Appendix 5A: Characteristics of National Samples

Australia

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), non-mainstream schools, and very 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 state or territory (8)
- Implicit stratification by geographic location (metropolitan, provincial, remote), school type (catholic, government, independent), and socioeconomic index (low socioeconomic status, high socioeconomic status)
- Prior to class sampling within schools, all indigenous students were grouped into a single classroom and were selected with certainty. Other classroom was sampled using the standard procedure.
- No overlap between Grade 4 and Grade 8 school samples
- Schools were oversampled at the state/territory level

Allocation of School Sample in Australia, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Australian Capital Territory	30	0	30	0	0	0	0
New South Wales	45	0	45	0	0	0	0
Northern Territory	15	0	15	0	0	0	0
Queensland	45	1	43	0	0	1	0
South Australia	40	0	39	0	0	1	0
Tasmania	30	0	30	0	0	0	0
Victoria	45	0	43	1	1	0	0
Western Australia	40	0	40	0	0	0	0
Total	**290**	**1**	**285**	**1**	**1**	**2**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), non-mainstream schools, and very 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 state or territory (8)
- Implicit stratification by geographic location (metropolitan, provincial, remote), school type (catholic, government, independent), and socioeconomic index (low socioeconomic status, high socioeconomic status)
- Within sampled schools, all indigenous students were regrouped into a single classroom that was sampled with certainty. When appropriate, classrooms were grouped according to the ability level of students prior to sampling and one classroom was sampled per class group.
- No overlap between Grade 4 and Grade 8 school samples
- Schools were oversampled at the state/territory level

Allocation of School Sample in Australia, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Australian Capital Territory	30	2	28	0	0	0	0
New South Wales	45	0	45	0	0	0	0
Northern Territory	15	1	13	0	0	1	0
Queensland	45	0	44	0	0	1	0
South Australia	40	0	40	0	0	0	0
Tasmania	30	0	30	0	0	0	0
Victoria	45	0	45	0	0	0	0
Western Australia	40	0	40	0	0	0	0
Total	**290**	**3**	**285**	**0**	**0**	**2**	**0**

Bahrain

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 1), special needs schools, students taught in French, and students taught in Japanese
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by governorate (5), and gender (girls, boys) within public schools
- No implicit stratification
- Sampled two classrooms per school
- No overlap between Grade 4 and Grade 8 school samples
- All schools were selected
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

Allocation of School Sample in Bahrain, Fourth Grade

			Participating Schools				
Explicit Strata	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	21	0	21	0	0	0	0
Public Northern - Girls	21	0	21	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	11	0	11	0	0	0	0
Private	62	0	62	0	0	0	0
Total	**182**	**0**	**182**	**0**	**0**	**0**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 1), students taught in French, and students taught in Japanese
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by governorate (5), and gender (girls, boys) within public schools
- No implicit stratification
- Sampled two classrooms per school
- No overlap between Grade 4 and Grade 8 school samples.
- All schools were selected
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

Allocation of School Sample in Bahrain, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
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	6	0	6	0	0	0	0
Public Southern - Boys	8	0	8	0	0	0	0
Private	46	0	46	0	0	0	0
Total	**105**	**0**	**105**	**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)
- 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), socioeconomic status (2), school type (official, private), and a stratum of eligible special education schools
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 35)
- TIMSS 2015 Main Data Collection and PIRLS 2016 Field Test school samples were selected simultaneously to avoid overlap

Allocation of School Sample in Belgium (Flemish), Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Antwerpen - High SES	16	0	12	2	1	1	0
Antwerpen - Low SES	24	0	14	7	2	1	0
Brussels Hoofdstedelijk Gewest - All SES	8	0	6	1	1	0	0
Limburg - High SES	10	0	6	3	1	0	0
Limburg - Low SES	10	0	8	2	0	0	0
Oost-Vlaanderen - High SES	16	0	13	1	1	1	0
Oost-Vlaanderen - Low SES	18	0	14	2	1	1	0
Vlaams-Brabant - High SES	11	0	9	2	0	0	1
Vlaams-Brabant - Low SES	12	0	8	1	3	0	0
West-Vlaanderen - High SES	16	0	14	0	2	0	0
West-Vlaanderen - Low SES	8	0	7	0	1	0	0
Special Education Schools	10	2	6	2	0	0	0
Total	**159**	**2**	**117**	**23**	**13**	**4**	**1**

Botswana

Ninth 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 (public, private), region (6), and socioeconomic status (medium to high socioeconomic status, low socioeconomic status)
- No implicit stratification
- Sampled one classroom except in private schools where two classrooms were sampled
- Census for private schools
- In census stratum, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

Allocation of School Sample in Botswana, Ninth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Central - Medium to High Mean SES	32	0	32	0	0	0	0
Central - Low Mean SES	18	0	18	0	0	0	0
Kweneng - Medium to High Mean SES	10	0	10	0	0	0	0
Kweneng - Low Mean SES	10	0	10	0	0	0	0
North East	10	0	10	0	0	0	0
North West - Medium to High Mean SES	8	0	8	0	0	0	0
North West - Low Mean SES	8	0	8	0	0	0	0
South - Medium to High Mean SES	8	0	8	0	0	0	0
South - Low Mean SES	14	0	14	0	0	0	0
South East	24	0	24	0	0	0	0
Private	17	0	17	0	0	0	0
Total	**159**	**0**	**159**	**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 urbanization (city, village) within the basic schools found outside the larger cities
- Sampled two classrooms per school

Allocation of School Sample in Bulgaria, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Elementary School - Capital and Large Cities	8	0	8	0	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	28	0	26	0	0	2	0
Basic School - Other	44	0	42	0	0	2	0
General School - Capital	14	1	12	0	1	0	0
General School - Large Cities	18	0	18	0	0	0	0
General School - Other	24	0	24	0	0	0	0
Total	**154**	**1**	**148**	**0**	**1**	**4**	**0**

Canada

Fourth Grade

Coverage and Exclusions

- Coverage is 78.9 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 and measure of size < 6 in Ontario, Alberta, Manitoba, and Newfoundland), special needs schools, international schools (in Quebec), federal schools (in Quebec), school boards with special status (in Quebec), band-operated schools (First Nation and Native schools), French schools (in Newfoundland), public special needs schools (in Manitoba), as well as private and home schools (in Manitoba)
- 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), and school type (immersion, regular). Within the province of Ontario, explicit stratification was done by 'Grade 4'/'Grade 4 and Grade 8', language (English, French) and school type (private, Catholic, public). Within Quebec, explicit stratification was done by school type (public, private) and language (French, English).
- Implicit stratification by region (4) in public and Catholic explicit strata within Ontario. Postal code (6) in English school system strata within Alberta.
- Sampled two classrooms in large schools for Quebec, two classroom per school for Ontario and Alberta, and one classroom per school for the rest of Canada
- Grade 4 and Grade 8 school samples were selected separately, with the exception of Ontario where Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- All Alberta French schools were selected
- In Alberta French schools classes were used as variance estimation strata and half classes were used as jackknife replicates

Allocation of School Sample in Canada, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Manitoba - Grade 4 & Grade 8	7	0	7	0	0	0	1
Newfoundland - Grade 4 & Grade 8	8	0	8	0	0	0	0
Ontario - Grade 4 - Private	8	0	3	0	0	5	0
Ontario - Grade 4 - English - Catholic	8	0	8	0	0	0	0
Ontario - Grade 4 - English - Public	40	0	39	0	0	1	0
Ontario - Grade 4 - French - Catholic & Public	8	0	8	0	0	0	0
Ontario - Grade 4 & Grade 8 - English - Catholic	36	1	35	0	0	0	0
Ontario - Grade 4 & Grade 8 - English - Public	59	0	58	0	0	1	1
Quebec - Grade 4 - Private - English	8	0	8	0	0	0	0
Quebec - Grade 4 - Private - French	8	0	8	0	0	0	0
Quebec - Grade 4 - Public - English	40	0	38	1	0	1	2
Quebec - Grade 4 - Public - French	118	0	47	16	3	52	0
Alberta - Grade 4 - French System	27	0	26	0	0	1	0
Alberta - Grade 4 - English System - Immersion Schools	21	1	16	2	0	2	0
Alberta - Grade 4 - English System - Regular Schools	120	1	94	13	3	9	0
Total	**516**	**3**	**403**	**32**	**6**	**72**	**4**

Eighth Grade

Coverage and Exclusions

- Coverage is 67.3 percent. Coverage in Canada is restricted to students from the provinces of Manitoba, Newfoundland, Ontario, and Quebec.
- School-level exclusions consisted of very small schools (measure of size < 10 in Quebec and measure of size < 6 in Ontario, Manitoba, and Newfoundland), special needs schools, international schools (in Quebec), federal schools (in Quebec), school boards with special status (in Quebec), band-operated schools (First Nation and Native schools), and French schools (in Newfoundland)
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by Provinces (4). Within the province of Ontario, explicit stratification was done by 'Grade 8'/'Grade 4 and Grade 8', language (English, French) and school type (private, Catholic, public). Within the province of Quebec, explicit stratification was done by school type (public, private) and language (French, English).
- Implicit stratification by region (4) in public and Catholic explicit strata within Ontario. Achievement within Quebec (Used in all strata with the exception of private -English stratum).
- Sampled two classrooms in large schools for Quebec and Ontario, one classroom per school for the rest of Canada
- Grade 4 and Grade 8 school samples were selected separately, with the exception of Ontario where Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Canada, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Manitoba - Grade 4 & Grade 8	8	0	8	0	0	0	0
Newfoundland - Grade 4 & Grade 8	8	0	8	0	0	0	0
Ontario - Grade 8 - Private	8	0	0	2	1	5	0
Ontario - Grade 8 - English - Catholic	8	1	7	0	0	0	0
Ontario - Grade 8 - English - Public	32	0	30	0	0	2	0
Ontario - Grade 8 - French - Catholic & Public	8	0	7	0	0	1	0
Ontario - Grade 4 & Grade 8 - English - Catholic	36	1	34	0	0	1	0
Ontario - Grade 4 & Grade 8 - English - Public	59	2	57	0	0	0	1
Quebec - Grade 8 - Private - English	12	0	11	0	0	1	0
Quebec - Grade 8 - Private - French	26	1	25	0	0	0	0
Quebec - Grade 8 - Public - English	38	0	36	1	0	1	0
Quebec - Grade 8 - Public - French	100	1	30	19	0	50	0
Total	**343**	**6**	**253**	**22**	**1**	**61**	**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 paid), and urbanization (rural, urban)
- Sampled one classroom
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- Private paid schools were oversampled

Allocation of School Sample in Chile, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4 - Rural	8	0	7	1	0	0	0
Grade 4 - Urban	8	0	7	0	1	0	0
Grade 4 & Grade 8 - Public - Rural	10	0	8	1	0	1	0
Grade 4 & Grade 8 - Public - Urban	48	1	38	1	0	8	0
Grade 4 & Grade 8 - Private Subsidized - Rural	8	0	7	1	0	0	0
Grade 4 & Grade 8 - Private Subsidized - Urban	68	0	63	5	0	0	0
Grade 4 & Grade 8 - Private Paid	40	0	31	7	1	1	0
Total	**190**	**1**	**161**	**16**	**2**	**10**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 9), special needs schools, and geographically inaccessible schools
- Within-school exclusions consisted of students with intellectual 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 paid), and urbanization (rural, urban)
- Sampled one classroom
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap.
- Private paid schools were oversampled

Allocation of School Sample in Chile, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8	10	0	9	1	0	0	0
Grade 4 & Grade 8 - Public - Rural	10	0	8	1	0	1	0
Grade 4 & Grade 8 - Public - Urban	48	0	36	1	0	11	0
Grade 4 & Grade 8 - Private Subsidized - Rural	8	0	7	1	0	0	0
Grade 4 & Grade 8 - Private Subsidized - Urban	68	0	63	5	0	0	0
Grade 4 & Grade 8 - Private Paid	40	0	31	7	1	1	0
Total	**184**	**0**	**154**	**16**	**1**	**13**	**0**

Chinese Taipei

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and newly founded schools without student information
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (rural, city, metropolitan)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 300)
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in Chinese Taipei, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Rural	26	0	26	0	0	0	0
City	74	0	74	0	0	0	0
Metropolitan	50	0	49	1	0	0	0
Total	**150**	**0**	**149**	**1**	**0**	**0**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and newly founded schools without student information
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (rural, city, metropolitan), and school academic performance on Basic Competence Test (6)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in Chinese Taipei, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Rural - Category D	8	0	8	0	0	0	0
Rural - Category T	24	0	24	0	0	0	0
Rural - Category Y	12	0	12	0	0	0	0
Rural - Other Categories	10	0	10	0	0	0	0
City - Category A	10	0	10	0	0	0	0
City - Category B	16	0	16	0	0	0	0
City - Category D	16	0	16	0	0	0	0
City - Category T	12	0	12	0	0	0	0
City - Category Y	16	0	16	0	0	0	0
City - Category Z	8	0	8	0	0	0	0
Metropolitan - Category A	20	0	20	0	0	0	0
Metropolitan - Category B	12	0	12	0	0	0	0
Metropolitan - Category D	10	0	10	0	0	0	0
Metropolitan - Category T	8	0	8	0	0	0	0
Metropolitan - Category Y	8	0	8	0	0	0	0
Total	**190**	**0**	**190**	**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), 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

- Explicit stratification by school type (single, mother, satellite), urbanization (urban, rural), and grouped regions (6)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size >60)

