7. The school learning environment

Chapter outline

This chapter presents findings 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. These are followed by sections that examine factors related to teaching and teaching practices including: levels of career satisfaction, the extent to which teachers collaborate in order to improve their teaching practice, how prepared teachers feel to teach mathematics and science and teachers' major areas of study during training. Outcomes for Northern Ireland are compared with the international averages, and where relevant, with those of other countries.

Key findings

- Principals and teachers in Northern Ireland reported the highest levels of emphasis on academic success: no other participating country had higher overall averages on this scale.
- The vast majority of pupils in Northern Ireland attended schools which were categorised as safe and orderly (teacher reports) and had hardly any, or minor, problems of discipline and safety (principal reports). These factors appeared to relate to higher pupil attainment.
- Pupils reported relatively low levels of bullying and teachers reported that their teaching was rarely limited by disruptive or uninterested pupils.
- In Northern Ireland, at least 95 per cent of pupils had teachers who reported that they were *Satisfied* or *Somewhat Satisfied* with their careers. However, higher levels of career satisfaction did not appear to be associated with increased pupil achievement.
- Compared with international averages, teachers in Northern Ireland reported less frequent collaboration to improve teaching. However, teacher responses on this scale did not appear to be associated with pupil attainment.
- In relation to teachers' educational emphasis during training, for teachers of reading, the most common specialism was English/language. Compared to international averages, teachers in Northern Ireland reported a lower emphasis on specialisms such as Language, Pedagogy/Teaching Reading and Reading Theory during their formal education and training.
- In Northern Ireland, most pupils (just over three quarters) were taught mathematics by teachers whose main area of study was primary education without specialisation in mathematics. The same was true of science, where a similar proportion of pupils were taught by non-science specialists. Similar proportions were seen in a number of comparator countries, including Australia, Finland and New Zealand.
- In terms of preparedness to teach the TIMSS mathematics and science topics, in Northern Ireland, just over half of pupils were taught by teachers who feel very well prepared to teach the TIMSS science topics. This was lower than the equivalent percentage for mathematics for this age group, where the vast majority were taught by teachers who feel very well prepared.

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.

Y6 pupils were sampled by class. The Y6 teacher questionnaire would, in most cases therefore, 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 reading, mathematics and/or science separately.

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

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

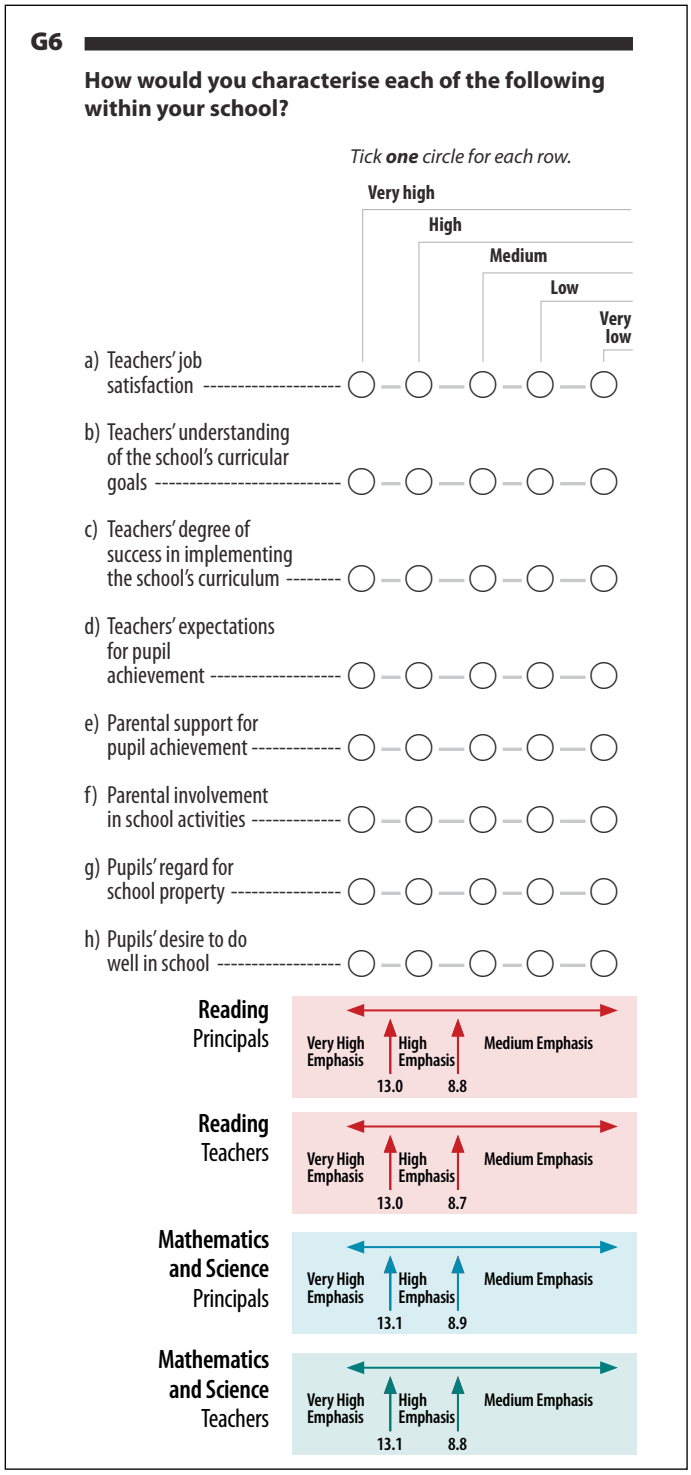
Principals and teachers were asked to rate the emphasis placed on academic success within their school by teachers, parents and pupils. Both principals and teachers were given the same set of questions, shown in Figure 7.1 below, and invited to rate levels of parental support and pupil motivation, as well as teachers' understanding of curricula goals and their expectations of pupils.

The questions were analysed as a separate scale for each subject. The scale categories for each subject (for principals and teachers) are summarised below the question in Figure 7.1 and the data for each subject is shown in Table 7.1.

It should be noted that the data provided by principals and teachers for this scale comes from the school and teacher questionnaires. The majority of the questions are not subject specific and therefore the overall proportions are broadly the same for reading, mathematics and science.[1] Differences in achievement scores, however, are subject specific and have been reported separately where appropriate.

1 Small differences in percentages may be due to slight differences in the PIRLS and TIMSS teacher samples or may arise from patterns of non-response, or rounding.

Figure 7.1 School's emphasis on academic success



Items a, f and g did not contribute to this scale.

Source: adapted from Exhibits 6.1 and 6.2, international PIRLS Report, Exhibits 6.1 and 6.3, international mathematics report, and Exhibits 6.1 and 6.3, international science report

Table 7.1 School emphasis on academic success

Reading

Reported by Principals and Teachers

Students were scored according to their principals' and teachers' responses characterizing five aspects on the School Emphasis on Academic Success scale. Students in schools where their principals/teachers reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.0, which corresponds to their principals/teachers characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 8.8 (principals)/8.7 (teachers) which corresponds to their principals/teachers 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.

Country		Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	*Principals*	33 (4.2)	570 (4.9)	60 (4.3)	556 (2.9)	7 (2.5)	529 (9.8)	11.9 (0.19)
	Teachers r	28 (4.2)	572 (3.9)	65 (4.4)	557 (3.7)	7 (2.2)	533 (8.5)	11.7 (0.19)
International Avg.	*Principals*	9 (0.3)	527 (1.9)	59 (0.6)	517 (0.6)	32 (0.5)	497 (0.8)	
	Teachers	9 (0.3)	529 (1.8)	60 (0.6)	517 (0.6)	31 (0.5)	497 (0.8)	

Centre point of scale set at 10.
( ) 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 students.

Mathematics

Reported by Principals and Teachers

Students were scored according to their principals/ teachers responses characterizing five aspects on the School Emphasis on Academic Success scale. Students in schools where their principals/teachers reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.1, which corresponds to their principals/teachers characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 8.9 (principals)/8.8 (teachers), which corresponds to their principals/teachers 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.

Country		Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	*Principals*	33 (4.2)	577 (4.9)	60 (4.3)	558 (4.1)	7 (2.5)	540 (13.6)	12.0 (0.19)
	Teachers r	31 (4.3)	573 (6.9)	65 (4.4)	559 (4.6)	5 (1.6)	550 (10.5)	11.9 (0.17)
International Avg.	*Principals*	8 (0.3)	511 (2.2)	58 (0.5)	496 (0.7)	34 (0.5)	477 (0.9)	
	Teachers	7 (0.3)	503 (3.3)	60 (0.5)	496 (0.7)	33 (0.5)	477 (0.9)	

Science

Reported by Principals and Teachers

Students were scored according to their principals' and teachers' responses characterizing five aspects on the *School Emphasis on Academic Success* scale. Students in schools where their principals/teachers reported a **Very High Emphasis** on academic success had a score on the scale of at least 13.1, which corresponds to their principals/teachers characterizing three of the five aspects as "very high" and the other two as "high," on average. Students in schools with a **Medium Emphasis** on academic success had a score no higher than 8.9 (principals)/8.8 (teachers), which corresponds to their principals/teachers 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.

Country		Very High Emphasis		High Emphasis		Medium Emphasis		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	*Principals*	33 (4.2)	532 (4.2)	60 (4.3)	511 (3.9)	7 (2.5)	495 (12.1)	12.0 (0.19)
	Teachers r	28 (4.2)	527 (6.6)	66 (4.3)	514 (3.8)	6 (1.9)	496 (9.8)	11.8 (0.18)
International Avg.	*Principals*	8 (0.3)	508 (2.3)	58 (0.5)	492 (0.7)	34 (0.5)	471 (1.0)	
	Teachers	8 (0.3)	499 (2.2)	60 (0.5)	492 (0.7)	33 (0.5)	472 (1.0)	

Centre point of scale set at 10.
( ) 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 students.

Sources: Exhibits 6.1 and 6.2, international PIRLS report, Exhibits 6.1 and 6.3, international mathematics report, and Exhibits 6.1 and 6.3, international science report

In Northern Ireland, across the three subjects, principals of over 90 per cent of pupils reported that their schools placed a *High* or *Very High* emphasis on academic success.

Teacher reports broadly reflected those of the principals. Again, well over 90 per cent of pupils were in schools where their teachers reported a *High* or *Very High* emphasis on academic success.

No other country participating in the PIRLS and TIMSS surveys had a higher proportion of pupils whose principals and teachers reported placing a *Very High Emphasis* on academic success, or had higher overall average scores on this scale. Principals had average scores on this scale of: 11.9 for PIRLS and 12.0 for TIMSS mathematics and science. Teachers had average scale scores of: 11.7 for PIRLS; 11.9 for TIMSS mathematics; and 11.8 for TIMSS science (details of how the scale scores were calculated is provided in Table 7.1).

Northern Ireland had the highest percentage of pupils (33 per cent) in schools where principals reported a *Very High Emphasis* on academic success, followed by Qatar (31 per cent) and the Republic of Ireland (28 per cent).

Hong Kong and Singapore were among the comparator countries where over a quarter of pupils were in schools whose principals and/or teachers reported a much lower emphasis on academic success.

Internationally, across all countries, pupil attainment in all subjects tended to be higher where teachers and principals reported a higher emphasis on academic success.

Pupil attainment in reading in Northern Ireland reflected the international pattern of higher attainment, on average, in schools where academic success was more highly emphasised. The standard errors, shown in Table 7.1, suggest that these differences are likely to be statistically significant.[2] However, the findings were more mixed for mathematics and science, and some apparent achievement differences across the categories of emphasis on academic success were likely to not be statistically significant for these subjects.[3]

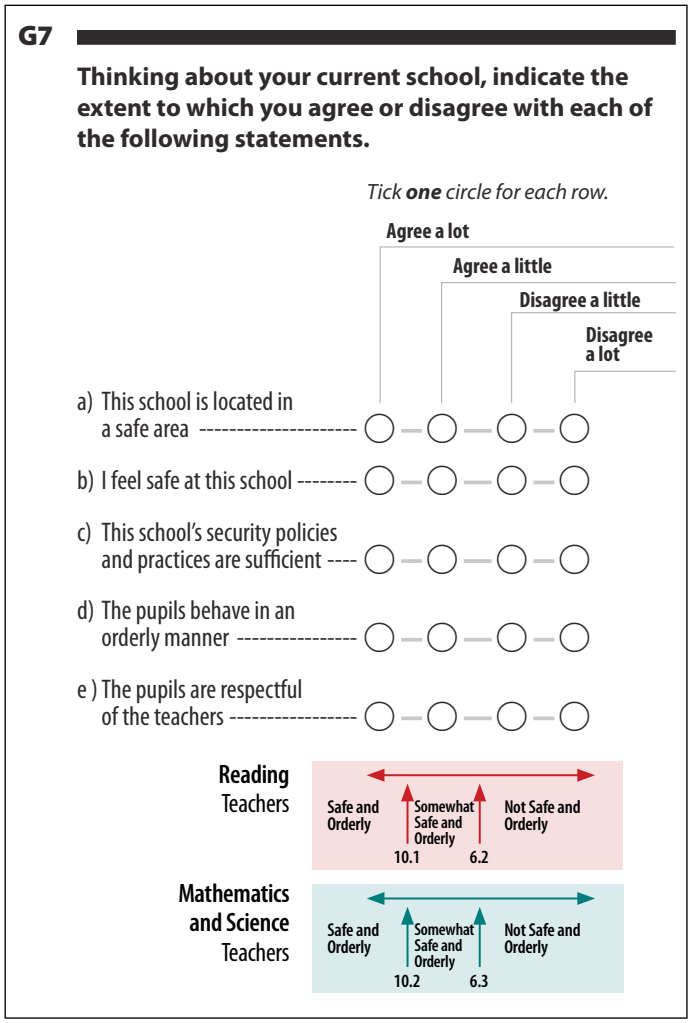
7.2 Teachers' ratings of the extent to which their schools are 'safe and orderly'

Teachers were asked about their perceptions of safety and the behaviour of pupils in their school. Based on teachers' responses, pupils were categorised as attending schools which were *Safe and Orderly*; *Somewhat Safe and Orderly*; or *Not Safe and Orderly*. The questions and details of the scaling are shown in Figure 7.2 and the results for each subject are shown in Table 7.2.

