

TIMSS 2011

The TIMSS 2011 Teacher Working Conditions Scale, Eighth Grade

The Teacher Working Conditions (TWC) 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 Teacher Working Conditions Scale, Eighth Grade

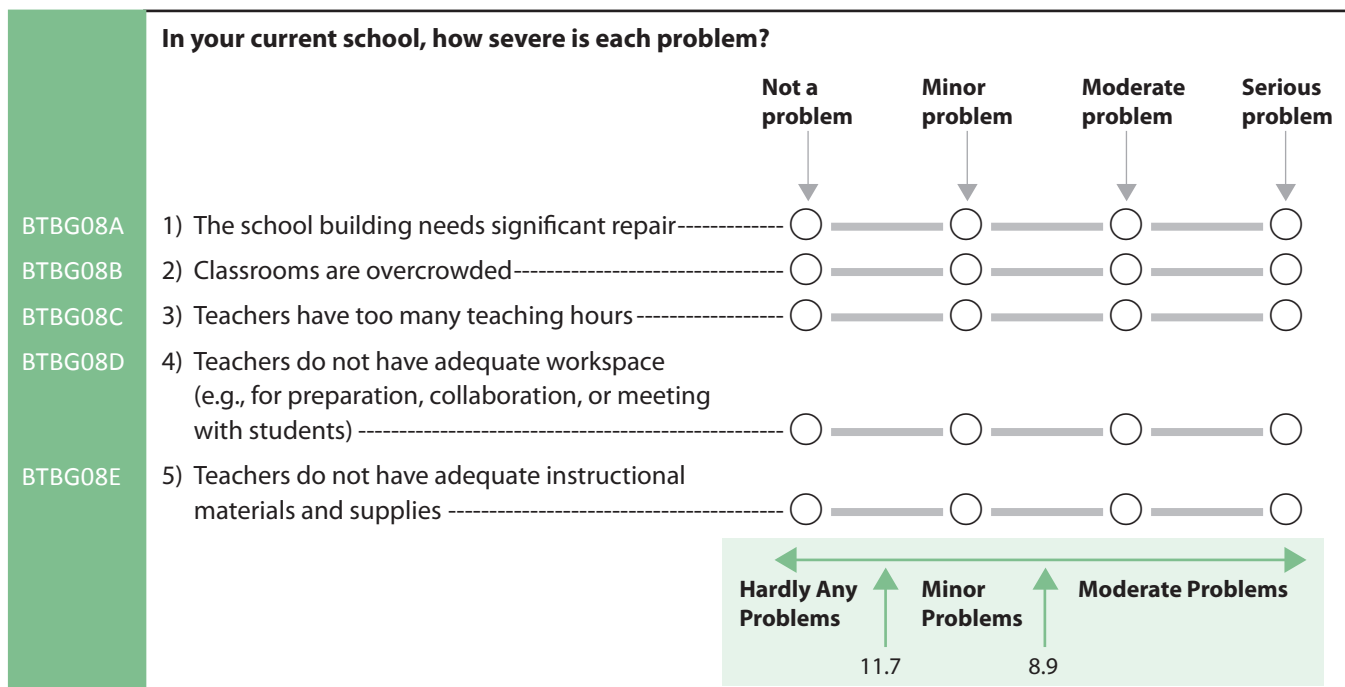


Exhibit 2: Item Parameters for TIMSS 2011 Teacher Working Conditions Scale, Eighth Grade

Item	delta	tau_1	tau_2	tau_3
BTBG08A	-0.58422	-0.72555	-0.07307	0.79862
BTBG08B	-0.47937	-0.69285	0.11888	0.57397
BTBG08C	-0.55821	-0.86766	0.21714	0.65052
BTBG08D	-0.39952	-0.69010	0.06705	0.62305
BTBG08E	-0.41035	-0.86744	-0.05075	0.91819

Exhibit 3: Scale Transformation Constants

Scale Transformation Constants

$$A = 9.98886$$

$$B = 1.92389$$

$$\text{Transformed Scale Score} = 9.98886 + 1.92389 \cdot \text{Logit Scale Score}$$

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	3.10346		8	9.27317	
1	5.26099		9	9.67788	
2	6.29799		10	10.09558	
3	7.00708		11	10.55962	
4	7.56539		12	11.10130	
5	8.04211		13	11.78582	11.7
6	8.47228		14	12.78428	
7	8.87731	8.9	15	14.89081	

