

PIRLS 2011

The PIRLS 2011 School Discipline and Safety Scale

The Students Discipline and Safety (DAS) scale was created based on principals' responses concerning ten potential school problems 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 School Discipline and Safety Scale

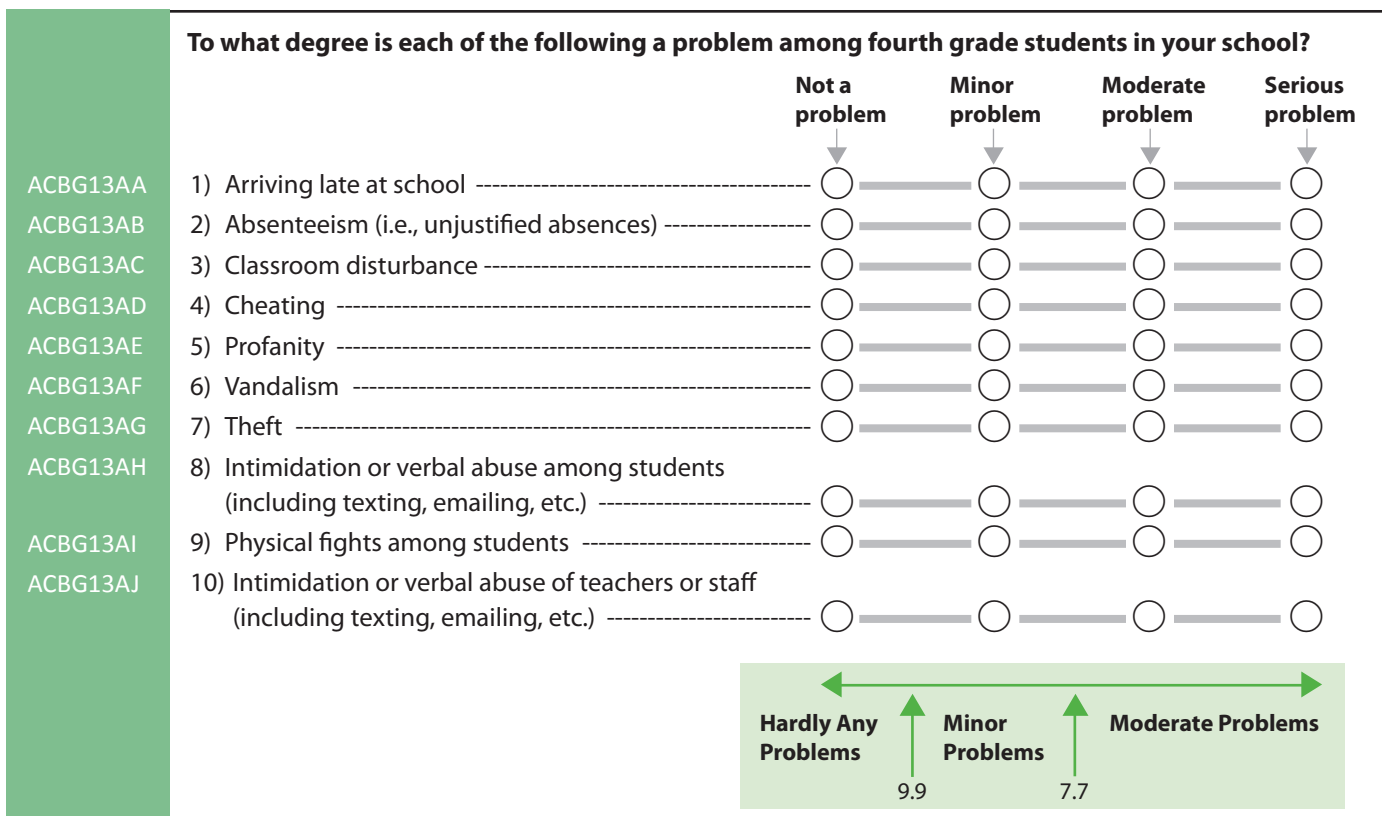


Exhibit 2: Item Parameters for the PIRLS 2011 School Discipline and Safety Scale

Item	delta	tau_1	tau_2	tau_3	Item	delta	tau_1	tau_2	tau_3
ACBG13AA	-2.45188	-2.06426	-0.52981	2.59407	ACBG13AF	-2.33644	-0.40250	-0.76472	1.16722
ACBG13AB	-2.12142	-1.06975	-0.64510	1.71485	ACBG13AG	-2.45654	0.28488	-1.30003	1.01515
ACBG13AC	-1.54867	-2.36363	-0.22140	2.58503	ACBG13AH	-1.96426	-1.36686	-0.70633	2.07319
ACBG13AD	-2.52426	-0.93117	-0.84004	1.77121	ACBG13AI	-1.74716	-1.26645	-0.98662	2.25307
ACBG13AE	-1.60818	-1.54301	-0.57429	2.11730	ACBG13AJ	-2.86078	0.40139	-0.78118	0.37979