2 Throughout this report, findings listed as 'significant' are statistically significant.

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

Figure 7.2 Safe and orderly schools



Source: adapted from Exhibit 6.5, international PIRLS Report, Exhibit 6.7, international mathematics report, and Exhibit 6.7, international science report

Table 7.2 Safe and orderly schools

Reading

Reported by Teachers

Students were scored according to their teachers' degree of agreement with five statements on the *Safe and orderly school* scale. Students in **Safe and Orderly** schools had a score on the scale of at least 10.1, which corresponds to their teachers "agreeing a lot" with three of the five qualities of a safe and orderly school and "agreeing a little" with the other two, on average. Students in **Not Safe and Orderly** schools had a score no higher than 6.2, which corresponds to their teachers "disagreeing a little" with three of the five qualities and "agreeing a little" with the other two, on average. All other students attended **Somewhat Safe and Orderly** schools.

Country		Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	r	84 (2.9)	564 (3.1)	16 (2.8)	538 (7.9)	0 (0.4)	~ ~	11.4 (0.14)
International Avg.		55 (0.5)	518 (0.6)	41 (0.5)	505 (0.8)	4 (0.2)	486 (3.6)	

Mathematics

Reported by Teachers

Students were scored according to their teachers' degree of agreement with five statements on the *Safe and Orderly School* scale. Students in **Safe and Orderly** schools had a score on the scale of at least 10.2, which corresponds to their teachers "agreeing a lot" with three of the five qualities of a safe and orderly school and "agreeing a little" with the other two, on average. Students in **Not Safe and Orderly** schools had a score no higher than 6.3, which corresponds to their teachers "disagreeing a little" with three of the five qualities and "agreeing a little" with the other two, on average. All other students attended **Somewhat Safe and Orderly** schools.

Country		Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	r	85 (2.7)	568 (4.0)	15 (2.6)	537 (8.6)	0 (0.4)	~ ~	11.5 (0.14)
International Avg.		53 (0.5)	498 (0.7)	43 (0.5)	483 (0.8)	4 (0.2)	470 (2.9)	

Science

Reported by Teachers

Students were scored according to their teachers' degree of agreement with five statements on the *Safe and Orderly School* scale. Students in **Safe and Orderly** schools had a score on the scale of at least 10.2, which corresponds to their teachers "agreeing a lot" with three of the five qualities of a safe and orderly school and "agreeing a little" with the other two, on average. Students in **Not Safe and Orderly** schools had a score no higher than 6.3, which corresponds to their teachers "disagreeing a little" with three of the five qualities and "agreeing a little" with the other two, on average. All other students attended **Somewhat Safe and Orderly** schools.

Country		Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	r	85 (2.7)	521 (3.5)	15 (2.6)	493 (7.2)	0 (0.4)	~ ~	11.5 (0.13)
International Avg.		53 (0.5)	493 (0.7)	43 (0.5)	480 (0.9)	4 (0.2)	449 (4.0)	

Centre point of scale set at 10.
( ) 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 students.

Source: adapted from Exhibit 6.5, international PIRLS Report, Exhibit 6.7, international mathematics report, and Exhibit 6.7, international science report

Across all three subjects, the vast majority of pupils (over 80 per cent) in Northern Ireland had teachers who reported that their schools were *Safe and Orderly*. This was the highest percentage for TIMSS and, among all countries participating in PIRLS, only teachers in Indonesia reported a higher percentage of pupils in *Safe and Orderly* schools.[4]

Among comparator countries, there was a lot of variation in terms of the percentage of pupils in each of the three categories of this scale. The majority of comparator countries had over 60 per cent of pupils in the *Safe and Orderly* category; the

4 Indonesia participated only in PIRLS.

exceptions were Finland and Hong Kong. Notably, Finland had one of the lowest percentages of pupils in schools that were considered to be *Safe and Orderly*, with less than 40 per cent of pupils in this category (35 per cent in PIRLS, 36 per cent for TIMSS mathematics and 38 per cent for TIMSS science).

Internationally, pupils in schools that teachers reported as being *Safe and Orderly*, on average, scored more highly than those in schools that teachers reported were *Somewhat Safe and Orderly*, which scored more highly in turn than those deemed *Not Safe and Orderly.* This suggests there may be an association between safety and orderliness and attainment,[5] but this relationship was not seen in all participating countries. The direction of causality cannot be inferred from this data.

In Northern Ireland, there did appear to be an association between attending a school that was judged to be safe and orderly and higher average achievement, as can be seen in Table 7.2. The standard error statistics suggest that, in Northern Ireland, these differences are likely to be statistically significant. This pattern was seen for other high performing participants including Finland.

The full international tables follow, for reference, showing data for all countries (Tables 7.3 to 7.5, derived from PIRLS Exhibit 6.5; TIMSS mathematics and science Exhibit 6.7).

5 Tests of statistical significance were not carried out in this international analysis. However, based on the size of the standard errors, it is likely that these findings are statistically significant.

Table 7.3 International table for safe and orderly schools

Reported by Teachers

Students were scored according to their teachers' degree of agreement with five statements on the *Safe and Orderly School* scale. Students in **Safe and Orderly** schools had a score on the scale of at least 10.1, which corresponds to their teachers "agreeing a lot" with three of the five qualities of a **Safe and Orderly** school and "agreeing a little" with the other two, on average. Students in **Not Safe and Orderly** schools had a score no higher than 6.2, which corresponds to their teachers "disagreeing a little" with three of the five qualities and "agreeing a little" with the other two, on average. All other students attended **Somewhat Safe and Orderly** schools.

Country	Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Indonesia	91 (2.6)	429 (4.5)	9 (2.6)	425 (13.8)	0 (0.0)	~ ~	11.9 (0.13)
Northern Ireland r	84 (2.9)	564 (3.1)	16 (2.8)	538 (7.9)	0 (0.4)	~ ~	11.4 (0.14)
Azerbaijan	82 (2.9)	463 (3.8)	16 (2.8)	463 (9.2)	1 (0.7)	~ ~	11.3 (0.13)
Israel	81 (3.2)	546 (3.5)	17 (3.3)	530 (9.5)	3 (1.4)	485 (41.9)	11.0 (0.14)
Georgia	79 (2.7)	489 (3.2)	19 (2.7)	482 (7.9)	1 (0.7)	~ ~	11.1 (0.13)
Ireland, Rep. of	77 (3.4)	560 (2.4)	21 (3.3)	527 (5.2)	2 (1.0)	~ ~	11.2 (0.15)
Australia r	76 (3.2)	540 (3.1)	21 (3.1)	509 (6.9)	4 (1.4)	489 (15.1)	11.0 (0.16)
United Arab Emirates	75 (1.8)	443 (2.9)	24 (1.8)	423 (4.7)	1 (0.4)	~ ~	10.8 (0.08)
Croatia	73 (3.1)	551 (2.0)	26 (3.0)	558 (4.0)	1 (0.7)	~ ~	10.7 (0.12)
England	72 (3.7)	561 (3.0)	27 (3.7)	524 (5.2)	0 (0.3)	~ ~	10.9 (0.14)
Netherlands	72 (3.2)	551 (1.8)	27 (3.1)	533 (4.3)	1 (0.0)	~ ~	10.8 (0.15)
New Zealand	72 (2.5)	545 (2.4)	25 (2.3)	504 (4.6)	4 (1.2)	490 (16.0)	10.8 (0.12)
Qatar	70 (3.4)	431 (4.9)	29 (3.3)	409 (8.5)	1 (0.6)	~ ~	10.7 (0.13)
Singapore	64 (2.2)	576 (4.1)	34 (2.2)	551 (5.2)	2 (0.6)	~ ~	10.3 (0.09)
Norway	64 (4.6)	510 (2.4)	36 (4.6)	501 (3.2)	0 (0.0)	~ ~	10.5 (0.15)
Denmark	64 (2.9)	561 (1.9)	35 (2.9)	543 (2.7)	1 (0.8)	~ ~	10.5 (0.11)
United States	64 (2.1)	567 (2.0)	30 (2.1)	542 (2.9)	6 (1.1)	521 (7.2)	10.3 (0.09)
Canada	62 (2.8)	555 (2.2)	34 (2.6)	540 (2.6)	4 (0.9)	521 (4.5)	10.3 (0.13)
Iran, Islamic Rep. of	60 (3.5)	464 (3.7)	39 (3.4)	449 (4.9)	1 (0.8)	~ ~	10.2 (0.14)
Austria	58 (3.4)	535 (2.2)	40 (3.5)	522 (3.2)	2 (1.5)	~ ~	10.0 (0.12)
Saudi Arabia	56 (3.8)	441 (6.0)	40 (3.9)	420 (7.4)	4 (1.4)	377 (18.3)	10.1 (0.14)
Oman	56 (2.9)	394 (3.3)	43 (3.0)	390 (4.7)	2 (0.7)	~ ~	10.1 (0.10)
Poland	55 (3.4)	524 (3.2)	44 (3.4)	529 (2.9)	1 (0.6)	~ ~	9.9 (0.12)
Bulgaria	55 (3.9)	537 (5.4)	43 (3.8)	530 (5.6)	3 (1.1)	461 (27.8)	9.9 (0.13)
Hong Kong SAR	52 (4.5)	574 (2.8)	46 (4.3)	566 (3.5)	3 (1.5)	572 (30.3)	9.9 (0.17)
Hungary	51 (3.8)	548 (4.2)	45 (3.7)	531 (5.0)	3 (1.5)	502 (14.4)	9.6 (0.13)
Malta	50 (0.1)	488 (2.0)	49 (0.1)	470 (2.0)	2 (0.0)	~ ~	9.9 (0.00)
Russian Federation	49 (4.0)	569 (5.4)	49 (3.8)	569 (3.7)	2 (1.3)	~ ~	9.7 (0.17)
Lithuania	47 (3.2)	531 (3.1)	51 (3.1)	526 (3.1)	2 (0.9)	~ ~	9.6 (0.12)
Portugal	46 (5.1)	546 (4.9)	50 (4.8)	538 (3.6)	4 (1.2)	516 (9.9)	9.5 (0.19)
Czech Republic	46 (3.8)	547 (3.2)	52 (3.6)	544 (3.1)	2 (0.9)	~ ~	9.5 (0.12)
Spain	46 (3.7)	524 (3.7)	49 (3.6)	507 (3.1)	5 (1.8)	476 (9.9)	9.5 (0.16)
Germany	45 (3.9)	549 (2.9)	51 (3.8)	536 (3.2)	4 (1.4)	519 (11.1)	9.6 (0.12)
France	40 (3.4)	533 (3.3)	55 (3.5)	514 (3.1)	5 (1.5)	484 (18.2)	9.4 (0.12)
Slovak Republic	40 (3.7)	537 (3.8)	59 (3.7)	535 (3.8)	1 (0.6)	~ ~	9.3 (0.08)
Romania	40 (3.6)	498 (7.8)	55 (3.7)	505 (6.2)	5 (1.6)	469 (15.2)	9.4 (0.13)
Sweden	40 (4.7)	551 (2.9)	55 (4.8)	540 (3.0)	5 (1.4)	498 (10.1)	9.4 (0.15)
Finland	35 (3.5)	573 (2.6)	59 (3.8)	566 (2.3)	6 (1.7)	554 (4.7)	9.2 (0.12)
Colombia	35 (4.4)	458 (8.9)	54 (4.7)	442 (5.3)	11 (2.8)	447 (8.2)	8.9 (0.21)
Belgium (French)	33 (3.9)	523 (3.7)	58 (3.8)	501 (4.0)	9 (2.5)	490 (9.4)	8.7 (0.17)
Chinese Taipei	31 (3.8)	552 (2.9)	62 (3.7)	556 (2.5)	7 (2.0)	532 (5.8)	8.9 (0.15)
Morocco	30 (3.3)	337 (7.5)	56 (3.7)	303 (6.0)	14 (2.3)	289 (10.7)	8.6 (0.15)
Trinidad and Tobago	28 (3.9)	482 (8.6)	52 (3.9)	469 (6.1)	20 (3.1)	461 (9.1)	8.4 (0.19)
Slovenia	27 (3.1)	528 (3.6)	67 (3.2)	532 (2.5)	6 (1.6)	515 (8.5)	8.8 (0.11)
Italy	18 (2.9)	546 (4.9)	78 (3.3)	542 (2.3)	4 (1.4)	506 (26.2)	8.6 (0.09)
International Avg.	55 (0.5)	518 (0.6)	41 (0.5)	505 (0.8)	4 (0.2)	486 (3.6)	

Centre point of scale set at 10.
( ) 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 students.

Source: Exhibit 6.5 international PIRLS report

Table 7.4 International table for safe and orderly schools

Reported by Teachers

Students were scored according to their teachers' degree of agreement with five statements on the *Safe and Orderly School* scale. Students in **Safe and Orderly schools** had a score on the scale of at least 10.2, which corresponds to their teachers "agreeing a lot" with three of the five qualities of a safe and orderly school and "agreeing a little" with the other two, on average. Students in **Not Safe and Orderly** schools had a score no higher than 6.3, which corresponds to their teachers "disagreeing a little" with three of the five qualities and "agreeing a little" with the other two, on average. All other students attended **Somewhat Safe and Orderly** schools.

