

PIRLS 2011

Canada in Context

Canadian Results from the Progress in
International Reading Literacy Study

A D E A A
G O E E B C N L H A
C H F I K M B L H A
N A I K O L H A



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Council of
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of Education,
Canada

Conseil des
ministres
de l'éducation
(Canada)

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Canadian Results from the Progress in International Reading Literacy Study

Developed by

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* In this report, “ministry” includes “department,” and “jurisdictions” includes participating “provinces” and “territories.”

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INTRODUCTION

What is PIRLS?

The Progress in International Reading Literacy Study (PIRLS) is an international assessment that measures trends in reading achievement of Grade 4 students, as well as policies and practices related to literacy. The study is administered every five years and is carried out by the International Association for the Evaluation of Educational Achievement, an independent cooperative of research institutions and governmental agencies. IEA was founded in 1959, with a Secretariat based in Amsterdam (the Netherlands), to conduct large-scale comparative studies on the effects of educational policies and practices around the world. IEA's membership has now grown to over 60 countries.

PIRLS is one of the regular research studies of cross-national achievement conducted by IEA, and it relies on collaboration among the research centres responsible for data collection in each country. It is overseen by IEA's TIMSS & PIRLS International Study Center, located at Boston College. PIRLS provides participating countries with unique information on how well their students can read after four years of elementary school and places this information in an internationally comparative context. Grade 4 was chosen because it represents an important transition point in students' development, the point at which students have already learned how to read and are now using reading to learn.¹ The student mean age is at least 9.5 years at the time of assessment. In addition to data on reading achievement, PIRLS also collects a significant range of contextual information about home and school supports for literacy via the student, home, teacher, and school questionnaires. The data from these questionnaires enable PIRLS to relate students' achievement to various types of curricula, instructional practices, and school environments. Since educational systems vary widely around the world, the study of their variations provides a unique opportunity to gain a deeper understanding of the effects of different policies and practices. The results obtained by PIRLS are used to improve teaching and learning methods in reading in many countries.

The first PIRLS assessment took place in 2001, with 35 countries participating. It was based on a new framework developed as a collaborative effort by all the countries, provinces/states, institutions, and agencies involved in the 2001 administration, including Ontario and Quebec. As previously mentioned, PIRLS is carried out on a five-year cycle, so the second assessment was administered in 2006, when the number of participants grew to 40 countries. Canada was represented by five provinces: British Columbia, Alberta, Ontario, Quebec, and Nova Scotia. The third PIRLS assessment took place in 2011, with the participation of 45 countries and nine Canadian provinces: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick French, Nova Scotia, and Newfoundland and Labrador. The countries and provinces that participated in all three assessments (2001, 2006, and 2011) are now able to identify trends in their students' performance by

¹ In 2011, the PIRLS assessment was extended to levels below and above Grade 4 to meet the needs of a broader range of countries. Forty-five countries, including Canada, assessed only Grade 4 students.

comparing the results across 10 years. The present document reports PIRLS 2011 results for Canadian provinces and for Canada overall, as compared to other countries.

PIRLS 2011 focused on three aspects of reading literacy:

- the purposes of reading (i.e., reading for literary experience and reading to acquire and use information);
- the processes of comprehension (i.e., focusing and retrieving explicitly stated information; making straightforward inferences; interpreting and integrating ideas and information; and examining and evaluating content, language, and textual elements); and
- behaviours and attitudes toward reading.

During the test, students were asked to answer a number of multiple-choice and constructed-response questions in two 40-minute sessions and then complete a 30-minute questionnaire about personal reading habits. Parents, schools, and teachers were also asked to complete questionnaires about the reading experiences young children have at home and at school. The details of the 2011 test are described in the General Design of the Assessment section.

In Canada, the results from PIRLS are used for research and policy purposes only. They are not included in a student's academic record and are valid only at the national and provincial levels. No results are attributed to individual students, schools, or school boards by CMEC, although individual provinces may elect to release results and information differently.

Participation Levels in Canada

Since 2001, IEA has established practices for participation in PIRLS. Each country decides on its participation status individually, based on the data needs and resources available, and the decision is coordinated through the IEA Secretariat in Amsterdam. In total, 45 countries participated in PIRLS 2011 at the Grade 4 level (see Appendix I for a complete list of participants). Depending on their economic capacity and data needs, some jurisdictions, states, and geographical or cultural regions of a country may choose to participate in PIRLS at a benchmarking level. There were nine benchmarking participants in the 2011 assessment. Benchmarking participants can be defined as entities with distinct education systems of their own and representative samples of students, allowing them to be treated as separate countries. Thus, they follow the same procedures and meet the same standards as those participating at the country level; their results are reported separately in the international PIRLS report.

As mentioned in the previous section, nine Canadian jurisdictions participated in PIRLS 2011: British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick French, Nova Scotia,

and Newfoundland and Labrador. There were three levels of participation in Canada, as shown in Figure 1 below:

- *Benchmarking level.* Participation at the benchmarking level gave provinces an opportunity to evaluate their programs in an international context and to compare the performance of their students with that of all other participating countries. The results of the benchmarking participants are included in the PIRLS 2011 International Report. Three Canadian provinces participated at the benchmarking level: Alberta, Ontario, and Quebec.
- *Oversampling level.* Oversampling can be defined as the selection of a greater number of respondents in a subgroup than the relative size in the population would require. This technique provides reliable estimates, allowing an analysis of each subgroup separately. Oversampling allows Canadian jurisdictions to be compared to each other and to other international participants; these results are not included in the international PIRLS 2011 report but are provided in this Canadian report. Four jurisdictions participated at the oversampling level: British Columbia, New Brunswick French, Nova Scotia, and Newfoundland and Labrador.
- *Canadian level.* The sample size of the jurisdictions participating at this level was not sufficient to report reliable provincial results, so the data could only be reported collectively, as part of the Canadian average. Two provinces participated at the Canadian level: Saskatchewan and Manitoba.

