

School Discipline Scale

The *School Discipline* (DAS) scale was created based on principals' responses concerning the ten potential school problems described below.

Items in the PIRLS 2016 *School Discipline* Scale

		To what degree is each of the following a problem among fourth grade students in your school?				
		Not a problem	Minor problem	Moderate problem	Serious problem	
T	ACBG14A	1) Arriving late at school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG14B	2) Absenteeism (i.e., unjustified absences)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG14C	3) Classroom disturbance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG14D	4) Cheating	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG14E	5) Profanity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG14F	6) Vandalism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG14G	7) Theft	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG14H	8) Intimidation or verbal abuse among students (including texting, emailing, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG14I	9) Physical fights among students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
T	ACBG14J	10) Intimidation or verbal abuse of teachers or staff (including texting, emailing, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Hardly Any Problems Minor Problems Moderate to Severe Problems

9.9 7.7

T Trend item—item was included in the same scale in PIRLS 2011 and was used for linking the PIRLS 2011 and PIRLS 2016 scales.

Item Parameters for the PIRLS 2016 School Discipline Scale

Item	delta	tau_1	tau_2	tau_3	Infit
ACBG14A	-0.12195	-2.34683	-0.42737	2.77420	1.24
ACBG14B	0.12937	-1.53131	-0.45652	1.98783	1.16
ACBG14C	0.91425	-2.22837	-0.27536	2.50373	1.02
ACBG14D	-0.39571	-1.01520	-0.90302	1.91822	1.08
ACBG14E	0.57429	-1.73047	-0.41827	2.14874	0.91
ACBG14F	-0.35555	-0.41221	-0.73370	1.14591	0.75
ACBG14G	-0.55939	0.41486	-1.38128	0.96642	0.84
ACBG14H	0.25527	-1.55859	-0.58526	2.14385	0.93
ACBG14I	0.33890	-1.63156	-0.63374	2.26530	0.84
ACBG14J	-0.77948	-0.03064	-0.67247	0.70311	0.86

Scale Transformation Constants for the PIRLS 2016 School Discipline Scale

Scale Transformation Constants	
A = 7.915470	Transformed Scale Score = 7.915470 + 0.941833 • Logit Scale Score
B = 0.941833	

Equivalence Table of the Raw Score and Transformed Scale Scores for the PIRLS 2016 School Discipline Scale

Raw Score	Transformed Scale Score	Cutpoint
0	3.78131	
1	4.85875	
2	5.36727	
3	5.70447	
4	5.96046	
5	6.16894	
6	6.34794	
7	6.50757	
8	6.65426	
9	6.79253	
10	6.92445	
11	7.05592	
12	7.18729	
13	7.32077	
14	7.45855	
15	7.60360	7.7
16	7.75631	
17	7.92096	
18	8.09978	
19	8.29514	
20	8.51076	
21	8.74775	
22	9.00813	
23	9.29258	
24	9.60146	
25	9.93429	9.9
26	10.29556	
27	10.69797	
28	11.17296	
29	11.80710	
30	12.98539	

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

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Cronbach's Alpha Reliability Coefficient and Principal Components Analysis of the Items in the PIRLS 2016 School Discipline Scale

