TIMSS 2011

The TIMSS 2011 Students Bullied at School Scale, Eighth Grade

The Students Bullied at School (SBS) scale was created based on students' responses to the six 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 Students Bullied at School Scale, Eighth Grade

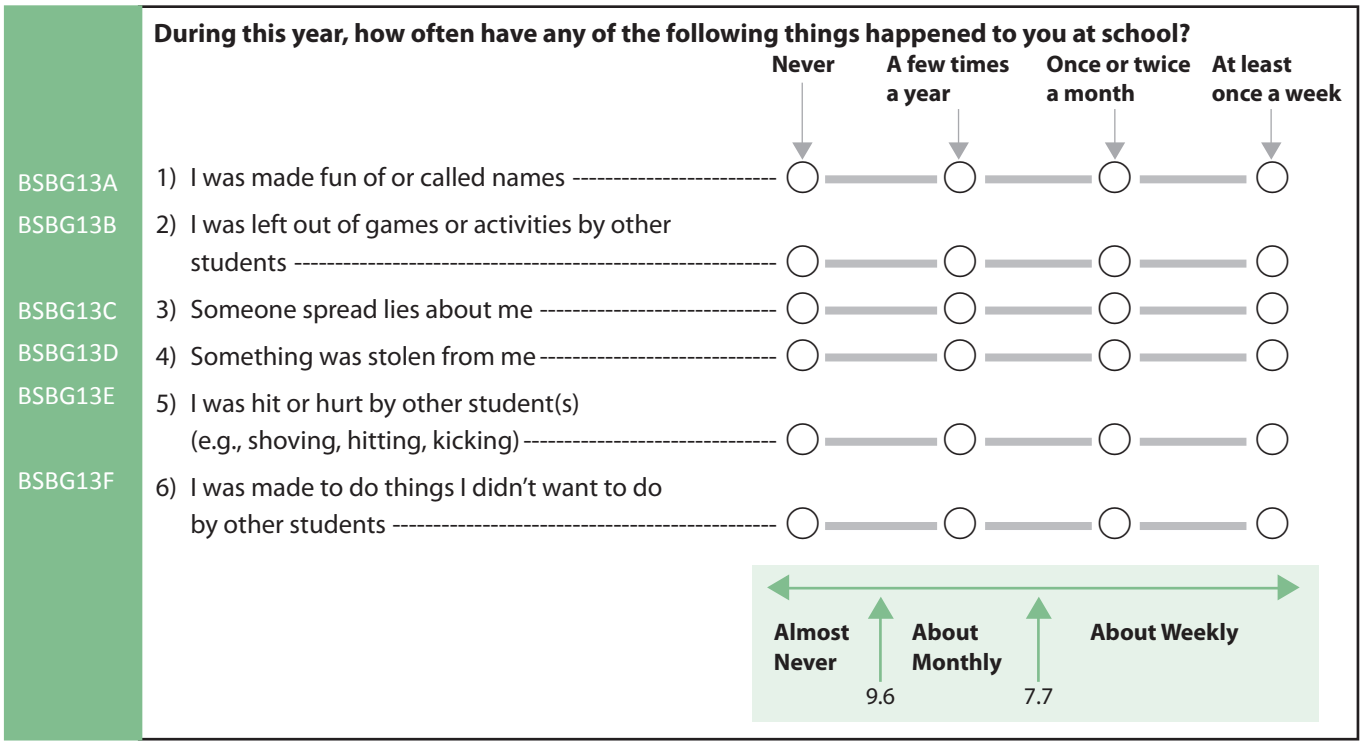

Exhibit 2: Item Parameters for the TIMSS 2011 Students Bullied at School Scale, Eighth Grade

Item	delta	tau_1	tau_2	tau_3
BSBG13A	–0.54060	0.15821	–0.29670	0.13849
BSBG13B	–1.22277	0.26545	0.18467	–0.45012
BSBG13C	–0.94125	–0.16804	–0.21169	0.37973
BSBG13D	–1.25198	0.05983	–0.16861	0.10878
BSBG13E	–1.30257	0.21467	–0.03729	–0.17738
BSBG13F	–1.65151	0.35008	0.19086	–0.54094

