PIRLS

Chapter 2


2

Chapter 2
Home Support for Literacy

To help interpret the trends in children's reading achievement described in Chapter 1, the remaining chapters of the report present trends in several key areas often associated with differing levels of reading proficiency. In particular, this chapter describes trends in several important variables associated with a home environment supportive of encouraging literacy activities.

Language Spoken at Home

Students who speak a language (or languages) in the home that differs from the language spoken in school sometimes benefit from being multilingual. Generally, however, there is a high degree of relationship between fluency in speaking a language and the ability to read the language. Conventional wisdom, as well as numerous studies, suggest that students whose home language is that of the school will have an easier transition into reading than those who have to learn a new language while they learn to read. Students who are still developing proficiency in the language of instruction and testing can be at a serious disadvantage. The previous IEA Reading Literacy Study in 1991 found occurrences of both situations – second language students in some countries scored well below students who spoke the language of the test; and in other countries, non-native language speakers were reading almost as well the native speakers.[1]

For the countries replicating the 1991 Reading Literacy Study, Exhibit 2.1 shows changes between 1991 and 2001 in the frequency with which primary/elementary-school students spoke the language of the test at home, as well as any changes in achievement in relation to frequency. For all of these nine countries in 2001, students always or almost always speaking the language of the test at home had higher reading achievement than those speaking it only sometimes or hardly ever. With the exception of Singapore, the results show that, in most countries, the percentage of students always or almost speaking the language of the test at home either essentially stayed the same or decreased somewhat – perhaps reflecting recent immigration.

In Hungary, nearly all students (at least 98%) reported speaking Hungarian at home in both 1991 and 2001. In six of the remaining countries in 2001, most primary/elementary-school students – from 88 to 93 percent – reported always or almost always speaking the language of the test at home. For three of these countries (Greece, Slovenia, and Sweden) this represented virtually no change from 1991, but it did represent a significant decrease for the other three countries. In Iceland, New Zealand, and the United States, from 4 to 8 percent fewer students usually spoke the language of the test at home. Primarily, these students were speaking the test language only sometimes at home.

1 Elley, W. B. (1991). *How in the world do students read?* The Hague: International Association for the Evaluation of Educational Achievement.

Since the four countries with significant increases in reading achievement – Greece, Slovenia, Iceland, and Hungary – had most of their students (88 % or more) in one response category, always or almost always speaking the language of the test at home, it follows that students in that category would have higher achievement in 2001 than 1991. Similarly, Sweden's overall decline between 1991 and 2001 is reflected in the achievement decline for the 91 percent of students usually speaking the test language at home.

In Italy in 2001, 69 percent of the students reported speaking the language of test at home and 12 percent reported never or hardly ever doing so. However, this was about the same as in 1991, and there were no changes in average achievement in any category.

In Singapore, the pattern was very different. Singapore has four official languages (Malay, Mandarin Chinese, Tamil, and English[2]) – with Malay being the national language, and English the language of administration. Fundamental to Singapore's educational system is its bilingual policy, which ensures children learn both English and their mother tongue. Consistent with this policy, Singapore tested in English. That only 42 percent of the students reported always or almost always speaking the language of the test at home, however, did represent a significant increase of 14 percent compared to 1991. Across the categories for language spoken in the home, there were no changes in average achievement for Singaporean students.

2 Mullis, I.V.S., Martin, M.O., Kennedy, A.M., & Flaherty, C.L. (Eds.). (2002). *PIRLS 2001 encyclopedia: A reference guide to reading education in the countries participating in IEA's Progress in International Reading Literacy Study (PIRLS).* Chestnut Hill, MA: Boston College.

