

Chapter 6

School Climate

Students with the highest mathematics achievement typically attend schools that emphasize academic success, as indicated by rigorous curricular goals, effective teachers, students that desire to do well, and parental support. In contrast, schools with discipline and safety problems are not conducive to high achievement. Students that attended schools with disorderly environments and reported more frequent bullying had much lower achievement than their counterparts in safe and orderly schools.

The school's educational values are reflected by the teachers, school leadership, the students themselves, and their parents. A school with a positive atmosphere toward high achievement and a rigorous academic program can overcome resource shortages and encourage students toward excellent performance. By contrast, a school with more disciplinary problems is not conducive to higher student achievement. When students are fearful and worried about their safety, for example, it is difficult to focus on academics. Chapter 6 presents the TIMSS 2011 results about positive and negative aspects of the atmosphere in schools around the world.

Schools Emphasize Academic Success

Studies of academic optimism show that a positive school atmosphere emphasizing academic achievement can even overcome socioeconomic disadvantages (McGuigan & Hoy, 2006). There are several dimensions of academic optimism, including a school communicating its academic emphasis through clear and rigorous academic goals. However, because individuals are the actors within schools, the effect on achievement is greatest when there is a collective influence. This includes a school administration and teachers that support and trust in students' achievement. In addition to making it clear that academic success is important, principals and teachers need to emphasize it can be achieved. Parents' support for their children's learning also contributes to a school's collective efficacy or belief that the school's academic goals can be implemented.

School Emphasis on Academic Success

The TIMSS 2011 School Emphasis on Academic Success scale characterizes three aspects of academic optimism:

academics in their schools, so the three regions of the scale have been described as **Very High**, **High**, and **Medium**. Students were scored according to their principals' characterization of their school in terms of the five aspects. Students in schools with **Very High Emphasis** on academic success had principals characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in **Medium Emphasis** schools had principals characterizing three of the five aspects as "medium" and the other two as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

On average, across the fourth grade countries, 8 percent of the students attended schools where the principal reported a **Very High Emphasis** on academic success, 58 percent a school with a **High Emphasis**, and 34 percent a school with a **Medium Emphasis**. Although the results were not entirely consistent from country to country, internationally at the fourth grade, on average, there was a direct correspondence between average mathematics achievement and principals' reports, with higher emphasis on academic success related to higher average mathematics achievement. The results were similar for the sixth grade and benchmarking participants.

Exhibit 6.2 shows the principals' reports on the School Emphasis on Academic Success scale for the TIMSS 2011 eighth grade assessment.

6.1:

Component	Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Grade 6							
H	(.)	(.)	(.)	(.)	(.)	(.)	. (.)
A	(.)	(.)	(.)	(.)	(.)	(.)	. (.)
Y	(.)		(.)	(.)	(.)	(.)	. (.)
Grade 7							
H							
A							
Y							
Grade 8							
H							
A							
Y							



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Armenia

Exhibit 6.5: Principals Spend Time on Leadership Activities (Continued)

Country	Percent of Students Whose Principals Spend “A Lot of Time”								
	Promoting the School’s Educational Vision or Goals	Developing the School’s Curricular and Educational Goals	Monitoring Teachers’ Implementation of the School’s Educational Goals in Their Teaching	Monitoring Students’ Learning Progress to Ensure that the School’s Educational Goals Are Reached	Keeping an Orderly Atmosphere in the School	Addressing Disruptive Student Behavior	Advising Teachers Who Have Questions or Problems with Their Teaching	Initiating Educational Projects or Improvements	Participating in Professional Development Activities Specifically for School Principals

Sixth Grade Participants

Botswana	68 (3.7)	67 (3.9)	83 (2.8)	82 (3.0)	87 (2.5)	62 (4.6)	57 (3.6)	45 (4.2)	52 (4.7)
Honduras	58 (4.5)	63 (4.7)	51 (5.1)	65 (4.4)	90 (2.5)	72 (4.8)	56 (4.6)	63 (4.7)	51 (4.9)
Yemen	49 (4.6)	53 (4.3)	75 (3.9)	66 (4.2)	84 (2.9)	64 (4.6)	56 (4.3)	19 (3.8)	32 (4.3)

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Exhibit 6.6: Principals Spend Time on Leadership Activities (Continued)

Country	Percent of Students Whose Principals Spend "A Lot of Time"									
	Promoting the School's Educational Vision or Goals	Developing the School's Curricular and Educational Goals	Monitoring Teachers' Implementation of the School's Educational Goals in Their Teaching	Monitoring Students' Learning Progress to						

had principals that needed to spend “a lot of time” addressing disruptive student behavior. Similar to the fourth grade, the last three areas—advising teachers, initiating projects, and participating in professional development activities—appear to occupy less of the principal’s time.