Allocation of School Sample in Croatia, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Single Building School - Urban - Central and East	12	0	12	0	0	0	0
Single Building School - Urban - South	10	0	10	0	0	0	0
Single Building School - Urban - North and West	10	0	10	0	0	0	0
Single Building School - Urban - City of Zagreb	24	0	24	0	0	0	0
Single Building School - Rural - Central and East	8	0	8	0	0	0	0
Single Building School - Rural - South, North and West	8	0	8	0	0	0	0
Mother School - Urban - Central and East	18	0	17	1	0	0	0
Mother School - Urban - South	10	0	10	0	0	0	0
Mother School - Urban - North, West and Zagreb	8	0	8	0	0	0	0
Mother School - Rural - Central and East	10	0	10	0	0	0	0
Mother School - Rural - South, North and West	12	0	12	0	0	0	0
Satellites - Urban - Central and East	8	1	7	0	0	0	0
Satellites - Urban - South, North, West and Zagreb	8	1	7	0	0	0	0
Satellites - Rural - Central and East	12	1	10	1	0	0	0
Satellites - Rural - South, North and West	10	2	8	0	0	0	0
Total	**168**	**5**	**161**	**2**	**0**	**0**	**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, French language, and Turkish Occupied Area
- Within-school exclusions consisted of students with intellectual disabilities, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by districts (4)
- Implicit stratification by urbanization (urban, rural)
- Sampled three classrooms whenever possible in large schools (measure of size > 46)

Allocation of School Sample in Cyprus, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Famagusta-Larnaca	37	0	37	0	0	0	0
Limassol	40	0	40	0	0	0	1
Nicosia	54	0	54	0	0	0	1
Paphos	17	0	17	0	0	0	0
Total	**148**	**0**	**148**	**0**	**0**	**0**	**2**

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)
- No implicit stratification
- Sampled two classrooms per school

Allocation of School Sample in Czech Republic, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Praha	16	0	16	0	0	0	0
Stredoceský	18	0	18	0	0	0	0
Plzenský	8	1	7	0	0	0	0
Karlovarský	8	0	8	0	0	0	0
Ústecký	12	0	12	0	0	0	0
Jihoceský	8	0	8	0	0	0	0
Liberecký	10	0	10	0	0	0	0
Královéhradecký	8	0	8	0	0	0	0
Pardubický	10	0	10	0	0	0	0
Vysocina	8	0	8	0	0	0	0
Jihomoravský	20	0	20	0	0	0	0
Olomoucký	8	0	8	0	0	0	0
Moravskoslezský	16	0	16	0	0	0	0
Zlínský	10	0	10	0	0	0	0
Total	**160**	**1**	**159**	**0**	**0**	**0**	**0**

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)
- No implicit stratification
- Sampled one classroom per school

Allocation of School Sample in Denmark, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Private	30	0	11	9	4	6	0
Public	190	8	102	56	11	13	0
Total	**220**	**8**	**113**	**65**	**15**	**19**	**0**

Egypt

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 12)
- No within-school exclusions

Sample Design

- Explicit stratification by region (Capital, North, South), school type (5), urbanization (urban, rural) and school gender (boys, girls, mixed)
- No implicit stratification
- Sampled one classroom per school

Allocation of School Sample in Egypt, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Capital - Government - Boys	18	0	16	2	0	0	0
Capital - Government - Girls	18	0	16	2	0	0	0
Capital - Government - Mixed	14	0	13	1	0	0	0
North - Government - Urban - Boys	8	0	8	0	0	0	0
North - Government - Urban - Girls	8	0	8	0	0	0	0
North - Government - Urban - Mixed	8	0	6	2	0	0	0
North - Government - Rural - Boys/Girls	8	0	8	0	0	0	0
North - Government - Rural - Mixed	36	0	35	1	0	0	0
South - Government - Urban	12	0	11	1	0	0	0
South - Government - Rural - Boys/Girls	8	0	8	0	0	0	0
South - Government - Rural - Mixed	28	0	28	0	0	0	0
Private Funded (without fees)	8	0	7	1	0	0	0
Private (with fees)	20	0	20	0	0	0	0
Private Language Schools	20	0	13	4	0	3	0
Total	**214**	**0**	**197**	**14**	**0**	**3**	**0**

England

Fifth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 9), special needs schools, and international schools
- Within-school exclusions consisted of students with intellectual disabilities

Sample Design

- Explicit stratification by school type (state-funded, private), and attainment level (5)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 90)
- Samples for Grade 4 and Grade 8 were drawn separately and no overlap between the two samples

Allocation of School Sample in England, Fifth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
State-Funded - Low	28	0	26	2	0	0	0
State-Funded - Low/Mid	28	0	26	2	0	0	0
State-Funded - Mid	28	0	27	0	0	1	0
State-Funded - Mid/High	28	0	27	0	0	1	0
State-Funded - High	30	0	28	1	0	1	0
Private	8	0	8	0	0	0	0
Total	**150**	**0**	**142**	**5**	**0**	**3**	**0**

Ninth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 9), special needs schools, and international schools
- Within-school exclusions consisted of students with intellectual disabilities

Sample Design

- Explicit stratification by school type (state-funded, private), and attainment level (5)

- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 200)
- Samples for Grade 4 and Grade 8 were drawn separately and no overlap between the two samples

Allocation of School Sample in England, Ninth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
State-Funded - Low	24	0	21	1	1	1	0
State-Funded - Low/Mid	28	0	24	3	0	1	0
State-Funded - Mid	28	0	25	1	0	2	0
State-Funded - Mid/High	30	0	28	1	0	1	0
State-Funded - High	30	0	30	0	0	0	0
Private	10	2	7	1	0	0	0
Total	**150**	**2**	**135**	**7**	**1**	**5**	**0**

Finland

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and instructional language other than Finnish or Sweden
- 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), and urbanization (urban and semi-urban, rural)
- No implicit stratification
- Sampled two classrooms per school

Allocation of School Sample in Finland, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Uusimaa	38	0	38	0	0	0	0
Southern Urban & Semi-Urban	22	0	21	1	0	0	0
Southern Rural	8	0	8	0	0	0	0
Western Urban & Semi-Urban	30	0	30	0	0	0	0
Western Rural	8	1	7	0	0	0	0
Eastern Urban & Semi-Urban	12	0	12	0	0	0	0
Eastern Rural	8	1	7	0	0	0	0
Northern Urban & Semi-Urban	16	0	16	0	0	0	0
Northern Rural	8	0	8	0	0	0	0
Swedish Schools	10	0	10	0	0	0	0
Total	**160**	**2**	**157**	**1**	**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), overseas territories, Reunion and Mayotte Islands, Guyana (Southern Hemisphere), private schools without contract, specialized schools, and French schools in foreign countries
- 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–priority education zone, public–other, private)
- No implicit stratification
- Sampled two classrooms per school
- TIMSS 2015 samples and PIRLS 2016 samples were selected simultaneously to avoid overlap between the two studies

Allocation of School Sample in France, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Public-priority education zone	44	0	43	1	0	0	0
Public-other	100	1	97	2	0	0	0
Private	22	0	19	2	0	1	0
Total	**166**	**1**	**159**	**5**	**0**	**1**	**0**

Georgia

Fourth Grade

Coverage and Exclusions

- Coverage is 90.4 percent. Coverage in Georgia is restricted to students taught in Georgian.
- School-level exclusions consisted of very small schools (measure of size < 5)
- 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 (4), and Mathematics average score (low, medium, high)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 90)
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Georgia, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4	8	1	7	0	0	0	0
Grade 4 & Grade 8 - aWara - Low Average Math Score	8	2	6	0	0	0	0
Grade 4 & Grade 8 - aWara - Medium Average Math Score	8	0	8	0	0	0	0
Grade 4 & Grade 8 - aWara - High Average Math Score	8	0	7	1	0	0	0
Grade 4 & Grade 8 - dasavleTi - Low Average Math Score	12	0	12	0	0	0	0
Grade 4 & Grade 8 - dasavleTi - Medium Average Math Score	14	0	14	0	0	0	0
Grade 4 & Grade 8 - dasavleTi - High Average Math Score	12	0	12	0	0	0	0
Grade 4 & Grade 8 - aRmosavleTi - Low Average Math Score	12	2	10	0	0	0	0
Grade 4 & Grade 8 - aRmosavleTi - Medium Average Math Score	14	2	12	0	0	0	0
Grade 4 & Grade 8 - aRmosavleTi - High Average Math Score	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - Low Average Math Score	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - Medium Average Math Score	18	0	18	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - High Average Math Score	14	0	13	1	0	0	0
Grade 4 & Grade 8 - All but aRmosavleTi - Missing Math Score	7	1	6	0	0	0	1
Total	**161**	**8**	**151**	**2**	**0**	**0**	**1**

Eighth Grade

Coverage and Exclusions

- Coverage is 89.6 percent. Coverage in Georgia is restricted to students taught in Georgian.
- School-level exclusions consisted of very small schools (measure of size < 5)
- 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 (4), and Mathematics average score (low, medium, high)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 80)
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Georgia, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8	7	1	6	0	0	0	1
Grade 4 & Grade 8 - aWara - Low Average Math Score	8	1	7	0	0	0	0
Grade 4 & Grade 8 - aWara - Medium Average Math Score	8	0	8	0	0	0	0
Grade 4 & Grade 8 - aWara - High Average Math Score	8	0	7	1	0	0	0
Grade 4 & Grade 8 - dasavleTi - Low Average Math Score	12	0	12	0	0	0	0
Grade 4 & Grade 8 - dasavleTi - Medium Average Math Score	14	0	14	0	0	0	0
Grade 4 & Grade 8 - dasavleTi - High Average Math Score	12	0	12	0	0	0	0
Grade 4 & Grade 8 - aRmosavleTi - Low Average Math Score	12	2	10	0	0	0	0
Grade 4 & Grade 8 - aRmosavleTi - Medium Average Math Score	14	2	12	0	0	0	0
Grade 4 & Grade 8 - aRmosavleTi - High Average Math Score	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - Low Average Math Score	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - Medium Average Math Score	18	0	18	0	0	0	0
Grade 4 & Grade 8 - Tbilisi - High Average Math Score	14	0	13	1	0	0	0
Grade 4 & Grade 8 - All but aRmosavleTi - Missing Math Score	7	1	6	0	0	0	1
Total	**160**	**7**	**151**	**2**	**0**	**0**	**2**

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 immigration status (4) and school type (regular, special education needs)
- No implicit stratification
- Sampled one classroom per school

Allocation of School Sample in Germany, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Regular Schools - Very low percentage of immigrants	62	0	58	3	0	1	0
Regular Schools - Low percentage of immigrants	94	2	90	2	0	0	0
Regular Schools - Medium percentage of immigrants	28	0	28	0	0	0	0
Regular Schools - High percentage of immigrants	16	0	16	0	0	0	0
SEN Schools - None	10	0	7	0	0	3	0
Total	**210**	**2**	**199**	**5**	**0**	**4**	**0**

Hong Kong

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and schools teaching in Japanese
- Within-school exclusions consisted of students with intellectual disabilities and students with functional disabilities

Sample Design

- Explicit stratification by school finance type (5)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in Hong Kong, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Aided	122	0	97	5	4	16	0
Direct Subsidy	8	0	8	0	0	0	0
Government	10	0	9	0	0	1	0
Non-Local	10	0	3	0	0	7	0
Private	10	0	6	0	0	4	0
Total	**160**	**0**	**123**	**5**	**4**	**28**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and schools teaching in Japanese
- Within-school exclusions consisted of students with intellectual disabilities and students with functional disabilities

Sample Design

- Explicit stratification by school finance type (4)
- Implicit stratification by other school characteristic (3)
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 school samples
- Systematic sampling selection with equal probabilities is used for sampling

Allocation of School Sample in Hong Kong, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Aided	118	0	96	6	1	15	0
Direct Subsidy	22	0	13	0	2	7	0
Government	10	0	9	0	0	1	0
Non-Local	8	0	5	0	1	2	0
Total	**158**	**0**	**123**	**6**	**4**	**25**	**0**

Hungary

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and 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'/'Grade 4 and Grade 8' schools, national assessment score (below or above average performance), and type of community (capital and county town, town, rural area) within 'Grade 4 and Grade 8' stratum
- No implicit stratification
- Sampled two classrooms per school
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Hungary, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4	22	1	21	0	0	0	0
Grade 4 & Grade 8 - Above Average Performance - Capital & County Town	36	2	34	0	0	0	0
Grade 4 & Grade 8 - Above Average Performance - Town	25	0	25	0	0	0	0
Grade 4 & Grade 8 - Above Average Performance - Rural Area	14	0	13	0	1	0	0
Grade 4 & Grade 8 - Below Average or Unknown Performance - Capital & County Town	9	1	7	0	0	1	0
Grade 4 & Grade 8 - Below Average or Unknown Performance - Town	21	1	20	0	0	0	0
Grade 4 & Grade 8 - Below Average or Unknown Performance - Rural Area	23	0	23	0	0	0	0
Total	**150**	**5**	**143**	**0**	**1**	**1**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and 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'/'Grade 4 and Grade 8', national assessment score (below or above average performance), and type of community (capital and county town, town, rural area) within 'Grade 4 and Grade 8' stratum
- No implicit stratification
- Sampled two classrooms per school
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Hungary, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8 - Above Average Performance	15	0	13	2	0	0	0
Grade 8 - Below Average or Unknown Performance	7	0	6	1	0	0	0
Grade 4 & Grade 8 - Above Average Performance - Capital & County Town	36	2	34	0	0	0	0
Grade 4 & Grade 8 - Above Average Performance - Town	25	0	25	0	0	0	0
Grade 4 & Grade 8 - Above Average Performance - Rural Area	14	0	13	0	1	0	0
Grade 4 & Grade 8 - Below Average or Unknown Performance - Capital & County Town	9	1	7	0	0	1	0
Grade 4 & Grade 8 - Below Average or Unknown Performance - Town	21	1	20	0	0	0	0
Grade 4 & Grade 8 - Below Average or Unknown Performance - Rural Area	23	1	22	0	0	0	0
Total	**150**	**5**	**140**	**3**	**1**	**1**	**0**