Figure 1 PIRLS 2011 — Canadian jurisdictions by participation level



In this report, the results will be presented:

- individually, for provinces participating at the benchmarking and oversampling levels (seven provinces in total); and
- collectively, for Canada as a whole (results from nine provinces to be aggregated at the Canadian level).

Why Did Canada Participate in PIRLS?

The ability to read is essential to the cultural, political, social, and economic growth of a society (UNESCO, 2006). Canada's future prosperity depends heavily on reading literacy, which is the key to all areas of learning and unlocks a wide range of possibilities for personal development. Therefore, it would appear to be very important to have easily accessible information about students' achievement in reading and to measure the success of provincial/territorial and pan-Canadian literacy initiatives for children in the early years.

Although Canadian students are among the most proficient readers in the world (OECD, 2010a; IEA, 2006), there remains a significant proportion of youth who do not possess the necessary knowledge and skills to adequately benefit from educational opportunities. Indeed, according to the 2009 Programme for International Student Assessment (PISA), almost 10 per cent of Canada's 15-year-old students do not achieve the expected proficiency level in reading (level 2, see Knighton, Brochu, & Gluszynsky, 2010). Results of the 2010 Pan-Canadian Assessment Program (PCAP) show that the reading performance of Grade 8 students (Secondary II in Quebec) enrolled in French schools decreased significantly from 2007 to 2010 (CMEC, 2011). In this context, it is of the utmost importance to be able to identify those areas in which students encounter difficulties *as soon as possible*, so as to enable Canadian educators to intervene early. If Canada is to remain among the most literate countries in the world, several questions need to be answered: What are the home, school, and classroom factors that impact reading in the early years of schooling? Who are the students at the lowest levels of reading literacy? Are there any early literacy activities that can help young students prepare for learning at the secondary and postsecondary levels? The data collected by PIRLS may help answer these questions and provide policy-makers, researchers, and practitioners with information that could help determine and remediate any structures limiting children's reading acquisition (Schwippert & Lenkeit, 2012).

It is important to note that PIRLS is the only international program that assesses reading achievement of Canadian students in the early years of education. There have been several early elementary assessments in reading at the provincial level in Canada, but there is currently no other systematic large-scale assessment offering international comparisons. Thus, PIRLS represents a unique means for Canadian provinces to obtain data on reading achievement of Grade 4 students and compare them against student achievement in other provinces and 45 countries. Because they are administered on a

five-year cycle, PIRLS assessments allow early literacy levels to be tracked over time. Thus, Ontario and Quebec, the two provinces that have been participating in PIRLS since 2001, will be able to monitor their changes in reading over the past 10 years. Alberta, British Columbia, and Nova Scotia, which joined the PIRLS initiative in 2006, will be able to track their reading achievement over the past five years. As for the other participating provinces, and for Canada overall, 2011 will constitute their baseline year.

With the majority of jurisdictions in Canada participating in PIRLS, CMEC will be able to publish pan-Canadian indicators of early literacy for elementary students. This will allow Canadian jurisdictions not only to evaluate the changes implemented in their education systems, but to consider them in an international context as well. Indeed, a much better sense of how effectively Canada's education systems are working can be gained by putting the results into an international context than by studying them independently of comparable data from other countries (Porter & Gamoran, 2002).

Considering the significant public resources invested in elementary education by Canadian provinces and territories, the results obtained by PIRLS should help channel spending to those areas of early education where it is most needed.

Conceptual Framework: Assessing Reading Literacy in PIRLS 2011

Definition of Reading Literacy

To convey a broad notion of what the ability to read means, PIRLS joins two terms: *reading* and *literacy*. Combining the terms connects the ability to reflect on what is read with the ability to use reading as a tool for attaining individual and societal goals (Mullis, Martin, Kennedy, Trong, & Sainsbury, 2009). The term *reading literacy* has been employed by IEA since its 1991 Reading Literacy Study (Elley, 1992, 1994; Wolf, 1995), which served as a basis for establishing the assessment framework used by PIRLS. The framework has been regularly updated and improved since that time, as reflected in the subsequent cycles of the PIRLS assessment (Campbell, Kelly, Mullis, Martin, & Sainsbury, 2001; Mullis, Kennedy, Martin, & Sainsbury, 2006; Mullis et al., 2009). The PIRLS 2011 Assessment Framework provides the following definition of reading literacy:

For PIRLS, reading literacy is defined as the ability to understand and use those written language forms required by society and/or valued by the individual. Young readers can construct meaning from a variety of texts. They read to learn, to participate in communities of readers in school and everyday life, and for enjoyment (Mullis et al., 2009, p. 11).

This definition of reading literacy relies on theories that consider reading as a constructive and interactive process (Alexander & Jetton, 2000; Anderson & Pearson, 1984; Chall, 1983; Rudell & Unrau, 2004; Walter, 1999). Readers actively construct meaning using a repertoire of linguistic skills, cognitive and metacognitive strategies, and their background knowledge. Literate readers are those who enjoy reading but also learn from it, acquiring knowledge of the world and of themselves. They gain information from the many multi-modal forms (e.g., books, newspapers, Internet, video media) and in a variety of contexts (e.g., classroom, school library, reading communities in and out of school). *Reading to learn* is essential for children, since it enables them to engage in lifelong learning and prepare for their future careers. It is generally accepted that the transition from *learning to read* to *reading to learn* is usually made around Grade 4 (Mullis et al., 2006, 2009).

