015	4	10.9	7.5%	86%
² 2011	4	11.0	6.3%	87%
² 2007	4	11.0	4.1%	85%
England				
² 2019	5	10.2	5.8%	89%
2015	5	10.1	2.3%	96%
2011	5	10.2	2.0%	78%
2007	5	10.2	2.1%	84%
[†] 2003	5	10.3	1.9%	76%
³ [†] 1995	5	10.0	12.1%	83%
Finland				
2019	4	10.8	3.3%	97%
2015	4	10.8	2.0%	97%
2011	4	10.8	3.1%	96%

Exhibit 9.18: Trends in Student Populations – TIMSS 2019 – Fourth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
France				
2019	4	9.9	4.4%	98%
2015	4	9.9	5.3%	97%
Georgia				
¹ 2019	4	10.1	4.7%	96%
¹ 2015	4	9.7	4.9%	98%
¹ 2011	4	10.0	4.9%	96%
¹ 2007	4	10.1	4.8%	98%
Germany				
2019	4	10.4	3.9%	97%
2015	4	10.4	2.7%	95%
2011	4	10.4	1.9%	95%
2007	4	10.4	1.3%	96%
Hong Kong SAR				
[†] 2019	4	10.1	3.5%	79%
[†] 2015	4	10.1	2.2%	76%
² 2011	4	10.1	8.5%	82%
2007	4	10.2	5.4%	81%
[†] 2003	4	10.2	3.8%	83%
1995	4	10.1	2.7%	83%
Hungary				
2019	4	10.5	4.1%	96%
2015	4	10.7	4.8%	96%
2011	4	10.7	4.2%	96%
2007	4	10.7	4.4%	96%
² 2003	4	10.5	8.1%	93%
1995	4	10.4	3.8%	92%
Iran, Islamic Rep. of				
2019	4	10.2	4.2%	99%
2015	4	10.2	4.0%	99%
2011	4	10.2	4.5%	99%
2007	4	10.2	3.0%	99%

Exhibit 9.18: Trends in Student Populations – TIMSS 2019 – Fourth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
² 2003	4	10.4	5.7%	98%
1995	4	10.5	1.3%	97%
Ireland				
2019	4	10.4	3.0%	91%
2015	4	10.4	2.7%	96%
2011	4	10.3	2.5%	95%
² 1995	4	10.3	6.9%	90%
Italy				
2019	4	9.6	4.9%	97%
² 2015	4	9.7	6.2%	94%
2011	4	9.7	3.7%	95%
2007	4	9.8	5.3%	97%
2003	4	9.8	4.2%	97%
Japan				
2019	4	10.4	2.2%	95%
2015	4	10.5	2.9%	97%
2011	4	10.5	3.2%	96%
2007	4	10.5	1.1%	95%
2003	4	10.4	0.8%	97%
1995	4	10.4	3.0%	92%
Kazakhstan				
² 2019	4	10.4	5.8%	99%
² 2011	4	10.4	6.3%	99%
Korea, Rep. of				
2019	4	10.5	2.3%	97%
2015	4	10.5	2.5%	97%
2011	4	10.4	2.5%	98%
² 1995	4	10.3	6.6%	95%
Kuwait				
2019	4	9.7	1.7%	94%
2015	4	9.7	3.0%	90%

Exhibit 9.18: Trends in Student Populations – TIMSS 2019 – Fourth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Latvia				
² 2019	4	10.8	6.9%	93%
2003	4	11.1	4.4%	88%
Lithuania				
² 2019	4	10.7	6.7%	94%
² 2015	4	10.7	6.1%	94%
¹ ² 2011	4	10.7	5.6%	94%
¹ 2007	4	10.8	5.4%	94%
¹ 2003	4	10.9	4.6%	87%
Malta				
2019	4	9.8	4.5%	96%
2011	5	9.8	3.6%	95%
Morocco				
2019	4	10.1	1.8%	99%
2015	4	10.3	1.5%	99%
2011	4	10.5	2.0%	96%
Netherlands				
[≡] 2019	4	10.1	3.5%	73%
[†] 2015	4	10.0	3.2%	83%
[†] 2011	4	10.2	4.0%	79%
[‡] 2007	4	10.2	4.8%	91%
[†] 2003	4	10.2	5.2%	84%
[≡] 1995	4	10.3	4.4%	59%
New Zealand				
² 2019	4.5 - 5.5	10.0	6.9%	93%
2015	4.5 - 5.5	10.0	4.8%	90%
2011	4.5 - 5.5	9.9	4.9%	90%
2007	4.5 - 5.5	10.0	5.4%	96%
2003	4.5 - 5.5	10.0	4.0%	93%
1995	4.5 - 5.5	10.0	1.3%	95%

Exhibit 9.18: Trends in Student Populations – TIMSS 2019 – Fourth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Northern Ireland				
†2019	4	10.4	2.8%	78%
‡2015	4	10.4	2.7%	71%
†2011	4	10.4	3.5%	79%
Norway (5)				
†2019	5	10.7	4.7%	84%
2015	5	10.7	4.7%	89%
Oman				
2019	4	9.7	2.2%	98%
2015	4	9.6	0.8%	97%
2011	4	9.9	1.5%	96%
Philippines				
² 2019	4	10.1	7.7%	98%
2003	4	10.8	4.5%	81%
Poland				
2019	4	10.3	3.1%	93%
2015	4	10.7	4.0%	92%
Portugal				
² 2019	4	10.0	7.8%	94%
² 2015	4	9.9	6.5%	92%
2011	4	10.0	2.5%	92%
² 1995	4	10.4	7.3%	92%
Qatar				
2019	4	9.9	2.2%	97%
2015	4	10.1	3.8%	99%
² 2011	4	10.0	6.2%	99%
Russian Federation				
² 2019	4	10.8	6.3%	97%
2015	4	10.8	4.0%	98%
2011	4	10.8	5.3%	98%
2007	4	10.8	3.6%	98%
² 2003	3 or 4	10.6	6.8%	97%

Exhibit 9.18: Trends in Student Populations – TIMSS 2019 – Fourth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Saudi Arabia				
² 2019	4	9.9	10.5%	98%
2015	4	10.0	1.9%	93%
2011	4	10.0	1.6%	99%
Serbia				
² 2019	4	10.6	8.2%	97%
³ 2015	4	10.7	11.3%	96%
² 2011	4	10.8	9.4%	97%
Singapore				
³ 2019	4	10.4	12.8%	97%
² 2015	4	10.4	10.1%	96%
² 2011	4	10.4	6.3%	96%
2007	4	10.4	1.5%	96%
2003	4	10.3	0.0%	98%
1995	4	10.3	0.0%	98%
Slovak Republic				
² 2019	4	10.4	5.5%	96%
2015	4	10.4	4.2%	97%
2011	4	10.4	4.6%	96%
2007	4	10.4	3.3%	97%
South Africa (5)				
2019	5	11.5	1.1%	97%
^b 2015	5	11.5	2.2%	98%
Spain				
2019	4	9.9	5.4%	95%
² 2015	4	9.9	5.6%	95%
2011	4	9.8	5.3%	97%
Sweden				
2019	4	10.8	5.4%	95%
² 2015	4	10.8	5.7%	95%
2011	4	10.7	4.1%	91%
2007	4	10.8	3.1%	97%

Exhibit 9.18: Trends in Student Populations – TIMSS 2019 – Fourth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
United Arab Emirates				
2019	4	9.7	3.2%	96%
2015	4	9.8	4.7%	97%
2011	4	9.8	3.3%	97%
United States				
² †2019	4	10.2	7.2%	84%
² †2015	4	10.2	6.8%	81%
² 2011	4	10.2	7.0%	80%
² †2007	4	10.3	9.2%	84%
†2003	4	10.2	5.1%	78%
1995	4	10.2	4.7%	80%
Benchmarking Participants				
Ontario, Canada				
² 2019	4	9.8	7.0%	90%
2015	4	9.8	3.4%	90%
2011	4	9.8	5.3%	94%
² 2007	4	9.8	6.3%	92%
2003	4	9.8	4.8%	90%
² 1995	4	9.8	–	92%
Quebec, Canada				
2019	4	10.1	4.4%	83%
^b 2015	4	10.1	5.4%	59%
2011	4	10.1	3.7%	91%
² 2007	4	10.1	6.4%	84%
2003	4	10.1	3.6%	91%
1995	4	10.3	–	81%
Abu Dhabi, UAE				
2019	4	9.7	3.6%	95%
² 2015	4	9.8	5.8%	97%
2011	4	9.7	2.7%	97%

Exhibit 9.18: Trends in Student Populations – TIMSS 2019 – Fourth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Dubai, UAE				
² 2019	4	9.9	5.6%	97%
2015	4	9.8	5.3%	97%
2011	4	9.8	5.1%	96%
[†] [‡] 2007	4	10.0	5.4%	67%

* Represents years of schooling counting from the first year of ISCED Level 1.

Data are included only for assessment years with comparable results for each country.

See Exhibit 9.3 for population coverage notes 1, 2, and 3. See Exhibit 9.10 for sampling guidelines and sampling participation notes †, ‡, and ≡.

[†] Tested the same cohort of students as other countries, but later in the assessment year.

Armenia began testing younger students in 2011 due to educational reforms.

Bahrain in 2015 administered both TIMSS and TIMSS Numeracy assessments to fourth grade students. Results for 2015 in mathematics are based on the average of both.

Georgia in 2011 excluded schools in South Ossetia and Abkhazia due to lack of access and absence of official statistics. Abkhazia refugee schools in other territories of Georgia were included in the sample frame.

Iran in 2015 administered both TIMSS and TIMSS Numeracy assessments to fourth grade students. Results for 2015 in mathematics are based on the average of both.

Results for Lithuania before 2015 do not include students taught in Polish or Russian.

Morocco and the Philippines in 2019 administered the less difficult fourth grade mathematics assessment.

Kuwait and Morocco in 2015 administered both TIMSS and TIMSS Numeracy assessments to fourth grade students. Results for 2015 in mathematics are based on the average of both.

Saudi Arabia and South Africa in 2019 administered the less difficult fourth grade mathematics assessment. South Africa in 2015 participated in only TIMSS Numeracy at the fifth grade.

Ontario and Quebec in 1995 participated as part of Canada. A dash (–) indicates comparable data not available.

Exhibit 9.19: Trends in Student Populations – TIMSS 2019 – Eighth Grade

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Australia				
2019	8	14.1	3.8%	91%
2015	8	14.0	3.5%	90%
2011	8	14.0	3.2%	88%
2007	8	13.9	1.9%	93%
2003	8	13.9	1.3%	83%
‡ 1995	8 or 9	14.2	0.8%	70%
Bahrain				
2019	8	13.8	0.6%	97%
2015	8	14.0	3.8%	97%
^b 2011	8	14.4	1.6%	97%
2007	8	14.1	1.5%	97%
2003	8	14.1	0.0%	98%
Chile				
2019	8	14.2	2.2%	95%
2015	8	14.3	1.9%	85%
2011	8	14.2	2.8%	95%
2003	8	14.2	2.2%	99%
1999	8	14.4	2.8%	96%
Chinese Taipei				
2019	8	14.3	1.5%	97%
2015	8	14.3	1.7%	98%
2011	8	14.2	1.3%	99%
2007	8	14.2	3.3%	99%
2003	8	14.2	4.8%	99%
1999	8	14.2	1.6%	99%
Cyprus				
2019	8	13.8	2.8%	96%
2007	8	13.8	2.5%	96%
2003	8	13.8	2.5%	96%
1999	8	13.8	0.8%	97%
1995	8	13.7	0.0%	97%
Egypt				
² 2019	8	13.9	9.1%	97%
2015	8	14.1	0.1%	91%

Exhibit 9.19: Trends in Student Populations – TIMSS 2019 – Eighth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
2007	8	14.1	0.5%	98%
2003	8	14.4	3.4%	97%
England				
2019	9	14.0	4.8%	85%
2015	9	14.1	2.3%	92%
‡2011	9	14.2	2.2%	70%
†2007	9	14.2	2.3%	75%
≡2003	9	14.3	2.1%	46%
†1999	9	14.2	5.0%	77%
³ †1995	9	14.0	11.3%	77%
Finland				
2019	8	14.8	3.1%	95%
2011	8	14.8	3.4%	93%
France				
2019	8	13.9	3.8%	97%
1995	8	14.3	2.0%	82%
Georgia				
¹ 2019	8	13.8	4.3%	89%
¹² 2015	8	13.7	6.0%	98%
¹ 2011	8	14.2	4.5%	97%
¹ 2007	8	14.2	3.9%	97%
Hong Kong SAR				
†2019	8	14.1	3.3%	81%
2015	8	14.2	1.6%	81%
2011	8	14.2	5.3%	75%
†2007	8	14.4	3.8%	75%
†2003	8	14.4	3.4%	80%
†1999	8	14.2	0.8%	74%
1995	8	14.2	2.0%	81%
Hungary				
2019	8	14.6	4.4%	96%
2015	8	14.7	5.4%	96%
2011	8	14.7	4.4%	95%
2007	8	14.6	3.9%	96%

Exhibit 9.19: Trends in Student Populations – TIMSS 2019 – Eighth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
² 2003	8	14.5	8.5%	94%
1999	8	14.4	4.3%	93%
1995	8	14.3	3.8%	87%
Iran, Islamic Rep. of				
2019	8	14.1	0.9%	98%
2015	8	14.2	2.2%	98%
2011	8	14.3	2.2%	99%
2007	8	14.2	0.5%	98%
² 2003	8	14.4	6.5%	98%
1999	8	14.6	4.4%	98%
1995	8	14.6	0.3%	98%
Ireland				
2019	8	14.4	1.0%	86%
2015	8	14.4	1.2%	91%
1995	8	14.4	0.4%	81%
Israel				
³ 2019	8	14.0	23.2%	91%
³ 2015	8	14.0	22.8%	93%
³ 2011	8	14.0	22.6%	92%
Italy				
2019	8	13.7	4.3%	97%
² 2015	8	13.8	6.1%	93%
2011	8	13.8	4.7%	93%
2007	8	13.9	5.0%	96%
2003	8	13.9	3.6%	97%
² 1999	8	14.0	6.7%	97%
Japan				
2019	8	14.4	1.8%	88%
2015	8	14.5	2.3%	93%
2011	8	14.5	2.8%	87%
2007	8	14.5	3.5%	91%
2003	8	14.4	0.6%	93%
1999	8	14.4	1.3%	89%
1995	8	14.4	0.6%	90%

Exhibit 9.19: Trends in Student Populations – TIMSS 2019 – Eighth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Jordan				
2019	8	13.9	0.2%	98%
2015	8	13.8	1.0%	96%
2011	8	13.9	0.4%	96%
2007	8	14.0	2.0%	96%
2003	8	13.9	1.3%	96%
1999	8	14.0	3.0%	99%
Kazakhstan				
² 2019	8	14.3	5.8%	99%
2011	8	14.6	5.1%	98%
Korea, Rep. of				
2019	8	14.5	1.6%	98%
2015	8	14.4	2.1%	98%
2011	8	14.3	1.9%	99%
2007	8	14.3	1.6%	99%
^b 2003	8	14.6	4.9%	98%
1999	8	14.4	4.0%	100%
1995	8	14.2	3.8%	95%
Kuwait				
2019	8	13.8	2.0%	96%
2015	8	13.7	3.3%	85%
Lebanon				
2019	8	14.0	1.2%	88%
2015	8	14.2	1.3%	88%
2011	8	14.3	1.4%	94%
2007	8	14.4	1.4%	85%
2003	8	14.6	1.4%	91%
Lithuania				
2019	8	14.7	5.3%	92%
² 2015	8	14.7	7.0%	93%
¹ 2011	8	14.7	4.8%	92%
¹ 2007	8	14.9	4.2%	90%
¹ 2003	8	14.9	2.6%	84%
^{1 b} 1999	8	15.2	4.5%	89%
^{1 2} 1995	8	14.3	6.6%	83%

Exhibit 9.19: Trends in Student Populations – TIMSS 2019 – Eighth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Malaysia				
2019	8	14.3	3.2%	98%
2015	8	14.3	4.3%	98%
2011	8	14.4	0.1%	98%
2007	8	14.3	3.3%	98%
2003	8	14.3	4.0%	98%
1999	8	14.4	4.6%	99%
Morocco				
2019	8	14.5	0.0%	98%
2015	8	14.5	0.0%	95%
2011	8	14.7	0.1%	94%
New Zealand				
†2019	8.5 – 9.5	13.9	4.2%	81%
†2015	8.5 – 9.5	14.1	3.1%	81%
2011	8.5 – 9.5	14.1	3.2%	88%
2003	8.5 – 9.5	14.1	4.4%	90%
1999	8.5 – 9.5	14.0	2.4%	91%
1995	8.5 – 9.5	14.0	1.7%	94%
Norway (9)				
†2019	9	14.7	4.0%	84%
2015	9	14.7	3.7%	87%
Oman				
2019	8	13.9	2.2%	99%
2015	8	14.0	0.4%	96%
2011	8	14.1	1.2%	97%
2007	8	14.3	1.2%	99%
Portugal				
2019	8	14.0	5.5%	94%
1995	8	14.5	0.3%	92%
Qatar				
2019	8	14.0	2.2%	97%
2015	8	14.1	3.2%	96%
2011	8	14.0	4.5%	99%

Exhibit 9.19: Trends in Student Populations – TIMSS 2019 – Eighth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
Romania				
2019	8	14.8	3.2%	94%
2011	8	14.9	1.3%	99%
2007	8	15.0	1.8%	97%
2003	8	15.0	0.5%	98%
1999	8	14.8	3.7%	97%
1995	8	14.6	2.8%	89%
Russian Federation				
² 2019	8	14.8	5.7%	97%
2015	8	14.7	3.7%	97%
² 2011	8	14.7	6.0%	98%
2007	7 or 8	14.6	2.3%	97%
2003	7 or 8	14.2	5.5%	96%
1999	7 or 8	14.1	1.7%	97%
² 1995	7 or 8	14.0	6.3%	95%
Saudi Arabia				
² 2019	8	13.9	10.0%	99%
2015	8	14.1	2.1%	97%
2011	8	14.1	1.2%	98%
Singapore				
² 2019	8	14.3	10.3%	96%
² 2015	8	14.4	7.0%	97%
² 2011	8	14.4	6.0%	95%
2007	8	14.4	1.8%	95%
2003	8	14.3	0.0%	97%
1999	8	14.4	0.0%	98%
1995	8	14.5	4.6%	95%
South Africa (9)				
2019	9	15.5	1.1%	96%
^b 2015	9	15.7	1.5%	96%
2011	9	16.0	1.4%	95%
Sweden				
² 2019	8	14.8	6.3%	91%
2015	8	14.7	5.4%	94%
2011	8	14.8	5.1%	92%

Exhibit 9.19: Trends in Student Populations – TIMSS 2019 – Eighth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
2007	8	14.8	3.6%	94%
2003	8	14.9	2.8%	87%
1995	7	14.9	0.9%	90%
Turkey				
2019	8	13.9	3.4%	99%
2015	8	13.9	1.3%	98%
2011	8	14.0	1.5%	97%
United Arab Emirates				
2019	8	13.7	2.4%	96%
2015	8	13.9	3.6%	97%
2011	8	13.9	2.8%	97%
United States				
[†] 2019	8	14.2	3.9%	79%
[†] 2015	8	14.2	5.1%	78%
² 2011	8	14.2	7.2%	81%
^{2†} 2007	8	14.3	7.9%	77%
[‡] 2003	8	14.2	4.9%	73%
1999	8	14.2	3.9%	85%
[†] 1995	8	14.2	2.1%	78%
Benchmarking Participants				
Ontario, Canada				
2019	8	13.8	5.5%	88%
2015	8	13.8	2.5%	87%
² 2011	8	13.8	5.6%	93%
² 2007	8	13.8	6.2%	89%
² 2003	8	13.8	6.0%	89%
1999	8	13.9	5.1%	93%
1995	8	14.0	-	90%
Quebec, Canada				
[‡] 2019	8	14.2	4.2%	73%
[≡] 2015	8	14.3	5.3%	58%
2011	8	14.2	4.9%	88%
³ 2007	8	14.2	13.6%	77%

Exhibit 9.19: Trends in Student Populations – TIMSS 2019 – Eighth Grade (continued)

Country	Years of Formal Schooling*	Average Age at Time of Testing	Overall Exclusion Rates	Overall Participation Rates (After Replacement)
2003	8	14.2	4.8%	85%
1999	8	14.3	1.3%	92%
1995	8	14.5	-	89%
Abu Dhabi, UAE				
2019	8	13.7	1.7%	96%
2015	8	13.9	4.1%	98%
2011	8	13.8	1.7%	96%
Dubai, UAE				
² 2019	8	13.9	5.5%	96%
2015	8	13.9	5.2%	97%
2011	8	13.9	4.0%	95%
[‡] 2007	8	14.2	5.0%	69%

* Represents years of schooling counting from the first year of ISCED Level 1.

Data are included only for assessment years with comparable results for each country.

See Exhibit 9.4 for population coverage notes 1, 2, and 3. See Exhibit 9.11 for sampling guidelines and sampling participation notes †, ‡, and ≡.

[‡] Tested the same cohort of students as other countries, but later in the assessment year.

Egypt's 2015 exclusion rate may be underestimated.

Georgia in 2011 excluded schools in South Ossetia and Abkhazia due to lack of access and absence of official statistics. Abkhazia refugee schools in other territories of Georgia were included in the sample frame.

Results for Lithuania before 2015 do not include students taught in Polish or Russian. Lithuania in 1999 tested the same cohort of students as other countries, but later in the assessment year.

Ontario and Quebec in 1995 and 1999 participated as part of Canada. A dash (-) indicates comparable data not available.

Characteristics of the Bridge Samples

As mentioned earlier, eTIMSS countries also provided a separate sample of bridge data in order to control for mode effects while linking the two versions to the TIMSS achievement scales and to safeguard the measurement of trends from previous assessments.

The bridge data result from administering the paper version of the trend items (eight blocks of items for each subject and grade that also were administered in 2015) to a separate, equivalent sample of students during the main data collection. The following sections of this chapter provide a summary of the major characteristics of the bridge samples for trend countries that participated in eTIMSS.

Overlap between the Bridge and eTIMSS Samples

As mentioned in [Chapter 3](#), it was important that the eTIMSS countries' bridge samples mirror their main eTIMSS samples as closely as possible. For operational reasons, it was not possible to administer both

the eTIMSS assessment and bridge assessment to the same students or in the same class. Consequently, bridge samples were obtained by a) selecting an additional class from a subset of the sampled schools, or b) selecting a separate sample of schools, or c) a combination of the two approaches. The sampling experts from Statistics Canada worked with each country during the sampling development stage to develop an optimal strategy for selecting the bridge sample.

Exhibits 9.20 and 9.21 present the number and percentage of students from the bridge sample that came from the eTIMSS schools.

