

TIMSS 2011

The TIMSS 2011 Collaborate to Improve Teaching Scale, Eighth Grade

The Collaborate to Improve Teaching (CIT) scale was created based on teachers' responses to the five statements 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 TIMSS 2011 Collaborate to Improve Teaching Scale, Eighth Grade

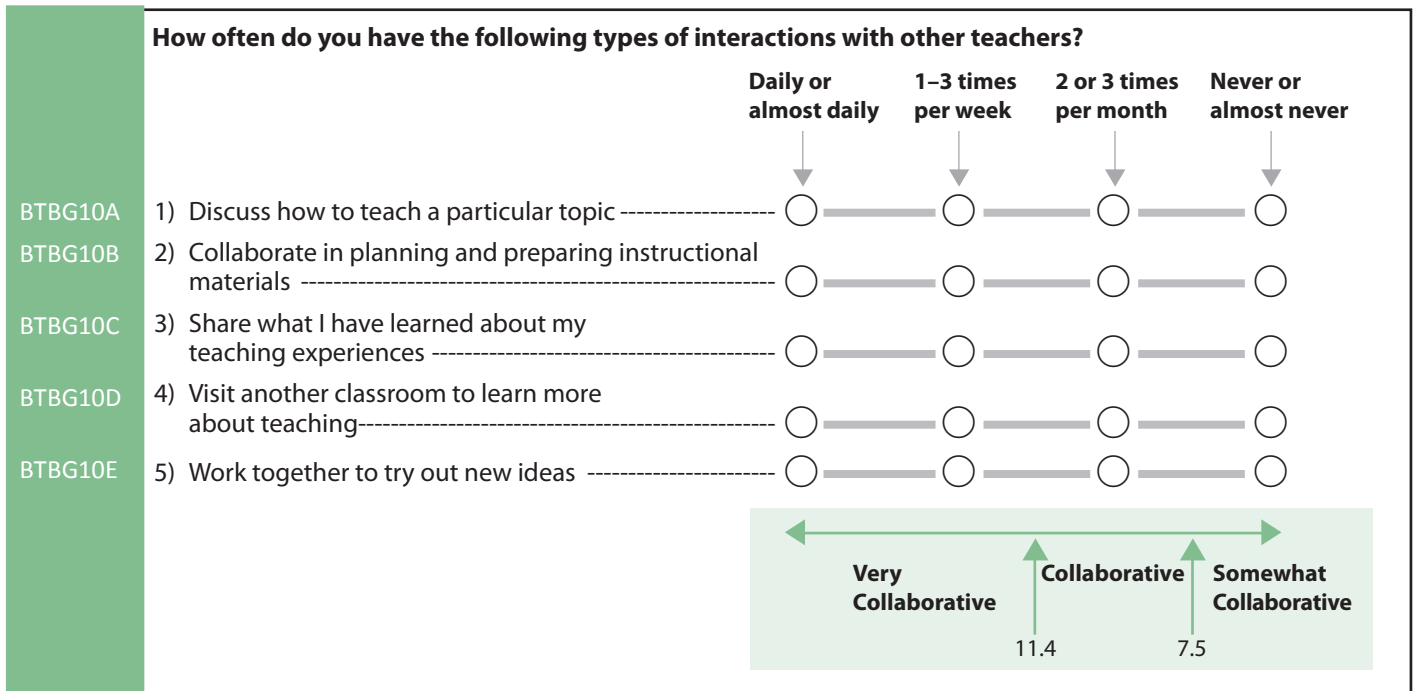


Exhibit 2: Item Parameters for the TIMSS 2011 Collaborate to Improve Teaching Scale, Eighth Grade

Item	delta	tau_1	tau_2	tau_3
BTBG10A	-0.00723	-2.44233	0.52737	1.91496
BTBG10B	0.60882	-2.32502	0.51485	1.81017
BTBG10C	-0.17134	-2.47286	0.71921	1.75365
BTBG10D	2.10603	-1.98002	0.67431	1.30571
BTBG10E	0.91082	-2.32374	0.90748	1.41626

