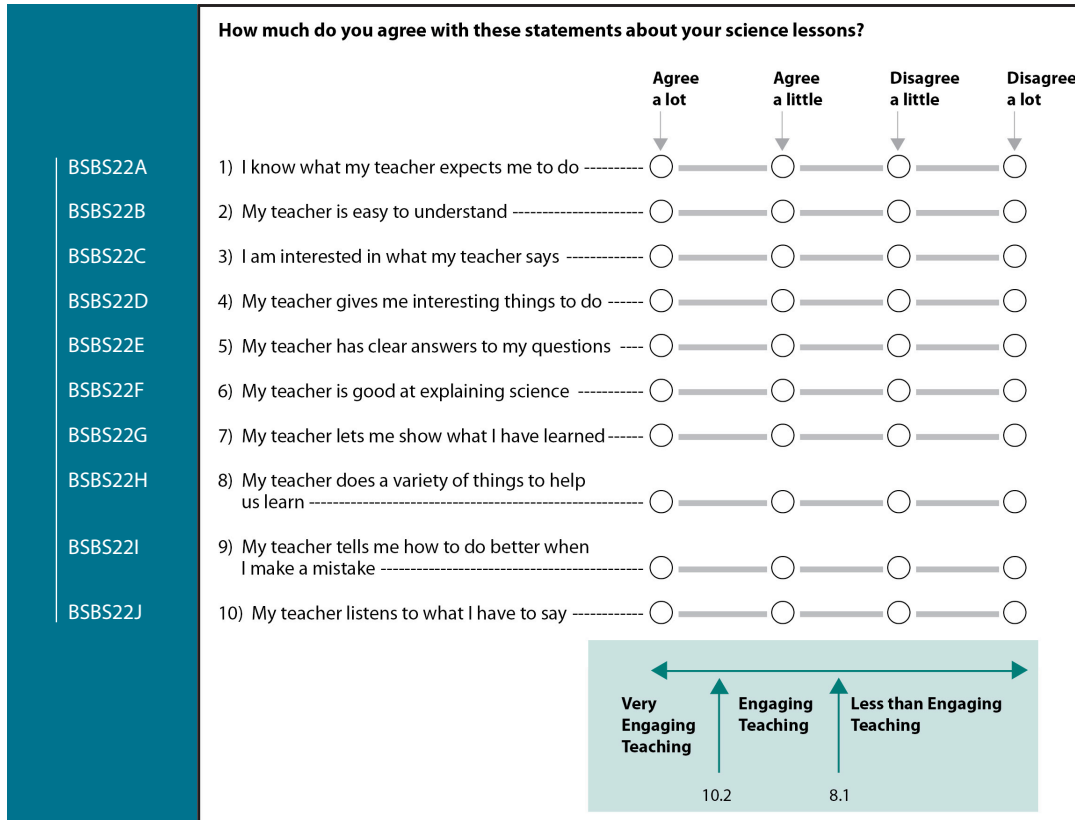


Students' Views on Engaging Teaching in Science Lessons Scale, Eighth Grade

The Students' Views on Engaging Teaching in Science Lessons (ESL) scale was created based on students' degree of agreement with the ten statements described below.

Items in the TIMSS 2015 Students' Views on Engaging Teaching in Science Lessons Scale, Eighth Grade



Item Parameters for the TIMSS 2015 Students' Views on Engaging Teaching in Science Lessons Scale, Eighth Grade

Item	delta	tau_1	tau_2	tau_3	Infit
BSBS22A	-0.04924	-1.64346	-0.54140	2.18486	1.40
BSBS22B	0.05145	-1.53889	-0.46940	2.00829	0.96
BSBS22C	-0.08308	-1.60569	-0.28773	1.89342	0.99
BSBS22D	0.38580	-1.67313	-0.26587	1.93900	1.04
BSBS22E	-0.12954	-1.48983	-0.40490	1.89473	0.86
BSBS22F	-0.32397	-1.28029	-0.44404	1.72433	0.85
BSBS22G	0.40041	-1.82277	-0.27075	2.09352	1.10
BSBS22H	-0.15706	-1.48381	-0.41006	1.89387	0.97
BSBS22I	-0.07063	-1.53419	-0.39286	1.92705	0.98
BSBS22J	-0.02414	-1.35914	-0.47354	1.83268	1.05

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

Scale Transformation Constants for the TIMSS 2015 Students' Views on Engaging Teaching in Science Lessons Scale, Eighth Grade

Scale Transformation Constants	
A = 8.256995	Transformed Scale Score = 8.256995 + 0.933751 • Logit Scale Score
B = 0.933751	