Exhibit 2.1: Trends in Frequency with Which Students Speak the Language of Test at Home

ISC RLS Trend 1991–2001

Countries	Always or Almost Always		Sometimes		Never or Hardly Ever	
	Percent of Students in 2001	1991 to 2001 Difference	Percent of Students in 2001	1991 to 2001 Difference	Percent of Students in 2001	1991 to 2001 Difference
Greece	92 (1.2)	-2 (1.7)	7 (1.1)	2 (1.3)	1 (0.4)	-1 (0.7)
Hungary	98 (0.3)	1 (0.5)	1 (0.2)	0 (0.3)	1 (0.2)	0 (0.4)
Iceland	93 (0.8)	-4 (0.8) ▼	5 (0.7)	3 (0.7) ▲	2 (0.3)	1 (0.4) ▲
Italy	69 (1.7)	-4 (2.8)	19 (1.4)	4 (2.0)	12 (0.9)	1 (1.7)
New Zealand	88 (1.4)	-4 (1.7) ▼	9 (1.1)	3 (1.4) ▲	3 (0.6)	1 (0.7)
Singapore	42 (1.8)	14 (2.2) ▲	45 (1.5)	-15 (1.9) ▼	13 (0.8)	0 (1.0)
Slovenia	88 (1.7)	0 (2.0)	8 (1.4)	-1 (1.6)	3 (0.8)	1 (0.9)
Sweden	91 (1.1)	0 (1.6)	7 (0.9)	1 (1.2)	3 (0.3)	-1 (0.7)
United States	89 (1.4)	-8 (1.5) ▼	8 (1.2)	6 (1.3) ▲	3 (0.5)	2 (0.5) ▲

SOURCE: Trends in IEA's Reading Literacy Study 1991–2001

Countries	Always or Almost Always		Sometimes		Never or Hardly Ever	
	Average Achievement in 2001	1991 to 2001 Difference	Average Achievement in 2001	1991 to 2001 Difference	Average Achievement in 2001	1991 to 2001 Difference
Greece	513 (5.6)	42 (7.1) ▲	456 (9.4)	39 (28.4)	~ ~	– –
Hungary	476 (3.9)	15 (5.5) ▲	~ ~	– –	~ ~	– –
Iceland	517 (3.3)	29 (3.6) ▲	473 (12.3)	– –	~ ~	– –
Italy	520 (4.4)	9 (6.9)	496 (7.9)	19 (11.7)	500 (7.7)	20 (15.1)
New Zealand	511 (4.9)	4 (6.3)	445 (16.7)	35 (19.7)	426 (20.9)	– –
Singapore	529 (8.4)	14 (9.7)	466 (7.4)	-5 (8.0)	440 (8.7)	-12 (9.9)
Slovenia	497 (3.9)	34 (5.0) ▲	466 (8.0)	41 (10.3) ▲	462 (15.4)	65 (18.7) ▲
Sweden	504 (3.7)	-17 (5.1) ▼	438 (9.1)	7 (18.7)	444 (10.7)	-22 (15.9)
United States	520 (6.0)	-2 (6.8)	452 (12.2)	-32 (14.1) ▼	443 (20.8)	– –

▲ 2001 significantly higher than 1991

▼ 2001 significantly lower than 1991

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available. A tilde (~) indicates insufficient data to report achievement.

Books and Daily Newspapers at Home

An important home environment factor associated with children's positive reading outcomes is having a variety of printed materials in the home, including books and newspapers. IEA's 1991 study found positive relationships between the number of books students reported at home and achievement, with Hungary and New Zealand among the countries with the highest relationship.[3] The relationship of achievement with newspapers in the home was much lower in all countries, and often not significant.

For the countries replicating the 1991 study, Exhibit 2.2 contains primary/elementary-students' reports about trends in the number of books in the home. Similar to the previous findings, in 2001 higher reading achievement was observed for students with more books in the home (more than 50). This also agrees with findings from PIRLS, IEA's newly-developed reading assessment at the fourth grade.[4] The number of books in the home is typically a very strong variable in IEA studies, not only for reading but also for mathematics and science. IEA's ongoing trend assessments in mathematics and science (TIMSS) also found that eighth-grade students from homes with more than 100 books had higher achievement than those from homes with fewer books.[5]

In 2001, for countries participating in the repeat of IEA's 1991 Reading Literacy Study, the percentages of students with more than 100 books in the home ranged from about one- to two-thirds (31 to 65%). For six of the countries, this represented a significant decrease (5 to 11%) from 1991 – Hungary, Iceland, Italy, Slovenia, Sweden, and the United States. New Zealand also had a decrease of 4 percent that was not statistically significant. In contrast, Greece and Singapore showed increases (6 to 7%).

