

Chapter 9 The home environment in PIRLS 2011

Chapter outline

This chapter considers the relationship between pupils' home circumstances in England and their performance on the PIRLS 2011 reading assessment. Pupils were asked whether or not they possessed certain items in their homes, and were asked to give other details about their lives which might affect achievement. Information was also gathered from teachers of pupils involved in PIRLS.

Key findings

- Pupils in England reported having among the most books at home of all participating countries. Pupils in England who reported a larger number of books at home had higher mean achievement scores than pupils who reported fewer books at home.
- The average achievement of pupils in England was higher for pupils who reported spending more time reading outside of school than those who spent less time reading outside of school. This pattern was not seen clearly in the international data.
- Compared to 2006, fewer pupils in 2011 reported *Never or almost never* reading for fun out of school. Over half of pupils in PIRLS 2011 reported reading for half an hour or more every day out of school.
- The average achievement for pupils in England who reported having their own television, mobile phone or DVD player was lower in each case than those who did not possess these items.
- Teachers were asked the extent to which they thought their teaching was limited by pupils' lack of prerequisite skills and knowledge, basic nutrition and sufficient sleep. Responses were in line with international averages in relation to prerequisite skills and knowledge, and basic nutrition. Teachers of a greater proportion of pupils in England reported their teaching was limited by pupils' lack of sleep compared to the international average.

9.1 Home resources for learning

PIRLS has consistently shown that access to reading material in the home is strongly related to higher achievement in reading. The 2011 PIRLS pupil questionnaire asked pupils to estimate the number of books in their homes (not counting magazines, newspapers, or school books) and the data for England and the comparator countries is shown in Table 9.1. Pupils in England reported having among the most books, with 36 per cent of pupils having more than 100 books at home. In just four comparator countries (Australia, Finland, New Zealand and Sweden) was the proportion slightly greater. Among pupils in England, there was a clear association between the number of books in the home and reading achievement.

Table 9.1 Number of books reported in homes and average achievement of pupils in England and internationally

	0–10		11–25		26–100		101–200		201+	
	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement
England	9	486	19	525	36	556	21	577	15	584
International average	16	467	25	501	33	524	15	536	12	534

Source: Student background data almanac by reading achievement: SGQ-04, PIRLS 2011¹

Pupils were also asked whether they had certain resources in their home which could be seen as enhancing their opportunity to read outside of school (such as their own room, the availability of an internet connection and books of their own). In England, 76 per cent of pupils surveyed reported having a room of their own. The international average of pupils reporting having their own room was lower (67 per cent). Of the comparator countries, the lowest percentage of pupils having their own room was reported in Singapore (52 per cent), with Sweden reporting the highest percentage (87 per cent). In England, 94 per cent of pupils surveyed reported having an internet connection at home. The international average was lower at 77 per cent. Of the comparator countries, the lowest percentage of pupils reporting having an internet connection at home was in the Russian Federation (68 per cent), with the highest proportion in Sweden (96 per cent). In England, 96 per cent of pupils surveyed reported having books of their own at home (not counting school books). The equivalent figure in 2006 was 92 per cent. Of the items surveyed, possessing books of one's own presented the largest discrepancies in average achievement between those who did and did not have the item, for both pupils in England and pupils internationally. Just over three-quarters of pupils in England reported having their own desk or table for studying at home. This is unchanged since 2006.

9.2 Reading out of school

Pupils in England involved in PIRLS were asked to estimate how much time they spend reading outside of school on a normal school day. In England, 77 per cent of pupils reported that they read for up to an hour on a normal school day, and 23 per cent reported reading for one hour or more. As shown in Table 9.2 below, pupils in England who reported reading for a longer time outside of school had higher average achievement than their peers. Internationally, higher achievement was associated with more time spent reading, except for pupils who reported reading more than two hours whose average achievement was lower. The average achievement of pupils in England who read outside school for more than 30 minutes a day was above the High International Benchmark of 550.

¹ Standard errors are not available for the data taken from the international almanacs.

