8 School learning environment

Chapter outline

This chapter presents findings from TIMSS 2015 relating to the school learning environment, as reported by teachers and principals. Sections relate to the emphasis placed on academic success and perceptions of safety, orderliness, discipline, bullying and the impact of disruptive and uninterested pupils.

Outcomes for Northern Ireland are compared with the international averages, and where relevant, with those of other countries.

Key findings

- In both mathematics and science, principals and teachers in Northern Ireland reported some of the highest levels of emphasis on academic success of any nation. Teachers reported higher levels of emphasis on academic success than principals.
- The vast majority of pupils in Northern Ireland attended schools which were categorised as 'Very Safe and Orderly' (teacher reports), with only one country having a higher percentage of pupils in this category. Similarly most pupils in Northern Ireland attended schools with 'Hardly Any', or 'Minor', problems with discipline (principal reports).
- On average, pupils in Northern Ireland participating in TIMSS 2015 reported experiencing bullying behaviours less frequently than those in most other participating countries.
- Teachers in Northern Ireland reported that their teaching was rarely limited by disruptive or uninterested pupils.
- Most aspects of the school learning environment in Northern Ireland remained stable between the 2011 and 2015 TIMSS cycles.

Interpreting the data: percentages in tables

Most of the data in this chapter is derived from teacher and principal reports. Reported percentages refer to pupils and can usually be interpreted as the percentage of pupils whose teachers or principals reported a particular practice or circumstance.

Year 6 (Y6) pupils (ages 9-10) were sampled by class. As a result, the Y6 Teacher Questionnaire would, in most cases, have been completed by the class teacher of the sampled class. However, in some cases, it might have been completed by different teachers who teach these pupils mathematics and / or science separately.

This means that the teacher-derived data for mathematics and science may differ slightly, as the sample of teachers in each group is not necessarily the same, or because the distribution of pupils within the sample of teachers may differ by subject.

Interpreting the data: indices and scales

In order to summarise data from a questionnaire, responses to several related items are sometimes combined to form an index or scale. The respondents to the questionnaire items are grouped according to their responses and the way in which responses have been categorised is shown for each index or scale. The data in an index or scale is often considered to be more reliable and valid than the responses to individual items.

8.1 Schools' emphasis on academic success – views of teachers and principals

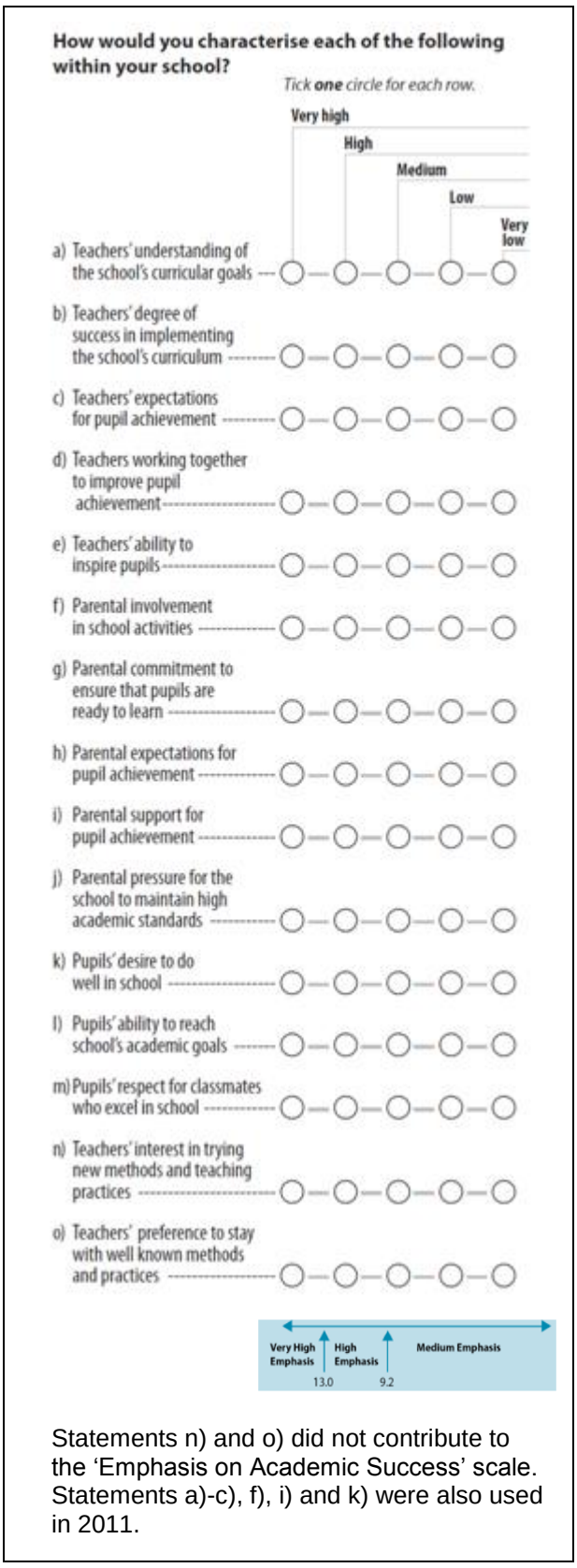
Principals and teachers were asked to rate the emphasis placed on academic success within their school by teachers, parents and pupils. Principals were asked a set of 13 questions, shown in Figure 8.1. Teachers answered a similar set of questions to principals, plus several additional questions; these are shown in Figure 8.2. Principals and teachers were also invited to rate levels of parental support and pupil motivation, as well as teachers' understanding of curricula goals and their expectations of pupils.

The questions were analysed as a separate scale for each subject (mathematics and science). The scale categories for each subject (for principals and teachers) are summarised below the teacher questions in Figure 8.2 and the data for each subject is shown in Table 8.1.

The data provided by principals and teachers for this scale comes from the School Questionnaire and the Teacher Questionnaire. The majority of the questions are not subject-specific. As a result, the overall proportions are broadly the same for mathematics and science[34]. Differences in achievement scores, however, are subject specific and have been reported separately where appropriate.

[34] Small differences in percentages may arise from patterns of non-response, or rounding.

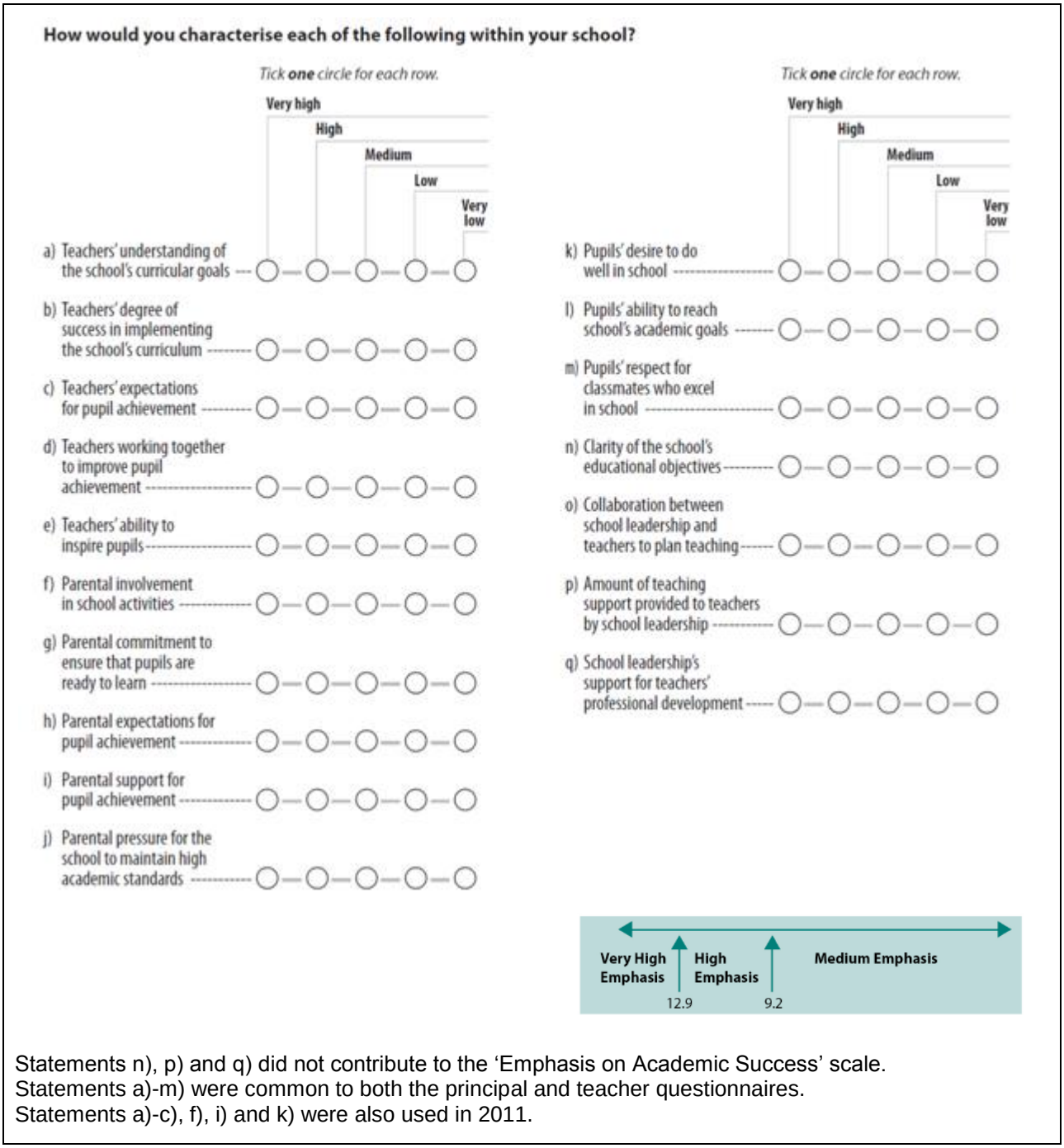
Figure 8.1 School's emphasis on academic success – questions for school principal



Statements n) and o) did not contribute to the 'Emphasis on Academic Success' scale. Statements a)-c), f), i) and k) were also used in 2011.

Source: Exhibit 6.2, International mathematics report (Mullis *et al.*, 2016a) and Exhibit 6.2 International science report (Martin *et al.*, 2016a).

Figure 8.2 School's emphasis on academic success – questions for teachers



Statements n), p) and q) did not contribute to the 'Emphasis on Academic Success' scale.
Statements a)-m) were common to both the principal and teacher questionnaires.
Statements a)-c), f), i) and k) were also used in 2011.

Source: Exhibit 6.4, International mathematics report (Mullis *et al.*, 2016a) and Exhibit 6.4 International science report (Martin *et al.*, 2016a).