Country	Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland r	85 (2.7)	568 (4.0)	15 (2.6)	537 (8.6)	0 (0.4)	~ ~	11.5 (0.14)
Georgia	83 (2.5)	453 (3.9)	16 (2.4)	442 (10.4)	1 (0.7)	~ ~	11.3 (0.12)
Azerbaijan	83 (2.9)	465 (6.5)	16 (2.8)	459 (16.7)	1 (0.7)	~ ~	11.4 (0.13)
Ireland, Rep. of	78 (3.3)	537 (3.0)	20 (3.3)	497 (6.0)	2 (1.0)	~ ~	11.3 (0.15)
Australia r	76 (3.1)	529 (3.7)	20 (3.0)	491 (7.9)	4 (1.4)	460 (12.4)	11.1 (0.16)
United Arab Emirates	76 (2.2)	440 (3.0)	24 (2.2)	418 (5.7)	0 (0.2)	~ ~	10.8 (0.08)
Croatia	73 (3.1)	489 (2.2)	26 (3.0)	495 (4.2)	1 (0.7)	~ ~	10.8 (0.12)
Thailand	72 (3.9)	462 (4.5)	26 (3.8)	462 (10.1)	3 (1.8)	352 (15.0)	11.0 (0.18)
Armenia	72 (2.7)	455 (4.2)	26 (2.6)	447 (6.6)	2 (1.1)	~ ~	10.9 (0.13)
Kuwait	70 (3.1)	346 (3.9)	30 (3.1)	331 (6.3)	0 (0.0)	~ ~	10.4 (0.10)
New Zealand	70 (2.3)	501 (2.9)	29 (2.3)	456 (4.8)	1 (0.5)	~ ~	11.0 (0.10)
Denmark	68 (3.5)	544 (2.7)	32 (3.5)	534 (4.6)	0 (0.0)	~ ~	10.6 (0.12)
Kazakhstan	67 (4.0)	505 (5.8)	33 (4.0)	495 (9.2)	1 (0.4)	~ ~	10.7 (0.15)
England	67 (4.3)	557 (3.8)	31 (4.1)	519 (7.9)	2 (1.3)	~ ~	10.7 (0.18)
United States	66 (2.4)	553 (2.3)	30 (2.3)	526 (3.4)	4 (0.8)	503 (8.4)	10.5 (0.09)
Qatar	65 (3.6)	421 (6.1)	34 (3.7)	393 (8.1)	1 (0.0)	~ ~	10.5 (0.11)
Norway	64 (4.6)	501 (3.5)	36 (4.6)	484 (4.6)	0 (0.0)	~ ~	10.7 (0.17)
Saudi Arabia	62 (4.4)	425 (7.2)	36 (4.4)	389 (7.2)	2 (0.9)	~ ~	10.4 (0.16)
Singapore	61 (2.5)	613 (3.8)	37 (2.5)	595 (5.6)	2 (0.7)	~ ~	10.3 (0.10)
Iran, Islamic Rep. of	60 (3.5)	440 (4.2)	39 (3.4)	419 (6.1)	1 (0.8)	~ ~	10.3 (0.15)
Bahrain	57 (4.2)	446 (4.0)	42 (4.3)	423 (4.9)	1 (0.0)	~ ~	10.3 (0.17)
Austria	57 (3.4)	513 (3.0)	40 (3.5)	504 (3.3)	2 (1.5)	~ ~	10.0 (0.13)
Netherlands r	56 (4.6)	541 (2.6)	43 (4.6)	536 (3.8)	1 (0.8)	~ ~	10.2 (0.18)
Poland	55 (3.4)	478 (2.8)	44 (3.4)	485 (3.3)	1 (0.6)	~ ~	10.0 (0.12)
Hong Kong SAR	55 (4.7)	603 (4.6)	44 (4.8)	602 (6.0)	1 (0.6)	~ ~	10.2 (0.17)
Hungary	52 (3.8)	525 (4.9)	46 (3.6)	506 (5.6)	3 (1.3)	452 (24.4)	9.7 (0.14)
Spain	51 (3.8)	497 (3.2)	45 (3.9)	470 (4.4)	5 (1.8)	449 (14.4)	9.7 (0.16)
Russian Federation	49 (4.0)	546 (5.0)	48 (3.8)	539 (5.4)	2 (1.3)	~ ~	9.9 (0.17)
Malta	49 (0.1)	503 (1.8)	46 (0.1)	488 (2.1)	5 (0.1)	500 (5.9)	9.9 (0.01)
Lithuania	47 (3.2)	538 (3.7)	51 (3.1)	530 (3.2)	2 (0.9)	~ ~	9.7 (0.12)
Germany	47 (3.8)	533 (3.0)	52 (3.7)	525 (3.1)	2 (0.9)	~ ~	9.8 (0.13)
Portugal	46 (5.1)	541 (6.9)	50 (4.9)	527 (4.6)	4 (1.3)	507 (12.7)	9.6 (0.20)
Belgium (Flemish)	46 (3.0)	555 (2.6)	52 (2.9)	545 (2.3)	1 (0.8)	~ ~	9.7 (0.11)
Oman	46 (2.6)	400 (3.7)	52 (2.7)	374 (4.1)	2 (0.9)	~ ~	9.8 (0.09)
Yemen	46 (4.4)	257 (8.4)	52 (4.5)	235 (7.9)	2 (0.9)	~ ~	9.9 (0.15)
Czech Republic	45 (3.8)	512 (3.7)	53 (3.6)	510 (3.5)	2 (0.9)	~ ~	9.6 (0.12)
Sweden r	41 (4.8)	516 (3.4)	54 (4.9)	501 (3.2)	5 (1.3)	453 (3.6)	9.6 (0.16)
Chile	41 (3.7)	484 (4.6)	46 (3.7)	451 (4.2)	13 (3.1)	430 (13.1)	9.2 (0.19)
Slovak Republic	40 (3.6)	509 (5.9)	58 (3.6)	506 (4.8)	1 (0.7)	~ ~	9.4 (0.09)
Serbia	40 (4.2)	515 (4.8)	55 (4.1)	520 (3.9)	5 (1.6)	478 (20.5)	9.4 (0.16)
Romania	40 (3.6)	480 (9.7)	55 (3.7)	483 (7.4)	5 (1.6)	459 (17.9)	9.5 (0.14)
Tunisia	40 (3.9)	367 (6.9)	51 (3.8)	355 (4.8)	10 (2.6)	347 (17.0)	9.3 (0.16)
Turkey	37 (3.3)	495 (4.8)	45 (3.1)	461 (6.8)	18 (2.7)	438 (15.9)	8.9 (0.17)
Finland	36 (3.5)	554 (3.5)	59 (4.0)	544 (2.7)	6 (1.7)	519 (8.8)	9.4 (0.12)
Chinese Taipei	31 (3.8)	590 (2.4)	62 (3.7)	594 (2.7)	7 (2.0)	575 (5.2)	9.0 (0.15)
Morocco	29 (3.7)	363 (8.8)	53 (4.4)	331 (7.0)	17 (3.0)	321 (11.7)	8.8 (0.18)
Slovenia	27 (3.1)	511 (3.6)	67 (3.2)	515 (2.8)	6 (1.6)	498 (9.0)	8.9 (0.11)
Korea, Rep. of	24 (3.7)	615 (5.0)	69 (3.8)	603 (2.2)	7 (2.2)	593 (4.5)	8.7 (0.18)
Italy	18 (2.6)	508 (5.6)	75 (2.8)	511 (3.4)	6 (2.0)	487 (12.1)	8.6 (0.12)
Japan	5 (1.7)	589 (5.7)	83 (3.1)	587 (1.9)	12 (2.6)	574 (5.6)	7.9 (0.09)
International Avg.	53 (0.5)	498 (0.7)	43 (0.5)	483 (0.8)	4 (0.2)	470 (2.9)	

Centre point of scale set at 10.
( ) 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 students.

Source: Exhibit 6.7, international mathematics report

Table 7.5 International table for safe and orderly schools

Reported by Teachers

Students were scored according to their teachers' degree of agreement with five statements on the *Safe and Orderly School* scale. Students in **Safe and Orderly** schools had a score on the scale of at least 10.2, which corresponds to their teachers "agreeing a lot" with three of the five qualities of a safe and orderly school and "agreeing a little" with the other two, on average. Students in **Not Safe and Orderly** schools had a score no higher than 6.3, which corresponds to their teachers "disagreeing a little" with three of the five qualities and "agreeing a little" with the other two, on average. All other students attended **Somewhat Safe and Orderly** schools.

Country	Safe and Orderly		Somewhat Safe and Orderly		Not Safe and Orderly		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland r	85 (2.7)	521 (3.5)	15 (2.6)	493 (7.2)	0 (0.4)	~ ~	11.5 (0.13)
Azerbaijan	85 (2.9)	437 (6.3)	14 (2.8)	444 (15.7)	1 (0.7)	~ ~	11.5 (0.13)
Georgia	82 (2.5)	456 (4.0)	17 (2.4)	454 (9.3)	1 (0.7)	~ ~	11.3 (0.12)
Ireland, Rep. of	78 (3.3)	527 (3.6)	20 (3.3)	482 (7.0)	2 (1.0)	~ ~	11.3 (0.15)
Australia r	75 (3.5)	528 (3.5)	21 (3.2)	497 (7.8)	4 (1.4)	462 (15.4)	11.0 (0.17)
United Arab Emirates	74 (2.0)	434 (3.5)	25 (2.0)	421 (4.6)	0 (0.3)	~ ~	10.8 (0.08)
Croatia	73 (3.1)	514 (2.4)	26 (3.0)	520 (3.9)	1 (0.7)	~ ~	10.8 (0.12)
Thailand	72 (3.9)	477 (5.0)	26 (3.8)	478 (11.5)	3 (1.8)	338 (24.3)	11.0 (0.18)
Armenia	72 (2.7)	418 (4.3)	26 (2.6)	411 (7.3)	2 (1.1)	~ ~	10.9 (0.13)
New Zealand	70 (2.3)	512 (2.6)	29 (2.3)	466 (4.5)	1 (0.6)	~ ~	11.0 (0.10)
England	68 (4.0)	541 (3.8)	30 (3.9)	504 (7.0)	2 (1.2)	~ ~	10.8 (0.16)
Kazakhstan	67 (4.0)	498 (6.6)	33 (4.0)	489 (10.1)	1 (0.4)	~ ~	10.7 (0.15)
United States r	65 (2.1)	556 (2.3)	30 (1.9)	530 (4.2)	5 (0.9)	497 (7.7)	10.5 (0.10)
Singapore	64 (2.1)	594 (4.1)	33 (2.1)	564 (5.3)	3 (0.5)	576 (17.5)	10.3 (0.09)
Qatar	62 (4.9)	398 (6.5)	34 (3.4)	392 (9.2)	4 (3.0)	362 (32.3)	10.3 (0.20)
Norway	62 (4.7)	500 (2.7)	38 (4.7)	485 (3.7)	0 (0.0)	~ ~	10.6 (0.15)
Denmark	61 (3.5)	533 (3.0)	38 (3.5)	531 (4.4)	1 (0.9)	~ ~	10.3 (0.11)
Iran, Islamic Rep. of	60 (3.5)	462 (4.4)	39 (3.4)	441 (6.6)	1 (0.8)	~ ~	10.3 (0.15)
Kuwait	60 (3.7)	352 (6.4)	38 (3.4)	337 (7.4)	3 (1.4)	353 (41.1)	10.1 (0.15)
Austria	58 (3.5)	538 (3.2)	39 (3.7)	525 (4.0)	2 (1.5)	~ ~	10.1 (0.13)
Netherlands r	56 (4.6)	533 (2.9)	43 (4.6)	527 (4.0)	1 (0.8)	~ ~	10.2 (0.18)
Malta	56 (0.1)	456 (2.2)	43 (0.1)	437 (2.6)	2 (0.0)	~ ~	10.5 (0.00)
Poland	55 (3.4)	503 (3.3)	44 (3.4)	508 (3.8)	1 (0.6)	~ ~	10.0 (0.12)
Yemen	55 (4.2)	204 (7.8)	41 (4.1)	210 (13.1)	5 (1.8)	251 (23.2)	10.1 (0.18)
Bahrain	53 (5.4)	463 (5.0)	43 (5.3)	431 (7.1)	4 (1.9)	477 (10.0)	10.1 (0.19)
Hungary	52 (3.7)	543 (4.6)	44 (3.5)	526 (5.6)	4 (1.4)	491 (18.1)	9.8 (0.13)
Spain	51 (3.8)	518 (3.5)	45 (3.9)	495 (4.5)	5 (1.8)	472 (11.4)	9.7 (0.16)
Saudi Arabia	50 (4.6)	432 (7.0)	46 (4.5)	427 (9.5)	4 (1.8)	429 (29.2)	9.9 (0.17)
Russian Federation	49 (4.1)	554 (5.4)	49 (3.9)	551 (4.7)	2 (1.3)	~ ~	9.8 (0.17)
Hong Kong SAR	49 (5.0)	539 (3.8)	47 (4.9)	536 (6.4)	4 (1.8)	467 (60.0)	9.9 (0.17)
Oman	47 (2.5)	393 (6.2)	49 (2.6)	364 (4.7)	4 (1.4)	353 (21.1)	9.9 (0.10)
Lithuania	47 (3.2)	519 (3.4)	52 (3.1)	510 (3.4)	2 (0.9)	~ ~	9.7 (0.12)
Portugal	46 (5.1)	530 (8.0)	50 (4.9)	516 (4.5)	4 (1.3)	493 (14.4)	9.6 (0.20)
Belgium (Flemish)	46 (3.0)	516 (2.5)	52 (2.9)	504 (2.7)	1 (0.8)	~ ~	9.7 (0.11)
Germany	43 (3.7)	538 (3.7)	54 (3.7)	523 (3.5)	3 (1.3)	503 (10.8)	9.6 (0.12)
Slovak Republic	42 (3.3)	533 (5.9)	57 (3.3)	531 (5.2)	1 (0.7)	~ ~	9.4 (0.08)
Chile	41 (3.7)	503 (4.3)	46 (3.7)	469 (4.4)	13 (3.1)	449 (13.2)	9.2 (0.19)
Czech Republic	41 (3.9)	538 (4.3)	57 (3.8)	536 (3.3)	2 (0.9)	~ ~	9.4 (0.12)
Serbia	40 (4.2)	515 (4.7)	55 (4.1)	519 (3.8)	5 (1.6)	480 (17.5)	9.4 (0.16)
Romania	40 (3.6)	501 (10.1)	55 (3.7)	509 (7.3)	5 (1.6)	466 (22.0)	9.5 (0.14)
Sweden r	39 (4.4)	551 (3.6)	57 (4.4)	529 (3.9)	4 (1.3)	465 (4.8)	9.5 (0.16)
Tunisia	38 (4.3)	359 (9.0)	52 (3.9)	340 (5.9)	9 (2.6)	322 (21.2)	9.3 (0.19)
Finland	38 (3.6)	581 (4.0)	57 (4.0)	566 (2.7)	6 (1.7)	548 (6.6)	9.4 (0.13)
Chinese Taipei	37 (4.1)	557 (3.7)	59 (4.1)	550 (2.5)	4 (1.5)	526 (15.7)	9.3 (0.15)
Turkey	37 (3.3)	487 (4.9)	45 (3.1)	455 (6.3)	18 (2.7)	432 (14.0)	8.9 (0.17)
Morocco	34 (3.4)	294 (6.8)	52 (3.9)	251 (8.1)	13 (2.4)	236 (10.8)	8.8 (0.14)
Slovenia	27 (3.1)	518 (4.0)	67 (3.2)	523 (3.5)	6 (1.6)	502 (9.1)	8.9 (0.11)
Korea, Rep. of	25 (3.7)	593 (5.0)	68 (3.7)	586 (2.1)	7 (2.1)	574 (5.4)	8.8 (0.18)
Italy	15 (2.2)	524 (7.3)	79 (2.9)	528 (2.9)	7 (2.0)	493 (16.8)	8.5 (0.11)
Japan	5 (1.8)	569 (10.5)	80 (3.4)	559 (2.1)	16 (2.8)	551 (4.3)	7.8 (0.10)
International Avg.	53 (0.5)	493 (0.7)	43 (0.5)	480 (0.9)	4 (0.2)	449 (4.0)	

