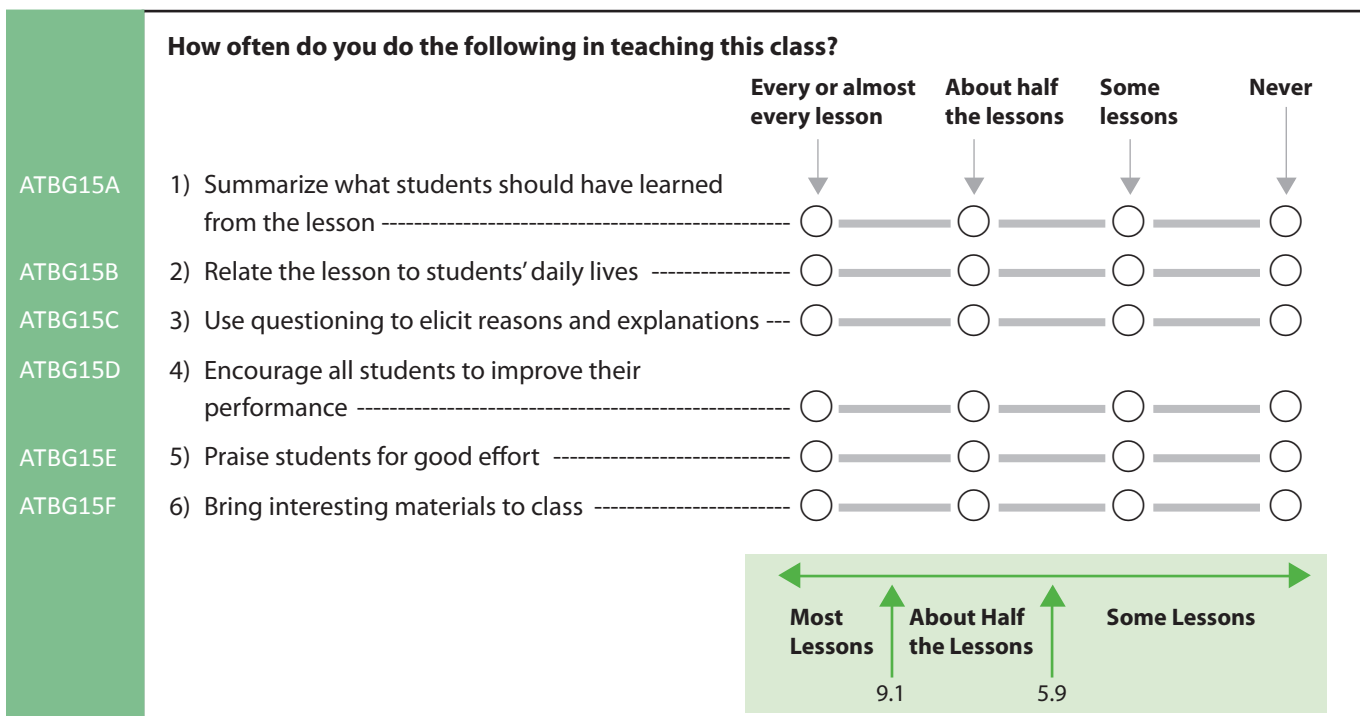


## PIRLS 2011

# The PIRLS 2011 Instruction to Engage Students in Learning Scale

The Instruction to Engage Students in Learning (IES) scale was created based on teachers' responses to how often they used each of six instructional practices described below. See [Creating and Interpreting TIMSS and PIRLS 2011 Context Questionnaire Scales](#) for more information on how the scales were formed.

**Exhibit 1: Items in the PIRLS 2011 Instruction to Engage Students in Learning Scale**



**Exhibit 2: Item Parameters for the PIRLS 2011 Instruction to Engage Students in Learning Scale<sup>1</sup>**

Item	delta	tau_1	tau_2
ATBG15A	-1.34706	-0.04317	0.04317
ATBG15B	-1.04660	-0.36467	0.36467
ATBG15C	-2.17027	-0.24338	0.24338
ATBG15D	-2.29190	-0.02936	0.02936
ATBG15E	-2.52834	-0.04346	0.04346
ATBG15F	-0.01389	-0.73155	0.73155

<sup>1</sup> For the purpose of scaling, the categories "Some lessons" and "Never" were combined because there were very few respondents in each of these categories.