Exhibit 3: Scale Transformation Constants

Scale Transformation Constants

$$A = 10.08035$$

$$B = 1.00135$$

$$\text{Transformed Scale Score} = 10.08035 + 1.00135 \cdot \text{Logit Scale Score}$$

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	3.64548		16	7.74873	
1	4.78440		17	7.90505	
2	5.32174		18	8.07774	
3	5.67817		19	8.26758	
4	5.94724		20	8.47922	
5	6.16552		21	8.71539	
6	6.35144		22	8.98014	
7	6.51639		23	9.27254	
8	6.66494		24	9.59189	
9	6.80652		25	9.93866	9.9
10	6.94127		26	10.31739	
11	7.07000		27	10.74122	
12	7.19857		28	11.24285	
13	7.32805		29	11.91352	
14	7.46266		30	13.16248	
15	7.60117	7.7			

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2011 School Discipline and Safety Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item									
			ACBG13AA	ACBG13AB	ACBG13AC	ACBG13AD	ACBG13AE	ACBG13AF	ACBG13AG	ACBG13AH	ACBG13AI	ACBG13AJ
Australia	0.89	52	0.63	0.66	0.71	0.62	0.79	0.80	0.68	0.76	0.77	0.79
Austria	0.91	58	0.56	0.81	0.66	0.77	0.76	0.81	0.82	0.74	0.80	0.82
Azerbaijan	0.98	83	0.79	0.85	0.80	0.96	0.96	0.97	0.97	0.94	0.92	0.90
Belgium (French)	0.86	45	0.60	0.67	0.66	0.59	0.78	0.70	0.57	0.74	0.74	0.63
Bulgaria	0.93	62	0.78	0.85	0.79	0.76	0.76	0.80	0.83	0.73	0.73	0.86
Canada	0.84	43	0.56	0.56	0.67	0.57	0.77	0.72	0.66	0.70	0.69	0.63
Chinese Taipei	0.89	50	0.69	0.53	0.73	0.65	0.86	0.81	0.73	0.80	0.75	0.45
Colombia	0.96	75	0.74	0.82	0.67	0.87	0.89	0.93	0.94	0.90	0.93	0.92
Croatia	0.86	45	0.50	0.69	0.68	0.46	0.66	0.75	0.77	0.69	0.73	0.74
Czech Republic	0.86	45	0.61	0.67	0.71	0.65	0.77	0.81	0.69	0.74	0.66	0.29
Denmark	0.86	45	0.69	0.67	0.71	0.58	0.77	0.66	0.51	0.75	0.67	0.67
England	0.85	45	0.52	0.50	0.78	0.59	0.79	0.70	0.70	0.72	0.78	0.50

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2011 School Discipline and Safety Scale (Continued)

