

Introduction

In today's information society, the ability to read is essential for maximizing success in the endeavors of daily life, continuing intellectual growth, and realizing personal potential. Similarly, a literate citizenry is vital to a nation's social growth and economic prosperity. To help countries make informed decisions about reading education, IEA's Progress in International Reading Literacy Study (PIRLS) provides internationally comparative data about students' reading achievement in primary school (the fourth grade in most participating countries). The fourth grade is an important transition point in children's development as readers, because most of them should have learned to read, and are now reading to learn.



The IEA (International Association for the Evaluation of Educational Achievement) is an independent international cooperative of national research institutions and governmental agencies with a permanent secretariat based in Amsterdam, the Netherlands. For the past 50 years, IEA has been conducting large-scale comparative studies of educational achievement to gain a deeper understanding of the effects of policies and practices within and across systems of education internationally.

What Is PIRLS?

PIRLS 2006 continues IEA's series of highly significant international studies in reading literacy. As an important event in its 50-year history of educational research, IEA marked the beginning of the 21st century by inaugurating PIRLS to monitor international trends in primary school reading achievement on a 5-year cycle. PIRLS 2001 was conducted in 35 countries around the world on the tenth anniversary of IEA's 1991 Reading Literacy Study.¹ This provided participants an opportunity to obtain 10-year change measures linking back to 1991² and to lay the foundation for measuring trends into the future.

All the countries, institutions, and agencies involved in PIRLS 2001 worked collaboratively to design and implement the most innovative and comprehensive measure of reading achievement possible within the constraints of a large-scale international assessment.³ As such, PIRLS 2001 was based on a newly developed framework, describing the interaction between two major reading purposes (literary and informative) and a range of four comprehension processes. The assessment itself was based on a variety of "authentic" texts taken from children's reading materials, and included a special PIRLS Reader printed in color. About half the questions asked students to write out their answers.

Conducted in 40 countries, including Belgium with 2 education systems and Canada with 5 provinces (45 participants in total), PIRLS 2006 continued the collaborative effort among participants to improve PIRLS' primary purpose of providing policy and instructionally relevant information about reading achievement in primary schools. Building on PIRLS 2001, every effort was made to use state-of-the-art methods in constructing the reading

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

2 Martin, M.O., Mullis I.V.S., Gonzalez, E.J., & Kennedy, A.M. (2003). *Trends in children's reading literacy achievement 1991–2001: IEA's repeat in nine countries of the 1991 Reading Literacy Study*. Chestnut Hill, MA: Boston College.

3 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.

assessment, and to collect a full array of contextual information about home and school environments for learning to read. Most notably, parents and caregivers in almost all countries provided information about students' early literacy activities and environments. In addition, to advance its mission of improving the teaching and learning of reading, PIRLS 2006 collected information about classrooms and schools via a full range of student, teacher, and principal questionnaires. This enables PIRLS 2006 to provide information about students' achievement in relation to the different types of curricula, instructional practices, and school environments found in countries around the world. The variation across the participating countries provides a unique opportunity to study different approaches to educational practice and how these can improve achievement.

In addition to this report, the *PIRLS 2006 Assessment Framework and Specifications*⁴ describes the conceptual framework and design of the study. The *PIRLS 2006 Encyclopedia: A Guide to Reading Education in the Forty PIRLS 2006 Countries*⁵ is intended to complement the achievement results by providing a sense of the educational settings in each country, including the national and regional contexts for reading instruction. The *PIRLS 2006 Technical Report*⁶ describes the methods and procedures used for instruments development, sampling, data collection, and analysis. The full set of PIRLS 2006 reports can be obtained from the TIMSS & PIRLS International Study Center (web: <http://isc.bc.edu>).

What Was the Nature of the PIRLS 2006 Test of Reading Comprehension?

As described in the *PIRLS 2006 Assessment Framework and Specifications*, purposes for reading and processes of comprehension are the foundation of the PIRLS 2006 assessment of reading comprehension. The two purposes for reading are: 1) For literary experience and 2) To acquire and use information. The four processes of comprehension are: 1) Focus on and retrieve explicitly stated information, 2) Make straightforward inferences, 3) Interpret and integrate ideas and information, and 4) Examine and evaluate content, language, and textual elements. The four processes were assessed within each of the two major purposes for reading.

4 Mullis, I.V.S., Kennedy, A.M., Martin, M.O., & Sainsbury, M. (2006). *PIRLS 2006 assessment framework and specifications* (2nd ed.). Chestnut Hill, MA: Boston College.

5 Kennedy, A.M., Mullis, I.V.S., Martin, M.O., & Trong, K.L. (Eds.). (2007). *PIRLS 2006 encyclopedia: A guide to reading education in the forty PIRLS 2006 countries*. Chestnut Hill, MA: Boston College.

6 Martin, M.O., Mullis, I.V.S., & Kennedy, A.M. (Eds.). (2007). *PIRLS 2006 technical report*. Chestnut Hill, MA: Boston College.



An important innovation in PIRLS 2006 is the ability to report the achievement results according to reading comprehension processes, in addition to reading purposes. In the *PIRLS 2001 International Report*, the achievement results were reported for reading comprehension overall and by literary and informational purposes. Research by several countries and by the TIMSS & PIRLS International Study Center indicated that the results also could be reported by comprehension process, especially if the total assessment was increased from 8 passages and item sets to 10 passages and item sets.^{7, 8}

In PIRLS 2006, the reading purposes and comprehension processes were assessed based on 10 passages, 5 for the literary purpose and 5 for the informational purpose. Altogether, the assessment consisted of 126 items (see Appendix A for details). Each passage was accompanied by approximately 12 questions (test items), with about half in the multiple-choice format and half in the constructed-response format, requiring students to write their own answers. Four of the 10 passages and item sets (2 literary and 2 informational) were retained from PIRLS 2001 to provide a foundation for measuring trends in reading achievement; the remaining 6 were developed specifically for the 2006 assessment. That is, PIRLS 2006 included three newly developed literary passages and item sets, and three newly developed informational passages and item sets.