Table 8.1 School emphasis on academic success

Mathematics

Reported by principals

Students were scored according to their principals' responses characterizing thirteen aspects on the *School Emphasis on Academic Success* scale. Students in schools where their principals reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.0, which corresponds to their principals characterizing seven of the thirteen aspects as "very high" and the other six as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 9.2, which corresponds to their principals characterizing seven of the thirteen aspects as "medium" and the other six as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

Country	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	
Northern Ireland r	15 (3.9)	589 (8.6)	76 (4.6)	569 (4.2)	9 (2.7)	548 (9.8)	11.4 (0.19)
International Avg.	7 (0.3)	527 (2.4)	54 (0.5)	512 (0.6)	39 (0.5)	490 (0.8)	

This TIMSS questionnaire scale was established in 2015 based on the combined response distribution of all countries that participated in TIMSS 2015. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale points corresponded to the standard deviation of the distribution.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the pupils.

Mathematics

Reported by teachers

Students were scored according to their teachers' responses characterizing fourteen aspects on the *School Emphasis on Academic Success* scale. Students in schools where their teachers reported a **Very High Emphasis** on academic success had a score on the scale of at least 12.9, which corresponds to their teachers characterizing seven of the fourteen aspects as "very high" and the other seven as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 9.2, which corresponds to their teachers characterizing seven of the fourteen aspects as "medium" and the other seven as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

Country	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	
Northern Ireland r	22 (3.6)	585 (7.3)	67 (4.4)	574 (4.2)	11 (3.1)	539 (6.6)	11.8 (0.20)
International Avg.	7 (0.3)	515 (2.2)	56 (0.5)	513 (0.6)	36 (0.5)	488 (0.8)	

This TIMSS questionnaire scale was established in 2015 based on the combined response distribution of all countries that participated in TIMSS 2015. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale points corresponded to the standard deviation of the distribution.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the pupils.

Sources: Exhibits 6.2 and 6.4 International mathematics report (Mullis *et al.*, 2016a).

Table 8.1 School emphasis on academic success - continued

Science

Reported by principals

Students were scored according to their principals' responses characterizing thirteen aspects on the *School Emphasis on Academic Success* scale. Students in schools where their principals reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.0, which corresponds to their principals characterizing seven of the thirteen aspects as "very high" and the other six as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 9.2, which corresponds to their principals characterizing seven of the thirteen aspects as "medium" and the other six as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

Country	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	
Northern Ireland r	15 (3.9)	529 (7.5)	76 (4.6)	519 (3.3)	9 (2.7)	503 (7.8)	11.4 (0.19)
International Avg.	7 (0.3)	525 (2.2)	55 (0.6)	514 (0.6)	38 (0.5)	491 (0.9)	

This TIMSS questionnaire scale was established in 2015 based on the combined response distribution of all countries that participated in TIMSS 2015. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale points corresponded to the standard deviation of the distribution.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the pupils.

Science

Reported by teachers

Students were scored according to their teachers' responses characterizing fourteen aspects on the *School Emphasis on Academic Success* scale. Students in schools where their teachers reported a **Very High Emphasis** on academic success had a score on the scale of at least 12.9, which corresponds to their teachers characterizing seven of the fourteen aspects as "very high" and the other seven as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 9.2, which corresponds to their teachers characterizing seven of the fourteen aspects as "medium" and the other seven as "high," on average. All other students attended schools with a **High Emphasis** on academic success.

Country	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	
Northern Ireland r	22 (3.6)	529 (5.3)	66 (4.4)	522 (3.4)	11 (3.1)	500 (5.9)	11.8 (0.20)
International Avg.	8 (0.3)	522 (2.4)	56 (0.5)	514 (0.6)	36 (0.5)	491 (0.9)	

This TIMSS questionnaire scale was established in 2015 based on the combined response distribution of all countries that participated in TIMSS 2015. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale points corresponded to the standard deviation of the distribution.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

An "r" indicates data are available for at least 70% but less than 85% of the pupils.

Sources: Exhibits 6.2 and 6.4 International science report (Martin *et al.*, 2016a).

In Northern Ireland, across both mathematics and science, principals of 91 per cent of pupils participating in TIMSS 2015 reported that their schools placed a 'High' or 'Very High' emphasis on academic success. This is similar to the 2011 results, which showed principals of over 90 per cent of pupils reporting that their school had either a 'High' or 'Very High' emphasis on academic success. However, compared with 2011 the percentage of pupils in the highest category has decreased, from 33 per cent in 2011 to 15 per cent in 2015. Caution should though be exercised when comparing 2011 and 2015. This is because the number of questions contributing to the scale has increased from eight to 13, and only six questions are common to both the 2011 and 2015 scales.

Teacher reports broadly reflected those of principals. Just under 90 per cent of pupils across both mathematics and science were in schools where their teachers reported a 'High' or 'Very High' emphasis on academic success. As with principals, the most noticeable change

between 2011 and 2015 was a decrease in the percentage of pupils in schools in which teachers reported a 'Very High Emphasis' on academic success. This fell from 31 per cent in 2011 to 22 per cent in 2015.

In both mathematics and science, Northern Ireland was one of the nations participating in TIMSS 2015 with the highest school emphasis on academic success. Only six countries had a higher proportion of pupils whose principals reported that their schools placed a 'Very High Emphasis' on academic success. These countries included the high performer Korea (26 per cent) and the Republic of Ireland (19 per cent). By contrast, in the sub-set of main comparator countries considered for this report, Poland and Finland had some of the lowest figures internationally, with only 1 per cent of pupils in schools where principals reported placing a 'Very High Emphasis' on academic success.

Teachers in Northern Ireland were more likely to report that their school placed a 'Very High Emphasis' on academic success than principals; 22 per cent of pupils in Northern Ireland were taught in schools where teachers reported that their school placed a 'Very High Emphasis' on academic success in mathematics and science. Korea was the only country to have a higher percentage of pupils in this category (29 per cent). Among the main comparator countries Poland, Singapore, Hong Kong and Finland all had less than 5 per cent of pupils in schools where teachers reported placing a 'Very High Emphasis' on success.

Principals had an average scale score of 11.4 and teachers 11.8. This was the case for mathematics and science. (Details of how the scale scores were calculated is provided in Table 8.1). For mathematics, Northern Ireland had the highest scale score for teachers of any participating country and the fourth highest scale score for principals. For science, the results were similarly high, with Northern Ireland having the joint highest average scale score for teachers and the fourth highest for principals.

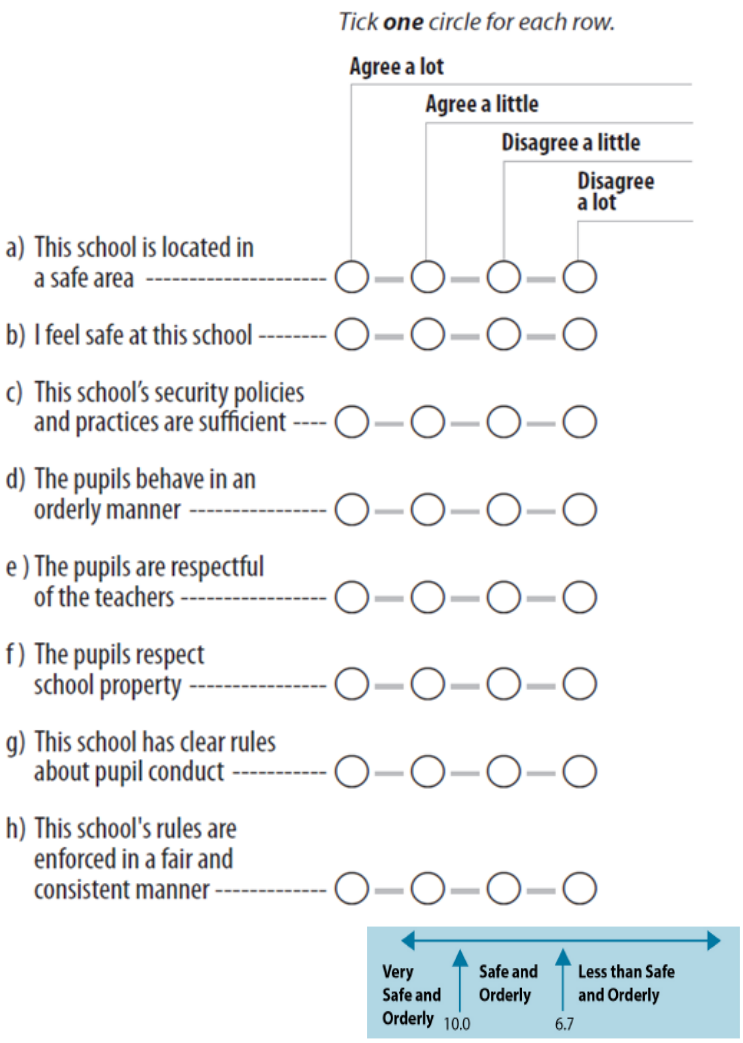
On average, across all countries internationally, pupil attainment in both mathematics and science tended to be higher where teachers and principals reported a higher emphasis on academic success. This was also the case in Northern Ireland; however, the association between emphasis on academic success and achievement is unlikely to be statistically significant for mathematics or science.[35]

8.2 The extent to which schools are 'safe and orderly'

Teachers were asked about their perceptions of safety and the behaviour of pupils in their school. Based on their responses, pupils were categorised as attending schools which were either 'Very Safe and Orderly'; 'Safe and Orderly'; or 'Less than Safe and Orderly' (see Figure 8.3). The results for both mathematics and science are shown in Table 8.2.

[35] Based on low percentages in some categories and/or the size of standard errors.

Figure 8.3 Safe and orderly schools



Statements a)-e) were also used in the 2011 survey.

Source: adapted from Exhibit 7.3, International mathematics report (Mullis *et al.*, 2016a) and Exhibit 7.3, International science report (Martin *et al.*, 2016a).

Table 8.2 Safe and orderly schools

Mathematics

Reported by teachers

Students were scored according to their teachers' degree of agreement with eight statements on the *Safe and Orderly School* scale. Students in **Very Safe and Orderly** schools had a score on the scale of at least 10.0, which corresponds to their teachers "agreeing a lot" with four of the eight qualities of a safe and orderly school and "agreeing a little" with the other four, on average. Students in **Less than Safe and Orderly** schools had a score no higher than 6.7, which corresponds to their teachers "disagreeing a little" with four of the eight qualities and "agreeing a little" with the other four, on average. All other students attended **Safe and Orderly** schools.

Country	Very Safe and Orderly		Safe and Orderly		Less than Safe and Orderly		Average Scale Score	Difference in Average Scale Score from 2011
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
Northern Ireland r	85 (3.1)	576 (3.1)	15 (3.1)	554 (12.1)	0 (0.0)	~ ~	12.0 (0.16)	r 0.5 (0.21)
International Avg.	56 (0.5)	511 (0.6)	40 (0.5)	497 (0.8)	4 (0.2)	464 (2.9)		

This TIMSS questionnaire scale was established in 2011 based on the combined response distribution of all countries that participated in TIMSS 2011. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale score points corresponded to the standard deviation of the distribution.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the pupils.

Science

Reported by teachers

Students were scored according to their teachers' degree of agreement with eight statements on the *Safe and Orderly School* scale. Students in **Very Safe and Orderly** schools had a score on the scale of at least 10.0, which corresponds to their teachers "agreeing a lot" with four of the eight qualities of a safe and orderly school and "agreeing a little" with the other four, on average. Students in **Less than Safe and Orderly** schools had a score no higher than 6.7, which corresponds to their teachers "disagreeing a little" with four of the eight qualities and "agreeing a little" with the other four, on average. All other students attended **Safe and Orderly** schools.