In examining trends in achievement in relation to the different categories of responses, one would anticipate the overall trends to be reflected in each category, everything being equal. For example, Greece had a substantial increase in reading achievement overall (41 scale-score points) that, for the most part, is reflected in each category of books in the home (from 23 to 56 scale-score points). The other three countries with significant increases overall (Slovenia, Iceland, and Hungary) also showed relatively consistent increases

3 Elley, W.B. (Ed.). (1994). *The IEA study of reading literacy: Achievement and instruction in 32 school systems*. Oxford, England: Elsevier Science Ltd.

4 Mullis, I.V.S., Martin, M.O., Gonzalez, E.J., & Kennedy, A.M. (2003). *PIRLS 2001 international report: IEA's study of reading literacy achievement in primary schools in 35 countries*. Chestnut Hill, MA: Boston College.

5 Mullis, I.V.S., Martin, M.O., Gonzalez, E.J., Gregory, K.D., Garden, R.A., O'Connor, K.M., Chrostowski, S.J., & Smith, T.A. (2000). *TIMSS 1999 international mathematics report: Findings from IEA's repeat of the Third International Mathematics and Science Study at the eighth grade*. Chestnut Hill, MA: Boston College; Martin, M.O., Mullis, I.V.S., Gonzalez, E.J., Gregory, K.D., Smith, T.A., Chrostowski, S.J., Garden, R.A., & O'Connor, K.M. (2000). *TIMSS 1999 international science report: Findings from IEA's repeat of the Third International Mathematics and Science Study at the eighth grade*. Chestnut Hill, MA: Boston College.

Exhibit 2.2: Trends in Number of Books in the Home

ISC RLS Trend 1991–2001

Countries	More than 100 Books		51-100 Books		11-50 Books		0-10 Books	
	Percent of Students in 2001	1991 to 2001 Difference	Percent of Students in 2001	1991 to 2001 Difference	Percent of Students in 2001	1991 to 2001 Difference	Percent of Students in 2001	1991 to 2001 Difference
Greece	31 (2.1)	7 (2.5) ▲	27 (1.5)	5 (1.8) ▲	31 (1.7)	-2 (2.1)	11 (1.3)	-10 (1.9) ▼
Hungary	43 (1.6)	-6 (2.2) ▼	25 (0.7)	-2 (1.2)	20 (1.0)	3 (1.4)	12 (1.0)	5 (1.2) ▲
Iceland	58 (1.4)	-8 (1.6) ▼	26 (1.1)	5 (1.3) ▲	12 (0.8)	2 (0.9)	3 (0.6)	1 (0.6)
Italy	25 (1.5)	-5 (2.2) ▼	22 (0.9)	0 (1.6)	31 (1.6)	2 (2.2)	23 (1.4)	3 (2.0)
New Zealand	55 (2.5)	-4 (3.0)	22 (1.5)	3 (1.7)	15 (1.3)	2 (1.6)	8 (0.9)	-1 (1.2)
Singapore	42 (1.4)	6 (1.8) ▲	24 (0.9)	2 (1.1)	22 (1.0)	-3 (1.2) ▼	13 (0.9)	-6 (1.3) ▼
Slovenia	38 (1.9)	-5 (2.4) ▼	26 (1.6)	-1 (1.9)	24 (1.4)	2 (1.7)	12 (1.0)	4 (1.2) ▲
Sweden	65 (1.5)	-7 (1.9) ▼	19 (1.0)	3 (1.2) ▲	13 (0.8)	4 (1.1) ▲	3 (0.4)	1 (0.6)
United States	43 (2.2)	-11 (2.7) ▼	24 (1.2)	3 (1.4) ▲	22 (1.6)	5 (1.8) ▲	11 (1.3)	2 (1.5)