Exhibit 3: Scale Transformation Constants

Scale Transformation Constants	
A = 10.15661 B = 2.11601	Transformed Scale Score = 10.15661 + 2.11601 • Logit Scale Score

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

Raw Score	Transformed Scale Score	Cutpoint
0	2.89672	
1	4.59042	
2	5.32220	
3	5.81451	
4	6.19658	
5	6.53455	
6	6.83195	
7	7.11034	
8	7.38476	
9	7.64772	7.7
10	7.91396	
11	8.19852	
12	8.48873	
13	8.81989	
14	9.18945	
15	9.62934	9.6
16	10.19817	
17	11.04872	
18	13.03951	

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Students Bullied at School Scale, Eighth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item					
			BSBG13A	BSBG13B	BSBG13C	BSBG13D	BSBG13E	BSBG13F
Armenia	0.73	45	0.66	0.73	0.63	0.60	0.72	0.68
Australia	0.80	50	0.76	0.74	0.75	0.62	0.72	0.66
Bahrain	0.78	48	0.69	0.65	0.75	0.65	0.76	0.65
Chile	0.70	42	0.68	0.70	0.65	0.55	0.70	0.58
Chinese Taipei	0.75	45	0.73	0.69	0.68	0.56	0.69	0.69
England	0.77	48	0.74	0.72	0.74	0.60	0.73	0.60
Finland	0.76	47	0.75	0.70	0.72	0.60	0.69	0.64
Georgia	0.60	35	0.60	0.50	0.57	0.60	0.66	0.59
Ghana	0.63	36	0.56	0.50	0.66	0.53	0.68	0.63
Hong Kong SAR	0.75	47	0.56	0.69	0.71	0.64	0.74	0.75
Hungary	0.70	41	0.71	0.67	0.66	0.52	0.67	0.58
Indonesia	0.70	41	0.68	0.57	0.68	0.55	0.70	0.63
Iran, Islamic Rep. of	0.66	38	0.65	0.51	0.66	0.56	0.70	0.61
Israel	–	–	–	–	–	–	–	–
Italy	0.69	41	0.75	0.68	0.68	0.51	0.62	0.55
Japan	0.79	50	0.76	0.72	0.74	0.56	0.74	0.72
Jordan	0.73	44	0.69	0.65	0.69	0.54	0.73	0.64
Kazakhstan	0.69	41	0.68	0.50	0.66	0.63	0.73	0.64

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Students Bullied at School Scale, Eighth Grade (Continued)

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item					
			BSBG13A	BSBG13B	BSBG13C	BSBG13D	BSBG13E	BSBG13F
Korea, Rep. of	0.75	45	0.73	0.67	0.67	0.58	0.72	0.66
Lebanon	0.74	44	0.67	0.56	0.70	0.66	0.68	0.69
Lithuania	0.74	44	0.72	0.65	0.72	0.56	0.72	0.58
Macedonia, Rep. of	0.77	48	0.72	0.68	0.70	0.61	0.74	0.70
Malaysia	0.66	38	0.61	0.54	0.69	0.58	0.67	0.58
Morocco	0.67	39	0.67	0.59	0.67	0.50	0.69	0.59
New Zealand	0.79	49	0.73	0.72	0.74	0.62	0.72	0.65
Norway	0.78	48	0.71	0.72	0.76	0.60	0.72	0.64
Oman	0.68	40	0.66	0.44	0.71	0.60	0.71	0.62
Palestinian Nat'l Auth.	0.66	38	0.65	0.63	0.67	0.45	0.69	0.56
Qatar	0.80	50	0.71	0.71	0.75	0.61	0.76	0.71
Romania	0.73	43	0.67	0.68	0.69	0.58	0.72	0.58
Russian Federation	0.67	40	0.74	0.52	0.70	0.46	0.75	0.56
Saudi Arabia	0.72	42	0.68	0.58	0.69	0.58	0.72	0.62
Singapore	0.77	47	0.67	0.67	0.74	0.62	0.72	0.68
Slovenia	0.74	44	0.75	0.73	0.71	0.55	0.64	0.61
Sweden	0.73	44	0.70	0.63	0.70	0.58	0.71	0.66
Syrian Arab Republic	0.69	40	0.63	0.60	0.66	0.58	0.70	0.63
Thailand	0.70	40	0.64	0.54	0.67	0.60	0.69	0.66
Tunisia	0.69	40	0.67	0.62	0.64	0.52	0.69	0.63
Turkey	0.69	40	0.65	0.61	0.71	0.52	0.70	0.58
Ukraine	0.70	41	0.72	0.59	0.70	0.46	0.73	0.61
United Arab Emirates	0.74	44	0.68	0.63	0.72	0.59	0.72	0.63
United States	0.78	48	0.75	0.71	0.72	0.63	0.72	0.62
Ninth Grade Participants								
Botswana	0.47	28	0.52	0.40	0.60	0.42	0.62	0.56
Honduras	0.69	41	0.67	0.63	0.66	0.56	0.69	0.61
South Africa	0.64	36	0.62	0.64	0.60	0.41	0.63	0.67