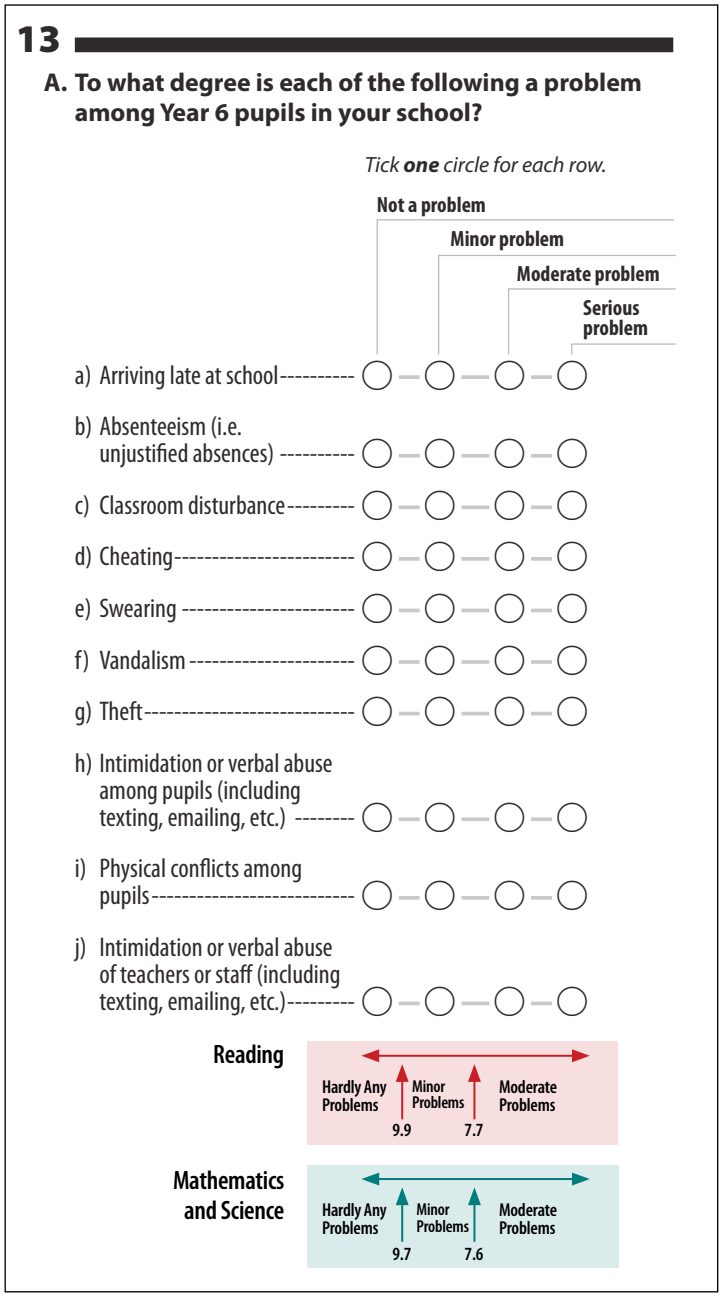
Centre point of scale set at 10.
( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.
A tilde (~) indicates insufficient data to report achievement.
An "r" indicates data are available for at least 70% but less than 85% of the students.

Source: Exhibit 6.7, international science report

7.3 Principals' views of school discipline and safety

Principals were asked about the degree to which a number of potential safety and discipline issues were a problem in their school. Based on principals' responses, pupils were categorised as attending schools with *Hardly Any Problems*, *Minor Problems* or *Moderate Problems.* The questions and details of the scoring are shown in Figure 7.3 and the results for all three subjects are shown in Table 7.6.

Figure 7.3 School discipline and safety



Source: adapted from Exhibit 6.6, international PIRLS Report, Exhibit 6.9, international mathematics report, and Exhibit 6.9, international science report

Table 7.6 School discipline and safety

Reading

Reported by Principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline and Safety scale*. Students in schools with **Hardly Any Problems** had a score on the scale of at least 9.9, which corresponds to their principals reporting "not a problem" for five of the ten discipline and safety issues and "minor problem" for the other five, on average. Students in schools with **Moderate Problems** had a score no higher than 7.7, 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 Problems		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	85 (3.7)	561 (2.9)	15 (3.7)	546 (7.1)	0 (0.0)	~ ~	11.1 (0.13)
International Avg.	58 (0.5)	519 (0.7)	31 (0.5)	504 (1.0)	11 (0.3)	476 (2.0)	

Mathematics

Reported by Principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline and Safety* 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 discipline and safety issues and "minor problem" for the other five, on average. Students in schools with **Moderate 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 Problems		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	85 (3.7)	566 (3.8)	15 (3.7)	542 (7.7)	0 (0.0)	~ ~	11.0 (0.13)
International Avg.	61 (0.5)	496 (0.7)	29 (0.5)	482 (1.1)	11 (0.3)	451 (2.2)	

Science

Reported by Principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline and Safety* 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 discipline and safety issues and "minor problem" for the other five, on average. Students in schools with **Moderate 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 Problems		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	85 (3.7)	520 (3.4)	15 (3.7)	502 (7.3)	0 (0.0)	~ ~	11.0 (0.13)
International Avg.	61 (0.5)	492 (0.7)	29 (0.5)	477 (1.2)	11 (0.3)	448 (2.2)	

Centre point of scale set at 10.
( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.
A tilde (~) indicates insufficient data to report achievement.

Sources: Exhibit 6.6, international PIRLS Report, Exhibit 6.9, international mathematics report, and Exhibit 6.9, international science report

The vast majority of pupils in Northern Ireland (85 per cent) had principals who reported *Hardly Any Problems* of discipline or safety in their schools. In PIRLS, this was higher than any other participating country except Hong Kong, and compares with an international average of 58 per cent. In TIMSS, only Kazakhstan and Armenia reported fewer problems than Northern Ireland. The remaining 15 per cent of pupils in Northern Ireland were in schools where principals reported *Minor Problems*.

Principals in all comparator countries reported a low percentage of pupils (3 per cent or less) in schools with *Moderate Problems* of discipline and safety.

Internationally, pupils in schools with lower problem ratings, on average, scored higher 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*. The standard error statistics for Northern Ireland on this scale suggest that the apparent differences in the three subjects are probably significant (shown in Table 7.6). However, across

countries, rankings in ratings for discipline and safety 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 7.7 to 7.9, derived from PIRLS Exhibit 6.6; TIMSS mathematics and science Exhibit 6.9).

Table 7.7 International table for school discipline and safety (reading)

Reported by Principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline and Safety scale*. Students in schools with **Hardly Any Problems** had a score on the scale of at least 9.9, which corresponds to their principals reporting "not a problem" for five of the ten discipline and safety issues and "minor problem" for the other five, on average. Students in schools with **Moderate Problems** had a score no higher than 7.7, 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 Problems		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Hong Kong SAR	87 (2.9)	570 (2.5)	12 (2.8)	566 (10.1)	1 (0.0)	~ ~	11.4 (0.12)
Northern Ireland	85 (3.7)	561 (2.9)	15 (3.7)	546 (7.1)	0 (0.0)	~ ~	11.1 (0.13)
Ireland, Rep. of	83 (3.5)	556 (2.5)	16 (3.3)	531 (9.0)	1 (1.0)	~ ~	11.2 (0.12)
Georgia	81 (2.8)	489 (3.6)	13 (2.4)	481 (9.5)	6 (1.4)	484 (13.2)	10.8 (0.14)
Chinese Taipei	77 (3.3)	552 (2.1)	23 (3.3)	555 (4.5)	0 (0.0)	~ ~	11.4 (0.13)
Spain	77 (3.3)	517 (2.8)	14 (2.7)	499 (6.7)	10 (2.5)	510 (9.2)	10.7 (0.17)
Bulgaria	75 (3.6)	540 (4.2)	19 (3.6)	509 (11.8)	6 (2.0)	498 (14.7)	10.6 (0.15)
Lithuania	75 (3.5)	531 (2.4)	25 (3.5)	522 (4.6)	0 (0.0)	~ ~	10.6 (0.11)
England	75 (4.4)	557 (3.3)	24 (4.3)	532 (5.8)	1 (1.0)	~ ~	10.8 (0.15)
Iran, Islamic Rep. of	74 (3.9)	462 (4.1)	26 (3.9)	446 (6.8)	0 (0.0)	~ ~	10.8 (0.11)
Czech Republic	68 (3.6)	547 (2.7)	29 (3.5)	542 (4.1)	2 (1.0)	~ ~	10.3 (0.11)
New Zealand	68 (3.3)	544 (2.9)	32 (3.3)	514 (5.7)	0 (0.4)	~ ~	10.6 (0.11)
Singapore	67 (0.0)	568 (4.0)	33 (0.0)	565 (5.8)	0 (0.0)	~ ~	10.8 (0.00)
Portugal	65 (5.2)	543 (3.2)	30 (5.3)	538 (6.5)	5 (1.7)	524 (8.0)	10.4 (0.17)
Croatia	65 (4.0)	557 (2.3)	33 (4.0)	544 (3.2)	2 (1.2)	~ ~	10.5 (0.12)
Russian Federation	65 (3.9)	571 (3.5)	35 (3.8)	564 (4.3)	0 (0.5)	~ ~	10.3 (0.09)
Australia	64 (3.9)	534 (3.5)	34 (3.8)	521 (4.5)	2 (1.0)	~ ~	10.5 (0.12)
Finland	64 (4.5)	571 (2.3)	34 (4.4)	564 (3.2)	2 (1.2)	~ ~	10.3 (0.12)
Romania	64 (4.1)	512 (5.2)	23 (3.4)	500 (10.6)	13 (2.9)	454 (14.3)	10.3 (0.17)
Malta	64 (0.1)	492 (1.9)	30 (0.1)	454 (2.8)	6 (0.1)	448 (6.3)	10.2 (0.00)
United States	63 (2.7)	564 (2.0)	35 (2.8)	548 (2.7)	2 (0.8)	~ ~	10.3 (0.09)
Qatar	63 (3.2)	441 (5.2)	23 (2.6)	405 (8.7)	14 (2.3)	384 (12.2)	10.1 (0.14)
Azerbaijan	62 (4.2)	464 (4.0)	8 (2.3)	455 (9.5)	30 (3.9)	461 (7.5)	9.6 (0.26)
France	62 (4.5)	527 (2.6)	33 (4.3)	507 (5.5)	5 (1.8)	502 (14.3)	10.4 (0.12)
United Arab Emirates	61 (2.3)	449 (3.1)	24 (1.9)	414 (4.7)	15 (1.7)	412 (6.6)	10.0 (0.11)
Canada	60 (2.4)	554 (2.0)	37 (2.4)	539 (2.4)	3 (0.7)	531 (4.5)	10.3 (0.07)
Norway	58 (4.4)	507 (2.9)	39 (4.2)	507 (3.2)	3 (1.6)	496 (10.2)	10.0 (0.13)
Belgium (French)	57 (4.7)	515 (3.2)	38 (4.5)	496 (5.7)	5 (2.2)	496 (8.1)	10.1 (0.16)
Slovak Republic	57 (3.6)	539 (2.6)	35 (3.4)	534 (5.5)	9 (2.0)	514 (15.0)	10.0 (0.12)
Italy	56 (3.9)	541 (3.1)	25 (3.8)	546 (4.7)	19 (2.9)	538 (5.5)	9.6 (0.14)
Denmark	56 (3.5)	557 (2.4)	42 (3.3)	550 (2.7)	2 (1.0)	~ ~	10.1 (0.09)
Slovenia	53 (3.7)	530 (2.8)	42 (3.6)	532 (3.2)	4 (1.4)	519 (7.6)	10.1 (0.12)
Poland	51 (3.9)	527 (2.7)	46 (4.2)	524 (3.8)	3 (1.4)	530 (16.0)	9.9 (0.09)
Hungary	50 (4.2)	553 (4.3)	45 (4.2)	533 (4.9)	5 (1.5)	470 (20.2)	9.8 (0.13)
Sweden	49 (4.7)	551 (2.7)	45 (4.7)	534 (4.0)	6 (1.2)	523 (7.6)	9.8 (0.13)
Austria	46 (4.3)	533 (2.9)	42 (4.1)	527 (3.6)	12 (3.3)	522 (5.1)	9.5 (0.14)
Israel	46 (4.5)	550 (6.5)	39 (4.3)	549 (5.6)	16 (3.1)	493 (12.2)	9.2 (0.21)
Saudi Arabia	45 (3.9)	440 (4.8)	25 (3.8)	412 (13.5)	30 (3.8)	430 (8.6)	9.2 (0.18)
Germany	41 (3.3)	554 (3.1)	53 (3.5)	538 (3.2)	6 (1.5)	498 (9.3)	9.6 (0.08)
Trinidad and Tobago	38 (4.3)	483 (7.2)	52 (4.4)	464 (6.0)	10 (2.4)	460 (10.6)	9.4 (0.12)
Oman	28 (2.9)	397 (4.2)	37 (3.1)	377 (4.5)	35 (3.0)	382 (5.8)	8.5 (0.15)
Netherlands r	25 (4.6)	555 (3.9)	67 (5.3)	545 (2.3)	8 (3.3)	536 (14.0)	9.1 (0.10)
Colombia	25 (3.4)	463 (9.0)	33 (4.7)	435 (6.8)	42 (4.4)	449 (7.2)	8.0 (0.19)
Morocco	14 (2.5)	330 (11.0)	22 (2.9)	294 (6.6)	63 (3.7)	316 (5.1)	7.3 (0.15)
Indonesia	7 (2.4)	442 (14.2)	18 (3.6)	428 (11.8)	75 (4.3)	428 (4.8)	6.2 (0.21)
International Avg.	58 (0.5)	519 (0.7)	31 (0.5)	504 (1.0)	11 (0.3)	476 (2.0)	

Centre point of scale set at 10.
( ) 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 students.