Developing the instruments for the PIRLS 2006 assessment was a cooperative venture, involving the National Research Coordinators (NRCs) from the participating countries throughout the entire process. Identifying prospective passages began even before the first NRC meeting for PIRLS 2006, so that initial review could take place and a consensus be established about characteristics of desirable texts. Primarily, with the aim of motivating students as much as possible, there was agreement about searching for texts that would interest fourth-grade students in general, and, in particular, boys as well as girls. In PIRLS 2001, girls had significantly higher achievement than boys in every country so efforts were made to make the passages equally interesting to both genders. More than 100 texts were submitted, reviewed, and, mostly, discovered to not be suitable for PIRLS due to various concerns.

7 Bos, W., Lankes, E. M., Prenzel, M., Schwippert, K., Walther, G., & Valtin, R. (Hrsg.). (2003). *Ergebnisse aus IGLU: Schülerleistungen am Ende der vierten Jahrgangsstufe im internationalen Vergleich*. New York: Waxmann.

8 Mullis, I.V.S., Martin, M.O., Gonzalez, E.J. (2004). *PIRLS international achievement in the processes of reading comprehension: Results from PIRLS 2001 in 35 countries*. Chestnut Hill, MA : Boston College.

However, eventually the NRCs selected six literary and six informational text passages for field testing.

To develop the items based on the text passages identified for the field test, the TIMSS & PIRLS International Study Center conducted an item-writing workshop for NRCs and their colleagues. The items were drafted at the workshop, reviewed extensively by reading and measurement specialists, and produced in booklets for the field test, with extensive translation and layout verification along the way. Please see Appendix A for information about the translation and verification process. Participating countries field tested the items with representative samples of students, and all of the potential new items were reviewed by the PIRLS 2006 Reading Development Group of internationally recognized experts. On the basis of the field-test data and the recommendations of the PIRLS 2006 Reading Development Group, the NRCs selected three literary and three informational passages and the related item sets for inclusion in the PIRLS 2006 assessment.

In PIRLS 2006, the 10 passages and item sets were distributed across 13 test booklets, each consisting of two 40-minute sections, with each section containing a passage with its item set. Each student completed one test booklet. Eight of the passages were paired in different combinations throughout 12 of the booklets according to a plan that enabled linking the booklets. Appendix A contains further detail about the PIRLS 2006 design and testing time.

To present at least some of the assessment in a more natural, authentic setting, two passages (one literary and one informational) were presented in color in a magazine format with the questions in a separate booklet. A copy of this booklet, referred to as the PIRLS 2006 Reader, is found in the back pocket of this report. Appendix D contains the question/answer booklet for the reader, two other PIRLS 2006 passages and item sets (one literary and one informational) being released to the public, and the scoring guides for the released constructed-response items.

What Background Information Is Available About the Contexts for Students Learning to Read?

Primarily, fourth-grade students develop reading literacy skills, behaviors, and attitudes at home and in school. However, the experiences and instruction that students have at school and home often are affected by the community and the country in which students live and attend school. Cultural, social, and economic factors can all influence the success a country has in educating its children. Thus, PIRLS 2006 incorporated several approaches to collecting background information.

To provide information about the national and regional contexts for reading education, the *PIRLS 2006 Encyclopedia*,⁹ consisting of a chapter prepared by each country, provides an important resource for interpreting the achievement results. The encyclopedia provides a perspective on the structure and organization of the education system in each country, and describes the policies and reading curriculum pertaining to the educational level and grade in school of the students that were assessed (typically, the primary-school curriculum pertaining to students in the fourth year of schooling). In addition, each chapter describes teacher education and training, instructional resources and materials used in teaching reading, availability of specialists, and assessment practices. To collect some basic information, each country was also responsible for completing the online administration of the *PIRLS 2006 Reading Curriculum Questionnaire*.

The *PIRLS 2006 Learning to Read Survey* was completed by the parents or caregivers of the students who participated in the assessment. This questionnaire included questions about children's early literacy activities, parents' estimates of their children's early literacy skills, home resources supporting literacy, parents' attitudes and habits regarding reading, and parents' occupation.

Each student was asked to complete a background questionnaire. The *PIRLS 2006 Student Questionnaire* was the vehicle for collecting information about the students' reading behaviors and attitudes. Students also were asked about their classroom instruction. Each student's reading teacher was asked to

9 Kennedy, A.M., Mullis, I.V.S., Martin, M.O., & Trong, K. L. (2007). *PIRLS 2006 encyclopedia: A guide to reading education in the forty PIRLS 2006 countries*. Chestnut Hill, MA: Boston College.

complete the *PIRLS 2006 Teacher Questionnaire*. The questionnaire collected information about the classroom organization and instructional approaches used to teach reading, the resources used, and assessment strategies, as well as information about teachers' educational training. The *PIRLS 2006 School Questionnaire*, completed by the principal or school head, was designed to collect information about overall school policies and resources, as well as the role of the principal in the school.

Which Countries Participated in PIRLS 2006?

