

School Discipline Problems–Principals’ Reports Scale, Advanced Mathematics

The School Discipline Problems–Principals’ Reports (DAS) scale was created based on principals’ responses concerning the eleven potential school problems described below.

Items in the TIMSS Advanced 2015 School Discipline Problems–Principals’ Reports Scale, Advanced Mathematics

		To what degree is each of the following a problem among twelfth grade students in your school?			
		Not a problem	Minor problem	Moderate problem	Serious problem
MCBG11A	1) Arriving late at school -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MCBG11B	2) Absenteeism (i.e., unjustified absences) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MCBG11C	3) Classroom disturbance -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MCBG11D	4) Cheating -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MCBG11E	5) Profanity -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MCBG11F	6) Vandalism -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MCBG11G	7) Theft -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MCBG11H	8) Intimidation or verbal abuse among students (including texting, emailing, etc.) -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MCBG11 I	9) Physical injury to other students -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MCBG11J	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"/>
MCBG11K	11) Physical injury to teachers or staff -----	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Hardly Any Problems 10.0 Minor Problems 7.2 Moderate to Severe Problems

Item Parameters for the TIMSS Advanced 2015 School Discipline Problems - Principals' Reports Scale, Advanced Mathematics

Item	delta	tau_1	tau_2	tau_3	Infit
MCBG11A	1.17742	-3.15684	-0.15587	3.31271	1.32
MCBG11B	1.45295	-2.15166	-0.29819	2.44985	1.30
MCBG11C	0.19376	-1.84784	-0.67552	2.52336	0.88
MCBG11D	0.54002	-2.57666	-0.59148	3.16814	1.15
MCBG11E	-0.23367	-1.81279	-0.33749	2.15028	0.87
MCBG11F	-0.49122	0.42442	-1.36426	0.93984	0.69
MCBG11G	-0.42249	0.12894	-1.20999	1.08105	0.69
MCBG11H	0.03725	-0.81699	-1.25629	2.07328	0.78
MCBG11I	-0.61113	0.68322	-1.40198	0.71876	0.61
MCBG11J	-0.63015	0.69434	-1.66531	0.97097	0.74
MCBG11K	-1.01274	1.42144	-0.55467	-0.86677	0.56

Scale Transformation Constants for the TIMSS Advanced 2015 School Discipline Problems - Principals' Reports Scale, Advanced Mathematics

Scale Transformation Constants

A = 7.71961

B = 0.975134

Transformed Scale Score = 7.71961 + 0.975134 • Logit Scale Score

**Equivalence Table of the Raw Score and the Transformed Scale Score
for the TIMSS Advanced 2015 School Discipline Problems - Principals'
Reports Scale, Advanced Mathematics**

Raw Score	Transformed Scale Score	Cutpoint
0	3.51299	
1	4.63283	
2	5.15247	
3	5.48517	
4	5.72627	
5	5.91593	
6	6.07244	
7	6.20925	
8	6.33188	
9	6.44442	
10	6.55006	
11	6.65149	
12	6.75093	
14	6.95014	
15	7.05580	
16	7.16645	7.2
17	7.28461	
18	7.41311	
19	7.55522	
20	7.71471	
21	7.89534	
22	8.10206	
23	8.33660	
24	8.60078	
25	8.89568	
26	9.22471	
27	9.59087	
28	10.00271	10.0
29	10.47049	
30	11.00615	
31	11.62931	
32	12.40529	
33	13.73050	

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 Advanced 2015 School Discipline Problems - Principals' Reports Scale, Advanced Mathematics

Country	Cronbach's Alpha Reliability Coefficient	Percent of Variance Explained	Component Loadings for Each Item										
			MCBG1A	MCBG1B	MCBG1C	MCBG1D	MCBG1E	MCBG1F	MCBG1G	MCBG1H	MCBG1I	MCBG1J	MCBG1K
France	0.94	65	0.61	0.65	0.79	0.70	0.88	0.89	0.80	0.88	0.91	0.87	0.85
Italy	0.96	72	0.49	0.77	0.87	0.72	0.74	0.94	0.95	0.91	0.95	0.94	0.92
Lebanon	0.98	84	0.84	0.88	0.90	0.87	0.94	0.95	0.96	0.91	0.94	0.93	0.94
Norway	0.85	46	0.65	0.74	0.67	0.58	0.78	0.72	0.66	0.63	0.74	0.69	0.61
Portugal	0.93	62	0.50	0.75	0.81	0.71	0.75	0.86	0.86	0.86	0.88	0.85	0.72
Russian Federation	0.75	34	0.56	0.67	0.65	0.58	0.73	0.52	0.48	0.56	0.58	0.39	-
Russian Federation 6hr+	0.77	34	0.65	0.66	0.72	0.60	0.70	0.56	0.50	0.54	0.57	0.05	-
Slovenia	0.76	37	0.26	0.27	0.53	0.53	0.66	0.68	0.66	0.58	0.80	0.64	0.83
Sweden	0.78	32	0.52	0.54	0.59	0.41	0.53	0.71	0.68	0.67	0.58	0.62	0.20
United States	0.88	47	0.55	0.56	0.79	0.62	0.78	0.77	0.78	0.74	0.73	0.65	0.47
International Avg.	0.87	53	0.55	0.65	0.73	0.64	0.75	0.78	0.76	0.75	0.79	0.73	0.69

A dash (-) indicates comparable data not available.

Relationship Between the TIMSS Advanced 2015 School Discipline Problems - Principals' Reports Scale, and TIMSS Advanced 2015 Advanced Mathematics Achievement

Country	Pearson's Correlation with Advanced Mathematics Achievement		Variance in Advanced Mathematics Achievement Accounted for by Difference Between Regions of the Scale (η^2)
	(r)	(r ²)	
France	0.10	0.01	0.00
Italy	0.21	0.04	0.06
Lebanon	0.10	0.01	0.01
Norway	0.18	0.03	0.01
Portugal	0.03	0.00	0.00
Russian Federation	0.15	0.02	0.00
Russian Federation 6hr+	0.02	0.00	0.00
Slovenia	0.25	0.06	0.03
Sweden	0.09	0.01	0.01
United States	0.16	0.03	0.02
International Median	0.15	0.02	0.01

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