Source: Exhibit 6.6, international PIRLS report

Table 7.8 International table for school discipline and safety (mathematics)

Reported by Principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline and Safety* 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 discipline and safety issues and "minor problem" for the other five, on average. Students in schools with **Moderate 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 Problems		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Kazakhstan	91 (2.2)	505 (5.0)	9 (2.4)	465 (13.3)	1 (0.6)	~ ~	11.1 (0.10)
Armenia	87 (2.7)	450 (3.8)	8 (2.3)	460 (11.8)	4 (1.7)	479 (20.6)	11.1 (0.12)
Northern Ireland	85 (3.7)	566 (3.8)	15 (3.7)	542 (7.7)	0 (0.0)	~ ~	11.0 (0.13)
Netherlands r	85 (3.6)	544 (2.2)	15 (3.6)	524 (6.9)	0 (0.0)	~ ~	11.3 (0.16)
Hong Kong SAR	84 (2.9)	606 (3.0)	15 (2.8)	574 (16.0)	1 (0.0)	~ ~	11.2 (0.12)
Ireland, Rep. of	83 (3.1)	532 (2.9)	16 (3.0)	512 (9.9)	1 (1.0)	~ ~	11.1 (0.13)
Georgia	81 (2.8)	449 (4.7)	13 (2.4)	447 (9.8)	6 (1.4)	471 (14.3)	10.7 (0.15)
Spain	80 (3.3)	487 (2.7)	12 (2.8)	459 (10.1)	8 (2.3)	481 (14.2)	10.7 (0.17)
Chinese Taipei	77 (3.3)	591 (2.5)	23 (3.3)	591 (4.2)	0 (0.0)	~ ~	11.4 (0.13)
England	77 (4.1)	551 (4.2)	20 (4.2)	515 (11.0)	3 (1.6)	495 (10.9)	10.6 (0.11)
Korea, Rep. of	76 (3.6)	606 (2.3)	18 (3.4)	599 (3.9)	6 (2.0)	596 (7.5)	10.9 (0.15)
Lithuania	75 (3.5)	538 (2.8)	25 (3.5)	523 (5.8)	0 (0.0)	~ ~	10.5 (0.11)
Iran, Islamic Rep. of	74 (3.9)	437 (4.6)	25 (3.9)	417 (7.8)	0 (0.0)	~ ~	10.7 (0.11)
Japan	72 (3.2)	585 (1.9)	24 (3.3)	587 (4.8)	4 (1.6)	582 (10.4)	10.5 (0.12)
New Zealand	69 (3.4)	502 (3.3)	28 (3.2)	458 (5.5)	3 (1.3)	419 (15.2)	10.7 (0.12)
Czech Republic	68 (3.6)	512 (3.0)	29 (3.5)	506 (5.1)	2 (1.0)	~ ~	10.2 (0.11)
Belgium (Flemish)	67 (4.4)	553 (2.2)	32 (4.3)	545 (3.9)	1 (0.0)	~ ~	10.4 (0.13)
Singapore	67 (0.0)	606 (3.9)	33 (0.0)	603 (6.0)	0 (0.0)	~ ~	10.7 (0.00)
Croatia	66 (4.0)	492 (2.6)	31 (4.0)	484 (3.8)	2 (1.2)	~ ~	10.4 (0.12)
Portugal	66 (5.4)	536 (4.1)	30 (5.5)	525 (7.9)	5 (1.7)	529 (18.7)	10.3 (0.17)
Russian Federation	65 (3.9)	545 (4.5)	35 (3.8)	536 (5.4)	0 (0.5)	~ ~	10.1 (0.09)
United States	64 (2.7)	551 (3.0)	34 (2.6)	531 (3.3)	2 (0.7)	~ ~	10.3 (0.09)
Australia	64 (3.9)	523 (4.1)	34 (3.8)	511 (5.3)	2 (1.0)	~ ~	10.4 (0.12)
Finland	64 (4.5)	549 (2.5)	34 (4.4)	540 (4.8)	2 (1.2)	~ ~	10.2 (0.12)
Romania	64 (4.1)	495 (5.6)	23 (3.4)	478 (12.3)	13 (2.9)	430 (27.6)	10.2 (0.17)
Malta	64 (0.1)	503 (1.8)	30 (0.1)	486 (2.4)	6 (0.1)	473 (4.9)	10.1 (0.00)
Bahrain	63 (4.2)	438 (4.8)	25 (4.1)	430 (9.2)	12 (4.7)	437 (7.4)	10.1 (0.30)
Qatar	63 (3.2)	430 (5.1)	23 (2.6)	391 (10.1)	14 (2.3)	373 (10.2)	9.9 (0.14)
Azerbaijan	62 (4.2)	461 (7.6)	8 (2.3)	462 (13.8)	30 (3.9)	466 (9.3)	9.5 (0.26)
United Arab Emirates	61 (2.3)	444 (2.9)	24 (2.0)	411 (4.6)	15 (1.7)	415 (6.8)	9.9 (0.11)
Denmark r	60 (4.0)	543 (3.4)	40 (4.0)	535 (4.1)	1 (0.0)	~ ~	10.0 (0.09)
Norway	58 (4.4)	495 (3.7)	39 (4.2)	492 (4.0)	3 (1.6)	485 (10.1)	9.9 (0.13)
Thailand	58 (4.6)	469 (4.8)	36 (4.4)	444 (9.0)	6 (2.3)	442 (21.5)	10.1 (0.16)
Slovak Republic	57 (3.6)	513 (3.7)	35 (3.4)	503 (7.5)	9 (2.0)	477 (16.9)	9.9 (0.12)
Italy	56 (3.9)	509 (3.8)	25 (3.8)	509 (5.9)	19 (2.9)	505 (6.3)	9.5 (0.14)
Serbia	55 (4.7)	514 (4.8)	30 (4.2)	524 (5.8)	15 (3.2)	506 (6.9)	9.7 (0.18)
Slovenia	53 (3.7)	512 (3.4)	42 (3.6)	516 (3.6)	4 (1.4)	500 (5.6)	10.0 (0.12)
Poland	51 (3.9)	481 (3.0)	46 (4.2)	481 (3.2)	3 (1.4)	493 (14.4)	9.7 (0.09)
Hungary	50 (4.2)	530 (4.8)	45 (4.2)	509 (6.0)	5 (1.5)	433 (24.6)	9.7 (0.13)
Sweden	49 (4.7)	514 (2.8)	45 (4.7)	495 (3.7)	6 (1.2)	479 (12.7)	9.7 (0.13)
Austria	46 (4.3)	513 (3.4)	42 (4.1)	508 (3.7)	12 (3.3)	492 (9.1)	9.4 (0.14)
Saudi Arabia	45 (3.9)	417 (6.2)	25 (3.8)	395 (13.8)	30 (3.8)	414 (9.8)	9.1 (0.18)
Germany	41 (3.3)	539 (3.1)	53 (3.5)	526 (3.0)	6 (1.5)	487 (7.8)	9.5 (0.08)
Chile	39 (3.4)	481 (5.0)	43 (4.1)	459 (4.6)	18 (2.9)	439 (6.4)	9.2 (0.14)
Turkey	38 (2.9)	491 (6.8)	35 (3.4)	464 (7.2)	26 (3.4)	445 (12.0)	8.9 (0.14)
Oman	28 (2.9)	385 (4.8)	37 (3.1)	374 (4.6)	35 (3.0)	380 (6.2)	8.4 (0.15)
Tunisia	26 (3.3)	362 (7.1)	27 (3.2)	357 (7.9)	46 (4.0)	359 (6.2)	8.0 (0.19)
Kuwait	24 (3.5)	348 (6.8)	48 (4.2)	345 (5.0)	29 (3.6)	332 (7.3)	8.4 (0.15)
Morocco	14 (2.4)	340 (9.1)	24 (3.1)	317 (7.6)	62 (3.9)	342 (6.1)	7.2 (0.15)
Yemen	13 (2.8)	263 (12.4)	33 (4.1)	259 (10.5)	54 (4.0)	238 (9.7)	7.5 (0.16)
International Avg.	61 (0.5)	496 (0.7)	29 (0.5)	482 (1.1)	11 (0.3)	451 (2.2)	

Centre point of scale set at 10.

( ) 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 students.

Source: Exhibit 6.9, international mathematics report

Table 7.9 International table for school discipline and safety (science)

Reported by Principals

Students were scored according to their principals' responses concerning ten potential school problems on the *School Discipline and Safety* 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 discipline and safety issues and "minor problem" for the other five, on average. Students in schools with **Moderate 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 Problems		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Kazakhstan	91 (2.2)	498 (5.6)	9 (2.4)	463 (17.7)	1 (0.6)	~ ~	11.1 (0.10)
Armenia	87 (2.7)	414 (4.0)	8 (2.3)	422 (13.9)	4 (1.7)	445 (20.7)	11.1 (0.12)
Northern Ireland	85 (3.7)	520 (3.4)	15 (3.7)	502 (7.3)	0 (0.0)	~ ~	11.0 (0.13)
Netherlands r	85 (3.6)	536 (2.7)	15 (3.6)	516 (6.5)	0 (0.0)	~ ~	11.3 (0.16)
Hong Kong SAR	84 (2.9)	540 (3.0)	15 (2.8)	505 (19.5)	1 (0.0)	~ ~	11.2 (0.12)
Ireland, Rep. of	83 (3.1)	521 (3.5)	16 (3.0)	499 (11.2)	1 (1.0)	~ ~	11.1 (0.13)
Georgia	81 (2.8)	454 (4.7)	13 (2.4)	454 (9.5)	6 (1.4)	470 (10.8)	10.7 (0.15)
Spain	80 (3.3)	510 (2.9)	12 (2.8)	486 (8.7)	8 (2.3)	498 (13.8)	10.7 (0.17)
Chinese Taipei	77 (3.3)	552 (2.7)	23 (3.3)	551 (4.4)	0 (0.0)	~ ~	11.4 (0.13)
England	77 (4.1)	537 (3.5)	20 (4.2)	500 (10.0)	3 (1.6)	486 (7.3)	10.6 (0.11)
Korea, Rep. of	76 (3.6)	588 (2.3)	18 (3.4)	580 (3.6)	6 (2.0)	582 (7.0)	10.9 (0.15)
Lithuania	75 (3.5)	518 (2.8)	25 (3.5)	505 (5.3)	0 (0.0)	~ ~	10.5 (0.11)
Iran, Islamic Rep. of	74 (3.9)	458 (5.0)	25 (3.9)	440 (8.7)	0 (0.0)	~ ~	10.7 (0.11)
Japan	72 (3.2)	559 (2.1)	24 (3.3)	558 (4.2)	4 (1.6)	557 (8.2)	10.5 (0.12)
New Zealand	69 (3.4)	512 (3.1)	28 (3.2)	469 (6.0)	3 (1.3)	428 (14.4)	10.7 (0.12)
Czech Republic	68 (3.6)	539 (2.9)	29 (3.5)	529 (5.1)	2 (1.0)	~ ~	10.2 (0.11)
Belgium (Flemish)	67 (4.4)	512 (2.3)	32 (4.3)	504 (4.4)	1 (0.0)	~ ~	10.4 (0.13)
Singapore	67 (0.0)	584 (4.1)	33 (0.0)	581 (6.5)	0 (0.0)	~ ~	10.7 (0.00)
Croatia	66 (4.0)	517 (2.6)	31 (4.0)	512 (3.6)	2 (1.2)	~ ~	10.4 (0.12)
Portugal	66 (5.4)	527 (4.3)	30 (5.5)	512 (8.6)	5 (1.7)	519 (20.6)	10.3 (0.17)
Russian Federation	65 (3.9)	555 (4.4)	35 (3.8)	549 (5.1)	0 (0.5)	~ ~	10.1 (0.09)
United States	64 (2.7)	555 (3.0)	34 (2.6)	532 (3.6)	2 (0.7)	~ ~	10.3 (0.09)
Australia	64 (3.9)	523 (4.1)	34 (3.8)	510 (5.0)	2 (1.0)	~ ~	10.4 (0.12)
Finland	64 (4.5)	574 (2.9)	34 (4.4)	565 (3.8)	2 (1.2)	~ ~	10.2 (0.12)
Romania	64 (4.1)	519 (6.1)	23 (3.4)	501 (12.0)	13 (2.9)	446 (23.8)	10.2 (0.17)
Malta	64 (0.1)	457 (2.3)	30 (0.1)	429 (2.7)	6 (0.1)	419 (7.2)	10.1 (0.00)
Bahrain	63 (4.2)	453 (5.3)	25 (4.1)	437 (9.7)	12 (4.7)	452 (7.3)	10.1 (0.30)
Qatar	63 (3.2)	414 (5.9)	23 (2.6)	366 (11.8)	14 (2.3)	347 (14.8)	9.9 (0.14)
Azerbaijan	62 (4.2)	438 (7.2)	8 (2.3)	431 (12.8)	30 (3.9)	440 (10.6)	9.5 (0.26)
United Arab Emirates	61 (2.3)	438 (3.1)	24 (2.0)	402 (5.1)	15 (1.7)	411 (7.7)	9.9 (0.11)
Denmark r	60 (4.0)	534 (3.3)	40 (4.0)	525 (5.1)	1 (0.0)	~ ~	10.0 (0.09)
Norway	58 (4.4)	494 (3.1)	39 (4.2)	492 (3.3)	3 (1.6)	483 (10.2)	9.9 (0.13)
Thailand	58 (4.6)	484 (5.5)	36 (4.4)	457 (10.7)	6 (2.3)	444 (24.5)	10.1 (0.16)
Slovak Republic	57 (3.6)	537 (3.5)	35 (3.4)	529 (7.4)	9 (2.0)	503 (18.4)	9.9 (0.12)
Italy	56 (3.9)	525 (4.0)	25 (3.8)	526 (6.1)	19 (2.9)	520 (6.6)	9.5 (0.14)
Serbia	55 (4.7)	513 (4.7)	30 (4.2)	524 (5.3)	15 (3.2)	506 (7.3)	9.7 (0.18)
Slovenia	53 (3.7)	519 (3.9)	42 (3.6)	523 (4.2)	4 (1.4)	503 (8.3)	10.0 (0.12)
Poland	51 (3.9)	505 (3.4)	46 (4.2)	505 (3.6)	3 (1.4)	518 (14.9)	9.7 (0.09)
Hungary	50 (4.2)	550 (5.0)	45 (4.2)	528 (5.8)	5 (1.5)	456 (21.6)	9.7 (0.13)
Sweden	49 (4.7)	547 (3.1)	45 (4.7)	522 (4.8)	6 (1.2)	504 (11.0)	9.7 (0.13)
Austria	46 (4.3)	538 (3.7)	42 (4.1)	529 (4.4)	12 (3.3)	515 (8.0)	9.4 (0.14)
Saudi Arabia	45 (3.9)	439 (6.1)	25 (3.8)	409 (15.0)	30 (3.8)	433 (10.2)	9.1 (0.18)
Germany	41 (3.3)	541 (3.4)	53 (3.5)	526 (4.0)	6 (1.5)	475 (10.7)	9.5 (0.08)
Chile	39 (3.4)	498 (5.1)	43 (4.1)	477 (4.5)	18 (2.9)	459 (6.4)	9.2 (0.14)
Turkey	38 (2.9)	486 (6.7)	35 (3.4)	458 (6.9)	26 (3.4)	436 (10.5)	8.9 (0.14)
Oman	28 (2.9)	378 (6.4)	37 (3.1)	366 (5.8)	35 (3.0)	372 (8.9)	8.4 (0.15)
Tunisia	26 (3.3)	345 (9.3)	27 (3.2)	343 (10.1)	46 (4.0)	348 (8.2)	8.0 (0.19)
Kuwait	24 (3.5)	358 (9.6)	48 (4.2)	351 (7.5)	29 (3.6)	334 (9.6)	8.4 (0.15)
Morocco	14 (2.4)	271 (12.0)	24 (3.1)	244 (8.6)	62 (3.9)	271 (6.3)	7.2 (0.15)
Yemen	13 (2.8)	226 (14.4)	33 (4.1)	217 (12.0)	54 (4.0)	201 (11.4)	7.5 (0.16)
International Avg.	61 (0.5)	492 (0.7)	29 (0.5)	477 (1.2)	11 (0.3)	448 (2.2)	

Centre point of scale set at 10.
( ) 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 students.