Country	Very Safe and Orderly		Safe and Orderly		Less than Safe and Orderly		Average Scale Score	Difference in Average Scale Score from 2011
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
Northern Ireland r	85 (3.1)	523 (2.4)	15 (3.1)	506 (7.3)	0 (0.0)	~ ~	12.0 (0.16)	r 0.5 (0.21)
International Avg.	57 (0.5)	513 (0.6)	39 (0.5)	498 (0.8)	4 (0.2)	469 (2.8)		

This TIMSS questionnaire scale was established in 2011 based on the combined response distribution of all countries that participated in TIMSS 2011. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale score points corresponded to the standard deviation of the distribution.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the pupils.

Sources: Exhibit 7.3, International mathematics report (Mullis *et* al., 2016a) and Exhibit 7.3, International science report (Martin *et al.*, 2016a).

In both mathematics and science, the vast majority of pupils in Northern Ireland participating in TIMSS 2015 (85 per cent) had teachers who reported that their schools were 'Very Safe and Orderly'. Among all participating countries, only teachers in Indonesia reported a higher percentage of pupils in 'Very Safe and Orderly' schools (87 per cent). This mirrors the findings from 2011. The average scale score for Northern Ireland was 12 for both mathematics and science. This was the second highest score among participating countries; again, Indonesia was the only country with a marginally higher average scale score (12.1 for both subjects).

For mathematics, across the comparator countries, there was variation in terms of the percentage of pupils in each of the three categories of this scale. England, Australia and the

Republic of Ireland had 75 per cent or more of pupils in the 'Very Safe and Orderly' category. Poland by contrast had 50 per cent of pupils in this category and Finland only 37 per cent. As was the case for Northern Ireland, all the comparator countries had a very small proportion of pupils (3 per cent or less) in schools categorised as being 'Less than Safe and Orderly'.

For science, the Republic of Ireland, Australia and England had over 70 per cent of pupils in the 'Very Safe and Orderly' category. Poland, Singapore and Hong Kong had between 60 and 70 per cent of pupils in 'Very Safe and Orderly' schools, and Finland, again, had 37 per cent. All seven comparator countries had fewer than five per cent of pupils in 'Less than Safe and Orderly' schools.

In 2011, among all countries participating in TIMSS, Northern Ireland had the largest percentage of pupils in the highest category for school safety and orderliness; this was the case for both subjects. The results for Northern Ireland for both mathematics and science remained stable between 2011 and 2015, with the percentage of pupils in the highest category for safety and orderliness remaining the same. However, since 2011, the number of questions on school safety and orderliness has changed[36].

Internationally, pupils in schools that teachers reported as being 'Very Safe and Orderly', on average, scored more highly than those in schools that teachers reported were 'Safe and Orderly', which in turn scored more highly than those deemed 'Less than Safe and Orderly'. This suggests an association between safety and orderliness and attainment[37], but this relationship was not seen in all participating countries and the direction of causality cannot be inferred from the data.

In Northern Ireland, there did appear to be an association between attending a school that was judged to be 'Very Safe and Orderly' and higher average achievement in both mathematics and science, as can be seen in Table 8.2. The standard error statistics suggest, however, that these differences are unlikely to be statistically significant. The association between attending schools which are 'Very Safe and Orderly' and higher average achievement was consistent across all seven comparator countries.

The full international tables follow, for reference, showing data for all countries (Tables 8.3 and 8.4).

[36] Only five questions were used in 2011 to calculate this scale, as opposed to eight in 2015. The three categories in 2011 were also different to 2015. In 2011, schools were categorised as being either 'Safe and Orderly', 'Somewhat Safe and Orderly' or 'Not Safe and Orderly'.
[37] Tests of statistical significance were not carried out in this international analysis.

Table 8.3 International tables for safe and orderly schools (mathematics)

Students were scored according to their teachers' degree of agreement with eight statements on the *Safe and Orderly School* scale. Students in **Very Safe and Orderly** schools had a score on the scale of at least 10.0, which corresponds to their teachers "agreeing a lot" with four of the eight qualities of a safe and orderly school and "agreeing a little" with the other four, on average. Students in **Less than Safe and Orderly** schools had a score no higher than 6.7, which corresponds to their teachers "disagreeing a little" with four of the eight qualities and "agreeing a little" with the other four, on average. All other students attended **Safe and Orderly** schools.

Country	Very Safe and Orderly		Safe and Orderly		Less than Safe and Orderly		Average Scale Score	Difference in Average Scale Score from 2011
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
Indonesia	89 (2.1)	399 (3.7)	11 (2.1)	390 (12.3)	0 (0.1)	~ ~	12.1 (0.11)	◊ ◊
Northern Ireland r	85 (3.1)	576 (3.1)	15 (3.1)	554 (12.1)	0 (0.0)	~ ~	12.0 (0.16)	r 0.5 (0.21)
Ireland, Rep. of	83 (2.7)	551 (2.2)	14 (2.7)	536 (5.6)	2 (1.3)	~ ~	11.7 (0.15)	0.4 (0.21)
Qatar	77 (3.2)	444 (4.3)	21 (3.2)	432 (9.0)	2 (1.2)	~ ~	11.3 (0.15)	0.9 (0.19) ▲
Spain	76 (2.6)	512 (2.6)	21 (2.6)	489 (5.0)	3 (1.0)	442 (19.5)	11.1 (0.11)	1.4 (0.20) ▲
England	76 (3.7)	550 (4.0)	24 (3.7)	536 (6.2)	0 (0.4)	~ ~	11.3 (0.17)	0.6 (0.25) ▲
Kazakhstan	75 (3.7)	545 (5.6)	25 (3.7)	544 (8.2)	0 (0.0)	~ ~	11.5 (0.16)	0.7 (0.22) ▲
Australia	75 (2.8)	529 (4.1)	23 (2.9)	490 (5.8)	2 (0.8)	~ ~	11.4 (0.13)	r 0.3 (0.21)
Norway (5)	72 (3.0)	553 (3.0)	24 (2.9)	540 (3.6)	4 (1.4)	554 (20.1)	10.8 (0.14)	◊ ◊
New Zealand	71 (2.5)	504 (2.6)	26 (2.2)	461 (5.0)	3 (0.8)	446 (12.7)	11.0 (0.12)	0.0 (0.15)
Iran, Islamic Rep. of	70 (2.5)	432 (4.1)	27 (2.5)	436 (6.8)	3 (1.1)	379 (23.5)	10.7 (0.12)	0.4 (0.19)
Bulgaria	69 (3.5)	533 (5.3)	29 (3.7)	504 (8.9)	2 (1.8)	~ ~	10.4 (0.13)	◊ ◊
Portugal	65 (3.4)	547 (3.1)	32 (3.5)	534 (4.4)	3 (1.1)	503 (24.5)	10.6 (0.13)	1.0 (0.23) ▲
Oman	64 (2.9)	430 (3.2)	33 (3.0)	418 (5.2)	3 (1.1)	421 (9.5)	10.5 (0.12)	0.6 (0.15) ▲
Hong Kong SAR	64 (4.5)	616 (3.4)	34 (4.5)	612 (6.5)	2 (1.3)	~ ~	10.6 (0.17)	0.4 (0.24)
Singapore	63 (2.6)	619 (4.5)	35 (2.6)	616 (6.5)	2 (0.6)	~ ~	10.7 (0.11)	0.4 (0.15) ▲
Georgia	62 (3.8)	468 (5.3)	37 (3.9)	456 (6.3)	1 (0.6)	~ ~	10.4 (0.14)	-0.9 (0.18) ▼
United Arab Emirates	62 (1.8)	473 (3.5)	35 (1.8)	420 (4.6)	3 (0.8)	409 (23.1)	10.6 (0.08)	-0.2 (0.11)
Cyprus	60 (3.8)	530 (3.1)	36 (3.7)	513 (4.1)	4 (1.3)	514 (7.7)	10.5 (0.17)	◊ ◊
Netherlands r	60 (3.7)	534 (2.2)	39 (3.8)	523 (2.7)	1 (1.1)	~ ~	10.3 (0.16)	r 0.1 (0.24)
Saudi Arabia	59 (3.0)	397 (5.5)	34 (3.2)	361 (6.9)	7 (2.0)	379 (19.9)	10.1 (0.13)	-0.3 (0.21)
Lithuania	57 (4.3)	535 (3.7)	42 (4.2)	536 (4.5)	1 (0.8)	~ ~	10.3 (0.13)	0.6 (0.18) ▲
Bahrain	56 (2.5)	464 (2.4)	37 (2.5)	442 (2.8)	8 (0.9)	427 (5.6)	10.2 (0.13)	-0.1 (0.22)
Canada	55 (2.2)	512 (2.8)	42 (2.3)	511 (4.8)	3 (0.8)	484 (14.1)	10.4 (0.09)	◊ ◊
Kuwait	55 (3.5)	355 (5.3)	41 (3.4)	347 (9.0)	3 (1.0)	360 (36.1)	10.1 (0.15)	◊ ◊
United States	55 (2.5)	552 (3.0)	38 (2.3)	526 (4.4)	7 (1.4)	500 (11.1)	10.3 (0.12)	-0.2 (0.15)
Russian Federation	55 (3.8)	566 (4.6)	43 (3.9)	562 (6.5)	2 (0.9)	~ ~	10.1 (0.12)	0.2 (0.21)
Czech Republic	54 (3.6)	532 (3.0)	45 (3.5)	524 (3.7)	2 (0.8)	~ ~	9.8 (0.12)	0.3 (0.17)
Italy	53 (3.3)	508 (4.0)	44 (3.3)	507 (3.7)	3 (1.5)	482 (16.0)	10.0 (0.14)	1.4 (0.19) ▲
Slovak Republic	53 (3.3)	504 (3.3)	44 (3.3)	494 (4.0)	3 (1.0)	453 (19.4)	9.8 (0.11)	0.4 (0.14) ▲
Serbia	52 (3.5)	521 (4.0)	41 (3.6)	513 (6.4)	7 (1.6)	522 (9.6)	10.1 (0.14)	0.7 (0.21) ▲
Jordan	52 (3.9)	397 (4.8)	39 (3.9)	385 (5.9)	9 (2.1)	353 (10.8)	10.0 (0.16)	◊ ◊
Poland	50 (3.8)	536 (3.0)	48 (3.6)	534 (3.1)	2 (0.9)	~ ~	9.9 (0.12)	◊ ◊
Turkey	49 (3.3)	497 (5.6)	44 (3.3)	472 (4.7)	7 (1.6)	454 (15.6)	9.7 (0.14)	0.8 (0.23) ▲
South Africa (5)	49 (3.8)	385 (7.3)	41 (3.7)	366 (7.3)	10 (2.2)	373 (10.8)	9.7 (0.15)	◊ ◊
Croatia	48 (3.5)	501 (2.4)	50 (3.5)	503 (2.8)	2 (1.0)	~ ~	9.9 (0.13)	-0.9 (0.18) ▼
Chile	47 (4.2)	475 (4.5)	41 (4.4)	451 (4.9)	12 (2.6)	438 (6.8)	9.6 (0.20)	0.4 (0.27)
Germany	46 (3.2)	529 (3.1)	50 (3.1)	516 (3.7)	5 (1.5)	496 (11.4)	9.7 (0.11)	-0.1 (0.17)
Hungary	46 (3.9)	539 (4.9)	48 (3.9)	524 (5.9)	6 (2.2)	480 (22.4)	9.6 (0.15)	-0.2 (0.20)
Korea, Rep. of	44 (3.7)	615 (3.8)	54 (3.6)	603 (2.8)	2 (1.2)	~ ~	10.0 (0.17)	1.3 (0.25) ▲
Belgium (Flemish)	43 (3.5)	552 (3.6)	52 (3.6)	542 (3.3)	5 (1.6)	530 (9.8)	9.6 (0.11)	-0.1 (0.16)
Morocco	43 (2.9)	388 (6.0)	47 (3.1)	372 (5.5)	11 (1.8)	352 (9.8)	9.6 (0.13)	0.8 (0.22) ▲
Denmark	41 (3.6)	547 (4.9)	53 (3.8)	533 (3.9)	6 (1.8)	525 (10.7)	9.5 (0.15)	-1.1 (0.19) ▼
France	40 (3.6)	501 (4.2)	54 (3.8)	483 (3.5)	6 (1.6)	444 (10.7)	9.4 (0.13)	◊ ◊
Sweden	37 (4.3)	533 (3.9)	57 (4.4)	515 (3.5)	6 (1.9)	467 (17.4)	9.6 (0.15)	r -0.1 (0.22)
Finland	37 (3.1)	540 (2.5)	60 (3.1)	534 (2.4)	3 (1.0)	509 (15.3)	9.5 (0.11)	0.2 (0.17)
Chinese Taipei	35 (3.6)	597 (3.0)	61 (3.9)	596 (2.6)	4 (1.5)	605 (13.9)	9.4 (0.14)	0.4 (0.21)
Slovenia	29 (3.2)	522 (3.2)	64 (3.4)	521 (2.5)	7 (1.6)	510 (5.7)	9.0 (0.10)	0.1 (0.15)
Japan	7 (1.8)	606 (6.2)	83 (2.5)	593 (2.1)	9 (2.2)	577 (4.7)	8.2 (0.08)	0.3 (0.12)
International Avg.	56 (0.5)	511 (0.6)	40 (0.5)	497 (0.8)	4 (0.2)	464 (2.9)		