It is important to note the similarities that exist between the definitions of reading in PIRLS, PISA, and PCAP. Although these programs target three different student populations (Grade 4 for PIRLS, Grade 8 (Secondary II in Quebec) for PCAP, and 15-year-old students for PISA), all of them emphasize the constructive and interactive nature of reading. Thus, PCAP, which relies on curricula across Canada, defines reading as “a dynamic, interactive process whereby the reader constructs meaning from texts” (CMEC, 2011, p. 39). The process of reading is described there through the active interaction of four components: reader, text, purpose, and context. Similarly to PIRLS, PISA uses the broader term of *reading literacy* and defines it as “understanding, using, reflecting on and engaging with written texts, in order to achieve one’s goals, to develop one’s knowledge and potential, and to participate in society” (OECD, 2010a, p. 23). Thus, all three programs share similar definitions.

PIRLS examines three aspects of students’ reading literacy:

- purposes for reading,
- processes of comprehension, and
- reading literacy behaviours and attitudes.

These three aspects are interrelated and depend on the contexts in which students live and learn, including home, classroom, school, and community contexts. In order to identify effective procedures and practices for developing children’s reading literacy, PIRLS collects information on these contexts through background questionnaires.

In what follows, each aspect of the reading literacy studied by PIRLS will be discussed in detail.

Purposes for Reading

The first aspect examined by PIRLS is directly related to the question “Why do people read?” and, more important, “Why do young students read?” PIRLS focuses on two main purposes: reading for literary experience, and reading to acquire and use information. These two purposes account for a significant part of the reading done by young students in and out of school, which is often associated with certain types of text (examples of PIRLS passages and questions are included in Appendix II).

- *Reading for literary experience.* Fiction is the type of text most often read for the literary experience it provides. It allows the reader to get involved in imagined events, actions, characters, and ideas while enjoying language itself. PIRLS uses mostly narrative fiction (e.g., short stories and novels), which offers children an opportunity to explore and reflect upon situations that could be encountered in life.
- *Reading to acquire and use information.* This kind of reading is usually associated with informational texts, allowing readers to understand how the real world works and why things happen the way they do. These include texts that recount events (e.g., biographies and autobiographies), procedural texts (e.g., recipes and instructions), expository texts (e.g., textbooks and research papers), and persuasive texts (e.g., advertisements). The organization and presentation of information varies, depending on the type of the text.

Although PIRLS distinguishes between the two purposes for reading, the comprehension processes employed by readers for both purposes are more similar than different.

Processes of Comprehension

Processes of comprehension relate to the question of “how the reader constructs meaning from a text.” The four processes assessed by PIRLS are as follows:

- *Focusing on and retrieving explicitly stated information.* This process requires the reader to be able to understand explicitly stated information and to relate it to the question posed. Little or no inferring is needed, as meaning is evident and clearly stated in the text. However, the relevance of the information or idea should be recognized by the reader. Examples of this type of text processing include tasks such as identifying information that is relevant to the specific goal, looking for specific ideas, searching for definitions of words or phrases, identifying the setting of a story (e.g., time, place), and finding the topic sentence or main idea (when explicitly stated).
- *Making straightforward inferences.* This process enables the reader to fill in the “gaps” in meaning by inferring information from the text. Straightforward inferences require very little effort and are usually performed automatically by skilled readers. Examples of the process include tasks such as inferring that one event caused another event, drawing conclusions about what the main point of a series of arguments is, determining the referent of a pronoun, identifying generalizations made in the text, and describing the relationship between two characters.

- *Interpreting and integrating ideas and information.* This process allows the reader to construct a more complete understanding of the text by integrating both prior knowledge and the information available in the text. The connections to be made are not only implicit; they may also be open to the reader's interpretation. Since the interpretation is very much determined by a reader's personal experience, the meaning constructed through this type of processing is likely to vary among readers. Examples of the process include tasks such as discerning the overall message or theme of a text, considering an alternative to the actions of the characters, comparing and contrasting text information, inferring a story's mood or tone, and interpreting a real-world application of text information.
- *Examining and evaluating content, language, and textual elements.* This process enables the reader to stand apart from the text in order to critically consider its content, language, or textual elements. When evaluating the content, the reader may compare the writer's representation of the world with his or her own understanding, or with information from other sources. When evaluating the language and textual elements, the reader may reflect on how well the meaning is expressed by drawing upon his or her own knowledge of text genre, structure, or language conventions. In any case, the evaluation process depends on the reader's familiarity with the topic and language. Examples of the process include tasks such as evaluating the likelihood that the events described could really happen, describing how the author devised a surprise ending, judging the completeness or clarity of information in the text, and determining an author's perspective on the central topic.

The four processes described above are assessed within each of the two purposes for reading (i.e., reading for literary experience, and reading to acquire and use information).

Reading Literacy Behaviours and Attitudes

The ability to realize one's potential requires not only efficient processes of comprehension, but also behaviours and attitudes that support lifelong reading. For this reason, PIRLS dedicates a substantial proportion of the student questionnaire to the assessment of the following important aspects:

- *Student reading literacy behaviours.* Recreational activities, such as reading books and magazines, browsing for information on the Internet, or visiting a library, play an important role in the development of reading literacy. Research shows that students who read for fun and participate in social aspects of reading by discussing books with family and friends demonstrate higher reading performance (Sainsbury & Schangen, 2004; van der Voort, 2001). On the other hand, students who spend most of their recreational time watching television tend to show lower reading achievement (van der Voort, 2001). Thus, out-of-school behaviours and social interactions can be considered significant factors when assessing reading literacy.
- *Attitudes toward reading.* Positive attitudes toward reading are among the most important prerequisites for lifelong readers. Indeed, research indicates that good readers are typically those who enjoy reading and demonstrate a positive attitude toward different reading activities (Mullis, Martin, Kennedy, & Foy, 2007). Moreover, a recent meta-analysis showed that the positive

relationship between reading attitudes and achievement is stronger for elementary-school students than for older students (Petscher, 2010).

- *Attitudes toward learning to read.* Motivation to learn to read involves the value of reading for the student, his or her interest in what is read, and, most important, the feeling that he or she can succeed. Thus, it is important for students to have a strong self-concept and self-esteem with respect to their own reading skills to be able to attain higher levels of reading literacy (Quirk, Schwanenflugel & Webb, 2009). Fluent and successful readers enjoy challenging reading, which goes beyond simple decoding and word recognition and involves personal interest in what is read.