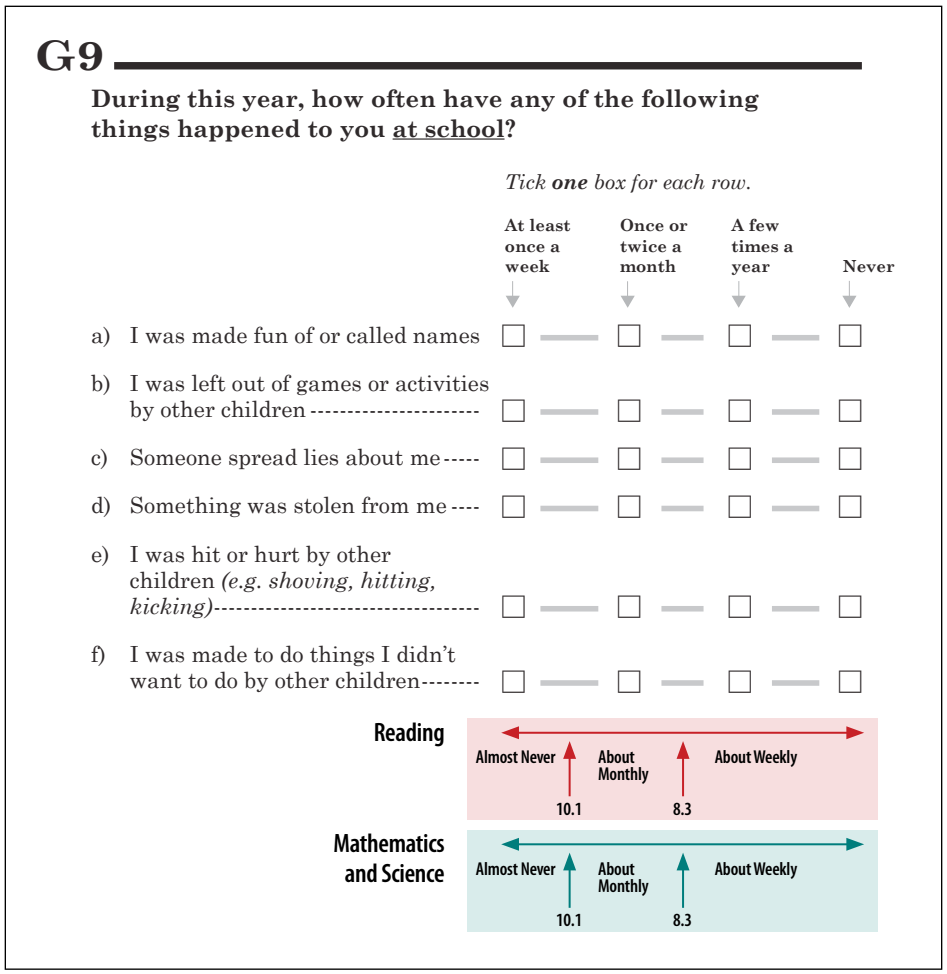
Source: Exhibit 6.9, international science report

7.4 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 and details of the scaling are shown in Figure 7.4 and the results for each subject are shown in Table 7.10.

Based on their responses, pupils were categorised as being in one of three bands which described the frequency with which they had experienced the six bullying behaviours in their school during the last year: *Almost Never*, *About Monthly* and *About Weekly.*

Figure 7.4 Pupils bullied at school



Source: adapted from Exhibit 6.7, international PIRLS Report, Exhibit 6.11, international mathematics report, and Exhibit 6.11, international science report

Table 7.10 Pupils bullied at school

Reading

Reported by Students

Students were scored according to their responses to how often they experienced six bullying behaviors on the *Students Bullied at School* scale. Students bullied **Almost Never** had a score on the scale of at least 10.1, which corresponds to "never" experiencing three of the six bullying behaviors and each of the other three behaviors "a few times a year," on average. Students bullied **About Weekly** had a score no higher than 8.3, which corresponds to their experiencing each of three of the six behaviors "once or twice a month" and each of the other three "a few times a year," on average. All other students were bullied **About Monthly.**

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	57 (1.3)	567 (2.7)	29 (1.0)	557 (3.8)	14 (0.9)	527 (5.0)	10.4 (0.06)
International Avg.	47 (0.2)	523 (0.5)	33 (0.1)	513 (0.5)	20 (0.1)	489 (0.7)	

Mathematics

Reported by Students

Students were scored according to their responses to how often they experienced six bullying behaviors on the *Students Bullied at School* scale. Students bullied **Almost Never** had a score on the scale of at least 10.1, which corresponds to "never" experiencing three of the six bullying behaviors and each of the other three behaviors "a few times a year," on average. Students bullied **About Weekly** had a score no higher than 8.3, which corresponds to their experiencing each of three of the six behaviors "once or twice a month" and each of the other three "a few times a year," on average. All other students were bullied **About Monthly**.

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	57 (1.3)	571 (3.4)	29 (1.0)	565 (4.1)	14 (1.0)	528 (7.3)	10.4 (0.06)
International Avg.	48 (0.2)	501 (0.5)	32 (0.1)	493 (0.6)	20 (0.1)	469 (0.7)	

Science

Reported by Students

Students were scored according to their responses to how often they experienced six bullying behaviors on the *Students Bullied at School* scale. Students bullied **Almost Never** had a score on the scale of at least 10.1, which corresponds to "never" experiencing three of the six bullying behaviors and each of the other three behaviors "a few times a year," on average. Students bullied **About Weekly** had a score no higher than 8.3, which corresponds to their experiencing each of three of the six behaviors "once or twice a month" and each of the other three "a few times a year," on average. All other students were bullied **About Monthly**.

Country	Almost Never		About Monthly		About Weekly		Average Scale Score
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	57 (1.3)	523 (2.6)	29 (1.0)	519 (3.2)	14 (1.0)	490 (6.7)	10.4 (0.06)
International Avg.	48 (0.2)	497 (0.6)	32 (0.1)	489 (0.6)	20 (0.1)	464 (0.8)	

Centre point of scale set at 10.
( ) Standard errors appear in parentheses. Because of rounding some results may appear inconsistent.

Sources: Exhibit 6.7, international PIRLS Report, Exhibit 6.11, international mathematics report, and Exhibit 6.11, international science report

Pupils in Northern Ireland reported that, on average, they experienced bullying behaviours less frequently than those in most other participating countries. The average scale scores on this scale were 10.4 for PIRLS and TIMSS placing them in the *Almost Never* bullied category overall. Fifty-seven per cent of pupils reported that they were *Almost Never* bullied, while responses from 29 per cent were categorised as experiencing bullying *About Monthly* and 14 per cent *About Weekly*. These figures compare favourably with the international averages of PIRLS (47 per cent, 33 per cent and 20 per cent) and TIMSS (48 per cent, 32 per cent and 20 per cent).

Among comparator countries, only the Republic of Ireland and Finland were ranked higher on this scale. These two countries also reported experiencing the lowest levels of bullying behaviour, while the highest levels among comparator countries were reported in New Zealand and Australia.

Internationally, average pupil attainment in all three subjects 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. However, the standard errors shown in Table 7.10 suggest that, in Northern Ireland, these differences were statistically significant across all categories for reading only, with possibly significant differences for mathematics and science only between pupils with *About Weekly* and *About Monthly* experience of bullying behaviours.

7.5 Teachers' reports of 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 each subject are shown in Table 7.11. Teachers' responses led to them being categorised as having their teaching limited *Some or Not At All*, or *A Lot* by these factors.

Table 7.11 Teaching limited by disruptive or uninterested pupils

Reading

Reported by teachers

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Disruptive Students				Students in Classrooms Where Teachers Report Instruction Is Limited by Uninterested Students			
	Some or Not At All		A Lot		Some or Not At All		A Lot	
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement
Northern Ireland	r 95 (2.1)	560 (2.9)	5 (2.1)	554 (10.5)	r 97 (1.6)	561 (2.7)	3 (1.6)	535 (8.3)
International Avg.	88 (0.3)	514 (0.4)	12 (0.3)	501 (1.4)	90 (0.3)	515 (0.4)	10 (0.3)	494 (1.6)

Mathematics

Reported by Teachers

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Disruptive Students				Students in Classrooms Where Teachers Report Instruction Is Limited by Uninterested Students			
	Some or Not At All		A Lot		Some or Not At All		A Lot	
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement
Northern Ireland	r 96 (1.7)	564 (3.4)	4 (1.7)	539 (29.7)	r 98 (1.2)	563 (3.5)	2 (1.2)	~ ~
International Avg.	87 (0.3)	493 (0.5)	13 (0.3)	479 (1.6)	89 (0.3)	494 (0.5)	11 (0.3)	468 (1.9)

Science

Reported by Teachers

Country	Students in Classrooms Where Teachers Report Instruction Is Limited by Disruptive Students				Students in Classrooms Where Teachers Report Instruction Is Limited by Uninterested Students			
	Some or Not At All		A Lot		Some or Not At All		A Lot	
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement
Northern Ireland	r 95 (2.0)	519 (2.9)	5 (2.0)	485 (23.3)	r 98 (1.2)	517 (3.1)	2 (1.2)	~ ~
International Avg.	87 (0.3)	488 (0.6)	13 (0.3)	472 (1.6)	89 (0.3)	489 (0.6)	11 (0.3)	463 (1.9)

( ) 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 students.

Sources: Exhibit 8.11, international PIRLS Report, Exhibit 8.23, international mathematics report, and Exhibit 8.23, international science report

The vast majority of pupils in Northern Ireland had teachers who felt that their teaching was limited *Some or Not At All* by disruptive or uninterested pupils.

Across all three subjects, only 4 or 5 per cent of pupils had teachers who reported that their teaching was limited *A Lot* by disruptive pupils and 2 or 3 per cent of pupils had teachers who reported that their lessons were limited *A Lot* by pupils who were uninterested. These compare with respective international averages of 12 to 13 per cent and 10 to 11 per cent.

Among the comparator countries, teachers in Northern Ireland reported the lowest levels of limitation to teaching caused by disruptive pupils. In terms of teaching limited by uninterested pupils, teachers in Northern Ireland, England, Finland, Republic of Ireland and New Zealand all reported very low levels (5 per cent or less).

Internationally, pupil attainment tended to be lower where teachers reported high levels of limitation caused by disruptive or uninterested pupils,[6] but the direction of causality cannot be inferred from this data.

In Northern Ireland for all three subjects, there appeared to be a difference between the average achievement scores of those pupils whose teachers are limited *Some or Not at All* by disruptive pupils and those pupils whose teachers are limited *A Lot* by disruptive pupils. However, the small percentage of pupils in the *A Lot* category and large standard errors mean that these apparent differences in achievement are not likely to be significant.

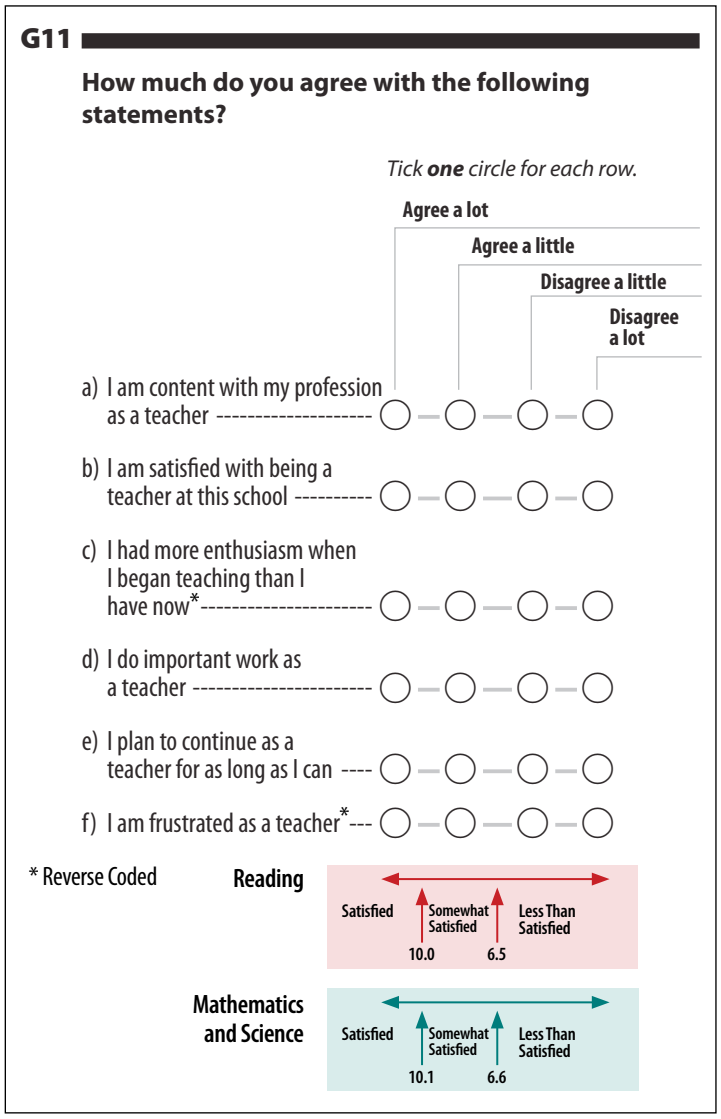
For mathematics and science, differences in the average achievement scores of those pupils whose teachers are limited to varying extents by uninterested pupils could not be determined because of the small percentage of pupils whose teachers were limited *A Lot* by uninterested pupils. However, differences in average scale scores for reading did appear likely to be significantly different where teachers reported that their teaching was limited *A Lot* by uninterested pupils (based on the size of the standard error statistics). In Northern Ireland, pupils in classes where teachers reported that their teaching was limited *A Lot* by uninterested pupils scored an average 26 scale points less in reading than those whose teachers reported *Some or Not at All.*

6 Tests of statistical significance were not carried out in this international analysis. However, based on the size of the standard errors, it is likely that these findings are statistically significant.