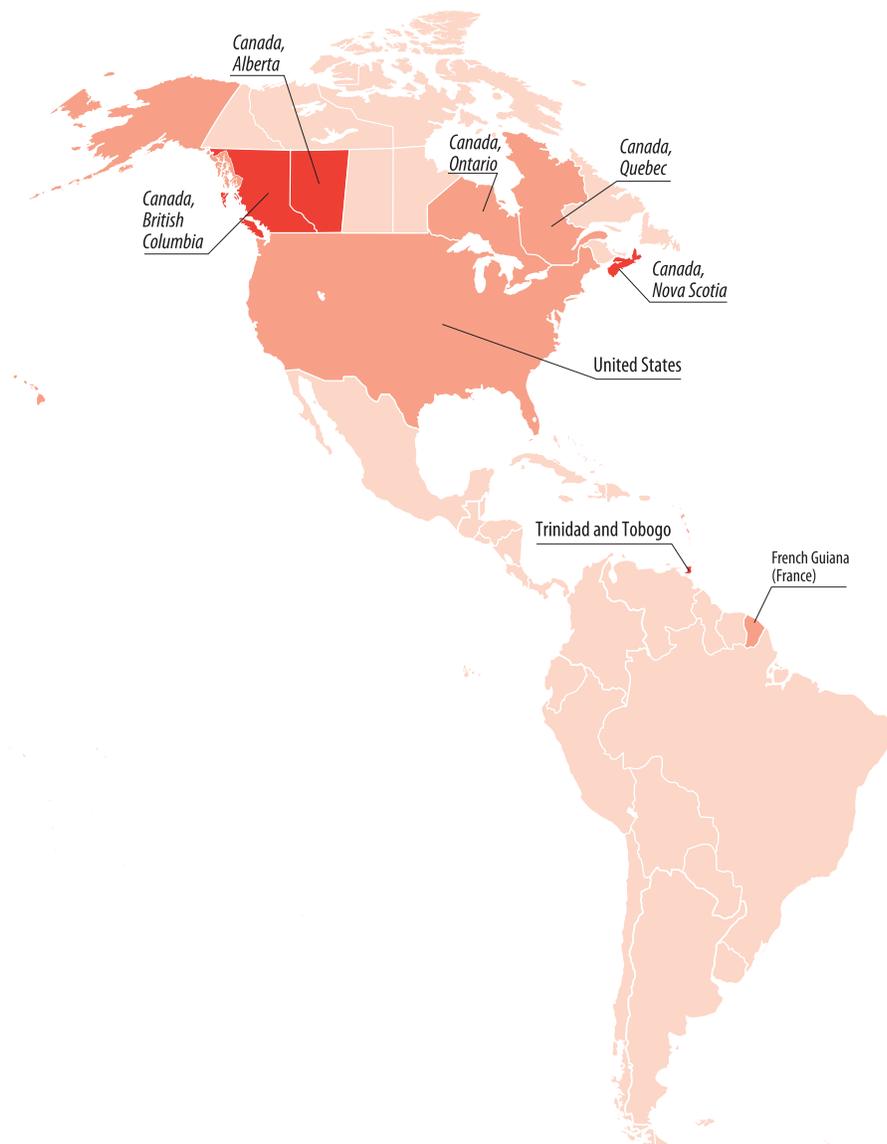
The decision to participate in an IEA study is coordinated through the IEA Secretariat in Amsterdam and made solely by each member country according to its own data needs and resources. Exhibit 1 shows the 40 countries that participated in PIRLS 2006. More specifically, as part of IEA's long history, some practices have become established across the decades. That is, with distinct education systems of their own, England and Scotland have always participated separately in IEA studies, as has Hong Kong, so in the report these entities are treated as countries. Traditionally, the two major geographic and cultural regions of Belgium, the French-speaking part and the Dutch-speaking part (Flanders), have separate education systems and participate separately. Canada currently participates in IEA as a country, however, education is primarily a provincial matter and several provinces were early members of IEA. For PIRLS 2006, the Canadian provinces worked with IEA procedurally and financially so that they could be reported separately but not collectively as a country, even though they represent 88 percent of the student population in Canada.

Of the participants in PIRLS 2006, Exhibit 1 shows that 26 countries and 2 provinces also participated in PIRLS 2001 (displayed in orange). For these participants, the report includes data about changes between the two assessments. The PIRLS community also was extremely pleased to welcome 13 new countries (including both separate education systems in Belgium) and 3 new provinces to the study (displayed in red). Altogether, there were 45 participants. (For a complete listing of the participants in PIRLS 2001 as well as those in PIRLS 2006, please see Appendix A.)