Learning Contexts: Home, Classroom, School, and Community

Students' achievement in reading literacy as well as their reading behaviours and attitudes are the results of learning and life experiences accumulated through a variety of contexts:

- *Home context.* IEA studies conducted over the past 20 years have shown a strong positive relationship between the reading achievement of elementary-school students and a supportive environment at home (PIRLS 2011 International Report). In order to further investigate this relationship, the PIRLS 2011 Learning to Read Survey was used to collect data on economic, social, and educational resources at home; parental emphasis on literacy development; and parents' reading behaviours and attitudes.
- *Classroom context.* The classroom context is as important as the home context for literacy development, since young students spend several hours each day with other students in classrooms managed by teachers. Among "classroom" factors investigated by PIRLS are teacher education and development, teacher characteristics and attitudes, classroom characteristics (e.g., class size), instructional materials and technology, instructional strategies and activities, and, finally, assessment.
- *School context.* Since resources and policies established at the school level often set the tone for the structure and environment at the classroom level, PIRLS pays special attention to "school" factors, including school characteristics (e.g., location, composition by student background), school organization for instruction, school climate for learning, school resources, and parental involvement in school activities.
- *Community context.* Home, classroom, and school contexts do not function in isolation from each other; they are all closely interrelated and shaped by a more global "community" context. The ability of a country to produce a literate population depends heavily on its capacity to develop and implement effective educational programs and incentives for further reading improvement. In order to evaluate cultural, social, political, and economic factors at the country level, PIRLS collects information on countries' languages and emphasis on literacy, demographics and resources, the organization and structure of the education system, and the reading curriculum in the primary grades.

Information about the *home, school, and classroom contexts* is collected by PIRLS by means of background questionnaires that are completed by the students being tested, their parents or caregivers, their school principals, and their teachers. Information about the *community contexts* is collected through a curriculum questionnaire completed by the national research coordinators in each country. Based on this questionnaire, each PIRLS country and benchmarking participant prepares a chapter for the *PIRLS 2011 Encyclopedia*² (Mullis et al., 2012), summarizing the structure of its education system; the reading curriculum and reading instruction in primary school; teacher-education requirements; and assessment and examination practices.

Sampling Features of PIRLS 2011

Target Population

PIRLS is designed to assess reading achievement at the same grade in schooling across different countries. This grade corresponds to the fourth year of formal school, which typically represents an important transition point in reading development: the point at which students have already learned how to read, and are now using reading to learn. It is also the point at which many countries start having separate classes for different subjects (e.g., mathematics, science). Below is the exact definition of the target population, as published in the PIRLS 2011 Assessment Framework:

The PIRLS target grade should be the grade that represents four years of schooling, counting from the first year of ISCED Level 1 (Mullis et al., 2009, p. 60).

The first year of ISCED³ Level 1 corresponds to primary education, indicating the beginning of systematic apprenticeship of reading, writing, and mathematics (UNESCO Institute for Statistics, 1999). Thus, the PIRLS target grade would be the fourth year since this systematic apprenticeship has started, which is Grade 4 in most countries and Canada in particular.

The age of entry to primary school varies significantly across the world: most countries report policies requiring children to begin school at age six, but there are also countries where students enter school at age five (e.g., England, New Zealand, Trinidad and Tobago) or at age seven (e.g., most of the Eastern European countries). Because age is a fundamental factor in considering the achievement results, IEA established a policy stating that children should be at least 9 years old before being asked to participate in PIRLS. The aim of such a policy is to ensure that students do not fall under the minimum average age of 9.5 years at the time of testing. For countries where children enter school early, and the average age of Grade 4 students at the time of testing would be less than 9.5 years, PIRLS recommends assessing the next higher grade (i.e., Grade 5). Also, in order to meet the

² The *PIRLS 2011 Encyclopedia* can be found at <http://timss.bc.edu/pirls2011/encyclopedia-pirls.html>.

³ ISCED, the International Standard Classification of Education developed by the UNESCO Institute for Statistics, provides an international standard for describing levels of schooling across the world (UNESCO, 1997, 2011).

needs of developing countries for whom the assessment in Grade 4 is too difficult, PIRLS offers the option to assess students in Grade 5 or Grade 6, or to participate in prePIRLS (a less difficult reading assessment designed to test basic skills, and considered a stepping stone to PIRLS).⁴

The age of entry to primary school in Canada varies across provinces, from five to seven (see the *PIRLS 2011 Encyclopedia* for details on the education systems in Canada). Since the average age of Grade 4 students in Canada was over 9.5 years at the time of PIRLS 2011 testing (precisely $M = 9.9$ years), Grade 4 was sampled.

General Sampling Approach

The general approach in PIRLS was to sample from 100 per cent of the international desired target population, which includes all students enrolled in the target grade (Grade 4 in most countries and Canada in particular). Occasionally, a country could exclude some portion of the population, based on geographic or linguistic constraints. For example, Lithuania assessed only Lithuanian-speaking schools, and New Brunswick assessed only students in francophone schools. A two-stage, stratified cluster design was used: the first stage consisted of a sample of schools, and the second stage consisted of a sample of intact classrooms from the target grade in the sampled schools. In order to avoid sample size losses — which can occur if the originally sampled school refuses to participate — two replacement schools were identified and held in reserve for each sampled school.⁵ In Canada, in the jurisdictions where numbers were smaller than the desired size, all schools and/or all Grade 4 classes were selected.

At the national level, two types of exclusions were permitted on the following grounds:

- *school-level exclusions* for the schools that were geographically remote, had very few students (i.e., four or fewer students in the target grade), offered a grade structure or curriculum radically different from the mainstream education system, or provided instruction solely to students with special needs;
- *student-level exclusions* for the students with functional or intellectual disabilities, or for non-native language speakers.

