

Chapter 6 The curriculum and teaching

Chapter outline

This chapter focuses on how reading skills are taught to young children. It reports the frequency of practices within school, the age at which a range of reading skills and strategies first receive a major emphasis, and the use of computer technology in reading lessons.

Key findings

- Generally, pupils in higher performing countries spent less time on reading activities than the average, while pupils in English-speaking countries spent more. The amount of time teachers of pupils in England spent on the teaching of reading, including reading across the curriculum was below the international average, although internationally, responses regarding the time spent teaching reading varied greatly.
- England had the highest proportion of pupils in schools where the teaching of a range of reading skills was emphasised at or before the academic year in which they turned eight (Year 3 in England).
- In England and internationally, the average achievement of pupils who began learning a range of reading skills earlier was higher than the average achievement of those who were introduced to the skills later.
- The percentage of pupils in England whose teachers reported they practised a range of comprehension skills and strategies on at least a weekly basis was close to or above the international mean.
- Internationally, the average achievement scores were the same regardless of whether or not computers were available for use in reading lessons. Average achievement in England was similar for pupils who did and who did not have access to a computer for reading lessons. More pupils in the top performing countries used computers in reading lessons than did those in less well performing countries.

Several countries of interest have been included in this chapter, due to their similarities with England or their high performance. These include English-speaking countries, the high performing Pacific Rim countries, Finland, Sweden and Denmark¹. Other countries have been included where their data is of particular interest.

¹ Denmark is included in the comparator group of countries in this section due to the country's policy with regard to subject teaching in primary schools.

Interpreting the data: indices and scales

In order to summarise data from a questionnaire, responses to several related items are sometimes combined together to form an index or scale. The respondents to the questionnaire items are grouped according to their responses. Where teacher responses have been reported in an index or scale, the analysis has classified pupils as being within a particular category based on their teachers' responses. The way in which responses have been categorised is shown at the foot of the index or scale in each case. Data in an index or scale can often be more reliable and valid than the responses to individual items.

6.1 Teaching time

Time spent on the teaching of language and reading was calculated using the methodology shown at the foot of Table 6.1, using teachers' reports of weekly language teaching hours, and headteachers' reports of school days per year, school days per week, and teaching hours per day. Table 6.1 shows teaching time spent on language and reading, for England and all comparator countries, listed in descending order of amount of total teaching hours per year. 'Language' was defined as the language of the test.

Compared to the international mean, it can be seen that teachers in England reported spending slightly more time teaching explicit reading skills, but less time teaching reading skills across the curriculum.

The amount of time spent on the teaching of reading and reading activities in a typical week was less than that reported in 2006. In 2011, teachers in England reported spending about three hours per week on these activities compared with almost three and a half hours in 2006.

Internationally, there were large differences in the amount of time devoted to the teaching of reading and reading activities. Of the 11 top performing countries, teachers in eight reported spending less time teaching reading across the curriculum, including time spent on the teaching of reading than the average amount of time internationally. Conversely, most English-speaking countries reported more time spent on this than the average internationally.

Table 6.1 Teaching time spent on language and reading (comparator countries)

Reported by headteachers and teachers

Country	Teaching hours per year				
	Total	Language teaching	Time spent on reading as part of language teaching	Reading across the curriculum, including time spent on reading teaching	
United States	1077 (7.9)	r 275 (8.5)	s 131 (4.9)	r 246 (9.5)	
Hong Kong SAR	r 1060 (11.4)	r 207 (5.6)	r 73 (3.1)	r 102 (6.6)	
Singapore	1012 (0.0)	242 (5.5)	56 (1.8)	127 (6.0)	
Australia	1008 (6.9)	s 356 (10.4)	s 119 (5.1)	s 197 (11.0)	
Chinese Taipei	r 989 (13.4)	192 (5.2)	41 (2.0)	65 (2.8)	
England	r 987 (7.7)	r 277 (7.6)	r 77 (4.0)	r 123 (9.5)	
Northern Ireland	r 970 (11.0)	s 274 (7.7)	s 80 (3.7)	s 155 (9.9)	
Canada	957 (4.5)	r 284 (6.1)	r 101 (3.0)	r 186 (8.6)	
New Zealand	932 (4.9)	r 349 (8.3)	r 131 (3.9)	r 220 (6.7)	
Denmark	860 (8.1)	219 (3.7)	63 (1.8)	108 (5.2)	
Ireland, Rep. of	854 (0.0)	175 (3.4)	56 (1.5)	159 (9.3)	
Sweden	s 849 (11.4)	s 223 (11.0)	s 75 (3.5)	s 156 (13.1)	
Finland	779 (9.8)	188 (5.3)	55 (2.4)	99 (5.5)	
Russian Federation	r 660 (8.0)	200 (2.4)	58 (1.3)	130 (3.8)	
International Avg.	905 (2.1)	232 (1.2)	70 (0.5)	146 (1.4)	