Indonesia

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4) and remote areas
- No within-school exclusions

Sample Design

- Explicit stratification by performance (good, moderate, poor), school type (general, Madrasah) and school status (private, public)
- No implicit stratification
- Sampled two classrooms per school

Allocation of School Sample in Indonesia, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Good - General - Private	8	0	8	0	0	0	0
Good - General - Public	44	0	44	0	0	0	0
Good - Madrasah	8	0	8	0	0	0	0
Moderate - General - Private	8	0	8	0	0	0	0
Moderate - General - Public	86	0	86	0	0	0	0
Moderate - Madrasah	12	0	12	0	0	0	0
Poor - General - Private	8	0	8	0	0	0	0
Poor - General - Public	48	0	48	0	0	0	0
Poor - Madrasah	8	0	8	0	0	0	0
Total	**230**	**0**	**230**	**0**	**0**	**0**	**0**

Iran

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 functional disabilities

Sample Design

- Explicit stratification by school type (public, private), gender (mixed, girls, boys), region group (1, 2, 3), province or grouped provinces (6), and gender (boys, girls) within 'other' gender public schools
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 108)
- Grade 4 and Grade 8 school samples were selected simultaneously with no overlap
- TIMSS and TIMSS Numeracy booklets were rotated within classes

Allocation of School Sample in Iran, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Private	16	0	16	0	0	0	0
Public - Mixed - Region group 1	10	0	10	0	0	0	0
Public - Mixed - Region group 2	8	0	8	0	0	0	0
Public - Mixed - Region group 3	8	0	8	0	0	0	0
Public - Girls - Region group 1 - Khozestan	12	1	11	0	0	0	0
Public - Girls - Region group 1 - All Others	12	0	12	0	0	0	0
Public - Girls - Region group 2 - Razavi Khorasan	12	0	12	0	0	0	0
Public - Girls - Region group 2 - Tehran Province	12	0	12	0	0	0	0
Public - Girls - Region group 2 - All Others	10	0	10	0	0	0	0

Allocation of School Sample in Iran, Fourth Grade (Continued)

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Public - Girls - Region group 3 - Esfahan	12	0	12	0	0	0	0
Public - Girls - Region group 3 - Fars	12	0	12	0	0	0	0
Public - Girls - Region group 3 - Tehran City	12	0	12	0	0	0	0
Public - Girls - Region group 3 - All Others	10	0	10	0	0	0	0
Public - Boys - Region group 1 - Khozestan	12	0	12	0	0	0	0
Public - Boys - Region group 1 - All Others	12	0	12	0	0	0	0
Public - Boys - Region group 2 - Razavi Khorasan	12	0	12	0	0	0	0
Public - Boys - Region group 2 - Tehran Province	12	0	12	0	0	0	0
Public - Boys - Region group 2 - All Others	10	0	10	0	0	0	0
Public - Boys - Region group 3 - Esfahan	12	0	12	0	0	0	0
Public - Boys - Region group 3 - Fars	12	0	12	0	0	0	0
Public - Boys - Region group 3 - Tehran City	12	0	12	0	0	0	0
Public - Boys - Region group 3 - All Others	10	1	9	0	0	0	0
Total	**250**	**2**	**248**	**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), special needs schools, and geographically inaccessible schools
- Within-school exclusions consisted of students with functional disabilities and non-native language speakers

Sample Design

- Explicit stratification by school type (public, private), gender (mixed, girls, boys), region group (1, 2, 3), province or grouped provinces (6), and gender (boys, girls) within 'other' gender public schools
- No implicit stratification
- Sampled one classroom per school
- Grade 4 and Grade 8 school samples were selected simultaneously with no overlap

Allocation of School Sample in Iran, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Private	14	0	14	0	0	0	0
Public - Mixed	8	0	8	0	0	0	0
Public - Girls - Region group 1 - Khozestan	12	0	12	0	0	0	0
Public - Girls - Region group 1 - All Others	16	0	16	0	0	0	0
Public - Girls - Region group 2 - Razavi Khorasan	12	0	12	0	0	0	0
Public - Girls - Region group 2 - Tehran Province	12	0	12	0	0	0	0
Public - Girls - Region group 2 - All Others	12	0	12	0	0	0	0
Public - Girls - Region group 3 - Esfahan	12	0	12	0	0	0	0

Allocation of School Sample in Iran, Eighth Grade (Continued)

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Public - Girls - Region group 3 - Fars	12	0	12	0	0	0	0
Public - Girls - Region group 3 - Tehran City	12	0	12	0	0	0	0
Public - Girls - Region group 3 - All Others	14	0	14	0	0	0	0
Public - Boys - Region group 1 - Khozestan	12	0	12	0	0	0	0
Public - Boys - Region group 1 - All Others	16	0	16	0	0	0	0
Public - Boys - Region group 2 - Razavi Khorasan	12	0	12	0	0	0	0
Public - Boys - Region group 2 - Tehran Province	12	0	12	0	0	0	0
Public - Boys - Region group 2 - All Others	12	0	12	0	0	0	0
Public - Boys - Region group 3 - Esfahan	12	0	12	0	0	0	0
Public - Boys - Region group 3 - Fars	12	0	12	0	0	0	0
Public - Boys - Region group 3 - Tehran City	12	0	12	0	0	0	0
Public - Boys - Region group 3 - All Others	14	0	14	0	0	0	0
Total	**250**	**0**	**250**	**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 < 5)
- 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
- The school sample for TIMSS at Grade 4 was selected by controlling for the overlap with another National Study sample using the Chowdhury approach. No overlap between Grade 4 and Grade 8 samples.

Allocation of School Sample in Ireland, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Gaelscoil	10	0	10	0	0	0	0
Gaeltacht Schools	8	0	8	0	0	0	0
Non-DEIS - Ordinary - Boys	12	0	12	0	0	0	0
Non-DEIS - Ordinary - Girls	10	0	10	0	0	0	0
Non-DEIS - Ordinary - Mixed	77	0	77	0	0	0	0
DEIS Rural - Ordinary	10	0	10	0	0	0	0
DEIS Urban Band 1 - Ordinary	12	0	12	0	0	0	0
DEIS Urban Band 2 - Ordinary	10	0	10	0	0	0	0
Total	**149**	**0**	**149**	**0**	**0**	**0**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 15)

- 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 > 147)
- No overlap between Grade 4 and Grade 8 samples

Allocation of School Sample in Ireland, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Community/ comprehensive – High SES	8	0	8	0	0	0	0
Community/ comprehensive - Low SES	8	0	8	0	0	0	0
Community/ comprehensive - Med SES	10	0	10	0	0	0	0
Secondary - High SES - Boys	12	0	11	0	0	1	0
Secondary - High SES - Girls	16	0	16	0	0	0	0
Secondary - High SES - Mixed	12	0	12	0	0	0	0
Secondary - Low SES	12	0	12	0	0	0	0
Secondary - Med SES - Boys	10	0	10	0	0	0	0
Secondary - Med SES - Girls	12	0	12	0	0	0	0
Secondary - Med SES - Mixed	10	0	10	0	0	0	0
Vocational - High SES	10	0	10	0	0	0	0
Vocational - Low SES	18	0	18	0	0	0	0
Vocational - Med SES	12	0	12	0	0	0	0
Total	**150**	**0**	**149**	**0**	**0**	**1**	**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, English or French schools, and Ultra-Orthodox 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 (4), socioeconomic status (high, medium, low) and subgroups within Arab sector (Arab/Druze, Bedouin)
- No implicit stratification
- Sampled one classroom per school

Allocation of School Sample in Israel, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Hebrew-Secular - High SES	52	0	48	2	2	0	0
Hebrew-Secular - Medium SES	42	0	35	5	2	0	0
Hebrew-Secular - Low SES	12	0	10	2	0	0	0
Hebrew-Religious - High SES	10	0	9	0	1	0	0
Hebrew-Religious - Medium SES	16	0	15	1	0	0	0
Hebrew-Religious - Low SES	10	0	9	1	0	0	0
Arabic-Arab/Druze-Medium SES	14	0	14	0	0	0	0
Arabic-Arab/Druze-Low SES	30	0	28	1	1	0	0
Arabic - Bedouin	14	0	14	0	0	0	0
Total	**200**	**0**	**182**	**12**	**6**	**0**	**0**

Italy

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), Slovenian language schools, Ladin language schools, and German 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 (private, public), region (6) within public schools. A census of schools was taken in Bolzano.
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 110)
- The school sample for TIMSS at Grade 8 was selected by controlling for the overlap with the sample at Grade 4 using the Chowdhury approach
- In Bolzano schools or class were used as variance estimation strata and classes or half classes were used to build jackknife replicates. Two classrooms selected within these schools whenever possible.

Allocation of School Sample in Italy, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Private	10	0	8	1	1	1	0
Public - Center	26	0	20	4	1	1	0
Public - South and Islands	22	0	17	5	0	0	0
Public - North East (without Bolzano)	26	0	21	5	0	0	0
Public - North West	36	0	30	5	1	0	0
Public - South	28	0	23	5	0	0	0
Bolzano	18	0	17	0	0	1	0
Total	**166**	**0**	**136**	**25**	**3**	**2**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), Slovenian language schools, Ladin language schools, and German 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 (private, public), region (6) within public schools. A census of schools was taken in Bolzano.
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 130)
- The school sample for TIMSS at Grade 8 was selected by controlling for the overlap with the sample at Grade 4 using the Chowdhury approach
- In Bolzano schools or class were used as variance estimation strata and classes or half classes were used to build jackknife replicates. Two classrooms selected within these schools whenever possible.

Allocation of School Sample in Italy, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Private	8	0	8	0	0	0	0
Public - Center	22	0	15	6	0	1	0
Public - South and Islands	23	0	16	4	1	2	0
Public - North East (without Bolzano)	26	0	21	5	0	0	0
Public - North West	34	0	29	4	1	0	0
Public - South	34	0	27	7	0	0	0
Bolzano	18	0	17	0	0	1	0
Total	**165**	**0**	**133**	**26**	**2**	**4**	**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 urbanization (4)
- No implicit stratification
- Sampled one classroom per school
- No overlap between grade 4 and grade 8 school samples

Allocation of School Sample in Japan, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Very Large City	37	0	35	1	0	1	0
Large City	25	0	23	2	0	0	0
Small City	72	1	70	1	0	0	0
Non-City Area	16	0	15	1	0	0	0
Total	**150**	**1**	**143**	**5**	**0**	**1**	**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, students with functional disabilities, and non-native language speakers

Sample Design

- Explicit stratification by urbanization (4) and school type (public junior high school, other)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in Japan, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Public Junior High School - Very Large City	31	0	30	1	0	0	0
Public Junior High School - Large City	24	0	23	1	0	0	0
Public Junior High School - Small City	67	1	66	0	0	0	0
Public Junior High School - Non-City Area	14	0	13	1	0	0	0
National School, Private School or Public Combined Junior and Senior High School	14	0	10	2	0	2	0
Total	**150**	**1**	**142**	**5**	**0**	**2**	**0**

Jordan

Fourth Grade

Coverage and Exclusions

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

Sample Design

- Explicit stratification by school type (6) and achievement (6)
- Implicit stratification by gender
- Sampled two classrooms in the strata where all schools were taken
- The school sample for TIMSS Numeracy at Grade 4 was selected by controlling for the overlap with the sample at Grade 8 using the Chowdhury approach
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

Allocation of School Sample in Jordan, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Madrasiti	41	0	41	0	0	0	0
Public	73	1	72	0	0	0	0
Discovery	38	2	36	0	0	0	0
ERSP	44	0	44	0	0	0	0
UNRWA	24	0	24	0	0	0	0
Private	37	0	37	0	0	0	0
Total	**257**	**3**	**254**	**0**	**0**	**0**	**0**

Eighth Grade

Coverage and Exclusions

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

Sample Design

- Explicit stratification by school type (6) and achievement (6)
- Implicit stratification by region or grouped regions
- Sampled two classrooms in the strata where all schools were taken
- The school sample for TIMSS Numeracy at Grade 4 was selected by controlling for the overlap with the sample at Grade 8 using the Chowdhury approach
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates

Allocation of School Sample in Jordan, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Madrasiti	47	1	46	0	0	0	0
Public	80	4	76	0	0	0	0
Discovery	36	2	34	0	0	0	0
ERSP	43	1	42	0	0	0	0
UNRWA	26	0	26	0	0	0	0
Private	28	0	28	0	0	0	0
Total	**260**	**8**	**252**	**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
- No within-school exclusions

Sample Design

- Explicit stratification by 'Grade 4'/'Grade 4 and Grade 8' schools, region (4), urbanization (urban, rural), and language (Kazakh, Russian, both languages, other languages)
- No implicit stratification
- Sampled two classrooms in certain strata
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Kazakhstan, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4	8	1	5	1	1	0	0
Grade 4 & Grade 8 - Region A - Urban - Kazakh and Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region A - Rural - Kazakh	16	0	14	1	1	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	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region C - Urban - Kazakh	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Region C - Urban - Kazakh and Russian	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Region C - Rural - Kazakh	8	0	7	1	0	0	0

Allocation of School Sample in Kazakhstan, Fourth Grade (Continued)