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.
A diamond (◊) indicates the country did not participate in the 2011 assessment.
A tilde (~) indicates insufficient data to report achievement.
An "r" indicates data are available for at least 70% but less than 85% of the pupils. An "x" indicates data are available for less than 50% of pupils.

▲ Significantly higher than 2011
▼ Significantly lower than 2011

Source: Exhibit 7.3, International mathematics report (Mullis *et al.*, 2016a).

Table 8.4 International tables for safe and orderly schools (science)

Students were scored according to their teachers' degree of agreement with eight statements on the *Safe and Orderly School* scale. Students in **Very Safe and Orderly** schools had a score on the scale of at least 10.0, which corresponds to their teachers "agreeing a lot" with four of the eight qualities of a safe and orderly school and "agreeing a little" with the other four, on average. Students in **Less than Safe and Orderly** schools had a score no higher than 6.7, which corresponds to their teachers "disagreeing a little" with four of the eight qualities and "agreeing a little" with the other four, on average. All other students attended **Safe and Orderly** schools.

Country	Very Safe and Orderly		Safe and Orderly		Less than Safe and Orderly		Average Scale Score	Difference in Average Scale Score from 2011
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
Indonesia	87 (2.3)	400 (5.3)	12 (2.2)	376 (13.0)	1 (0.5)	~ ~	12.1 (0.12)	◊ ◊
Northern Ireland r	85 (3.1)	523 (2.4)	15 (3.1)	506 (7.3)	0 (0.0)	~ ~	12.0 (0.16)	r 0.5 (0.21)
Ireland, Rep. of	83 (2.7)	534 (2.5)	14 (2.7)	511 (6.1)	2 (1.3)	~ ~	11.7 (0.15)	0.4 (0.21)
Qatar	79 (3.1)	444 (4.6)	19 (3.0)	410 (10.7)	1 (0.8)	~ ~	11.4 (0.12)	1.0 (0.24) ▲
Australia	77 (2.7)	533 (3.6)	21 (2.7)	502 (5.6)	2 (0.6)	~ ~	11.4 (0.15)	r 0.4 (0.22)
Kazakhstan	75 (3.7)	550 (5.5)	25 (3.7)	547 (8.2)	0 (0.0)	~ ~	11.5 (0.16)	0.7 (0.22) ▲
Spain	74 (2.7)	525 (2.7)	23 (2.7)	505 (4.6)	3 (1.2)	456 (15.1)	11.1 (0.11)	1.3 (0.20) ▲
England	73 (3.5)	541 (3.3)	26 (3.4)	524 (5.4)	1 (0.6)	~ ~	11.2 (0.17)	0.4 (0.23)
Norway (5)	72 (2.9)	543 (2.8)	25 (2.8)	528 (3.8)	3 (0.9)	538 (11.0)	11.0 (0.15)	◊ ◊
New Zealand	71 (2.6)	517 (3.1)	26 (2.3)	480 (5.1)	3 (0.8)	469 (13.2)	11.0 (0.12)	0.0 (0.16)
Iran, Islamic Rep. of	70 (2.5)	421 (5.0)	27 (2.5)	428 (7.5)	3 (1.1)	363 (21.2)	10.7 (0.12)	0.4 (0.19)
Bulgaria	68 (3.7)	548 (6.0)	30 (3.9)	509 (9.5)	2 (1.8)	~ ~	10.4 (0.14)	◊ ◊
Poland	66 (3.7)	549 (2.8)	33 (3.8)	543 (4.3)	0 (0.4)	~ ~	10.2 (0.11)	◊ ◊
Georgia	66 (3.8)	455 (5.2)	33 (3.9)	445 (5.7)	1 (0.6)	~ ~	10.5 (0.15)	-0.8 (0.19) ▼
Portugal	65 (3.4)	513 (2.6)	32 (3.5)	502 (3.5)	3 (1.1)	478 (15.5)	10.6 (0.13)	1.0 (0.23) ▲
Singapore	64 (2.4)	599 (4.8)	32 (2.3)	576 (6.1)	4 (0.9)	570 (15.4)	10.7 (0.10)	0.4 (0.14) ▲
Cyprus	62 (4.3)	484 (3.2)	33 (4.2)	478 (4.4)	5 (2.0)	468 (14.7)	10.4 (0.18)	◊ ◊
Hong Kong SAR	61 (4.6)	562 (4.7)	37 (4.8)	551 (6.7)	2 (1.3)	~ ~	10.7 (0.17)	0.8 (0.24) ▲
Bahrain	60 (1.6)	469 (3.2)	34 (1.6)	444 (4.1)	5 (0.2)	451 (3.2)	10.5 (0.05)	0.4 (0.20)
United Arab Emirates	60 (1.8)	474 (4.2)	36 (1.8)	423 (5.4)	4 (0.7)	386 (19.0)	10.6 (0.08)	-0.2 (0.11)
Netherlands r	60 (3.7)	524 (3.3)	39 (3.8)	508 (4.0)	1 (1.1)	~ ~	10.3 (0.16)	r 0.1 (0.24)
Lithuania	57 (4.2)	527 (3.6)	41 (4.2)	530 (4.5)	2 (0.9)	~ ~	10.3 (0.14)	0.6 (0.18) ▲
United States	57 (2.6)	560 (2.7)	36 (2.5)	531 (4.1)	8 (1.5)	510 (9.9)	10.3 (0.13)	r -0.2 (0.16)
Saudi Arabia	56 (3.4)	404 (6.8)	37 (3.6)	377 (8.6)	7 (1.8)	351 (17.8)	10.2 (0.13)	0.3 (0.22)
Canada	56 (2.4)	528 (3.1)	41 (2.5)	523 (4.4)	3 (0.8)	496 (12.4)	10.4 (0.10)	◊ ◊
Oman	55 (2.9)	436 (4.9)	41 (2.9)	424 (4.7)	4 (1.3)	431 (10.8)	10.3 (0.12)	0.4 (0.15) ▲
Russian Federation	54 (4.0)	568 (4.3)	44 (4.0)	567 (6.0)	2 (0.9)	~ ~	10.1 (0.13)	0.2 (0.21)
Italy	53 (3.6)	515 (3.6)	43 (3.5)	520 (4.2)	4 (1.6)	488 (10.1)	10.0 (0.15)	1.5 (0.18) ▲
Serbia	52 (3.5)	528 (3.8)	41 (3.6)	520 (6.8)	7 (1.6)	526 (7.8)	10.1 (0.14)	0.7 (0.21) ▲
Slovak Republic	51 (3.3)	530 (3.6)	45 (3.3)	513 (4.5)	3 (1.0)	471 (22.6)	9.8 (0.12)	0.4 (0.15) ▲
Czech Republic	51 (3.3)	538 (3.0)	47 (3.3)	531 (3.2)	2 (0.8)	~ ~	9.8 (0.12)	0.4 (0.17)
Kuwait	51 (3.2)	345 (10.4)	41 (3.6)	333 (7.4)	7 (1.8)	326 (24.0)	10.0 (0.15)	◊ ◊
Hungary	51 (3.8)	553 (4.4)	43 (3.6)	534 (5.4)	6 (2.2)	508 (14.4)	9.7 (0.15)	0.0 (0.20)
Germany	50 (3.4)	537 (3.7)	46 (3.3)	520 (3.9)	3 (1.3)	490 (16.4)	9.8 (0.12)	0.2 (0.17)
Turkey	49 (3.3)	497 (5.3)	44 (3.3)	473 (4.7)	7 (1.6)	454 (14.5)	9.7 (0.14)	0.8 (0.23) ▲
Croatia	48 (3.5)	532 (2.5)	50 (3.5)	534 (3.0)	2 (1.0)	~ ~	9.9 (0.13)	-0.9 (0.18) ▼
Morocco	47 (2.4)	370 (6.5)	39 (2.5)	341 (7.6)	14 (2.2)	327 (12.7)	9.7 (0.13)	0.8 (0.19) ▲
Korea, Rep. of	46 (4.2)	595 (3.1)	52 (4.2)	585 (2.5)	2 (1.2)	~ ~	10.1 (0.17)	1.4 (0.25) ▲
Chinese Taipei	44 (4.1)	554 (3.0)	49 (4.2)	556 (2.6)	7 (2.1)	558 (7.7)	9.7 (0.15)	0.3 (0.22)
Belgium (Flemish)	43 (3.5)	518 (4.0)	52 (3.6)	508 (3.4)	5 (1.6)	492 (11.0)	9.6 (0.11)	-0.1 (0.16)
Chile	43 (4.2)	499 (4.5)	44 (4.6)	469 (5.3)	13 (2.5)	447 (6.4)	9.4 (0.17)	0.2 (0.25)
France	43 (3.6)	501 (3.5)	52 (3.8)	481 (3.6)	5 (1.5)	448 (12.5)	9.5 (0.13)	◊ ◊
Denmark	41 (3.9)	537 (3.4)	53 (4.1)	521 (3.8)	6 (1.7)	500 (8.5)	9.5 (0.15)	-0.8 (0.19) ▼
Sweden	39 (4.5)	558 (4.5)	57 (4.4)	532 (3.9)	4 (1.5)	485 (32.7)	9.5 (0.16)	r 0.0 (0.23)
Finland	37 (3.4)	558 (2.7)	60 (3.4)	553 (2.7)	3 (1.0)	511 (20.9)	9.6 (0.11)	0.2 (0.17)
Slovenia	29 (3.2)	547 (3.7)	64 (3.4)	543 (3.3)	7 (1.6)	533 (6.4)	9.0 (0.10)	0.1 (0.15)
Japan	9 (2.5)	575 (6.0)	81 (3.2)	570 (1.9)	10 (2.0)	554 (4.4)	8.2 (0.08)	0.4 (0.13) ▲
International Avg.	57 (0.5)	513 (0.6)	39 (0.5)	498 (0.8)	4 (0.2)	469 (2.8)		