Exhibit 9.20: Bridge – Percentage of Students from the Bridge Sample from eTIMSS schools – TIMSS 2019 – Fourth Grade

Country	Number of Students	Unweighted Percentage	Weighted Percentage
Austria	753	38.3%	36.4%
Canada	891	55.5%	60.3%
Chile	0	0.0%	0.0%
Chinese Taipei	1394	83.8%	85.6%
Croatia	683	46.4%	48.6%
Czech Republic	0	0.0%	0.0%
Denmark	450	31.4%	37.2%
England	0	0.0%	0.0%
Finland	0	0.0%	0.0%
France	0	0.0%	0.0%
Georgia	0	0.0%	0.0%
Germany	731	48.6%	44.9%
Hong Kong SAR	1304	98.1%	97.9%
Hungary	0	0.0%	0.0%
Italy	0	0.0%	0.0%
Korea, Rep. of	1215	78.8%	82.8%
Lithuania	0	0.0%	0.0%
Netherlands	0	0.0%	0.0%
Norway (5)	0	0.0%	0.0%
Portugal	1326	82.3%	87.8%
Qatar	1379	92.8%	98.5%
Russian Federation	0	0.0%	0.0%
Singapore	1881	100.0%	100.0%
Slovak Republic	460	28.6%	34.5%
Spain	840	50.3%	53.0%
Sweden	0	0.0%	0.0%
United Arab Emirates	2124	94.7%	98.9%
United States	1456	88.1%	90.7%

Exhibit 9.21: Bridge – Percentage of Students from the Bridge Sample from eTIMSS schools – TIMSS 2019 – Eighth Grade

Country	Number of Students	Unweighted Percentage	Weighted Percentage
Chile	0	0.0%	0.0%
Chinese Taipei	1530	97.0%	98.0%
England	0	0.0%	0.0%
Georgia	0	0.0%	0.0%
Hong Kong SAR	1423	100.0%	100.0%
Hungary	1751	100.0%	100.0%
Israel	1772	95.1%	91.2%
Italy	0	0.0%	0.0%
Korea, Rep. of	1548	91.4%	95.8%
Lithuania	1687	100.0%	100.0%
Malaysia	0	0.0%	0.0%
Norway (9)	0	0.0%	0.0%
Qatar	1408	94.5%	98.6%
Russian Federation	0	0.0%	0.0%
Singapore	1871	100.0%	100.0%
Sweden	0	0.0%	0.0%
Turkey	1218	67.0%	69.7%
United Arab Emirates	1936	92.7%	98.0%
United States	1307	88.1%	91.6%

National Coverage and Exclusions of the Bridge Samples

The coverage and school exclusions prior to school sampling are the same for the bridge and eTIMSS samples as they took place before the drawing of the samples. Although the within-school exclusion estimates for the bridge and eTIMSS samples could be different because the students in the two samples were not the same, in general the within-school exclusion rates estimated from the bridge samples were very similar to those estimated from the eTIMSS samples. However, because of the smaller sample sizes for the bridge, the within-school exclusion rate estimates from the eTIMSS samples are more precise than those estimated from the bridge samples. Exhibits 9.22 and 9.23 summarize population coverage and exclusions resulting from the bridge samples.

Exhibit 9.22: Bridge – Coverage for TIMSS 2019 – Fourth Grade Target Population

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
Austria	100%		0.9%	3.8%	4.8%
Canada	79%	Students from the provinces of Alberta, Manitoba, Newfoundland, Ontario, and Quebec	3.1%	3.5%	6.7%
Chile	100%		1.2%	2.4%	3.6%
Chinese Taipei	100%		0.3%	1.8%	2.1%
Croatia	100%		1.1%	3.3%	4.4%
Czech Republic	100%		2.5%	1.7%	4.2%
Denmark	100%		1.6%	1.1%	2.7%
England	100%		2.2%	7.1%	9.3%
Finland	100%		1.8%	1.5%	3.2%
France	100%		2.5%	2.3%	4.8%
Georgia	92%	Students taught in Georgian	2.8%	1.7%	4.6%
Germany	100%		1.7%	1.4%	3.1%
Hong Kong SAR	100%		1.1%	2.1%	3.2%
Hungary	100%		2.1%	1.5%	3.6%
Italy	100%		0.9%	4.8%	5.7%
Korea, Rep. of	100%		0.9%	1.7%	2.5%
Lithuania	100%		2.6%	3.3%	6.0%
Netherlands	100%		2.6%	2.9%	5.5%
Norway (5)	100%		1.4%	2.6%	4.0%
Portugal	100%		0.9%	7.2%	8.1%
Qatar	100%		1.2%	1.5%	2.7%
Russian Federation	100%		2.4%	3.6%	6.0%
Singapore	100%		12.5%	0.3%	12.7%
Slovak Republic	100%		3.6%	1.3%	4.9%
Spain	100%		1.6%	4.2%	5.8%
Sweden	100%		1.6%	3.4%	5.0%
United Arab Emirates	100%		1.1%	1.3%	2.4%
United States	100%		0.0%	5.8%	5.8%

Exhibit 9.23: Bridge – Coverage for TIMSS 2019 Eighth Grade Target Population

Country	International Target Population		Exclusions from National Target Population		
	Coverage	Notes on Coverage	School-Level Exclusions	Within-Sample Exclusions	Overall Exclusions
Chile	100%		0.3%	3.1%	3.4%
Chinese Taipei	100%		0.1%	1.1%	1.2%
England	100%		2.9%	4.2%	7.1%
Georgia	91%	Students taught in Georgian	2.2%	2.4%	4.6%
Hong Kong SAR	100%		1.2%	1.3%	2.5%
Hungary	100%		2.5%	1.0%	3.5%
Israel	100%		19.5%	3.5%	22.9%
Italy	100%		0.8%	4.4%	5.1%
Korea, Rep. of	100%		0.7%	1.0%	1.7%
Lithuania	100%		3.2%	3.0%	6.2%
Malaysia	100%		1.9%	0.0%	1.9%
Norway (9)	100%		1.4%	2.8%	4.2%
Qatar	100%		1.3%	1.2%	2.5%
Russian Federation	100%		2.8%	3.1%	5.9%
Singapore	100%		10.1%	0.0%	10.1%
Sweden	100%		1.7%	4.0%	5.7%
Turkey	100%		1.1%	1.1%	2.1%
United Arab Emirates	100%		1.1%	1.7%	2.9%
United States	100%		0.0%	2.6%	2.6%

Target Population Size

Exhibits 9.24 and 9.25 show the number of schools and students in each country's target population³ and bridge sample, as well as an estimate of the student population size based on the bridge sample data. The target population figures are derived from the sampling frame used to select the TIMSS 2019 samples, while the sample figures are based on the number of sampled schools and students that participated in the bridge assessments. The student population size estimated from the sample were computed using sampling weights, which are explained in more detail in [Chapter 3](#).

3 After school-level exclusions.

Exhibit 9.24: Bridge – Population and Sample Sizes – TIMSS 2019 – Fourth Grade

Country	Population		Sample		
	Schools	Students	Schools	Students	Population Size Estimated from Sample
Austria	3,095	81,406	99	1,964	81,357
Canada	9,796	304,798	83	1,604	292,209
Chile	6,081	252,190	58	1,612	261,962
Chinese Taipei	2,476	190,975	68	1,663	187,133
Croatia	1,571	39,244	74	1,472	38,094
Czech Republic	3,578	114,774	58	2,030	110,694
Denmark	1,644	66,225	61	1,432	64,611
England	15,349	644,127	46	1,242	620,802
Finland	1,840	59,755	71	1,983	60,028
France	31,716	822,438	60	1,948	880,469
Georgia	1,678	42,980	58	1,632	41,954
Germany	17,584	716,091	78	1,505	713,942
Hong Kong SAR	564	60,786	54	1,329	60,002
Hungary	2,888	94,673	50	1,778	89,056
Italy	6,809	556,298	60	1,921	539,069
Korea, Rep. of	5,478	472,130	68	1,541	420,658
Lithuania	827	28,035	74	1,587	27,628
Netherlands	6,291	178,200	41	1,295	158,792
Norway (5)	1,945	62,012	55	1,899	66,756
Portugal	1,245	99,927	90	1,612	100,853
Qatar	247	25,506	63	1,486	25,664
Russian Federation	40,575	1,414,240	92	2,128	1,661,895
Singapore	187	39,934	56	1,881	39,978
Slovak Republic	2,000	52,222	70	1,610	52,347
Spain	12,861	489,765	69	1,670	464,033
Sweden	3,276	114,494	52	1,697	119,524
United Arab Emirates	754	85,609	98	2,243	88,435
United States	72,902	4,153,454	79	1,652	4,099,214

Exhibit 9.25: Bridge – Population and Sample Sizes – TIMSS 2019 – Eighth Grade

Country	Population		Sample		
	Schools	Students	Schools	Students	Population Size Estimated from Sample
Chile	5,767	246,120	56	1,526	230,321
Chinese Taipei	931	214,516	57	1,578	198,632
England	3,706	584,697	47	1,592	582,799
Georgia	1,837	45,339	53	1,314	44,074
Hong Kong SAR	478	54,160	54	1,423	55,605
Hungary	2,724	87,805	52	1,751	83,778
Israel	979	106,971	69	1,863	115,855
Italy	5,775	566,636	58	2,032	609,747
Korea, Rep. of	3,006	465,626	65	1,693	449,648
Lithuania	706	25,394	72	1,687	25,305
Malaysia	2,565	423,150	44	1,560	413,205
Norway (9)	1,012	60,847	51	2,018	61,630
Qatar	156	19,513	63	1,490	19,480
Russian Federation	37,308	1,326,933	92	2,083	1,424,446
Singapore	153	38,517	55	1,871	38,436
Sweden	1,600	108,164	52	1,582	114,578
Turkey	16,179	1,204,063	72	1,819	1,176,396
United Arab Emirates	685	68,113	88	2,089	64,713
United States	48,557	4,059,757	65	1,484	3,804,681

Sampling Participation for the TIMSS 2019 Bridge Samples

The bridge samples for TIMSS 2019 were subject to the same quality requirements as the TIMSS 2019 samples, as summarized in Exhibit 9.9.

Exhibits 9.26 through 9.29 present the school, classroom, student, and overall weighted and unweighted participation rates for each country’s fourth and eighth grade bridge samples, respectively. At the fourth grade, all but two countries were in the same participation category for the bridge sample as for the eTIMSS samples. The Netherlands improved their rating and achieved the minimum acceptable participation rate after including replacement schools for their bridge sample and Norway met the participation requirement for their bridge sample without the use of replacement schools.

At the eighth grade, all but one country had the same participation category for the bridge sample as for the eTIMSS sample. The United States nearly met the required sampling participation rate at the eighth grade with the use of replacement for their bridge sample.

Exhibit 9.26: Bridge – Participation Rates (Weighted) – TIMSS 2019 – Fourth Grade

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Austria	99%	100%	100%	97%	96%	97%
Canada	85%	90%	100%	94%	80%	85%
Chile	100%	100%	100%	96%	95%	96%
Chinese Taipei	94%	100%	100%	99%	93%	99%
Croatia	98%	98%	100%	89%	87%	87%
Czech Republic	100%	100%	100%	94%	94%	94%
Denmark	65%	98%	100%	86%	56%	84%
England	82%	90%	100%	95%	77%	85%
Finland	98%	100%	100%	97%	96%	97%
France	98%	98%	100%	98%	96%	96%
Georgia	100%	100%	100%	96%	96%	96%
Germany	97%	100%	100%	96%	92%	96%
Hong Kong SAR	67%	85%	100%	87%	58%	74%
Hungary	100%	100%	100%	96%	96%	96%
Italy	100%	100%	100%	97%	97%	97%
Korea, Rep. of	100%	100%	100%	98%	98%	98%
Lithuania	100%	100%	100%	93%	93%	93%
Netherlands	55%	82%	99%	96%	53%	78%
Norway (5)	100%	100%	100%	95%	95%	95%
Portugal	91%	100%	100%	92%	84%	92%
Qatar	100%	100%	100%	97%	97%	97%
Russian Federation	100%	100%	100%	97%	97%	97%
Singapore	100%	100%	100%	96%	96%	96%
Slovak Republic	99%	100%	100%	96%	95%	96%
Spain	97%	98%	100%	97%	94%	96%
Sweden	97%	100%	100%	96%	93%	96%
United Arab Emirates	97%	97%	100%	96%	92%	92%
United States	77%	93%	100%	96%	74%	89%

Exhibit 9.27: Bridge – Participation Rates (Weighted) – TIMSS 2019 – Eighth Grade

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Chile	97%	100%	100%	96%	92%	96%
Chinese Taipei	100%	100%	100%	98%	98%	98%
England	81%	95%	100%	92%	74%	87%
Georgia	91%	91%	100%	97%	88%	88%
Hong Kong SAR	63%	85%	100%	90%	57%	77%
Hungary	100%	100%	100%	96%	96%	96%
Israel	91%	97%	100%	90%	82%	87%
Italy	100%	100%	100%	97%	97%	97%
Korea, Rep. of	100%	100%	100%	97%	97%	97%
Lithuania	100%	100%	100%	92%	92%	92%
Malaysia	100%	100%	100%	98%	98%	98%
Norway (9)	91%	93%	100%	91%	82%	85%
Qatar	100%	100%	100%	97%	97%	97%
Russian Federation	100%	100%	100%	97%	97%	97%
Singapore	98%	98%	100%	97%	95%	95%
Sweden	97%	100%	100%	92%	89%	92%
Turkey	100%	100%	100%	97%	97%	97%
United Arab Emirates	98%	98%	100%	97%	95%	95%
United States	72%	80%	100%	93%	67%	74%

Exhibit 9.28: Bridge – Participation Rates (Unweighted) – TIMSS 2019 – Fourth Grade

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Austria	99%	100%	100%	97%	96%	97%
Canada	84%	90%	100%	94%	78%	84%
Chile	98%	100%	100%	96%	94%	96%
Chinese Taipei	94%	100%	100%	99%	93%	99%
Croatia	97%	97%	100%	89%	87%	87%
Czech Republic	100%	100%	100%	95%	95%	95%
Denmark	65%	98%	100%	86%	56%	85%
England	81%	88%	100%	95%	77%	84%
Finland	99%	100%	100%	97%	96%	97%
France	98%	98%	100%	98%	96%	96%
Georgia	100%	100%	100%	96%	96%	96%
Germany	97%	100%	100%	96%	93%	96%
Hong Kong SAR	65%	82%	100%	87%	57%	71%
Hungary	100%	100%	100%	96%	96%	96%
Italy	98%	100%	100%	97%	95%	97%
Korea, Rep. of	100%	100%	100%	98%	98%	98%
Lithuania	100%	100%	100%	93%	93%	93%
Netherlands	54%	82%	97%	96%	50%	77%
Norway (5)	100%	100%	100%	95%	95%	95%
Portugal	92%	100%	100%	92%	85%	92%
Qatar	100%	100%	100%	97%	97%	97%
Russian Federation	100%	100%	100%	97%	97%	97%
Singapore	100%	100%	100%	96%	96%	96%
Slovak Republic	99%	100%	100%	96%	94%	96%
Spain	97%	99%	100%	97%	94%	95%
Sweden	96%	100%	100%	95%	92%	95%
United Arab Emirates	98%	98%	100%	96%	94%	94%
United States	76%	93%	100%	95%	73%	89%

Exhibit 9.29: Bridge – Participation Rates (Unweighted) – TIMSS 2019 – Eighth Grade

Country	School Participation		Class Participation	Student Participation	Overall Participation	
	Before Replacement	After Replacement			Before Replacement	After Replacement
Chile	95%	100%	100%	95%	90%	95%
Chinese Taipei	100%	100%	100%	98%	98%	98%
England	82%	94%	100%	91%	75%	86%
Georgia	91%	91%	100%	96%	88%	88%
Hong Kong SAR	65%	86%	100%	92%	60%	78%
Hungary	100%	100%	100%	96%	96%	96%
Israel	93%	97%	100%	90%	84%	87%
Italy	100%	100%	100%	97%	97%	97%
Korea, Rep. of	100%	100%	100%	97%	97%	97%
Lithuania	100%	100%	100%	92%	92%	92%
Malaysia	100%	100%	100%	98%	98%	98%
Norway (9)	93%	94%	100%	91%	84%	86%
Qatar	100%	100%	100%	97%	97%	97%
Russian Federation	100%	100%	100%	97%	97%	97%
Singapore	98%	98%	100%	97%	95%	95%
Sweden	98%	100%	100%	92%	90%	92%
Turkey	100%	100%	100%	97%	97%	97%
United Arab Emirates	99%	99%	100%	97%	96%	96%
United States	71%	79%	100%	93%	66%	74%

Exhibits 9.30 through 9.33 show the achieved bridge sample sizes in terms of schools and students for each country at fourth and eighth grade, respectively.

Exhibit 9.30: Bridge – School Sample Sizes – TIMSS 2019 – Fourth Grade

Country	Number of Schools in Original Sample	Number of Eligible Schools in Original Sample	Number of Schools in Original Sample that Participated	Number of Replacement Schools that Participated	Total Number of Schools that Participated
Austria	100	99	98	1	99
Canada	94	92	77	6	83
Chile	58	58	57	1	58
Chinese Taipei	68	68	64	4	68
Croatia	76	76	74	0	74
Czech Republic	60	58	58	0	58
Denmark	62	62	40	21	61
England	52	52	42	4	46
Finland	72	71	70	1	71
France	62	61	60	0	60
Georgia	58	58	58	0	58
Germany	78	78	76	2	78
Hong Kong SAR	66	66	43	11	54
Hungary	52	50	50	0	50
Italy	60	60	59	1	60
Korea, Rep. of	68	68	68	0	68
Lithuania	74	74	74	0	74
Netherlands	50	50	27	14	41
Norway (5)	56	55	55	0	55
Portugal	90	90	83	7	90
Qatar	63	63	63	0	63
Russian Federation	92	92	92	0	92
Singapore	56	56	56	0	56
Slovak Republic	70	70	69	1	70
Spain	70	70	68	1	69
Sweden	52	52	50	2	52
United Arab Emirates	101	100	98	0	98
United States	86	85	65	14	79

Exhibit 9.31: Bridge – School Sample Sizes – TIMSS 2019 – Eighth Grade

Country	Number of Schools in Original Sample	Number of Eligible Schools in Original Sample	Number of Schools in Original Sample that Participated	Number of Replacement Schools that Participated	Total Number of Schools that Participated
Chile	56	56	53	3	56
Chinese Taipei	57	57	57	0	57
England	50	50	41	6	47
Georgia	58	58	53	0	53
Hong Kong SAR	63	63	41	13	54
Hungary	54	52	52	0	52
Israel	71	71	66	3	69
Italy	58	58	58	0	58
Korea, Rep. of	66	65	65	0	65
Lithuania	72	72	72	0	72
Malaysia	44	44	44	0	44
Norway (9)	54	54	50	1	51
Qatar	63	63	63	0	63
Russian Federation	92	92	92	0	92
Singapore	56	56	55	0	55
Sweden	54	52	51	1	52
Turkey	72	72	72	0	72
United Arab Emirates	93	89	88	0	88
United States	83	82	58	7	65

Exhibit 9.32: Bridge – Student Sample Sizes – TIMSS 2019 – Fourth Grade

Country	Within-School Student Participation (Weighted Percentage)	Number of Students Sampled in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Eligible Students	Number of Students Absent	Number of Students Assessed
Austria	97%	2,125	19	83	2,023	59	1,964
Canada	94%	1,773	19	40	1,714	110	1,604
Chile	96%	1,740	10	49	1,681	69	1,612
Chinese Taipei	99%	1,737	22	28	1,687	24	1,663
Croatia	89%	1,711	0	56	1,655	183	1,472
Czech Republic	94%	2,193	18	27	2,148	118	2,030
Denmark	86%	1,706	29	16	1,661	229	1,432
England	95%	1,445	14	121	1,310	68	1,242
Finland	97%	2,067	9	11	2,047	64	1,983
France	98%	2,050	13	46	1,991	43	1,948
Georgia	96%	1,742	12	30	1,700	68	1,632
Germany	96%	1,630	31	25	1,574	69	1,505
Hong Kong SAR	87%	1,561	2	34	1,525	196	1,329
Hungary	96%	1,898	16	27	1,855	77	1,778
Italy	97%	2,111	7	120	1,984	63	1,921
Korea, Rep. of	98%	1,616	16	24	1,576	35	1,541
Lithuania	93%	1,769	4	56	1,709	122	1,587
Netherlands	96%	1,389	17	27	1,345	50	1,295
Norway (5)	95%	2,057	9	44	2,004	105	1,899
Portugal	92%	1,891	10	125	1,756	144	1,612
Qatar	97%	1,600	40	24	1,536	50	1,486
Russian Federation	97%	2,264	5	65	2,194	66	2,128
Singapore	96%	1,962	5	0	1,957	76	1,881
Slovak Republic	96%	1,699	9	8	1,682	72	1,610
Spain	97%	1,810	4	79	1,727	57	1,670
Sweden	96%	1,845	14	53	1,778	81	1,697
United Arab Emirates	96%	2,385	12	37	2,336	93	2,243
United States	96%	1,827	22	74	1,731	79	1,652

Exhibit 9.33: Bridge – Student Sample Sizes – TIMSS 2019 – Eighth Grade

Country	Within-School Student Participation (Weighted Percentage)	Number of Students Sampled in Participating Schools	Number of Students Withdrawn from Class/School	Number of Students Excluded	Number of Eligible Students	Number of Students Absent	Number of Students Assessed
Chile	96%	1,666	23	43	1,600	74	1,526
Chinese Taipei	98%	1,666	34	16	1,616	38	1,578
England	92%	1,834	47	43	1,744	152	1,592
Georgia	97%	1,412	13	34	1,365	51	1,314
Hong Kong SAR	90%	1,578	2	21	1,555	132	1,423
Hungary	96%	1,847	8	15	1,824	73	1,751
Israel	90%	2,101	15	16	2,070	207	1,863
Italy	97%	2,206	17	95	2,094	62	2,032
Korea, Rep. of	97%	1,775	7	19	1,749	56	1,693
Lithuania	92%	1,880	9	37	1,834	147	1,687
Malaysia	98%	1,613	25	0	1,588	28	1,560
Norway (9)	91%	2,288	10	65	2,213	195	2,018
Qatar	97%	1,613	53	20	1,540	50	1,490
Russian Federation	97%	2,195	11	41	2,143	60	2,083
Singapore	97%	1,945	10	0	1,935	64	1,871
Sweden	92%	1,800	16	63	1,721	139	1,582
Turkey	97%	1,956	51	25	1,880	61	1,819
United Arab Emirates	97%	2,203	6	35	2,162	73	2,089
United States	93%	1,644	32	18	1,594	110	1,484

Appendix 9A: Characteristics of National Samples

Albania

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, very small schools - Grade 3, language not Albanian, and special curriculum
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), and urbanization (urban, rural) within public schools
- Implicit stratification by urbanization (urban, rural) within private school stratum
- Sampled two classrooms in large schools (measure of size > 100)

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Urban	88	1	85	0	0	2	0
Public - Rural	78	10	68	0	0	0	0
Private	14	0	14	0	0	0	0
Total	180	11	167	0	0	2	0

Armenia

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), and special needs schools
- Within-school exclusions consisted of non-native language speakers

Sample Design

- Explicit stratification by region (10)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 60)
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Aragatsotn	8	0	8	0	0	0	0
Ararat	14	0	14	0	0	0	0
Armavir	14	0	14	0	0	0	0
Gegharkunik	12	0	12	0	0	0	0
Kotayk	16	0	16	0	0	0	0
Lori	12	0	12	0	0	0	0
Shirak	12	0	12	0	0	0	0
Syunik & Vayots Dzor	10	0	10	0	0	0	0
Tavush	8	0	8	0	0	0	0
Yerevan	44	0	44	0	0	0	0
Total	150	0	150	0	0	0	0

Australia

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), very remote schools, and special and non-mainstream schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by state or territory (8)
- Implicit stratification by school type (Catholic, government, independent), geographic location (metropolitan, provincial, remote), and socioeconomic index (low socioeconomic status, high socioeconomic status)
- Sampled one classroom per school. In tracked schools, classrooms were grouped according to the ability level of students prior to sampling and one classroom was sampled per class group.
- The TIMSS Grade 4 and Grade 8 samples were selected sequentially.
- The TIMSS sample at Grade 4 was selected by controlling the overlap with the PISA and the TIMSS Grade 8 samples using the Chowdhury approach
- Schools were oversampled at the state/territory level

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Australian Capital Territory	29	0	29	0	0	0	0
New South Wales	46	0	44	2	0	0	0
Northern Territory	14	0	14	0	0	0	0
Queensland	45	0	45	0	0	0	0
South Australia	41	0	41	0	0	0	0
Tasmania	31	0	30	0	0	1	0
Victoria	44	0	44	0	0	0	1
Western Australia	38	0	38	0	0	0	1
Total	288	0	285	2	0	1	2

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), very remote schools, and special and non-mainstream schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by state or territory (8)
- Implicit stratification by school type (Catholic, government, independent), geographic location (metropolitan, provincial, remote), and socioeconomic index (low socioeconomic status, high socioeconomic status)
- Sampled one classroom per school. In tracked schools, classrooms were grouped according to the ability level of students prior to sampling and one classroom was sampled per class group.
- The TIMSS Grade 4 and Grade 8 samples were selected sequentially.
- The TIMSS sample at Grade 8 was selected by controlling the overlap with the PISA sample using the Chowdhury approach
- Schools were oversampled at the state/territory level