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
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	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region D - Rural - Kazakh and Russian	8	0	7	0	1	0	0
Grade 4 & Grade 8 - All Regions - Urban - Russian	16	0	16	0	0	0	0
Grade 4 & Grade 8 - All Regions - Rural - Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - All Regions - Other Languages	8	0	4	0	0	4	0
Grade 4 & Grade 8 - Regions A and B - Urban - Kazakh	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Regions A and B - Rural - Kazakh and Russian	14	0	14	0	0	0	0
Total	**176**	**1**	**165**	**3**	**3**	**4**	**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, and Uzbek, Uighur, Tadjik only schools
- No within-school exclusions

Sample Design

- Explicit stratification by 'Grade 8'/'Grade 4 and Grade 8' schools, region (4), urbanization (urban, rural), and language (Kazakh, Russian, both languages, other languages)
- No implicit stratification
- Sampled two classrooms in certain strata
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Kazakhstan, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region A - Urban - Kazakh and Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region A - Rural - Kazakh	16	0	14	1	1	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	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region C - Urban - Kazakh	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Region C - Urban - Kazakh and Russian	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Region C - Rural - Kazakh	8	0	7	1	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

Allocation of School Sample in Kazakhstan, Eighth Grade (Continued)

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4 & Grade 8 - Region D - Rural - Kazakh	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Region D - Rural - Kazakh and Russian	8	0	7	0	1	0	0
Grade 4 & Grade 8 - All Regions - Urban - Russian	16	0	16	0	0	0	0
Grade 4 & Grade 8 - All Regions - Rural - Russian	8	0	8	0	0	0	0
Grade 4 & Grade 8 - All Regions - Other Languages	8	0	4	0	0	4	0
Grade 4 & Grade 8 - Regions A and B - Urban - Kazakh	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Regions A and B - Rural - Kazakh and Russian	14	0	14	0	0	0	0
Total	**176**	**0**	**168**	**2**	**2**	**4**	**0**

Korea

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), remote schools, 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 urbanization (urban, suburban, rural)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 180)
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in Korea, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Urban	62	0	62	0	0	0	0
Suburban	64	0	64	0	0	0	0
Rural	24	1	23	0	0	0	0
Total	**150**	**1**	**149**	**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, special needs schools, and physical education middle school
- 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, suburban, rural), and school gender (boys, girls, mixed)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in Korea, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Urban - Boys	10	0	10	0	0	0	0
Urban - Girls	10	0	10	0	0	0	0
Urban - Mixed	35	0	35	0	0	0	0
Suburban - Boys	10	0	10	0	0	0	0
Suburban - Girls	10	0	10	0	0	0	0
Suburban - Mixed	35	0	35	0	0	0	0
Rural - Boys	10	0	10	0	0	0	0
Rural - Girls	10	0	10	0	0	0	0
Rural - Mixed	20	0	20	0	0	0	0
Total	**150**	**0**	**150**	**0**	**0**	**0**	**0**

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

Sample Design

- Explicit stratification by school type (public, private), region (6), and gender (girls, boys) within public schools, and language (Arabic, foreign, bilingual) within private schools
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 80)
- Samples for TIMSS Main Data Collection and samples for PIRLS Field Test and Main Data Collection were drawn simultaneously to avoid overlap

Allocation of School Sample in Kuwait, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Public - Asema - Girls	10	0	10	0	0	0	0
Public - Asema - Boys	11	0	11	0	0	0	0
Public - Hawally - Girls	8	0	8	0	0	0	0
Public - Hawally - Boys	8	0	8	0	0	0	0
Public - Farwaniya - Girls	11	0	11	0	0	0	0
Public - Farwaniya - Boys	12	0	12	0	0	0	0
Public - Ahmadi - Girls	12	0	12	0	0	0	0
Public - Ahmadi - Boys	13	0	13	0	0	0	0
Public - Jahra - Girls	10	0	10	0	0	0	0
Public - Jahra - Boys	10	0	10	0	0	0	0
Public - Mubarak Alkabeer - Girls	8	0	8	0	0	0	0
Public - Mubarak Alkabeer - Boys	7	0	7	0	0	0	0
Private - Arabic	18	1	17	0	0	0	0
Private - Foreign	29	0	20	0	0	9	0
Private - Bilingual	9	0	9	0	0	0	0
Total	**176**	**1**	**166**	**0**	**0**	**9**	**0**

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 school type (public, private), region (6), and gender (girls, boys) within public schools and language (Arabic, foreign and bilingual) within private schools
- No implicit stratification
- Sampled one classroom per school except for the census strata where two classrooms were selected
- No overlap between Grade 4 and Grade 8 school samples
- Census in public Mubarek Alkabeer schools (girls and boys)
- In census strata, classes were used to build jackknife replicates for variance estimation. Two classrooms selected within these schools

Allocation of School Sample in Kuwait, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Public - Asema - Girls	10	0	10	0	0	0	0
Public - Asema - Boys	10	0	10	0	0	0	0
Public - Hawally - Girls	10	0	10	0	0	0	0
Public - Hawally - Boys	10	0	10	0	0	0	0
Public - Farwaniya - Girls	10	0	10	0	0	0	0
Public - Farwaniya - Boys	10	0	10	0	0	0	0
Public - Ahmadi - Girls	12	0	12	0	0	0	0
Public - Ahmadi - Boys	12	0	12	0	0	0	0
Public - Jahra - Girls	10	0	10	0	0	0	0
Public - Jahra - Boys	10	0	10	0	0	0	0
Private - Arabic	30	1	29	0	0	0	0
Public - Mubarek Alkabeer - Male	11	0	11	0	0	0	0
Public - Mubarek Alkabeer - BoysGirls	11	0	11	0	0	0	0
Private - Foreign and Bilingual	22	0	13	0	0	9	0
Total	**178**	**1**	**168**	**0**	**0**	**9**	**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 school type (public, private, unknown) and by performance level (higher, lower)
- Implicit stratification by region (7)
- Sampled two classrooms in large schools (measure of size > 90)

Allocation of School Sample in Lebanon, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Public	44	0	44	0	0	0	0
Private	94	0	62	18	3	11	0
Unknown	12	0	10	1	0	1	0
Total	**150**	**0**	**116**	**19**	**3**	**12**	**0**

Lithuania

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 of instruction other than Lithuanian, Russian, or Polish
- 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 (Capital, other major cities, cities, small cities, and villages)
- Sampled two classrooms whenever possible
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- Census in Russian, Polish, and bilingual schools
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates. Class group option was used in bilingual schools.

Allocation of School Sample in Lithuania, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4 - Lithuanian	30	0	30	0	0	0	0
Grade 4 - Russian	5	0	5	0	0	0	0
Grade 4 - Polish	8	1	7	0	0	0	0
Grade 4 - Bilingual with Lithuanian	3	1	2	0	0	0	0
Grade 4 - Bilingual with Russian and Polish	1	0	1	0	0	0	0
Grade 4 & Grade 8 - Lithuanian	120	1	117	2	0	0	0
Grade 4 & Grade 8 - Russian	23	1	22	0	0	0	0
Grade 4 & Grade 8 - Polish	23	1	22	0	0	0	1
Grade 4 & Grade 8 - Bilingual with Lithuanian	6	0	6	0	0	0	0
Grade 4 & Grade 8 - Bilingual with Russian and Polish	11	0	11	0	0	0	0
Total	**230**	**5**	**223**	**2**	**0**	**0**	**1**

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 language of instruction other than Lithuanian, Russian, or Polish
- 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 (Capital, other major cities, cities, small cities, and villages)
- Sampled two classrooms whenever possible
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap.
- Census in Russian, Polish, and bilingual schools
- In census strata, schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates. Class group option was used in bilingual schools.

Allocation of School Sample in Lithuania, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8 - Lithuanian	16	0	14	2	0	0	0
Grade 8 - Russian	3	0	3	0	0	0	0
Grade 8 - Polish	7	2	5	0	0	0	0
Grade 8 - Bilingual with Lithuanian	1	0	1	0	0	0	0
Grade 4 & Grade 8 - Lithuanian	120	0	118	2	0	0	0
Grade 4 & Grade 8 - Russian	23	1	22	0	0	0	0
Grade 4 & Grade 8 - Polish	24	0	24	0	0	0	0
Grade 4 & Grade 8 - Bilingual with Lithuanian	6	0	6	0	0	0	0
Grade 4 & Grade 8 - Bilingual with Russian and Polish	11	0	11	0	0	0	0
Total	**211**	**3**	**204**	**4**	**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 in remote area, and schools that do not follow national curriculum
- Within-school exclusions consisted of students with intellectual disabilities and students with functional disabilities

Sample Design

- Explicit stratification by school type (6), score level (6), and urbanization (rural, urban)
- No implicit stratification
- Sampled two classrooms in Ministry of Education daily schools
- Ministry of Education fully residential schools were oversampled

Allocation of School Sample in Malaysia, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
MOE Daily School - Very Low	1	0	1	0	0	0	0
MOE Daily School - Low - Rural	18	0	18	0	0	0	0
MOE Daily School - Low - Urban	12	0	12	0	0	0	0
MOE Daily School - Mid-Low - Rural	14	0	14	0	0	0	0
MOE Daily School - Mid-Low - Urban	12	0	12	0	0	0	0
MOE Daily School - Mid-High - Rural	12	0	12	0	0	0	0
MOE Daily School - Mid-High - Urban	16	0	16	0	0	0	0
MOE Daily School - High	14	0	14	0	0	0	0
MOE Daily School - Very High	20	0	20	0	0	0	0
MOE Fully Residential School - Mid-High	8	0	8	0	0	0	0
MOE Fully Residential School - High	53	0	53	0	0	0	0
MOE Religious School	8	0	8	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	3	0	3	0	0	0	5
Total	**207**	**0**	**207**	**0**	**0**	**0**	**5**

Malta

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 8), 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

- No explicit stratification
- Implicit stratification by school type (state, church, independent) and gender (male, female, co-educational)
- All classrooms were sampled
- All schools and all students at Grade 8 (Year 9) were selected
- Classes were used as variance estimation strata and half classes were used to build jackknife replicates. All classrooms selected within schools.

Allocation of School Sample in Malta, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
None	48	0	48	0	0	0	0
Total	**48**	**0**	**48**	**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 (16)
- Implicit stratification by urbanization (urban, rural) within public sector
- Sampled two classrooms in public schools from the region of Oued eddahab Lagouira
- No overlap between Grade 4 and Grade 8 school 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

Allocation of School Sample in Morocco, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Private - Grand Casablanca	12	0	12	0	0	0	0
Private - All Other Regions	28	0	28	0	0	0	0
Public - Chaouia Ouardigha	20	1	19	0	0	0	0
Public - Doukkala Abda	20	0	20	0	0	0	0
Public - Fes Boulmane	20	0	20	0	0	0	0
Public - Gharb Chrarda Beni Hssein	20	0	20	0	0	0	0
Public - Goulmim Smara	20	0	20	0	0	0	0
Public - Grand Casablanca	20	0	20	0	0	0	0
Public - Laayoune Boujdour Sakia Hamra	20	0	20	0	0	0	0
Public - Marrakech Tansift Haouz	20	0	20	0	0	0	0
Public - Meknes Tafilalt	20	0	20	0	0	0	0
Public - Oued Eddahab Lagouira	21	0	20	0	0	1	0
Public - Rabat Salé Zemmour Zaer	20	0	20	0	0	0	0
Public - Région Est	20	0	20	0	0	0	0
Public - Souss Massa Draa	20	0	20	0	0	0	0
Public - Tadla Azilal	20	0	20	0	0	0	0
Public - Tanger Tetouan	20	0	20	0	0	0	0
Public - Taza Hoceima Taounate	20	1	19	0	0	0	0
Total	**361**	**2**	**358**	**0**	**0**	**1**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10)
- No within-school exclusions

Sample Design

- Explicit stratification by school type (private, public) and region (16)
- Implicit stratification by urbanization (urban, rural) within public sector
- Sampled two classrooms in public schools from the region of Oued eddahab Lagouira and Laayoune Boujdour Sakia Hamra
- No overlap between Grade 4 and Grade 8 school samples
- Schools at the regional level were oversampled. Census in the region of Oued eddahab Lagouira and Laayoune Boujdour Sakia Hamra.
- In census strata, schools or classes were used as variance estimation strata, and classes or half classes were used to build jackknife replicates

Allocation of School Sample in Morocco, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Private - Grand Casablanca	12	2	10	0	0	0	0
Private - All Other Regions	28	4	24	0	0	0	0
Public - Chaouia Ouardigha	20	0	20	0	0	0	0
Public - Doukkala Abda	20	1	19	0	0	0	0
Public - Fes Boulmane	20	0	20	0	0	0	0
Public - Gharb Chrarda Beni Hssein	20	0	20	0	0	0	0
Public - Goulmim Smara	20	0	20	0	0	0	0
Public - Grand Casablanca	20	0	20	0	0	0	0
Public - Laayoune Boujdour Sakia Hamra	24	0	24	0	0	0	0
Public - Marrakech Tansift Haouz	20	0	20	0	0	0	0
Public - Meknes Tafilalt	20	0	20	0	0	0	0
Public - Oued Eddahab Lagouira	9	0	9	0	0	0	0
Public - Rabat Salé Zemmour Zaer	20	0	20	0	0	0	0
Public - Région Est	20	1	19	0	0	0	0
Public - Souss Massa Draa	20	0	20	0	0	0	0
Public - Tadla Azilal	20	0	20	0	0	0	0
Public - Tanger Tetouan	20	0	20	0	0	0	0
Public - Taza Hoceima Taounate	20	0	20	0	0	0	0
Total	**353**	**8**	**345**	**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 < 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 Combinations of TIMSS and PIRLS socioeconomic status (5), and urbanization (5)
- No implicit stratification
- All classrooms were sampled
- TIMSS 2015 samples and PIRLS 2016 samples were selected simultaneously to avoid overlap