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

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

Source Exhibit 8.4 in the 2011 international PIRLS report

Total Teaching Hours per Year	=	Headteacher Reports of School Days per Year	x	Headteacher Reports of Teaching Hours per Day
Language Teaching Hours per Year	=	Teacher Reports of Weekly Language Teaching Hours	x	Headteacher Reports of School Days per Year

Time spent on reading as part of language teaching and hours spent on reading across the curriculum are also based on teacher reports of weekly teaching.

6.2 Emphasis in the early years on reading skills and strategies

Headteachers reported the age at which the teaching of specific reading skills was emphasised. A full list of these skills can be seen below Table 6.2 (items a, b and c did not contribute to the scale).

Table 6.2 lists England and comparator countries in descending order of the percentage of pupils in schools where the teaching of these skills and strategies had a major emphasis at or before the academic year in which pupils turn eight. This is Year 3 in England.

In England, 84 per cent of pupils are in schools where the teaching of these skills and strategies is emphasised by the end of Year 3. This is the highest proportion of all countries and it is notable that the four countries with the highest percentage of pupils who are taught this range of reading skills at or before the academic year in which they turn eight (England, United States, Australia and New Zealand) are all English-speaking countries.

Table 6.2 Emphasis in early years on reading skills and strategies (comparator countries)

Reported by headteachers

Pupils were scored according to their headteachers' responses about the earliest school year at which each of eleven reading skills and strategies were emphasised. Pupils in schools where their headteachers reported reading skills and strategies were emphasised **At or before the academic year in which pupils are eight (Y3)** had a score on the scale of at least 11.1, which corresponds to all eleven skills and strategies being emphasised at Y3 (second grade), on average. Pupils in schools where their headteachers reported reading skills and strategies were emphasised **During or after the academic year in which pupils are ten (Y5)** had a score no higher than 6.5, which corresponds to all eleven skills and strategies being emphasised at Y5 (fourth grade), on average. All other pupils attended schools where reading skills and strategies were emphasised **During the academic year in which pupils are nine (Y4)**.

Country	At or before the academic year in which pupils are eight		During the academic year in which pupils are nine		During or after the academic year in which pupils are ten		Average achievement
	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	Per cent of pupils	Average achievement	
England	84 (3.3)	553 (3.2)	15 (3.2)	538 (7.3)	1 (0.9)	~ ~	552 (2.6)
United States	r 75 (2.7)	558 (1.7)	24 (2.7)	557 (3.8)	1 (0.5)	~ ~	556 (1.5)
Australia	73 (4.0)	528 (2.9)	27 (4.0)	531 (5.9)	0 (0.0)	~ ~	527 (2.2)
New Zealand	73 (3.6)	538 (2.8)	27 (3.6)	523 (7.2)	0 (0.0)	~ ~	531 (1.9)
Canada	55 (2.7)	549 (2.5)	44 (2.7)	547 (2.9)	1 (0.4)	~ ~	548 (1.6)
Northern Ireland	r 55 (4.6)	561 (3.0)	45 (4.6)	557 (4.6)	0 (0.0)	~ ~	558 (2.4)
Russian Federation	50 (3.7)	567 (4.0)	50 (3.7)	570 (3.7)	0 (0.0)	~ ~	568 (2.7)
Singapore	46 (0.0)	567 (4.0)	54 (0.0)	566 (5.4)	0 (0.0)	~ ~	567 (3.3)
Ireland, Rep. of	40 (4.0)	558 (3.9)	60 (4.0)	547 (3.4)	0 (0.0)	~ ~	552 (2.3)
Sweden	r 37 (4.5)	543 (4.0)	63 (4.5)	541 (3.1)	0 (0.0)	~ ~	542 (2.1)
Denmark	21 (2.4)	555 (4.5)	79 (2.4)	553 (1.9)	1 (0.5)	~ ~	554 (1.7)
Chinese Taipei	17 (3.0)	556 (5.2)	80 (3.0)	552 (2.0)	3 (1.4)	555 (7.1)	553 (1.9)
Hong Kong SAR	16 (3.5)	579 (6.7)	81 (3.8)	569 (2.9)	3 (1.6)	548 (15.3)	571 (2.3)
Finland	10 (2.6)	569 (5.6)	87 (2.8)	568 (2.0)	3 (1.5)	555 (8.2)	568 (1.9)
International Avg.	28 (0.5)	522 (1.1)	68 (0.5)	511 (0.6)	4 (0.2)	450 (3.3)	