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Students Bullied at School Scale, Eighth Grade (Continued)

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item					
			BSBG13A	BSBG13B	BSBG13C	BSBG13D	BSBG13E	BSBG13F
Benchmarking Participants								
Alberta, Canada	0.80	50	0.76	0.72	0.74	0.67	0.73	0.63
Ontario, Canada	0.78	48	0.76	0.71	0.75	0.61	0.70	0.61
Quebec, Canada	0.74	44	0.75	0.70	0.72	0.56	0.69	0.53
Abu Dhabi, UAE	0.73	43	0.68	0.62	0.72	0.57	0.73	0.60
Dubai, UAE	0.74	44	0.66	0.64	0.73	0.59	0.72	0.64
Alabama, US	0.75	45	0.74	0.72	0.69	0.57	0.71	0.60
California, US	0.79	50	0.76	0.72	0.74	0.65	0.74	0.61
Colorado, US	0.78	48	0.76	0.72	0.71	0.62	0.70	0.64
Connecticut, US	0.78	48	0.73	0.68	0.75	0.65	0.71	0.66
Florida, US	0.76	47	0.73	0.70	0.70	0.63	0.71	0.62
Indiana, US	0.79	49	0.76	0.74	0.73	0.64	0.70	0.63
Massachusetts, US	0.78	49	0.75	0.70	0.73	0.65	0.71	0.64
Minnesota, US	0.77	47	0.75	0.71	0.72	0.61	0.70	0.63
North Carolina, US	0.74	45	0.75	0.68	0.66	0.60	0.70	0.62

A dash (–) indicates that the item was not administered or comparable data was not available.

Exhibit 6: Relationship Between the TIMSS 2011 Students Bullied at School 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	0.07	0.06	0.01	0.00	0.01	0.02
Australia	0.09	0.04	0.01	0.00	0.01	0.01
Bahrain	0.15	0.13	0.02	0.02	0.04	0.03
Chile	0.10	0.08	0.01	0.01	0.01	0.01
Chinese Taipei	0.02	0.00	0.00	0.00	0.01	0.00
England	0.02	–0.01	0.00	0.00	0.01	0.00
Finland	0.09	0.03	0.01	0.00	0.00	0.00
Georgia	0.10	0.10	0.01	0.01	0.02	0.02
Ghana	0.14	0.13	0.02	0.02	0.03	0.02
Hong Kong SAR	–0.02	0.01	0.00	0.00	0.00	0.00
Hungary	0.03	0.01	0.00	0.00	0.00	0.00
Indonesia	–0.07	–0.05	0.00	0.00	0.00	0.00
Iran, Islamic Rep. of	0.06	0.08	0.00	0.01	0.01	0.01
Israel	–	–	–	–	–	–
Italy	0.05	0.02	0.00	0.00	0.01	0.00
Japan	–0.04	–0.06	0.00	0.00	0.00	0.00