SOURCE: Trends in IEA's Reading Literacy Study 1991–2001

Countries	More than 100 Books		51-100 Books		11-50 Books		0-10 Books	
	Average Achievement in 2001	1991 to 2001 Difference	Average Achievement in 2001	1991 to 2001 Difference	Average Achievement in 2001	1991 to 2001 Difference	Average Achievement in 2001	1991 to 2001 Difference
Greece	519 (6.8)	28 (9.0) ▲	527 (7.7)	39 (9.2) ▲	495 (9.9)	23 (12.0)	473 (10.1)	56 (12.1) ▲
Hungary	507 (3.8)	22 (5.7) ▲	479 (4.3)	21 (6.7) ▲	456 (4.8)	22 (7.5) ▲	389 (6.9)	22 (10.6) ▲
Iceland	524 (3.4)	29 (3.7) ▲	513 (5.0)	27 (6.2) ▲	491 (6.8)	37 (8.8) ▲	437 (16.5)	– –
Italy	527 (7.5)	13 (9.9)	539 (6.2)	18 (8.7) ▲	509 (5.2)	-7 (10.6)	478 (6.5)	34 (9.7) ▲
New Zealand	525 (6.7)	1 (7.8)	499 (7.6)	5 (9.8)	489 (10.4)	26 (13.0) ▲	397 (12.5)	-5 (18.0)
Singapore	509 (9.1)	5 (10.2)	508 (7.6)	14 (8.5)	480 (7.6)	4 (8.1)	403 (7.0)	-26 (7.9) ▼
Slovenia	513 (4.5)	35 (6.0) ▲	498 (6.5)	36 (7.8) ▲	484 (6.9)	48 (8.2) ▲	444 (6.9)	46 (9.9) ▲
Sweden	509 (3.2)	-16 (5.1) ▼	493 (5.9)	-9 (8.4)	465 (8.7)	-5 (12.9)	422 (9.6)	– –
United States	537 (6.2)	0 (7.2)	512 (8.2)	-17 (9.0)	493 (7.7)	0 (8.8)	453 (7.1)	-10 (9.0)

▲ 2001 significantly higher than 1991

▼ 2001 significantly lower than 1991

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available. A tilde (~) indicates insufficient data to report achievement.

across the categories of different numbers of books in the home. The significant decline for Swedish students was for those with the most books in the home, but the pattern also was evidenced for other categories.

Exhibit 2.3 contains the trends for students' reports about having a daily newspaper at home. Similar to the results a decade ago, there was no clear-cut relationship across countries between reading achievement and having a daily newspaper in the home – despite higher achievement in Singapore, Slovenia, and Sweden. Further, the practice of taking a daily newspaper was on the decline in almost all countries.

Seven of the nine countries taking part in the repeat of IEA's 1991 Reading Literacy Study had a significant decrease in the percentages of primary/elementary-school students with a daily newspaper in the home. In 2001, the highest percentages of "Yes" responses were reported by Sweden (85 % with a 3% decline), Iceland (73% with a 6% decline), Singapore (70% with a 8% decline), the United States (67% with a 14% decline), and New Zealand (59% with a 10% decline). With decreases of 14 and 9 percentage points, respectively, Greece and Italy had less than one-third of their students with home access to a daily newspaper. There was essentially no change in Slovenia, with about half the students reporting a daily newspaper. Hungary, the exception to the pattern of declines in having a daily newspaper, showed a significant increase of 10 percentage points since 1991 – up to 41 percent.