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

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 pupils.

Note: 'At or before the academic year in which pupils are eight' is year 3 in England, and second grade; 'during the academic year in which pupils are nine' is year 4 or third grade; 'during or after the academic year in which pupils are ten' is from year 5, and from fourth grade.

Source Exhibit 6.4 in the 2011 international PIRLS report

The data from the four highest achieving countries shows a wide range in regard to this question. In the Russian Federation and Singapore, around half of pupils were in schools where the teaching of these early reading skills was emphasised at this age. In contrast, in Hong Kong and Finland the figures were 10 and 16 per cent respectively. In all four countries (the Russian Federation, Singapore, Hong Kong and Finland) the statutory age for starting school is later than that of three of the English-speaking countries which appear at the top of the table; in the United States, children customarily attend kindergarten before entering statutory education.

The remaining English-speaking countries (Canada, Northern Ireland and the Republic of Ireland), all have an above average proportion of pupils in schools where the teaching of these skills and strategies had a major emphasis at or before the academic year in which pupils turn eight. Whilst in Canada the age of starting school varies by province, in Northern Ireland and in the Republic of Ireland, pupils start school at a relatively young age. More information is available in the PIRLS encyclopaedia².

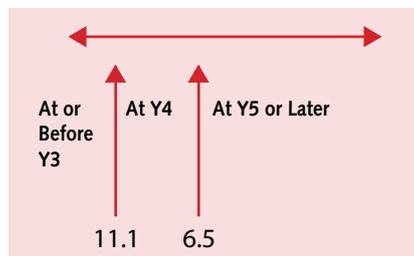
Overall, the international average achievement scores suggest that within countries, earlier teaching of a range of reading skills and strategies is associated with higher reading achievement but there is considerable variation. In a number of countries, including the high-achieving Singapore and Finland, attainment is consistent regardless of whether pupils are in schools where the skills are emphasised at age eight or at age nine.

² Mullis, I.V.S., Martin, M.O. and Minnich, C. (2012). *PIRLS 2011 Encyclopaedia: Education Policy and Curriculum in Reading (Volumes 1 and 2)*. Boston: TIMSS and PIRLS International Study Center, Lynch School of Education, Boston College.

In which year group do the following reading skills and strategies first receive a major emphasis in teaching in your school?

Tick **one** circle for each row.

	Year 2 or earlier	Year 3	Year 4	Year 5	Not in these year groups
a) Knowing letters of the alphabet -----	<input type="radio"/>				
b) Knowing letter-sound relationships -----	<input type="radio"/>				
c) Reading words -----	<input type="radio"/>				
d) Reading isolated sentences -----	<input type="radio"/>				
e) Reading connected text -----	<input type="radio"/>				
f) Locating information within the text -----	<input type="radio"/>				
g) Identifying the main idea of a text -----	<input type="radio"/>				
h) Explaining or supporting understanding of a text -----	<input type="radio"/>				
i) Comparing a text with personal experience -----	<input type="radio"/>				
j) Comparing different texts -----	<input type="radio"/>				
k) Making predictions about what will happen next in a text -----	<input type="radio"/>				
l) Making generalisations and drawing inferences based on a text -----	<input type="radio"/>				
m) Describing the style or structure of a text -----	<input type="radio"/>				
n) Determining the author's perspective or intention -----	<input type="radio"/>				



6.3 Teachers' focus on specific comprehension skills and strategies

In order to assess how teachers develop pupils' reading comprehension skills and strategies, teachers were asked to specify the frequency with which pupils in their class practised a range of reading skills and strategies. Table 6.3 shows the results of this questioning, listing England and comparator countries alphabetically.