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Australian Capital Territory	30	0	30	0	0	0	0
New South Wales	45	0	43	2	0	0	0
Northern Territory	14	1	13	0	0	0	1
Queensland	47	0	47	0	0	0	0
South Australia	39	0	39	0	0	0	1
Tasmania	29	1	28	0	0	0	1
Victoria	45	0	45	0	0	0	0
Western Australia	37	0	37	0	0	0	0
Total	286	2	282	2	0	0	3

Austria

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (area with more than 50,000 inhabitants, area with 50,000 inhabitants or less), achievement score (low, medium, high), and school size (small, large)
- Implicit stratification by region (9)
- Sampled two classrooms per school. In schools sampled for eTIMSS and bridge, one classroom sampled per assessment
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- Austria provided a bridge sample for their own national analyses only since they did not have a trend with TIMSS 2015
- 36.4 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Rural (no more than 50,000 inhabitants) - Low - Small	28	0	28	0	0	0	0
Rural (no more than 50,000 inhabitants) - Low - Large	12	0	12	0	0	0	0
Rural (no more than 50,000 inhabitants) - Medium - Small	38	2	36	0	0	0	0
Rural (no more than 50,000 inhabitants) - Medium - Large	12	0	12	0	0	0	0
Rural (no more than 50,000 inhabitants) - High - Small	32	0	31	0	0	1	0
Rural (no more than 50,000 inhabitants) - High - Large	10	0	10	0	0	0	0
Urban (more than 50,000 inhabitants) - Low - Small	9	0	9	0	0	0	0
Urban (more than 50,000 inhabitants) - Low - Large	17	0	17	0	0	0	0
Urban (more than 50,000 inhabitants) - Medium - Small	8	0	8	0	0	0	1
Urban (more than 50,000 inhabitants) - Medium - Large	12	0	12	0	0	0	0
Urban (more than 50,000 inhabitants) - High - Small	8	0	8	0	0	0	0
Urban (more than 50,000 inhabitants) - High - Large	10	0	10	0	0	0	0
Total	196	2	193	0	0	1	1

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Rural (no more than 50,000 inhabitants) - Low - Large	12	0	12	0	0	0	0
Rural (no more than 50,000 inhabitants) - Medium - Small	38	2	36	0	0	0	0
Rural (no more than 50,000 inhabitants) - Medium - Large	12	0	12	0	0	0	0
Rural (no more than 50,000 inhabitants) - High - Small	32	0	31	0	0	1	0
Rural (no more than 50,000 inhabitants) - High - Large	10	0	10	0	0	0	0
Urban (more than 50,000 inhabitants) - Low - Small	9	0	9	0	0	0	0
Urban (more than 50,000 inhabitants) - Low - Large	17	0	17	0	0	0	0
Urban (more than 50,000 inhabitants) - Medium - Small	8	0	8	0	0	0	1
Urban (more than 50,000 inhabitants) - Medium - Large	12	0	12	0	0	0	0
Urban (more than 50,000 inhabitants) - High - Small	8	0	8	0	0	0	0
Urban (more than 50,000 inhabitants) - High - Large	10	0	10	0	0	0	0
Total	196	2	193	0	0	1	1

Azerbaijan

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, language of instruction other than Azerbaijani or Russian, and private schools
- Within-school exclusions consisted of students with intellectual disabilities, and students with functional disabilities

Sample Design

- Explicit stratification by language (Azerbaijani only, Russian or Azerbaijani and Russian), urbanization (urban, rural) within Azerbaijani only strata, and city (Baku, other) within urban stratum
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 120) and in schools where class grouping is applied
- Class group option was used in bilingual schools

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Azerbaijani only - Urban - Baku	30	1	26	2	0	1	0
Azerbaijani only - Urban - Other cities	40	0	39	1	0	0	0
Azerbaijani only - Rural	80	0	78	0	0	2	0
Russian, Azerbaijani and Russian	50	0	43	5	0	2	0
Total	200	1	186	8	0	5	0

Bahrain

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and schools with students taught in French
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), and by governorate (4) and gender (girls, boys) within public schools
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 155)
- No overlap between Grade 4 and Grade 8 samples
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Participating Schools						
	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Public Muharraq - Girls	10	0	10	0	0	0	0
Public Muharraq - Boys	10	0	10	0	0	0	0
Public Capital - Girls	19	0	19	0	0	0	0
Public Capital - Boys	20	0	20	0	0	0	0
Public Northern - Girls	22	0	22	0	0	0	0
Public Northern - Boys	17	0	17	0	0	0	0
Public Southern - Girls	11	0	11	0	0	0	0
Public Southern - Boys	12	0	12	0	0	0	0
Private	64	0	64	0	0	0	0
Total	185	0	185	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and schools with students taught in French
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), and by governorate (4) and gender (girls, boys) within public schools
- No implicit stratification
- Sampled two classrooms per school
- No overlap between Grade 4 and Grade 8 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public Muharraq - Girls	6	0	6	0	0	0	0
Public Muharraq - Boys	6	0	6	0	0	0	0
Public Capital - Girls	8	0	8	0	0	0	0
Public Capital - Boys	8	0	8	0	0	0	0
Public Northern - Girls	8	0	8	0	0	0	0
Public Northern - Boys	9	0	9	0	0	0	0
Public Southern - Girls	7	0	7	0	0	0	0
Public Southern - Boys	10	0	10	0	0	0	0
Private	50	0	50	0	0	0	0
Total	112	0	112	0	0	0	0

Belgium (Flemish)

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), language other than Dutch, and special needs schools other than type 1, 3, 8, 9
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by region (6), school type (official, private) within Antwerpen region, and socioeconomic status (4). Special needs schools were grouped into one separate stratum.
- No implicit stratification
- Sampled two classrooms per school

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Antwerpen - Official - High SES	8	0	8	0	0	0	0
Antwerpen - Official - Medium SES	8	0	6	1	1	0	0
Antwerpen - Official - Low SES	8	0	7	1	0	0	0
Antwerpen - Private - High SES	8	0	5	1	2	0	0
Antwerpen - Private - Medium SES	8	0	3	0	3	2	0
Antwerpen - Private - Low SES	8	0	5	2	0	1	0
Brussels Hoofdstedelijk Gewest - Low and Medium SES	8	0	6	2	0	0	0
Limburg - High SES	8	0	5	2	0	1	0
Limburg - Medium SES	8	0	2	4	2	0	0

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Limburg - Low SES	8	0	4	1	2	1	0
Oost-Vlaanderen - High SES	8	0	7	1	0	0	0
Oost-Vlaanderen - Medium SES	8	0	6	1	1	0	0
Oost-Vlaanderen - Low SES	8	0	4	2	1	1	0
Vlaams-Brabant - High SES	8	0	5	2	1	0	0
Vlaams-Brabant - Medium SES	8	0	7	1	0	0	0
Vlaams-Brabant - Low SES	8	0	4	3	0	1	0
West-Vlaanderen - High SES	8	1	4	3	0	0	0
West-Vlaanderen - Medium SES	8	0	6	1	1	0	0
West-Vlaanderen - Low SES	8	0	5	3	0	0	0
Special Needs Schools	8	3	2	1	0	2	0
Total	160	4	101	32	14	9	0

Bosnia and Herzegovina

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and international schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by region (12) and urbanization (rural, urban) within 3 larger regions
- Implicit stratification by urbanization (urban, rural) within two other larger regions
- Sampled two classrooms per school
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- A census of schools was taken in two small regions
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Republika Srpska - Rural	10	0	10	0	0	0	0
Republika Srpska - Urban	36	0	36	0	0	0	0
Brcko District	8	0	8	0	0	0	0
Bosnian Podrinje Canton	6	0	6	0	0	0	0
Herzeg-Bosnia Canton	8	0	8	0	0	0	0
Herzegovina-Neretva Canton	8	0	8	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Sarajevo Canton	20	0	20	0	0	0	0
Central Bosnia Canton - Rural	8	0	8	0	0	0	0
Central Bosnia Canton - Urban	9	0	9	0	0	0	0
Tuzla Canton - Rural	12	0	12	0	0	0	0
Tuzla Canton - Urban	8	0	8	0	0	0	0
Una-Sana Canton	12	0	12	0	0	0	0
Zenica-Doboj Canton - Rural	8	0	8	0	0	0	0
Zenica-Doboj Canton - Urban	10	0	10	0	0	0	0
Posavina Canton	7	0	7	0	0	0	0
West Herzegovina Canton	8	0	8	0	0	0	0
Total	178	0	178	0	0	0	0

Bulgaria

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (elementary, basic, general) and urbanization (capital, large cities, other)
- Implicit stratification by score (4)
- Sampled two classrooms in large schools (measure of size > 80)
- The Field Test and Main Data Collection TIMSS samples were selected sequentially. The TIMSS Main Data Collection sample was selected by controlling for the overlap with the TIMSS Field Test and TALIS samples using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Elementary School - Capital and Large Cities	8	0	7	1	0	0	0
Elementary School - Other	8	0	8	0	0	0	0
Basic School - Capital	10	0	10	0	0	0	0
Basic School - Large Cities	30	0	28	1	1	0	0
Basic School - Other	36	0	35	1	0	0	0
General School - Capital	15	0	15	0	0	0	0
General School - Large Cities	20	0	19	1	0	0	0
General School - Other	24	0	24	0	0	0	0
Total	151	0	146	4	1	0	0

Canada

Fourth Grade

Coverage and Exclusions

- Coverage is 79.3 percent. Coverage in Canada is restricted to students from the provinces of Alberta, Manitoba, Newfoundland, Ontario, and Quebec.
- School-level exclusions consisted of very small schools (measure of size < 10 in Quebec, measure of size < 6 in Ontario, Alberta, and Newfoundland, measure of size < 4 in Manitoba), special needs schools, First Nation schools and federal schools. French schools, non-ministry schools and remote or hard to access schools (in Newfoundland). Home schools (in Alberta and Manitoba), not funded schools (in Manitoba). International schools and school boards with special status (in Quebec).
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by provinces (5). Within the province of Alberta, explicit stratification was done by school system (French, English), school type (public, private, separate), and by school size (small, large). Within the province of Ontario, explicit stratification was done by language (English, French), school type (private, Catholic, public), and by school size (small, large) within Catholic and public schools. Within Quebec and Manitoba, explicit stratification was done by language (French, English), school type (public, private), and school size (small with less than three classes, large with three or more classes).
- Implicit stratification by region (6) in English public and Catholic schools explicit strata within Ontario
- Sampled two classrooms in large schools (measure of size > 40 in Ontario and measure of size > 75 in Quebec). In schools sampled for eTIMSS and bridge, one classroom sampled per assessment
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- All Alberta and Manitoba French schools were selected
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS sample and classes were randomly

assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.

- 60.3 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Newfoundland	100	2	91	0	0	7	0
Quebec - English - Public - Small	12	0	8	1	0	3	0
Quebec - English - Public - Large	14	0	13	1	0	0	0
Quebec - English - Private	8	0	6	0	0	2	0
Quebec - French - Public - Small	44	0	35	1	0	8	0
Quebec - French - Public - Large	84	0	70	4	0	10	0
Quebec - French - Private - Small	4	0	3	1	0	0	0
Quebec - French - Private - Large	6	0	5	0	0	1	0
Manitoba - English - Public - Small	78	1	76	0	0	1	0
Manitoba - English - Public - Large	58	0	55	0	0	3	0
Manitoba - English - Private	10	0	10	0	0	0	0
Manitoba - French - Public	19	0	17	0	0	2	0
Alberta - English - Public - Small	36	0	25	4	2	5	0
Alberta - English - Public - Large	68	1	46	5	3	13	2
Alberta - English - Private	7	0	2	3	0	2	1
Alberta - English - Separate - Small	16	1	11	1	1	2	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Alberta - English - Separate - Large	22	2	13	3	2	2	0
Alberta - French - Public	28	0	23	0	0	5	0
Ontario - English - Public - Small	24	1	23	0	0	0	0
Ontario - English - Public - Large	72	0	70	1	0	1	0
Ontario - English - Catholic - Small	18	0	18	0	0	0	0
Ontario - English - Catholic - Large	19	0	19	0	0	0	0
Ontario - Private	8	0	0	1	1	6	0
Ontario - French - Catholic & Public - Small	18	0	18	0	0	0	0
Ontario - French - Catholic & Public - Large	12	0	12	0	0	0	0
Total	785	8	669	26	9	73	3

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Newfoundland	4	0	4	0	0	0	0
Quebec - English - Public - Small	2	0	0	0	0	2	0
Quebec - English - Public - Large	2	0	2	0	0	0	0
Quebec - English - Private	2	0	2	0	0	0	0
Quebec - French - Public - Small	6	0	6	0	0	0	0
Quebec - French - Public - Large	12	0	11	0	0	1	0
Quebec - French - Private - Small	2	0	2	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Quebec - French - Private - Large	2	0	1	0	0	1	0
Manitoba - English - Public - Small	2	0	2	0	0	0	0
Manitoba - English - Public - Large	2	0	2	0	0	0	0
Manitoba - English - Private	2	0	2	0	0	0	0
Manitoba - French - Public	2	0	2	0	0	0	0
Alberta - English - Public - Small	4	0	1	1	0	2	0
Alberta - English - Public - Large	6	0	2	2	0	2	0
Alberta - English - Private	1	0	0	0	1	0	1
Alberta - English - Separate - Small	2	0	2	0	0	0	0
Alberta - English - Separate - Large	2	1	1	0	0	0	0
Alberta - French - Public	2	0	2	0	0	0	0
Ontario - English - Public - Small	6	0	6	0	0	0	0
Ontario - English - Public - Large	16	0	15	1	0	0	0
Ontario - English - Catholic - Small	4	0	4	0	0	0	0
Ontario - English - Catholic - Large	4	0	4	0	0	0	0
Ontario - Private	2	0	0	1	0	1	0
Ontario - French - Catholic & Public - Small	2	0	2	0	0	0	0
Ontario - French - Catholic & Public - Large	2	0	2	0	0	0	0
Total	93	1	77	5	1	9	1

Chile

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and geographically inaccessible schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4’/‘Grade 4 and Grade 8’ schools, school type (public, private subsidized, private), and urbanization (rural, urban)
- Implicit stratification by national assessment score level (4)
- Sampled one classroom per school
- The Field Test and Main Data Collection TIMSS samples were selected sequentially. The TIMSS Main Data Collection sample was selected by controlling for the overlap with the TIMSS Field Test, ICILS, and PISA samples using the Chowdhury approach.
- Private schools were oversampled
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Urban	8	1	7	0	0	0	0
Grade 4 - Rural	8	0	7	1	0	0	0
Grade 4 & Grade 8 - Public - Urban	40	0	37	3	0	0	0
Grade 4 & Grade 8 - Public - Rural	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Private Subsidized - Urban	71	1	61	8	1	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 & Grade 8 - Private Subsidized - Rural	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Private Paid	29	0	21	4	1	3	0
Total	174	2	151	16	2	3	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Urban	4	0	4	0	0	0	0
Grade 4 - Rural	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Public - Urban	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Public - Rural	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Private Subsidized - Urban	22	0	22	0	0	0	0
Grade 4 & Grade 8 - Private Subsidized - Rural	4	0	3	1	0	0	0
Grade 4 & Grade 8 - Private Paid	8	0	8	0	0	0	0
Total	58	0	57	1	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and geographically inaccessible schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 8’/‘Grade 4 and Grade 8’ schools, school type (public, private subsidized, private), and urbanization (rural, urban)
- Implicit stratification by national assessment score level (4)
- Sampled one classroom per school
- The Field Test and Main Data Collection TIMSS samples were selected sequentially. The TIMSS Main Data Collection sample was selected by controlling for the overlap with the TIMSS Field Test, ICILS, and PISA samples using the Chowdhury approach.
- Private schools were oversampled
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	11	0	11	0	0	0	0
Grade 4 & Grade 8 - Public - Urban School	40	0	37	3	0	0	0
Grade 4 & Grade 8 - Public - Rural School	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Private-Subsidized - Urban School	71	2	60	8	1	0	0
Grade 4 & Grade 8 - Private-Subsidized - Rural School	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Private	29	0	21	4	1	3	0
Total	169	2	147	15	2	3	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	6	0	4	2	0	0	0
Grade 4 & Grade 8 - Public - Urban School	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Public - Rural School	4	0	4	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 & Grade 8 - Private-Subsidized - Urban School	22	0	22	0	0	0	0
Grade 4 & Grade 8 - Private-Subsidized - Rural School	4	0	3	1	0	0	0
Grade 4 & Grade 8 - Private	8	0	8	0	0	0	0
Total	56	0	53	3	0	0	0

Chinese Taipei

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and schools that do not follow the national curriculum
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (metropolitan area, city area, developing city area, rural and remote area), region (north, other), and school size (small, large)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 290 for eTIMSS, measure of size > 68 for bridge). In schools sampled for eTIMSS and bridge, one classroom sampled per assessment
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 85.6 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Metropolitan Area - North	24	0	20	4	0	0	0
Metropolitan Area - Other	10	0	10	0	0	0	0
City Area - North	24	0	23	1	0	0	0
City Area - Other	22	0	22	0	0	0	0
Developing City Area - North	22	0	22	0	0	0	0
Developing City Area - Other - Large	20	0	20	0	0	0	0
Developing City Area - Other - Small	8	0	8	0	0	0	0
Rural and Remote Area - North - Large	6	0	5	1	0	0	0
Rural and Remote Area - North - Small	4	0	4	0	0	0	0
Rural and Remote Area - Other - Large	8	0	7	1	0	0	0
Rural and Remote Area - Other - Small	15	0	14	0	0	1	0
Total	163	0	155	7	0	1	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Metropolitan Area - North	10	0	8	2	0	0	0
Metropolitan Area - Other	4	0	4	0	0	0	0
City Area - North	10	0	9	1	0	0	0
City Area - Other	8	0	8	0	0	0	0
Developing City Area - North	8	0	8	0	0	0	0
Developing City Area - Other - Large	8	0	8	0	0	0	0
Developing City Area - Other - Small	4	0	4	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Rural and Remote Area - North - Large	4	0	4	0	0	0	0
Rural and Remote Area - North - Small	2	0	2	0	0	0	0
Rural and Remote Area - Other - Large	4	0	3	1	0	0	0
Rural and Remote Area - Other - Small	6	0	6	0	0	0	0
Total	68	0	64	4	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and schools that do not follow the national curriculum
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (metropolitan area, city area, developing city area, rural and remote area), region (north, other), and school size (small, large)
- Implicit stratification by performance (5)
- Sampled one classroom per school
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Rural and remote schools were oversampled.
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample

of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.

- 98 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Metropolitan Area - North	23	0	22	1	0	0	0
Grade 8 - Metropolitan Area - Other	13	0	13	0	0	0	0
Grade 8 - City Area - North	24	0	23	0	0	1	0
Grade 8 - City Area - Other	24	0	24	0	0	0	0
Grade 8 - Developing City Area - North	18	1	17	0	0	0	0
Grade 8 - Developing City Area - Other	30	0	30	0	0	0	0
Grade 8 - Rural and Remote Area - North	19	0	18	1	0	0	0
Grade 8 - Rural and Remote Area - Other - Large	44	0	42	1	0	1	0
Grade 8 - Rural and Remote Area - Other - Small	11	0	11	0	0	0	0
Total	206	1	200	3	0	2	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Metropolitan Area - North	8	0	8	0	0	0	0
Grade 8 - Metropolitan Area - Other	4	0	4	0	0	0	0
Grade 8 - City Area - North	8	0	8	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - City Area - Other	8	0	8	0	0	0	0
Grade 8 - Developing City Area - North	6	0	6	0	0	0	0
Grade 8 - Developing City Area - Other	10	0	10	0	0	0	0
Grade 8 - Rural and Remote Area - North	3	0	3	0	0	0	0
Grade 8 - Rural and Remote Area - Other - Large	8	0	8	0	0	0	0
Grade 8 - Rural and Remote Area - Other - Small	2	0	2	0	0	0	0
Total	57	0	57	0	0	0	0

Croatia

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), and private schools
- Within-school exclusions consisted of students with intellectual disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (mother/single building, satellite), and by grouped regions (6) and school size (small, large) within mother/single building strata
- Implicit stratification by urbanization (urban, rural)
- Sampled two classrooms whenever possible. In schools selected for both the eTIMSS and Bridge samples, two classrooms selected for eTIMSS and one classroom selected for Bridge sample whenever possible
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 48.6 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Mother/Single Building School - Central Croatia - Small	10	0	10	0	0	0	0
Mother/Single Building School - Central Croatia - Large	14	0	13	1	0	0	0
Mother/Single Building School - Eastern Croatia - Small	10	0	9	0	0	1	0
Mother/Single Building School - Eastern Croatia - Large	8	0	8	0	0	0	0
Mother/Single Building School - Northern Croatia - Small	8	0	8	0	0	0	0
Mother/Single Building School - Northern Croatia - Large	8	0	8	0	0	0	0
Mother/Single Building School - Western Croatia - Small	11	0	10	1	0	0	0
Mother/Single Building School - Western Croatia - Large	9	0	8	0	0	1	0
Mother/Single Building School - Southern Croatia - Small	8	0	7	0	0	1	0
Mother/Single Building School - Southern Croatia - Large	16	0	16	0	0	0	0
Mother/Single Building School - City of Zagreb - Small	9	0	9	0	0	0	0
Mother/Single Building School - City of Zagreb - Large	24	0	22	1	0	1	0
Satellite Schools	24	1	22	0	0	1	0
Total	159	1	150	3	0	5	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Mother/Single Building School - Central Croatia - Small	4	0	4	0	0	0	0
Mother/Single Building School - Central Croatia - Large	6	0	6	0	0	0	0
Mother/Single Building School - Eastern Croatia - Small	6	0	6	0	0	0	0
Mother/Single Building School - Eastern Croatia - Large	4	0	4	0	0	0	0
Mother/Single Building School - Northern Croatia - Small	4	0	4	0	0	0	0
Mother/Single Building School - Northern Croatia - Large	4	0	4	0	0	0	0
Mother/Single Building School - Western Croatia - Small	4	0	4	0	0	0	0
Mother/Single Building School - Western Croatia - Large	4	0	3	0	0	1	0
Mother/Single Building School - Southern Croatia - Small	4	0	4	0	0	0	0
Mother/Single Building School - Southern Croatia - Large	8	0	8	0	0	0	0
Mother/Single Building School - City of Zagreb - Small	4	0	4	0	0	0	0
Mother/Single Building School - City of Zagreb - Large	12	0	12	0	0	0	0
Satellite Schools	12	0	11	0	0	1	0
Total	76	0	74	0	0	2	0

Cyprus

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, Turkish Occupied Area, and language of instruction other than Greek or English
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), curriculum (national curriculum, other), and district (4)
- Implicit stratification by urbanization (urban, rural)
- Sampled three classrooms whenever possible in large schools (measure of size > 65)
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Private with other curriculum	12	1	10	1	0	0	0
Public and private with national curriculum - Famagusta-Larnaca	34	0	34	0	0	0	0
Public and private with national curriculum - Limassol	38	0	38	0	0	0	0
Public and private with national curriculum - Nicosia	52	0	52	0	0	0	0
Public and private with national curriculum - Paphos	16	0	16	0	0	0	0
Total	152	1	150	1	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), Turkish Occupied Area, and language of instruction other than Greek or English
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), curriculum (national curriculum, other), and district (4)
- Implicit stratification by urbanization (urban, rural)
- Sampled three classrooms whenever possible in large schools (measure of size > 120)
- All Grade 8 schools were selected for the Main Data Collection
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Private with other curriculum	24	1	23	0	0	0	0
Public and private with national curriculum - Famagusta-Larnaca	15	0	15	0	0	0	0
Public and private with national curriculum - Limassol	23	0	23	0	0	0	0
Public and private with national curriculum - Nicosia	28	0	28	0	0	0	0
Public and private with national curriculum - Paphos	9	0	9	0	0	0	0
Total	99	1	98	0	0	0	0