▲ Significantly higher than 2011
▼ Significantly lower than 2011

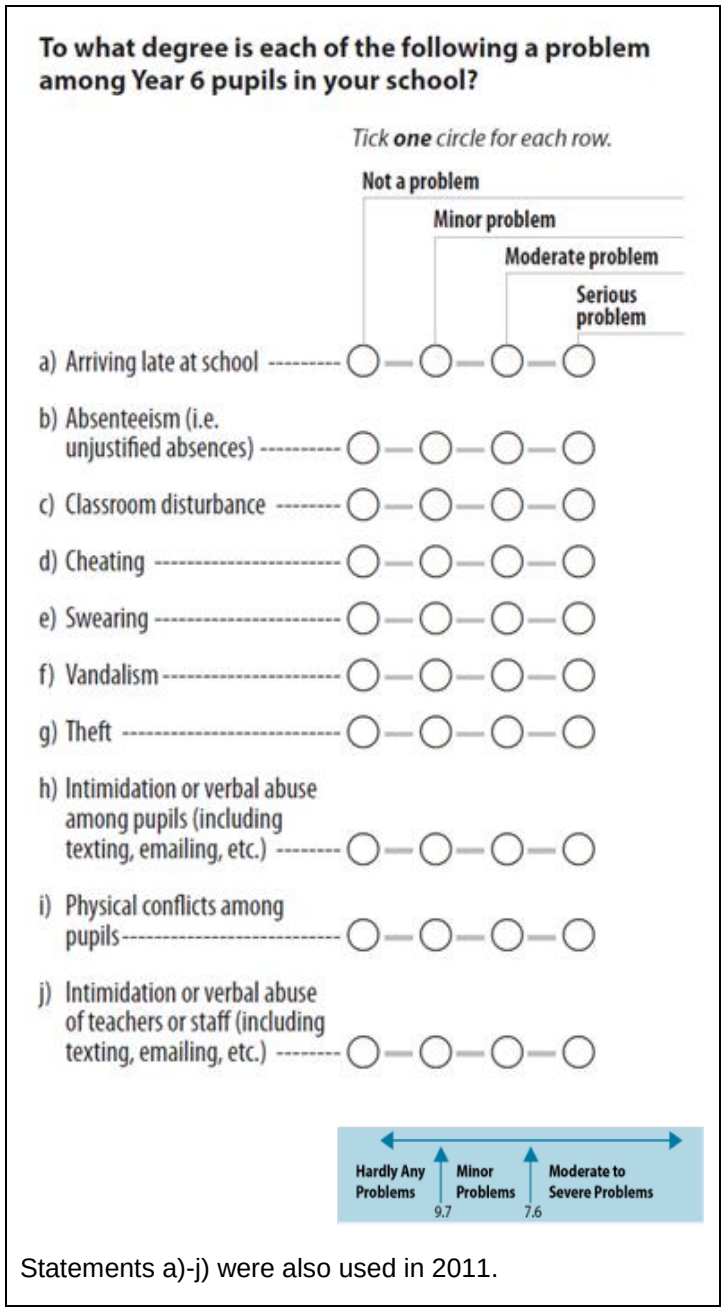
( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.
A diamond (◊) indicates the country did not participate in the 2011 assessment.
A tilde (~) indicates insufficient data to report achievement.
An "r" indicates data are available for at least 70% but less than 85% of the pupils. An "x" indicates data are available for less than 50% of pupils.

Source: Exhibit 7.3, International science report (Martin *et al.*, 2016a).

8.3 Principals' views of school discipline problems

Principals were asked about the degree to which a number of discipline issues were a problem in their school. Based on their responses, pupils were categorised as attending schools with 'Hardly Any Problems', 'Minor Problems' or 'Moderate to Severe Problems' (see Figure 8.4). The results for both subjects are shown in Table 8.5.

Figure 8.4 School discipline problems



Statements a)-j) were also used in 2011.

Exhibit 7.1, International mathematics report (Mullis *et al.*, 2016a), and Exhibit 7.1, International science report (Martin *et al.*, 2016a).

Table 8.5 School discipline problems

Mathematics

Reported by principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline Problems* scale. Students in schools with **Hardly Any Problems** had a score on the scale of at least 9.7, which corresponds to their principals reporting "not a problem" for five of the ten issues and "minor problem" for the other five, on average. Students in schools with **Moderate to Severe Problems** had a score no higher than 7.6, which corresponds to their principals reporting "moderate problem" for five of the ten issues and "minor problem" for the other five, on average. All other students attended schools with **Minor Problems**.

Country		Hardly Any Problems		Minor Problems		Moderate to Severe Problems		Average Scale Score	Difference in Average Scale Score from 2011
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
Northern Ireland	r	78 (4.0)	575 (3.6)	22 (4.0)	552 (8.8)	0 (0.0)	~ ~	10.8 (0.13)	r -0.2 (0.19)
International Avg.		60 (0.5)	512 (0.7)	31 (0.5)	497 (0.9)	10 (0.3)	468 (2.3)		

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.
A tilde (~) indicates insufficient data to report achievement.
An "r" indicates data are available for at least 70% but less than 85% of the pupils.

Science

Reported by principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline Problems* scale. Students in schools with **Hardly Any Problems** had a score on the scale of at least 9.7, which corresponds to their principals reporting "not a problem" for five of the ten issues and "minor problem" for the other five, on average. Students in schools with **Moderate to Severe Problems** had a score no higher than 7.6, which corresponds to their principals reporting "moderate problem" for five of the ten issues and "minor problem" for the other five, on average. All other students attended schools with **Minor Problems**.

Country		Hardly Any Problems		Minor Problems		Moderate to Severe Problems		Average Scale Score	Difference in Average Scale Score from 2011
		Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
Northern Ireland	r	78 (4.0)	522 (2.8)	22 (4.0)	508 (7.7)	0 (0.0)	~ ~	10.8 (0.13)	r -0.2 (0.19)
International Avg.		61 (0.5)	513 (0.7)	30 (0.5)	498 (1.0)	9 (0.3)	471 (2.5)		

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.
A tilde (~) indicates insufficient data to report achievement.
An "r" indicates data are available for at least 70% but less than 85% of the pupils.

Sources: Exhibit 7.1, International mathematics report (Mullis *et* al., 2016a), and Exhibit 7.1, International science report (Martin *et al.*, 2016a).

The vast majority of pupils in Northern Ireland (78 per cent) had principals who reported 'Hardly Any Problems' with discipline or safety in their schools. Across all countries participating in TIMSS 2015, only four - the Republic of Ireland, the Netherlands, the high performer Korea and Lithuania reported fewer problems than Northern Ireland, with England having the same percentage of pupils in this category. The remaining 22 per cent of pupils in Northern Ireland were in schools where principals reported 'Minor Problems'.

In Northern Ireland, there was a change between 2011[38] and 2015 in the results for school discipline and safety. There was a drop of 7 per cent between 2011 and 2015 in the

[38] The same ten statements were used to calculate the scale in 2011 and 2015. However, the categories in 2011 were slightly different. Schools were classed as having *Hardly Any Problems*, *Minor Problems* or *Moderate Problems*.

proportion of pupils in schools where principals reported ‘Hardly Any Problems’. The average scale score also decreased from 11.0 in 2011 to 10.8 in 2015, although this was not statistically significant.

On average internationally, pupils in schools with lower problem ratings for school discipline scored higher in TIMSS 2015 than those in schools with more reported problems. Northern Ireland followed this pattern: pupils in schools judged to have ‘Hardly Any Problems’ had higher average scores than those in schools judged to have ‘Minor Problems’. However, the standard error statistics for Northern Ireland on this scale suggest that the apparent differences in both subjects (shown in Table 8.5) are unlikely to be statistically significant. In addition, across countries, rankings in ratings for discipline problems did not necessarily relate directly to overall rankings of average pupil achievement.

The full international tables follow, for reference, showing data for all countries (Tables 8.6 and 8.7).

Table 8.6 School discipline problems mathematics

Reported by principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline Problems* scale. Students in schools with **Hardly Any Problems** had a score on the scale of at least 9.7, which corresponds to their principals reporting "not a problem" for five of the ten issues and "minor problem" for the other five, on average. Students in schools with **Moderate to Severe Problems** had a score no higher than 7.6, which corresponds to their principals reporting "moderate problem" for five of the ten issues and "minor problem" for the other five, on average. All other students attended schools with **Minor Problems**.