Allocation of School Sample in Netherlands, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
TIMSS & PIRLS High Mean SES - Very High Population Density	8	0	6	0	1	1	0
TIMSS & PIRLS High Mean SES - High Population Density	14	0	5	4	1	4	0
TIMSS & PIRLS High Mean SES - Moderate Population Density	16	0	11	3	1	1	0
TIMSS & PIRLS High Mean SES - Low Population Density	16	0	7	5	2	2	0
TIMSS & PIRLS High Mean SES - Very Low Population Density	16	0	10	3	2	1	0
TIMSS High & PIRLS Medium Mean SES - High to Very High Population Density	10	0	3	2	2	3	0
TIMSS High & PIRLS Medium Mean SES - Low to Moderate Population Density	14	0	8	6	0	0	0
TIMSS & PIRLS Medium Mean SES - High to Very High Population Density	10	0	4	0	3	3	0
TIMSS & PIRLS Medium Mean SES - Low to Moderate Population Density	12	0	8	3	0	1	0
TIMSS Medium & PIRLS Low Mean SES - High to Very High Population Density	14	1	4	7	1	1	0
TIMSS Medium & PIRLS Low Mean SES - Low to Moderate Population Density	10	0	4	4	2	0	0
TIMSS & PIRLS Low Mean SES	10	1	4	1	2	2	0
Total	**150**	**2**	**74**	**38**	**17**	**19**	**0**

New Zealand

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), special needs schools, 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), socioeconomic status (low, moderately low, moderately high, high), and urbanisation (major urban centers, smaller centers)
- No implicit stratification
- Sampled two classrooms per school
- The school sample for TIMSS at Grade 8 was selected by controlling for the overlap with the sample at Grade 4 using the Chowdhury approach

Allocation of School Sample in New Zealand, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Independent schools	9	0	8	0	0	1	0
Low SES schools - from major urban centers	24	0	16	5	1	2	0
Low SES schools - from smaller centers	8	0	5	2	0	1	0
Moderately low SES schools - from major urban centers	26	0	21	3	2	0	0
Moderately low SES schools - from smaller centers	16	0	14	1	0	1	0
Moderately high SES schools - from major urban centers	32	0	27	3	1	1	0
Moderately high SES schools - from smaller centers	18	0	13	3	0	2	0
High SES schools - from major urban centers	41	0	35	5	1	0	0
High SES schools - from smaller centers	8	0	8	0	0	0	0
Total	**182**	**0**	**147**	**22**	**5**	**8**	**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, 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), socioeconomic status (low, moderately low, moderately high, high), urbanisation (major urban centers, smaller centers), and gender (boys, girls, co-educational)
- No implicit stratification

- Sampled two classrooms per school
- The school sample for TIMSS at Grade 8 was selected by controlling for the overlap with the sample at Grade 4 using the Chowdhury approach
- Within schools, classes were stratified by performance level and one class from each level was selected

Allocation of School Sample in New Zealand, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Independent schools	8	0	8	0	0	0	0
Low SES schools - from major urban centers	12	0	9	3	0	0	0
Low SES schools - from smaller centers	8	0	6	1	0	1	0
Moderately low SES schools - from major urban centers - Coed	20	0	12	4	0	4	0
Moderately low SES schools - from major urban centers - Others	8	0	6	1	0	1	0
Moderately low SES schools - from smaller centers -	12	0	12	0	0	0	0
Moderately high SES schools - from major urban centers - Coed	26	0	18	5	0	3	0
Moderately high SES schools - from major urban centers - Boys	10	0	7	1	0	2	0
Moderately high SES schools - from major urban centers - Girls	8	0	6	2	0	0	0
Moderately high SES schools - from smaller centers -	16	0	14	2	0	0	0
High SES schools - Coed	18	0	11	3	0	4	0
High SES schools - Boys	8	0	5	1	0	2	0
High SES schools - Girls	8	0	6	2	0	0	0
Total	**162**	**0**	**120**	**25**	**0**	**17**	**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

Sample Design

- Explicit stratification by region (5) and deprivation (5)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 58)
- TIMSS 2015 sample and PIRLS 2016 samples were drawn simultaneously to avoid overlap

Allocation of School Sample in Northern Ireland, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Belfast - Lower Deprivation	10	0	4	1	0	5	0
Belfast - Highest Deprivation	12	0	5	1	1	5	0
Western - Lower Deprivation	10	0	8	1	1	0	0
Western - Moderate to High Deprivation	10	0	8	0	0	2	0
Western - Highest Deprivation	8	0	5	1	0	2	0
North Eastern - Lowest Deprivation	8	0	6	1	1	0	0
North Eastern - Low to Moderate Deprivation	12	0	8	0	0	4	0
North Eastern - Higher Deprivation	14	0	10	1	0	3	0
South Eastern - Lowest Deprivation	12	0	8	0	0	4	0
South Eastern - Low to Moderate Deprivation	8	0	4	0	1	3	0
South Eastern - Higher Deprivation	14	0	9	1	1	3	0
Southern - Lower Deprivation	12	0	7	2	1	2	0
Southern - Moderate Deprivation	12	0	11	1	0	0	0
Southern - Higher Deprivation	12	0	7	2	0	3	0
Total	**154**	**0**	**100**	**12**	**6**	**36**	**0**

Norway (5 and 9)

Fifth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), Sami language schools, international schools, 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 'Grade 5' / 'Grade 5 and Grade 9' schools, language (Bokmål, Nynorsk), and municipality size (small, medium, large)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 35)
- Grade 5 and Grade 9 school samples were selected simultaneously with minimum overlap

Allocation of School Sample in Norway, Fifth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 5 - Bokmål - Small Municipalities	8	0	8	0	0	0	0
Grade 5 - Bokmål - Medium Municipalities	28	0	26	0	0	2	0
Grade 5 - Bokmål - Large Municipalities	66	0	63	0	0	3	0
Grade 5 - Nynorsk	14	0	13	0	0	1	0
Grade 5 & Grade 9 - Bokmål - Small Municipalities	8	0	8	0	0	0	0
Grade 5 & Grade 9 - Bokmål - Medium Municipalities	8	0	7	0	0	1	0
Grade 5 & Grade 9 - Bokmål - Large Municipalities	10	0	8	0	0	2	0
Grade 5 & Grade 9 - Nynorsk	8	0	7	0	0	1	0
Total	**150**	**0**	**140**	**0**	**0**	**10**	**0**

Ninth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6), Sami language schools, international schools, 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 'Grade 9' / 'Grade 5 and Grade 9' schools, language (Bokmål, Nynorsk) and municipality size (small, medium, large)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 90)
- Grade 5 and Grade 9 school samples were selected simultaneously with minimum overlap

Allocation of School Sample in Norway, Ninth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 9 - Bokmål - Small Municipalities	8	0	7	0	0	1	0
Grade 9 - Bokmål - Medium Municipalities	26	0	26	0	0	0	0
Grade 9 - Bokmål - Large Municipalities	64	0	61	0	0	3	0
Grade 9 - Nynorsk	12	0	11	0	0	1	0
Grade 5 & Grade 9 - Bokmål - Small Municipalities	8	0	8	0	0	0	0
Grade 5 & Grade 9 - Bokmål - Medium Municipalities	8	0	6	0	0	2	0
Grade 5 & Grade 9 - Bokmål - Large Municipalities	16	0	16	0	0	0	0
Grade 5 & Grade 9 - Nynorsk	8	0	8	0	0	0	0
Total	**150**	**0**	**143**	**0**	**0**	**7**	**0**

Oman

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 governorates (11) and school type (government, private, international)
- No implicit stratification
- Sampled two classrooms in census strata or in large schools from other strata
- The school sample for TIMSS at Grade 8 was selected by controlling for the overlap with the sample at Grade 4 using the Chowdhury approach
- Census in AL Buraimi, Musandam, and Al Wusta Governorate strata
- In census strata schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates. Two classrooms selected within these schools.

Allocation of School Sample in Oman, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Ad Dakhliyah Governorate	26	0	26	0	0	0	0
Adh Dhahirah Governorate	26	0	26	0	0	0	0
Al Batinah North Governorate	30	0	30	0	0	0	0
Al Batinah South Governorate	26	0	26	0	0	0	0
Al Buraimi Governorate	15	0	15	0	0	0	0
Al Wusta Governorate	20	0	20	0	0	0	0
Ash Sharqiyah North Governorate	26	2	24	0	0	0	0
Ash Sharqiyah South Governorate	26	0	26	0	0	0	0
Dhofar Governorate	26	0	26	0	0	0	0
Musandam Governorate	7	0	7	0	0	0	0
Muscat Governorate	28	0	28	0	0	0	0
Private Schools	26	1	24	1	0	0	0
International Schools	26	0	18	2	1	5	0
Total	**308**	**3**	**296**	**3**	**1**	**5**	**0**

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 governorates (11), and special school type (government, private, international)
- Implicit stratification by gender (3)
- Sampled two classrooms in census strata or in large schools from other strata

- The school sample for TIMSS at Grade 8 was selected by controlling for the overlap with the sample at Grade 4 using the Chowdhury approach
- Census in AL Buraimi, Musandam, and Al Wusta Governorate strata
- In census strata schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates. Two classrooms selected within these schools.

Allocation of School Sample in Oman, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Ad Dakhliyah Governorate	24	0	24	0	0	0	0
Adh Dhahirah Governorate	25	0	25	0	0	0	0
Al Batinah North Governorate	30	0	30	0	0	0	0
Al Batinah South Governorate	26	0	26	0	0	0	0
Al Buraimi Governorate	13	0	13	0	0	0	0
Al Wusta Governorate	22	0	22	0	0	0	0
Ash Sharqiyah North Governorate	26	1	25	0	0	0	0
Ash Sharqiyah South Governorate	26	0	26	0	0	0	0
Dhofar Governorate	26	0	26	0	0	0	0
Musandam Governorate	12	0	12	0	0	0	0
Muscat Governorate	27	1	26	0	0	0	0
Private Schools	27	0	27	0	0	0	0
International Schools	26	0	18	1	0	7	0
Total	**310**	**2**	**300**	**1**	**0**	**7**	**0**

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 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) and school performance level (5)
- No implicit stratification
- Sampled two classrooms per school

Allocation of School Sample in Poland, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Village - Low Performance	14	0	14	0	0	0	0
Village - Medium-Low Performance	10	0	10	0	0	0	0
Village - Medium Performance	10	0	10	0	0	0	0
Village - Medium-High Performance	10	0	10	0	0	0	0
Village - High Performance	12	0	11	1	0	0	0
Town (Up to 20 Thousand Inhabitants) - Medium-Low Performance	8	0	7	1	0	0	0
Town (Up to 20 Thousand Inhabitants) - Medium-High Performance	10	0	9	1	0	0	0
City (20 to 100 Thousand Inhabitants) - Low Performance	10	0	9	1	0	0	0
City (20 to 100 Thousand Inhabitants) - Medium-Low Performance	8	0	7	1	0	0	0
City (20 to 100 Thousand Inhabitants) - Medium-High Performance	8	0	7	1	0	0	0
City (20 to 100 Thousand Inhabitants) - High Performance	10	0	9	1	0	0	0
City (Above 100 Thousand Inhabitants) - Low Performance	10	0	9	1	0	0	0
City (Above 100 Thousand Inhabitants) - Medium-Low Performance	10	0	10	0	0	0	0
City (Above 100 Thousand Inhabitants) - Medium-High Performance	10	0	7	2	1	0	0
City (Above 100 Thousand Inhabitants) - High Performance	10	0	8	2	0	0	0
Total	**150**	**0**	**137**	**12**	**1**	**0**	**0**

Portugal

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 minority 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 (7) and school type (public, private)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 140)
- No overlap between TIMSS 2015 and PIRLS 2016 main data collection samples except in the 6 smallest strata where all schools are sampled
- Probability proportional to (school) size systematic sampling was used in the 3 largest explicit strata, and systematic sampling selection with equal probabilities was used in all other strata

Allocation of School Sample in Portugal, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Private - Lisboa	8	1	5	2	0	0	0
Private - All Other Regions	12	0	8	3	1	0	0
Public - Alentejo	30	0	28	1	0	1	0
Public - Algarve	8	0	7	1	0	0	0
Public - Centro	48	0	47	1	0	0	0
Public - Lisboa	36	0	31	4	1	0	0
Public - Norte	64	0	57	5	0	2	0
Public - R. A. Açores	8	0	4	1	2	1	0
Public - R. A. Madeira	8	0	6	1	1	0	0
Total	**222**	**1**	**193**	**19**	**5**	**4**	**0**

Qatar

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of 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'/ 'Grade 4 and Grade 8'
- Implicit stratification by school type (private SEC, independent, community, private foreign) and gender (boys, girls, other)
- Sampled two classrooms in large schools (measure of size > 170)
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- Census of schools. Schools having Grade 4 and Grade 8 participated in TIMSS Main Data Collection for both grades.
- Schools or classrooms or half classrooms were used to build jackknife replicates for variance estimation

Allocation of School Sample in Qatar, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4	134	5	129	0	0	0	0
Grade 4 & Grade 8	83	1	82	0	0	0	3
Total	**217**	**6**	**211**	**0**	**0**	**0**	**3**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of 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 8' / 'Grade 4 and Grade 8'

- Implicit stratification by school type (private SEC, independent, community, private foreign) and gender (boys, girls, other)
- Sampled two classrooms whenever possible
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- Census of schools. Schools having Grade 4 and Grade 8 participated in TIMSS Main Data Collection for both grades.
- Schools or classrooms or half classrooms were used to build jackknife replicates for variance estimation

Allocation of School Sample in Qatar, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8	51	0	51	0	0	0	0
Grade 4 & Grade 8	85	2	80	0	0	3	0
Total	**136**	**2**	**131**	**0**	**0**	**3**	**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 (42)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 school samples
- An extra sampling stage (regions) was required prior to sampling schools. 28 of 69 regions were selected with probability proportional to the region size and 14 bigger regions were selected with certainty. While each certainty region itself is an explicit stratum, the other sampled regions make one large explicit stratum. In the large explicit stratum, 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.
- Within the certainty regions, schools were paired for variance calculation purposes. Otherwise, selected regions were paired for variance calculation purposes.