Table 9.2 Time spent reading outside of school and average achievement (for pupils in England and internationally)

	2 hours or more		1 hour up to 2 hours		30 min up to 1 hour		Less than 30 min	
	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement
England	10	592	13	586	35	564	43	523
International average	11	523	13	529	35	524	40	496

Source: Student background data almanac by reading achievement: SQR-01, PIRLS 2011²

Pupils in England were also surveyed to find out how often they read for fun outside of school. This is assumed to be reading that pupils undertake voluntarily, that is, not for homework. Responses to this item are included in the *Pupils like reading* scale (chapter 4, section 1) but are reported separately in Table 9.3, as most of this reading will take place in the home. The percentage of pupils reading for fun *Every day or almost every day* in England in 2011, was four percentage points higher than in 2006, and *Once or twice a week* was ten percentage points higher than in 2006. The percentage of pupils reading *Never or almost never* decreased between 2006 and 2011 by 15 percentage points. In 2011, higher average achievement was associated with more frequent reading for fun.

In England and a number of comparator countries in 2011, there was a greater difference between the attainment of pupils who read daily and those who read once or twice a week, when compared with the difference between those who read once or twice a week and those who read once or twice a month. Significance tests have not been carried out on these differences.

Table 9.3 Frequency of reading for fun and average achievement (for pupils in England in 2011 and 2006)

	Every day / almost every day		Once or twice a week		Once or twice a month		Never or almost never	
	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement
Pupils in England in 2011	37	573	35	552	15	541	13	506
Pupils in England in 2006	33	575	25	537	14	540	28	506

Source: Student background data almanac by reading achievement: SQR-02A, PIRLS 2011 and SG1-03E, PIRLS 2006³

9.3 Other out of school activities

Other possessions included in the survey in England were related to entertainment, rather than reading or studying. For example, the survey asked pupils to report whether or not they possessed a mobile phone, television, DVD player or a musical instrument of their own and this data is summarised in Table 9.4. For pupils in England, there was a negative association between achievement on the PIRLS tests and ownership of the following items:

² Standard errors are not available for the data taken from the international almanacs.

³ Standard errors are not available for the data taken from the international almanacs.

Your own mobile phone, Your own television and Your own DVD player. In each case, pupils who reported possessing the item obtained, on average, a lower mean score (by more than 20 scale points) than those who did not possess the item. Conversely, the 76 per cent of pupils who owned their own musical instrument scored an average of 31 scale points more than those who did not.

Table 9.4 Items in households of pupils in England and average achievement

	Your own musical instrument		Your own mobile phone		Your own television		Your own DVD player	
	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement
Yes	76	559	68	544	67	540	65	542
No	24	528	32	568	33	576	36	569

Source: *Student background data almanac by reading achievement: SQG-05 (G, I, J, K), PIRLS 2011⁴*

Compared to equivalent questions in 2006, a slightly lower proportion of pupils in 2011 reported having their own television (67 per cent compared with 72 per cent in 2006). A slightly higher proportion of pupils in 2011 reported having their own mobile phone (68 per cent compared with 64 per cent in 2006). The difference in the proportion of pupils owning a musical instrument in 2011, compared to 2006, was more pronounced than other items (76 per cent in 2011 compared with 66 per cent in 2006). Significance tests have not been conducted on these differences. Individual participating countries selected the possessions to be included and therefore there is no comparable data.

Pupils were asked about how much time they spent on various activities out of school on a normal school day and responses are summarised in Table 9.5. National data only is available and data from PIRLS 2006 is not directly comparable due to differences in the categories. Nevertheless, there is clear evidence that smaller proportions of pupils reported spending three or more hours watching television and/or playing video or computer games, compared to data collected in 2006⁵.

Table 9.5 Time spent on out of school activities on a normal school day

	Less than 30 min	30 min up to 1 hour	From 1 to up to 2 hours	From 2 up to 3 hours	From 3 up to 5 hours	5 hours or more
	Per cent of pupils	Per cent of pupils	Per cent of pupils	Per cent of pupils	Per cent of pupils	Per cent of pupils
Reading	43	34	12	5	2	3
Watching TV and films (incl. videos and DVDs)	14	25	23	17	9	12
Playing video or computer games	34	26	15	10	6	9

⁴ Standard errors are not available for the data taken from the international almanacs.