Exhibit 3: Scale Transformation Constants

Scale Transformation Constants

$$A = 10.02119$$

$$B = 1.17664$$

$$\text{Transformed Scale Score} = 10.02119 + 1.17664 \cdot \text{Logit Scale Score}$$

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	4.84968		8	11.40808	11.4
1	6.47169		9	11.84344	
2	7.46763	7.5	10	12.26863	
3	8.32708		11	12.70830	
4	9.13334		12	13.18514	
5	9.84425		13	13.73469	
6	10.43796		14	14.44864	
7	10.94807		15	15.77465	

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Collaborate to Improve Teaching Scale, Eighth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item				
			BTBG10A	BTBG10B	BTBG10C	BTBG10D	BTBG10E
Armenia	0.71	47	0.69	0.72	0.69	0.62	0.70
Australia	0.83	59	0.81	0.85	0.81	0.55	0.80
Bahrain	0.75	50	0.80	0.76	0.77	0.42	0.72
Chile	0.85	62	0.83	0.84	0.84	0.57	0.82
Chinese Taipei	0.83	61	0.82	0.83	0.74	0.64	0.84
England	0.82	59	0.82	0.81	0.80	0.62	0.77
Finland	0.81	57	0.82	0.82	0.80	0.46	0.80
Georgia	0.75	50	0.74	0.78	0.77	0.52	0.71
Ghana	0.83	59	0.79	0.76	0.75	0.72	0.81
Hong Kong SAR	0.82	58	0.80	0.80	0.80	0.62	0.78
Hungary	0.75	51	0.79	0.80	0.72	0.47	0.75
Indonesia	0.72	48	0.71	0.73	0.76	0.54	0.69
Iran, Islamic Rep. of	0.76	51	0.74	0.78	0.72	0.49	0.79
Israel	0.81	59	0.82	0.86	0.84	0.34	0.83
Italy	0.80	57	0.76	0.81	0.83	0.59	0.75
Japan	0.81	57	0.77	0.82	0.81	0.55	0.79
Jordan	0.77	52	0.73	0.74	0.75	0.62	0.76
Kazakhstan	0.75	51	0.71	0.78	0.72	0.61	0.72
Korea, Rep. of	0.85	63	0.86	0.85	0.86	0.51	0.84
Lebanon	0.76	52	0.81	0.77	0.79	0.33	0.78
Lithuania	0.80	56	0.78	0.82	0.71	0.70	0.72
Macedonia, Rep. of	0.75	50	0.77	0.77	0.73	0.57	0.68

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Collaborate to Improve Teaching Scale, Eighth Grade (Continued)