7.6 Teachers' reported career satisfaction

Teachers were asked to indicate the extent to which they were satisfied with their profession as a teacher. The questions and details of the scaling are shown in Figure 7.5 and the results for each subject are shown in Table 7.12. Teachers were categorised as being *Satisfied*, *Somewhat Satisfied* or *Less than Satisfied*.

Figure 7.5 Teacher career satisfaction



Source: adapted from Exhibit 7.5, international PIRLS Report, Exhibit 7.15, international mathematics report, and Exhibit 7.15, international science report

Table 7.12 Teacher career satisfaction

Reading

Reported by Teachers

Students were scored according to their teachers' degree of agreement with six statements on the *Teacher Career Satisfaction* scale. Students with **Satisfied** teachers had a score on the scale of at least 10.0, which corresponds to their teachers "agreeing a lot" with three of the six statements and "agreeing a little" with the other three, on average. Students with **Less Than Satisfied** teachers had a score no higher than 6.5, which corresponds to their teachers "disagreeing a little" with three of the six statements and "agreeing a little" with the other three, on average. All other students had **Somewhat Satisfied** teachers.

Country		Satisfied		Somewhat Satisfied		Less Than Satisfied		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	r	54 (4.3)	564 (4.0)	41 (4.5)	555 (4.2)	5 (1.9)	557 (12.6)	10.1 (0.18)
International Avg.		54 (0.5)	516 (0.6)	40 (0.5)	509 (0.8)	5 (0.2)	511 (1.9)	

Mathematics

Reported by Teachers

Students were scored according to their teachers' degree of agreement with six statements on the *Teacher Career Satisfaction* scale. Students with **Satisfied** teachers had a score on the scale of at least 10.1, which corresponds to their teachers "agreeing a lot" with three of the six statements and "agreeing a little" with the other three, on average. Students with **Less Than Satisfied** teachers had a score no higher than 6.6, which corresponds to their teachers "disagreeing a little" with three of the six statements and "agreeing a little" with the other three, on average. All other students had **Somewhat Satisfied** teachers.

Country		Satisfied		Somewhat Satisfied		Less Than Satisfied		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	r	56 (4.3)	564 (4.2)	41 (4.6)	562 (6.8)	4 (1.5)	562 (12.0)	10.3 (0.18)
International Avg.		54 (0.5)	494 (0.7)	41 (0.5)	487 (0.8)	5 (0.2)	486 (2.1)	

Science

Reported by Teachers

Students were scored according to their teachers' degree of agreement with six statements on the *Teacher Career Satisfaction* scale. Students with **Satisfied** teachers had a score on the scale of at least 10.1, which corresponds to their teachers "agreeing a lot" with three of the six statements and "agreeing a little" with the other three, on average. Students with **Less Than Satisfied** teachers had a score no higher than 6.6, which corresponds to their teachers "disagreeing a little" with three of the six statements and "agreeing a little" with the other three, on average. All other students had **Somewhat Satisfied** teachers.

Country		Satisfied		Somewhat Satisfied		Less Than Satisfied		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	r	55 (4.3)	520 (3.8)	40 (4.6)	513 (5.7)	5 (1.9)	512 (12.5)	10.2 (0.18)
International Avg.		54 (0.5)	490 (0.7)	41 (0.5)	483 (0.9)	5 (0.2)	483 (2.1)	

Centre point of scale set at 10.
( ) 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 students.

Source: Exhibit 7.5, international PIRLS Report, Exhibit 7.15, international mathematics report, and Exhibit 7.15, international science report

In Northern Ireland, 54 to 56 per cent of pupils, across all three subjects, had teachers who reported that they were *Satisfied* with their career and a further 40 to 41 per cent had teachers who were *Somewhat Satisfied*. Teachers of only 4 or 5 per cent of pupils reported that they were *Less Than Satisfied*.

The percentage of pupils in Northern Ireland falling into each category corresponded closely with the international averages on this scale.

Among the comparator countries, the highest percentage of pupils who had *Satisfied* teachers were in the Republic of Ireland (68 to 69 per cent), compared with an international average of 54 per cent of pupils taught by *Satisfied* teachers.

Teacher career satisfaction in some high performing Pacific Rim countries was considerably lower than in Northern Ireland. For example, the percentage of pupils in Singapore taught by teachers who reported being *Satisfied* with their careers was between 29 and 35 per cent across all three subjects. At the opposite end of the scale, the percentages *Less than Satisfied* in Singapore were 11 to 12 per cent, compared with international averages of 5 per cent.

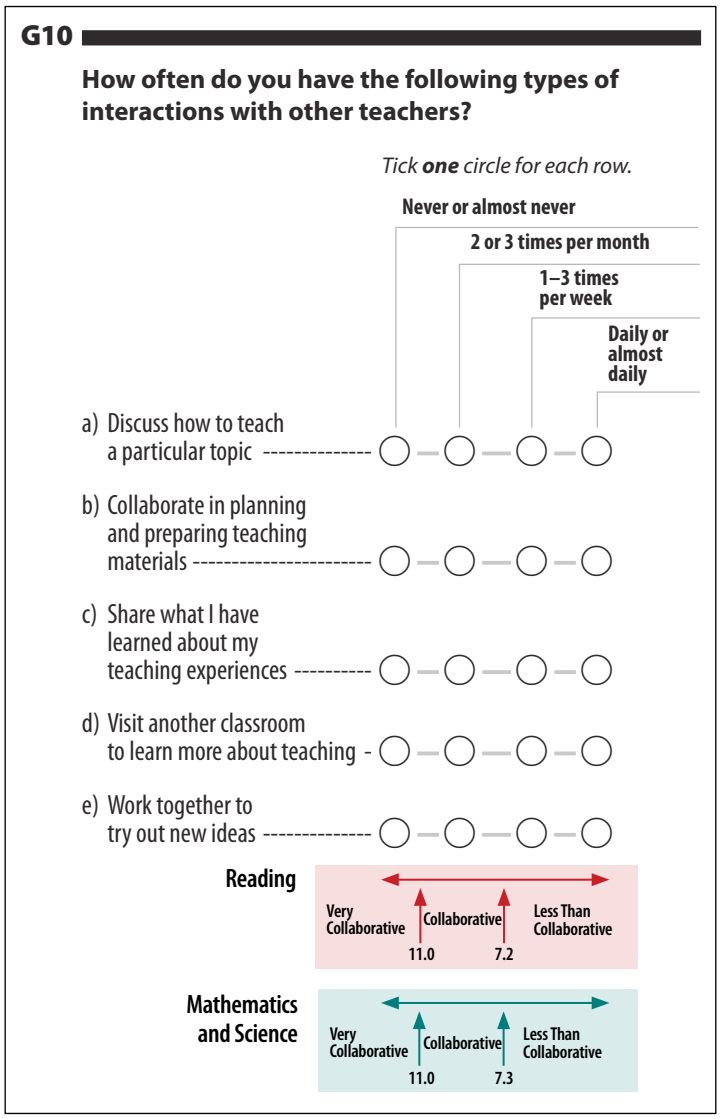
Teacher career satisfaction in a number of comparator countries was lower than in Northern Ireland. For example, the percentages of pupils in Finland taught by teachers who reported being *Satisfied* with their careers was 40 to 42 per cent across the three subjects.

Across the three subjects, few clear patterns of pupil attainment were apparent in relation to teachers' reported levels of career satisfaction and any apparent differences are not likely to be significant. The international averages show no clear patterns across all three categories for reading, mathematics or science internationally. There were also no clear patterns in Northern Ireland: for all three subjects, attainment does not appear to be associated with teacher career satisfaction.

7.7 Teacher reports of collaboration to improve teaching in each subject

Teachers were asked to indicate the extent to which they worked with their colleagues in particular aspects of teaching. The questions and details of the scaling are shown in Figure 7.6 and the results for each subject are shown in Table 7.13. On the basis of their responses to the questions, teachers were categorised as *Very Collaborative*, *Collaborative* or *Somewhat Collaborative*.

Figure 7.6 Collaboration to improve teaching



Source: adapted from Exhibit 8.5, international PIRLS Report, Exhibit 8.12, international mathematics report, and Exhibit 8.12, international science report

Table 7.13 Collaborate to improve teaching

Reading

Reported by Teachers

Students were scored according to their teachers' responses to how often they interacted with other teachers in each of five teaching areas on the *Collaborate to Improve Teaching* scale. Students with **Very Collaborative** teachers had a score on the scale of at least 11.0, which corresponds to their teachers having interactions with other teachers at least "one to three times per week" in each of three of the five areas and "two or three times per month" in each of the other two, on average. Students with **Somewhat Collaborative** teachers had a score no higher than 7.2, which corresponds to their teachers interacting with other teachers "never or almost never" in each of three of the five areas and "two or three times per month" in each of the other two, on average. All other students had **Collaborative** teachers.

Country		Very Collaborative		Collaborative		Somewhat Collaborative		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	r	21 (4.0)	562 (6.6)	55 (4.9)	559 (3.6)	24 (3.7)	560 (6.5)	9.3 (0.22)
International Avg.		35 (0.5)	513 (0.8)	54 (0.5)	512 (0.6)	11 (0.3)	510 (1.9)	

Mathematics

Reported by Teachers

Students were scored according to their teachers' responses to how often they interacted with other teachers in each of five teaching areas on the *Collaborate to Improve Teaching* scale. Students with **Very Collaborative** teachers had a score on the scale of at least 11.0, which corresponds to their teachers having interactions with other teachers at least "one to three times per week" in each of three of the five areas and "two or three times per month" in each of the other two, on average. Students with **Somewhat Collaborative** teachers had a score no higher than 7.3, which corresponds to their teachers interacting with other teachers "never or almost never" in each of three of the five areas and "two or three times per month" in each of the other two, on average. All other students had **Collaborative** teachers.

Country		Very Collaborative		Collaborative		Somewhat Collaborative		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	r	22 (4.1)	562 (6.5)	55 (4.8)	563 (4.3)	23 (3.6)	565 (8.2)	9.4 (0.21)
International Avg.		36 (0.5)	493 (0.9)	53 (0.5)	491 (0.7)	11 (0.3)	488 (2.0)	

Science

Reported by Teachers

Students were scored according to their teachers' responses to how often they interacted with other teachers in each of five teaching areas on the *Collaborate to Improve Teaching* scale. Students with **Very Collaborative** teachers had a score on the scale of at least 11.0, which corresponds to their teachers having interactions with other teachers at least "one to three times per week" in each of three of the five areas and "two or three times per month" in each of the other two, on average. Students with **Somewhat Collaborative** teachers had a score no higher than 7.3, which corresponds to their teachers interacting with other teachers "never or almost never" in each of three of the five areas and "two or three times per month" in each of the other two, on average. All other students had **Collaborative** teachers.

Country		Very Collaborative		Collaborative		Somewhat Collaborative		Average Scale Score
		Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	
Northern Ireland	r	22 (4.1)	515 (5.7)	54 (4.9)	519 (4.1)	24 (3.7)	514 (7.0)	9.3 (0.22)
International Avg.		35 (0.5)	487 (1.0)	53 (0.5)	487 (0.7)	12 (0.3)	479 (2.1)	

Centre point of scale set at 10.
( ) 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 students.

Sources: Exhibit 8.5, international PIRLS Report, Exhibit 8.12, international mathematics report, and Exhibit 8.12, international science report

Teachers in Northern Ireland reported relatively low levels of collaboration to improve teaching. Across the subjects, teachers of 21 to 22 per cent of pupils were categorised as being *Very Collaborative* compared with international averages of 35 or 36 per cent in the *Very Collaborative* category.

Of the comparator countries, teachers in England, Australia and New Zealand had the highest percentages on this index.

Teachers in Northern Ireland and the Republic of Ireland reported least collaboration among the comparator countries in PIRLS. In TIMSS, teachers in Hong Kong and Republic of Ireland had the lowest percentages in the *Very Collaborative* category.

In Northern Ireland and comparator countries, average achievement scores for pupils were similar whether their teachers had *Very Collaborative* practice, *Collaborative* practice or *Somewhat Collaborative* practice.

7.8 Teachers feeling prepared to teach mathematics and science

Teachers were asked how prepared they feel to teach the mathematics and science content topics assessed by TIMSS (the content topics are listed in Figures 7.7 and 7.8). For each topic teachers had to indicate whether they feel *very well prepared*, *somewhat prepared* or *not well prepared*. This question was not included in the PIRLS teacher questionnaire.

7.8.1 Teachers' reports of how well prepared they feel to teach mathematics

Teachers' responses about how well prepared they feel to teach the TIMSS mathematics topics were averaged across all 18 topics to give a perspective on mathematics overall as well as separately by content domain (Number, Geometric Shapes and Measures, and Data Display). Table 7.14 shows the percentage of pupils in Northern Ireland taught by teachers who feel *very well prepared* to teach the TIMSS mathematics topics (the findings for all countries can be seen in Exhibit 7.9 in the international mathematics report).

Figure 7.7 TIMSS mathematics topics

TIMSS 2011 Mathematics Topics

A. Number
1) Concepts of whole numbers, including place value and ordering
2) Adding, subtracting, multiplying, and/or dividing with whole numbers
3) Concepts of fractions
4) Adding and subtracting with fractions
5) Concepts of decimals, including place value and ordering
6) Adding and subtracting with decimals
7) Number sentences
8) Number patterns

B. Geometric Shapes and Measures
1) Lines: measuring, estimating length of; parallel and perpendicular lines
2) Comparing and drawing angles
3) Using informal coordinate systems to locate points in a plane
4) Elementary properties of common geometric shapes
5) Reflections and rotations
6) Relationships between two-dimensional and three-dimensional shapes
7) Finding and estimating areas, perimeters, and volumes

C. Data Display
1) Reading data from tables, pictographs, bar graphs, or pie charts
2) Drawing conclusions from data displays
3) Displaying data using tables, pictographs and bar graphs

Source: adapted from Exhibit 7.9, international mathematics report

Table 7.14 Teachers feel "very well" prepared to teach TIMSS mathematics topics

Country	Per cent of Students Whose Teachers Feel "Very Well" Prepared to Teach TIMSS Mathematics Topics			
	Overall Mathematics (18 Topics)	Number (8 Topics)	Geometric Shapes and Measures (7 Topics)	Data Display (3 Topics)
Northern Ireland	r 91 (1.7)	r 94 (1.8)	r 88 (2.0)	r 92 (2.4)
International Avg.	83 (0.3)	87 (0.3)	82 (0.3)	74 (0.4)

( ) 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 students.