⁵ Further information on the data from PIRLS 2006 is available in the national report: Twist, L., Schagen, I. and Hodgson, C. (2007). *Readers and Reading the National Report for England 2006*. Slough: NFER

9.4 Teaching limited by lack of prerequisite skills, sleep or nutrition

Teachers of pupils in England involved in PIRLS 2011 assessments were surveyed to acquire information about the extent to which they felt their teaching is limited by certain aspects in their pupils' lives, such as lack of prerequisite skills, sleep or nutrition. Lack of prerequisite skills and knowledge can hinder achievement because the ability to learn new skills is based on prior knowledge. In England, 63 per cent of pupils were in classes where teachers reported that there was *Some* limit to their teaching due to lack of pupils' prerequisite skills (Table 9.6). A smaller percentage of pupils (26 per cent) were in classes where teachers reported their teaching was *Not at all* limited by pupils lack of prerequisite skills. However, a small percentage of pupils (11 per cent) were in classes where teachers reported their teaching was limited *A lot*. These percentages were similar to the international averages. Pupils in England whose teachers reported their teaching was limited by lack of prerequisite skills achieved, on average, 32 scale points lower than those whose teachers reported their teaching was not limited by the lack of such skills. This pattern was also seen in the international data.

Table 9.6 Teaching limited by pupils lacking prerequisite knowledge or skills

Reported by teachers

Country	Pupils in classrooms where teachers report teaching is limited by pupils lacking prerequisite knowledge or skills					
	Not at all		Some		A lot	
	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement
Russian Federation	44 (3.7)	575 (4.2)	44 (3.2)	566 (4.2)	12 (2.6)	550 (5.9)
Finland	41 (3.5)	576 (2.3)	57 (3.4)	563 (2.5)	2 (0.6)	~ ~
Ireland, Rep. of	37 (3.1)	567 (3.0)	56 (3.4)	549 (2.8)	8 (1.9)	502 (5.9)
Sweden	r 33 (4.2)	549 (3.4)	60 (4.4)	541 (3.0)	7 (1.6)	517 (8.0)
Australia	r 30 (3.2)	555 (4.6)	60 (4.0)	524 (3.9)	10 (2.4)	501 (7.1)
Singapore	26 (2.4)	600 (5.4)	61 (3.0)	567 (3.7)	13 (1.8)	504 (8.4)
New Zealand	26 (2.8)	552 (5.0)	64 (3.0)	533 (3.0)	10 (1.4)	492 (7.7)
England	26 (3.8)	564 (6.5)	63 (4.1)	548 (3.7)	11 (2.7)	532 (10.9)
Northern Ireland	r 26 (3.7)	573 (5.4)	68 (3.9)	557 (3.6)	6 (2.1)	541 (9.6)
Hong Kong SAR	22 (4.0)	577 (6.1)	68 (4.1)	573 (2.7)	10 (2.4)	541 (9.6)
Canada	21 (2.0)	562 (4.3)	65 (2.3)	547 (2.0)	14 (1.6)	529 (3.5)
Chinese Taipei	19 (3.1)	562 (4.4)	74 (3.5)	553 (2.1)	7 (2.1)	525 (9.2)
United States	r 14 (1.9)	579 (5.0)	66 (2.1)	558 (2.2)	20 (1.7)	532 (3.6)
International Avg.	28 (0.5)	526 (0.9)	61 (0.5)	512 (0.5)	11 (0.3)	485 (1.6)

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

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

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

SOURCE: Adapted from IEA's Progress in International Reading Literacy Study – PIRLS 2011

Source: Exhibit 8.9 in PIRLS 2011 report

Teachers of pupils in England involved in PIRLS were also asked to report the degree to which their teaching was limited by pupils' lack of sleep or nutrition (Table 9.7). In England, 77 per cent of pupils were in classes where teachers reported their teaching was *Not at all* limited by pupils' lack of basic nutrition. The average achievement of pupils in these classes in England was 557, 28 scale points higher than those who were in classes where teachers thought lack of nutrition limited their teaching to some degree. It is not possible to quantify either the extent of this limitation on teaching or the numbers of pupils teachers believe are affected.