Allocation of School Sample in Russian Federation, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Sankt-Petersburg*	6	0	6	0	0	0	0
Moscow*	14	0	14	0	0	0	0
Moscow region*	10	0	10	0	0	0	0
Nizhni Novgorod region*	4	0	4	0	0	0	0
Perm territory*	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*	8	0	8	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*	8	0	8	0	0	0	0
Krasnoyarsk territory*	4	0	4	0	0	0	0
Republic of Dagestan*	6	0	6	0	0	0	0
Novgorod region	4	0	4	0	0	0	0
Kaliningrad region	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
Tula region	4	0	4	0	0	0	0
Bryansk region	4	0	4	0	0	0	0
Ryazan region	4	0	4	0	0	0	0
Kaluga region	4	0	4	0	0	0	0
Republic of Marij El	4	0	4	0	0	0	0
Ulyanovsk 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
Astrakhan region	4	0	4	0	0	0	0
Kurgan region	4	0	4	0	0	0	0
Khanty-Mansijsk AD	4	0	4	0	0	0	0

* Certainty Regions

Allocation of School Sample in Russian Federation, Fourth Grade (Continued)

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Irkutsk region	4	0	4	0	0	0	0
Kemerovo region	4	0	4	0	0	0	0
Novosibirsk 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 (Yakutia)	4	0	4	0	0	0	0
Primorski territory	4	0	4	0	0	0	0
Stravropol territory	4	0	4	0	0	0	0
Kabardino-Balkarian Republic	6	0	6	0	0	0	0
Total	**208**	**0**	**208**	**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, 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 region (42)
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 school samples
- An extra sampling stage (regions) was required prior to sampling schools. 28 of 69 regions were selected with probability proportional to the region size and 14 bigger regions were selected with certainty. While each certainty region itself is an explicit stratum, the other sampled regions make one large explicit stratum. In the large explicit stratum, 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.
- Within the certainty regions, schools were paired for variance calculation purposes. Otherwise, selected regions were paired for variance calculation purposes.

Allocation of School Sample in Russian Federation, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Sankt-Petersburg*	6	0	6	0	0	0	0
Moscow*	12	0	12	0	0	0	0
Moscow region*	10	0	10	0	0	0	0
Perm territory*	4	0	4	0	0	0	0
Samara region*	4	0	4	0	0	0	0
Nizhni Novgorod region*	4	0	4	0	0	0	0
Republic of Tatarstan*	6	0	6	0	0	0	0
Republic of Bashkortostan*	8	0	8	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
Novgorod region	4	0	4	0	0	0	0
Kaliningrad region	4	0	4	0	0	0	0
Arkhangelsk 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
Vladimir region	4	0	4	0	0	0	0
Lipetzk region	4	0	4	0	0	0	0
Yaroslavl region	4	0	4	0	0	0	0
Kaluga region	4	0	4	0	0	0	0
Kostroma region	4	0	4	0	0	0	0
Ulyanovsk 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
Yamalo-Nenets autonomous district	4	0	4	0	0	0	0
Tyumen region	4	0	4	0	0	0	0
Irkutsk region	4	0	4	0	0	0	0

* Certainty Regions

Allocation of School Sample in Russian Federation, Eighth Grade (Continued)

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Kemerovo region	4	0	4	0	0	0	0
Novosibirsk region	4	0	4	0	0	0	0
Altai territory	4	0	4	0	0	0	0
Omsk region	4	0	4	0	0	0	0
Tomsk region	4	0	4	0	0	0	0
Kamchatka territory	4	0	4	0	0	0	0
Khabarovsk territory	4	0	4	0	0	0	0
Primorski territory	4	0	4	0	0	0	0
Stravropol territory	4	0	4	0	0	0	0
Kabardino-Balkarian Republic	6	0	6	0	0	0	0
Total	**204**	**0**	**204**	**0**	**0**	**0**	**0**

Saudi Arabia

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 and non-native language speakers

Sample Design

- Explicit stratification by gender (boys, girls), education type (religious, non-religious) and school type (government, non-government) within non-religious schools
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in Saudi Arabia, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Government - General - Boys	78	2	69	6	1	0	0
Government - General - Girls	78	6	69	2	1	0	0
Non Government - Non-Religious - Boys	12	0	12	0	0	0	0
Non Government - Non-Religious - Girls	10	0	10	0	0	0	0
Other - Religious - Boys	10	0	10	0	0	0	0
Other - Religious - Girls	10	1	8	1	0	0	0
Total	**198**	**9**	**178**	**9**	**2**	**0**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 10) 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 gender (boys, girls), education type (religious, non-religious) and school type (government, non-government) within non-religious schools
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 215)
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in Saudi Arabia, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Government - General - Boys	60	6	51	2	1	0	0
Government - General - Girls	60	3	57	0	0	0	0
Non Government - Non-Religious - Boys	10	0	10	0	0	0	0
Non Government - Non-Religious - Girls	8	0	8	0	0	0	0
Other - Religious - Boys	8	2	6	0	0	0	0
Other - Religious - Girls	8	0	8	0	0	0	0
Total	**154**	**11**	**140**	**2**	**1**	**0**	**0**

Serbia

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, language other than Serbian, and less than 4 children taught in 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 (city, other) and school type (main, branch department)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 130)

Allocation of School Sample in Serbia, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Belgrade - City	30	0	30	0	0	0	0
Belgrade - Other	8	0	8	0	0	0	0
Vojvodina - City	24	0	23	1	0	0	0
Vojvodina - Other	16	0	16	0	0	0	0
Central Serbia - City	50	0	49	0	1	0	0
Central Serbia - Other - Main Schools	16	0	16	0	0	0	0
Central Serbia - Other - Branch Department Schools	16	0	16	0	0	0	0
Total	**160**	**0**	**158**	**1**	**1**	**0**	**0**

Singapore

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and private schools
- No within-school exclusions
- For TIMSS 2015, like in all previous cycles, Singapore took a census of all public schools with Grade 4 or Grade 8 students. The sampling frame excluded private schools, which are largely foreign-system schools operating in Singapore and which serve predominantly international students. These foreign-system schools are fundamentally different from the public schools in many respects (e.g., language of instruction; school-calendar year).

Sample Design

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

Allocation of School Sample in Singapore, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
None	179	0	179	0	0	0	0
Total	**179**	**0**	**179**	**0**	**0**	**0**	**0**

Eighth Grade

Coverage and Exclusions

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

- For TIMSS 2015, like in all previous cycles, Singapore took a census of all public schools with Grade 4 or Grade 8 students. The sampling frame excluded private schools, which are largely foreign-system schools operating in Singapore and which serve predominantly international students. These foreign-system schools are fundamentally different from the public schools in many respects (e.g., language of instruction; school-calendar year).

Sample Design

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

Allocation of School Sample in Singapore, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
None	167	0	167	0	0	0	0
Total	**167**	**0**	**167**	**0**	**0**	**0**	**0**

Slovakia

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 schools where language of instruction is not Slovak or Hungarian
- 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), socioeconomic status (4), and area (5)
- No implicit stratification
- Sampled two classrooms per school

Allocation of School Sample in Slovakia, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Slovak - High Mean SES - Bratislavský	16	0	14	2	0	0	0
Slovak - High Mean SES - North Area	22	1	20	1	0	0	0
Slovak - High Mean SES - South Area	12	0	12	0	0	0	0
Slovak - Low to Medium Mean SES - Bratislavský	10	0	9	0	0	1	0
Slovak - Medium Mean SES - North Area	46	0	46	0	0	0	0
Slovak - Medium Mean SES - South Area	26	0	26	0	0	0	0
Slovak - Low Mean SES - North Area	18	0	18	0	0	0	0
Slovak - Low Mean SES - South Area	28	0	28	0	0	0	0
Hungarian - Košický	10	0	8	0	2	0	0
Hungarian - Other	12	0	12	0	0	0	0
Total	**200**	**1**	**193**	**3**	**2**	**1**	**0**

Slovenia

Fourth Grade

Coverage and Exclusions

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

Sample Design

- Explicit stratification by performance level (4)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 50)
- Grade 4 and Grade 8 school samples were selected simultaneously with full overlap

Allocation of School Sample in Slovenia, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Very low math scores	14	0	14	0	0	0	0
Low math scores	46	0	44	1	0	1	0
Medium math scores	46	0	43	3	0	0	0
High math scores	44	0	43	0	0	1	0
Total	**150**	**0**	**144**	**4**	**0**	**2**	**0**

Eighth Grade

Coverage and Exclusions

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

Sample Design

- Explicit stratification by performance level (4)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 50)
- Grade 4 and Grade 8 school samples were selected simultaneously with full overlap

Allocation of School Sample in Slovenia, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Very low math scores	14	0	14	0	0	0	0
Low math scores	46	0	44	1	0	1	0
Medium math scores	46	0	43	3	0	0	0
High math scores	44	0	43	0	0	1	0
Total	**150**	**0**	**144**	**4**	**0**	**2**	**0**

South Africa

Fifth Grade

Coverage and Exclusions

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

Sample Design

- Explicit stratification by school type (independent, public), province (9) within public schools and socioeconomic status (low, medium/high) within independent schools
- Implicit stratification by performance level (lower quintiles, mid quintiles, higher quintiles) and province (GT, other)
- Sampled one classroom per school
- No overlap between Grade 5 and Grade 9 school samples

Allocation of School Sample in South Africa, Fifth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Independent schools - Low fee	27	0	25	2	0	0	1
Independent schools - Med-High fee	12	0	11	1	0	0	0
Public- EC	29	0	29	0	0	0	1
Public- FS	28	0	28	0	0	0	0
Public- GT	28	0	28	0	0	0	0
Public- KZ	30	0	30	0	0	0	0
Public- LP	30	0	30	0	0	0	0
Public- MP	28	0	28	0	0	0	0
Public- NC	28	0	28	0	0	0	0
Public- NW	28	0	28	0	0	0	0
Public- WC	30	1	28	0	1	0	0
Total	**298**	**1**	**293**	**3**	**1**	**0**	**2**

Ninth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 15) and special needs schools
- No within-school exclusions

Sample Design

- Explicit stratification by school type (independent, public), province (9), language (English, Afrikaans, bilingual) and socioeconomic status (low, medium/high)
- Implicit stratification by performance level (lower quintiles, first quintiles, second quintiles, higher quintiles, and other quintiles) and province (GT/WC, other)
- Sampled two classrooms in dual language schools with one class for each language group
- No overlap between Grade 5 and Grade 9 school samples

Allocation of School Sample in South Africa, Ninth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Independent schools - Low fee	26	0	26	0	0	0	0
Independent schools - Med-High fee	12	0	6	4	2	0	0
Public- EC - English	24	3	21	0	0	0	0
Public- FS - English	26	0	26	0	0	0	0
Public- GT - English	22	0	22	0	0	0	0
Public- KZ - English	28	1	26	1	0	0	0
Public- LP - English	28	0	27	1	0	0	0
Public- MP - English	26	0	26	0	0	0	0
Public- NC - Afrikaans	12	0	12	0	0	0	0
Public- NC - Bilingual	8	0	8	0	0	0	0
Public- NC - English	8	0	8	0	0	0	0
Public- NW - English	26	3	23	0	0	0	0
Public- WC - Afrikaans	8	0	8	0	0	0	0
Public- WC - Bilingual	10	0	10	0	0	0	0
Public- WC - English	10	1	9	0	0	0	0
Public- EC, FS, GT, KZ, LP, MP, NW - Afrikaans	12	0	10	2	0	0	0
Public- EC, FS, GT, KZ, LP, MP, NW - Bilingual	14	0	14	0	0	0	0
Total	**300**	**8**	**282**	**8**	**2**	**0**	**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, 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 (7) and school type (public, private)
- No implicit stratification
- Sampled one classroom per school except for the private schools in La Rioja where two classrooms were sampled whenever possible
- Oversampled in Asturias, La Rioja, Castile and Leon, Catalonia, Andalusia and Madrid in order to get better estimates. In La Rioja-private stratum all schools were taken.
- In La Rioja- private stratum, schools or classrooms were used as variance estimation strata and classrooms or half classrooms were used to build jackknife replicates. Two classrooms selected within these schools whenever possible.