In order to keep the exclusion rates to a minimum, two rules were established by PIRLS:

- When combined, school-level and student-level exclusions could not exceed 5 per cent of the national target population of students in a country.
- The number of students excluded because they attend very small schools could not exceed 2 per cent of the national target population of students.

⁴ Since Canada did not participate in the prePIRLS assessment, it will not be discussed in this report.

⁵ For further details on sampling, please see the TIMSS and PIRLS Web site: timssandpirls.bc.edu.

Details on school and student exclusion and participation in Canada can be found in Appendix III. In order to enhance the precision of the survey results, school stratification was employed in PIRLS 2011.⁶ Stratification variables could include region of the country (i.e., provinces, in the case of Canada); school type or source of funding (i.e., public or private); language of instruction (i.e., English or French, in the case of Canada); level of urbanization (i.e., urban or rural area); socioeconomic indicators; and school performance on national examinations.

Quality Assurance

As indicated in the PIRLS 2011 International Report, “the student sampling for PIRLS 2011 was conducted with careful attention to quality and comparability” (Mullis et al. 2012, p. 4). Statistics Canada as well as the IEA Data Processing and Research Center participated in all phases of the sampling procedures. High quality standards were maintained, with the sampling and participation requirements successfully met in a large majority of countries. The quality and comparability of the data were ensured through careful planning, documentation, standardized procedures, and cooperation among participating countries.⁷

Student and School Participation in PIRLS 2011

Overall, participation in PIRLS 2011 was high:

- In total, approximately 325,000 students across the world participated in PIRLS 2011.⁸
- At the national level, representative samples of approximately 4,000 students from 150 to 200 schools (per country) participated in PIRLS 2011.
- At the Canadian level, approximately 23,000 students from about 1,000 schools participated in PIRLS 2011. About 16,500 students wrote the test in English, and 6,500 students wrote the test in French. Appendix III contains further information on the exclusion and response rates in Canada.

⁶ As defined by PIRLS specialists, “Stratification consists of arranging the schools in the target population into groups, or strata, that share common characteristics such as geographic region or school type” (Joncas & Foy, 2012, p. 9).

⁷ For methods and procedures used to develop, implement, and analyze the results from PIRLS 2011, please see TIMSS & PIRLS International Study Center’s PIRLS Web site: pirls.bc.edu.

⁸ This number includes students from countries assessing more than one grade, benchmarking participants, and prePIRLS.

General Design of the Assessment

The goal of the PIRLS assessment is to provide a comprehensive picture of reading literacy achievement across the world (Mullis et al., 2009). The texts and items used in PIRLS 2011 were selected based on the conceptual framework, which targeted two reading purposes and four comprehension processes, as described in previous sections. Thus, the assessment was split evenly between reading for literary experience (50 per cent) and reading to acquire and use information (50 per cent) — the two purposes that account for most of the reading activity. Within each of these purposes, four processes of comprehension were measured: focusing on and retrieving explicitly stated information (20 per cent); making straightforward inferences (30 per cent); interpreting and integrating ideas and information (30 per cent); and examining and evaluating content, language, and textual elements (20 per cent). Table 1 summarizes the percentages devoted to each reading aspect and process in the assessment.

Table 1 Percentages allocated to reading purposes and comprehension processes in PIRLS 2011

Purposes for Reading	
Literary experience	50%
Acquire and use information	50%
Processes of Comprehension	
Focus on and retrieve explicitly stated information	20%
Make straightforward inferences	30%
Interpret and integrate ideas and information	30%
Examine and evaluate content, language, and textual elements	20%

Selecting PIRLS 2011 Reading Passages

The complete PIRLS 2011 assessment included 10 reading passages: 5 for the “literary experience” purpose and 5 for the “acquisition and use of information” purpose. Each passage was accompanied by 13 to 16 questions (also called “items”). There were 135 items in total, divided almost equally between multiple-choice questions and constructed-response questions. In order to link the data across years and to provide a foundation for measuring trends, 6 of 10 passages and item sets (3 literary and 3 informational) were retained from previous assessments. The remaining 4 passages and items sets (2 literary and 2 informational) were newly developed in a cooperative venture for use for the first

time in the 2011 assessment. Hundreds of passages were reviewed in order to select those that would satisfy PIRLS requirements:

- Passages had to be suitable for Grade 4 students in content, level of interest, and readability.
- Passages had to be well written in terms of depth and complexity to allow for a sufficient number of questions.
- Passages had to be selected in a way to avoid cultural bias, and to be equally familiar or unfamiliar to all students.

Other criteria that guided item selection included text length (no more than 800 words); fairness to sex; racial, ethnic, and religious considerations; and nature and level of linguistic characteristics.

Table 2 summarizes the main features of the texts selected for the PIRLS 2011 assessment. Examples of PIRLS passages and questions are presented in Appendix II.

Table 2 PIRLS 2011 — Main features of the texts used in the assessment

Text feature	Literary texts	Informational texts
Type of passages	Complete short stories or episodes (contemporary and traditional)	Continuous and non-continuous informational passages (covering scientific, ethnographic, biographical, historical, and practical information and ideas)
Number and length of passages	Five passages of approximately 800 words	Five passages of 600 to 900 words
Visuals	Supportive colourful illustrations	Presentational features such as diagrams, maps, illustrations, photographs, or tables
Structure	Two main characters and a plot with one or two central events in each story	Various structures, including structure by logic, argument, chronology, and topic
Other features	A range of styles and language features, such as first person narration, humour, dialogue, and some figurative language	A range of organizational features, such as subheadings, text boxes, or lists

Question Types and Scoring Procedures

Comprehension questions accompanying each passage were in one of two formats:

- *Multiple-choice*. This question format included four response options, which were written in a concise manner to minimize the reading load. Only one of the four options was correct; the other

incorrect options were plausible, but not deceptive. Although any comprehension processes could be assessed with multiple-choice questions, this format was mostly used for processes that do not rely on complex evaluations and interpretations. Each multiple-choice question was worth one point.