Exhibit 1 Countries Participating in PIRLS 2006

2006 and 2001

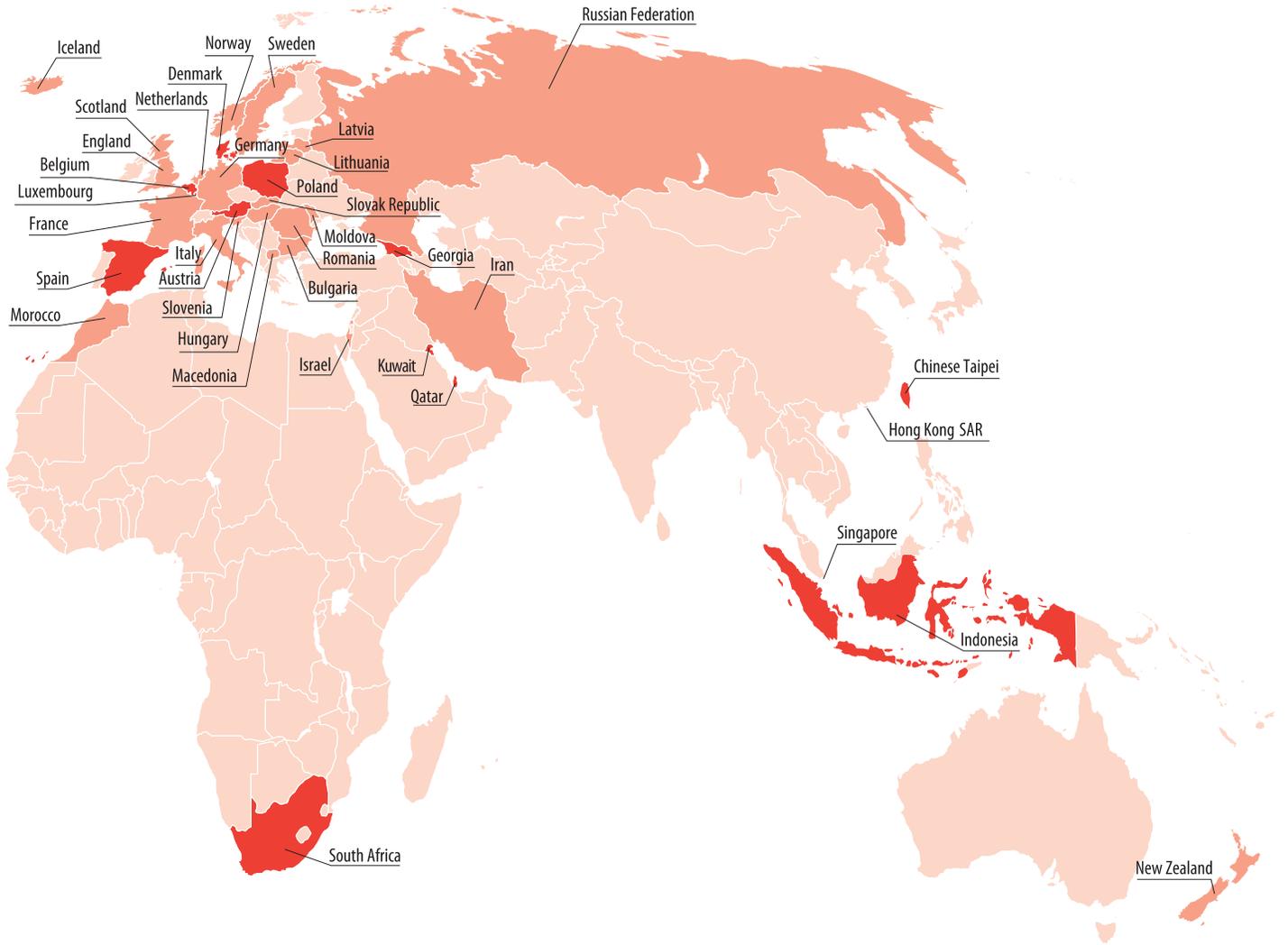
Bulgaria
 Canada, Ontario
 Canada, Quebec
 England
 France
 Germany
 Hong Kong SAR
 Hungary
 Iceland
 Iran, Islamic Rep. of
 Israel
 Italy
 Latvia
 Lithuania
 Macedonia, Rep. of
 Moldova, Rep. of
 Morocco
 Netherlands
 New Zealand
 Norway
 Romania
 Russian Federation
 Scotland
 Singapore
 Slovak Republic
 Slovenia
 Sweden
 United States



2006

Austria
 Belgium (Flemish)
 Belgium (French)
 Canada, Alberta
 Canada, British Columbia
 Canada, Nova Scotia
 Chinese Taipei
 Denmark
 Georgia
 Indonesia
 Kuwait
 Luxembourg
 Poland
 Qatar
 South Africa
 Spain
 Trinidad and Tobago

Exhibit 1 Countries Participating in PIRLS 2006 (Continued)



For the sake of comparability across participants, testing was conducted at the end of the school year. Thus, almost all of the countries tested in April through June on a Northern Hemisphere school schedule. The three countries on a Southern Hemisphere school schedule (New Zealand, Singapore, and South Africa) tested in October through December of 2005. It is important to note, however, that in PIRLS 2001 the Southern Hemisphere testing also was in October through December, but in calendar year 2001 (after the Northern Hemisphere testing instead of before it). Thus, for the two Southern Hemisphere countries that participated in both PIRLS 2001 and PIRLS 2006—New Zealand and Singapore—the changes in the report are over a 4-year period rather than a 5-year period.

PIRLS 2006 provides valuable comparative information across countries about students' reading achievement, reading curriculum, instructional practices, and school resources. However, it is important to consider the results in light of country-wide demographic and economic factors. Some selected demographic characteristics of the PIRLS 2006 countries and provinces are presented in Exhibit 2. As can be seen, the countries and education systems that participated in PIRLS 2006 vary widely in population size and geographic area. The participants also vary widely on indicators of health, such as life expectancy at birth and infant mortality rate. Most of the participants had a life expectancy of 75 to 81 years and a low infant mortality rate. However, several had a relatively lower life expectancy of 66 to 69 years and relatively high infant mortality rates, including Indonesia, Iran, Moldova, Morocco, and the Russian Federation. South Africa had a life expectancy of 46 years and the highest infant mortality rate.

The economic indicators in Exhibit 2, such as gross national income per capita, reveal great disparity in the economic resources available, and also that different policies exist about the percentage of funds that are spent on education. Economically, the PIRLS 2006 countries ranged from Luxembourg and Norway at the high end to Georgia, Indonesia, and Moldova at the low end. Although many of the PIRLS 2006 participants had 99 to 100 percent of their fourth-grade (or grade assessed) students in school, there were differences in enrollment rates. Finally, pupil-teacher ratios ranged from 10 to 12 for a number of participants to 28 in Morocco and 35 in South Africa.