Exhibit 2.3: Trends in Receiving a Daily Newspaper at Home

ISC RLS Trend 1991–2001

Countries	Yes		No	
	Percent of Students in 2001	1991 to 2001 Difference	Percent of Students in 2001	1991 to 2001 Difference
Greece	27 (1.5)	-14 (2.0) ▼	73 (1.5)	14 (2.0) ▲
Hungary	41 (1.4)	10 (1.8) ▲	59 (1.4)	-10 (1.8) ▼
Iceland	73 (1.5)	-6 (1.6) ▼	27 (1.5)	6 (1.6) ▲
Italy	32 (1.4)	-9 (2.0) ▼	68 (1.4)	9 (2.0) ▲
New Zealand	59 (2.3)	-10 (2.7) ▼	41 (2.3)	10 (2.7) ▲
Singapore	70 (0.9)	-8 (1.2) ▼	30 (0.9)	8 (1.2) ▲
Slovenia	49 (1.8)	1 (2.3)	51 (1.8)	-1 (2.3)
Sweden	85 (1.0)	-3 (1.2) ▼	15 (1.0)	3 (1.2) ▲
United States	67 (1.8)	-14 (2.0) ▼	33 (1.8)	14 (2.0) ▲

Countries	Yes		No	
	Average Achievement in 2001	1991 to 2001 Difference	Average Achievement in 2001	1991 to 2001 Difference
Greece	515 (7.2)	28 (9.2) ▲	506 (6.5)	50 (7.9) ▲
Hungary	468 (5.1)	17 (7.1) ▲	481 (4.1)	16 (6.0) ▲
Iceland	518 (4.2)	28 (4.4) ▲	503 (5.1)	29 (5.9) ▲
Italy	513 (5.3)	4 (7.6)	513 (5.0)	17 (8.1) ▲
New Zealand	497 (6.2)	-10 (7.7)	513 (6.5)	29 (9.2) ▲
Singapore	496 (7.8)	9 (8.7)	476 (8.8)	13 (9.4)
Slovenia	504 (4.7)	41 (5.8) ▲	484 (4.8)	26 (5.9) ▲
Sweden	503 (3.8)	-15 (5.6) ▼	469 (6.3)	-13 (10.4)
United States	516 (6.7)	-10 (7.4)	502 (7.9)	1 (8.9)

▲ 2001 significantly higher than 1991

▼ 2001 significantly lower than 1991

SOURCE: Trends in IEA's Reading Literacy Study 1991–2001

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

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Parents and Other People at Home Ask About Students' Reading

Parenting practices can influence literacy development in a number of ways, such as creating interactions around literacy activities and encouraging reading. The results, however, need to be interpreted with care, since students who receive the most attention at home may also be those who need it most – while the more competent readers may report fewer parental inquiries.

Trends in primary/elementary-school students' reports about how often their parents or other people at home ask about their reading are shown in Exhibit 2.4. Generally, there were no dramatic changes from 1991 to 2001 in the percentages of students in the various categories, or in the overall relationship with achievement. Overall improvements or declines in average reading achievement for the countries were reflected relatively uniformly across categories, with the highest achievement most often found for students reporting modest interaction (1 or 2 times a week).

Greek students reported the most daily interaction (66%), with virtually no change between 1991 and 2001. Much smaller percentages of children (from 16 to 31%) in the remaining 8 trend countries reported daily inquiries about their reading. Of these, the United States showed essentially no change; with 28 percent reporting daily interaction, 42 percent some degree of weekly interaction, and 30 percent never interacting about their reading with people at home. Countries showing trends toward more home interaction, in general, included New Zealand (from never to 3 or 4 times a week and daily) and Iceland (from never to 3 or 4 times a week). Countries showing decreases, in general, included Hungary (from 1 or 2 times a week to never), Italy (from daily to never), Singapore (weekly to never), and Slovenia (daily to 1 or 2 times a week). Interestingly, 8 percent fewer Swedish students reported being asked about their reading "1 or 2 times a week," but the increases split between the extremes of those reporting "nearly every day" and those reporting "never."