Exhibit 6: Relationship Between the TIMSS 2011 Students Bullied at School 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
Jordan	0.18	0.21	0.03	0.04	0.06	0.08
Kazakhstan	–0.02	–0.05	0.00	0.00	0.00	0.01
Korea, Rep. of	–0.02	–0.05	0.00	0.00	0.00	0.00
Lebanon	0.21	0.27	0.04	0.07	0.05	0.09
Lithuania	0.06	0.03	0.00	0.00	0.02	0.01
Macedonia, Rep. of	0.12	0.12	0.02	0.01	0.04	0.04
Malaysia	0.03	0.02	0.00	0.00	0.01	0.01
Morocco	0.01	0.02	0.00	0.00	0.01	0.01
New Zealand	0.08	0.04	0.01	0.00	0.01	0.00
Norway	0.07	0.07	0.00	0.01	0.01	0.01
Oman	0.19	0.20	0.03	0.04	0.04	0.05
Palestinian Nat'l Auth.	0.19	0.22	0.04	0.05	0.05	0.06
Qatar	0.13	0.13	0.02	0.02	0.03	0.03
Romania	0.15	0.13	0.02	0.02	0.05	0.04
Russian Federation	0.01	–0.03	0.00	0.00	0.00	0.00
Saudi Arabia	0.05	0.05	0.00	0.00	0.01	0.01
Singapore	0.10	0.09	0.01	0.01	0.01	0.01
Slovenia	–0.04	–0.08	0.00	0.01	0.00	0.00
Sweden	0.03	0.00	0.00	0.00	0.01	0.01
Syrian Arab Republic	0.09	0.10	0.01	0.01	0.01	0.02
Thailand	0.00	–0.01	0.00	0.00	0.00	0.00
Tunisia	–0.01	–0.02	0.00	0.00	0.00	0.00
Turkey	0.13	0.12	0.02	0.02	0.03	0.03
Ukraine	0.07	0.07	0.00	0.00	0.01	0.01
United Arab Emirates	0.15	0.15	0.02	0.02	0.04	0.04
United States	0.04	0.00	0.00	0.00	0.00	0.00
International Median	**0.07**	**0.04**	**0.00**	**0.00**	**0.01**	**0.01**
Ninth Grade Participants						
Botswana	0.20	0.21	0.04	0.05	0.05	0.05
Honduras	0.01	–0.02	0.00	0.00	0.01	0.01
South Africa	0.31	0.35	0.09	0.12	0.10	0.13

Exhibit 6: Relationship Between the TIMSS 2011 Students Bullied at School 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
Benchmarking Participants						
Alberta, Canada	0.12	0.08	0.02	0.01	0.02	0.01
Ontario, Canada	0.08	0.07	0.01	0.00	0.01	0.01
Quebec, Canada	0.02	–0.01	0.00	0.00	0.00	0.00
Abu Dhabi, UAE	0.09	0.09	0.01	0.01	0.03	0.03
Dubai, UAE	0.15	0.16	0.02	0.03	0.04	0.04
Alabama, US	0.01	0.02	0.00	0.00	0.00	0.00
California, US	0.03	0.01	0.00	0.00	0.00	0.00
Colorado, US	0.02	0.01	0.00	0.00	0.00	0.00
Connecticut, US	0.02	0.02	0.00	0.00	0.00	0.00
Florida, US	0.04	0.03	0.00	0.00	0.01	0.01
Indiana, US	0.02	–0.01	0.00	0.00	0.00	0.00
Massachusetts, US	0.04	0.04	0.00	0.00	0.01	0.01
Minnesota, US	0.08	0.03	0.01	0.00	0.01	0.00
North Carolina, US	0.05	–0.02	0.00	0.00	0.01	0.00

A dash (–) indicates that the item was not administered or comparable data was not available.