Allocation of School Sample in Spain, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Andalusia - Public	30	0	30	0	0	0	0
Andalusia - Private	20	0	20	0	0	0	0
Asturias - Public	30	0	30	0	0	0	0
Asturias - Private	20	0	20	0	0	0	0
Castile and Leon - Public	30	0	26	0	0	4	0
Castile and Leon - Private	20	0	20	0	0	0	0
Catalonia - Public	30	0	30	0	0	0	0
Catalonia - Private	20	0	20	0	0	0	0
La Rioja - Public	27	0	27	0	0	0	0
La Rioja - Private	23	0	23	0	0	0	0
Madrid - Public	26	1	25	0	0	0	0
Madrid - Private	24	0	24	0	0	0	0
Other - Public	44	0	43	0	0	1	0
Other - Private	20	0	19	1	0	0	0
Total	**364**	**1**	**357**	**1**	**0**	**5**	**0**

Sweden

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 5), international schools, and special education 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 average achievement for the grade (low, high, missing)
- Implicit stratification by school type (public, private, all)
- Sampled two classrooms in large schools (measure of size > 45)
- The school sample for TIMSS at Grade 4 was selected by controlling for the overlap with the sample at Grade 8 using the Chowdhury approach

Allocation of School Sample in Sweden, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4	99	4	95	0	0	0	1
Grade 4 & Grade 8 - Missing	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Low	16	1	15	0	0	0	0
Grade 4 & Grade 8 - High	24	0	24	0	0	0	0
Total	**149**	**5**	**144**	**0**	**0**	**0**	**1**

Eighth Grade

Coverage and Exclusions

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

Sample Design

- Explicit stratification by average achievement for the grade (7)
- Implicit stratification by 'Grade 8' / 'Grade 4 and Grade 8' schools
- Sampled two classrooms in large schools (measure of size > 110)
- The school sample for TIMSS at Grade 4 was selected by controlling for the overlap with the sample at Grade 8 using the Chowdhury approach

Allocation of School Sample in Sweden, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Missing	22	2	19	1	0	0	0
Low	26	2	24	0	0	0	0
Low-Medium	26	0	26	0	0	0	0
Medium	28	0	28	0	0	0	0
Medium-High	18	0	18	0	0	0	0
High	16	0	16	0	0	0	0
Very High	18	0	18	0	0	0	0
Total	**154**	**4**	**149**	**1**	**0**	**0**	**0**

Thailand

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
- No within-school exclusions

Sample Design

- Explicit stratification by jurisdiction (7) and region (Bangkok, Central, other) within OBEC2 jurisdiction
- No implicit stratification
- Sampled one classroom per school

Allocation of School Sample in Thailand, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
OBEC1	42	0	41	1	0	0	0
OBEC2 - Bangkok	10	0	9	1	0	0	0
OBEC2 - Central	10	0	10	0	0	0	0
OBEC2 - Other Regions	78	0	78	0	0	0	0
OPEC	22	0	20	1	1	0	0
BMA	10	0	10	0	0	0	0
DLA	12	0	12	0	0	0	0
OHEC	10	0	10	0	0	0	0
SCISCH	10	0	10	0	0	0	0
Total	**204**	**0**	**200**	**3**	**1**	**0**	**0**

Turkey

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, geographically inaccessible schools, very small schools, and schools with different structure/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 (urban, rural) and statistical regions (12) within urban
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 samples

Allocation of School Sample in Turkey, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Rural	40	3	37	0	0	0	0
Urban - TR1-Istanbul	36	4	32	0	0	0	0
Urban - TR2-West Marmara	10	3	7	0	0	0	0
Urban - TR3-Aegean	26	0	26	0	0	0	0
Urban - TR4-East Marmara	16	4	12	0	0	0	0
Urban - TR5-West Anatolia	16	1	15	0	0	0	0
Urban - TR6-Mediterranean	30	0	30	0	0	0	0
Urban - TR7-Central Anatolia	10	1	9	0	0	0	0
Urban - TR8-West Black Sea	10	0	10	0	0	0	0
Urban - TR9-East Black Sea	10	0	10	0	0	0	0
Urban - TRA-Northeast Anatolia	10	0	10	0	0	0	0
Urban - TRB-Centraleast Anatolia	14	1	13	0	0	0	0
Urban - TRC-Southeast Anatolia	32	1	31	0	0	0	0
Total	**260**	**18**	**242**	**0**	**0**	**0**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, geographically inaccessible schools, very small schools, and schools with different structure/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 (urban, rural) and statistical regions (12) within urban
- No implicit stratification
- Sampled one classroom per school
- No overlap between Grade 4 and Grade 8 samples

Allocation of School Sample in Turkey, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Rural	34	1	33	0	0	0	0
Urban - TR1-Istanbul	30	3	27	0	0	0	0
Urban - TR2-West Marmara	10	3	7	0	0	0	0
Urban - TR3-Aegean	24	1	23	0	0	0	0
Urban - TR4-East Marmara	22	2	20	0	0	0	0
Urban - TR5-West Anatolia	16	4	12	0	0	0	0
Urban - TR6-Mediterranean	20	0	20	0	0	0	0
Urban - TR7-Central Anatolia	10	0	10	0	0	0	0
Urban - TR8-West Black Sea	10	2	8	0	0	0	0
Urban - TR9-East Black Sea	10	0	10	0	0	0	0
Urban - TRA-Northeast Anatolia	10	1	9	0	0	0	0
Urban - TRB-Centraleast Anatolia	14	1	13	0	0	0	0
Urban - TRC-Southeast Anatolia	30	4	26	0	0	0	0
Total	**240**	**22**	**218**	**0**	**0**	**0**	**0**

United Arab Emirates

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 15) in Abu Dhabi and other Emirates, (measure of size < 10) in Dubai, instruction language other than English or Arabic, and geographically inaccessible schools in Emirates other than Dubai and Abu Dhabi
- 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, Emirates (7), national assessment score (4) and curriculum (Ministry of Education, UK/US/CAD, other). School type (public, private) within Dubai. Region (Abu Dhabi, Al Ain, Western region), school type (public, private), and performance level (low, medium, high) within Abu Dhabi.
- Implicit stratification by educational zones (Ajman, Fujairah, Ras Al Khaimah, Sharjah, Umm Al Quwain) and language of test (Arabic, English, French)
- Sampled two classrooms in schools from the western region, from 'Grade 4' schools in Abu Dhabi, from Dubai and from regions other than Sharjah
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- All schools were sampled in all regions except Sharjah, in Western region of Abu Dhabi and in Dubai
- The United Arab Emirates was divided into three large districts: Abu Dhabi (Abu Dhabi, Al Ain, and West region), Dubai, and the rest of the Emirates. All three districts were oversampled.
- In census strata, classes or half classes were used to build jackknife replicates for variance estimation. Two classrooms selected within these schools.

Allocation of School Sample in United Arab Emirates, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4 - Abu Dhabi - Public - Low Performance	10	0	10	0	0	0	0
Grade 4 - Abu Dhabi - Public - Medium Performance	10	0	10	0	0	0	0
Grade 4 - Abu Dhabi - Public - High Performance	10	0	10	0	0	0	0
Grade 4 - Abu Dhabi - Private	10	1	9	0	0	0	0
Grade 4 - Al Ain - Public - Low Performance	12	0	12	0	0	0	0
Grade 4 - Al Ain - Public - High Performance	10	1	9	0	0	0	0
Grade 4 - Western Region	12	0	12	0	0	0	0
Grade 4 - Dubai - Private	37	0	37	0	0	0	0
Grade 4 - Dubai - Public	25	0	25	0	0	0	0
Grade 4 - Sharjah - No Assessment Score	8	0	8	0	0	0	0
Grade 4 - Sharjah - Low Assessment Score	8	0	8	0	0	0	0
Grade 4 - Sharjah - MediumAssessment Score	8	0	8	0	0	0	0
Grade 4 - Sharjah - High Assessment Score	8	0	8	0	0	0	0
Grade 4 - Other Zones	85	1	84	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - Ministry of Education	14	1	13	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - UK/ US/CAD	22	2	20	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - Other	22	5	17	0	0	0	0

Allocation of School Sample in United Arab Emirates, Fourth Grade (Continued)

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4 & Grade 8 - Al Ain - UK/US/CAD	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Al Ain - Other	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Western Region	15	0	15	0	0	0	0
Grade 4 & Grade 8 - Dubai - Private	105	2	103	0	0	0	0
Grade 4 & Grade 8 - Dubai - Public	3	0	3	0	0	0	0
Grade 4 & Grade 8 - Sharjah - No Assessment Score - UK/US/Australian	18	0	18	0	0	0	0
Grade 4 & Grade 8 - Sharjah - No Assessment Score - Other	20	0	20	0	0	0	0
Grade 4 & Grade 8 - Sharjah - Medium Assessment Score - Ministry of Education	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Sharjah - High Assessment Score - Ministry of Education	8	1	7	0	0	0	0
Grade 4 & Grade 8 - Other Zones	59	1	58	0	0	0	0
Total	**573**	**15**	**558**	**0**	**0**	**0**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 15) in Abu Dhabi and other Emirates, very small schools (measure of size < 10) in Dubai, special needs and geographically inaccessible schools in Emirates other than Dubai and Abu Dhabi, and language of instruction 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, Emirates (7), national assessment score (4) and curriculum (Ministry of Education, UK/US/CAD, other). School type (public, private) within Dubai. Region (Abu Dhabi, Al Ain, Western region), school type (public, private), and performance level (low, medium, high) within Abu Dhabi.
- Implicit stratification by educational zones (Ajman, Fujairah, Ras Al Khaimah, Umm Al Quwain) and language of test (Arabic, English, French)
- Sampled two classrooms in schools from the western region, from 'Grade 8' schools in Abu Dhabi, from Dubai and from regions other than Sharjah
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- All schools were sampled in all regions except Sharjah, in Western region of Abu Dhabi and in Dubai.
- In census strata, classes or half classes were used to build jackknife replicates for variance estimation. Two classrooms selected within these schools.

Allocation of School Sample in United Arab Emirates, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8 - Abu Dhabi - Public - Low Performance	15	0	15	0	0	0	0
Grade 8 - Abu Dhabi - Public - High Performance	16	0	16	0	0	0	0
Grade 8 - Al Ain - Public - Low Performance	10	0	10	0	0	0	0
Grade 8 - Al Ain - Public - High Performance	15	1	14	0	0	0	0
Grade 8 - Western Region	10	0	10	0	0	0	0
Grade 8 - Dubai - Private	7	1	6	0	0	0	0
Grade 8 - Dubai - Public	22	0	22	0	0	0	0
Grade 8 - Sharjah - Low Assessment Score	8	0	8	0	0	0	0

Allocation of School Sample in United Arab Emirates, Eighth Grade (Continued)

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8 - Sharjah - High Assessment Score	8	0	8	0	0	0	0
Grade 8 - Other Zones	58	0	58	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - Ministry of Education	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - UK/US/CAD	22	2	20	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - Other	22	5	17	0	0	0	0
Grade 4 & Grade 8 - Al Ain - UK/US/CAD	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Al Ain - Other	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Western Region	15	1	14	0	0	0	0
Grade 4 & Grade 8 - Dubai - Private	105	1	104	0	0	0	0
Grade 4 & Grade 8 - Dubai - Public	3	0	3	0	0	0	0
Grade 4 & Grade 8 - Sharjah - No Assessment Score - UK/US/Australian	18	0	18	0	0	0	0
Grade 4 & Grade 8 - Sharjah - No Assessment Score - Other	20	0	20	0	0	0	0
Grade 4 & Grade 8 - Sharjah - Medium Assessment Score - Ministry of Education	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Sharjah - High Assessment Score - Ministry of Education	8	0	8	0	0	0	0
Grade 4 & Grade 8 - Other Zones	59	1	58	0	0	0	0
Total	**489**	**12**	**477**	**0**	**0**	**0**	**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), and census region (4)
- Implicit stratification by urbanization (city, suburb, town, rural) and ethnicity status (above 15% non-White students in a school, below 15% non-White students in a school)
- Sampled two classrooms per school
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in United States, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
High poverty - Public - Census region 1	17	0	10	0	0	7	0
High poverty - Public - Census region 2	26	1	21	3	0	1	0
High poverty - Public - Census region 3	68	2	61	3	0	2	0
High poverty - Public - Census region 4	37	0	29	0	0	8	0
Low poverty - Private - Census region 1	6	0	3	1	0	2	0
Low poverty - Private - Census region 2	6	0	4	1	0	1	0
Low poverty - Private - Census region 3	9	0	5	2	0	2	0
Low poverty - Private - Census region 4	5	0	1	2	0	2	0
Low poverty - Public - Census region 1	26	0	13	4	0	9	0
Low poverty - Public - Census region 2	31	0	25	3	0	3	0
Low poverty - Public - Census region 3	39	0	35	2	0	2	0
Low poverty - Public - Census region 4	29	1	21	1	0	6	1
Total	**299**	**4**	**228**	**22**	**0**	**45**	**1**

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) and census region (4)
- Implicit stratification by urbanization (city, suburb, town, rural) and ethnicity status (above 15% non-White students in a school, below 15% non-White students in a school)
- Sampled two classrooms per school
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in United States, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
High poverty - Public - Census region 1	15	0	11	1	0	3	0
High poverty - Public - Census region 2	23	1	18	0	0	4	0
High poverty - Public - Census region 3	63	2	54	4	0	3	0
High poverty - Public - Census region 4	34	0	29	0	0	5	0
Low poverty - Private - Census region 1	6	0	3	3	0	0	0
Low poverty - Private - Census region 2	6	0	5	0	0	1	0
Low poverty - Private - Census region 3	8	0	6	1	0	1	0
Low poverty - Private - Census region 4	5	2	2	1	0	0	0
Low poverty - Public - Census region 1	29	0	18	0	0	11	0
Low poverty - Public - Census region 2	36	0	28	4	0	4	0
Low poverty - Public - Census region 3	43	0	36	3	0	4	0
Low poverty - Public - Census region 4	32	2	19	0	0	11	0
Total	**300**	**7**	**229**	**17**	**0**	**47**	**0**