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Teacher Working Conditions Scale, Eighth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item				
			BTBG08A	BTBG08B	BTBG08C	BTBG08D	BTBG08E
Armenia	0.50	36	0.64	0.26	0.27	0.80	0.78
Australia	0.78	53	0.69	0.76	0.66	0.79	0.73
Bahrain	0.83	59	0.71	0.76	0.77	0.80	0.80
Chile	0.76	51	0.68	0.68	0.71	0.81	0.69
Chinese Taipei	0.72	47	0.59	0.71	0.68	0.78	0.66
England	0.79	55	0.73	0.79	0.68	0.76	0.74
Finland	0.66	43	0.59	0.66	0.50	0.74	0.76
Georgia	0.68	45	0.60	0.68	0.59	0.77	0.68
Ghana	0.67	44	0.65	0.74	0.49	0.73	0.67
Hong Kong SAR	0.77	53	0.66	0.71	0.69	0.83	0.72
Hungary	0.75	50	0.63	0.73	0.62	0.81	0.74
Indonesia	0.68	44	0.57	0.73	0.66	0.72	0.63
Iran, Islamic Rep. of	0.67	44	0.65	0.58	0.55	0.83	0.67
Israel	0.76	51	0.65	0.76	0.62	0.77	0.76
Italy	0.74	49	0.70	0.74	0.47	0.80	0.74
Japan	0.81	57	0.76	0.73	0.76	0.79	0.73
Jordan	0.78	53	0.64	0.75	0.68	0.81	0.76
Kazakhstan	0.74	49	0.59	0.73	0.69	0.76	0.73
Korea, Rep. of	0.78	53	0.56	0.74	0.77	0.80	0.74
Lebanon	0.74	49	0.68	0.69	0.63	0.80	0.68
Lithuania	0.65	43	0.59	0.63	0.55	0.78	0.68
Macedonia, Rep. of	0.74	49	0.70	0.64	0.61	0.80	0.72

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2011 Teacher Working Conditions Scale, Eighth Grade (Continued)

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item				
			BTBG08A	BTBG08B	BTBG08C	BTBG08D	BTBG08E
Malaysia	0.74	50	0.52	0.72	0.73	0.79	0.73
Morocco	0.75	50	0.54	0.75	0.71	0.79	0.73
New Zealand	0.78	54	0.69	0.71	0.76	0.76	0.74
Norway	0.69	45	0.67	0.71	0.59	0.69	0.70
Oman	0.76	51	0.63	0.69	0.71	0.81	0.73
Palestinian Nat'l Auth.	0.74	49	0.63	0.70	0.62	0.79	0.75
Qatar	0.84	61	0.74	0.81	0.72	0.84	0.80
Romania	0.73	48	0.54	0.72	0.67	0.78	0.73
Russian Federation	0.59	38	0.51	0.64	0.56	0.69	0.68
Saudi Arabia	0.78	53	0.65	0.78	0.68	0.78	0.76
Singapore	0.80	55	0.70	0.77	0.70	0.78	0.77
Slovenia	0.71	47	0.64	0.59	0.64	0.79	0.73
Sweden	0.69	45	0.53	0.73	0.65	0.77	0.67
Syrian Arab Republic	0.69	45	0.63	0.67	0.65	0.74	0.66
Thailand	0.67	43	0.60	0.62	0.67	0.74	0.67
Tunisia	0.77	52	0.63	0.71	0.76	0.74	0.76
Turkey	0.69	45	0.62	0.69	0.59	0.69	0.75
Ukraine	0.62	40	0.57	0.58	0.66	0.70	0.66
United Arab Emirates	0.76	51	0.62	0.73	0.67	0.77	0.77
United States	0.71	47	0.59	0.65	0.66	0.79	0.73
Ninth Grade Participants							
Botswana	0.73	48	0.62	0.73	0.66	0.75	0.72
Honduras	0.68	45	0.76	0.61	0.35	0.79	0.75
South Africa	0.83	60	0.78	0.76	0.70	0.83	0.79
Benchmarking Participants							
Alberta, Canada	0.75	51	0.53	0.69	0.76	0.80	0.76
Ontario, Canada	0.78	54	0.70	0.78	0.70	0.79	0.69
Quebec, Canada	0.67	44	0.58	0.62	0.66	0.73	0.70
Abu Dhabi, UAE	0.76	52	0.64	0.74	0.57	0.81	0.82
Dubai, UAE	0.71	46	0.55	0.68	0.70	0.72	0.74
Alabama, US	0.79	54	0.69	0.65	0.73	0.84	0.76
California, US	0.71	47	0.65	0.64	0.67	0.77	0.71
Colorado, US	0.74	50	0.75	0.62	0.71	0.71	0.74
Connecticut, US	0.78	54	0.65	0.75	0.68	0.79	0.78
Florida, US	0.63	42	0.66	0.41	0.60	0.82	0.68
Indiana, US	0.75	50	0.74	0.67	0.56	0.77	0.78
Massachusetts, US	0.69	45	0.66	0.67	0.63	0.66	0.75
Minnesota, US	0.67	43	0.48	0.74	0.72	0.61	0.70
North Carolina, US	0.71	48	0.59	0.73	0.60	0.80	0.70