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Components Loadings for Each Item									
			ACBG1A	ACBG1B	ACBG1C	ACBG1D	ACBG1E	ACBG1F	ACBG1G	ACBG1H	ACBG1I	ACBG1J
Australia	0.88	51	0.58	0.59	0.72	0.63	0.84	0.75	0.76	0.77	0.76	0.73
Austria	0.86	45	0.48	0.56	0.76	0.62	0.83	0.77	0.63	0.70	0.74	0.53
Azerbaijan	0.95	70	0.50	0.73	0.86	0.80	0.84	0.93	0.92	0.88	0.87	0.94
Bahrain	0.96	74	0.74	0.82	0.78	0.90	0.87	0.91	0.91	0.88	0.84	0.92
Belgium (Flemish)	0.86	46	0.51	0.58	0.72	0.68	0.77	0.74	0.61	0.72	0.74	0.68
Belgium (French)	0.85	43	0.51	0.64	0.54	0.55	0.73	0.65	0.69	0.79	0.78	0.65
Bulgaria	0.93	64	0.64	0.80	0.81	0.82	0.73	0.81	0.85	0.82	0.84	0.86
Canada	0.88	50	0.62	0.61	0.71	0.64	0.77	0.74	0.74	0.74	0.77	0.69
Chile	0.92	59	0.57	0.60	0.73	0.65	0.83	0.87	0.86	0.86	0.82	0.79
Chinese Taipei	0.88	50	0.61	0.63	0.68	0.68	0.82	0.74	0.76	0.77	0.74	0.59
Czech Republic	0.83	41	0.48	0.49	0.64	0.69	0.75	0.66	0.65	0.73	0.56	0.67
Denmark	0.82	40	0.59	0.53	0.70	0.45	0.77	0.58	0.49	0.79	0.77	0.54
Egypt	0.93	61	0.61	0.63	0.75	0.80	0.86	0.85	0.86	0.85	0.75	0.79
England	0.77	34	0.67	0.67	0.63	0.14	0.71	0.48	0.36	0.67	0.74	0.51
Finland	0.79	35	0.57	0.54	0.71	0.40	0.76	0.56	0.53	0.64	0.62	0.47
France	0.90	53	0.66	0.65	0.68	0.49	0.78	0.79	0.80	0.82	0.80	0.77
Georgia	0.97	76	0.64	0.80	0.90	0.69	0.93	0.95	0.95	0.94	0.91	0.95
Germany	0.89	50	0.62	0.67	0.73	0.60	0.73	0.76	0.66	0.78	0.82	0.63
Hong Kong SAR	0.80	37	0.50	0.57	0.65	0.59	0.73	0.68	0.73	0.61	0.67	0.21
Hungary	0.90	53	0.72	0.69	0.79	0.71	0.77	0.81	0.55	0.72	0.80	0.67
Iran, Islamic Rep. of	0.91	57	0.66	0.60	0.72	0.76	0.85	0.82	0.83	0.82	0.78	0.69
Ireland	0.85	46	0.59	0.60	0.70	0.53	0.70	0.68	0.61	0.74	0.82	0.73
Israel	0.96	72	0.71	0.82	0.76	0.89	0.80	0.94	0.89	0.86	0.89	0.92
Italy	0.94	66	0.61	0.75	0.64	0.73	0.69	0.92	0.92	0.92	0.91	0.91
Kazakhstan	0.95	70	0.79	0.80	0.80	0.58	0.83	0.93	0.92	0.88	0.89	0.88
Kuwait	0.91	58	0.49	0.58	0.71	0.79	0.84	0.86	0.84	0.81	0.87	0.76
Latvia	0.83	42	0.63	0.59	0.82	0.37	0.68	0.74	0.64	0.64	0.69	0.56
Lithuania	0.79	36	0.52	0.48	0.69	0.58	0.70	0.60	0.61	0.64	0.61	0.49
Macao SAR	0.73	31	0.72	0.47	0.65	0.28	0.70	0.28	0.76	0.45	0.72	0.03
Malta	0.93	61	0.56	0.77	0.61	0.82	0.83	0.85	0.85	0.86	0.80	0.82
Morocco	0.95	68	0.63	0.74	0.84	0.86	0.90	0.90	0.88	0.86	0.84	0.75
Netherlands	0.85	43	0.39	0.46	0.78	0.59	0.82	0.75	0.54	0.80	0.79	0.43
New Zealand	0.88	49	0.64	0.66	0.63	0.52	0.77	0.75	0.75	0.75	0.79	0.74
Northern Ireland	0.74	34	0.30	0.47	0.76	0.55	0.77	0.53	0.53	0.63	0.62	0.48
Norway (5)	0.85	45	0.60	0.67	0.68	0.65	0.72	0.69	0.49	0.70	0.68	0.77
Oman	0.96	74	0.73	0.81	0.83	0.93	0.89	0.91	0.92	0.90	0.76	0.89
Poland	0.81	38	0.50	0.54	0.57	0.63	0.73	0.65	0.57	0.65	0.71	0.55
Portugal	0.89	53	0.49	0.67	0.77	0.67	0.75	0.79	0.76	0.77	0.77	0.81
Qatar	0.92	61	0.62	0.68	0.73	0.85	0.82	0.82	0.79	0.81	0.80	0.85
Russian Federation	0.77	33	0.60	0.62	0.64	0.60	0.58	0.53	0.60	0.56	0.59	0.35
Saudi Arabia	0.95	70	0.53	0.73	0.81	0.88	0.90	0.90	0.91	0.91	0.88	0.84
Singapore	0.89	50	0.75	0.72	0.76	0.64	0.78	0.67	0.72	0.71	0.82	0.46
Slovak Republic	0.89	51	0.65	0.74	0.70	0.67	0.76	0.80	0.67	0.65	0.75	0.74
Slovenia	0.90	54	0.61	0.67	0.73	0.76	0.77	0.83	0.80	0.76	0.76	0.64
South Africa	0.90	51	0.67	0.72	0.69	0.67	0.72	0.79	0.78	0.72	0.75	0.65
Spain	0.94	69	0.67	0.84	0.77	0.80	0.76	0.91	0.92	0.87	0.86	0.89
Sweden	0.85	44	0.50	0.63	0.76	0.47	0.72	0.78	0.55	0.72	0.76	0.68
Trinidad and Tobago	0.90	54	0.58	0.68	0.58	0.67	0.82	0.85	0.85	0.79	0.83	0.62
United Arab Emirates	0.93	64	0.66	0.68	0.69	0.86	0.84	0.89	0.86	0.82	0.81	0.87
United States	0.87	47	0.59	0.65	0.69	0.61	0.78	0.70	0.68	0.71	0.78	0.66
Benchmarking Participants												
Buenos Aires, Argentina	0.86	49	0.46	0.58	0.65	0.69	0.75	0.80	0.79	0.73	0.77	0.69
Ontario, Canada	0.91	57	0.69	0.68	0.74	0.71	0.79	0.79	0.78	0.81	0.81	0.72
Quebec, Canada	0.83	43	0.58	0.58	0.73	0.35	0.74	0.74	0.72	0.69	0.74	0.58
Denmark (3)	0.84	43	0.60	0.55	0.68	0.51	0.78	0.67	0.49	0.77	0.75	0.65
Norway (4)	0.87	47	0.54	0.46	0.77	0.49	0.79	0.78	0.69	0.73	0.70	0.80
Moscow City, Russian Fed.	0.75	31	0.57	0.56	0.56	0.58	0.67	0.67	0.57	0.47	0.54	0.20
Eng/Afr/Zulu - RSA (5)	0.91	56	0.69	0.72	0.74	0.73	0.77	0.80	0.82	0.78	0.75	0.69
Andalusia, Spain	0.95	70	0.72	0.85	0.70	0.80	0.79	0.93	0.92	0.87	0.84	0.90
Madrid, Spain	0.88	55	0.48	0.51	0.71	0.80	0.74	0.84	0.81	0.77	0.81	0.82
Abu Dhabi, UAE	0.93	63	0.67	0.68	0.71	0.82	0.79	0.88	0.86	0.86	0.79	0.88
Dubai, UAE	0.94	67	0.56	0.73	0.72	0.89	0.87	0.89	0.87	0.85	0.82	0.89