Exhibit 2 Selected Characteristics of PIRLS 2006 Countries

PIRLS 2006
4th Grade

| Country Name | Population Size (in Millions) ¹ | Area of Country (1000 Square Kilometers) ² | Population Density (People per Square Kilometer) ³ | Urban Population (% of Total) ⁴ | Life Expectancy at Birth (Years) ⁵ | Infant Mortality Rate (per 1,000 Live Births) ⁶ |
|--|--|---|---|--|---|--|
| Austria | 8.1 | 84 | 98 | 68 | 79 | 5 |
| Belgium (French and Flemish) | 10.4 | 31 | 343 | 98 | 78 | 4 |
| Bulgaria | 7.8 | 111 | 71 | 68 | 72 | 12 |
| ¹⁵ Canada, Alberta | 3.4 | 662 | 5 | 81 | 80 | 6 |
| ¹⁵ Canada, British Columbia | 4.3 | 945 | 4 | 85 | 81 | 4 |
| ¹⁵ Canada, Nova Scotia | 0.9 | 55 | 17 | 56 | 79 | 5 |
| ¹⁵ Canada, Ontario | 12.5 | 1076 | 13 | 85 | 80 | 6 |
| ¹⁵ Canada, Quebec | 7.6 | 1542 | 6 | 80 | 79 | 5 |
| ¹⁷ Chinese Taipei | 22.8 | 4 | 633 | 79 | 79 | 5 |
| Denmark | 5.4 | 43 | 127 | 85 | 77 | 4 |
| ¹⁷ England | 50.0 | 130 | 380 | 90 | 79 | 5 |
| France | 59.8 | 552 | 109 | 76 | 79 | 4 |
| Georgia | 5.1 | 70 | 74 | 57 | 74 | 41 |
| ¹⁰ Germany | 82.5 | 357 | 237 | 88 | 78 | 4 |
| Hong Kong SAR | 6.8 | 1 | 6541 | 100 | 80 | 3 |
| Hungary | 10.1 | 93 | 110 | 65 | 73 | 8 |
| Iceland | 0.3 | 103 | 3 | 93 | 80 | 3 |
| Indonesia | 214.7 | 1905 | 119 | 44 | 67 | 31 |
| Iran, Islamic Rep. of | 66.4 | 1648 | 41 | 66 | 69 | 33 |
| Israel | 6.7 | 22 | 308 | 92 | 79 | 5 |
| ¹² Italy | 57.6 | 301 | 196 | 67 | 80 | 4 |
| Kuwait | 2.4 | 18 | 135 | 96 | 77 | 8 |
| Latvia | 2.3 | 65 | 37 | 60 | 71 | 10 |
| Lithuania | 3.5 | 65 | 55 | 69 | 72 | 8 |
| Luxembourg | 0.4 | 3 | 173 | 93 | 78 | 5 |
| Macedonia, Rep. of | 2.1 | 26 | 81 | 60 | 74 | 10 |
| Moldova, Rep. of | 4.2 | 34 | 129 | 42 | 67 | 26 |
| Morocco | 30.1 | 447 | 68 | 57 | 69 | 36 |
| ¹⁶ Netherlands | 16.2 | 42 | 479 | 90 | 79 | 5 |
| New Zealand | 4.0 | 271 | 15 | 86 | 79 | 5 |
| Norway | 4.6 | 324 | 15 | 76 | 79 | 3 |
| Poland | 38.2 | 313 | 125 | 63 | 75 | 6 |
| ¹³ Qatar | 0.8 | 11 | 72 | 93 | 75 | 11 |
| Romania | 21.7 | 238 | 95 | 56 | 70 | 18 |
| Russian Federation | 143.4 | 17075 | 9 | 73 | 66 | 16 |
| ¹⁷ Scotland | 5.1 | 78 | 66 | 81 | 77 | 5 |
| ¹⁴ Singapore | 4.3 | 1 | 6343 | 100 | 78 | 3 |
| Slovak Republic | 5.4 | 49 | 111 | 58 | 73 | 7 |
| ¹² Slovenia | 2.0 | 20 | 99 | 49 | 76 | 4 |
| South Africa | 45.8 | 1219 | 38 | 59 | 46 | 53 |
| Spain | 41.1 | 506 | 82 | 78 | 80 | 4 |
| Sweden | 9.0 | 450 | 22 | 83 | 80 | 3 |
| Trinidad and Tobago | 1.3 | 5 | 256 | 75 | 72 | 17 |
| United States | 299.0 | 9629 | 32 | 78 | 77 | 7 |

SOURCE: IEA Progress in International Reading Literacy Study (PIRLS) 2006

All data taken from the World Bank's World Development Indicators Online, retrieved April 19, 2007, unless otherwise noted.

Data are from most recent year available.

A dash (-) indicates that data are not available.

NOTE: Data provided for Belgium (French and Flemish) are for the entire country of Belgium.

1 Includes all residents regardless of legal status or citizenship except refugees not permanently settled in the country of asylum as they are generally considered to be part of their country of origin. Data for Qatar provided by NRC.

2 Area is the total surface area in square kilometers, comprising all land area, inland bodies of water, and some coastal water way.

3 Midyear population divided by land area in square kilometers. Data for Qatar provided by NRC.

4 Urban population is the midyear population of areas defined as urban in each country and reported to the United Nations. It is measured here as the percentage of the total population.

5 Number of years a newborn infant would live if prevailing patterns of mortality at its birth were to stay the same throughout its life.

6 Infant mortality rate is the number of infants who die before reaching one year of age, per 1,000 live births in a given year.