- *Constructed-response.* This question format required students to construct a written response, and was meant to illicit an interaction between the reader, the text, and the context. The constructed-response items could be either short or extended. They were used to assess any of the four comprehension processes but were especially suited for interpretation processes calling for students' background knowledge and experiences. Constructed-response questions were worth one, two, or three points (depending on the depth of the understanding required).

Although constructed-response items usually provide more informative measures of achievement than multiple-choice items, they are time consuming, and their quality depends largely on the ability of coders to score them reliably. Therefore, it was essential to develop clear and efficient scoring guides for constructed-response items that would ensure high reliability within and across countries (see Mullis, Martin, Kennedy and Trong, 2011 for details on item-writing guidelines). PIRLS 2011 scoring guides focused on evidence of the comprehension process that a particular question assessed but also provided evidence that would help to distinguish partial understanding from extensive/complete understanding. It is important to note that the focus of the scoring guides was solely on students' understanding of the text, and not on their writing ability.

Test Booklet Design

The PIRLS Reading Development Group estimated that completing all items for 10 passages would take more than six hours. Of course, such a long testing period would not be possible for Grade 4 students owing to the loss of concentration and fatigue. For this reason, a booklet rotation procedure was used, allowing each student to be presented with only part of the PIRLS 2011 assessment. More particularly, the passages and accompanying items were divided into 10 blocks, 40 minutes each, and then they were systematically distributed across 13 booklets. As a result, each booklet included two 40-minute blocks of passages and items, and an additional 15- to 30-minute student questionnaire. Booklets were assigned to students in a given classroom using a randomized procedure.

Background Questionnaires

In order to collect information on community, school, and home factors, PIRLS 2011 administered the following questionnaires:

- *Student Questionnaire.* This questionnaire was included in the assessment booklets and had to be completed by each participating student. It asked about aspects of students' home and school lives, notably demographic information, home environment, school climate for learning, out-of-school reading behaviours, and attitudes toward learning.

- *PIRLS Learning to Read Survey (Home Questionnaire)*. This questionnaire was addressed to the parents or primary caregivers of each participating student. It asked about language spoken at home, preschool literacy-centred experiences, homework activities, home–school involvement, number of books at home, parent education and involvement, parents’ reading habits and attitudes toward reading, etc. The home questionnaire required 10 to 15 minutes to complete. In Canada, an impressive total of close to 19,000 parents or guardians responded to this survey, a more than 80 per cent response rate.
- *Teacher Questionnaire*. This questionnaire was addressed to the reading teacher of each participating Grade 4 class. It asked about the teacher’s background and education, the school climate for learning, attitudes toward teaching, classroom characteristics, student engagement, etc. The teacher questionnaire required about 30 minutes to complete. In Canada, more than 1,300 teachers responded to this questionnaire, a 95 per cent response rate.
- *School Questionnaire*. This questionnaire had to be completed by the principal of each participating school. It asked about school characteristics, instructional time, resources and technology, parental involvement, school climate for learning, teaching staff, the role of the principal, etc. The school questionnaire required about 30 minutes to complete. In Canada, more than 1,000 schools responded to this questionnaire, a 97 per cent response rate.
- *Curriculum Questionnaire*. This questionnaire was completed by the national research centre of each participating country. It asked about the country’s reading curriculum, including national policy on reading, goals and standards for reading instruction, time specified for reading, and provision of books and other literary resources. In Canada, ministries and departments of education from all nine participating provinces responded to the questionnaire. These responses were aggregated at the Canadian level, taking into account commonalities and differences between provincial education systems.

Objectives and Organization of the Report

This report presents the first Canadian results of the Progress in International Reading Literacy Study 2011. It provides information on the reading skills for Grade 4 students and describes home and school supports for literacy in Canada. Results are reported at both Canadian and international levels, with comparisons across Canadian provinces, as well as with participating countries. The report includes seven chapters and a number of appendices.

Chapter 1 provides a general picture on reading achievement in Canada, by situating it in the international context. It presents the distribution of achievement scores for Canada as a whole and for participating provinces, including the results by language (English- and French-language school systems), by sex, by reading purpose (reading for literary experience and reading to acquire and use information), and, finally, by process of comprehension (process of retrieving and straightforward inferring, and process of interpreting, integrating, and evaluating). In addition, change in performance

over time is examined for the five provinces that participated in one or more previous cycles of PIRLS (British Columbia, Alberta, Ontario, Quebec, and Nova Scotia).

Chapter 2 describes the skills demonstrated by students at the four international benchmarks (advanced, high, intermediate, and low). It presents percentages of students reaching each of the four benchmarks in Canada, with subsequent comparisons by province, language, and sex.

Chapters 3 to 6 provide data from the *Learning to Read Survey* (also called *Home Questionnaire*), *Student Questionnaire*, *Teacher Questionnaire*, and *School Questionnaire*. For each variable of interest, descriptive statistics for Canada and participating provinces are presented, followed, where pertinent, by an analysis of the relationship between the variable in question and student reading achievement. Thus, *Chapter 3* discusses the results related to reading activities at home. Four main areas of interest for Canada are explored: languages spoken at home, engagement of parents with their child, students' resources at home, and parents' reading habits and attitudes. *Chapter 4* presents the results that relate to students' reading attitudes, behaviours, and out-of-school activities. More particularly, it examines the extent to which Canadian students like to read; their motivation, confidence, and engagement in reading; and the time they spend reading and the type of reading they do outside of school. *Chapter 5* is dedicated to teachers and their teaching of reading, with a particular focus on the background of the Grade 4 teachers who were involved with the study. The chapter describes attributes such as teacher age, sex, years of teaching experience, education level, area of specialization, and time spent on professional development. In addition, variables related to some teacher working conditions, classroom environment, and classroom resources are considered. *Chapter 6* covers the school context. Among the examined aspects are school composition, availability of computers for instruction, school emphasis on academic success, school discipline and safety, and bullying.