Exhibit 2.4: Trends in How Often Parents or Other People at Home Ask Students About What They Have Been Reading

ISC RLS Trend 1991–2001

Countries	Nearly Every Day		3 or 4 Times a Week		1 or 2 Times a Week		Never	
	Percent of Students in 2001	1991 to 2001 Difference	Percent of Students in 2001	1991 to 2001 Difference	Percent of Students in 2001	1991 to 2001 Difference	Percent of Students in 2001	1991 to 2001 Difference
Greece	66 (1.9)	-1 (2.4)	10 (1.2)	0 (1.3)	16 (1.5)	2 (1.7)	7 (0.9)	-1 (1.2)
Hungary	31 (1.2)	0 (1.6)	15 (0.7)	-1 (1.0)	31 (0.9)	-3 (1.4) ▼	23 (0.8)	4 (1.1) ▲
Iceland	18 (0.9)	0 (1.1)	14 (0.7)	4 (0.9) ▲	32 (1.2)	2 (1.4)	36 (1.3)	-6 (1.5) ▼
Italy	29 (1.6)	-5 (2.1) ▼	13 (1.0)	-2 (1.5)	30 (1.4)	2 (2.0)	28 (1.3)	5 (1.9) ▲
New Zealand	21 (1.8)	4 (2.0) ▲	14 (1.1)	3 (1.4) ▲	37 (2.3)	0 (2.6)	28 (1.7)	-8 (2.1) ▼
Singapore	19 (0.8)	0 (1.1)	12 (0.6)	-5 (0.8) ▼	30 (0.9)	-2 (1.1) ▼	39 (1.1)	7 (1.5) ▲
Slovenia	30 (1.5)	-7 (2.0) ▼	17 (1.3)	1 (1.5)	35 (1.6)	5 (2.0) ▲	18 (1.6)	2 (1.9)
Sweden	16 (0.9)	3 (1.2) ▲	9 (0.5)	0 (0.8)	37 (1.3)	-8 (1.8) ▼	38 (1.6)	4 (2.1) ▲
United States	28 (1.6)	-1 (1.9)	14 (1.6)	2 (1.7)	28 (0.8)	0 (1.0)	30 (1.6)	-1 (1.8)

SOURCE: Trends in IEA's Reading Literacy Study 1991–2001

Countries	Nearly Every Day		3 or 4 Times a Week		1 or 2 Times a Week		Never	
	Average Achievement in 2001	1991 to 2001 Difference	Average Achievement in 2001	1991 to 2001 Difference	Average Achievement in 2001	1991 to 2001 Difference	Average Achievement in 2001	1991 to 2001 Difference
Greece	510 (6.8)	40 (8.5) ▲	499 (10.6)	40 (13.7) ▲	504 (9.9)	34 (11.3) ▲	510 (14.6)	61 (18.4) ▲
Hungary	471 (4.1)	19 (6.6) ▲	467 (5.5)	13 (8.1)	484 (5.2)	17 (6.9) ▲	475 (5.5)	9 (8.2)
Iceland	491 (5.9)	24 (6.9) ▲	519 (7.1)	35 (9.0) ▲	528 (5.0)	29 (5.6) ▲	514 (4.6)	25 (5.2) ▲
Italy	517 (7.4)	14 (9.9)	507 (8.3)	16 (11.5)	521 (5.0)	7 (9.6)	503 (5.2)	10 (8.2)
New Zealand	471 (9.8)	-9 (12.2)	515 (10.0)	20 (14.4)	522 (8.8)	9 (10.2)	497 (8.0)	3 (9.5)
Singapore	488 (9.7)	6 (10.7)	468 (9.6)	-10 (10.5)	493 (8.6)	7 (9.5)	492 (7.8)	16 (8.8)
Slovenia	485 (4.5)	34 (6.4) ▲	487 (7.7)	36 (9.4) ▲	498 (5.4)	42 (6.9) ▲	506 (7.2)	16 (8.7)
Sweden	456 (5.9)	-12 (8.9)	495 (7.8)	-15 (11.1)	518 (4.6)	-8 (6.8)	496 (4.8)	-19 (7.1) ▼
United States	501 (8.2)	-5 (9.0)	514 (11.8)	-9 (12.8)	522 (6.5)	-16 (7.4) ▼	510 (6.8)	-13 (7.8)

▲ 2001 significantly higher than 1991

▼ 2001 significantly lower than 1991

( ) Standard errors appear in parentheses. Because results are rounded to the nearest whole number, some totals may appear inconsistent.

A dash (–) indicates data are not available. A tilde (~) indicates insufficient data to report achievement.