Equivalence Table of Raw and Transformed Scale Scores for the TIMSS 2015 Students' Views on Engaging Teaching in Science Lessons Scale, Eighth Grade

Raw Score	Transformed Scale Score	Cutpoint
0	3.99370	
1	5.05193	
2	5.56338	
3	5.91581	
4	6.19102	
5	6.42207	
6	6.62528	
7	6.81001	
8	6.98219	
9	7.14596	
10	7.30443	
11	7.46008	
12	7.61501	
13	7.77116	
14	7.93069	
15	8.09420	8.1
16	8.26433	
17	8.44227	
18	8.62934	
19	8.82641	
20	9.03371	
21	9.25114	
22	9.47855	
23	9.71647	
24	9.96698	
25	10.23475	10.2
26	10.52856	
27	10.86204	
28	11.27059	
29	11.83812	
30	12.94849	

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015



Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the TIMSS 2015 Students' Views on Engaging Teaching in Science Lessons Scale, Eighth Grade

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item									
			BS8S22A	BS8S22B	BS8S22C	BS8S22D	BS8S22E	BS8S22F	BS8S22G	BS8S22H	BS8S22I	BS8S22J
Australia	0.95	69	0.74	0.86	0.83	0.84	0.88	0.84	0.79	0.85	0.84	0.84
Bahrain	0.94	64	0.67	0.81	0.78	0.82	0.85	0.83	0.76	0.81	0.83	0.80
Botswana (9)	0.89	51	0.57	0.74	0.70	0.73	0.77	0.76	0.70	0.69	0.72	0.71
Canada	0.95	68	0.72	0.86	0.83	0.82	0.87	0.87	0.81	0.84	0.83	0.81
Chile	0.95	68	0.72	0.80	0.82	0.83	0.87	0.85	0.82	0.84	0.85	0.84
Chinese Taipei	0.93	61	0.74	0.80	0.81	0.80	0.80	0.78	0.78	0.80	0.79	0.74
Egypt	0.89	51	0.50	0.66	0.74	0.75	0.77	0.77	0.66	0.77	0.74	0.71
England	0.94	66	0.77	0.83	0.81	0.84	0.86	0.86	0.76	0.81	0.80	0.82
Georgia	-	-	-	-	-	-	-	-	-	-	-	-
Hong Kong SAR	0.96	72	0.79	0.86	0.85	0.86	0.88	0.87	0.84	0.85	0.85	0.83
Hungary	-	-	-	-	-	-	-	-	-	-	-	-
Iran, Islamic Rep. of	0.92	59	0.63	0.79	0.80	0.72	0.81	0.79	0.78	0.77	0.78	0.77
Ireland	0.95	67	0.73	0.87	0.83	0.82	0.86	0.87	0.78	0.80	0.80	0.80
Israel	0.95	70	0.76	0.86	0.82	0.83	0.87	0.88	0.83	0.83	0.84	0.83
Italy	0.92	58	0.57	0.77	0.71	0.76	0.84	0.81	0.77	0.77	0.78	0.78
Japan	0.93	61	0.64	0.83	0.80	0.79	0.82	0.83	0.67	0.81	0.82	0.78
Jordan	0.92	58	0.57	0.73	0.75	0.78	0.82	0.82	0.74	0.83	0.78	0.76
Kazakhstan	-	-	-	-	-	-	-	-	-	-	-	-
Korea, Rep. of	0.94	65	0.72	0.82	0.83	0.83	0.83	0.83	0.70	0.83	0.84	0.84
Kuwait	0.90	54	0.59	0.73	0.73	0.74	0.81	0.79	0.71	0.78	0.74	0.72
Lebanon	-	-	-	-	-	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-	-	-	-	-
Malaysia	0.93	62	0.70	0.80	0.83	0.80	0.82	0.83	0.76	0.79	0.81	0.76
Malta	-	-	-	-	-	-	-	-	-	-	-	-
Morocco	-	-	-	-	-	-	-	-	-	-	-	-
New Zealand	0.94	67	0.72	0.84	0.82	0.83	0.87	0.85	0.78	0.82	0.82	0.81
Norway (9)	0.94	66	0.67	0.86	0.79	0.82	0.85	0.86	0.79	0.82	0.82	0.80
Oman	0.89	51	0.51	0.74	0.73	0.73	0.78	0.76	0.72	0.76	0.72	0.70
Qatar	0.95	70	0.76	0.86	0.82	0.85	0.88	0.88	0.81	0.85	0.85	0.80
Russian Federation	-	-	-	-	-	-	-	-	-	-	-	-
Saudi Arabia	0.93	61	0.65	0.79	0.81	0.79	0.82	0.82	0.71	0.84	0.80	0.79
Singapore	0.93	63	0.73	0.82	0.81	0.81	0.83	0.83	0.75	0.78	0.79	0.77
Slovenia	-	-	-	-	-	-	-	-	-	-	-	-
South Africa (9)	0.89	51	0.60	0.74	0.72	0.74	0.72	0.75	0.73	0.68	0.74	0.70
Sweden	-	-	-	-	-	-	-	-	-	-	-	-
Thailand	0.92	59	0.55	0.81	0.76	0.81	0.80	0.82	0.77	0.80	0.76	0.75
Turkey	0.91	58	0.65	0.80	0.75	0.58	0.83	0.83	0.79	0.74	0.81	0.80
United Arab Emirates	0.95	67	0.71	0.84	0.80	0.82	0.86	0.85	0.82	0.81	0.83	0.81
United States	0.96	71	0.76	0.86	0.83	0.85	0.88	0.89	0.82	0.85	0.84	0.83
Benchmarking Participants												
Buenos Aires, Argentina	0.94	64	0.65	0.79	0.79	0.80	0.86	0.85	0.79	0.81	0.82	0.80
Ontario, Canada	0.95	70	0.73	0.86	0.83	0.83	0.87	0.88	0.81	0.85	0.84	0.83
Quebec, Canada	0.94	65	0.69	0.84	0.81	0.80	0.87	0.86	0.80	0.82	0.80	0.78
Norway (8)	0.94	63	0.65	0.84	0.76	0.80	0.84	0.85	0.79	0.81	0.81	0.80
Abu Dhabi, UAE	0.95	68	0.72	0.84	0.81	0.83	0.87	0.86	0.84	0.82	0.84	0.81
Dubai, UAE	0.94	64	0.70	0.83	0.78	0.81	0.84	0.85	0.78	0.80	0.81	0.80
Florida, US	0.96	72	0.76	0.86	0.85	0.86	0.89	0.89	0.83	0.87	0.86	0.84