Czech Republic

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, and Polish language schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by region (14). One additional stratum created for schools with no Grade 4 students on the frame but expected to have some during the Main Data Collection.
- No implicit stratification
- Sampled two classrooms per school
- The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Praha	16	0	16	0	0	0	0
Stredočeský	20	0	20	0	0	0	0
Plzeňský	8	0	8	0	0	0	0
Karlovarský	7	0	7	0	0	0	1
Ústecký	12	0	12	0	0	0	0
Jihočeský	8	0	7	1	0	0	0
Liberecký	8	0	8	0	0	0	0
Královéhradecký	8	0	8	0	0	0	0
Pardubický	8	0	8	0	0	0	0
Vysocina	8	0	8	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Jihomoravský	15	0	15	0	0	0	1
Olomoucký	8	0	8	0	0	0	0
Moravskoslezský	16	0	16	0	0	0	0
Zlínský	8	0	8	0	0	0	0
Empty Schools	4	2	2	0	0	0	0
Total	154	2	151	1	0	0	2

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Praha	4	0	4	0	0	0	0
Stredočeský	6	1	5	0	0	0	0
Plzeňský	4	0	4	0	0	0	0
Karlovarský	4	0	4	0	0	0	0
Ústecký	4	0	4	0	0	0	0
Jihočeský	4	0	4	0	0	0	0
Liberecký	4	0	4	0	0	0	0
Královéhradecký	4	0	4	0	0	0	0
Pardubický	4	0	4	0	0	0	0
Vysocina	4	0	4	0	0	0	0
Jihomoravský	4	0	4	0	0	0	0
Olomoucký	4	0	4	0	0	0	0
Moravskoslezský	4	0	4	0	0	0	0
Zlínský	3	0	3	0	0	0	1
Empty Schools	2	0	2	0	0	0	0
Total	59	1	58	0	0	0	1

Denmark

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), and school size (small, large) within public schools
- No implicit stratification
- Sampled two classrooms in large schools that participate in eTIMSS or both eTIMSS and bridge (measure of size > 85). Sampled two classrooms in large schools that participate in bridge only (measure of size > 44).
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was obtained using a combination of strategies. In the large school stratum, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school and private school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 37.2 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Private	30	1	12	7	4	6	0
Public - Small	80	0	63	15	1	1	0
Public - Large	65	0	48	12	4	1	0
Total	175	1	123	34	9	8	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Private	10	0	6	2	1	1	0
Public - Small	28	0	17	7	4	0	0
Public - Large	24	0	17	4	3	0	0
Total	62	0	40	13	8	1	0

Egypt

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 20), Al-Azhar schools, special needs schools, and sports prep schools
- Within-school exclusions consisted of students with intellectual disabilities

Sample Design

- Explicit stratification by region (3), school type (4) and school gender (3).
- Implicit stratification by school shift (4) within governmental schools
- Sampled one classroom per school
- The Field Test and Main Data Collection school samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Capital - Governmental Schools - Girls	10	0	10	0	0	0	0
Capital - Governmental Schools - Boys	10	0	10	0	0	0	0
Capital - Governmental Schools - Mixed	8	0	8	0	0	0	0
North - Governmental Schools - Girls	11	0	11	0	0	0	1
North - Governmental Schools - Boys	12	0	12	0	0	0	0
North - Governmental Schools - Mixed	40	0	39	1	0	0	0
South - Governmental Schools - Girls	8	0	8	0	0	0	0
South - Governmental Schools - Boys	8	0	8	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
South - Governmental Schools - Mixed	30	0	30	0	0	0	0
Private Funded Schools (without fees)	11	0	11	0	0	0	1
Private Schools (with fees)	12	0	12	0	0	0	0
Private Language Schools	9	0	9	0	0	0	3
Total	169	0	168	1	0	0	5

England

Fifth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10), and special schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (academy, all other state funded, independent), and attainment level (5)
- Implicit stratification by attainment level (7)
- Sampled two classrooms in large schools selected for eTIMSS (measure of size > 90) and in large schools selected for bridge (measure of size > 65)
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample for Grade 5 was selected by controlling for the overlap with the Main Data Collection sample at Grade 8 and the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
All Other State-Funded - Low	14	0	12	0	0	2	0
All Other State-Funded - Low/Middle	22	0	21	0	0	1	0
All Other State-Funded - Middle/High	24	0	20	2	0	2	0
All Other State-Funded - High	20	0	17	1	0	2	0
All Other State-Funded - Middle and N.A.	24	0	21	0	0	3	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Academy - Low and Low/Middle	16	0	14	2	0	0	0
Academy - Middle and N.A.	8	0	8	0	0	0	0
Academy - Mid-dle/ High and High	14	0	11	2	0	1	0
Independent	8	0	5	3	0	0	0
Total	150	0	129	10	0	11	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
All Other State-Funded - Low	4	0	4	0	0	0	0
All Other State-Funded - Low/Middle	8	0	5	2	0	1	0
All Other State-Funded - Middle/High	8	0	7	0	0	1	0
All Other State-Funded - High	6	0	6	0	0	0	0
All Other State-Funded - Middle and N.A.	8	0	7	0	0	1	0
Academy - Low and Low/Middle	6	0	4	1	0	1	0
Academy - Middle and N.A.	4	0	3	0	0	1	0
Academy - Mid-dle/ High and High	4	0	4	0	0	0	0
Independent	4	0	2	0	1	1	0
Total	52	0	42	3	1	6	0

Ninth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 20), and special schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (academy, all other state funded, independent), and attainment level (5)
- Implicit stratification by attainment level (7)
- Sampled two classrooms in large schools selected for eTIMSS (measure of size > 245) and in large schools selected for bridge (measure of size > 200)
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample for Grade 9 was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
All Other State Funded - Middle/High	12	0	9	3	0	0	0
All Other State Funded - High	8	0	8	0	0	0	0
All Other State Funded - Low and Low/Middle	10	0	8	1	0	1	0
All Other State Funded - Middle and N.A.	16	0	14	2	0	0	0
Academy - Mid-dle/High	26	0	24	0	0	2	0
Academy - High	22	0	18	1	0	3	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Academy - Low and Low/Middle	21	0	17	1	0	3	0
Academy - Middle and N.A.	26	0	22	0	0	4	0
Independent	10	0	5	3	0	2	0
Total	151	0	125	11	0	15	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
All Other State Funded - Middle/High	4	0	4	0	0	0	0
All Other State Funded - High	4	0	4	0	0	0	0
All Other State Funded - Low and Low/Middle	4	0	3	0	0	1	0
All Other State Funded - Middle and N.A.	4	0	3	1	0	0	0
Academy - Middle/High	8	0	5	3	0	0	0
Academy - High	8	0	7	0	0	1	0
Academy - Low and Low/Middle	6	0	6	0	0	0	0
Academy - Middle and N.A.	8	0	7	1	0	0	0
Independent	4	0	2	1	0	1	0
Total	50	0	41	6	0	3	0

Finland

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and language schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by language (Finnish, Swedish), and major region (4) and urbanization (urban/semi-urban, rural) within Finnish schools
- Implicit stratification by regional state administrative agency (6)
- Sampled two classrooms per school
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection was selected by controlling for the overlap with the Field Test sample and Main Data Collection Grade 8 sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Finnish Speaking - Helsinki/Uusimaa	42	1	40	1	0	0	0
Finnish Speaking - Southern - Urban and Semi-Urban	24	0	24	0	0	0	0
Finnish Speaking - Southern - Rural	8	0	8	0	0	0	0
Finnish Speaking - Western - Urban and Semi-Urban	31	0	31	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Finnish Speaking - Western - Rural	8	0	8	0	0	0	0
Finnish Speaking - Northern & Eastern - Urban and Semi-Urban	28	0	28	0	0	0	0
Finnish Speaking - Northern & Eastern - Rural	8	0	8	0	0	0	0
Swedish Speaking	10	0	10	0	0	0	0
Total	159	1	157	1	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Finnish Speaking - Helsinki/Uusimaa	18	0	17	1	0	0	0
Finnish Speaking - Southern - Urban and Semi-Urban	12	0	12	0	0	0	0
Finnish Speaking - Southern - Rural	4	1	3	0	0	0	0
Finnish Speaking - Western - Urban and Semi-Urban	14	0	14	0	0	0	0
Finnish Speaking - Western - Rural	4	0	4	0	0	0	0
Finnish Speaking - Northern & Eastern - Urban and Semi-Urban	12	0	12	0	0	0	0
Finnish Speaking - Northern & Eastern - Rural	4	0	4	0	0	0	0
Swedish Speaking	4	0	4	0	0	0	0
Total	72	1	70	1	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6), special needs schools, and language schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by language (Finnish, Swedish), and major region (4) and urbanization (urban/semi-urban, rural) within Finnish schools
- Implicit stratification by regional state administrative agency (6)
- Sampled two classrooms per school
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- No bridge sample required at Grade 8 as they did not participate in TIMSS 2015

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Finnish Speaking - Helsinki/Uusimaa	39	0	39	0	0	0	0
Finnish Speaking - Southern - Urban and Semi-Urban	24	2	22	0	0	0	0
Finnish Speaking - Southern - Rural	9	0	9	0	0	0	0
Finnish Speaking - Western - Urban and Semi-Urban	30	1	29	0	0	0	0
Finnish Speaking - Western - Rural	8	0	8	0	0	0	0
Finnish Speaking - Northern & Eastern - Urban and Semi-Urban	28	1	27	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Finnish Speaking - Northern & Eastern - Rural	10	0	10	0	0	0	0
Swedish Speaking	10	0	10	0	0	0	0
Total	158	4	154	0	0	0	0

France

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, overseas territories, Mayotte, and private schools without a contract
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public – other, public – priority education zone, private)
- No implicit stratification
- Sampled two classrooms per school
- No overlap between Grade 4 and Grade 8 schools
- The Main Data Collection sample was selected by controlling for the overlap with the Field Test using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Other	108	1	107	0	0	0	0
Public - Priority Education Zone	24	0	24	0	0	0	0
Private	24	0	24	0	0	0	0
Total	156	1	155	0	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Other	42	1	40	0	0	1	0
Public - Priority Education Zone	10	0	10	0	0	0	0
Private	10	0	10	0	0	0	0
Total	62	1	60	0	0	1	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, overseas territories, Mayotte, and private schools without a contract
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public – other, public – priority education zone, private)
- No implicit stratification
- Sampled two classrooms per school
- No overlap between Grade 4 and Grade 8 schools
- The Main Data Collection sample was selected by controlling for the overlap with the Field Test using the Chowdhury approach.
- No bridge sample required at Grade 8 as they did not participate in TIMSS 2015

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public-Priority Education Zone	24	0	24	0	0	0	0
Public-Other	94	0	94	0	0	0	0
Private	32	0	32	0	0	0	0
Total	150	0	150	0	0	0	0

Georgia

Fourth Grade

Coverage and Exclusions

- Coverage is 92 percent. Coverage in Georgia is restricted to students taught in Georgian.
- School-level exclusions consisted of very small schools (measure of size < 5), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4’/Grade 4 and Grade 8’ schools, region (Tbilisi, other), and Mathematics average score (low, high, N.A.)
- Implicit stratification by urbanization (town, village), and school type (public, private)
- Sampled two classrooms in large schools (measure of size > 70)
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 only	8	1	6	0	0	1	0
Grade 4 & Grade 8 - Missing Average Math Score	9	0	9	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - Low Average Math Score	7	0	7	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - High Average Math Score	48	0	45	3	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 & Grade 8 - Other Region - Low Average Math Score	36	0	36	0	0	0	0
Grade 4 & Grade 8 - Other Region - High Average Math Score	50	0	48	0	0	2	0
Total	158	1	151	3	0	3	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 only	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Missing Average Math Score	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - Low Average Math Score	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - High Average Math Score	16	0	16	0	0	0	0
Grade 4 & Grade 8 - Other Region - Low Average Math Score	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Other Region - High Average Math Score	18	0	18	0	0	0	0
Total	58	0	58	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 91.3 percent. Coverage in Georgia is restricted to students taught in Georgian.
- School-level exclusions consisted of very small schools (measure of size < 5), and special needs schools

- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 8’/Grade 4 and Grade 8’ schools, region (Tbilisi, other), and Mathematics average score (low, high, N.A.)
- Implicit stratification by urbanization (town, village), and school type (public, private)
- Sampled two classrooms in large schools (measure of size > 95)
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Missing Achievement score	9	1	8	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - Low Achievement	7	0	7	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - High Achievement	48	0	38	3	0	7	0
Grade 4 & Grade 8 - Other - Low Achievement	36	0	36	0	0	0	0
Grade 4 & Grade 8 - Other - High Achievement	50	0	45	0	0	5	0
Total	158	1	142	3	0	12	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	4	0	3	0	0	1	0
Grade 4 & Grade 8 - Missing Achievement score	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - Low Achievement	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - High Achievement	16	0	12	0	0	4	0
Grade 4 & Grade 8 - Other - Low Achievement	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Other - High Achievement	18	0	18	0	0	0	0
Total	58	0	53	0	0	5	0

Germany

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (regular, special needs). Within regular school, explicit stratification by socioeconomic status estimated by the percentage of migrants (low, medium, high), and school size (small, large).
- No implicit stratification
- Sampled one classroom per school. In schools sampled for eTIMSS and bridge, one classroom sampled per assessment
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 44.9 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Regular Schools - Very low percentage of im-migrants	24	0	19	3	2	0	0
Regular Schools - Low percentage of immi-grants - Small	50	0	50	0	0	0	0
Regular Schools - Low percentage of immi-grants - Large	50	0	50	0	0	0	0
Regular Schools - Me-dium percentage of immigrants - Small	18	0	18	0	0	0	0
Regular Schools - Me-dium percentage of immigrants - Large	30	0	30	0	0	0	0
Regular Schools - High percentage of immi-grants - Small	10	1	9	0	0	0	0
Regular Schools - High percentage of immi-grants - Large	14	0	14	0	0	0	0
Special Needs Schools	10	2	8	0	0	0	0
Total	206	3	198	3	2	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Regular Schools - Very low percentage of im-migrants	10	0	10	0	0	0	0
Regular Schools - Low percentage of immi-grants - Small	20	0	18	2	0	0	0
Regular Schools - Low percentage of immi-grants - Large	18	0	18	0	0	0	0
Regular Schools - Me-dium percentage of immigrants - Small	6	0	6	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Regular Schools - Medium percentage of immigrants - Large	12	0	12	0	0	0	0
Regular Schools - High percentage of immigrants - Small	4	0	4	0	0	0	0
Regular Schools - High percentage of immigrants - Large	6	0	6	0	0	0	0
Special Needs Schools	2	0	2	0	0	0	0
Total	78	0	76	2	0	0	0

Hong Kong SAR

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, Japanese school, and remote school
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school finance type (5)
- No implicit stratification
- Sampled one classroom per school. One additional classroom selected in schools sampled for the bridge
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 97.9 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Aided	113	0	82	18	6	7	0
Direct Subsidy	10	0	7	2	0	1	0
Government	12	0	12	0	0	0	0
Private	12	0	6	1	1	4	0
Non-Local	12	0	2	2	0	8	0
Total	159	0	109	23	7	20	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Aided	46	0	32	8	2	4	0
Direct Subsidy	4	0	3	0	0	1	0
Government	4	0	4	0	0	0	0
Private	6	0	2	1	0	3	0
Non-Local	6	0	2	0	0	4	0
Total	66	0	43	9	2	12	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and Japanese school
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school finance type (4)
- Implicit stratification by other school characteristic (3)
- Sampled one classroom per school. One additional classroom selected in schools sampled for the bridge
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 100 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Aided	112	0	83	15	4	10	0
Direct Subsidy	22	0	16	3	0	3	0
Government	12	0	10	0	0	2	0
Private	12	0	3	2	0	7	0
Non-Local	158	0	112	20	4	22	0
Total	159	0	109	23	7	20	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Aided	45	0	31	8	1	5	0
Direct Subsidy	10	0	6	2	0	2	0
Government	4	0	4	0	0	0	0
Private	4	0	0	2	0	2	0
Non-Local	63	0	41	12	1	9	0
Total	66	0	43	9	2	12	0

Hungary

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and schools with students taught in foreign language
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4 only’/‘Grade 4 and Grade 8’ schools, type of community (capital, county town, town, rural area) and national assessment score (low, medium, high) within ‘Grade 4 and Grade 8’ stratum
- No implicit stratification
- Sampled two classrooms per school
- Grade 4 and Grade 8 samples were selected simultaneously with maximum overlap
- The Main Data Collection school samples for Grade 4 and Grade 8 were selected by controlling for the overlap with the Field test samples using the Chowdhury approach
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4	20	1	17	0	2	0	0
Grade 4 & Grade 8 - Capital - High Performance	13	0	10	2	1	0	0
Grade 4 & Grade 8 - Capital - Low or Medium Performance	10	0	9	1	0	0	0
Grade 4 & Grade 8 - County Town - High Performance	10	0	9	1	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 & Grade 8 - County Town - Low or Medium Performance	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Town - Low Performance	14	0	13	0	1	0	0
Grade 4 & Grade 8 - Town - Medium Performance	26	0	25	0	1	0	0
Grade 4 & Grade 8 - Town - High Performance	8	0	6	1	0	1	0
Grade 4 & Grade 8 - Rural Area - Low Performance	16	0	16	0	0	0	0
Grade 4 & Grade 8 - Rural Area - Medium Performance	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Rural Area - High Performance	8	0	8	0	0	0	0
Total	151	1	139	5	5	1	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4	6	1	5	0	0	0	0
Grade 4 & Grade 8 - Capital - High Performance	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Capital - Low or Medium Performance	4	0	4	0	0	0	0
Grade 4 & Grade 8 - County Town - High Performance	4	0	4	0	0	0	0
Grade 4 & Grade 8 - County Town - Low or Medium Performance	4	0	4	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 & Grade 8 - Town - Low Performance	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Town - Medium Performance	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Town - High Performance	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Rural Area - Low Performance	6	0	6	0	0	0	0
Grade 4 & Grade 8 - Rural Area - Medium Performance	4	1	3	0	0	0	0
Grade 4 & Grade 8 - Rural Area - High Performance	4	0	4	0	0	0	0
Total	52	2	50	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and schools with students taught in foreign language
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 8 only’/‘Grade 4 and Grade 8’ schools, type of community (capital, county town, town, rural area) and national assessment score (low, medium, high) within ‘Grade 4 and Grade 8’ stratum
- No implicit stratification

- Sampled two classrooms per school
- Grade 4 and Grade 8 samples were selected simultaneously with maximum overlap
- The Main Data Collection school samples for Grade 4 and Grade 8 were selected by controlling for the overlap with the Field test samples using the Chowdhury approach
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	24	0	24	0	0	0	0
Grade 4 & Grade 8 - Capital - High	13	0	10	2	1	0	0
Grade 4 & Grade 8 - Capital - Low or Medium	10	0	9	1	0	0	0
Grade 4 & Grade 8 - County town - High	10	0	9	1	0	0	0
Grade 4 & Grade 8 - County town - Low or Medium	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Town - Low	14	0	13	0	1	0	0
Grade 4 & Grade 8 - Town - Medium	26	0	25	0	1	0	0
Grade 4 & Grade 8 - Town - High	8	0	6	1	0	1	0
Grade 4 & Grade 8 - Rural area - Low	16	0	16	0	0	0	0
Grade 4 & Grade 8 - Rural area - Medium	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Rural area - High	8	0	8	0	0	0	0
Total	155	0	146	5	3	1	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Capital - High	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Capital - Low or Medium	4	1	3	0	0	0	0
Grade 4 & Grade 8 - County town - High	4	0	4	0	0	0	0
Grade 4 & Grade 8 - County town - Low or Medium	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Town - Low	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Town - Medium	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Town - High	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Rural area - Low	6	0	6	0	0	0	0
Grade 4 & Grade 8 - Rural area - Medium	4	1	3	0	0	0	0
Grade 4 & Grade 8 - Rural area - High	4	0	4	0	0	0	0
Total	54	2	52	0	0	0	0

Iran, Islamic Rep. of

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and geographically inaccessible schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), gender (mixed, girls, boys), and province or grouped provinces (7)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	24	0	24	0	0	0	0
Grade 4 & Grade 8 - Capital - High	13	0	10	2	1	0	0
Grade 4 & Grade 8 - Capital - Low or Medium	10	0	9	1	0	0	0
Grade 4 & Grade 8 - County town - High	10	0	9	1	0	0	0
Grade 4 & Grade 8 - County town - Low or Medium	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Town - Low	14	0	13	0	1	0	0
Grade 4 & Grade 8 - Town - Medium	26	0	25	0	1	0	0
Grade 4 - Private	22	0	22	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Public - Boys - Esfahan	10	0	10	0	0	0	0
Grade 4 - Public - Boys - Fars	10	0	10	0	0	0	0
Grade 4 - Public - Boys - Khozestan	10	0	10	0	0	0	0
Grade 4 - Public - Boys - Tehran Province	10	0	10	0	0	0	0
Grade 4 - Public - Boys - Tehran City	10	0	10	0	0	0	0
Grade 4 - Public - Boys - Khorasan Razavi	10	0	10	0	0	0	0
Grade 4 - Public - Boys - Other Provinces	30	0	30	0	0	0	0
Grade 4 - Public - Girls - Esfahan	10	0	10	0	0	0	0
Grade 4 - Public - Girls - Fars	10	0	10	0	0	0	0
Grade 4 - Public - Girls - Khozestan	10	0	10	0	0	0	0
Grade 4 - Public - Girls - Tehran Province	10	0	10	0	0	0	0
Grade 4 - Public - Girls - Tehran City	10	0	10	0	0	0	0
Grade 4 - Public - Girls - Khorasan Razavi	10	0	10	0	0	0	0
Grade 4 - Public - Girls - Other Provinces	30	0	30	0	0	0	0
Grade 4 - Public - Mixed	22	0	22	0	0	0	0
Total	224	0	224	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and geographically inaccessible schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), gender (mixed, girls, boys), and province or grouped provinces (7)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Private	14	0	14	0	0	0	0
Grade 8 - Public - Boys - Esfahan	10	0	10	0	0	0	0
Grade 8 - Public - Boys - Fars	10	0	10	0	0	0	0
Grade 8 - Public - Boys - Khozestan	10	0	10	0	0	0	0
Grade 8 - Public - Boys - Tehran Province	10	0	10	0	0	0	0
Grade 8 - Public - Boys - Tehran City	10	0	10	0	0	0	0
Grade 8 - Public - Boys - Khorasan Razavi	10	0	10	0	0	0	0
Grade 8 - Public - Boys - Other Provinces	38	0	38	0	0	0	0
Grade 8 - Public - Girls - Esfahan	10	0	10	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Public - Girls - Fars	10	0	10	0	0	0	0
Grade 8 - Public - Girls - Khozestan	10	0	10	0	0	0	0
Grade 8 - Public - Girls - Tehran Province	10	0	10	0	0	0	0
Grade 8 - Public - Girls - Tehran City	10	0	10	0	0	0	0
Grade 8 - Public - Girls - Khorasan Razavi	10	0	10	0	0	0	0
Grade 8 - Public - Girls - Other Provinces	38	0	38	0	0	0	0
Grade 8 - Public - Mixed	10	0	10	0	0	0	0
Total	220	0	220	0	0	0	0

Ireland

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, and non-aided (private) schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school level socioeconomic status DEIS (urban band 1, urban band 2, rural), language of instruction (Gaelscoil, Gaeltacht, ordinary), and gender (boys, girls, mixed)
- Implicit stratification by location (cities, rural)
- Sampled two classrooms per school
- No overlap between Grade 4 and Grade 8 schools.
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection school sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
All Irish Schools	10	0	10	0	0	0	0
Gaeltacht Schools	8	0	8	0	0	0	0
DEIS Urban Band 1 - Ordinary School	14	0	14	0	0	0	0
DEIS Urban Band 2 - Ordinary School	8	0	8	0	0	0	0
DEIS Rural - Ordinary School	8	0	8	0	0	0	0
Non-DEIS - Ordinary School - Boys	10	0	10	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Non-DEIS - Ordinary School - Girls	12	0	12	0	0	0	0
Non-DEIS - Ordinary School - Mixed	81	1	80	0	0	0	0
Total	151	1	150	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of island schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school sector (community/comprehensive, secondary, vocational), socioeconomic status (high, medium, low) and gender (boys, girls, mixed)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 150)
- No overlap between Grade 4 and Grade 8 schools.
- The Field Test and Main Data Collection samples were selected sequentially. The TIMSS Main Data Collection school sample was selected by controlling for the overlap with the TIMSS Field Test sample and the PISA Feasibility study sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Secondary - High SES - Girls	15	0	15	0	0	0	0
Secondary - High SES - Boys	14	0	14	0	0	0	0
Secondary - High SES - Mixed	14	0	14	0	0	0	0
Secondary - Medium SES - Girls	10	0	9	1	0	0	0
Secondary - Medium SES - Boys	9	0	9	0	0	0	0
Secondary - Medium SES - Mixed	8	0	7	0	0	1	0
Secondary - Low SES	10	0	10	0	0	0	0
Vocational - High SES	8	0	7	1	0	0	0
Vocational - Medium SES	17	0	17	0	0	0	0
Vocational - Low SES	19	0	18	0	0	1	0
Community/Comprehensive - High SES	8	0	7	0	0	1	0
Community/Comprehensive - Medium SES	10	0	10	0	0	0	0
Community/Comprehensive - Low SES	10	0	10	0	0	0	0
Total	152	0	147	2	0	3	0