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item				
			BTBG10A	BTBG10B	BTBG10C	BTBG10D	BTBG10E
Malaysia	0.81	58	0.81	0.83	0.81	0.50	0.80
Morocco	0.80	56	0.79	0.80	0.82	0.52	0.77
New Zealand	0.83	59	0.80	0.84	0.80	0.60	0.79
Norway	0.81	57	0.85	0.82	0.77	0.50	0.79
Oman	0.76	51	0.75	0.77	0.76	0.52	0.74
Palestinian Nat'l Auth.	0.76	51	0.76	0.80	0.78	0.43	0.75
Qatar	0.84	60	0.82	0.78	0.78	0.72	0.78
Romania	0.79	54	0.78	0.83	0.74	0.57	0.73
Russian Federation	0.74	50	0.70	0.76	0.74	0.57	0.72
Saudi Arabia	0.78	54	0.76	0.83	0.77	0.47	0.78
Singapore	0.82	59	0.82	0.83	0.80	0.57	0.78
Slovenia	0.79	55	0.83	0.79	0.71	0.62	0.75
Sweden	0.85	63	0.86	0.87	0.82	0.52	0.83
Syrian Arab Republic	0.72	47	0.66	0.72	0.74	0.60	0.71
Thailand	0.86	64	0.78	0.81	0.84	0.76	0.79
Tunisia	0.80	55	0.82	0.85	0.80	0.34	0.79
Turkey	0.82	58	0.84	0.85	0.79	0.45	0.80
Ukraine	0.68	45	0.71	0.77	0.63	0.55	0.67
United Arab Emirates	0.78	54	0.78	0.79	0.78	0.49	0.78
United States	0.86	65	0.87	0.88	0.84	0.51	0.85
Sixth Grade Participants							
Botswana	0.84	61	0.81	0.82	0.78	0.66	0.81
Honduras	0.82	58	0.77	0.78	0.81	0.63	0.79
South Africa	0.83	59	0.79	0.82	0.80	0.60	0.82
Benchmarking Participants							
Alberta, Canada	0.86	65	0.85	0.88	0.81	0.60	0.85
Ontario, Canada	0.90	71	0.85	0.88	0.86	0.72	0.88
Quebec, Canada	0.78	54	0.81	0.84	0.72	0.41	0.80
Abu Dhabi, UAE	0.76	51	0.77	0.79	0.75	0.39	0.79
Dubai, UAE	0.82	58	0.77	0.82	0.82	0.60	0.78
Alabama, US	0.86	64	0.87	0.90	0.81	0.50	0.84
California, US	0.84	62	0.86	0.88	0.86	0.46	0.78
Colorado, US	0.87	67	0.90	0.93	0.83	0.47	0.87
Connecticut, US	0.88	68	0.88	0.90	0.86	0.62	0.83
Florida, US	0.86	65	0.86	0.88	0.83	0.48	0.90
Indiana, US	0.85	63	0.87	0.87	0.87	0.38	0.85
Massachusetts, US	0.80	56	0.85	0.83	0.71	0.45	0.82
Minnesota, US	0.86	64	0.88	0.90	0.85	0.39	0.86
North Carolina, US	0.85	63	0.87	0.90	0.81	0.50	0.82

Exhibit 6: Relationship Between the TIMSS 2011 Collaborate to Improve Teaching Scale, Eighth Grade, and TIMSS 2011 Achievement

Country	Pearson's Correlation with Achievement				Variance in Achievement Accounted for by Difference Between Regions of the Scale (η^2)	
	(r)		(r ²)		Mathematics	Science
	Mathematics	Science	Mathematics	Science		
Armenia	0.04	0.02	0.00	0.00	0.00	0.00
Australia	0.04	-0.03	0.00	0.00	0.01	0.00
Bahrain	-0.02	0.05	0.00	0.00	0.00	0.00
Chile	0.06	0.07	0.00	0.00	0.00	0.00
Chinese Taipei	0.07	0.01	0.00	0.00	0.00	0.00
England	-0.05	-0.07	0.00	0.01	0.00	0.01
Finland	0.00	0.02	0.00	0.00	0.00	0.00
Georgia	0.03	-0.02	0.00	0.00	0.00	0.00
Ghana	-0.06	-0.02	0.00	0.00	0.01	0.01
Hong Kong SAR	-0.10	0.01	0.01	0.00	0.01	0.01
Hungary	-0.02	-0.10	0.00	0.01	0.00	0.01
Indonesia	-0.03	-0.07	0.00	0.00	0.00	0.00
Iran, Islamic Rep. of	0.05	0.06	0.00	0.00	0.00	0.01
Israel	0.11	-0.04	0.01	0.00	0.01	0.00
Italy	0.05	0.05	0.00	0.00	0.00	0.00
Japan	0.03	-0.01	0.00	0.00	0.00	0.00
Jordan	0.05	0.09	0.00	0.01	0.01	0.01
Kazakhstan	-0.03	-0.17	0.00	0.03	0.00	0.02
Korea, Rep. of	-0.03	0.03	0.00	0.00	0.00	0.00
Lebanon	0.09	0.11	0.01	0.01	0.01	0.01
Lithuania	0.02	0.00	0.00	0.00	0.00	0.00
Macedonia, Rep. of	-0.05	-0.04	0.00	0.00	0.00	0.00
Malaysia	-0.03	0.01	0.00	0.00	0.01	0.01
Morocco	0.08	0.03	0.01	0.00	0.00	0.00
New Zealand	-0.08	0.07	0.01	0.00	0.03	0.01
Norway	0.04	0.04	0.00	0.00	0.00	0.00
Oman	0.09	0.09	0.01	0.01	0.01	0.01
Palestinian Nat'l Auth.	-0.07	-0.03	0.00	0.00	0.00	0.00
Qatar	-0.17	-0.11	0.03	0.01	0.03	0.02
Romania	0.06	0.01	0.00	0.00	0.01	0.00
Russian Federation	0.04	0.00	0.00	0.00	0.00	0.00
Saudi Arabia	0.06	0.07	0.00	0.00	0.01	0.00
Singapore	0.01	0.01	0.00	0.00	0.00	0.01
Slovenia	-0.01	-0.02	0.00	0.00	0.00	0.00
Sweden	0.02	-0.01	0.00	0.00	0.00	0.00
Syrian Arab Republic	0.02	-0.07	0.00	0.00	0.01	0.00
Thailand	0.00	0.06	0.00	0.00	0.00	0.01