Table 9.7 Teaching limited by pupils suffering from lack of nutrition or sleep

Reported by teachers

Country	Pupils in classrooms where teachers report teaching is limited by pupils suffering from lack of basic nutrition				Pupils in classrooms where teachers report teaching is limited by pupils suffering from not enough sleep			
	Not at all		Some or a lot		Not at all		Some or a lot	
	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement
Australia	r 73 (3.0)	544 (2.7)	27 (3.0)	497 (5.6)	r 33 (3.5)	546 (4.5)	67 (3.5)	524 (4.1)
Canada	67 (2.2)	554 (2.0)	33 (2.2)	537 (2.7)	33 (2.6)	554 (3.4)	67 (2.6)	545 (2.0)
Chinese Taipei	71 (3.7)	555 (2.3)	29 (3.7)	547 (4.3)	40 (4.0)	548 (3.0)	60 (4.0)	556 (2.6)
England	77 (2.9)	557 (3.2)	23 (2.9)	529 (5.1)	37 (4.1)	564 (5.1)	63 (4.1)	542 (3.6)
Finland	91 (2.2)	570 (1.8)	9 (2.2)	553 (5.1)	41 (3.9)	573 (2.5)	59 (3.9)	565 (2.5)
Hong Kong SAR	89 (2.5)	572 (2.3)	11 (2.5)	558 (8.9)	52 (4.7)	577 (2.7)	48 (4.7)	563 (4.3)
Ireland, Rep. of	78 (2.9)	558 (2.5)	22 (2.9)	532 (5.0)	38 (3.8)	566 (3.2)	62 (3.8)	544 (2.8)
New Zealand	63 (2.6)	546 (2.8)	37 (2.6)	511 (3.8)	31 (2.7)	552 (4.1)	69 (2.7)	525 (3.1)
Northern Ireland	r 80 (3.1)	567 (3.0)	20 (3.1)	535 (7.3)	r 40 (4.7)	573 (3.6)	60 (4.7)	552 (3.8)
Russian Federation	83 (2.6)	574 (3.1)	17 (2.6)	544 (5.3)	73 (2.7)	571 (3.3)	27 (2.7)	561 (4.2)
Singapore	86 (1.8)	573 (3.4)	14 (1.8)	532 (9.8)	60 (2.8)	578 (3.8)	40 (2.8)	551 (6.2)
Sweden	r 96 (1.5)	542 (2.5)	4 (1.5)	548 (11.6)	r 60 (3.7)	548 (2.6)	40 (3.7)	534 (3.6)
United States	r 60 (2.6)	563 (2.2)	40 (2.6)	544 (3.2)	r 24 (2.2)	566 (3.5)	76 (2.2)	553 (2.1)
International Avg.	73 (0.4)	519 (0.6)	27 (0.4)	495 (1.0)	51 (0.5)	518 (0.6)	49 (0.5)	507 (0.7)

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

SOURCE: Adapted from IEA's Progress in International Reading Literacy Study – PIRLS 2011

Source: Exhibit 8.10 in PIRLS 2011 report

Internationally, average attainment was also notably higher for pupils in classes where teachers said their teaching was not limited by pupils' lack of nutrition, compared to pupils in classes where teachers said their teaching was limited by this factor.

Teachers of pupils in England were more likely to report pupils' lack of sleep as limiting their classroom teaching than pupils' lack of nutrition. In England, 63 per cent of pupils were in classes where teachers reported their teaching was limited *Some or a lot* by pupils suffering from lack of sleep, but the extent of the limitation and the number of pupils cannot be quantified. The average reading achievement of pupils in these classes in England was 542. In England, 37 per cent of pupils were in classes where teachers reported their teaching was *Not at all* limited by pupils suffering from lack of sleep. The average reading achievement of pupils in these classes was 564 scale points. Internationally, around half of pupils were in classes where teachers reported their teaching was limited by pupils suffering from lack of sleep.