Schools with Discipline and Safety Problems

A sense of security that comes from attending a school with few behavior problems and having little or no concern about student or teacher safety promotes a stable learning environment. There is increasing research showing that a safe school environment is important for students’ academic achievement. On the other hand, a general lack of discipline, especially if students and teachers are afraid for their safety, does not facilitate learning. Unfortunately, community and school violence are becoming an increasing problem, especially among urban youth.

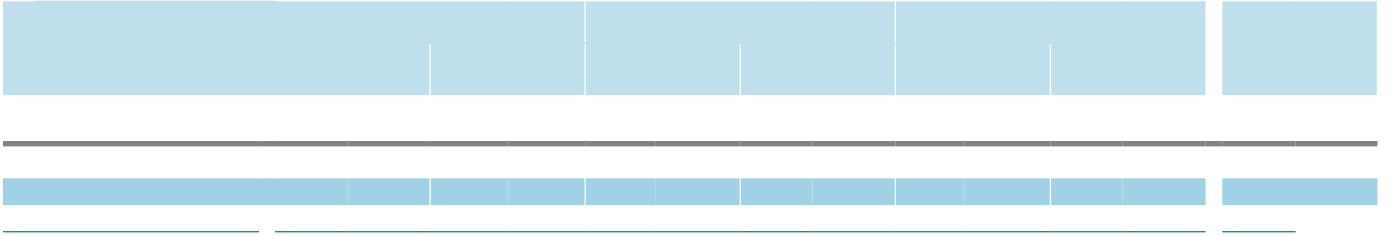
Safe and Orderly School

There is growing evidence that students’ perceived school safety adversely affects academic performance, even for primary school children (Milam, Furr-Holden, & Leaf, 2010). It seems that safety at school can no longer be taken for granted, even at the fourth grade. To provide information on the extent to which school safety might be affecting mathematics achievement, TIMSS 2011 developed the Safe and Orderly School scale. Teachers in both the fourth and eighth grade assessments were asked the degree to which they agreed or disagreed with the following statements:

- This school is located in a safe neighborhood;
- I feel safe at this school;
- This school’s security policies and practices are sufficient;

their teachers to be **Safe and Orderly**. Almost all of the remaining students (43%) were in schools judged to be **Somewhat Safe and Orderly**. In general, only small percentages of students (4% on average) were in schools judged **Not Safe and Orderly** at best, their teachers “disagreed a little” with three of the five statements and “agreed a little” with the other two, on average. Across the fourth grade countries, on average, the safer the school as reported by their teachers, the higher the students’ average mathematics achievement.

Exhibit 6.8 presents the corresponding Safe and Orderly School scale results for the eighth grade assessment. Students were assigned to one of the



Students Bullied at School

In general, bullying involves aggression or negative behavior intended to harm or bother less physically or psychologically powerful persons, although a New Zealand review of the literature found a range of definitions and terminology relating bullying to violence and abuse (Carroll-Lind, 2009). There is growing evidence that bullying in schools is on the rise, especially with the emergence of cyber-bullying, and that bullying does have a negative impact on students' educational achievement. To provide data about bullying in the participating countries, TIMSS 2011 created the Students Bullied at School scale, based on how often students experienced six bullying behaviors:

I was made fun of or called names;

I was left out of games or activities by other students;

Someone spread lies about me;

Something was stolen from me;

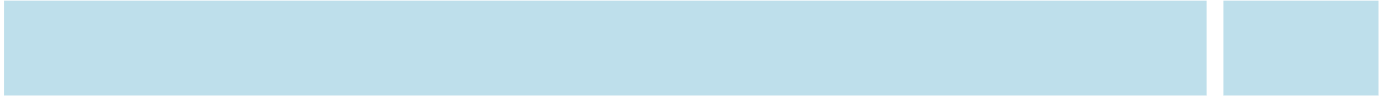
I was hit or hurt by other student(s); and

I was made to do things I didn't want to do by other students.