Exhibit 6: Relationship Between the TIMSS 2011 Collaborate to Improve Teaching Scale, Eighth Grade, and TIMSS 2011 Achievement (Continued)

Country	Pearson's Correlation with Achievement				Variance in Achievement Accounted for by Difference Between Regions of the Scale (η^2)	
	(r)		(r ²)		Mathematics	Science
	Mathematics	Science	Mathematics	Science		
Tunisia	-0.01	-0.01	0.00	0.00	0.00	0.00
Turkey	0.11	-0.03	0.01	0.00	0.01	0.00
Ukraine	0.00	0.01	0.00	0.00	0.00	0.00
United Arab Emirates	-0.03	-0.02	0.00	0.00	0.00	0.00
United States	-0.04	0.05	0.00	0.00	0.00	0.00
International Median	0.01	0.01	0.00	0.00	0.00	0.00
Ninth Grade Participants						
Botswana	-0.06	0.03	0.00	0.00	0.00	0.00
Honduras	0.06	0.02	0.00	0.00	0.02	0.01
South Africa	0.02	-0.04	0.00	0.00	0.00	0.00
Benchmarking Participants						
Alberta, Canada	0.01	0.00	0.00	0.00	0.00	0.00
Ontario, Canada	0.02	0.01	0.00	0.00	0.00	0.00
Quebec, Canada	-0.01	0.03	0.00	0.00	0.00	0.00
Abu Dhabi, UAE	0.01	-0.06	0.00	0.00	0.00	0.01
Dubai, UAE	-0.02	-0.06	0.00	0.00	0.00	0.00
Alabama, US	0.09	0.05	0.01	0.00	0.01	0.00
California, US	-0.09	0.03	0.01	0.00	0.04	0.04
Colorado, US	-0.01	-0.07	0.00	0.00	0.00	0.01
Connecticut, US	-0.03	0.16	0.00	0.03	0.00	0.05
Florida, US	-0.05	-0.17	0.00	0.03	0.05	0.05
Indiana, US	-0.02	-0.06	0.00	0.00	0.01	0.01
Massachusetts, US	0.04	0.01	0.00	0.00	0.01	0.00
Minnesota, US	-0.05	0.02	0.00	0.00	0.02	0.02
North Carolina, US	-0.18	0.12	0.03	0.02	0.03	0.03