Israel

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, ultra Orthodox schools, and schools teaching in English or French
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school sector (3), socioeconomic status (high, medium, low), subgroups within Arab sector (Arab, Druze, Bedouin), and school size (small, large)
- Implicit stratification by gender (male, female, mixed), and region (north, south, all)
- Sampled one classroom per school in schools that are selected to do eTIMSS or Bridge only and two classes in schools that are selected to do both assessments.
- The Field Test and Main Data Collection TIMSS samples were selected sequentially. The TIMSS Main Data Collection sample was selected by controlling for the overlap with the TIMSS Field Test sample and a national study (Mitzav) using the Chowdhury approach.
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 91.2 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Hebrew-Secular - High SES	39	0	36	2	0	1	0
Hebrew-Secular - Medium SES	32	0	32	0	0	0	0
Hebrew-Secular - Low SES	11	0	10	0	0	1	0
Hebrew-Religious - High SES	10	0	9	1	0	0	0
Hebrew-Religious - Medium SES - Large	9	0	8	0	1	0	0
Hebrew-Religious - Medium SES - Small	4	0	2	1	0	1	0
Hebrew-Religious - Low SES	8	0	7	0	0	1	0
Arabic-Arabs - Medium SES	10	0	10	0	0	0	0
Arabic-Arabs - Low SES	18	0	18	0	0	0	0
Arabic-Druze	8	0	8	0	0	0	0
Arabic-Bedouin	12	0	12	0	0	0	0
Total	161	0	152	4	1	4	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Hebrew-Secular - High SES	14	0	12	1	0	1	0
Hebrew-Secular - Medium SES	12	0	11	1	0	0	0
Hebrew-Secular - Low SES	4	0	3	0	0	1	0
Hebrew-Religious - High SES	4	0	3	1	0	0	0
Hebrew-Religious - Medium SES - Large	4	0	4	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Hebrew-Religious - Medium SES - Small	2	0	2	0	0	0	0
Hebrew-Religious - Low SES	3	0	3	0	0	0	0
Arabic-Arabs - Medium SES	5	0	5	0	0	0	0
Arabic-Arabs - Low SES	11	0	11	0	0	0	0
Arabic-Druze	4	0	4	0	0	0	0
Arabic-Bedouin	8	0	8	0	0	0	0
Total	71	0	66	3	0	2	0

Italy

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, Slovenian, Ladin and German language schools
- Within-school exclusions consisted of students with functional disabilities

Sample Design

- Explicit stratification by ‘Grade 4 only’/‘Grade 4 and Grade 8’ schools, school type (private, public), region (center, islands, north east, north west, and south) within Grade 4 and Grade 8 public schools
- Implicit stratification by region (center, islands, north east, north west, and south) within Grade 4 only
- Sampled two classrooms in large schools (measure of size > 112)
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Public	16	0	14	2	0	0	0
Grade 4 - Private	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Public - Center	26	0	25	1	0	0	0
Grade 4 & Grade 8 - Public - Islands	20	0	20	0	0	0	0
Grade 4 & Grade 8 - Public - North East	24	0	22	2	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 & Grade 8 - Public - North West	34	0	33	1	0	0	0
Grade 4 & Grade 8 - Public - South	24	0	24	0	0	0	0
Grade 4 & Grade 8 - Private	8	0	5	3	0	0	0
Total	162	0	153	9	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Public	6	0	6	0	0	0	0
Grade 4 - Private	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Public - Center	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Public - Islands	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Public - North East	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Public - North West	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Public - South	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Private	4	0	3	1	0	0	0
Total	60	0	59	1	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, Slovenian, Ladin and German language schools
- Within-school exclusions consisted of students with functional disabilities

Sample Design

- Explicit stratification by ‘Grade 8 only’/‘Grade 4 and Grade 8’ schools, school type (private, public), region (center, islands, north east, north west, and south) within Grade 4 and Grade 8 public schools
- Implicit stratification by region (center, islands, north east, north west, and south) within Grade 8 only
- Sampled two classrooms in large schools (measure of size > 135)
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Public	14	0	13	1	0	0	0
Grade 8 - Private	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Public - Center	26	0	25	1	0	0	0
Grade 4 & Grade 8 - Public - Islands	20	0	20	0	0	0	0
Grade 4 & Grade 8 - Public - North East	24	0	22	2	0	0	0
Grade 4 & Grade 8 - Public - North West	34	0	33	1	0	0	0
Grade 4 & Grade 8 - Public - South	24	0	24	0	0	0	0
Grade 4 & Grade 8 - Private	8	0	8	0	0	0	0
Total	158	0	153	5	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Public	4	0	4	0	0	0	0
Grade 8 - Private	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Public - Center	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Public - Islands	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Public - North East	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Public - North West	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Public - South	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Private	4	0	4	0	0	0	0
Total	58	0	58	0	0	0	0

Japan

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school location (4)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Very Large City	39	0	33	4	1	1	0
Large City	22	0	17	0	4	1	0
Small City	74	0	61	11	1	1	0
Non-City Area	15	0	15	0	0	0	0
Total	150	0	126	15	6	3	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private) and school location (4)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Very large city	32	0	26	2	3	1	0
Public - Large city	20	0	16	1	3	0	0
Public - Small city	69	0	63	2	1	3	0
Public - Non-city area	14	0	13	1	0	0	0
Private or National school	15	0	7	3	1	4	0
Total	150	0	125	9	8	8	0

Jordan

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- No school-level exclusions
- Within-school exclusions consisted of students with intellectual disabilities, and students with functional disabilities

Sample Design

- Explicit stratification by school type (6) and achievement level (4)
- Implicit stratification by region (south, north, middle, all)
- Sampled one classroom per school
- The Field Test and Main Data Collection samples were selected simultaneously to avoid overlap.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Discovery - Low	8	1	7	0	0	0	0
Discovery - Medium	8	1	7	0	0	0	0
Discovery - High	8	0	8	0	0	0	0
Discovery - Very High	8	0	8	0	0	0	0
Madrasati - Low	8	0	8	0	0	0	0
Madrasati - Medium	8	0	8	0	0	0	0
Madrasati - High	8	0	8	0	0	0	0
Madrasati - Very High	8	0	8	0	0	0	0
Syria - Low	8	1	7	0	0	0	0
Syria - Medium	8	1	7	0	0	0	0
Syria - High	8	0	8	0	0	0	0
Syria - Very High	8	1	7	0	0	0	0
Public - Low	20	1	19	0	0	0	0
Public - Medium	24	2	22	0	0	0	0
Public - High	20	2	18	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Very High	24	1	23	0	0	0	0
UNRWA - Low	8	0	8	0	0	0	0
UNRWA - Medium	8	0	8	0	0	0	0
UNRWA - High	8	0	8	0	0	0	0
UNRWA - Very High	8	0	8	0	0	0	0
Private - Low	8	0	8	0	0	0	0
Private - Medium	8	1	7	0	0	0	0
Private - High	8	0	8	0	0	0	0
Private - Very High	8	1	7	0	0	0	0
Total	248	13	235	0	0	0	0

Kazakhstan

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, and Uzbek, Uighur, Tadjik only schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4 only’/‘Grade 4 and Grade 8’ schools, region (4), urbanization (urban, rural), and language (Kazakh, Russian)
- No implicit stratification
- Sampled two classrooms per school
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap.
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region A - Urban - Kazakh	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Region A - Urban - Kazakh and Russian	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Region A - Rural - Kazakh	20	0	20	0	0	0	0
Grade 4 & Grade 8 - Region A - Rural - Kazakh and Russian	8	0	8	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 & Grade 8 - Region B - Urban - Kazakh	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region B - Urban - Kazakh and Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region B - Rural - Kazakh or Kazakh and Russian	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Region C - Urban - Kazakh	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region C - Urban - Kazakh and Russian	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Region C - Rural - Kazakh	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region C - Rural - Kazakh and Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region D - Urban - Kazakh	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region D - Urban - Kazakh and Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region D - Rural - Kazakh or Kazakh and Russian	7	0	7	0	0	0	0
Grade 4 & Grade 8 - Urban - Russian	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Rural - Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Other Languages	7	0	7	0	0	0	1
Total	168	0	168	0	0	0	1

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, and Uzbek, Uighur, Tadjik only schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 8 only’/‘Grade 4 and Grade 8’ schools, region (4), urbanization (urban, rural), and language (Kazakh, Russian)
- No implicit stratification
- Sampled two classrooms per school
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap.
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region A - Urban - Kazakh	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Region A - Urban - Kazakh and Russian	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Region A - Rural - Ka-zakh	20	0	20	0	0	0	0
Grade 4 & Grade 8 - Region A - Rural - Ka-zakh and Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region B - Urban - Kazakh	8	0	8	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 & Grade 8 - Region B - Urban - Kazakh and Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region B - Rural - Kazakh or Kazakh and Russian	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Region C - Urban - Kazakh	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region C - Urban - Kazakh and Russian	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Region C - Rural - Kazakh	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region C - Rural - Kazakh and Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region D - Urban - Kazakh	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region D - Urban - Kazakh and Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region D - Rural - Kazakh or Kazakh and Russian	7	0	7	0	0	0	0
Grade 4 & Grade 8 - Urban - Russian	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Rural - Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Other	7	0	7	0	0	0	1
Total	168	0	168	0	0	0	1

Korea, Rep. of

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and remote schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (3) and school size (small, large)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 190). In schools sampled for eTIMSS and bridge, one additional classroom was selected for the bridge
- No overlap between Grade 4 and Grade 8 school samples
- The Main Data Collection school sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 82.8 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Big City - Small	8	0	8	0	0	0	0
Big City - Large	52	0	52	0	0	0	0
Medium/Small City - Small	10	0	10	0	0	0	0
Medium/Small City - Large	56	0	56	0	0	0	0
Small Town or Village - Small	10	0	9	0	0	1	0
Small Town or Village - Large	16	0	16	0	0	0	0
Total	152	0	151	0	0	1	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Big City - Small	6	0	6	0	0	0	0
Big City - Large	22	0	22	0	0	0	0
Medium/Small City - Small	6	0	6	0	0	0	0
Medium/Small City - Large	22	0	22	0	0	0	0
Small Town or Village - Small	6	0	6	0	0	0	0
Small Town or Village - Large	6	0	6	0	0	0	0
Total	68	0	68	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), remote schools, and physical education middle schools

- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (3), school gender (girls, boys, mixed), and school size (small, large) within small town or village strata
- No implicit stratification
- Sampled one classroom per school. In schools sampled for eTIMSS and bridge, one additional classroom was selected for the bridge
- No overlap between Grade 4 and Grade 8 school samples
- The Main Data Collection school sample for TIMSS was selected by controlling for the overlap with the TIMSS Field Test, PISA, and ICILS samples using the Chowdhury approach
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 95.8 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Big City - Boy - Large	10	0	10	0	0	0	0
Big City - Girl - Large	10	0	10	0	0	0	0
Big City - Mixed - Large	46	0	46	0	0	0	0
Medium/Small City - Boy - Large	10	0	10	0	0	0	0
Medium/Small City - Girl - Large	10	0	10	0	0	0	0
Medium/Small City - Mixed - Large	48	0	48	0	0	0	0
Small Town or Village - Boy - Small	2	0	2	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Small Town or Village - Boy - Large	5	0	5	0	0	0	0
Small Town or Village - Girl - Small	2	0	2	0	0	0	0
Small Town or Village - Girl - Large	7	0	7	0	0	0	0
Small Town or Village - Mixed - Small	6	0	6	0	0	0	0
Small Town or Village - Mixed - Large	12	0	12	0	0	0	0
Total	168	0	168	0	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Big City - Boy - Large	4	0	4	0	0	0	0
Big City - Girl - Large	4	0	4	0	0	0	0
Big City - Mixed - Large	16	0	16	0	0	0	0
Medium/Small City - Boy - Large	4	0	4	0	0	0	0
Medium/Small City - Girl - Large	4	0	4	0	0	0	0
Medium/Small City - Mixed - Large	18	0	18	0	0	0	0
Small Town or Village - Boy - Small	2	0	2	0	0	0	0
Small Town or Village - Boy - Large	2	0	2	0	0	0	0
Small Town or Village - Girl - Small	2	0	2	0	0	0	0
Small Town or Village - Girl - Large	2	0	2	0	0	0	0
Small Town or Village - Mixed - Small	4	1	3	0	0	0	0
Small Town or Village - Mixed - Large	4	0	4	0	0	0	0
Total	66	1	65	0	0	0	0

Kosovo

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of Bosnian schools, and Serbian schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (urban, rural) and shifts (one, two or more)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 49)
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Rural - One Shift	16	0	16	0	0	0	0
Rural - Two or more Shifts	58	0	58	0	0	0	0
Urban - One Shift	7	0	7	0	0	0	1
Urban - Two or more Shifts	66	2	64	0	0	0	2
Total	147	2	145	0	0	0	3

Kuwait

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and minority language schools
- Within-school exclusions consisted of students with intellectual disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4 only’/‘Grade 4 and Grade 8’ schools, school type (public, private), region (6), and gender (male, female) within public Grade 4 only schools and language (3) within private Grade 4 and Grade 8 schools
- No implicit stratification
- Sampled one classroom per school
- The Grade 4 and Grade 8 samples were selected with maximum overlap

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Private	26	2	24	0	0	0	0
Grade 4 - Public - Ahmedi - Female	12	0	12	0	0	0	0
Grade 4 - Public - Ahmedi - Male	10	0	10	0	0	0	0
Grade 4 - Public - Asima - Female	8	0	8	0	0	0	0
Grade 4 - Public - Asima - Male	8	0	8	0	0	0	0
Grade 4 - Public - Farwaniya - Female	10	0	10	0	0	0	0
Grade 4 - Public - Farwaniya - Male	8	0	8	0	0	0	0
Grade 4 - Public - Hawally - Female	8	0	8	0	0	0	0
Grade 4 - Public - Hawally - Male	8	0	8	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Public - Jahraa - Female	10	0	10	0	0	0	0
Grade 4 - Public - Jahraa - Male	8	0	8	0	0	0	0
Grade 4 - Public - Mubarak Al-Kabeer - Female	8	0	8	0	0	0	0
Grade 4 - Public - Mubarak Al-Kabeer - Male	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Private - Pakistani and Indian Schools	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Private - English, American, and Bilingual Schools	29	0	25	1	0	3	1
Total	169	2	163	1	0	3	1

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and minority language schools
- No within-school exclusions

Sample Design

- Explicit stratification by ‘Grade 8 only’/‘Grade 4 and Grade 8’ schools, school type (public, private), region (6), and gender (male, female) within public Grade 4 only schools and language (3) within private Grade 4 and Grade 8 schools
- No implicit stratification
- Sampled one classroom per school
- The Grade 4 and Grade 8 samples were selected with maximum overlap

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Private	32	2	30	0	0	0	0
Grade 8 - Public - Ahmedi - Female	14	0	14	0	0	0	0
Grade 8 - Public - Ahmedi - Male	12	1	11	0	0	0	0
Grade 8 - Public - Asima - Female	10	0	10	0	0	0	0
Grade 8 - Public - Asima - Male	10	0	10	0	0	0	0
Grade 8 - Public - Farwaniya - Female	12	0	12	0	0	0	0
Grade 8 - Public - Farwaniya - Male	10	0	10	0	0	0	0
Grade 8 - Public - Hawally - Female	10	0	10	0	0	0	0
Grade 8 - Public - Hawally - Male	10	1	9	0	0	0	0
Grade 8 - Public - Jahraa - Female	10	0	10	0	0	0	0
Grade 8 - Public - Jahraa - Male	10	0	10	0	0	0	0
Grade 8 - Public - Mubarak Al-Kabeer - Female	8	0	8	0	0	0	0
Grade 8 - Public - Mubarak Al-Kabeer - Male	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Private - Pakistani and Indian Schools	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Private - English, American, and Bilingual Schools	12	0	11	0	0	1	2
Total	176	4	171	0	0	1	2

Latvia

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, other Language schools, and distance learning schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (Riga, city, town and rural area), language (Latvian, Russian), and school type (basic-beginners, secondary) within town and rural area Latvian schools
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 85) and in schools where class grouping was applied
- Class group option was used in bilingual schools

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Riga - Latvian	26	0	25	1	0	0	0
Riga - Russian	24	0	22	1	0	1	0
Other Cities - Latvian	20	0	20	0	0	0	0
Other Cities - Russian	12	0	11	1	0	0	0
Town-Rural - Latvian - Basic/Beginners	30	0	23	5	2	0	0
Town-Rural - Latvian - Secondary	36	0	34	2	0	0	0
Town-Rural - Russian	8	0	7	0	0	1	0
Total	156	0	142	10	2	2	0

Lebanon

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 8)
- No within-school exclusions

Sample Design

- Explicit stratification by regions or grouped regions (6), school type (public, private), and school size (small, large)
- No implicit stratification
- Sampled one classroom per school
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Census of schools in Beirut and Mont Liban large public school strata
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Bekaa Baalbak Hermel - Public - Small	8	1	7	0	0	0	0
Bekaa Baalbak Hermel - Public - Large	8	0	8	0	0	0	0
Bekaa Baalbak Hermel - Private - Small	8	0	7	1	0	0	0
Bekaa Baalbak Hermel - Private - Large	8	0	7	1	0	0	0
Nord Aakaar - Public - Small	10	0	10	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Nord Aakaar - Public - Large	8	0	8	0	0	0	0
Nord Aakaar - Private - Small	8	0	7	1	0	0	0
Nord Aakaar - Private - Large	14	0	12	1	0	1	0
Sud Nabatyeh - Public - Small	8	0	8	0	0	0	0
Sud Nabatyeh - Public - Large	8	0	8	0	0	0	0
Sud Nabatyeh - Private - Small	8	0	8	0	0	0	0
Sud Nabatyeh - Private - Large	12	0	9	1	0	2	0
Beirut - Public - Small	8	1	7	0	0	0	0
Beirut - Public - Large	8	0	8	0	0	0	0
Beirut - Private - Small	8	0	7	0	0	1	0
Beirut - Private - Large	8	0	4	1	0	3	0
Mont Liban - Public - Small	8	0	8	0	0	0	0
Mont Liban - Public - Large	8	0	8	0	0	0	0
Mont Liban - Private - Small	8	0	7	1	0	0	0
Mont Liban - Private - Large	8	0	6	1	0	1	0
Mont Liban Suburb - Public - Small	8	0	8	0	0	0	0
Mont Liban Suburb - Public - Large	8	0	8	0	0	0	0
Mont Liban Suburb - Private - Small	8	0	5	2	0	1	0
Mont Liban Suburb - Private - Large	22	0	14	2	3	3	0
Total	218	2	189	12	3	12	0

Lithuania

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, schools with students taught in a language other than Lithuanian, Polish, or Russian, and schools providing remote studying
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4’/Grade 4 and Grade 8’ schools, and language (5)
- Implicit stratification by urbanization (4), and school type (4)
- Sampled two classrooms in large schools (more than 4 classes)
- Grade 4 and Grade 8 school samples were selected simultaneously with minimum overlap.
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Lithuanian only	31	0	31	0	0	0	0
Grade 4 - Other	11	0	11	0	0	0	1
Grade 4 & Grade 8 - Lithuanian only	112	0	112	0	0	0	0
Grade 4 & Grade 8 - Russian	14	0	14	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 & Grade 8 - Polish	26	0	26	0	0	0	0
Grade 4 & Grade 8 - Lithuanian and Russian and/or Polish	13	0	13	0	0	0	0
Total	207	0	207	0	0	0	1

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Lithuanian only	12	0	12	0	0	0	0
Grade 4 - Other	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Lithuanian only	46	0	46	0	0	0	0
Grade 4 & Grade 8 - Russian	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Polish	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Lithuanian and Russian and/or Polish	4	0	4	0	0	0	0
Total	74	0	74	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, schools with students taught in a language other than Lithuanian, Polish, or Russian, and schools providing remote studying
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 8’/Grade 4 and Grade 8’ schools, and language (5)
- Implicit stratification by urbanization (4), and school type (4)
- Sampled two classrooms in large schools (more than 4 classes)
- Grade 4 and Grade 8 school samples were selected simultaneously with minimum overlap.
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Lithuanian only	14	0	14	0	0	0	0
Grade 8 - Other	6	0	6	0	0	0	0
Grade 4 & Grade 8 - Lithuanian only	122	0	121	0	0	1	0
Grade 4 & Grade 8 - Russian	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Polish	26	0	26	0	0	0	0
Grade 4 & Grade 8 - Lithuanian and Russian and/or Polish	13	0	13	0	0	0	0
Total	195	0	194	0	0	1	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Lithuanian only	8	0	8	0	0	0	0
Grade 8 - Other	2	0	2	0	0	0	0
Grade 4 & Grade 8 - Lithuanian only	50	0	50	0	0	0	0
Grade 4 & Grade 8 - Russian	4	0	4	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 & Grade 8 - Polish	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Lithuanian and Russian and/or Polish	4	0	4	0	0	0	0
Total	72	0	72	0	0	0	0

Malaysia

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 15), special needs schools, schools located at remote area, and schools that do not follow the national curriculum
- Within-school exclusions consisted of students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (6), score level (3) within Ministry of Education daily school strata and urbanization (rural, urban) within all Ministry of Education strata
- No implicit stratification
- Sampled two classrooms in Ministry of Education daily schools
- The Field Test and Main Data Collection samples were selected sequentially. The TIMSS Main Data Collection sample was selected by controlling for the overlap with the TIMSS Field Test and PISA samples using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
MOE Daily School - High to mid-High - Urban	9	0	9	0	0	0	0
MOE Daily School - Intermediate or N.A. - Urban	31	0	30	1	0	0	0
MOE Daily School - High to intermediate - Rural	19	0	19	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
MOE Daily School - Mid-Low to Very Low - Rural	31	0	31	0	0	0	0
MOE Daily School - Mid-Low to Very Low - Urban	24	0	24	0	0	0	0
MOE Fully Residential School - Rural	11	0	11	0	0	0	0
MOE Fully Residential School - Urban	10	0	10	0	0	0	0
MOE Religious School - Rural	10	0	9	1	0	0	0
MOE Religious School - Urban	10	0	10	0	0	0	0
MARA Junior Science College	8	0	8	0	0	0	0
Non-MOE Religious School	8	0	8	0	0	0	0
Private School	6	0	6	0	0	0	1
Total	177	0	175	2	0	0	1

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
MOE Daily School - High to mid-High - Urban	2	0	2	0	0	0	0
MOE Daily School - Intermediate or N.A. - Urban	8	0	8	0	0	0	0
MOE Daily School - High to intermediate - Rural	6	0	6	0	0	0	0
MOE Daily School - Mid-Low to Very Low - Rural	8	0	8	0	0	0	0
MOE Daily School - Mid-Low to Very Low - Urban	6	0	6	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
MOE Fully Residential School - Rural	2	0	2	0	0	0	0
MOE Fully Residential School - Urban	2	0	2	0	0	0	0
MOE Religious School - Rural	2	0	2	0	0	0	0
MOE Religious School - Urban	2	0	2	0	0	0	0
MARA Junior Science College	2	0	2	0	0	0	0
Non-MOE Religious School	2	0	2	0	0	0	0
Private School	2	0	2	0	0	0	0
Total	44	0	44	0	0	0	0