Exhibit 6.11 provides the results for the Students Bullied at School scale for the TIMSS 2011 fourth grade assessment. Students were scored according to their responses to how often they experienced six bullying behaviors (detailed on the second page of the exhibit). Students bullied **Almost Never** reported never experiencing three of six bullying behaviors and each of the

achievement to the extent that there was a 32-point difference in achievement between **Almost Never** being bullied and being bullied **About Weekly** (501 vs. 469).

Exhibit 6.12 provides the results for the TIMSS 2011 eighth grade assessment for the Students Bullied at School scale, which was based on the same six bullying behaviors (detailed on the second page of the exhibit).



Country	Composite Score			Number of Items			Error	SE	CI
	Mean	SD	SE	Total	Used	Discarded			
Andorra	581	50	2	35	35	0	4	1	577-585
Armenia	495	60	4	35	35	0	4	2	487-503
Australia	562	52	2	35	35	0	4	1	558-566
Austria	543	55	2	35	35	0	4	1	539-547
Azerbaijan	488	70	4	35	35	0	4	2	478-498
Bahrain	514	60	4	35	35	0	4	2	504-524
Bangladesh	475	80	4	35	35	0	4	2	465-485
Belgium	534	57	2	35	35	0	4	1	530-538
Belize	465	85	4	35	35	0	4	2	455-475
Bolivia	478	85	4	35	35	0	4	2	468-488
Bosnia and Herzegovina	494	65	4	35	35	0	4	2	484-504
Botswana	512	65	4	35	35	0	4	2	502-522
Brunei Darussalam	538	60	4	35	35	0	4	2	528-548
Bulgaria	476	75	4	35	35	0	4	2	466-486
Burkina Faso	455	95	4	35	35	0	4	2	445-465
Burundi	453	100	4	35	35	0	4	2	443-463
Cambodia	442	110	4	35	35	0	4	2	432-452
Cameroon	458	100	4	35	35	0	4	2	448-468
Canada	547	58	2	35	35	0	4	1	543-551
Chad	451	100	4	35	35	0	4	2	441-461
Chile	516	65	4	35	35	0	4	2	506-526
China	514	65	4	35	35	0	4	2	504-524
Colombia	495	75	4	35	35	0	4	2	485-505
Costa Rica	492	70	4	35	35	0	4	2	482-502
Croatia	522	60	4	35	35	0	4	2	512-532
Cuba	498	75	4	35	35	0	4	2	488-508
Cyprus	522	60	4	35	35	0	4	2	512-532
Czechia	534	57	2	35	35	0	4	1	530-538
Dominican Republic	468	85	4	35	35	0	4	2	458-478
Dominica	488	75	4	35	35	0	4	2	478-498
Ecuador	495	75	4	35	35	0	4	2	485-505
Egypt	485	85	4	35	35	0	4	2	475-495
El Salvador	478	85	4	35	35	0	4	2	468-488
Estonia	534	57	2	35	35	0	4	1	530-538
Fiji	455	95	4	35	35	0	4	2	445-465
Finland	562	52	2	35	35	0	4	1	558-566
France	543	55	2	35	35	0	4	1	539-547
Ghana	455	95	4	35	35	0	4	2	445-465
Guatemala	465	85	4	35	35	0	4	2	455-475
Hong Kong	572	48	2	35	35	0	4	1	568-576
Hungary	534	57	2	35	35	0	4	1	530-538
India	478	85	4	35	35	0	4	2	468-488
Indonesia	475	85	4	35	35	0	4	2	465-485
Ireland	522	60	4	35	35	0	4	2	512-532
Israel	522	60	4	35	35	0	4	2	512-532
Italy	534	57	2	35	35	0	4	1	530-538