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016

Relationship Between the PIRLS 2016 School Discipline Scale and PIRLS 2016 Reading 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	0.24	0.06	0.05
Austria	0.10	0.01	0.02
Azerbaijan	-0.06	0.00	0.01
Bahrain	0.18	0.03	0.02
Belgium (Flemish)	0.17	0.03	0.02
Belgium (French)	0.12	0.01	0.02
Bulgaria	0.13	0.02	0.02
Canada	0.16	0.03	0.02
Chile	0.20	0.04	0.05
Chinese Taipei	0.03	0.00	0.00
Czech Republic	0.04	0.00	0.00
Denmark	0.08	0.01	0.01
Egypt	0.13	0.02	0.01
England	0.15	0.02	0.01
Finland	0.06	0.00	0.00
France	0.10	0.01	0.01
Georgia	0.07	0.01	0.00
Germany	0.26	0.07	0.09
Hong Kong SAR	0.17	0.03	0.01
Hungary	0.25	0.06	0.04
Iran, Islamic Rep. of	0.22	0.05	0.05
Ireland	0.12	0.01	0.03
Israel	0.24	0.06	0.07
Italy	0.09	0.01	0.00
Kazakhstan	0.01	0.00	0.01
Kuwait	0.12	0.02	0.02
Latvia	0.08	0.01	0.01
Lithuania	0.04	0.00	0.00
Macao SAR	0.02	0.00	0.01
Malta	0.09	0.01	0.01
Morocco	0.04	0.00	0.00
Netherlands	0.12	0.01	0.02
New Zealand	0.23	0.05	0.06
Northern Ireland	0.14	0.02	0.00
Norway (5)	0.08	0.01	0.01
Oman	0.09	0.01	0.01
Poland	0.07	0.01	0.00
Portugal	0.17	0.03	0.02
Qatar	0.06	0.00	0.01
Russian Federation	0.03	0.00	0.00
Saudi Arabia	0.36	0.13	0.10
Singapore	0.12	0.01	0.01
Slovak Republic	0.16	0.03	0.08
Slovenia	0.01	0.00	0.00
South Africa	0.17	0.03	0.02
Spain	0.16	0.02	0.02
Sweden	0.13	0.02	0.02
Trinidad and Tobago	0.10	0.01	0.01
United Arab Emirates	0.24	0.06	0.03
United States	0.22	0.05	0.03
International Median	0.12	0.01	0.01
Benchmarking Participants			
Buenos Aires, Argentina	0.11	0.01	0.02
Ontario, Canada	0.16	0.03	0.03
Quebec, Canada	0.15	0.02	0.01
Denmark (3)	0.05	0.00	0.01
Norway (4)	0.06	0.00	0.00
Moscow City, Russian Fed.	-0.04	0.00	0.00
Eng/Afr/Zulu - RSA (5)	0.12	0.01	0.01
Andalusia, Spain	0.08	0.01	0.01
Madrid, Spain	0.11	0.01	0.02
Abu Dhabi, UAE	0.14	0.02	0.01
Dubai, UAE	0.26	0.07	0.04

SOURCE: IEA's Progress in International Reading Literacy Study – PIRLS 2016