Malta

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and language schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (church, independent, state)
- No implicit stratification
- Sampled all classrooms
- Classes were used as variance estimation strata and half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Church	25	0	25	0	0	0	0
Independent	11	0	11	0	0	0	0
State	63	1	62	0	0	0	0
Total	99	1	98	0	0	0	0

Montenegro

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 2), and language of instruction not Montenegrin
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by region (north, central, south)
- Implicit stratification by urbanization (rural, urban)
- Sampled three classrooms in large schools (measure of size > 80) and two classrooms elsewhere
- All schools at Grade 4 were selected
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
North	66	0	66	0	0	0	0
Central	48	0	48	0	0	0	0
South	26	0	26	0	0	0	0
Total	140	0	140	0	0	0	0

Morocco

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6)
- No within-school exclusions

Sample Design

- Explicit stratification by school type (private, public) and region (12)
- Implicit stratification by urbanization (urban, rural) within public sector
- Sampled two classrooms in public schools from the region of Oued eddhab Lagouira where all schools were taken
- No overlap between Grade 4 and Grade 8 samples
- Schools at the regional level were oversampled. Census in the region of Oued eddhab Lagouira.
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Private - Casablanca-Settat	8	0	8	0	0	0	0
Private - All other re-gions	16	1	15	0	0	0	0
Public - Tanger-Tetouan-Al Hoceima	20	0	20	0	0	0	0
Public - Oriental	20	0	20	0	0	0	0
Public - Fes-Meknes	20	0	20	0	0	0	0
Public - Rabat-Sale-Kenitra	20	0	20	0	0	0	0
Public - Beni Mellal-Khenifra	20	0	20	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Casablanca-Settat	20	0	20	0	0	0	0
Public - Marrakech-Safi	20	0	20	0	0	0	0
Public - Draa-Tafilalet	20	0	20	0	0	0	0
Public - Souss-Massa	20	0	20	0	0	0	0
Public - Guelmim-Oued Noun	20	0	20	0	0	0	0
Public - Laayoune-Sakia El Hamra	20	0	20	0	0	0	0
Public - Eddakhla-Oued Eddahab	21	0	21	0	0	0	0
Total	265	1	264	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6)
- No within-school exclusions

Sample Design

- Explicit stratification by school type (private, public) and region (12)
- Implicit stratification by urbanization (urban, rural) within public sector
- Sampled two classrooms in public schools from the region of Oued eddahab Lagouira where all schools were taken
- No overlap between Grade 4 and Grade 8 samples
- Schools at the regional level were oversampled. Census in the region of Oued eddahab Lagouira.
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Private - Casablanca-Settat	8	0	8	0	0	0	0
Private - All other re-gions	12	0	12	0	0	0	0
Public - Tanger Te-touan Al Hoceima	20	0	20	0	0	0	0
Public - Oriental	20	1	19	0	0	0	0
Public - Fes Meknes	20	0	20	0	0	0	0
Public - Rabat Sale Kenitra	20	1	19	0	0	0	0
Public - Beni Mellal Khenifra	20	0	20	0	0	0	0
Public - Casablanca Settat	24	0	24	0	0	0	0
Public - Marrakech Safi	20	0	20	0	0	0	0
Public - Draa Tafilalet	20	0	20	0	0	0	0
Public - Souss Massa	20	0	20	0	0	0	0
Public - Guelmim Oued Noun	20	0	20	0	0	0	0
Public - Laayoune Sa-kia El Hamra	20	0	20	0	0	0	0
Public - Eddakhla Oued Eddahab	9	0	9	0	0	0	0
Total	253	2	251	0	0	0	0

Netherlands

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by socioeconomic status (low, medium, high)
- No implicit stratification
- Sampled all classrooms
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
High Mean SES	99	1	40	23	10	25	0
Medium Mean SES	44	1	25	5	3	10	0
Low Mean SES	8	0	6	0	0	2	0
Total	151	2	71	28	13	37	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
High Mean SES	32	0	20	6	2	4	0
Medium Mean SES	14	0	6	3	1	4	0
Low Mean SES	4	0	1	1	1	1	0
Total	50	0	27	10	4	9	0

New Zealand

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), correspondence schools, Maori-medium Level 1 immersion schools, and mostly students in Level 1-2 immersion units schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- No explicit stratification
- Implicit stratification by school type (state, independent), socioeconomic status (4) and urbanization (major urban centers, smaller urban centers) within state schools
- Sampled two classrooms per school
- The sample at Grade 4 was selected by controlling for the overlap with Grade 8 Field Test and Main Data Collection samples using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
None	163	2	138	18	4	1	1
Total	163	2	138	18	4	1	1

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), correspondence schools, Maori-medium Level 1 immersion schools, and mostly students in Level 1-2 immersion units schools

- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (state, independent), and socioeconomic status (4), and urbanization (major urban centers, smaller urban centers) within state schools. One additional stratum created for newly created schools
- Implicit stratification by school gender (coeducational, boys, girls)
- Sampled two classrooms per school
- Class group option was used in schools by ability level (advanced, other).

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Independent school	8	0	6	1	0	1	0
State - Low SES school -Major urban centers	12	0	10	2	0	0	0
State - Low SES school -Smaller centers	8	0	4	2	0	2	0
State - Moderately low SES school - Major urban centers	23	0	18	1	0	4	1
State - Moderately low SES school - Smaller centers	12	0	9	1	1	1	0
State - Moderately high SES school - Major urban centers	40	0	31	4	0	5	0
State - Moderately high SES school - Smaller centers	16	0	11	4	0	1	0
State - High SES school	30	0	25	2	0	3	0
New School	3	1	1	0	1	0	1
Total	152	1	115	17	2	17	2

North Macedonia

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and Turkish language schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (urban, rural, mixed) and language (Macedonian, Albanian, mixed)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 70) and in schools with more than one language of instruction
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Urban - Macedonian	40	0	40	0	0	0	0
Urban - Albanian	8	0	8	0	0	0	0
Urban - Mixed	10	0	10	0	0	0	0
Rural - Macedonian	16	0	14	2	0	0	0
Rural - Albanian	22	0	20	2	0	0	0
Rural - Mixed	10	0	10	0	0	0	0
Mixed - Macedonian	30	0	30	0	0	0	0
Mixed - Albanian or Mixed	14	0	14	0	0	0	0
Total	150	0	146	4	0	0	0

Northern Ireland

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by region (5), and deprivation group (9)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 90), and in schools with composite classes.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Belfast - Lower Deprivation	8	0	5	0	1	2	0
Belfast - Highest Deprivation	14	0	8	0	3	3	0
Western - Lower Deprivation	10	0	6	4	0	0	0
Western - Moderate to high Deprivation	10	0	5	2	0	3	0
Western - Highest Deprivation	8	0	6	1	0	1	0
North Eastern - Lowest Deprivation	10	0	8	1	1	0	0
North Eastern - Low to moderate Deprivation	10	0	6	4	0	0	0
North Eastern - Higher Deprivation	14	0	7	5	1	1	0
South Eastern - Lowest Deprivation	12	0	6	3	2	1	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
South Eastern - Low to moderate Deprivation	12	0	10	0	1	1	0
South Eastern - Higher Deprivation	10	0	7	1	0	2	0
Southern - Lower Deprivation	14	0	6	2	3	3	0
Southern - Moderate Deprivation	10	0	8	0	1	1	0
Southern - Higher Deprivation	14	0	7	1	2	4	0
Total	156	0	95	24	15	22	0

Norway

Fifth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, immigrant schools, Sami schools, and international schools
- Within-school exclusions consisted of students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 5’/Grade 5 and Grade 9’ schools, city (Oslo, other), and municipality size (small, medium, large)
- Implicit stratification by national numeracy test score (4)
- Sampled two classrooms per school
- Grade 5 and Grade 9 school samples were selected simultaneously with minimum overlap.
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples
- Additional replacement schools were used for eTIMSS in the case that schools did not have adequate technology infrastructure

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 5 - Oslo	22	0	16	3	1	2	0
Grade 5 - Other - Small Municipalities	8	0	7	0	0	1	0
Grade 5 - Other - Medium Municipalities	36	0	21	7	4	4	0
Grade 5 - Other - Large Municipalities	68	0	52	11	2	3	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 5 & Grade 9 - Oslo	7	0	6	0	0	1	0
Grade 5 & Grade 9 - Other - Small Municipalities	8	0	6	1	0	1	0
Grade 5 & Grade 9 - Other - Medium Municipalities	8	0	5	1	0	2	0
Grade 5 & Grade 9 - Other - Large Municipalities	10	0	6	0	1	3	0
Total	167	0	119	23	8	17	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 5 - Oslo	4	0	4	0	0	0	0
Grade 5 - Other - Small Municipalities	4	0	4	0	0	0	0
Grade 5 - Other - Medium Municipalities	12	0	12	0	0	0	0
Grade 5 - Other - Large Municipalities	20	0	20	0	0	0	0
Grade 5 & Grade 9 - Oslo	4	1	3	0	0	0	0
Grade 5 & Grade 9 - Other - Small Municipalities	4	0	4	0	0	0	0
Grade 5 & Grade 9 - Other - Medium Municipalities	4	0	4	0	0	0	0
Grade 5 & Grade 9 - Other - Large Municipalities	4	0	4	0	0	0	0
Total	56	1	55	0	0	0	0

Ninth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, immigrant schools, and international schools
- Within-school exclusions consisted of students with functional disabilities

Sample Design

- Explicit stratification by ‘Grade 9’/‘Grade 5 and Grade 9’ schools, city (Oslo, other), and municipality size (small, medium, large)
- Implicit stratification by national numeracy test score (4)
- Sampled two classrooms per school
- Grade 5 and Grade 9 school samples were selected simultaneously with minimum overlap.
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples
- Additional replacement schools were used for eTIMSS in the case that schools did not have adequate technology infrastructure

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 9 - Oslo	20	0	20	0	0	0	0
Grade 9 - Other - Small municipalities	8	0	5	3	0	0	0
Grade 9 - Other - Medium municipalities	36	0	24	7	1	4	0
Grade 9 - Other - Large municipalities	62	0	48	11	1	2	0
Grade 5 & Grade 9 - Oslo	9	0	9	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 5 & Grade 9 - Other - Small municipalities	10	0	10	0	0	0	0
Grade 5 & Grade 9 - Other - Medium municipalities	8	0	7	1	0	0	0
Grade 5 & Grade 9 - Other - Large municipalities	13	1	9	1	0	2	0
Total	166	1	132	23	2	8	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 9 - Oslo	4	0	4	0	0	0	0
Grade 9 - Other - Small municipalities	4	0	4	0	0	0	0
Grade 9 - Other - Medium municipalities	12	0	11	0	0	1	0
Grade 9 - Other - Large municipalities	18	0	16	1	0	1	0
Grade 5 & Grade 9 - Oslo	4	0	4	0	0	0	0
Grade 5 & Grade 9 - Other - Small municipalities	4	0	4	0	0	0	0
Grade 5 & Grade 9 - Other - Medium municipalities	4	0	4	0	0	0	0
Grade 5 & Grade 9 - Other - Large municipalities	4	0	3	0	0	1	0
Total	54	0	50	1	0	3	0

Oman

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 7), special needs schools, and evening schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by governorates (11) and school type (private, international)
- No implicit stratification
- Sampled two classrooms in census stratum (Musandam Governorate) and in large schools (measure of size > 250)
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Grade 4 and Grade 8 Field Test samples using the Chowdhury approach.
- Census of schools in Musandam Governorate
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Muscat Governorate	20	0	20	0	0	0	0
Ash Sharqiyah North Governorate	19	0	19	0	0	0	0
Ash Sharqiyah South Governorate	20	0	20	0	0	0	0
Ad Dakhliyah Governorate	20	0	20	0	0	0	0
Adh Dhahirah Governorate	20	0	20	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Al Batinah North Governorate	26	0	26	0	0	0	0
Al Batinah South Governorate	19	0	19	0	0	0	0
Al Buraimi Governorate	8	0	8	0	0	0	0
Musandam Governorate	8	0	8	0	0	0	0
Dhofar Governorate	20	0	20	0	0	0	0
Al Wusta Governorate	8	0	8	0	0	0	0
Private Schools	20	0	18	1	1	0	0
International Schools	20	0	20	0	0	0	0
Total	228	0	226	1	1	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 7), special needs schools, and evening schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by governorates (11) and school type (private, international)
- Implicit stratification by gender (3)
- Sampled two classrooms in large schools (measure of size > 250)
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for minimum overlap with the Grade 4 and Grade 8 Field Test samples and maximum overlap with the Grade 4 Main Data Collection sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Muscat Governorate	23	0	23	0	0	0	0
Ash Sharqiyah North Governorate	20	0	20	0	0	0	0
Ash Sharqiyah South Governorate	20	0	20	0	0	0	0
Ad Dakhliyah Governorate	20	0	20	0	0	0	0
Adh Dhahirah Governorate	20	0	20	0	0	0	0
Al Batinah North Governorate	22	0	22	0	0	0	1
Al Batinah South Governorate	20	0	20	0	0	0	0
Al Buraimi Governorate	8	0	8	0	0	0	0
Musandam Governorate	8	0	8	0	0	0	0
Dhofar Governorate	19	0	19	0	0	0	1
Al Wusta Governorate	8	0	8	0	0	0	0
Private Schools	20	0	15	5	0	0	0
International Schools	20	0	20	0	0	0	0
Total	228	0	223	5	0	0	2

Pakistan

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), and language of instruction other than English, Urdu or Sindhi
- No within-school exclusions

Sample Design

- Explicit stratification by school type (public, private), region (Khyber Pakhtunkhwa, Punjab, Sindh, other small regions) within public schools and region (Punjab, other regions) within private schools
- Implicit stratification by region (5), urbanization (urban, rural) and gender (boys, girls) within public schools, and by regions (6) within private schools
- Sampled two classrooms per school
- Private schools were sampled with equal probability as no measure of size was available

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Smaller Re-gions	20	0	15	1	4	0	0
Public - Khyber Pakhtunkhwa	24	0	22	0	1	1	0
Public - Punjab	50	0	50	0	0	0	0
Public - Sindh	22	0	16	4	0	2	0
Private - Punjab	26	7	13	3	3	0	0
Private - All Other Re-gions	8	1	5	1	1	0	0
Total	150	8	121	9	9	3	0

Philippines

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 12), special needs schools, and schools in community with armed conflict
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), socioeconomic index (high, medium, low), geographic location (urban, rural), and unknown
- No implicit stratification
- Sampled one classroom per school

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - High SES - Urban	30	0	30	0	0	0	0
Public - High SES - Rural	45	0	45	0	0	0	1
Public - Medium SES - Urban	34	0	34	0	0	0	0
Public - Medium SES - Rural	20	0	20	0	0	0	0
Public - Low SES - Urban	14	0	14	0	0	0	0
Public - Low SES - Rural	8	0	8	0	0	0	0
Private - High SES	8	1	7	0	0	0	0
Private - Medium SES	8	0	8	0	0	0	0
Private - Low SES	8	0	8	0	0	0	0
Unknown - No available data	8	2	6	0	0	0	0
Total	183	3	180	0	0	0	1

Poland

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and schools with language of instruction other than Polish
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (4)
- No implicit stratification
- Sampled two classrooms whenever possible

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Village	54	1	51	2	0	0	0
Town (Up to 20 Thousand Inhabitants)	26	0	26	0	0	0	0
City (20 to 100 Thousand Inhabitants)	30	0	30	0	0	0	0
City (Above 100 Thousand Inhabitants)	40	0	36	4	0	0	0
Total	150	1	143	6	0	0	0

Portugal

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and non Portuguese instruction language or not following national curriculum
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), NUTS 2 region within public schools (8), and school size (2) within private schools
- Implicit stratification by NUTS 3 region within public schools (25) and NUTS 2 region within private schools (8)
- Sampled two classrooms in large schools (measure of size > 110). In schools sampled for eTIMSS and bridge, one additional classroom sampled for the bridge
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 87.8 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Alentejo	12	0	10	2	0	0	0
Public - Algarve	10	0	9	1	0	0	0
Public - Centro	30	0	26	3	1	0	0
Public - Lisboa	38	0	33	4	1	0	0
Public - Norte - Porto	24	0	22	2	0	0	0
Public - Norte - Other	26	0	26	0	0	0	0
Public - R. A. Açores	8	0	7	1	0	0	0
Public - R. A. Madeira	8	0	7	1	0	0	0
Private - Small	16	1	10	4	1	0	0
Private - Large	10	0	8	2	0	0	0
Total	182	1	158	20	3	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Alentejo	6	0	6	0	0	0	0
Public - Algarve	4	0	3	1	0	0	0
Public - Centro	16	0	15	1	0	0	0
Public - Lisboa	20	0	16	3	1	0	0
Public - Norte - Porto	12	0	12	0	0	0	0
Public - Norte - Other	12	0	12	0	0	0	0
Public - R. A. Açores	4	0	4	0	0	0	0
Public - R. A. Madeira	4	0	4	0	0	0	0
Private - Small	8	0	7	1	0	0	0
Private - Large	4	0	4	0	0	0	0
Total	90	0	83	6	1	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10), and non Portuguese instruction language or not following national curriculum
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private) and NUTS 2 region (8) within public schools
- Implicit stratification by NUTS 3 region within public schools (25) and grouped NUTS 2 region within private schools (5)
- Sampled two classrooms in large schools (measure of size > 190)
- The Main Data Collection Grade 8 sample was selected by controlling for the overlap with the Field Test and Grade 4 Main Data Collection samples using the Chowdhury approach.
- No bridge sample required at Grade 8 as they did not participate in TIMSS 2015

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Alentejo	10	0	9	1	0	0	0
Public - Algarve	8	0	8	0	0	0	0
Public - Centro	24	0	22	2	0	0	0
Public - Lisboa	36	0	35	1	0	0	0
Public - Porto	22	0	21	1	0	0	0
Public - Norte	24	0	23	1	0	0	0
Public - R.A. Açores	8	0	5	1	0	2	0
Public - R.A. Madeira	8	0	8	0	0	0	0
Private	18	0	18	0	0	0	0
Total	158	0	149	7	0	2	0

Qatar

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and instruction not in English or Arabic
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4 only’/‘Grade 4 and Grade 8’, gender (3) within Grade 4 only stratum
- Implicit stratification by gender (3) within Grade 4 and 8 schools, and school type (4)
- Sampled one classroom per school. In schools sampled for eTIMSS and bridge, one additional classroom selected for the bridge
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 98.5 % of students in the bridge sample were in schools selected for the eTIMSS sample
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Boys	42	0	42	0	0	0	0
Grade 4 - Girls	46	0	46	0	0	0	0
Grade 4 - Mixed	58	0	58	0	0	0	0
Grade 4 & Grade 8	96	0	96	0	0	0	0
Total	242	0	242	0	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Boys	11	0	11	0	0	0	0
Grade 4 - Girls	11	0	11	0	0	0	0
Grade 4 - Mixed	9	0	9	0	0	0	0
Grade 4 & Grade 8	32	0	32	0	0	0	0
Total	63	0	63	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and instruction not in English or Arabic
- Within-school exclusions consisted of students with intellectual disabilities, and students with functional disabilities

Sample Design

- Explicit stratification by ‘Grade 8 only’/‘Grade 4 and Grade 8’
- Implicit stratification by gender (3), and school type (4)
- Sampled two classrooms in large schools (measure of size >100) selected for eTIMSS only and in schools selected for eTIMSS and bridge

- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 98.6 % of students in the bridge sample were in schools selected for the eTIMSS sample
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	57	0	57	0	0	0	0
Grade 4 & Grade 8	95	0	95	0	0	0	0
Total	152	0	152	0	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	33	0	33	0	0	0	0
Grade 4 & Grade 8	30	0	30	0	0	0	0
Total	63	0	63	0	0	0	0

Romania

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, and schools with different curriculum
- Within-school exclusions consisted of students with intellectual disabilities, and students with functional disabilities

Sample Design

- Explicit stratification by urbanization (rural, urban) and regions (5)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 100)

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Rural - Bucharest-Ilfov	8	0	8	0	0	0	0
Rural - North	32	0	28	3	1	0	0
Rural - Center	12	0	10	1	1	0	0
Rural - South	36	0	35	1	0	0	0
Rural - West	8	0	8	0	0	0	0
Urban - Bucharest-Ilfov	16	0	16	0	0	0	0
Urban - North	28	0	28	0	0	0	0
Urban - Center	12	0	11	1	0	0	0
Urban - South	34	0	34	0	0	0	0
Urban - West	12	0	11	1	0	0	0
Total	198	0	189	7	2	0	0

Russian Federation

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by region (43).
- No implicit stratification
- Sampled one classroom per school
- No overlap control between Grade 4 and Grade 8 samples.
- The Main Data Collection sample was selected by controlling for the overlap with the Moscow benchmarking sample using the Chowdhury approach
- An extra sampling stage (regions) was required prior to sampling schools. 43 regions out of 85 were selected with probability proportional to the region size. 14 bigger regions were selected with certainty. Each certainty region make up an explicit stratum. The other sampled regions make up one other large explicit stratum for variance purposes. In this latter stratum of sampled regions, a sample of schools is selected within each region.
- Within regions, schools were selected with probability proportional to (school) size systematic sampling. Schools were sorted (serpentine) by location (up to 7 levels) before being sorted by school size.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples
- Special treatment is required for variance calculation due to the first sampling stage (region). Within each explicit stratum made up from a certainty region, schools are paired together as in the standard procedure. In the larger explicit stratum composed of sampled regions, regions are paired for variance calculation purposes.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Sankt-Petersburg*	6	0	6	0	0	0	0
City of Moscow*	12	0	11	0	0	1	0
Moscow region*	10	0	10	0	0	0	0
Nizhni Novgorod re-gion*	4	0	4	0	0	0	0
Samara region*	4	0	4	0	0	0	0
Republic of Tatarstan*	6	0	6	0	0	0	0
Republic of Bashkortostan*	6	0	6	0	0	0	0
Krasnodar territory*	8	0	8	0	0	0	0
Rostov region*	6	0	6	0	0	0	0
Chelyabinsk region*	4	0	4	0	0	0	0
Sverdlovsk region*	6	0	6	0	0	0	0
Kemerovo region*	4	0	4	0	0	0	0
Krasnoyarsk territory*	4	0	4	0	0	0	0
Republic of Dagestan*	6	0	6	0	0	0	0
Pskov region	4	0	4	0	0	0	0
Republic of Komi	4	0	4	0	0	0	0
Vologda region	4	0	4	0	0	0	0
Voronezh region	4	0	4	0	0	0	0
Belgorod region	4	0	4	0	0	0	0
Tula region	4	0	4	0	0	0	0
Yaroslavl region	4	0	4	0	0	0	0
Ryazan region	4	0	4	0	0	0	0
Tambov region	4	0	4	0	0	0	0
Kostroma region	4	0	4	0	0	0	0
Penza region	4	0	4	0	0	0	0
Chuvashi Republic	4	0	4	0	0	0	0
Orenburg region	4	0	4	0	0	0	0
Saratov region	4	0	4	0	0	0	0
Perm territory	4	0	4	0	0	0	0
Volgograd region	4	0	4	0	0	0	0
Astrakhan region	4	0	4	0	0	0	0
Kurgan region	4	0	4	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Khanty-Mansijsk autonomous district	4	0	4	0	0	0	0
Novosibirsk region	4	0	4	0	0	0	0
Irkutsk region	4	0	4	0	0	0	0
Altai territory	4	0	4	0	0	0	0
Zabaikalsk territory	4	0	4	0	0	0	0
Tomsk region	4	0	4	0	0	0	0
Sakhalin region	4	0	4	0	0	0	0
Khabarovsk territory	4	0	4	0	0	0	0
Primorsky territory	4	0	3	0	0	1	0
Stavropol territory	4	0	4	0	0	0	0
Kabardino-Balkarian Republic	4	0	4	0	0	0	0
Total	202	0	200	0	0	2	0