Jamaica	455	95	4	35	35	0	4	2	445-465
Japan	562	52	2	35	35	0	4	1	558-566
Jordan	478	85	4	35	35	0	4	2	468-488
Kazakhstan	512	65	4	35	35	0	4	2	502-522
Kenya	455	95	4	35	35	0	4	2	445-465
Korea, Republic of	562	52	2	35	35	0	4	1	558-566
Korea, Democratic People's Republic of	455	95	4	35	35	0	4	2	445-465
Kuwait	514	65	4	35	35	0	4	2	504-524
Latvia	534	57	2	35	35	0	4	1	530-538
Lithuania	534	57	2	35	35	0	4	1	530-538
Luxembourg	543	55	2	35	35	0	4	1	539-547
Macao	572	48	2	35	35	0	4	1	568-576
Madagascar	455	95	4	35	35	0	4	2	445-465
Maldives	495	75	4	35	35	0	4	2	485-505
Mali	455	95	4	35	35	0	4	2	445-465
Malta	522	60	4	35	35	0	4	2	512-532
Mexico	478	85	4	35	35	0	4	2	468-488
Moldova	495	75	4	35	35	0	4	2	485-505
Montenegro	495	75	4	35	35	0	4	2	485-505
Morocco	455	95	4	35	35	0	4	2	445-465
Mozambique	455	95	4	35	35	0	4	2	445-465
Myanmar	455	95	4	35	35	0	4	2	445-465
Netherlands	543	55	2	35	35	0	4	1	539-547
New Zealand	543	55	2	35	35	0	4	1	539-547
Nigeria	455	95	4	35	35	0	4	2	445-465
North Macedonia	495	75	4	35	35	0	4	2	485-505
Oman	514	65	4	35	35	0	4	2	504-524
Pakistan	455	95	4	35	35	0	4	2	445-465
Palau	514	65	4	35	35	0	4	2	504-524
Panama	495	75	4	35	35	0	4	2	485-505
Papua New Guinea	455	95	4	35	35	0	4	2	445-465
Paraguay	478	85	4	35	35	0	4	2	468-488
Peru	478	85	4	35	35	0	4	2	468-488
Philippines	478	85	4	35	35	0	4	2	468-488
Poland	534	57	2	35	35	0	4	1	530-538
Portugal	534	57	2	35	35	0	4	1	530-538
Romania	495	75	4	35	35	0	4	2	485-505
Russia	514	65	4	35	35	0	4	2	504-524
Rwanda	455	95	4	35	35	0	4	2	445-465
Saint Vincent and the Grenadines	495	75	4	35	35	0	4	2	485-505
Saudi Arabia	514	65	4	35	35	0	4	2	504-524
Serbia	495	75	4	35	35	0	4	2	485-505
Singapore	572	48	2	35	35	0	4	1	568-576
Slovenia	534	57	2	35	35	0	4	1	530-538
Slovakia	534	57	2	35	35	0	4	1	530-538
Slovenia	534	57	2	35	35	0	4	1	530-538
Spain	534	57	2	35	35	0	4	1	530-538
Sweden	543	55	2	35	35	0	4	1	539-547
Switzerland	543	55	2	35	35	0	4	1	539-547
Taiwan	562	52	2	35	35	0	4	1	558-566
Tanzania	455	95	4	35	35	0	4	2	445-465
Thailand	514	65	4	35	35	0	4	2	504-524
Togo	455	95	4	35	35	0	4	2	445-465
Tonga	495	75	4	35	35	0	4	2	485-505
Turkey	495	75	4	35	35	0	4	2	485-505
Uganda	455	95	4	35	35	0	4	2	445-465
Ukraine	495	75	4	35	35	0	4	2	485-505
United Arab Emirates	514	65	4	35	35	0	4	2	504-524
United Kingdom	543	55	2	35	35	0	4	1	539-547
United States	543	55	2	35	35	0	4	1	539-547
Uruguay	495	75	4	35	35	0	4	2	485-505
Uzbekistan	495	75	4	35	35	0	4	2	485-505
Venezuela	455	95	4	35	35	0	4	2	445-465
Vietnam	478	85	4	35	35	0	4	2	468-488
Yemen	455	95	4	35	35	0	4	2	445-465
Zambia	455	95	4	35	35	0	4	2	445-465
Zimbabwe	455	95	4	35	35	0	4	2	445-465