7 GNI per capita in U.S. dollars is converted using the World Bank Atlas method.

8 An international dollar has the same purchasing power over GNI as a U.S. dollar in the United States.



Exhibit 2 Selected Characteristics of PIRLS 2006 Countries (Continued)

PIRLS 2006
4th Grade

| Country Name | Gross National Income per Capita (in US Dollars) ⁷ | GNI per Capita (Purchasing Power Parity) ⁸ | Public Expenditure on Education (% of GDP) ⁹ | Net Enrollment Ratio in Primary Education (% of relevant group) ¹⁰ | Primary Pupil-Teacher Ratio ¹¹ |
|--|---|---|---|---|---|
| Austria | 26810 | 29740 | 6.0 | 99 | 13 |
| Belgium (French and Flemish) | 25760 | 28920 | 6.0 | 100 | 12 |
| Bulgaria | 2130 | 7540 | 4.0 | 90 | 17 |
| ¹⁵ Canada, Alberta | 38628 | – | 5.0 | 100 | 17 |
| ¹⁵ Canada, British Columbia | 41690 | – | 6.0 | 100 | 18 |
| ¹⁵ Canada, Nova Scotia | 35518 | – | 7.0 | 100 | 13 |
| ¹⁵ Canada, Ontario | 42812 | 35534 | 5.0 | 100 | 17 |
| ¹⁵ Canada, Quebec | 29856 | 28940 | 8.0 | 100 | 15 |
| ¹⁷ Chinese Taipei | 13970 | 14030 | 4.0 | 99 | 18 |
| Denmark | 33570 | 31050 | 9.0 | 100 | 10 |
| ¹⁷ England | – | – | 6.0 | 100 | 22 |
| France | 24730 | 27640 | 6.0 | 100 | 19 |
| Georgia | 770 | 2610 | 2.0 | 89 | 14 |
| ¹⁰ Germany | 25270 | 27610 | 5.0 | 100 | 14 |
| Hong Kong SAR | 25860 | 28680 | 4.0 | 98 | 20 |
| Hungary | 6350 | 13840 | 5.0 | 91 | 10 |
| Iceland | 30910 | 30570 | 6.0 | 100 | 11 |
| Indonesia | 810 | 3210 | 1.0 | 92 | 21 |
| Iran, Islamic Rep. of | 2010 | 7000 | 5.0 | 87 | 24 |
| Israel | 16240 | 19440 | 7.0 | 100 | 12 |
| ¹² Italy | 21570 | 26830 | 5.0 | 99 | 11 |
| Kuwait | 17960 | 19480 | 8.0 | 83 | 13 |
| Latvia | 4400 | 10210 | 6.0 | 88 | 14 |
| Lithuania | 4500 | 11390 | 6.0 | 94 | 16 |
| Luxembourg | 45740 | 55500 | 4.0 | 96 | 12 |
| Macedonia, Rep. of | 1980 | 6750 | 4.0 | 92 | 21 |
| Moldova, Rep. of | 590 | 1760 | 5.0 | 79 | 19 |
| Morocco | 1310 | 3940 | 7.0 | 90 | 28 |
| ¹⁶ Netherlands | 26230 | 28560 | 5.0 | 99 | 14 |
| New Zealand | 15530 | 21350 | 7.0 | 100 | 18 |
| Norway | 43400 | 37910 | 7.0 | 100 | 10 |
| Poland | 5280 | 11210 | 6.0 | 98 | 11 |
| ¹³ Qatar | – | 29607 | 4.0 | 95 | 12 |
| Romania | 2260 | 7140 | 3.0 | 88 | 17 |
| Russian Federation | 2610 | 8950 | 3.0 | 99 | 17 |
| ¹⁷ Scotland | – | – | 6.0 | 100 | 16 |
| ¹⁴ Singapore | 21230 | 24180 | 4.0 | 96 | 24 |
| Slovak Republic | 4940 | 13440 | 4.0 | 87 | 19 |
| ¹² Slovenia | 11920 | 19100 | 6.0 | 100 | 13 |
| South Africa | 2750 | 10130 | 5.0 | 89 | 35 |
| Spain | 17040 | 22150 | 4.0 | 100 | 14 |
| Sweden | 28910 | 26710 | 7.0 | 100 | 12 |
| Trinidad and Tobago | 7790 | 10390 | 4.0 | 91 | 19 |
| United States | 37870 | 37750 | 6.0 | 93 | 15 |

SOURCE: IEA Progress in International Reading Literacy Study (PIRLS) 2006

- 9 Current and capital public expenditure on primary, secondary, and tertiary education expressed as a percentage of total government expenditure.
- 10 Ratio of children of official school age who are enrolled in school to the population of the corresponding official school age based on the national education system. Based on the International Standard Classification of Education 1997. Data for Austria and Germany provided by NRC.
- 11 Primary pupil–teacher ratio is the number of pupils enrolled in primary school divided by the number of primary school teachers (regardless of their assignment).
- 12 Public Expenditure on Education taken from World Bank's 2006 World Development Indicators, p. 84.
- 13 GNI Per Capita taken from World Bank's 2007 World Development Indicators database (PPP data revised), p. 1.

- 14 Public Expenditure on Education taken from Ministry of Education's Education Statistics Digest 2004 (p. xi); Primary Pupil–Teacher Ratio taken from Ministry of Education's, Statistics Digest 2006 (p. ix).
- 15 Population Size, Area of Country, Urban Population, Life Expectancy at Birth, and Infant Mortality Rate provided by Statistics Canada. All other information provided by provincial Ministries of Education. Please note that British Columbia, Nova Scotia, Ontario, and Quebec have provided Gross Domestic Product data in place of Gross National Income, and data for British Columbia, Nova Scotia, and Ontario (GNI per capita only) are in Canadian dollars.
- 16 Primary Pupil–Teacher Ratio provided by National Research Coordinator.
- 17 All data provided by National Research Coordinator.



Which Students Were Tested for PIRLS 2006?

Exhibit 3 contains information about the grade tested in each country, together with information about the age at which students begin school and promotion policies. The last column shows the average age of the students assessed. Because PIRLS studies the effectiveness of curriculum and instruction on students' learning, it is designed to assess reading achievement at the same point in schooling across countries. In particular, the target grade should be the grade that represents 4 years of schooling, counting from the first year of ISCED Level 1. ISCED stands for the International Standard Classification of Education developed by the UNESCO Institute for Statistics.¹⁰ Level 1 corresponds to primary education or the first stage of basic education. The first year of Level 1 should mark the beginning of "systematic apprenticeship of reading, writing and mathematics". However, IEA has a policy that children should be at least 9 years old before being asked to participate in a paper-and-pencil assessment such as PIRLS. Thus, as a policy, PIRLS also tries to ensure that, at the time of testing, students do not fall under the minimum average age of 9.5 years old.