### Exhibit 3: Scale Transformation Constants

#### Scale Transformation Constants

$$A = 10.12167$$

$$B = 1.64083$$

$$\text{Transformed Scale Score} = 10.12167 + 1.64083 \cdot \text{Logit Scale Score}$$

### Exhibit 4: Equivalence Table of the Raw Score and the Transformed Scale Score

Raw Score	Transformed Scale Score	Cutpoint	Raw Score	Transformed Scale Score	Cutpoint
0	2.72507		7	7.90467	
1	4.36984		8	8.47269	
2	5.19701		9	9.12423	9.1
3	5.81933	5.9	10	9.93700	
4	6.36186		11	11.08700	
5	6.86826		12	13.26717	
6	7.38078				

### Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2011 Instruction to Engage Students in Learning Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item					
			ATBG15A	ATBG15B	ATBG15C	ATBG15D	ATBG15E	ATBG15F
Australia	0.61	36	0.63	0.67	0.71	0.56	0.45	0.55
Austria	0.70	41	0.66	0.70	0.73	0.67	0.52	0.51
Azerbaijan	0.37	24	0.58	0.39	0.42	0.46	0.50	0.57
Belgium (French)	0.60	34	0.44	0.67	0.62	0.59	0.48	0.64
Bulgaria	0.56	34	0.36	0.44	0.34	0.82	0.73	0.64
Canada	0.58	33	0.56	0.64	0.52	0.52	0.57	0.62
Chinese Taipei	0.81	52	0.62	0.73	0.72	0.79	0.76	0.70
Colombia	0.47	29	0.41	0.59	0.61	0.34	0.63	0.56
Croatia	0.54	32	0.40	0.67	0.61	0.57	0.58	0.55
Czech Republic	0.55	32	0.50	0.59	0.64	0.44	0.57	0.61
Denmark	0.67	38	0.62	0.70	0.66	0.61	0.60	0.49
England	0.62	42	0.67	0.50	0.77	0.68	0.72	0.51
Finland	0.66	38	0.48	0.70	0.65	0.67	0.74	0.41
France	0.57	33	0.41	0.62	0.52	0.69	0.64	0.52
Georgia	0.56	33	0.28	0.43	0.52	0.81	0.61	0.65
Germany	0.61	34	0.50	0.62	0.49	0.60	0.64	0.64
Hong Kong SAR	0.71	42	0.57	0.54	0.63	0.77	0.76	0.59
Hungary	0.57	34	0.56	0.60	0.67	0.41	0.55	0.65
Indonesia	0.62	36	0.68	0.57	0.76	0.23	0.58	0.65
Iran, Islamic Rep. of	0.60	34	0.49	0.65	0.61	0.59	0.52	0.64
Ireland	0.51	30	0.58	0.54	0.56	0.49	0.48	0.63
Israel	0.48	29	0.42	0.76	0.59	-0.05	-0.01	0.81

**Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2011 Instruction to Engage Students in Learning Scale (Continued)**

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item					
			ATBG15A	ATBG15B	ATBG15C	ATBG15D	ATBG15E	ATBG15F
Italy	0.53	33	0.54	0.36	0.31	0.75	0.82	0.48
Lithuania	0.49	29	0.47	0.58	0.71	0.24	0.48	0.63
Malta	0.44	28	0.60	0.48	0.65	0.40	0.53	0.51
Morocco	0.57	34	0.52	0.61	0.72	0.53	0.53	0.57
Netherlands	0.59	35	0.57	0.58	0.59	0.65	0.66	0.48
New Zealand	0.54	31	0.65	0.66	0.53	0.44	0.38	0.61
Northern Ireland	0.53	32	0.59	0.63	0.40	0.56	0.59	0.58
Norway	0.63	36	0.57	0.54	0.64	0.68	0.58	0.58
Oman	0.34	24	0.40	0.32	0.36	0.67	0.48	0.62
Poland	0.48	30	0.35	0.56	0.55	0.66	0.61	0.52
Portugal	0.60	36	0.60	0.63	0.75	0.56	0.52	0.53
Qatar	0.56	34	0.36	0.68	0.49	0.71	0.62	0.58
Romania	0.50	32	0.44	0.65	0.48	0.67	0.63	0.49
Russian Federation	0.61	36	0.42	0.74	0.66	0.53	0.56	0.62
Saudi Arabia	0.49	30	0.53	0.47	0.67	0.59	0.37	0.59
Singapore	0.77	47	0.67	0.67	0.63	0.69	0.74	0.71
Slovak Republic	0.58	34	0.37	0.55	0.73	0.63	0.49	0.65
Slovenia	0.56	33	0.41	0.52	0.71	0.57	0.61	0.59
Spain	0.55	32	0.34	0.57	0.63	0.50	0.71	0.59
Sweden	0.66	38	0.64	0.63	0.66	0.57	0.52	0.64
Trinidad and Tobago	0.59	38	0.67	0.48	0.60	0.74	0.68	0.49
United Arab Emirates	0.52	32	0.48	0.62	0.53	0.67	0.59	0.50
United States	0.60	37	0.69	0.73	0.56	0.53	0.60	0.49
<b>Sixth Grade Participants</b>								
Botswana	0.49	29	0.54	0.67	0.67	0.24	0.19	0.66
Honduras	0.57	32	0.62	0.64	0.70	0.31	0.41	0.63
Kuwait	0.43	30	0.13	0.60	0.69	0.55	0.50	0.62
Morocco	0.61	37	0.53	0.66	0.58	0.69	0.61	0.55
<b>Benchmarking Participants</b>								
Alberta, Canada	0.47	28	0.50	0.66	0.45	0.47	0.47	0.58
Ontario, Canada	0.59	34	0.65	0.66	0.64	0.26	0.55	0.62
Quebec, Canada	0.56	33	0.43	0.53	0.49	0.62	0.69	0.63
Maltese - Malta	0.39	28	0.39	0.29	0.53	0.75	0.74	0.24
Eng/Afr (5) - RSA <sup>o</sup>	0.40	25	0.69	0.69	0.48	0.09	0.27	0.51
Andalusia, Spain	0.53	32	0.49	0.62	0.61	0.41	0.73	0.50
Abu Dhabi, UAE	0.48	33	0.50	0.60	0.10	0.73	0.79	0.46
Dubai, UAE	0.51	31	0.46	0.67	0.57	0.60	0.35	0.60
Florida, US	0.52	33	0.68	0.51	0.70	0.54	0.43	0.56

**Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2011 Instruction to Engage Students in Learning Scale (Continued)**

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item					
			ATBG15A	ATBG15B	ATBG15C	ATBG15D	ATBG15E	ATBG15F
prePIRLS Participants								
Botswana	0.46	27	0.61	0.67	0.51	0.17	0.39	0.62
Colombia	0.47	29	0.41	0.59	0.61	0.34	0.63	0.56
South Africa	0.59	34	0.62	0.68	0.66	0.49	0.41	0.57

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

**Exhibit 6: Relationship Between the PIRLS 2011 Instruction to Engage Students in Learning Scale and PIRLS 2011 Achievement**

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale ( $\eta^2$ )
	(r)	(r <sup>2</sup> )	
Australia	0.07	0.00	0.00
Austria	-0.03	0.00	0.00
Azerbaijan	0.09	0.01	0.01
Belgium (French)	0.04	0.00	0.00
Bulgaria	0.05	0.00	0.00
Canada	0.02	0.00	0.00
Chinese Taipei	0.00	0.00	0.00
Colombia	0.10	0.01	0.01
Croatia	0.02	0.00	0.00
Czech Republic	0.04	0.00	0.00
Denmark	0.03	0.00	0.00
England	0.00	0.00	0.00
Finland	0.02	0.00	0.00
France	0.06	0.00	0.00
Georgia	0.03	0.00	0.00
Germany	-0.06	0.00	0.01
Hong Kong SAR	-0.02	0.00	0.00
Hungary	-0.02	0.00	0.00
Indonesia	0.09	0.01	0.01
Iran, Islamic Rep. of	0.13	0.02	0.01
Ireland	-0.03	0.00	0.00
Israel	-0.07	0.01	0.00
Italy	-0.09	0.01	0.01
Lithuania	0.02	0.00	0.00
Malta	-0.02	0.00	0.00
Morocco	0.11	0.01	0.01
Netherlands	-0.01	0.00	0.00
New Zealand	0.06	0.00	0.00

**Exhibit 6: Relationship Between the PIRLS 2011 Instruction to Engage Students in Learning Scale and PIRLS 2011 Achievement (Continued)**

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale ( $\eta^2$ )
	(r)	(r <sup>2</sup> )	
Northern Ireland	-0.01	0.00	0.00
Norway	0.08	0.01	0.00
Oman	0.05	0.00	0.00
Poland	-0.01	0.00	0.00
Portugal	-0.01	0.00	0.00
Qatar	0.05	0.00	0.00
Romania	-0.01	0.00	0.00
Russian Federation	0.05	0.00	0.00
Saudi Arabia	0.16	0.02	0.01
Singapore	0.01	0.00	0.00
Slovak Republic	0.01	0.00	0.00
Slovenia	-0.02	0.00	0.00
Spain	0.02	0.00	0.00
Sweden	-0.02	0.00	0.00
Trinidad and Tobago	0.05	0.00	0.01
United Arab Emirates	0.07	0.01	0.00
United States	0.01	0.00	0.00
<b>International Median</b>	<b>0.02</b>	<b>0.00</b>	<b>0.00</b>
<b>Sixth Grade Participants</b>			
Botswana	0.12	0.01	0.00
Honduras	0.05	0.00	0.02
Kuwait	0.03	0.00	0.00
Morocco	0.01	0.00	0.00
<b>Benchmarking Participants</b>			
Alberta, Canada	0.01	0.00	0.00
Ontario, Canada	0.02	0.00	0.00
Quebec, Canada	0.03	0.00	0.00
Maltese - Malta	-0.01	0.00	0.00
Eng/Afr (5) - RSA <sup>◇</sup>	-0.16	0.03	0.00
Andalusia, Spain	0.07	0.00	0.00
Abu Dhabi, UAE	0.01	0.00	0.00
Dubai, UAE	0.19	0.04	0.02
Florida, US	-0.12	0.01	0.01
<b>prePIRLS Participants</b>			
Botswana	0.06	0.00	0.00
Colombia	0.12	0.01	0.02
South Africa	-0.06	0.00	0.00

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