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item									
			ACBG13AA	ACBG13AB	ACBG13AC	ACBG13AD	ACBG13AE	ACBG13AF	ACBG13AG	ACBG13AH	ACBG13AI	ACBG13AJ
Finland	0.84	41	0.52	0.62	0.77	0.44	0.74	0.62	0.55	0.75	0.75	0.58
France	0.89	52	0.51	0.58	0.69	0.63	0.83	0.73	0.79	0.83	0.82	0.72
Georgia	0.94	70	0.59	0.73	0.85	0.80	0.88	0.87	0.91	0.90	0.90	0.86
Germany	0.84	41	0.57	0.64	0.70	0.51	0.73	0.70	0.50	0.70	0.75	0.55
Hong Kong SAR	0.86	45	0.63	0.68	0.69	0.60	0.74	0.73	0.62	0.76	0.66	0.60
Hungary	0.90	54	0.55	0.68	0.77	0.70	0.78	0.76	0.79	0.74	0.80	0.75
Indonesia	0.97	80	0.82	0.92	0.84	0.82	0.93	0.89	0.95	0.93	0.93	0.91
Iran, Islamic Rep. of	0.80	37	0.49	0.59	0.74	0.64	0.71	0.67	0.49	0.69	0.70	0.18
Ireland	0.84	46	0.43	0.43	0.74	0.54	0.84	0.76	0.74	0.72	0.73	0.70
Israel	0.96	75	0.77	0.83	0.81	0.92	0.85	0.92	0.92	0.84	0.92	0.91
Italy	0.94	67	0.47	0.81	0.68	0.64	0.82	0.95	0.92	0.89	0.94	0.92
Lithuania	0.80	36	0.42	0.44	0.67	0.58	0.74	0.56	0.62	0.72	0.64	0.52
Malta	0.91	56	0.51	0.61	0.64	0.81	0.88	0.87	0.77	0.80	0.74	0.79
Morocco	0.95	70	0.61	0.76	0.85	0.87	0.90	0.88	0.88	0.87	0.90	0.82
Netherlands	0.85	43	0.56	0.63	0.62	0.56	0.71	0.73	0.64	0.76	0.75	0.56
New Zealand	0.86	46	0.57	0.57	0.68	0.56	0.78	0.73	0.76	0.71	0.77	0.60
Northern Ireland	0.74	32	0.58	0.38	0.68	0.49	0.52	0.56	0.56	0.67	0.62	0.58
Norway	0.83	40	0.43	0.49	0.68	0.55	0.77	0.72	0.62	0.72	0.66	0.63
Oman	0.95	70	0.73	0.72	0.77	0.86	0.88	0.88	0.90	0.88	0.86	0.86
Poland	0.86	46	0.65	0.43	0.78	0.57	0.77	0.77	0.74	0.73	0.74	0.44
Portugal	0.92	61	0.58	0.78	0.66	0.67	0.84	0.87	0.88	0.80	0.78	0.91
Qatar	0.96	72	0.69	0.77	0.85	0.92	0.85	0.91	0.88	0.85	0.87	0.86
Romania	0.95	71	0.65	0.75	0.85	0.86	0.82	0.92	0.92	0.86	0.88	0.87
Russian Federation	0.77	34	0.49	0.39	0.68	0.59	0.75	0.59	0.57	0.65	0.64	0.27
Saudi Arabia	0.96	75	0.58	0.76	0.76	0.93	0.89	0.93	0.94	0.92	0.93	0.92
Singapore	0.88	49	0.71	0.72	0.72	0.64	0.76	0.71	0.76	0.70	0.72	0.52
Slovak Republic	0.91	57	0.60	0.64	0.71	0.77	0.81	0.84	0.83	0.76	0.78	0.75
Slovenia	0.89	51	0.65	0.61	0.66	0.63	0.75	0.79	0.74	0.75	0.78	0.75
Spain	0.96	73	0.73	0.84	0.79	0.82	0.84	0.93	0.92	0.88	0.85	0.91
Sweden	0.88	49	0.59	0.60	0.72	0.59	0.79	0.78	0.66	0.76	0.76	0.74
Trinidad and Tobago	0.89	52	0.45	0.59	0.73	0.73	0.84	0.80	0.78	0.77	0.83	0.60
United Arab Emirates	0.96	75	0.71	0.78	0.85	0.90	0.88	0.92	0.91	0.87	0.91	0.89
United States	0.87	47	0.64	0.70	0.75	0.59	0.76	0.73	0.74	0.71	0.71	0.50
Sixth Grade Participants												
Botswana	0.87	46	0.54	0.54	0.60	0.75	0.71	0.79	0.78	0.70	0.70	0.60
Honduras	0.95	70	0.72	0.73	0.80	0.81	0.84	0.93	0.89	0.91	0.86	0.87
Kuwait	0.92	61	0.49	0.54	0.76	0.83	0.86	0.85	0.84	0.85	0.86	0.80
Morocco	0.95	70	0.60	0.76	0.86	0.87	0.90	0.88	0.89	0.87	0.90	0.81

Exhibit 5: Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2011 School Discipline and Safety Scale (Continued)