There are four comprehension skills which were reported to be more likely to be taught at least weekly in England than on average internationally. These are: making predictions, making generalisations and drawing inferences, describing a text's style or structure, and determining the author's perspective or intention. In respect of the other five skills listed in Table 6.3, the pattern in England followed that seen internationally. Across the countries, there is no clear link to achievement in the emphases given to these various skills.

Several comparator countries, including Australia, New Zealand and Singapore, showed a similar pattern to England. However, teachers in these countries tended to report a greater emphasis on the comprehension skill of pupils comparing what they have read with experiences they have had, than teachers in England. Teachers in Canada and the Republic of Ireland showed similar patterns to teachers in England but placed rather less emphasis on elements of critical literacy – describing the style or structure of the text and determining the author's perspective or intention – than teachers in England.

The four Scandinavian countries in PIRLS, Denmark, Finland, Norway and Sweden, tended to report less emphasis on these skills than the international average.

Table 6.3 Teachers develop pupils' reading comprehension skills and strategies (comparator countries)

Reported by teachers

Country	Per cent of pupils whose teachers ask them to do the following at least weekly								
	Locate information within the text	Identify the main ideas of what they have read	Explain or support their understanding of what they have read	Compare what they have read with experiences they have had	Compare what they have read with other things they have read	Make predictions about what will happen next in the text	Make generalisations and draw inferences	Describe the style or structure of the text	Determine the author's perspective or intention
Australia	r 96 (1.6)	r 95 (2.2)	r 96 (1.7)	r 87 (2.4)	r 72 (3.7)	r 92 (1.4)	r 92 (1.9)	r 84 (2.8)	r 73 (3.4)
Canada	96 (0.9)	94 (1.1)	96 (0.9)	82 (1.7)	72 (1.9)	87 (1.5)	88 (1.5)	57 (2.3)	57 (2.3)
Chinese Taipei	89 (2.7)	87 (3.0)	73 (3.7)	65 (4.2)	51 (4.4)	47 (4.5)	62 (4.1)	52 (4.4)	66 (3.8)
Denmark	86 (2.2)	86 (2.6)	86 (2.2)	65 (3.1)	51 (3.6)	50 (3.5)	54 (3.4)	41 (3.5)	40 (3.4)
England	97 (1.4)	97 (1.4)	95 (1.8)	78 (3.3)	74 (3.5)	96 (1.4)	93 (1.9)	82 (3.2)	72 (3.6)
Finland	86 (2.2)	88 (2.8)	80 (2.8)	67 (3.5)	39 (3.5)	44 (3.4)	66 (3.2)	24 (2.6)	15 (2.1)
Hong Kong SAR	100 (0.0)	96 (1.9)	96 (1.9)	81 (3.6)	70 (3.9)	78 (4.0)	84 (3.3)	77 (4.2)	82 (3.7)
Ireland, Rep. of	98 (0.9)	97 (1.1)	96 (1.3)	87 (2.5)	68 (3.6)	91 (2.1)	83 (3.0)	58 (3.7)	52 (4.2)
New Zealand	99 (0.5)	98 (0.7)	97 (0.9)	89 (2.3)	74 (3.0)	94 (1.6)	94 (1.4)	72 (2.4)	72 (2.5)
Northern Ireland	r 99 (1.1)	r 94 (2.5)	r 98 (1.3)	r 67 (3.8)	r 59 (3.7)	r 84 (3.4)	r 82 (3.4)	r 64 (4.4)	r 50 (4.6)
Russian Federation	100 (0.0)	99 (0.7)	99 (0.6)	92 (2.0)	88 (2.7)	84 (2.6)	98 (0.8)	83 (3.0)	96 (1.3)
Singapore	95 (1.2)	95 (1.2)	95 (1.2)	89 (1.8)	81 (2.1)	90 (1.7)	90 (1.7)	78 (2.4)	72 (2.3)
Sweden	r 96 (1.2)	r 78 (3.5)	r 77 (4.0)	r 56 (4.1)	r 27 (3.3)	r 38 (4.0)	r 53 (4.6)	r 19 (3.3)	r 12 (2.3)
United States	r 99 (0.5)	r 99 (0.3)	r 99 (0.3)	r 95 (1.1)	r 90 (1.6)	r 98 (0.9)	r 98 (0.9)	r 81 (2.1)	r 84 (1.8)
International Avg.	96 (0.2)	95 (0.3)	95 (0.2)	81 (0.4)	70 (0.5)	74 (0.4)	80 (0.4)	66 (0.5)	63 (0.5)

() 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 Exhibit 8.8 in the 2011 international PIRLS report

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

6.4 Use of computers in reading lessons

Teachers were asked to report computer activities during reading lessons; this included whether computers were available for use during reading lessons and the frequency of their use for various computer-based tasks. The results can be seen in Table 6.4, where England and comparator countries are listed in descending order of the percentage of pupils in classes which have access to one or more computers, as reported by teachers.