* Certainty regions

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Sankt-Petersburg*	2	0	2	0	0	0	0
City of Moscow*	4	0	4	0	0	0	0
Moscow region*	4	0	4	0	0	0	0
Nizhni Novgorod region*	2	0	2	0	0	0	0
Samara region*	2	0	2	0	0	0	0
Republic of Tatarstan*	2	0	2	0	0	0	0
Republic of Bashkortostan*	2	0	2	0	0	0	0
Krasnodar territory*	4	0	4	0	0	0	0
Rostov region*	2	0	2	0	0	0	0
Chelyabinsk region*	2	0	2	0	0	0	0
Sverdlovsk region*	2	0	2	0	0	0	0
Kemerovo region*	2	0	2	0	0	0	0
Krasnoyarsk territory*	2	0	2	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Republic of Dagestan*	2	0	2	0	0	0	0
Pskov region	2	0	2	0	0	0	0
Republic of Komi	2	0	2	0	0	0	0
Vologda region	2	0	2	0	0	0	0
Voronezh region	2	0	2	0	0	0	0
Belgorod region	2	0	2	0	0	0	0
Tula region	2	0	2	0	0	0	0
Yaroslavl region	2	0	2	0	0	0	0
Ryazan region	2	0	2	0	0	0	0
Tambov region	2	0	2	0	0	0	0
Kostroma region	2	0	2	0	0	0	0
Penza region	2	0	2	0	0	0	0
Chuvashi Republic	2	0	2	0	0	0	0
Orenburg region	2	0	2	0	0	0	0
Saratov region	2	0	2	0	0	0	0
Perm territory	2	0	2	0	0	0	0
Volgograd region	2	0	2	0	0	0	0
Astrakhan region	2	0	2	0	0	0	0
Kurgan region	2	0	2	0	0	0	0
Khanty-Mansijsk autonomous district	2	0	2	0	0	0	0
Novosibirsk region	2	0	2	0	0	0	0
Irkutsk region	2	0	2	0	0	0	0
Altai territory	2	0	2	0	0	0	0
Zabaikalsk territory	2	0	2	0	0	0	0
Tomsk region	2	0	2	0	0	0	0
Sakhalin region	2	0	2	0	0	0	0
Khabarovsk territory	2	0	2	0	0	0	0
Primorsky territory	2	0	2	0	0	0	0
Stavropol territory	2	0	2	0	0	0	0
Kabardino-Balkarian Republic	2	0	2	0	0	0	0
Total	92	0	92	0	0	0	0

* Certainty regions

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by region (43).
- No implicit stratification
- Sampled one classroom per school
- No overlap control between Grade 4 and Grade 8 samples.
- An extra sampling stage (regions) was required prior to sampling schools. 43 regions out of 85 were selected with probability proportional to the region size. 14 bigger regions were selected with certainty. Each certainty region make up an explicit stratum. The other sampled regions make up one other large explicit stratum for variance purposes. In this latter stratum of sampled regions, a sample of schools is selected within each region.
- Within regions, schools were selected with probability proportional to (school) size systematic sampling. Schools were sorted (serpentine) by location (up to 7 levels) before being sorted by school size.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples
- Special treatment is required for variance calculation due to the first sampling stage (region). Within each explicit stratum made up from a certainty region, schools are paired together as in the standard procedure. In the larger explicit stratum composed of sampled regions, regions are paired for variance calculation purposes.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Sankt-Petersburg*	6	0	6	0	0	0	0
City of Moscow*	12	0	11	1	0	0	0
Moscow region*	10	0	10	0	0	0	0
Perm territory*	4	0	4	0	0	0	0
Nizhni Novgorod re-gion*	4	0	4	0	0	0	0
Republic of Tatarstan*	6	0	6	0	0	0	0
Republic of Bashkortostan*	6	0	6	0	0	0	0
Krasnodar territory*	8	0	8	0	0	0	0
Rostov region*	6	0	6	0	0	0	0
Chelyabinsk region*	6	0	6	0	0	0	0
Sverdlovsk region*	6	0	6	0	0	0	0
Krasnoyarsk territory*	4	0	4	0	0	0	0
Republic of Dagestan*	6	0	6	0	0	0	0
Pskov region	4	0	4	0	0	0	0
Republic of Komi	4	0	4	0	0	0	0
Vologda region	4	0	4	0	0	0	0
Voronezh region	4	0	4	0	0	0	0
Vladimir region	4	0	4	0	0	0	0
Tver region	4	0	4	0	0	0	0
Yaroslavl region	4	0	4	0	0	0	0
Ryazan region	4	0	4	0	0	0	0
Ivanovo region	4	0	4	0	0	0	0
Republic of Marij El	4	0	4	0	0	0	0
Penza region	4	0	4	0	0	0	0
Chuvashi Republic	4	0	4	0	0	0	0
Orenburg region	4	0	4	0	0	0	0
Saratov region	4	0	4	0	0	0	0
Volgograd region	4	0	4	0	0	0	0
Astrakhan region	4	0	4	0	0	0	0
Kurgan region	4	0	4	0	0	0	0
Khanty-Mansijsk autonomous district	4	0	4	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Novosibirsk region	4	0	4	0	0	0	0
Kemerovo region	4	0	4	0	0	0	0
Irkutsk region	4	0	4	0	0	0	0
Altai territory	4	0	4	0	0	0	0
Zabaikalsk territory	4	0	4	0	0	0	0
Tomsk region	4	0	4	0	0	0	0
Sakhalin region	4	0	4	0	0	0	0
Republic of Sakha	4	0	4	0	0	0	0
Primorsky territory	4	0	4	0	0	0	0
Chechen Republic	4	0	4	0	0	0	0
Kabardino-Balkarian Republic	4	0	4	0	0	0	0
Total	204	0	203	1	0	0	0

* Certainty regions

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Sankt-Petersburg*	2	0	2	0	0	0	0
City of Moscow*	4	0	4	0	0	0	0
Moscow region*	4	0	4	0	0	0	0
Perm territory*	2	0	2	0	0	0	0
Nizhni Novgorod re-gion*	2	0	2	0	0	0	0
Samara region*	2	0	2	0	0	0	0
Republic of Tatarstan*	2	0	2	0	0	0	0
Republic of Bashkortostan*	2	0	2	0	0	0	0
Krasnodar territory*	4	0	4	0	0	0	0
Rostov region*	2	0	2	0	0	0	0
Chelyabinsk region*	2	0	2	0	0	0	0
Sverdlovsk region*	2	0	2	0	0	0	0
Krasnoyarsk territory*	2	0	2	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Republic of Dagestan*	2	0	2	0	0	0	0
Pskov region	2	0	2	0	0	0	0
Republic of Komi	2	0	2	0	0	0	0
Vologda region	2	0	2	0	0	0	0
Voronezh region	2	0	2	0	0	0	0
Vladimir region	2	0	2	0	0	0	0
Tver region	2	0	2	0	0	0	0
Yaroslavl region	2	0	2	0	0	0	0
Ryazan region	2	0	2	0	0	0	0
Ivanovo region	2	0	2	0	0	0	0
Republic of Marij El	2	0	2	0	0	0	0
Penza region	2	0	2	0	0	0	0
Chuvashi Republic	2	0	2	0	0	0	0
Orenburg region	2	0	2	0	0	0	0
Saratov region	2	0	2	0	0	0	0
Volgograd region	2	0	2	0	0	0	0
Astrakhan region	2	0	2	0	0	0	0
Kurgan region	2	0	2	0	0	0	0
Khanty-Mansijsk autonomous district	2	0	2	0	0	0	0
Novosibirsk region	2	0	2	0	0	0	0
Kemerovo region	2	0	2	0	0	0	0
Irkutsk region	2	0	2	0	0	0	0
Altai territory	2	0	2	0	0	0	0
Zabaikalsk territory	2	0	2	0	0	0	0
Tomsk region	2	0	2	0	0	0	0
Sakhalin region	2	0	2	0	0	0	0
Republic of Sakha	2	0	2	0	0	0	0
Primorsky territory	2	0	2	0	0	0	0
Chechen Republic	2	0	2	0	0	0	0
Kabardino-Balkarian Republic	2	0	2	0	0	0	0
Total	92	0	92	0	0	0	0

* Certainty regions

Saudi Arabia

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6), special needs schools, schools using different language other than Arabic or English, and schools in Jizan, Najran and part of Asir
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private, international/foreign) and gender (boys, girls)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Girls	84	0	82	0	2	0	0
Public - Boys	80	0	78	1	0	1	0
Private - Girls	14	0	13	1	0	0	0
Private - Boys	16	0	16	0	0	0	0
International/Foreign - Girls	14	1	12	1	0	0	0
International/Foreign - Boys	14	0	14	0	0	0	0
Total	222	1	215	3	2	1	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6), special needs schools, schools using different language other than Arabic or English, and schools in Jizan, Najran and part of Asir
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private, international/foreign) and gender (boys, girls)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 215)
- No overlap between Grade 4 and Grade 8 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public - Girls	78	0	78	0	0	0	0
Public - Boys	74	1	73	0	0	0	0
Private - Girls	16	1	15	0	0	0	0
Private - Boys	16	0	16	0	0	0	0
International or Foreign - Girls	14	1	12	0	1	0	0
International or Foreign - Boys	14	0	14	0	0	0	0
Total	212	3	208	0	1	0	0

Serbia

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, and schools with students taught in language other than Serbian
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by region (Belgrade, Vojvodina, Central Serbia), urbanization (urban, rural), and school hierarchy (main school, branch department) within Central Serbia rural schools
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 100)

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Belgrade - Urban	30	0	30	0	0	0	0
Belgrade - Rural	10	0	10	0	0	0	0
Vojvodina - Urban	28	0	28	0	0	0	0
Vojvodina - Rural	16	0	16	0	0	0	0
Central Serbia - Urban	47	0	45	2	0	0	1
Central Serbia - Rural - Main School	15	0	14	0	1	0	1
Central Serbia - Rural - Branch Department	20	1	16	2	1	0	2
Total	166	1	159	4	2	0	4

Singapore

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and private schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- No explicit stratification
- No implicit stratification
- Sampled two classrooms per school
- No overlap between Grade 4 and Grade 8 schools.
- Census of all schools. Within schools, two classrooms were sampled with probability proportional to the size of the classroom. Within selected classrooms, 19 students were randomly sampled for eTIMSS. The remaining students were assigned to the bridge sample.
- 100 % of students in the bridge sample were in schools selected for the eTIMSS sample
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
None	187	0	187	0	0	0	0
Total	187	0	187	0	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
None	56	0	56	0	0	0	0
Total	56	0	56	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and private schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- No explicit stratification
- No implicit stratification
- Sampled two classrooms per school
- No overlap between Grade 4 and Grade 8 schools.
- Census of all schools. Within schools, two classrooms were sampled with probability proportional to the size of the classroom. Within selected classrooms, 19 students were randomly sampled for eTIMSS. The remaining students were assigned to the bridge sample.
- 100 % of students in the bridge sample were in schools selected for the eTIMSS sample
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
None	153	0	153	0	0	0	0
Total	153	0	153	0	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
None	56	0	55	0	0	1	0
Total	56	0	55	0	0	1	0

Slovak Republic

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 3), special needs schools, instruction language other than Slovak or Hungarian, and alternative schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by language (Slovak, Hungarian), national testing score (4), and school size (small, large) within Slovak schools
- No implicit stratification
- Sampled two classrooms per school. In schools sampled for eTIMSS and bridge, one additional classroom sampled for the bridge.
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 34.5 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Slovak - Low Average Math Score - Small	8	0	7	1	0	0	0
Slovak - Low Average Math Score - Large	3	0	2	0	1	0	0
Slovak - Medium Average Math Score - Small	30	0	29	1	0	0	0
Slovak - Medium Average Math Score - Large	10	0	10	0	0	0	0
Slovak - High Average Math Score - Small	42	0	41	1	0	0	1
Slovak - High Average Math Score - Large	43	0	43	0	0	0	0
Slovak - Missing Score - Small	12	0	11	0	0	1	0
Hungarian	10	0	10	0	0	0	0
Total	158	0	153	3	1	1	1

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Slovak - Low Average Math Score - Small	4	0	4	0	0	0	0
Slovak - Low Average Math Score - Large	2	0	1	0	1	0	0
Slovak - Medium Average Math Score - Small	14	0	14	0	0	0	0
Slovak - Medium Average Math Score - Large	4	0	4	0	0	0	0
Slovak - High Average Math Score - Small	18	0	18	0	0	0	0
Slovak - High Average Math Score - Large	18	0	18	0	0	0	0
Slovak - Missing Score - Small	6	0	6	0	0	0	0
Hungarian	4	0	4	0	0	0	0
Total	70	0	69	0	1	0	0

South Africa

Fifth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and special needs schools
- No within-school exclusions

Sample Design

- Explicit stratification by school type (independent, public) and province (9) within public schools
- Implicit stratification by performance level (1st quintile, 2nd quintile, 3rd quintile, 4th and 5th quintiles, missing) within public schools and province (Gauteng, Western Cape, Eastern Cape, Limpopo, all other provinces) within independent schools
- Sampled one classroom per school
- No overlap between Grade 5 and Grade 9 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Independent	30	0	26	3	1	0	0
Public - Eastern Cape	30	2	28	0	0	0	0
Public - Free State	30	0	29	1	0	0	0
Public - Kwazulu-Natal	30	0	25	3	1	1	0
Public - Limpopo	30	0	30	0	0	0	0
Public - Mpumalanga	30	0	29	1	0	0	0
Public - North West	30	0	30	0	0	0	0
Public - Northern Cape	30	0	30	0	0	0	0
Public - Gauteng	30	0	30	0	0	0	0
Public - Western Cape	30	0	29	1	0	0	0
Total	300	2	286	9	2	1	0

Ninth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 11), and special needs schools
- Within-school exclusions consisted of non-native language speakers

Sample Design

- Explicit stratification by school type (independent, public) and province (9) within public schools. Independent schools were stratified by province (Gauteng, Western Cape, all other provinces).
- Implicit stratification by performance level (1st quintile, 2nd quintile, 3rd quintile, 4th and 5th quintiles, missing within public schools) and province (Eastern Cape, Limpopo) within independent schools from all other provinces stratum
- Sampled one classroom per school
- No overlap between Grade 5 and Grade 9 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Independent - Western Cape	8	0	7	1	0	0	0
Independent - Gauteng	16	0	14	1	1	0	0
Independent - All Other provinces	10	1	9	0	0	0	0
Public - Eastern Cape	30	2	28	0	0	0	0
Public - Free State	30	0	30	0	0	0	0
Public - Kwazulu-Natal	34	0	34	0	0	0	0
Public - Limpopo	30	0	30	0	0	0	0
Public - Mpumalanga	30	0	30	0	0	0	0
Public - North West	30	0	29	0	0	1	0
Public - Northern Cape	30	0	30	0	0	0	0
Public - Western Cape	142	1	141	0	0	0	0
Public - Gauteng	134	0	134	0	0	0	0
Total	524	4	516	2	1	1	0

Spain

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, international schools outside Madrid, and geographically inaccessible or campus schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by region (9) and school type (public, private). Within Madrid, explicit stratification was done by school funding (publicly funded, non publicly funded) within private schools, bilingual status (bilingual, not bilingual) within publicly funded private schools and public schools
- Implicit stratification by region within the other regions strata (12) and school type (public, private) within Ceuta and Melilla strata
- Sampled one classroom per school. In schools sampled for eTIMSS and bridge, one classroom sampled per assessment. In schools selected for the bridge only, two classrooms sampled in large schools (measure of size > 45).
- The Field Test and Main Data Collection TIMSS samples were selected sequentially. The TIMSS Main Data Collection sample was selected by controlling for the overlap with the TIMSS Field Test sample using the Chowdhury approach.
- Oversampled in Asturias, Castile and Leon, Catalonia, La Rioja, Ceuta, Melilla and Madrid in order to get better estimates. A census of schools was taken in the autonomous cities of Ceuta and Melilla.
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.

- 53 % of students in the bridge sample were in schools selected for the eTIMSS sample
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Asturias - Public	30	0	30	0	0	0	0
Asturias - Private	20	0	20	0	0	0	0
Castile and Leon - Public	30	0	28	1	1	0	0
Castile and Leon - Private	20	0	19	1	0	0	0
Catalonia - Public	30	0	30	0	0	0	0
Catalonia - Private	20	0	19	1	0	0	0
La Rioja - Public	30	0	30	0	0	0	0
La Rioja - Private	20	0	20	0	0	0	0
Ceuta	21	0	21	0	0	0	0
Melilla	16	0	16	0	0	0	0
Other larger regions - Public	58	0	55	1	1	1	0
Other larger regions - Private	22	0	22	0	0	0	0
Other smaller regions - Public	12	0	11	1	0	0	0
Other smaller regions - Private	6	0	6	0	0	0	0
Madrid - Public Bilingual	40	0	40	0	0	0	0
Madrid - Public Non Bilingual	40	0	40	0	0	0	0
Madrid - Private Bilingual (Pub. Funded)	39	0	39	0	0	0	0
Madrid - Private Non Bilingual (Pub. Funded)	40	0	40	0	0	0	0
Madrid - Private	8	0	8	0	0	0	0
Total	502	0	494	5	2	1	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Asturias - Public	2	0	2	0	0	0	0
Asturias - Private	2	0	2	0	0	0	0
Castile and Leon - Public	2	0	2	0	0	0	0
Castile and Leon - Private	2	0	2	0	0	0	0
Catalonia - Public	6	0	6	0	0	0	0
Catalonia - Private	4	0	3	1	0	0	0
La Rioja - Public	2	0	2	0	0	0	0
La Rioja - Private	2	0	2	0	0	0	0
Ceuta	2	0	2	0	0	0	0
Melilla	2	0	2	0	0	0	0
Other larger regions - Public	20	0	19	0	0	1	0
Other larger regions - Private	8	0	8	0	0	0	0
Other smaller regions - Public	4	0	4	0	0	0	0
Other smaller regions - Private	2	0	2	0	0	0	0
Madrid - Public Bilingual	2	0	2	0	0	0	0
Madrid - Public Non Bilingual	2	0	2	0	0	0	0
Madrid - Private Bilingual (Pub. Funded)	2	0	2	0	0	0	0
Madrid - Private Non Bilingual (Pub. Funded)	2	0	2	0	0	0	0
Madrid - Private	2	0	2	0	0	0	0
Total	70	0	68	1	0	1	0

Sweden

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, special schools, and international schools
- Within-school exclusions consisted of students with functional disabilities

Sample Design

- Explicit stratification by average achievement for the grade (low, medium, high, missing) and school type (public, private)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 45)
- The Field Test and Main Data Collection samples were selected sequentially.
- The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample and the Main Data Collection sample at Grade 8 using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Achievement not available - Public	97	3	94	0	0	0	0
Low Average Achievement - Public	8	0	7	0	1	0	0
Medium Average Achievement - Public	10	1	9	0	0	0	0
High Average Achievement - Public	16	0	16	0	0	0	0
High Average Achievement - Private	11	1	10	0	0	0	0
Other - Private	8	0	8	0	0	0	0
Total	150	5	144	0	1	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Achievement not available - Public	32	0	31	1	0	0	0
Low Average Achievement - Public	4	0	4	0	0	0	0
Medium Average Achievement - Public	4	0	4	0	0	0	0
High Average Achievement - Public	4	0	4	0	0	0	0
High Average Achievement - Private	4	0	4	0	0	0	0
Other - Private	4	0	3	1	0	0	0
Total	52	0	50	2	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), special needs schools, special schools, and international schools
- Within-school exclusions consisted of students with functional disabilities

Sample Design

- Explicit stratification by average achievement for the grade (low, medium, high, missing) and school type (public, private)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 100)
- The Field Test and Main Data Collection samples were selected sequentially.
- The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Separate samples of schools for eTIMSS and bridge were selected so there was no overlap between the samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Missing - Public	8	0	8	0	0	0	0
Low - Public	20	1	19	0	0	0	0
Medium - Public	48	0	47	0	0	1	0
High - Public	46	1	45	0	0	0	0
High - Private	23	0	22	1	0	0	0
Other - Private	8	0	8	0	0	0	0
Total	153	2	149	1	0	1	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Missing - Public	4	0	4	0	0	0	0
Low - Public	8	0	8	0	0	0	0
Medium - Public	16	0	15	0	1	0	0
High - Public	14	1	13	0	0	0	0
High - Private	8	0	8	0	0	0	0
Other - Private	4	1	3	0	0	0	0
Total	54	2	51	0	1	0	0

Turkey

Fifth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10), special needs schools, international schools, and schools abroad
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 5 only’/‘Grade 5 and Grade 8’, school type (public, private), region (13), and school size (small, large) within Grade 5 and 8 schools
- No implicit stratification
- Sampled one classroom per school. In schools sampled for eTIMSS and bridge, one classroom sampled per assessment
- Grade 5 and Grade 8 school samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- No bridge sample required at Grade 5 as they participated in TIMSS 2015 at the 4th Grade

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 5 only	8	0	7	1	0	0	0
Grade 5 & Grade 8 - Private - Large	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Private - Small	6	0	6	0	0	0	0
Grade 5 & Grade 8 - Public - TR1-Istanbul	24	0	24	0	0	0	0
Grade 5 & Grade 8 - Public - TR2-West Marmara - Large	4	0	4	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 5 & Grade 8 - Public - TR2-West Marmara - Small	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Public - TR3-Aegean - Large	10	0	10	0	0	0	0
Grade 5 & Grade 8 - Public - TR3-Aegean - Small	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Public - TR4-East Marmara	14	0	14	0	0	0	0
Grade 5 & Grade 8 - Public - TR5-West Anatolia	14	0	14	0	0	0	0
Grade 5 & Grade 8 - Public - TR6- Mediterranean - Large	14	0	14	0	0	0	0
Grade 5 & Grade 8 - Public - TR6- Mediterranean - Small	6	0	6	0	0	0	0
Grade 5 & Grade 8 - Public - TR7-Central Anatolia - Large	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Public - TR7-Central Anatolia - Small	3	0	3	0	0	0	0
Grade 5 & Grade 8 - Public - TR8-West Black Sea - Large	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Public - TR8-West Black Sea - Small	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Public - TR9-East Black Sea - Large	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Public - TR9-East Black Sea - Small	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Public - TRA-Northeast Anatolia - Large	4	0	4	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 5 & Grade 8 - Public - TRA-Northeast Anatolia - Small	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Public - TRB-Centraleast Anatolia - Large	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Public - TRB-Centraleast Anatolia - Small	4	0	4	0	0	0	0
Grade 5 & Grade 8 - Public - TRC-Southeast Anatolia - Large	16	0	16	0	0	0	0
Grade 5 & Grade 8 - Public - TRC-Southeast Anatolia - Small	6	1	5	0	0	0	0
Grade 5 & Grade 8 - Public - Rural Regions	8	0	8	0	0	0	0
Total	181	1	179	1	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10), special needs schools, international schools, and schools abroad
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 8 only’/‘Grade 5 and Grade 8’, school type (public, private), region (13), and school size (small, large) within Grade 5 and 8 schools
- No implicit stratification
- Sampled one classroom per school. In schools sampled for eTIMSS and bridge, one classroom sampled per assessment

- Grade 5 and Grade 8 school samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 69.7 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	8	0	8	0	0	0	0
Gr5 and Gr8 - Private - Large	4	0	4	0	0	0	0
Gr5 and Gr8 - Private - Small	6	0	6	0	0	0	0
Gr5 and Gr8 - Public - TR1-Istanbul - Large	24	0	24	0	0	0	0
Gr5 and Gr8 - Public - TR2-West Marmara - Large	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR2-West Marmara - Small	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR3-Aegean - Large	10	0	10	0	0	0	0
Gr5 and Gr8 - Public - TR3-Aegean - Small	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR4-East Marmara	14	0	14	0	0	0	0
Gr5 and Gr8 - Public - TR5-West Anatolia	14	0	14	0	0	0	0
Gr5 and Gr8 - Public - TR6-Mediterranean - Large	14	0	14	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Gr5 and Gr8 - Public - TR6-Mediterranean - Small	6	0	6	0	0	0	0
Gr5 and Gr8 - Public - TR7-Central Anatolia - Large	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR7-Central Anatolia - Small	3	0	3	0	0	0	0
Gr5 and Gr8 - Public - TR8-West Black Sea - Large	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR8-West Black Sea - Small	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR9-East Black Sea - Large	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR9-East Black Sea - Small	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TRA-Northeast Anatolia - Large	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TRA-Northeast Anatolia - Small	4	0	3	1	0	0	0
Gr5 and Gr8 - Public - TRB-Centraleast Anato-lia - Large	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TRB-Centraleast Anato-lia - Small	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TRC-Southeast Anatolia - Large	16	0	16	0	0	0	0
Gr5 and Gr8 - Public - TRC-Southeast Anatolia - Small	6	0	6	0	0	0	0
Gr5 and Gr8 - Public - Rural Regions	8	0	8	0	0	0	0
Total	181	0	180	1	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	4	0	4	0	0	0	0
Gr5 and Gr8 - Private - Large	2	0	2	0	0	0	0
Gr5 and Gr8 - Private - Small	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TR1-Istanbul - Large	8	0	8	0	0	0	0
Gr5 and Gr8 - Public - TR2-West Marmara - Large	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TR2-West Marmara - Small	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TR3-Aegean - Large	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR3-Aegean - Small	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TR4-East Marmara	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR5-West Anatolia	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR6-Mediterranean - Large	4	0	4	0	0	0	0
Gr5 and Gr8 - Public - TR6-Mediterranean - Small	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TR7-Central Anatolia - Large	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TR7-Central Anatolia - Small	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TR8-West Black Sea - Large	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TR8-West Black Sea - Small	2	0	2	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Gr5 and Gr8 - Public - TR9-East Black Sea - Large	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TR9-East Black Sea - Small	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TRA-Northeast Anatolia - Large	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TRA-Northeast Anatolia - Small	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TRB-Centraleast Anato-lia - Large	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TRB-Centraleast Anato-lia - Small	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - TRC-Southeast Anatolia - Large	6	0	6	0	0	0	0
Gr5 and Gr8 - Public - TRC-Southeast Anatolia - Small	2	0	2	0	0	0	0
Gr5 and Gr8 - Public - Rural Regions	4	0	4	0	0	0	0
Total	72	0	72	0	0	0	0

United Arab Emirates

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of instruction language other than English or Arabic, and very small schools (measure of size < 10 in Abu Dhabi and < 5 in other emirates but Dubai)
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4’/Grade 4 and Grade 8’ schools, emirate (Dubai, Abu Dhabi, all other emirates), school type (public, private), as well as by the main curriculum taught (UK/US/CAD/AUS/International, other) within private schools in all emirates with the exception of Dubai
- Implicit stratification by school size (small, large), as well as region (Abu Dhabi, Al Ain, Al Dhafra) within large private schools of Abu Dhabi, language of test (Arabic, English, French) within Dubai, emirate (Sharjah, other emirates) within public schools, and curriculum (Ministry of Education, UK/US/CAD, other) within private schools in the rest of the emirates
- Sampled two classrooms per school. In schools sampled for eTIMSS and bridge, one additional classroom was sampled for the bridge
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially. In areas other than Dubai, the Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The United Arab Emirates was divided into three areas: Abu Dhabi, Dubai, and the rest of the emirates. All schools were sampled in Dubai. All public schools as well as all private schools with UK/US/CAD/AUS/International/SABIS curriculum were sampled in the other emirates.
- The bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.