Characteristics of Benchmarking Participants

Buenos Aires, Argentina

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools, and federal government 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 (2), school type (public, private) and socioeconomic status (low, medium, high)
- No implicit stratification
- Sampled all classrooms
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Buenos Aires, Argentina, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4 - Private - Low Mean SES	8	0	7	0	0	1	0
Grade 4 - Private - Medium Mean SES	8	0	4	1	0	3	0
Grade 4 - Private - High Mean SES	8	0	7	1	0	0	0
Grade 4 - Public - Low Mean SES	28	0	22	2	1	3	0
Grade 4 - Public - Medium Mean SES	28	0	22	2	0	4	0
Grade 4 - Public - High Mean SES	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Private - Low Mean SES	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Private - Medium Mean SES	20	0	16	2	0	2	0
Grade 4 & Grade 8 - Private - High Mean SES	18	0	17	0	0	1	0
Grade 4 & Grade 8 - Public - All Mean SESs	8	0	8	0	0	0	0
Total	**150**	**0**	**127**	**8**	**1**	**14**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of special needs schools and federal government schools
- No within-school exclusions

Sample Design

- Explicit stratification by 'Grade 8' / 'Grade 4 and Grade 8' schools (2), school type (public, private), and socioeconomic status (low, medium, high)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 280)
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Buenos Aires, Argentina, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8 - Private - Low Mean SES	8	0	7	1	0	0	0
Grade 8 - Private - Medium Mean SES	8	0	7	0	0	1	0
Grade 8 - Private - High Mean SES	8	0	8	0	0	0	0
Grade 8 - Public - Low Mean SES	26	0	19	1	0	6	0
Grade 8 - Public - Medium Mean SES	26	0	19	2	0	5	0
Grade 8 - Public - High Mean SES	16	0	12	1	0	3	0
Grade 4 & Grade 8 - Private - Low Mean SES	12	0	11	0	0	1	0
Grade 4 & Grade 8 - Private - Medium Mean SES	20	0	17	1	0	2	0
Grade 4 & Grade 8 - Private - High Mean SES	18	0	16	0	0	2	0
Grade 4 & Grade 8 - Public - All Mean SESs	8	0	6	0	0	2	0
Total	**150**	**0**	**122**	**6**	**0**	**22**	**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 First Nations 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, language (French, English), and school type (public, Catholic, private)
- Implicit stratification by regional office (Thunder Bay/Sudbury/London, Barrie/Ottawa, Toronto and Area)
- Sampled two classrooms per school
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Ontario, Canada, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4 - Private	8	0	3	0	0	5	0
Grade 4 - English - Catholic	8	0	8	0	0	0	0
Grade 4 - English - Public	40	0	39	0	0	1	0
Grade 4 - French - Catholic & Public	8	0	8	0	0	0	0
Grade 4 & Grade 8 - English - Catholic	36	1	35	0	0	0	0
Grade 4 & Grade 8 - English - Public	59	0	58	0	0	1	1
Total	**159**	**1**	**151**	**0**	**0**	**7**	**1**

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 First Nations 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, language (French, English), and school type (public, Catholic, private)
- Implicit stratification by regional office (Thunder Bay/Sudbury/London, Barrie/Ottawa, Toronto and Area)
- Sampled two classrooms in large schools (measure of size > 50)
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap

Allocation of School Sample in Ontario, Canada, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8 - Private	8	0	0	2	1	5	0
Grade 8 - English - Catholic	8	1	7	0	0	0	0
Grade 8 - English - Public	32	0	30	0	0	2	0
Grade 8 - French - Catholic & Public	8	0	7	0	0	1	0
Grade 4 & Grade 8 - English - Catholic	36	1	34	0	0	1	0
Grade 4 & Grade 8 - English - Public	59	2	57	0	0	0	1
Total	**151**	**4**	**135**	**2**	**1**	**9**	**1**

Quebec, Canada

Fourth 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, federal 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 school type (private, public) and language (English, French)
- Implicit stratification by Mathematics average score (3)
- Sampled two classrooms in large schools (measure of size > 80)
- Grade 4 and Grade 8 school samples were selected separately

Allocation of School Sample in Quebec, Canada, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Private - English	8	0	8	0	0	0	0
Private - French	8	0	8	0	0	0	0
Public - English	40	0	38	1	0	1	2
Public - French	118	0	47	16	3	52	0
Total	**174**	**0**	**101**	**17**	**3**	**53**	**2**

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, federal 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 school type (private, public) and language (English, French)
- Implicit stratification by Mathematics average score (3)
- Sampled two classrooms in large schools (measure of size > 450)
- Grade 4 and Grade 8 school samples were selected separately

Allocation of School Sample in Quebec, Canada, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Private - English	12	0	11	0	0	1	0
Private - French	26	1	25	0	0	0	0
Public - English	38	0	36	1	0	1	0
Public - French	100	1	30	19	0	50	0
Total	**176**	**2**	**102**	**20**	**0**	**52**	**0**

Norway (4 and 8)

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 4), language other than Bokmal and Nynorsk, international schools, 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 'Grade 5' / 'Grade 5 and Grade 9' / 'Grade 4 only' schools, language (Bokmål, Nynorsk), and municipality size (small, medium, large)
- No implicit stratification
- Grade 4 school sample corresponds to the Grade 5 school sample, with an additional sample selected from the Grade 4 only schools stratum
- Grade 4 and Grade 8 school samples were selected simultaneously with minimum overlap

Allocation of School Sample in Norway (4 and 8), Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 5 - Bokmål - Small Municipalities	8	0	8	0	0	0	0
Grade 5 - Bokmål - Medium Municipalities	28	0	26	0	0	2	0
Grade 5 - Bokmål - Large Municipalities	66	1	63	0	0	2	0
Grade 5 - Nynorsk	14	1	12	0	0	1	0
Grade 5 & Grade 9 - Bokmål - Small Municipalities	8	0	8	0	0	0	0
Grade 5 & Grade 9 - Bokmål - Medium Municipalities	8	1	6	0	0	1	0
Grade 5 & Grade 9 - Bokmål - Large Municipalities	10	0	8	0	0	2	0
Grade 5 & Grade 9 - Nynorsk	8	1	6	0	0	1	0
Grade 4	2	0	2	0	0	0	0
Total	**152**	**4**	**139**	**0**	**0**	**9**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 6), Sami language schools, international schools, remote schools, and Grade 8 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 9' / 'Grade 5 and Grade 9' schools, language (Bokmål, Nynorsk), and municipality size (small, medium, large)
- No implicit stratification
- Sampled two classrooms in large schools (measure of size > 90)
- Grade 8 school sample corresponds to the Grade 9 school sample. Grade 8 only schools were scarce and as a result were excluded prior to school sampling.
- Grade 4 and Grade 8 school samples were selected simultaneously with minimum overlap

Allocation of School Sample in Norway (4 and 8), Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 9 - Bokmål - Small Municipalities	8	0	7	0	0	1	0
Grade 9 - Bokmål - Medium Municipalities	26	0	26	0	0	0	0
Grade 9 - Bokmål - Large Municipalities	64	0	61	0	0	3	0
Grade 9 - Nynorsk	12	0	10	0	0	2	0
Grade 5 & Grade 9 - Bokmål - Small Municipalities	8	0	8	0	0	0	0
Grade 5 & Grade 9 - Bokmål - Medium Municipalities	8	0	6	0	0	2	0
Grade 5 & Grade 9 - Bokmål - Large Municipalities	16	0	16	0	0	0	0
Grade 5 & Grade 9 - Nynorsk	8	0	8	0	0	0	0
Total	**150**	**0**	**142**	**0**	**0**	**8**	**0**

Abu Dhabi, United Arab Emirates

Fourth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 15), and language of instruction other than Arabic and English
- 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 (Abu Dhabi, Al Ain, Western region), school type (public, private), and performance level (low, medium, high) within 'Grade 4' schools, and curriculum (Ministry of Education, UK/US/CAD, other) within 'Grade 4 and Grade 8' schools.
- No implicit stratification
- Sampled two classrooms in Western region and in Grade 4 schools
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- All schools were sampled in Western region
- In census strata (Western region), classes or half classes were used to build jackknife replicates for variance estimation. Two classrooms selected within these schools.

Allocation of School Sample in Abu Dhabi, United Arab Emirates, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4 - Abu Dhabi - Public - Low Performance	10	0	10	0	0	0	0
Grade 4 - Abu Dhabi - Public - Medium Performance	10	0	10	0	0	0	0
Grade 4 - Abu Dhabi - Public - High Performance	10	0	10	0	0	0	0
Grade 4 - Abu Dhabi - Private	10	1	9	0	0	0	0
Grade 4 - Al Ain - Public - Low Performance	12	0	12	0	0	0	0
Grade 4 - Al Ain - Public - High Performance	10	1	9	0	0	0	0
Grade 4 - Western Region	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - Ministry of Education	14	1	13	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - UK/US/CAD	22	2	20	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - Other	22	5	17	0	0	0	0
Grade 4 & Grade 8 - Al Ain - UK/US/CAD	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Al Ain - Other	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Western Region	15	0	15	0	0	0	0
Total	**173**	**10**	**163**	**0**	**0**	**0**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 100 percent
- School-level exclusions consisted of very small schools (measure of size < 15) and language of instruction other than Arabic and English
- Within-school exclusions consisted of students with intellectual disabilities and students with functional disabilities

Sample Design

- Explicit stratification by 'Grade 8' / 'Grade 4 and Grade 8' schools, region (Abu Dhabi, Al Ain, Western region), school type (public, private), and performance level (low, medium, high)
- No implicit stratification
- Sampled two classrooms in Western region and in Grade 8 schools
- Grade 4 and grade 8 school samples were selected simultaneously with maximum overlap
- All schools were sampled in Western region
- In census strata (Western region) classes or half classes were used to build jackknife replicates for variance estimation. Two classrooms selected within these schools.

Allocation of School Sample in Abu Dhabi, United Arab Emirates, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8 - Abu Dhabi - Public - Low Performance	15	0	15	0	0	0	0
Grade 8 - Abu Dhabi - Public - High Performance	16	0	16	0	0	0	0
Grade 8 - Al Ain - Public - Low Performance	10	0	10	0	0	0	0
Grade 8 - Al Ain - Public - High Performance	15	1	14	0	0	0	0
Grade 8 - Western Region	10	0	10	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - Ministry of Education	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - UK/US/CAD	22	2	20	0	0	0	0
Grade 4 & Grade 8 - Abu Dhabi - Other	22	5	17	0	0	0	0
Grade 4 & Grade 8 - Al Ain - UK/US/CAD	12	0	12	0	0	0	0
Grade 4 & Grade 8 - Al Ain - Other	14	0	14	0	0	0	0
Grade 4 & Grade 8 - Western Region	15	1	14	0	0	0	0
Total	**165**	**9**	**156**	**0**	**0**	**0**	**0**

Dubai, United Arab Emirates

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)
- Implicit stratification by language of test (Arabic, English, French)
- Sampled two classrooms per school
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- Census of all schools
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates. Some schools are paired together within explicit stratum when there is only one class participating.

Allocation of School Sample in Dubai, United Arab Emirates, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 4 - Private	37	0	37	0	0	0	0
Grade 4 - Public	25	0	25	0	0	0	0
Grade 4 & Grade 8 - Private	105	2	103	0	0	0	0
Grade 4 & Grade 8 - Public	3	0	3	0	0	0	0
Total	**170**	**2**	**168**	**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 'Grade 8' / 'Grade 4 and Grade 8' schools and school type (public, private)
- Implicit stratification by language of test (Arabic, English, French)
- Sampled two classrooms per school
- Grade 4 and Grade 8 school samples were selected simultaneously with maximum overlap
- Census of all schools
- Schools or classes were used as variance estimation strata and classes or half classes were used to build jackknife replicates. Some schools are paired together within explicit stratum when there is only one class participating

Allocation of School Sample in Dubai, United Arab Emirates, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
Grade 8 - Private	7	1	6	0	0	0	0
Grade 8 - Public	22	0	22	0	0	0	0
Grade 4 & Grade 8 - Private	105	1	104	0	0	0	0
Grade 4 & Grade 8 - Public	3	0	3	0	0	0	0
Total	**137**	**2**	**135**	**0**	**0**	**0**	**0**

Florida, United States

Fourth Grade

Coverage and Exclusions

- Coverage is 89.8 percent. Coverage in USA Florida is restricted to students from public schools.
- 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)
- Implicit stratification by location (city, suburb, town, rural) and ethnicity status (above 15% non-White students in a school, below 15% non-White students in a school)
- Sampled one classroom per school
- TIMSS sample was selected using the Chowdhury method to minimize overlap with the TIMSS USA sample and the Alpha and the Beta NAEP samples
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in Florida, United States, Fourth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
High poverty	37	1	36	0	0	0	0
Low poverty	17	0	17	0	0	0	0
Total	**54**	**1**	**53**	**0**	**0**	**0**	**0**

Eighth Grade

Coverage and Exclusions

- Coverage is 90.1 percent. Coverage in USA Florida is restricted to students from public schools.
- 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)
- Implicit stratification by location (city, suburb, town, rural) and ethnicity status (above 15% non-White students in a school, below 15% non-White students in a school)
- Sampled one classroom per school
- TIMSS sample was selected using the Chowdhury method to minimize overlap with the TIMSS USA sample, the Alpha and the Beta NAEP samples.
- No overlap between Grade 4 and Grade 8 school samples

Allocation of School Sample in Florida, United States, Eighth Grade

			Participating Schools				
Explicit Strata	Total Sampled Schools	Ineligible Schools	Original Schools	1st Replacements	2nd Replacements	Refusal Schools	Excluded Schools
High poverty	36	0	35	0	0	1	0
Low poverty	18	0	18	0	0	0	0
Total	**54**	**0**	**53**	**0**	**0**	**1**	**0**