Chapter 7 is based on the information collected through the *Curriculum Questionnaire* and gives an overview of the organization of the education systems in Canada, provincial reading curricula, reading instruction policies and practices, teacher-education requirements, and assessments.

Finally, the *Conclusion* of this report summarizes the main Canadian results of the PIRLS 2011 assessment.

1. CANADIAN RESULTS IN READING

This chapter presents the PIRLS 2011 achievement results in reading for all participating countries and Canadian provinces. First, the results of Grade 4 students in reading achievement for Canada and participating provinces will be compared to the other participating countries. The provincial results will also be compared to the Canadian average. Then the results for provinces will be presented by language for the provinces that sampled students in the English and French school systems separately. Next, the reading performance of boys and girls across provinces will be reported. Then the results for the two main aspects of reading will be described: *Purposes for Reading* (i.e., reading for literary experience, and reading to acquire and use information) and *Processes of Comprehension* (i.e., retrieving and straightforward inferencing, and interpreting, integrating, and evaluating). Finally, for the provinces that participated in previous PIRLS assessments, results will be reported over time.

The PIRLS 2011 average scores in reading are reported on the PIRLS scale, which has a range of 0 to 1000. In the first administration in 2001, the international mean was set at 500 with a standard deviation of 100. This has been used as a baseline for the subsequent administrations. In 2011, the centrepoint of the 0 to 1000 scale (i.e., 500) is used as the international reference point.

It may be misleading to compare and rank the students' performance based on the average scores only. When comparing the results, it is important to take into account the sampling error and the error of measurement associated with each average score. This will determine whether the differences in the average scores are *statistically significant* (see the statistical note below for details).

Terminology Used in the Charts and Tables

Differences

In this report, the terms “difference” or “different,” used in the context of achievement levels, benchmarks, and percentages, refer to a difference in a technical sense. They refer to a **statistically significant difference**. A difference is statistically different when there is no overlap of **confidence intervals** between different measurements being compared. Throughout this report, average scores that are significantly different from the Canadian average score are highlighted in bold.

Confidence intervals

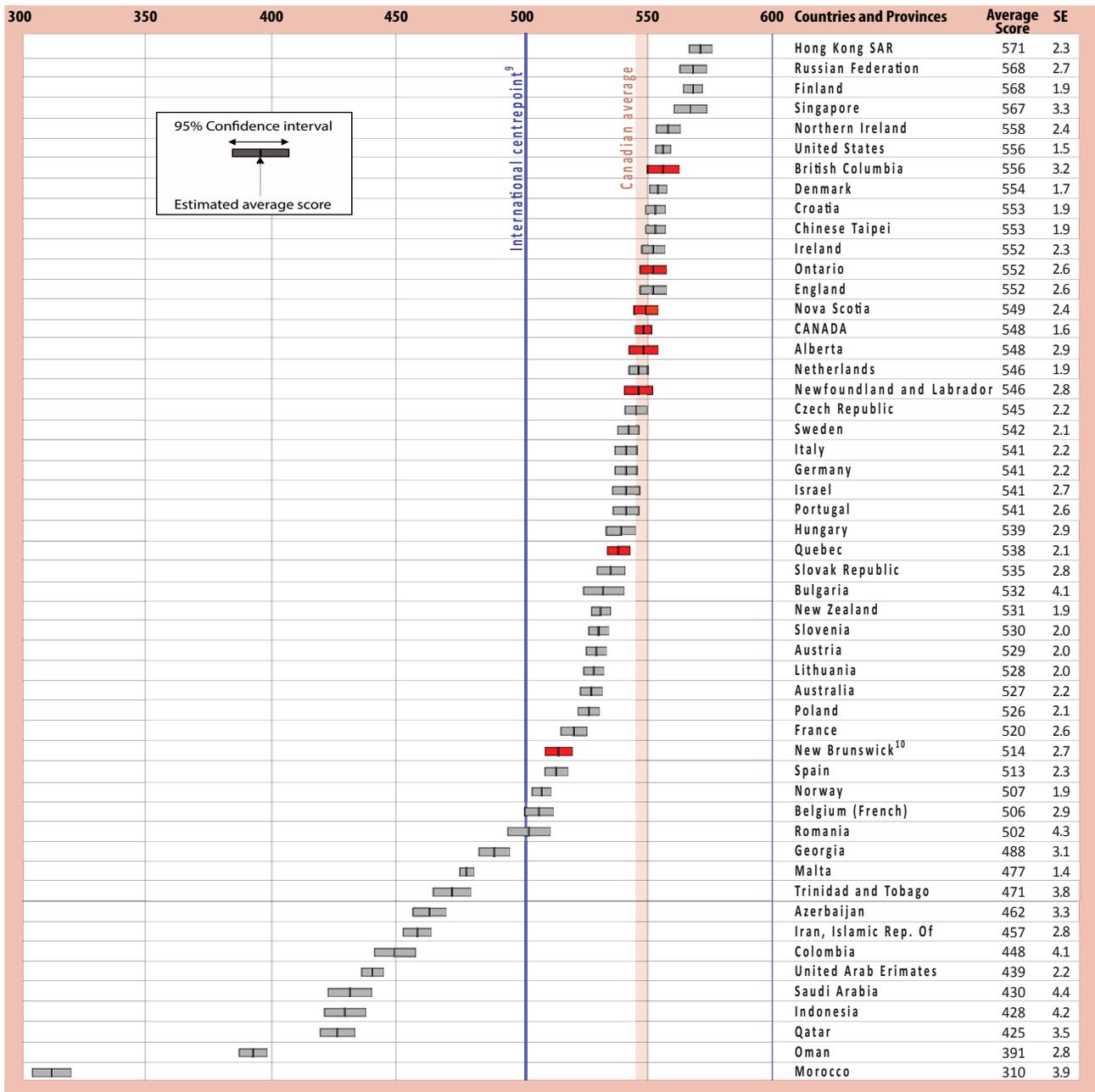
The purpose of PIRLS is to report results on the Grade 4 student population. A random sample of Grade 4 students was selected to write the test. The average scores were computed based on the responses of these students. Thus, the reported achievement scores provide estimates of the achievement results that would have been demonstrated if all students in the population had participated in this assessment. However, this process introduces what is known in statistical terms as a **sampling error**. In addition, a degree of error is associated with the scores describing student reading skills because these scores are estimated, based on student responses to test items. This error is called the **error of measurement**. Because an estimate that is based on a sample is rarely exact, and because the error of measurement exists, a **standard error** (SE) is computed. In large-scale assessments such as PIRLS, it is a common practice when reporting mean scores to provide a range of scores within which the “true” achievement level might fall. This range of scores expressed for each average score is called a **confidence interval**. A 95 per cent confidence interval is used in this report to represent the high- and low-end points between which the actual average score should fall 95 per cent of the time (and is computed as ± 1.96 SE). It is important to consider the standard error when comparing the results among groups in order to determine if the scores are statistically different from one another.