- 98.9 % of students in the bridge sample were in schools selected for the eTIMSS sample
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Dubai - Grade 4 - Public	24	3	21	0	0	0	0
Dubai - Grade 4 - Private	47	0	47	0	0	0	0
Dubai - Grade 4 & Grade 8 - Public	4	1	3	0	0	0	0
Dubai - Grade 4 & Grade 8 - Private	130	2	128	0	0	0	0
Abu Dhabi - Grade 4 - Public - ADEC schools	67	1	66	0	0	0	0
Abu Dhabi - Grade 4 - Private - UK/US/CAD/AUS/Int	23	0	23	0	0	0	0
Abu Dhabi - Grade 4 - Private - Other curriculum	6	1	5	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Public - ADEC schools	22	0	22	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - Ministry of Education	20	0	20	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - UK/US/CAD/AUS/Int	87	0	87	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - Others	24	0	24	0	0	0	0
Other - Grade 4 - Public - Ministry of Education	80	1	79	0	0	0	0
Other - Grade 4 - Private - UK/US/AUS/International/SABIS	13	0	13	0	0	0	0
Other - Grade 4 - Private - Other Curriculum	8	0	8	0	0	0	0

School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Other - Grade 4 & Grade 8 - Public - Ministry of Education	22	0	22	0	0	0	0
Other - Grade 4 & Grade 8 - Private - Ministry of Education	20	0	20	0	0	0	0
Other - Grade 4 & Grade 8 - Private - UK/US/AUS/International/SABIS	60	0	60	0	0	0	0
Other - Grade 4 & Grade 8 - Private - Other Curriculum	40	0	40	0	0	0	0
Total	697	9	688	0	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Dubai - Grade 4 - Public	4	0	4	0	0	0	0
Dubai - Grade 4 - Private	5	0	5	0	0	0	0
Dubai - Grade 4 & Grade 8 - Public	2	1	1	0	0	0	0
Dubai - Grade 4 & Grade 8 - Private	14	0	13	0	0	1	0
Abu Dhabi - Grade 4 - Public - ADEC schools	8	0	8	0	0	0	0
Abu Dhabi - Grade 4 - Private - UK/US/CAD/AUS/Int	4	0	4	0	0	0	0
Abu Dhabi - Grade 4 - Private - Other curriculum	1	0	1	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Public - ADEC schools	4	0	4	0	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Abu Dhabi - Grade 4 & Grade 8 - Private - Ministry of Education	6	0	6	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - UK/US/CAD/AUS/Int	8	0	8	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - Others	4	0	4	0	0	0	0
Other - Grade 4 - Public - Ministry of Education	10	0	10	0	0	0	0
Other - Grade 4 - Private - UK/US/AUS/International/SABIS	4	0	4	0	0	0	0
Other - Grade 4 - Private - Other Curriculum	4	0	4	0	0	0	0
Other - Grade 4 & Grade 8 - Public - Ministry of Education	4	0	4	0	0	0	0
Other - Grade 4 & Grade 8 - Private - Ministry of Education	3	0	3	0	0	0	0
Other - Grade 4 & Grade 8 - Private - UK/US/AUS/International/SABIS	8	0	8	0	0	0	0
Other - Grade 4 & Grade 8 - Private - Other Curriculum	8	0	7	0	0	1	0
Total	101	1	98	0	0	2	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of instruction language other than English or Arabic, special needs schools, and very small schools (measure of size < 10 in Abu Dhabi and < 5 in other emirates but Dubai)
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 8’/Grade 4 and Grade 8’ schools, emirate (Dubai, Abu Dhabi, all other emirates), school type (public, private), as well as by the main curriculum taught (UK/US/CAD/AUS/International, other) within private schools in all emirates with the exception of Dubai
- Implicit stratification by school size (small, large), as well as region (Abu Dhabi, Al Ain, Al Dhafra) within large private schools of Abu Dhabi, language of test (Arabic, English, French) within Dubai, emirate (Sharjah, other emirates) within public schools, and curriculum (Ministry of Education, UK/US/CAD, other) within private schools in the rest of the emirates
- Sampled two classrooms per school. In schools sampled for eTIMSS and bridge, one additional classroom was sampled for the bridge
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially. In areas other than Dubai, the Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- The United Arab Emirates was divided into three areas: Abu Dhabi, Dubai, and the rest of the emirates. All schools were sampled in Dubai. All public schools as well as all private schools with UK/US/CAD/AUS/International/SABIS curriculum were sampled in the other emirates.
- The bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 98 % of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Dubai - Grade 8 - Public	23	3	20	0	0	0	0
Dubai - Grade 8 - Private	7	0	7	0	0	0	0
Dubai - Grade 4 & Grade 8 - Public	4	1	3	0	0	0	0
Dubai - Grade 4 & Grade 8 - Private	137	4	133	0	0	0	0
Abu Dhabi - Grade 8 - Public	72	0	72	0	0	0	0
Abu Dhabi - Grade 8 - Private	4	0	4	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Public - ADEC schools	23	0	23	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - Ministry of Education	20	0	20	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - UK/US/CAD/AUS/Int	87	0	87	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - Others	24	0	24	0	0	0	0
Other - Grade 8 - Public	83	0	83	0	0	0	0
Other - Grade 8 - Private	7	0	7	0	0	0	0
Other - Grade 4 & Grade 8 - Public - Ministry of Education	21	0	21	0	0	0	0
Other - Grade 4 & Grade 8 - Private - Ministry of Education	20	0	20	0	0	0	0
Other - Grade 4 & Grade 8 - Private - UK/US/AUS/Int./SABIS	59	0	59	0	0	0	0
Other - Grade 4 & Grade 8 - Private - Others	40	0	40	0	0	0	0
Total	631	8	623	0	0	0	0

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Dubai - Grade 8 - Public	4	3	1	0	0	0	0
Dubai - Grade 8 - Private	2	0	2	0	0	0	0
Dubai - Grade 4 & Grade 8 - Public	2	1	1	0	0	0	0
Dubai - Grade 4 & Grade 8 - Private	14	0	13	0	0	1	0
Abu Dhabi - Grade 8 - Public	10	0	10	0	0	0	0
Abu Dhabi - Grade 8 - Private	4	0	4	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Public - ADEC schools	2	0	2	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - Ministry of Education	6	0	6	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - UK/US/CAD/AUS/Int	8	0	8	0	0	0	0
Abu Dhabi - Grade 4 & Grade 8 - Private - Others	4	0	4	0	0	0	0
Other - Grade 8 - Public	11	0	11	0	0	0	0
Other - Grade 8 - Private	3	0	3	0	0	0	0
Other - Grade 4 & Grade 8 - Public - Ministry of Education	3	0	3	0	0	0	0
Other - Grade 4 & Grade 8 - Private - Ministry of Education	4	0	4	0	0	0	0
Other - Grade 4 & Grade 8 - Private - UK/US/AUS/Int./SABIS	8	0	8	0	0	0	0
Other - Grade 4 & Grade 8 - Private - Others	8	0	8	0	0	0	0
Total	93	4	88	0	0	1	0

United States

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- No school-level exclusions
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by poverty level (high, low), school type (public, private), census region of public school (Northeast, Midwest, South, West), and type of private school (Roman Catholic, other private)
- Implicit stratification by urbanization (city, suburb, town, rural), ethnicity status (above 15% non-White students in a school, below 15% non-White students in a school), and state (52)
- Sampled two classrooms per school. In schools sampled for eTIMSS and bridge, one classroom sampled per assessment
- No overlap between Grade 4 and Grade 8 samples.
- The TIMSS Main Data Collection sample was selected by controlling for the overlap with the national NAEP sample using the Chowdhury approach
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.
- 90.7% of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
High poverty - Public - Census Region 1	20	0	13	0	1	6	0
High poverty - Public - Census Region 2	26	0	18	3	0	5	0
High poverty - Public - Census Region 3	65	0	59	5	0	1	0
High poverty - Public - Census Region 4	42	0	29	7	2	4	0
Low poverty - Private - Non Catholic	13	2	5	1	0	5	0
Low poverty - Private - Catholic	8	0	4	1	0	3	0
Low poverty - Public - Census Region 1	29	0	21	5	0	3	0
Low poverty - Public - Census Region 2	36	0	27	4	3	2	0
Low poverty - Public - Census Region 3	56	0	49	3	0	4	1
Low poverty - Public - Census Region 4	32	0	24	2	1	5	1
Total	327	2	249	31	7	38	2

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
High poverty - Public - Census Region 1	6	0	5	0	0	1	0
High poverty - Public - Census Region 2	6	0	6	0	0	0	0
High poverty - Public - Census Region 3	16	0	13	3	0	0	0
High poverty - Public - Census Region 4	10	0	5	4	0	1	0
Low poverty - Private - Non Catholic	4	1	1	1	1	0	0
Low poverty - Private - Catholic	4	0	2	1	0	1	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Low poverty - Public - Census Region 1	8	0	5	2	0	1	0
Low poverty - Public - Census Region 2	10	0	8	2	0	0	0
Low poverty - Public - Census Region 3	14	0	12	0	0	2	0
Low poverty - Public - Census Region 4	8	0	8	0	0	0	0
Total	86	1	65	13	1	6	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- No school-level exclusions
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by poverty level (high, low), school type (public, private), census region of public school (Northeast, Midwest, South, West), and type of private school (Roman Catholic, other private)
- Implicit stratification by urbanization (city, suburb, town, rural), ethnicity status (above 15% non-White students in a school, below 15% non-White students in a school), and state (52)
- Sampled two classrooms per school. In schools sampled for eTIMSS and bridge, one classroom sampled per assessment
- No overlap between Grade 4 and Grade 8 samples.
- The TIMSS Main Data Collection sample was selected by controlling for the overlap with the national NAEP sample using the Chowdhury approach
- The bridge sample was obtained using a combination of strategies. In the large school strata, the bridge sample was selected as a subset of the eTIMSS school sample and classes were randomly assigned to either the eTIMSS or bridge samples. In the small school strata, a

distinct sample of schools was selected for the bridge sample. During data collection, schools with only one class selected for both the eTIMSS and bridge samples were randomly assigned to administer either the eTIMSS or bridge assessment, and school weights were adjusted accordingly during the weighting process.

- 91.6% of students in the bridge sample were in schools selected for the eTIMSS sample

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - High - Public - Census region 1	17	1	6	2	0	8	0
Grade 8 - High - Public - Census region 2	22	0	17	2	0	3	0
Grade 8 - High - Public - Census region 3	59	1	50	4	2	2	0
Grade 8 - High - Public - Census region 4	39	0	27	2	1	9	0
Grade 8 - Low - Private - Non Catholic	13	1	5	1	2	4	0
Grade 8 - Low - Private - Catholic	8	0	5	1	0	2	0
Grade 8 - Low - Public - Census region 1	29	0	17	7	2	3	1
Grade 8 - Low - Public - Census region 2	42	0	25	5	3	9	0
Grade 8 - Low - Public - Census region 3	61	0	53	3	1	4	0
Grade 8 - Low - Public - Census region 4	34	0	26	3	1	4	0
Total	324	3	231	30	12	48	1

Bridge Sample School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - High - Public - Census region 1	6	0	3	0	0	3	0
Grade 8 - High - Public - Census region 2	6	0	4	2	0	0	0
Grade 8 - High - Public - Census region 3	14	0	13	1	0	0	0

Bridge Sample School Participation Status (continued)

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - High - Public - Census region 4	9	0	6	0	0	3	0
Grade 8 - Low - Private - Non Catholic	4	1	1	0	0	2	0
Grade 8 - Low - Private - Catholic	4	0	3	1	0	0	0
Grade 8 - Low - Public - Census region 1	8	0	5	1	0	2	0
Grade 8 - Low - Public - Census region 2	10	0	5	1	1	3	0
Grade 8 - Low - Public - Census region 3	14	0	13	0	0	1	0
Grade 8 - Low - Public - Census region 4	8	0	5	0	0	3	0
Total	83	1	58	6	1	17	0

Ontario, Canada

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6), special needs schools, and remote and hard to access school
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by language (English, French), school type (private, Catholic, public), and by school size (small, large) within Catholic and public schools
- Implicit stratification by regional office (Thunder Bay, Sudbury-North Bay, London, Barrie, Ottawa, Toronto and Area)
- Sampled two classrooms in large schools (measure of size > 40)
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
English - Public - Small	24	1	23	0	0	0	0
English - Public - Large	72	0	70	1	0	1	0
English - Catholic - Small	18	0	18	0	0	0	0
English - Catholic - Large	19	0	19	0	0	0	0
Private	8	0	0	1	1	6	0
French - Catholic & Public - Small	18	0	18	0	0	0	0
French - Catholic & Public - Large	12	0	12	0	0	0	0
Total	171	1	160	2	1	7	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by language (French, English), school type (public, Catholic, private), and by school size (small, large) within French Catholic and public schools
- Implicit stratification by regional office (Thunder Bay, Sudbury-North Bay, London, Barrie, Ottawa, Toronto and Area)
- Sampled two classrooms in large schools (measure of size > 100)
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
English - Public	94	2	86	0	1	5	0
English - Catholic	40	0	40	0	0	0	0
French - Large - Catholic & Public	16	0	15	0	0	1	0
French - Small - Catholic & Public	14	0	14	0	0	0	0
Private	8	0	2	0	0	6	0
Total	172	2	157	0	1	12	0

Quebec, Canada

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10), special school, First Nation schools/federal schools, international schools, and school boards with special status
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by language (French, English), school type (public, private), and school size (small, large)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 75)
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Class group option was used within schools with regular and enriched programs

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
English - Public - Small	12	0	8	1	0	3	0
English - Public - Large	14	0	13	1	0	0	0
English - Private	8	0	6	0	0	2	0
French - Public - Small	44	0	35	1	0	8	0
French - Public - Large	84	0	70	4	0	10	0
French - Private - Small	4	0	3	1	0	0	0
French - Private - Large	6	0	5	0	0	1	0
Total	172	0	140	8	0	24	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10), special school, First Nation schools/federal schools, international schools, and school boards with special status
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by language (French, English), school type (public, private), and school size (small, large) within French public schools
- Implicit stratification by Mathematics average score (4) and available programs (regular program, with enriched program)
- Sampled two classrooms in schools with regular and enriched programs
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- Class group option was used within schools with regular and enriched programs

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
English - Public	23	0	17	0	0	6	1
English - Private	8	2	4	0	0	2	0
French - Private	28	1	19	1	0	7	0
French - Large - Public	62	0	46	1	0	15	0
French - Small - Public	44	1	33	3	0	7	0
Total	165	4	119	5	0	37	1

Moscow City, Russian Fed.

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4’/‘Grade 4 and Grade 8’ schools and school type (state, private) within ‘Grade 4 and Grade 8’ schools
- Implicit stratification by school size (up to 1,000 students, from 1,000 to 3,000 students, over 3,000 students) within ‘Grade 4 and Grade 8’ state schools
- Sampled two classrooms in large schools (measure of size > 300)
- Grade 4 and Grade 8 samples were selected simultaneously with maximum overlap

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4	4	0	4	0	0	0	0
Grade 4 & Grade 8 - State	140	1	138	0	1	0	0
Grade 4 & Grade 8 - Private	8	0	6	1	0	1	0
Total	152	1	148	1	1	1	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 8’/Grade 4 and Grade 8’ schools and school type (state, private) within ‘Grade 4 and Grade 8’ schools
- Implicit stratification by school size (up to 1,000 students, from 1,000 to 3,000 students, over 3,000 students) within ‘Grade 4 and Grade 8’ state schools
- Sampled two classrooms in large schools (measure of size > 260)
- Grade 4 and Grade 8 samples were selected simultaneously with maximum overlap

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8	4	0	3	0	1	0	0
Grade 4 & Grade 8 - State	140	1	138	0	1	0	0
Grade 4 & Grade 8 - Private	8	0	6	1	0	1	0
Total	152	1	147	1	2	1	0

Gauteng, RSA

Ninth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 11), and special needs schools
- Within-school exclusions consisted of non-native language speakers

Sample Design

- Explicit stratification by school type (independent, public)
- Implicit stratification by performance level (1st quintile, 2nd quintile, 3rd quintile, 4th quintile, 5th quintiles, missing) within public schools
- Sampled one classroom per school
- No overlap control between Grade 5 and Grade 9 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Independent	16	0	14	1	1	0	0
Public	134	0	134	0	0	0	0
Total	150	0	148	1	1	0	0

Western Cape, RSA

Ninth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 11), and special needs schools
- Within-school exclusions consisted of non-native language speakers

Sample Design

- Explicit stratification by school type (independent, public)
- Implicit stratification by performance level (1st quintile, 2nd quintile, 3rd quintile, 4th quintile, 5th quintiles, missing) within public schools
- Sampled one classroom per school
- No overlap control between Grade 5 and Grade 9 samples

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Independent	8	0	7	1	0	0	0
Public	142	1	141	0	0	0	0
Total	150	1	148	1	0	0	0

Madrid, Spain

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), and special needs schools
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private publicly funded, private) and bilingual status (bilingual, not bilingual) within public schools and private publicly funded schools
- No implicit stratification
- Sampled one classroom per school
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Public Bilingual	40	0	40	0	0	0	0
Public Non Bilingual	40	0	40	0	0	0	0
Private Bilingual (Pub. Funded)	39	0	39	0	0	0	0
Private Non Bilingual (Pub. Funded)	40	0	40	0	0	0	0
Private	8	0	8	0	0	0	0
Total	167	0	167	0	0	0	0

Abu Dhabi, UAE

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10), and instruction language other than English or Arabic
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4’/Grade 4 and Grade 8’ schools and school type (public, private) and main curriculum (UK/US/CAD/AUS/International, Ministry of Education, other) within private schools
- Implicit stratification by school size (small, large) and region (Abu Dhabi, Al Ain, Al Dhafra) within large private schools
- Sampled two classrooms whenever possible
- Grade 4 and Grade 8 samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- All public schools and all private schools with UK/US/CAD/AUS/International main curriculum were sampled
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Public - ADEC schools	67	1	66	0	0	0	0
Grade 4 - Private - UK/US/CAD/AUS/International Curriculum	23	0	23	0	0	0	0
Grade 4 - Private - Other Curriculum	6	1	5	0	0	0	0
Grade 4 & Grade 8 - Public - ADEC schools	22	0	22	0	0	0	0
Grade 4 & Grade 8 - Private - Ministry of Education	20	0	20	0	0	0	0
Grade 4 & Grade 8 - Private - UK/US/CAD/AUS/International Curriculum	87	0	87	0	0	0	0
Grade 4 & Grade 8 - Private - Other Curriculum	24	0	24	0	0	0	0
Total	249	2	247	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10), and instruction language other than English or Arabic
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private) and main curriculum (UK/US/CAD/AUS/International, Ministry of Education, other) within private schools
- Implicit stratification by school size (small, large) and region (Abu Dhabi, Al Ain, Al Dhafra) within large private schools

- Sampled two classrooms whenever possible
- Grade 4 and Grade 8 samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially. The Main Data Collection sample was selected by controlling for the overlap with the Field Test sample using the Chowdhury approach.
- All public schools and all private schools with UK/US/CAD/AUS/International main curriculum were sampled

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Public	72	0	72	0	0	0	0
Grade 8 - Private	4	0	4	0	0	0	0
Grade 4 & Grade 8 - Public - ADEC schools	23	0	23	0	0	0	0
Grade 4 & Grade 8 - Private - Ministry of Education	20	0	20	0	0	0	0
Grade 4 & Grade 8 - Private - UK/US/CAD/AUS/Int	87	0	87	0	0	0	0
Grade 4 & Grade 8 - Private - Others	24	0	24	0	0	0	0
Total	230	0	230	0	0	0	0

Dubai, UAE

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of instruction language other than English or Arabic
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 4’/Grade 4 and Grade 8’ schools and school type (public, private)
- Implicit stratification by school size (small, large) and language of test (Arabic, English, French)
- Sampled two classrooms whenever possible
- Grade 4 and Grade 8 samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially
- Census of all schools
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 4 - Public	24	3	21	0	0	0	0
Grade 4 - Private	47	0	47	0	0	0	0
Grade 4 & Grade 8 - Public	4	1	3	0	0	0	0
Grade 4 & Grade 8 - Private	130	2	128	0	0	0	0
Total	205	6	199	0	0	0	0

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of instruction language other than English or Arabic
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by ‘Grade 8’/Grade 4 and Grade 8’ schools and school type (public, private)
- Implicit stratification by school size (small, large) and language of test (Arabic, English, French)
- Sampled two classrooms whenever possible
- Grade 4 and Grade 8 samples were selected simultaneously with maximum overlap
- The Field Test and Main Data Collection samples were selected sequentially
- Census of all schools
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

School Participation Status

Explicit Strata	Total Sampled Schools	Ineligible Schools	Participating Schools			Refusal Schools	Excluded Schools
			Original Schools	1st Replacements	2nd Replacements		
Grade 8 - Public	23	3	20	0	0	0	0
Grade 8 - Private	7	0	7	0	0	0	0
Grade 4 & Grade 8 - Public	4	1	3	0	0	0	0
Grade 4 & Grade 8 - Private	137	4	133	0	0	0	0
Total	171	8	163	0	0	0	0