A dash (-) indicates comparable data not available.

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

Relationship Between the TIMSS 2015 Students' Views on Engaging Teaching in Science Lessons Scale, Eighth Grade, and TIMSS 2015 Science Achievement

Country	Pearson's Correlation with Science Achievement		Variance in Science Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	(r)	(r ²)	
Australia	0.22	0.05	0.05
Bahrain	0.16	0.02	0.02
Botswana (9)	0.19	0.04	0.04
Canada	0.09	0.01	0.01
Chile	0.09	0.01	0.00
Chinese Taipei	0.21	0.04	0.03
Egypt	0.21	0.04	0.04
England	0.10	0.01	0.01
Georgia	-	-	-
Hong Kong SAR	0.16	0.03	0.02
Hungary	-	-	-
Iran, Islamic Rep. of	0.05	0.00	0.00
Ireland	0.19	0.04	0.03
Israel	0.12	0.01	0.01
Italy	0.03	0.00	0.00
Japan	0.21	0.04	0.04
Jordan	0.15	0.02	0.02
Kazakhstan	-	-	-
Korea, Rep. of	0.32	0.10	0.09
Kuwait	0.11	0.01	0.01
Lebanon	-	-	-
Lithuania	-	-	-
Malaysia	0.23	0.05	0.06
Malta	-	-	-
Morocco	-	-	-
New Zealand	0.15	0.02	0.02
Norway (9)	0.12	0.01	0.02
Oman	0.16	0.03	0.03
Qatar	0.20	0.04	0.04
Russian Federation	-	-	-
Saudi Arabia	0.16	0.03	0.02
Singapore	0.08	0.01	0.01
Slovenia	-	-	-
South Africa (9)	0.05	0.00	0.00
Sweden	-	-	-
Thailand	0.07	0.00	0.00
Turkey	0.17	0.03	0.03
United Arab Emirates	0.15	0.02	0.02
United States	0.11	0.01	0.01
International Median	0.15	0.02	0.02
Benchmarking Participants			
Buenos Aires, Argentina	0.03	0.00	0.00
Ontario, Canada	0.09	0.01	0.01
Quebec, Canada	0.11	0.01	0.01
Norway (8)	0.10	0.01	0.01
Abu Dhabi, UAE	0.13	0.02	0.02
Dubai, UAE	0.10	0.01	0.01
Florida, US	0.12	0.01	0.01

SOURCE: IEA's Trends in International Mathematics and Science Study – TIMSS 2015

A dash (-) indicates comparable data not available.