Exhibit 6: Relationship Between the TIMSS 2011 Teacher Working Conditions 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	0.13	0.08	0.02	0.01	0.03	0.01
Australia	0.09	-0.01	0.01	0.00	0.01	0.00
Bahrain	0.25	0.29	0.06	0.08	0.08	0.07
Chile	0.13	0.15	0.02	0.02	0.02	0.02
Chinese Taipei	-0.04	-0.04	0.00	0.00	0.01	0.00
England	0.02	0.00	0.00	0.00	0.02	0.00
Finland	0.02	0.01	0.00	0.00	0.00	0.00
Georgia	-0.09	-0.03	0.01	0.00	0.01	0.00
Ghana	0.14	0.19	0.02	0.03	0.02	0.03
Hong Kong SAR	0.06	-0.03	0.00	0.00	0.01	0.00
Hungary	-0.13	-0.10	0.02	0.01	0.02	0.01
Indonesia	0.21	0.17	0.04	0.03	0.04	0.03
Iran, Islamic Rep. of	0.08	0.10	0.01	0.01	0.01	0.01
Israel	-0.15	-0.01	0.02	0.00	0.02	0.00
Italy	0.03	0.01	0.00	0.00	0.00	0.00
Japan	0.05	0.04	0.00	0.00	0.00	0.01
Jordan	0.10	0.17	0.01	0.03	0.01	0.03
Kazakhstan	0.09	0.15	0.01	0.02	0.01	0.03
Korea, Rep. of	-0.06	-0.01	0.00	0.00	0.01	0.00
Lebanon	0.21	0.17	0.04	0.03	0.04	0.03
Lithuania	-0.05	-0.03	0.00	0.00	0.01	0.00
Macedonia, Rep. of	0.10	0.15	0.01	0.02	0.00	0.01
Malaysia	0.02	-0.02	0.00	0.00	0.03	0.01
Morocco	0.24	0.16	0.06	0.02	0.09	0.04
New Zealand	0.04	-0.01	0.00	0.00	0.00	0.00
Norway	-0.02	0.00	0.00	0.00	0.00	0.00
Oman	0.12	0.10	0.02	0.01	0.01	0.01
Palestinian Nat'l Auth.	0.07	0.07	0.00	0.00	0.01	0.00
Qatar	0.03	0.03	0.00	0.00	0.00	0.01
Romania	0.02	-0.02	0.00	0.00	0.00	0.00
Russian Federation	0.09	0.09	0.01	0.01	0.00	0.01
Saudi Arabia	0.12	0.09	0.02	0.01	0.02	0.01
Singapore	0.15	0.02	0.02	0.00	0.02	0.00
Slovenia	-0.02	-0.01	0.00	0.00	0.00	0.00
Sweden	0.07	0.06	0.00	0.00	0.01	0.01
Syrian Arab Republic	-0.02	0.04	0.00	0.00	0.01	0.00
Thailand	0.02	-0.05	0.00	0.00	0.00	0.00

Exhibit 6: Relationship Between the TIMSS 2011 Teacher Working Conditions 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	0.04	0.00	0.00	0.00	0.00
Turkey	0.10	0.11	0.01	0.01	0.01	0.00
Ukraine	-0.01	0.07	0.00	0.01	0.00	0.01
United Arab Emirates	0.13	0.03	0.02	0.00	0.02	0.00
United States	0.06	0.14	0.00	0.02	0.00	0.02
International Median	0.06	0.04	0.01	0.00	0.01	0.01
Ninth Grade Participants						
Botswana	0.03	0.07	0.00	0.01	0.01	0.03
Honduras	0.20	0.20	0.04	0.04	0.05	0.02
South Africa	0.41	0.33	0.16	0.11	0.21	0.17
Benchmarking Participants						
Alberta, Canada	0.03	0.04	0.00	0.00	0.00	0.00
Ontario, Canada	-0.03	-0.01	0.00	0.00	0.00	0.00
Quebec, Canada	0.16	0.11	0.02	0.01	0.02	0.01
Abu Dhabi, UAE	0.07	-0.01	0.00	0.00	0.01	0.00
Dubai, UAE	0.23	0.15	0.05	0.02	0.04	0.03
Alabama, US	-0.02	0.08	0.00	0.01	0.01	0.03
California, US	0.05	0.03	0.00	0.00	0.01	0.00
Colorado, US	0.14	0.09	0.02	0.01	0.01	0.01
Connecticut, US	0.13	0.33	0.02	0.11	0.02	0.14
Florida, US	0.27	0.09	0.07	0.01	0.12	0.02
Indiana, US	0.08	0.03	0.01	0.00	0.01	0.00
Massachusetts, US	0.07	0.19	0.00	0.04	0.05	0.03
Minnesota, US	0.05	0.04	0.00	0.00	0.03	0.02
North Carolina, US	-0.09	0.18	0.01	0.03	0.01	0.03