Source: Exhibit 7.9, international mathematics report

In Northern Ireland, 91 per cent of pupils were taught by teachers who feel *very well prepared* to teach the TIMSS topics. This compares favourably with the comparator countries where the percentage of pupils taught by teachers who were *well prepared* is similar or lower than that in Northern Ireland, for example England (90 per cent), Australia (90 per cent), Singapore (89 per cent), Republic of Ireland (88 per cent), Finland (83 per cent), New Zealand (79 per cent) and Hong Kong (77 per cent). In terms of the three content domains, there was little difference in the percentage of pupils in Northern Ireland whose teachers feel *very well prepared* to teach the topics within each domain; the percentages for each domain can be seen in Table 7.14. Notably, in some countries, including Finland and Republic of Ireland, a smaller percentage of pupils were taught by teachers who feel *very well prepared* to teach Geometric Shapes and Measures compared with Number. This may indicate that there is a greater focus on Number in the curricula of these countries, a conjecture which is borne out by data in Exhibit 8.8 in the international mathematics report.

7.8.2 Teachers' reports of how well prepared they feel to teach science

As noted above, teachers were asked how prepared they feel to teach the science content topics assessed by TIMSS (the content topics can be found in Figure 7.8). The responses were averaged across all 20 topics to give a perspective on science overall as well as separately by content domain (Life Science, Physical Science and Earth Science). Table 7.15 shows the percentage of pupils in Northern Ireland taught by teachers who feel *very well prepared* to teach the TIMSS science topics (the findings for all countries can be seen in Exhibit 7.9 in the international science report).

Figure 7.8 TIMSS science topics

TIMSS 2011 Science Topics

A. Life Science

1) Major body structures and their functions in humans and other organisms (plants and animals)
2) Life cycles and reproduction in plants and animals
3) Physical features, behavior, and survival of organisms living in different environments
4) Relationships in a given community (e.g., simple food chains, predator-prey relationships)
5) Changes in environments (effects of human activity, pollution and its prevention)
6) Human health (e.g., transmission/ prevention of communicable diseases, signs of health/ illness, diet exercise)

B. Physical Science

1) States of matter (solids, liquids, gases) and differences in their physical properties (shape, volume), including changes in state of matter by heating and cooling
2) Classification of objects/ materials based on physical properties (e.g., weight/ mass, volume, magnetic attraction)
3) Forming and separating mixtures
4) Familiar changes in materials (e.g., decaying, burning, rusting,cooking)
5) Common energy sources/ forms and their practical uses (e.g., Sun, electricity, water, wind)
6) Light (e.g., sources, behavior)
7) Electrical circuits and properties of magnets
8) Forces that cause objects to move (e.g., gravity, push/ pull forces)

C. Earth Science

1) Water on Earth (location, types, and movement) and air (composition, proof of its existence, uses)
2) Common features of Earth's landscape (e.g., mountains, plains, rivers, deserts) and relationship to human use (e.g., farming, irrigation, land development)
3) Weather conditions from day to day or over the seasons
4) Fossils of animals and plants (age, location, formation)
5) Earth's solar system (planets, Sun, moon)
6) Day, night, and shadows due to Earth's rotation and its relationship to the Sun

Source: adapted from Exhibit 7.9, international science report

Table 7.15 Teachers feel "very well" prepared to teach TIMSS science topics

Country	Per cent of Students Whose Teachers Feel "Very Well" Prepared to Teach TIMSS Science Topics			
	Overall Science (20 Topics)	Life Science (6 Topics)	Physical Science (8 Topics)	Earth Science (6 Topics)
Northern Ireland	r 54 (3.4)	r 62 (3.9)	r 56 (3.6)	r 44 (3.7)
International Avg.	62 (0.3)	70 (0.4)	62 (0.4)	53 (0.4)

( ) 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 students.

Source: Exhibit 7.9, international science report

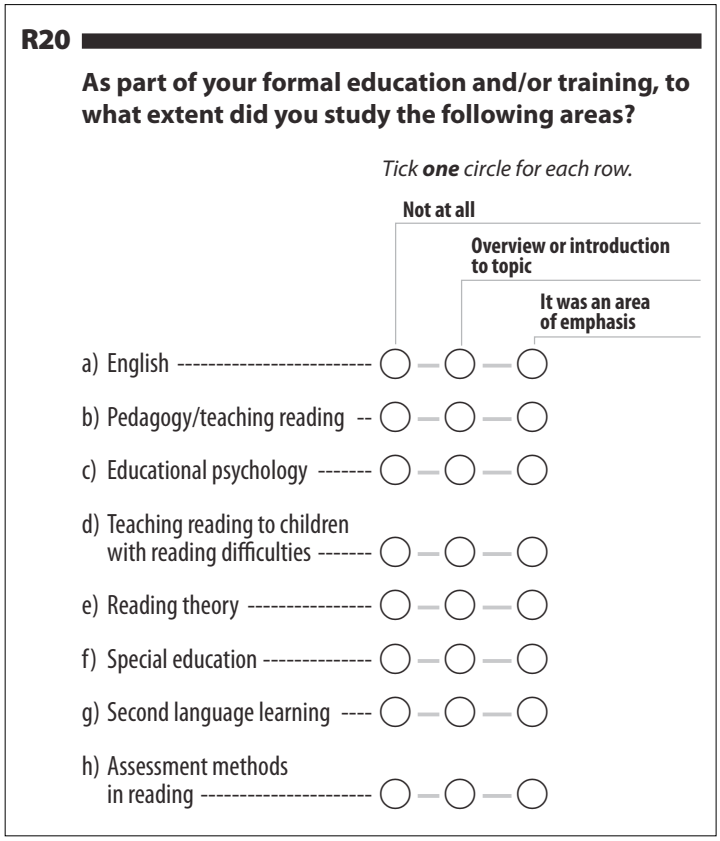
In Northern Ireland, just over half of pupils (54 per cent) were taught by teachers who feel *very well prepared* to teach the TIMSS science topics. This was lower than the equivalent percentage for mathematics for this age group, where 91 per cent of pupils were taught by teachers who feel *very well prepared*. However, in terms of the international picture, the percentage of pupils in Northern Ireland who were taught by teachers who feel *very well prepared* to teach the TIMSS science topics was lower than the international average (62 per cent), but similar to a number of comparator countries, e.g. Hong Kong (49 per cent), Finland (51 per cent), and Australia (51 per cent). As for the three content domains, there was a difference in the percentages of pupils in Northern Ireland whose teachers feel *very well prepared* to teach Earth Science compared with Physical Science and Life Science. The percentages for each domain can be seen in Table 7.15. Although it was also the case in England that teachers of a lower percentage of pupils feel *very well prepared* to teach Earth Science, across participating countries there was variation in the science content domains that teachers feel *very well prepared* to teach. This may indicate that within these countries the focus of curricula is different (see chapter 8 of the international science report for more information about curricula).

7.9 Teachers' educational emphasis/major areas of training

7.9.1 Reading: teachers' educational emphasis during training

Teachers were asked to indicate the extent to which, during their formal education and training, they studied in specialist areas related to language and the teaching of reading. The question is shown in Figure 7.9 and results are shown in Table 7.16.

Figure 7.9 Reading: teacher's educational emphasis during training



Source: adapted from the international version of the PIRLS and TIMSS Teacher Questionnaire.

The most common specialist area of study, reported by teachers of 62 per cent of pupils in Northern Ireland, was *English (Language)*. This compares with an international average of 72 per cent.

Forty-four per cent of pupils had teachers whose studies emphasised *pedagogy/ teaching reading* and 20 per cent had teachers whose formal education and training studies had emphasised *reading theory*. These figures compare with respective international averages of 62 and 33 per cent in these areas.

Among the comparator countries, more pupils in the Republic of Ireland and Hong Kong had teachers who reported an emphasis on *Language* study (i.e. the language of the test) during their education and training. In terms of studying *pedagogy and the teaching of reading*, more pupils in the Republic of Ireland and Singapore had teachers who reported an emphasis on this area than other comparator countries. Similarly, more pupils in the Republic of Ireland had teachers who reported an emphasis on *reading theory* in their formal education and training than in other comparator countries.

The areas of *language, pedagogy* and *reading theory* might be expected to play a significant part in the study of education generally, and of reading in particular. While teachers in the Republic of Ireland reported greater emphases on each of these three areas than other comparator countries, this can be contrasted with teachers in Finland who reported the lowest emphases across all three.

There does not appear to be any clear pattern of pupil attainment within individual countries in relation to the different areas of emphasis in their teachers' formal training and education.

7.9.2 Mathematics: teacher's major area of study during training

In order to discover the percentage of pupils taught by subject specialists, in this case mathematics, teachers were asked to indicate their main area of study and whether they had specialised in any specific subjects during their post-secondary education (the findings for teachers in Northern Ireland are shown in Table 7.17). In Northern Ireland, the majority of pupils (76 per cent) were taught mathematics by teachers whose main area of study was primary education without specialisation in mathematics. Only 11 per cent of pupils were taught mathematics by teachers who are mathematics specialists (for 10 per cent, their teachers had a specialism in mathematics and primary education and for a further 1 per cent, their teachers specialised in mathematics but not primary education). However, in Hong Kong and Singapore a much larger percentage of pupils were taught by mathematics specialists (54 per cent in each case). There was not a clear pattern within individual countries, or on average, between being taught by a subject specialist and average achievement. This was the case in Northern Ireland and a number of comparator countries, for example England, Australia and the Republic of Ireland.

7.9.3 Science: teacher's major area of study during training

The findings for teachers in Northern Ireland are shown in Table 7.18. In Northern Ireland, three-quarters of pupils in Y5 were taught science by teachers whose main area of study was primary education (without specialisation in science). Only 14 per cent of pupils were taught science by teachers who are science specialists (3 per cent of these were taught by teachers with a specialism in science but not primary education; the remainder had teachers who specialised in science and primary education). The percentage of pupils taught by science specialists was similar to a

number of comparator countries, namely Australia, Finland, Republic of Ireland and New Zealand. There was not a clear association within individual countries between a teacher specialisation during training and the average achievement in science at this level.

Table 7.16 Teachers' educational emphasis during training

Country	Language			Pedagogy / Teaching Reading			Reading Theory		
	Per cent of Students	Average Achievement		Per cent of Students	Average Achievement		Per cent of Students	Average Achievement	
	Area Emphasised	Area Emphasised	Area not Emphasised	Area Emphasised	Area Emphasised	Area not Emphasised	Area Emphasised	Area Emphasised	Area not Emphasised
Northern Ireland	r 62 (4.5)	560 (4.2)	561 (3.4)	r 44 (4.9)	563 (4.2)	557 (4.0)	r 20 (3.6)	563 (8.0)	559 (3.2)
International Avg.	72 (0.5)	513 (0.5)	510 (1.3)	62 (0.5)	513 (0.6)	511 (1.0)	33 (0.5)	514 (0.8)	512 (0.6)

( ) 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 students.

Source: Exhibit 7.2, international PIRLS Report

Table 7.17 Teachers' major area of study during training

Country	Major in Primary Education and Major (or Specialization) in Mathematics		Major in Primary Education but No Major (or Specialization) in Mathematics		Major in Mathematics but No Major in Primary Education		All Other Majors		No Formal Education Beyond Upper-secondary*	
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement
Northern Ireland	r 10 (3.1)	564 (12.2)	76 (4.2)	567 (3.9)	1 (0.0)	~ ~	13 (3.1)	537 (16.4)	0 (0.0)	~ ~
International Avg.	28 (0.5)	490 (1.4)	46 (0.4)	501 (1.0)	10 (0.3)	457 (3.1)	10 (0.3)	486 (2.0)	6 (0.2)	444 (3.0)

*Countries have been increasing their certification requirements and providing professional development to teachers certified under earlier guidelines.
( ) 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 students.

Source: Exhibit 7.3, international mathematics report

Table 7.18 Teachers' major area of study during training

Country	Major in Primary Education and Major (or Specialization) in Science		Major in Primary Education but No Major (or Specialization) in Science		Major in Science but No Major in Primary Education		All Other Majors		No Formal Education Beyond Upper-secondary*	
	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement	Per cent of Students	Average Achievement
Northern Ireland	r 11 (2.8)	538 (7.9)	75 (3.9)	518 (3.4)	3 (1.7)	513 (22.7)	10 (3.0)	490 (19.1)	0 (0.0)	~ ~
International Avg.	25 (0.4)	482 (1.5)	48 (0.4)	489 (1.3)	12 (0.3)	462 (2.4)	10 (0.3)	479 (1.9)	6 (0.2)	433 (2.9)

*Countries have been increasing their certification requirements and providing professional development to teachers certified under earlier guidelines.
( ) 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 students.

Source: Exhibit 7.3, international science report

7.10 Conclusion

In terms of school learning environment, teachers and principals were asked about the emphasis placed on academic success and their perceptions of safety, orderliness and discipline in their schools; and about the impact of disruptive and uninterested pupils. Pupils were also asked about their experience of bullying behaviours. The findings of the surveys showed that schools in Northern Ireland are considered safe, orderly and well disciplined by their principals and teachers. Pupils reported relatively low levels of bullying and very few teachers reported that their teaching was limited *A Lot* by disruptive or uninterested pupils. Across all three subjects there was an association between some factors of the school learning environment and pupil attainment (specifically, the safety and orderliness of the school, and school discipline and safety).

The surveys explored factors related to teaching and teaching practices. Teachers reported high levels of career satisfaction; this was true of all three subjects. However, higher levels of career satisfaction did not appear to be associated with increased pupil achievement. Teachers in Northern Ireland reported relatively low levels of collaboration: as with career satisfaction, no clear links were seen with achievement in any of the subjects.

In terms of how prepared teachers feel to teach the TIMSS mathematics and science topics, a vast majority of pupils were taught by teachers who feel *very well prepared* to teach the TIMSS mathematics topics. In contrast, about half of pupils were taught by teachers who feel *very well prepared* to teach the TIMSS science topics.

Teachers were asked about the focus of their formal education and training. For teachers of reading, the most common specialism was English/language. Compared to international averages, teachers in Northern Ireland reported a lower emphasis on specialisms such as Language, Pedagogy/Teaching Reading and Reading Theory during their formal education and training. For mathematics, about three-quarters of pupils were taught by teachers whose main area of study was primary education without specialisation in mathematics. The same was true of science, where a similar proportion of pupils were taught by non-science specialists.