Country	Hardly Any Problems		Minor Problems		Moderate to Severe Problems		Average Scale Score	Difference in Average Scale Score from 2011
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
Ireland, Rep. of	84 (3.3)	552 (2.6)	14 (3.1)	531 (7.3)	2 (1.2)	~ ~	10.9 (0.11)	-0.2 (0.17)
Netherlands s	83 (4.1)	536 (2.2)	17 (4.1)	529 (3.8)	0 (0.0)	~ ~	11.1 (0.13)	s -0.2 (0.20)
Korea, Rep. of	81 (3.4)	608 (2.5)	14 (3.0)	613 (5.1)	5 (1.8)	591 (9.4)	11.3 (0.16)	0.4 (0.22)
Lithuania	79 (3.4)	536 (2.7)	20 (3.4)	532 (9.4)	1 (1.0)	~ ~	10.6 (0.10)	0.1 (0.16)
England	78 (3.7)	553 (3.6)	21 (3.6)	524 (6.7)	1 (0.8)	~ ~	10.9 (0.11)	0.3 (0.16)
Northern Ireland r	78 (4.0)	575 (3.6)	22 (4.0)	552 (8.8)	0 (0.0)	~ ~	10.8 (0.13)	r -0.2 (0.19)
Croatia	76 (4.1)	503 (2.1)	24 (4.1)	501 (4.5)	0 (0.0)	~ ~	10.7 (0.14)	0.3 (0.18)
Japan	74 (3.2)	595 (2.1)	20 (3.0)	589 (4.2)	6 (2.0)	589 (7.8)	10.4 (0.14)	-0.1 (0.18)
Norway (5)	74 (4.3)	553 (3.0)	25 (4.2)	537 (4.9)	1 (0.8)	~ ~	10.7 (0.13)	◊ ◊
Bulgaria	72 (4.2)	535 (4.6)	20 (3.8)	491 (10.0)	8 (2.9)	514 (33.2)	10.4 (0.18)	◊ ◊
Singapore	72 (0.0)	620 (4.9)	28 (0.0)	615 (8.0)	0 (0.0)	~ ~	10.7 (0.00)	0.0 (0.00)
Kazakhstan	71 (3.9)	544 (5.5)	13 (2.7)	559 (14.8)	15 (2.8)	536 (9.7)	10.3 (0.21)	-0.9 (0.24) ▼
New Zealand	71 (2.8)	506 (3.2)	28 (2.9)	462 (6.4)	1 (0.8)	~ ~	10.5 (0.08)	-0.1 (0.15)
Hong Kong SAR	71 (4.6)	617 (4.0)	29 (4.6)	610 (7.7)	0 (0.0)	~ ~	10.5 (0.13)	-0.8 (0.17) ▼
Georgia	70 (3.9)	468 (4.3)	22 (3.5)	441 (7.7)	8 (2.6)	491 (24.2)	10.4 (0.19)	-0.3 (0.24)
Spain	70 (3.4)	512 (2.9)	22 (3.0)	489 (5.8)	8 (1.5)	489 (9.3)	10.3 (0.13)	-0.5 (0.21)
Chinese Taipei	70 (4.1)	600 (2.2)	28 (3.8)	591 (4.2)	3 (1.6)	573 (16.4)	10.6 (0.14)	-0.7 (0.20) ▼
United States	69 (3.3)	549 (3.3)	29 (3.3)	521 (5.0)	3 (0.9)	475 (10.2)	10.3 (0.10)	0.0 (0.14)
Finland	68 (3.8)	538 (2.5)	31 (3.7)	529 (3.0)	1 (1.0)	~ ~	10.3 (0.11)	0.1 (0.16)
Belgium (Flemish)	68 (3.6)	553 (2.3)	31 (3.8)	535 (5.7)	1 (1.1)	~ ~	10.5 (0.12)	0.1 (0.18)
Russian Federation	67 (3.9)	566 (4.6)	32 (3.9)	560 (6.4)	0 (0.4)	~ ~	10.2 (0.09)	0.0 (0.13)
Canada	66 (3.1)	518 (2.6)	31 (2.9)	497 (4.6)	2 (1.0)	~ ~	10.2 (0.10)	◊ ◊
Czech Republic	65 (3.6)	529 (2.9)	31 (3.5)	528 (4.3)	4 (1.8)	506 (18.7)	10.1 (0.10)	0.0 (0.15)
Iran, Islamic Rep. of	65 (3.5)	436 (5.0)	26 (3.3)	438 (6.3)	9 (2.4)	383 (17.6)	10.0 (0.13)	-0.7 (0.17) ▼
Australia	64 (3.4)	530 (3.5)	30 (3.4)	506 (5.4)	6 (3.1)	446 (5.9)	10.2 (0.12)	-0.2 (0.17)
Qatar	63 (3.0)	444 (5.0)	26 (2.8)	428 (8.1)	11 (1.8)	434 (9.7)	10.0 (0.12)	0.0 (0.19)
Slovak Republic	63 (3.6)	510 (3.2)	32 (3.4)	484 (5.1)	5 (1.7)	444 (18.9)	10.0 (0.10)	0.1 (0.16)
United Arab Emirates	61 (2.4)	467 (3.5)	31 (2.5)	426 (4.9)	8 (1.2)	396 (9.6)	10.1 (0.07)	0.2 (0.13)
Italy	60 (4.5)	508 (3.7)	25 (3.7)	504 (5.4)	15 (3.0)	509 (7.9)	9.6 (0.16)	0.1 (0.22)
Bahrain	59 (0.2)	456 (1.8)	26 (0.2)	446 (2.6)	14 (0.1)	427 (7.3)	9.7 (0.01)	-0.4 (0.31)
France	58 (4.6)	497 (4.1)	33 (4.3)	480 (4.5)	9 (2.7)	454 (12.1)	9.9 (0.15)	◊ ◊
Serbia	56 (4.3)	519 (5.0)	35 (3.8)	521 (4.8)	9 (2.0)	499 (13.2)	9.8 (0.15)	0.1 (0.23)
Hungary	55 (3.7)	541 (4.5)	37 (3.6)	524 (5.3)	8 (1.7)	471 (20.7)	9.8 (0.11)	0.1 (0.17)
Denmark r	53 (4.3)	548 (3.8)	45 (4.4)	533 (4.5)	1 (1.0)	~ ~	9.9 (0.11)	r -0.2 (0.14)
Slovenia	52 (4.3)	521 (2.5)	45 (4.5)	520 (3.2)	3 (1.3)	540 (5.2)	9.8 (0.13)	-0.2 (0.18)
Poland	52 (3.6)	534 (2.7)	45 (3.8)	537 (3.6)	3 (1.4)	528 (16.0)	9.8 (0.09)	◊ ◊
Cyprus	50 (4.8)	530 (3.6)	42 (4.5)	517 (4.6)	8 (2.6)	514 (6.7)	9.7 (0.17)	◊ ◊
Sweden	49 (4.1)	531 (3.5)	40 (4.0)	514 (3.6)	10 (2.6)	481 (13.8)	9.4 (0.11)	-0.3 (0.17)
Saudi Arabia	49 (3.9)	388 (5.2)	26 (3.1)	377 (9.1)	25 (3.4)	382 (10.4)	9.2 (0.19)	0.1 (0.26)
Chile	46 (4.0)	470 (4.1)	47 (4.3)	452 (5.5)	6 (2.2)	437 (15.5)	9.6 (0.11)	0.4 (0.18)
Turkey	44 (3.5)	506 (4.8)	29 (3.2)	464 (7.9)	26 (2.9)	465 (7.5)	8.8 (0.15)	-0.2 (0.21)
Portugal	43 (4.5)	546 (3.6)	46 (4.7)	538 (4.2)	11 (2.6)	541 (7.1)	9.4 (0.15)	-0.9 (0.23) ▼
Germany	39 (3.8)	531 (3.3)	50 (3.7)	517 (2.7)	10 (2.4)	501 (10.6)	9.2 (0.10)	-0.3 (0.13)
Jordan	36 (4.0)	411 (6.0)	40 (3.9)	375 (6.7)	24 (3.2)	376 (9.0)	9.0 (0.17)	◊ ◊
Oman	34 (3.4)	426 (6.0)	36 (3.0)	419 (4.8)	29 (2.8)	434 (4.8)	8.6 (0.15)	0.2 (0.21)
Kuwait	25 (3.9)	373 (8.3)	40 (4.4)	344 (7.0)	35 (3.5)	342 (10.3)	8.3 (0.19)	◊ ◊
South Africa (5)	23 (3.1)	406 (13.6)	56 (3.5)	369 (5.4)	22 (3.1)	365 (8.3)	8.7 (0.11)	◊ ◊
Morocco	21 (3.0)	394 (8.7)	30 (3.0)	367 (6.8)	49 (3.2)	377 (4.4)	7.7 (0.16)	0.5 (0.21)
Indonesia	18 (2.9)	407 (9.9)	28 (3.3)	408 (6.6)	54 (3.6)	389 (5.9)	7.4 (0.16)	◊ ◊
International Avg.	60 (0.5)	512 (0.7)	31 (0.5)	497 (0.9)	10 (0.3)	468 (2.3)		

Significantly higher than 2011 ▲
Significantly lower than 2011 ▼

This TIMSS questionnaire scale was established in 2011 based on the combined response distribution of all countries that participated in TIMSS 2011. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale score points corresponded to the standard deviation of the distribution.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A diamond (◊) indicates the country did not participate in the 2011 assessment.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the pupils.

An "s" indicates data are available for at least 50% but less than 70% of the pupils.

Source: Exhibit 7.1, International mathematics report (Mullis *et al.*, 2016a).

Table 8.7 School discipline problems science

Reported by principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline Problems* scale. Students in schools with **Hardly Any Problems** had a score on the scale of at least 9.7, which corresponds to their principals reporting "not a problem" for five of the ten issues and "minor problem" for the other five, on average. Students in schools with **Moderate to Severe Problems** had a score no higher than 7.6, which corresponds to their principals reporting "moderate problem" for five of the ten issues and "minor problem" for the other five, on average. All other students attended schools with **Minor Problems**.