Exhibit 3 reveals that, with few exceptions, the grade tested in each country represented the fourth year of formal schooling. Thus, solely for convenience, the report usually refers to the grade tested as the fourth grade. In addition to the information listed in Exhibit 3, Iceland and Norway assessed smaller samples of students in the fifth grade. Selected information about these students is provided in Appendix F.

Exhibit 3 also shows that countries have different policies and practices about the age of entry to primary school. To provide additional information about actual practices, parents were asked at what age their child started school, and, considering issues such as immigration, there was agreement with the country reports (see Chapter 5). More than half of the PIRLS 2006 participants reported that policy and actual practice was for children to begin school at age 6. Depending on such aspects as whether or not the policy is according to calendar year, this would make students assessed at the end of their fourth year of schooling approximately 10.5 years old, and this was

10 UNESCO. (1997). *Manual for international standard classification of education*.

the case for most countries. However, in England, New Zealand, Scotland, and Trinidad and Tobago children begin school at age 5. Although these countries assessed students in the fifth grade according to the PIRLS policy, their students were still among the youngest (9.9 to 10.3 years old).

In most of the Eastern European countries as well as Sweden and Denmark, as a matter of policy and, especially, practice, children begin school at age 7, and students in these countries were among the oldest (10.6 to 11.0). Finally, because of challenges presented by multiple native languages and languages of instruction in South Africa and in Luxembourg, these two countries tested the fifth grade even though it meant students were older. In an attempt to conduct the assessment in each student's language of instruction, South Africa tested in 11 different languages. In Luxembourg, the assessment was conducted in German, which is the language of reading instruction, but usually is either the student's second or a foreign language. Please see Exhibits 3.11 and A.3 for more information about the languages spoken in the home, the languages of instruction, and the languages of testing. Also, for each participant, the *PIRLS 2006 Encyclopedia* describes the languages spoken, and the languages of instruction.

Policies on promotion and retention also can affect how old students are when they reach a particular grade. Promotion in primary schools was automatic for approximately half of the PIRLS 2006 countries, but in the others, promotion depended on academic achievement. Because the lower achievers are the most likely to be retained and, consequently, be older for their grade, in these countries, the older students often have lower achievement.

Because of the many policies and practices involved, the interaction between grade and age in school can be extremely complicated. The variations in policies and practices across the countries resulted in a range in the average age of students assessed. Although students averaged between 10 and 11 years old in most of the countries, because grade and age are fundamental factors in considering the achievement results, this information is reproduced in conjunction with the achievement results in Exhibit 1.1.

Exhibit 3 Information about the Students Tested for PIRLS 2006

PIRLS 2006
4th Grade

| Country Name | Country's Name for Grade Tested | Policy on Age of Entry to Primary School | Practice on Age of Entry to Primary School |
|--------------------------|--|---|--|
| Austria | Grade 4 | 6 | 6 |
| Belgium (Flemish) | Grade 4 | 6 | 6 |
| Belgium (French) | Grade 4 | 6 | 6 |
| Bulgaria | Grade 4 | 7 | 6 or 7 |
| Canada, Alberta | Grade 4 | 6 | 5 |
| Canada, British Columbia | Grade 4 | 5 | 5 |
| Canada, Nova Scotia | Grade 4 | 5 | 5 |
| Canada, Ontario | Grade 4 | 6 | Between 5 and 6 |
| Canada, Quebec | Second year of elementary cycle 2 | 6 | 6 |
| Chinese Taipei | Grade 4 | 6 | Between 6 and 7 |
| Denmark | Grade 4 or 4th form | 7 | 7 |
| England | Year 5 (Y5) | 5 | Between 4 and 5 |
| France | CM1 = Mean Course 1st year, or Second year of the 3rd Cycle – (Deepenings Cycle) | 6 | 6 |
| Georgia | Grade 4 | 6.5 | 6.5 |
| Germany | Grade 4 | 6 | 6 |
| Hong Kong SAR | Primary 4 | 6 | 6 |
| Hungary | Grade 4 | Between 6 and 8 | 7 |
| Iceland | Grade 4 | 6 | 6 |
| Indonesia | Grade 4 | 7 | 6 |
| Iran, Islamic Rep. of | Grade 4 | 6 | 6 |
| Israel | Grade 4 | 6 | 6 |
| Italy | Primary school - fourth class | 5 | 6 |
| Kuwait | Grade 4 | 6 | 6 |
| Latvia | Grade 4 | 7 | 7 |
| Lithuania | Grade 4 | 6 | 7 |
| Luxembourg | 5th year of primary studies | 6 | 6 |
| Macedonia, Rep. of | Grade 4 | Between 6 and 7 | Between 6 and 7 |
| Moldova, Rep. of | Grade 4 | 6 | Between 6 and 7 |
| Morocco | – | – | – |
| Netherlands | Group 6 | 6 | 6 |
| New Zealand | Year 5 | 6 | Continuous entry into school; children begin on or soon after 5th birthday |
| Norway | Grade 4 | 6 | 6 |
| Poland | Grade 3 of primary school | 6 | 6 |
| Qatar | Grade 4 | 6 | 6 |
| Romania | Grade 4 | 7 | Between 6 and 7 |
| Russian Federation | Grade 4 | Between 6.5 and 7 | 7 |
| Scotland | Primary 5 / P5 | 5 | Between 4.5 and 5.5 |
| Singapore | Primary 4 | 6 | 6 |
| Slovak Republic | Grade 4 | 6 | 6 |
| Slovenia | Grade 4 of 9-year elementary school; Grade 3 of 8-year elementary school | 6 for 9-year elementary school; 7 for 8-year elementary school | 6 for 9-year elementary school; 7 for 8-year elementary school |
| South Africa | Grade 5 | Year students turn 7 | 6 |
| Spain | Grade 4 | 6 | 6 |
| Sweden | Grade 4 | 7 | 7 |
| Trinidad and Tobago | Standard Three (3) | 5 | 5 |
| United States | Grade 4 | Varies by state; typically 6 | 6 |