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Factor Loadings for Each Item									
			ACBG13AA	ACBG13AB	ACBG13AC	ACBG13AD	ACBG13AE	ACBG13AF	ACBG13AG	ACBG13AH	ACBG13AI	ACBG13AJ
Benchmarking Participants												
Alberta, Canada	0.84	45	0.47	0.50	0.67	0.71	0.74	0.78	0.77	0.69	0.59	0.69
Ontario, Canada	0.88	51	0.68	0.76	0.76	0.52	0.84	0.72	0.67	0.73	0.75	0.66
Quebec, Canada	0.83	42	0.53	0.57	0.59	0.63	0.75	0.75	0.64	0.67	0.65	0.63
Maltese - Malta	0.91	56	0.50	0.61	0.64	0.81	0.89	0.87	0.77	0.80	0.74	0.79
Eng/Afr (5) - RSA [◇]	0.89	51	0.50	0.65	0.69	0.77	0.73	0.79	0.85	0.68	0.79	0.60
Andalusia, Spain	0.95	70	0.74	0.83	0.77	0.79	0.82	0.92	0.92	0.87	0.82	0.88
Abu Dhabi, UAE	0.95	70	0.67	0.72	0.83	0.90	0.84	0.90	0.87	0.86	0.87	0.88
Dubai, UAE	0.97	77	0.68	0.77	0.86	0.91	0.92	0.94	0.93	0.87	0.92	0.91
Florida, US	0.88	51	0.53	0.65	0.79	0.77	0.81	0.72	0.83	0.76	0.64	0.61
prePIRLS Participants												
Botswana	0.88	49	0.61	0.65	0.58	0.68	0.79	0.76	0.73	0.79	0.75	0.63
Colombia	0.96	75	0.74	0.82	0.67	0.87	0.89	0.93	0.94	0.90	0.93	0.92
South Africa	0.90	54	0.58	0.64	0.74	0.80	0.81	0.80	0.78	0.81	0.78	0.58

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

Exhibit 6: Relationship Between the PIRLS 2011 School Discipline and Safety 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 (η^2)
	(r)	(r ²)	
Australia	0.21	0.04	0.02
Austria	0.05	0.00	0.00
Azerbaijan	0.09	0.01	0.01
Belgium (French)	0.14	0.02	0.03
Bulgaria	0.15	0.02	0.03
Canada	0.12	0.01	0.01
Chinese Taipei	0.03	0.00	0.00
Colombia	0.14	0.02	0.03
Croatia	0.08	0.01	0.01
Czech Republic	0.00	0.00	0.00
Denmark	0.12	0.01	0.00
England	0.15	0.02	0.02
Finland	0.08	0.01	0.00
France	0.16	0.02	0.03
Georgia	0.01	0.00	0.00
Germany	0.21	0.05	0.06
Hong Kong SAR	0.09	0.01	0.00
Hungary	0.23	0.05	0.07

Exhibit 6: Relationship Between the PIRLS 2011 School Discipline and Safety 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 (η^2)
	(r)	(r ²)	
Indonesia	0.01	0.00	0.00
Iran, Islamic Rep. of	0.09	0.01	0.02
Ireland	0.17	0.03	0.02
Israel	0.13	0.02	0.04
Italy	0.03	0.00	0.00
Lithuania	0.01	0.00	0.00
Malta	0.13	0.02	0.04
Morocco	-0.03	0.00	0.01
Netherlands	0.10	0.01	0.01
New Zealand	0.22	0.05	0.03
Northern Ireland	0.14	0.02	0.01
Norway	0.05	0.00	0.00
Oman	0.08	0.01	0.01
Poland	-0.02	0.00	0.00
Portugal	0.05	0.00	0.00
Qatar	0.19	0.04	0.04
Romania	0.20	0.04	0.04
Russian Federation	0.01	0.00	0.00
Saudi Arabia	0.10	0.01	0.03
Singapore	0.07	0.00	0.00
Slovak Republic	0.09	0.01	0.01
Slovenia	-0.01	0.00	0.00
Spain	0.06	0.00	0.01
Sweden	0.13	0.02	0.02
Trinidad and Tobago	0.17	0.03	0.01
United Arab Emirates	0.13	0.02	0.02
United States	0.18	0.03	0.01
International Median	0.10	0.01	0.01
Sixth Grade Participants			
Botswana	0.22	0.05	0.04
Honduras	0.18	0.03	0.03
Kuwait	0.05	0.00	0.01
Morocco	0.01	0.00	0.00
Benchmarking Participants			
Alberta, Canada	0.13	0.02	0.02
Ontario, Canada	0.10	0.01	0.01
Quebec, Canada	0.06	0.00	0.00
Maltese - Malta	0.06	0.00	0.01

Exhibit 6: Relationship Between the PIRLS 2011 Students Discipline and Safety Scale and PIRLS 2011 Reading Achievement (Continued)

Country	Pearson's Correlation with Reading Achievement		Variance in Reading Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	(r)	(r ²)	
Eng/Afr (5) - RSA [◇]	0.46	0.21	0.17
Andalusia, Spain	0.07	0.01	0.01
Abu Dhabi, UAE	0.10	0.01	0.02
Dubai, UAE	0.14	0.02	0.04
Florida, US	0.18	0.03	0.02
prePIRLS Participants			
Botswana	0.23	0.05	0.05
Colombia	0.13	0.02	0.02
South Africa	0.21	0.05	0.04

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