Country	Hardly Any Problems		Minor Problems		Moderate to Severe Problems		Average Scale Score	Difference in Average Scale Score from 2011
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement		
Ireland, Rep. of	84 (3.3)	532 (2.8)	14 (3.1)	516 (7.4)	2 (1.2)	~ ~	10.9 (0.11)	-0.2 (0.17)
Netherlands s	83 (4.1)	526 (3.4)	17 (4.1)	514 (5.7)	0 (0.0)	~ ~	11.1 (0.13)	s -0.2 (0.20)
Korea, Rep. of	81 (3.4)	590 (2.2)	14 (3.0)	593 (4.6)	5 (1.8)	574 (7.0)	11.3 (0.16)	0.4 (0.22)
Lithuania	79 (3.4)	528 (2.8)	20 (3.4)	524 (8.8)	1 (1.0)	~ ~	10.6 (0.10)	0.1 (0.16)
England	78 (3.7)	542 (3.1)	21 (3.6)	517 (6.8)	1 (0.8)	~ ~	10.9 (0.11)	0.3 (0.16)
Northern Ireland r	78 (4.0)	522 (2.8)	22 (4.0)	508 (7.7)	0 (0.0)	~ ~	10.8 (0.13)	r -0.2 (0.19)
Croatia	76 (4.1)	533 (2.5)	24 (4.1)	533 (4.2)	0 (0.0)	~ ~	10.7 (0.14)	0.3 (0.18)
Japan	74 (3.2)	571 (1.9)	20 (3.0)	566 (3.7)	6 (2.0)	563 (6.5)	10.4 (0.14)	-0.1 (0.18)
Norway (5)	74 (4.3)	540 (3.0)	25 (4.2)	528 (5.2)	1 (0.8)	~ ~	10.7 (0.13)	◊ ◊
Bulgaria	72 (4.2)	550 (5.2)	20 (3.8)	496 (12.2)	8 (2.9)	506 (36.2)	10.4 (0.18)	◊ ◊
Singapore	72 (0.0)	592 (4.6)	28 (0.0)	588 (7.7)	0 (0.0)	~ ~	10.7 (0.00)	0.0 (0.00)
Kazakhstan	71 (3.9)	552 (5.6)	13 (2.7)	560 (15.3)	15 (2.8)	535 (10.3)	10.3 (0.21)	-0.9 (0.24) ▼
New Zealand	71 (2.8)	520 (3.4)	28 (2.9)	478 (6.3)	1 (0.8)	~ ~	10.5 (0.08)	-0.1 (0.15)
Hong Kong SAR	71 (4.6)	559 (4.3)	29 (4.6)	552 (8.3)	0 (0.0)	~ ~	10.5 (0.13)	-0.8 (0.17) ▼
Georgia	70 (3.9)	455 (4.2)	22 (3.5)	432 (8.1)	8 (2.6)	481 (26.8)	10.4 (0.19)	-0.3 (0.24)
Spain	70 (3.4)	525 (2.8)	22 (3.0)	501 (5.1)	8 (1.5)	507 (9.5)	10.3 (0.13)	-0.5 (0.21)
Chinese Taipei	70 (4.1)	559 (2.1)	28 (3.8)	549 (4.0)	3 (1.6)	531 (12.5)	10.6 (0.14)	-0.7 (0.20) ▼
United States	69 (3.3)	556 (3.0)	29 (3.3)	528 (5.5)	3 (0.9)	480 (11.8)	10.3 (0.10)	0.0 (0.14)
Finland	68 (3.8)	556 (2.8)	31 (3.7)	548 (3.3)	1 (1.0)	~ ~	10.3 (0.11)	0.1 (0.16)
Belgium (Flemish)	68 (3.6)	520 (2.6)	31 (3.8)	499 (6.0)	1 (1.1)	~ ~	10.5 (0.12)	0.1 (0.18)
Russian Federation	67 (3.9)	570 (4.0)	32 (3.9)	561 (5.6)	0 (0.4)	~ ~	10.2 (0.09)	0.0 (0.13)
Canada	66 (3.1)	531 (2.8)	31 (2.9)	514 (4.2)	2 (1.0)	~ ~	10.2 (0.10)	◊ ◊
Czech Republic	65 (3.6)	536 (2.6)	31 (3.5)	534 (4.4)	4 (1.8)	514 (20.0)	10.1 (0.10)	0.0 (0.15)
Iran, Islamic Rep. of	65 (3.5)	427 (5.6)	26 (3.3)	428 (7.8)	9 (2.4)	365 (21.0)	10.0 (0.13)	-0.7 (0.17) ▼
Australia	64 (3.4)	534 (2.9)	30 (3.4)	516 (4.7)	6 (3.1)	462 (6.3)	10.2 (0.12)	-0.2 (0.17)
Qatar	63 (3.0)	444 (5.5)	26 (2.8)	417 (9.1)	11 (1.8)	433 (12.1)	10.0 (0.12)	0.0 (0.19)
Slovak Republic	63 (3.6)	535 (3.4)	32 (3.4)	503 (5.7)	5 (1.7)	459 (19.0)	10.0 (0.10)	0.1 (0.16)
United Arab Emirates	61 (2.4)	470 (4.1)	31 (2.5)	422 (6.0)	8 (1.2)	385 (11.2)	10.1 (0.07)	0.2 (0.13)
Italy	60 (4.5)	518 (3.6)	25 (3.7)	513 (4.9)	15 (3.0)	517 (8.2)	9.6 (0.16)	0.1 (0.22)
Bahrain	59 (0.2)	469 (3.3)	26 (0.2)	450 (4.2)	14 (0.1)	423 (7.6)	9.7 (0.01)	-0.4 (0.31)
France	58 (4.6)	496 (3.7)	33 (4.3)	479 (4.3)	9 (2.7)	454 (12.8)	9.9 (0.15)	◊ ◊
Serbia	56 (4.3)	524 (5.2)	35 (3.8)	528 (4.4)	9 (2.0)	513 (13.5)	9.8 (0.15)	0.1 (0.23)
Hungary	55 (3.7)	553 (4.4)	37 (3.6)	537 (5.4)	8 (1.7)	484 (20.8)	9.8 (0.11)	0.1 (0.17)
Denmark r	53 (4.3)	536 (3.3)	45 (4.4)	522 (3.7)	1 (1.0)	~ ~	9.9 (0.11)	r -0.2 (0.14)
Slovenia	52 (4.3)	544 (3.4)	45 (4.5)	542 (3.5)	3 (1.3)	559 (4.1)	9.8 (0.13)	-0.2 (0.18)
Poland	52 (3.6)	546 (3.0)	45 (3.8)	549 (3.6)	3 (1.4)	543 (14.1)	9.8 (0.09)	◊ ◊
Cyprus	50 (4.8)	488 (3.4)	42 (4.5)	475 (4.4)	8 (2.6)	471 (8.4)	9.7 (0.17)	◊ ◊
Sweden	49 (4.1)	554 (4.1)	40 (4.0)	536 (4.5)	10 (2.6)	492 (16.8)	9.4 (0.11)	-0.3 (0.17)
Saudi Arabia	49 (3.9)	397 (6.5)	26 (3.1)	380 (11.0)	25 (3.4)	387 (12.8)	9.2 (0.19)	0.1 (0.26)
Chile	46 (4.0)	489 (4.1)	47 (4.3)	471 (5.6)	6 (2.2)	455 (17.0)	9.6 (0.11)	0.4 (0.18)
Turkey	44 (3.5)	505 (4.6)	29 (3.2)	464 (7.5)	26 (2.9)	468 (7.0)	8.8 (0.15)	-0.2 (0.21)
Portugal	43 (4.5)	511 (2.8)	46 (4.7)	507 (3.4)	11 (2.6)	507 (5.3)	9.4 (0.15)	-0.9 (0.23) ▼
Germany	39 (3.8)	541 (3.7)	50 (3.7)	522 (3.2)	10 (2.4)	506 (10.8)	9.2 (0.10)	-0.3 (0.13)
Oman	34 (3.4)	431 (7.4)	36 (3.0)	426 (5.8)	29 (2.8)	439 (6.0)	8.6 (0.15)	0.2 (0.21)
Kuwait	25 (3.9)	368 (10.6)	40 (4.4)	324 (10.0)	35 (3.5)	326 (12.3)	8.3 (0.19)	◊ ◊
Morocco	21 (3.0)	378 (12.5)	30 (3.0)	342 (7.8)	49 (3.2)	348 (5.9)	7.7 (0.16)	0.5 (0.21)
Indonesia	18 (2.9)	407 (11.7)	28 (3.3)	411 (8.9)	54 (3.6)	386 (7.0)	7.4 (0.16)	◊ ◊
International Avg.	61 (0.5)	513 (0.7)	30 (0.5)	498 (1.0)	9 (0.3)	471 (2.5)		

Significantly higher than 2011 ▲
Significantly lower than 2011 ▼

This TIMSS questionnaire scale was established in 2011 based on the combined response distribution of all countries that participated in TIMSS 2011. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale score points corresponded to the standard deviation of the distribution.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

A diamond (◊) indicates the country did not participate in the 2011 assessment.

A tilde (~) indicates insufficient data to report achievement.

An "r" indicates data are available for at least 70% but less than 85% of the pupils.

An "s" indicates data are available for at least 50% but less than 70% of the pupils.

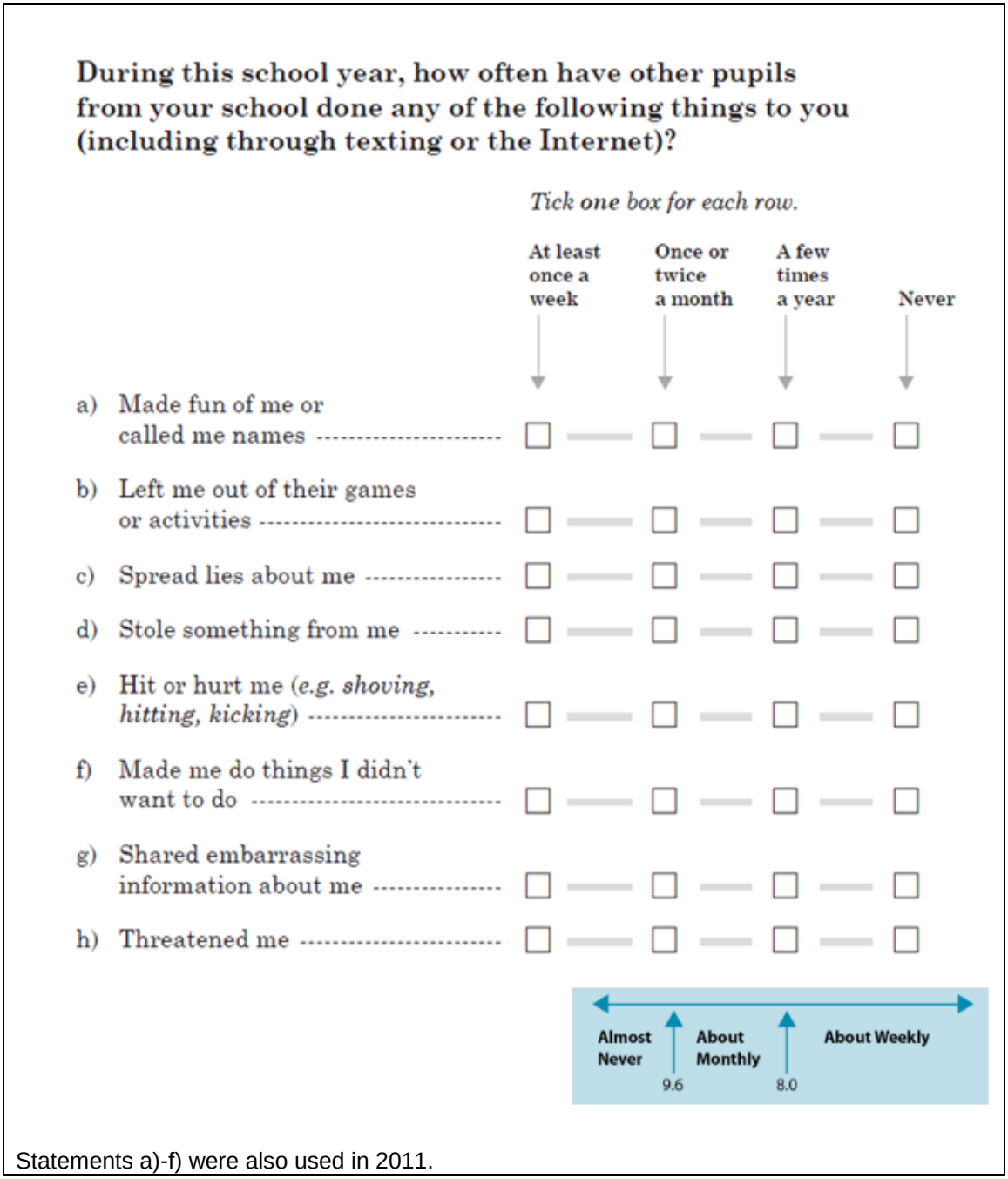
Source: Exhibit 7.1, International science report (Martin *et al.*, 2016a)

8.4 Pupil reports of bullying in school

Pupils were asked about the extent to which they had experienced a range of behaviours which were considered to demonstrate bullying at school. The questions they were asked and details of the scaling are shown in Figure 8.5 and the results for each subject are shown in Table 8.8.