SOURCE: IEA Progress in International Reading Literacy Study (PIRLS) 2006

Data provided by National Research Coordinators.
A dash (–) indicates data are not available.



| Exhibit 3 Information about the Students Tested for PIRLS 2006 (Continued) | | PIRLS 2006 4th Grade |
|--|---|--------------------------------|
| Country Name | Policy on Promotion / Retention | Average Age at Time of Testing |
| Austria | Depends on results of teacher assessments throughout the year | 10.3 |
| Belgium (Flemish) | Automatic, though students may decide to repeat a grade | 10.0 |
| Belgium (French) | Student may not be retained in the same grade more than twice | 9.9 |
| Bulgaria | Automatic | 10.9 |
| Canada, Alberta | Varies by school board | 9.9 |
| Canada, British Columbia | Automatic for grades 1–4; Other grades are decided by teacher, principal, and parents | 9.8 |
| Canada, Nova Scotia | Varies by school board | 10.0 |
| Canada, Ontario | Varies by school board | 9.8 |
| Canada, Quebec | Automatic for most students | 10.1 |
| Chinese Taipei | Automatic | 10.1 |
| Denmark | Automatic | 10.9 |
| England | Automatic for most students | 10.3 |
| France | Students must meet competencies, as decided by teacher | 10.0 |
| Georgia | Automatic | 10.1 |
| Germany | Varies by federal state | 10.5 |
| Hong Kong SAR | Automatic | 10.0 |
| Hungary | Automatic in grades 1–3; Dependent on academic progress in grades 4–8 | 10.7 |
| Iceland | Automatic | 9.8 |
| Indonesia | None | 10.4 |
| Iran, Islamic Rep. of | Must pass exam for each grade | 10.2 |
| Israel | Automatic for most students | 10.1 |
| Italy | Essentially automatic, though students must make satisfactory progress | 9.7 |
| Kuwait | Students must pass school-developed tests at each grade | 9.8 |
| Latvia | Depends on satisfactory performance in final assessments, as well recommendations by teacher and parents | 11.0 |
| Lithuania | Depends on academic progress, and is discussed with parents | 10.7 |
| Luxembourg | Depends on academic performance; Students can be retained by teachers if results are unsatisfactory in 2 of 3 main subjects (German, French, Mathematics) | 11.4 |
| Macedonia, Rep. of | Automatic for grades 1–4; Dependent on academic progress for grades 5–8 | 10.6 |
| Moldova, Rep. of | Automatic | 10.9 |
| Morocco | – | 10.8 |
| Netherlands | Automatic for most students | 10.3 |
| New Zealand | Normally automatic, subject to parent/principal decisions | 10.0 |
| Norway | Automatic | 9.8 |
| Poland | Automatic for the preparatory grade; Other grades are decided by teaching staff, though retention in grades 1–3 is rare | 9.9 |
| Qatar | Students must pass Arabic exam each year | 9.8 |
| Romania | Dependent on academic progress | 10.9 |
| Russian Federation | Dependent on academic progress | 10.8 |
| Scotland | Automatic for most students | 9.9 |
| Singapore | Automatic for grades 1–3; Dependent on academic progress for grades 4–6 | 10.4 |
| Slovak Republic | Dependent on academic progress; students can repeat the same grade only once | 10.4 |
| Slovenia | None | 9.9 |
| South Africa | Students can repeat a grade once per phase, after which promotion is automatic | 11.9 |
| Spain | Dependent on achievement of basic competencies; students in grades 1–6 can repeat a grade only once | 9.9 |
| Sweden | Automatic | 10.9 |
| Trinidad and Tobago | Dependent on academic progress | 10.1 |
| United States | Varies by state | 10.1 |

SOURCE: IEA Progress in International Reading Literacy Study (PIRLS) 2006

The student sampling for PIRLS 2006 was conducted with careful attention to quality and comparability. Staff from Statistics Canada worked with the participants on all phases of the sampling activities. The Statistics Canada sampling experts provided training and, in conjunction with the PIRLS 2006 sampling referee (Keith Rust, Westat, Inc.), reviewed national sampling plans, sampling data, sampling frames, and sample selections. The sampling documentation was used by the TIMSS & PIRLS International Study Center to evaluate the quality of the samples. As presented in the “Sample Implementation and Participation Rates” section of Appendix A, country coverage was typically good, with most countries sampling about 150 schools and approximately 4,000 students (see Exhibits A.4 to A.6). The participation rates were generally high (see Exhibit A.7), but in a few cases the PIRLS 2006 sampling guidelines were not met, and there are annotations to this effect in Exhibit 1.1 and subsequent tables.

PIRLS made every effort to attend to the quality and comparability of the data through careful planning and documentation, cooperation among participating countries, standardized procedures, and rigorous attention to quality control throughout. For example, an extensive series of verification checks were conducted to ensure the comparability of the test translations, and detailed documentation was required to satisfy adherence to the sampling standards. Appendix A contains further descriptions of the procedures used, and more detailed information is provided in the *PIRLS 2006 Technical Report*. Appendix G describes and lists the organizations and individuals responsible for implementing PIRLS 2006.



This report benefited from extensive reviews by National Research Coordinators and their staff, and by members of IEA’s Publications and Editorial Committee: David F. Robitaille (Chair), Robert A. Garden, and Nancy Law.