Forty-seven per cent of pupils in England were in classes with access to one or more computers for reading lessons, just above the international mean. The percentage of pupils in classes with access to a computer for reading lessons was equal to or higher than the overall international mean in nine of the 11 highest performing countries, the exceptions being Croatia and the Russian Federation. Of the four highest achieving countries, in two (Finland and Singapore) a majority of pupils had access to computers in reading lessons. In Hong Kong and the Russian Federation, access to computers in reading lessons was not as widespread.

When comparing pupils in classes which did not have access to a computer with those in classes which did, the international average achievement was identical (513 for both), and generally there was little variation between these achievement scores within countries.

When looking at the percentage of pupils who use computers for the four different reading tasks (see Table 6.4) at least monthly, the use of computers for these tasks by pupils in England was broadly in line with the average use internationally; the most common use reported in England and internationally was to look up information.

Table 6.4 Computer activities during reading lessons (comparator countries)

Reported by teachers

Country	Computers available for reading lessons			Per cent of pupils whose teachers have them use computers at least monthly			
	Per cent of pupils	Average achievement		To look up information	To read stories or other texts	To write stories or other texts	To develop reading skills and strategies with instructional software
	Yes	Yes	No				
Denmark	87 (2.0)	553 (1.9)	564 (3.9)	76 (2.6)	65 (2.7)	83 (2.3)	54 (3.5)
New Zealand	86 (2.2)	534 (2.4)	532 (8.8)	83 (2.4)	70 (2.9)	79 (2.7)	55 (3.0)
Australia	r 82 (2.9)	533 (3.3)	525 (6.4)	r 76 (3.2)	r 68 (3.4)	r 74 (3.2)	r 58 (3.5)
United States	r 74 (2.2)	554 (2.0)	562 (3.8)	r 61 (2.4)	r 53 (2.3)	r 49 (2.4)	r 55 (2.6)
Sweden	r 73 (3.8)	543 (2.5)	544 (4.5)	r 64 (4.2)	r 44 (4.3)	r 65 (4.1)	r 43 (4.8)
Northern Ireland	r 65 (4.2)	559 (3.1)	562 (5.6)	r 61 (4.3)	r 51 (4.4)	r 63 (4.2)	r 40 (4.8)
Finland	64 (3.1)	568 (2.3)	569 (2.9)	59 (3.6)	41 (3.3)	53 (3.4)	34 (3.4)
Singapore	64 (2.8)	563 (4.6)	572 (4.8)	58 (2.7)	51 (2.8)	47 (2.8)	47 (2.7)
Ireland, Rep. of	56 (3.7)	555 (2.9)	548 (3.5)	50 (3.9)	42 (3.7)	43 (3.7)	30 (3.4)
Chinese Taipei	48 (3.9)	553 (2.5)	553 (2.8)	36 (3.8)	39 (3.7)	20 (2.9)	37 (3.5)
England	47 (4.0)	547 (4.1)	555 (4.2)	43 (4.2)	34 (4.5)	40 (4.1)	26 (4.1)
Canada	46 (2.5)	550 (2.4)	547 (2.2)	43 (2.4)	34 (2.6)	40 (2.5)	24 (2.2)
Hong Kong SAR	45 (4.7)	569 (3.7)	572 (3.7)	38 (4.6)	36 (4.6)	10 (2.9)	34 (4.6)
Russian Federation	29 (3.6)	568 (7.1)	568 (2.3)	24 (2.8)	20 (2.5)	23 (2.7)	20 (3.0)
International Avg.	45 (0.5)	513 (0.9)	513 (0.6)	38 (0.5)	32 (0.5)	32 (0.5)	29 (0.5)

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

() 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.

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

Source Exhibit 8.14 in the 2011 international PIRLS report