Based on their responses, pupils were categorised as being in one of three bands, which described the frequency with which they had experienced the eight bullying behaviours in their school during the last year: 'Almost Never', 'About Monthly' and 'About Weekly'. The number of statements included in the question on pupil bullying increased from six in the 2011 survey to eight in 2015. The additional statements in 2015 asked pupils about their experience of threatening behaviour and their experience of having embarrassing information shared about them, for example through social media.

Figure 8.5 Pupils bullied at school



Statements a)-f) were also used in 2011.

Source: Exhibit 7.5, International mathematics report (Mullis *et al.*, 2016a), and Exhibit 7.5, International science report (Martin *et al.*, 2016a).

Table 8.8 Pupils bullied

Mathematics

Reported by pupils

Students were scored according to their responses to how often they experienced eight bullying behaviors on the *Student Bullying* scale. Students bullied **Almost Never** had a score on the scale of at least 9.6, which corresponds to "never" experiencing four of the eight bullying behaviors and experiencing each of the other four behaviors "a few times a year," on average. Students bullied **About Weekly** had a score no higher than 8.0, which corresponds to their experiencing each of four of the eight behaviors "once or twice a month" and each of the other four "a few times a year," on average. All other students were bullied **About Monthly**.

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Northern Ireland	64 (1.5)	578 (3.0)	27 (1.1)	568 (4.4)	10 (0.7)	529 (7.2)	10.3 (0.06)
International Avg.	56 (0.2)	514 (0.5)	29 (0.1)	505 (0.5)	16 (0.1)	478 (0.8)	

This TIMSS questionnaire scale was established in 2015 based on the combined response distribution of all countries that participated in TIMSS 2015. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale score points corresponded to the standard deviation of the distribution.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Science

Reported by pupils

Students were scored according to their responses to how often they experienced eight bullying behaviors on the *Student Bullying* scale. Students bullied **Almost Never** had a score on the scale of at least 9.6, which corresponds to "never" experiencing four of the eight bullying behaviors and experiencing each of the other four behaviors "a few times a year," on average. Students bullied **About Weekly** had a score no higher than 8.0, which corresponds to their experiencing each of four of the eight behaviors "once or twice a month" and each of the other four "a few times a year," on average. All other students were bullied **About Monthly**.

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Percent of Students	Average Achievement	Percent of Students	Average Achievement	Percent of Students	Average Achievement	
Northern Ireland	64 (1.5)	524 (2.7)	27 (1.1)	520 (3.6)	10 (0.7)	496 (5.3)	10.3 (0.06)
International Avg.	57 (0.2)	515 (0.5)	28 (0.1)	506 (0.6)	15 (0.1)	481 (0.9)	

This TIMSS questionnaire scale was established in 2015 based on the combined response distribution of all countries that participated in TIMSS 2015. To provide a point of reference for country comparisons, the scale centerpoint of 10 was located at the mean of the combined distribution. The units of the scale were chosen so that 2 scale score points corresponded to the standard deviation of the distribution.

( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Sources: Exhibit 7.5 International mathematics report (Mullis *et al.*, 2016a) and Exhibit 7.5, international science report (Martin *et al.*, 2016a).

Pupils in Northern Ireland participating in TIMSS 2015 reported that, on average, they experienced bullying behaviours less frequently than those in most other participating countries. The average scale score for Northern Ireland on this scale was 10.3, placing pupils in the 'Almost Never' bullied category overall. Sixty-four per cent of pupils reported that they were 'Almost Never' bullied, while responses from 27 per cent of pupils were categorised as experiencing bullying' About Monthly' and 10 per cent as 'About Weekly'. These figures compare favourably with the international averages of 56 per cent (mathematics) and 57 per cent (science) for 'Almost Never'; 29 per cent (mathematics) and 28 per cent (science) for 'About Monthly'; and 16 per cent (mathematics) and 15 per cent (science) for 'About Weekly'.

In 2011, reported frequency of bullying in Northern Ireland was broadly similar to that reported by pupils in 2015, although there was a small reduction in the percentage of pupils

reporting an 'About Weekly' experience of bullying between 2011 and 2015 of 4 per cent. Additionally, there was an increase between 2011 and 2015 in the percentage of pupils in the 'Almost Never' category of 7 per cent.

Among comparator countries, the Republic of Ireland, Finland and Poland were ranked higher on this scale. These three countries also reported experiencing the lowest levels of bullying behaviour, while the highest levels of bullying among comparator countries were reported in Singapore and Australia. Internationally, average pupil attainment in both mathematics and science tended to be higher where less bullying was reported (but causality cannot be inferred). Pupils in Northern Ireland appeared to conform to this general pattern. The standard errors shown in Table 8.8 suggest that, in Northern Ireland, for both subjects, the differences in average achievement between pupils who are 'Almost Never' bullied and those who experience 'About Monthly' bullying behaviours are unlikely to be statistically significant. However, the differences in average achievement in both mathematics and science between pupils with 'About Weekly' and 'About Monthly' experience of bullying behaviours may be statistically significant[39].

8.5 The extent to which their teaching is limited by disruptive or uninterested pupils

Teachers were asked to indicate the extent to which they felt that their teaching was limited by disruptive or uninterested pupils. The results for mathematics and science are shown in Table 8.9. Teachers' responses led to them being categorised as having their teaching limited' Not At All', 'Some' or 'A Lot' by these factors.

Table 8.9 Teaching limited by disruptive or uninterested pupils

Mathematics teaching limited by disruptive pupils

Country	Not at All		Some		A lot	
	% of Pupils	Average Achievement	% of Pupils	Average Achievement	% of Pupils	Average Achievement
Northern Ireland r	44	582	47	568	9	553
International Avg.	27	521	54	509	19	493

[39] Tests of statistical significance were not carried out in this international analysis.

Mathematics teaching limited by uninterested pupils

Country	Not at All		Some		A lot	
	% of Pupils	Average Achievement	% of Pupils	Average Achievement	% of Pupils	Average Achievement
Northern Ireland r	26	597	68	565	6	550
International Avg.	23	524	62	509	15	490

Science teaching limited by disruptive pupils

Country	Not at All		Some		A lot	
	% of Pupils	Average Achievement	% of Pupils	Average Achievement	% of Pupils	Average Achievement
Northern Ireland r	44	529	47	516	9	505
International Avg.	27	517	54	506	19	492

Science teaching limited by uninterested pupils

Country	Not at All		Some		A lot	
	% of Pupils	Average Achievement	% of Pupils	Average Achievement	% of Pupils	Average Achievement
Northern Ireland r	26	538	67	516	6	502
International Avg.	24	521	61	505	15	488

Sources: Mathematics Teacher Context Data Almanac by Mathematics Achievement questions ATBG15D and ATBG15E and Science Teacher Context Data Almanac by Science Achievement questions ATBG15D and ATBG15E

The vast majority of pupils in Northern Ireland (over 90 per cent) across both subjects had teachers who felt that their teaching was limited ‘Some’ or ‘Not At All’ by disruptive or uninterested pupils.

In both mathematics and science, 9 per cent of pupils had teachers who reported that their teaching was limited ‘A Lot’ by disruptive pupils, and 6 per cent of pupils had teachers who reported that their lessons were limited ‘A Lot’ by pupils who were uninterested. These figures compare favourably with the respective international averages of 19 per cent and 15 per cent.

Among the comparator countries, for both mathematics and science, teachers in Northern Ireland had the highest percentage of pupils (44 per cent) in schools where teachers were ‘Not at All’ limited by disruptive students. In terms of teaching being limited by uninterested pupils, teachers in Northern Ireland fared less well. Among comparator countries, the Republic of Ireland, Finland and Hong Kong had a smaller percentage of pupils being taught by teachers whose teaching was disrupted ‘A Lot’ by uninterested pupils. England had a

similar proportion to Northern Ireland (6 per cent), with Singapore, Australia and Poland reporting higher levels.

Internationally, pupil attainment tended to be lower where teachers reported high levels of limitation caused by disruptive or uninterested pupils,[40] but the direction of causality cannot be inferred from the data.

In Northern Ireland, for both subjects, there was an apparent difference between the average achievement scores of those pupils whose teachers are limited' Not at All', 'Some' or 'A Lot' by either disruptive pupils or uninterested pupils. However, from the data available it is not possible to determine whether these apparent differences in achievement are statistically significant.

In the 2011 TIMSS survey the questions on the extent to which teachers were limited by disruptive or uninterested pupils only had two reporting categories 'Some or Not at All' and 'A Lot'. In 2011, 4 per cent of pupils in mathematics and 5 per cent of pupils in science were taught by teachers reporting that their teaching was limited 'A Lot' by disruptive pupils. These figures were different in 2015, with a five percentage point increase in the proportion of pupils in this category for mathematics and a four percentage point increase for science. There was a similar change in both subjects for disruption caused by uninterested pupils. For both subjects in 2011, only 2 per cent of pupils were in classes where teachers reported 'A Lot' of disruption by uninterested pupils. This increased to 6 per cent in 2015, but caution needs to be exercised in comparing the results for 2011 and 2015 as the reporting categories have changed between surveys.

8.6 Conclusion

Most aspects of the school learning environment in Northern Ireland have remained stable between the 2011 and 2015 TIMSS cycles. In both mathematics and science, principals and teachers in Northern Ireland reported some of the highest levels of emphasis on academic success of any nation. For example, over 90 per cent of pupils were taught in schools where principals reported placing a 'High' or 'Very High' emphasis on academic success. Teachers reported even higher levels of emphasis on academic success than principals. Only Korea had a higher percentage of pupils in schools which placed a 'Very High Emphasis' on academic success, as reported by teachers.

In Northern Ireland, in both mathematics and science, the majority of pupils (over 80 per cent) had teachers who reported that their schools were 'Very Safe and Orderly'. Among all countries participating in TIMSS 2015, only teachers in Indonesia reported a higher percentage of pupils in this category. Similarly, almost all pupils in Northern Ireland attended schools in which principals reported 'Hardly Any', or 'Minor', problems with discipline.

On average, pupils in Northern Ireland reported experiencing bullying behaviours less frequently than those in most other participating countries. Sixty-four per cent of pupils reported that they were 'Almost Never' bullied, compared with the international average of 56 per cent for mathematics and 57 per cent for science. The standard errors in the data suggest that, in Northern Ireland, the differences in average achievement in both

[40] Tests of statistical significance were not carried out in this international analysis.

mathematics and science between pupils with ‘About Weekly’ and ‘About Monthly’ experience of bullying behaviours may be statistically significant.

Finally, in terms of disruption, teachers in Northern Ireland reported that their teaching was rarely limited by disruptive or uninterested pupils. For both mathematics and science, 9 per cent of pupils had teachers who reported that their teaching was limited ‘A Lot’ by disruptive pupils, and 6 per cent of pupils had teachers who reported that their lessons were limited ‘A Lot’ by pupils who were uninterested. These figures are below the international averages of 19 per cent and 15 per cent respectively.