In other words, one can be confident that the actual achievement level of all students would fall somewhere in the established range 19 times out of 20, if the assessment were repeated with different samples randomly drawn from the same student population. In the charts in this report, confidence intervals are represented by the symbol . If the confidence intervals overlap, the differences are defined as not statistically significant. When the confidence intervals overlapped slightly, an additional test of significance (t-test) was conducted in order to determine whether the difference was statistically significant.

Results in Reading for Participating Countries and Canadian Provinces

The following chart provides the average scores in reading for each participating country and Canadian provinces in the PIRLS 2011 for Grade 4 students. In total, 45 countries participated at the Grade 4 level. These countries and Canadian provinces are listed in this chart in descending order according to the average reading achievement.

Chart 1.1 Average scores and confidence intervals in reading for countries and Canadian provinces



⁹ International centrepoint represented an average score in PIRLS 2001, and it has been set at 500 since then.

¹⁰ Only New Brunswick (French) participated in PIRLS 2011.

Overall, Canadian students performed quite well on PIRLS 2011, with higher achievement than most participating countries. Canada had an average score of 548, which is well above the PIRLS scale centrepoint of 500. Among all participating countries in PIRLS 2011, seven obtained an average score significantly higher than Canadian students: Hong Kong SAR, Russian Federation, Finland, Singapore, Northern Ireland, United States, and Denmark. There are six countries performing as well as Canada: Croatia, Chinese Taipei, Ireland, England, Netherlands, and Czech Republic.

Most students in Canada are performing well in reading, with the average scores for all provinces being above the PIRLS centrepoint of 500. In relation to the Canadian average, British Columbia performed above the Canadian average, while Ontario, Nova Scotia, Alberta, and Newfoundland and Labrador performed at the Canadian average. The average scores for Quebec and New Brunswick French are significantly lower than that of Canada overall.

Canadian Results in Reading by Language

The performance of students enrolled in English- and French-language school systems is also examined. Four provinces (British Columbia, Ontario, Quebec, and Nova Scotia) oversampled these populations separately in order to examine the difference between the two language groups.

The table below presents the average scores and differences in the reading performance for students enrolled in English- and French-language school systems.

Table 1.1 Average scores and differences in reading by language

	English-language school system		French-language school system		Difference
	Average score	SE	Average score	SE	
BC	556	3.2	513	6.2	43
AB	548	2.8	–	–	–
ON	554	2.7	506	3.5	48
QC	545	3.6	537	2.4	8
NBf	–	–	514	2.7	–
NS	551	2.5	500	3.7	51
NL	547	2.8	–	–	–
CAN	553	2.0	533	2.1	20

Note: Alberta and Newfoundland and Labrador did not oversample students in French; New Brunswick did not assess students in English. However, the results for these provinces are included in this table, so that they can be compared with either the Canadian English or Canadian French average score.

In all provinces that sampled by language, students enrolled in English-language schools are performing at a level that is not statistically different from the Canadian English average. The results are different for francophones. More precisely, only Quebec students are performing at the Canadian French average; for the other provinces (i.e., British Columbia, Ontario, New Brunswick French, and Nova Scotia), the average scores of students enrolled in French-language schools are significantly lower than the Canadian French average.

Overall, there is a clear pattern in the difference in reading results between students enrolled in the English-language school systems and those in the French-language school systems. In most provinces, students enrolled in a majority-language school system significantly outperform those enrolled in a minority-language school system. The differences for these provinces range from 43 points to 51 points. In Quebec, there is no significant difference in the student performance between these two groups.

Canadian Results in Reading by Sex

Results obtained from multiple studies have shown that girls usually perform better than boys in reading. This was the case in PISA 2009¹¹ and PCAP 2007¹² (when reading was the major domain), and the differences in the results were noticed in all Canadian provinces. Table 1.2 shows the average scores and differences in PIRLS 2011 reading results by sex for each participating province.

Table 1.2 Average scores and differences in reading by sex

	Girls		Boys		Difference
	Average score	SE	Average score	SE	
BC	564	3.5	548	3.7	16
AB	553	3.1	543	3.1	10
ON	558	3.1	546	2.8	13
QC	544	2.6	531	2.4	14
NBf	520	3.5	507	4.4	13
NS	556	2.6	543	2.8	13
NL	555	3.1	538	3.1	16
CAN	555	1.7	542	2.1	12
INT	520	0.5	504	0.5	16

¹¹ See Canadian report: <http://www.cmec.ca/Publications/Lists/Publications/Attachments/254/PISA2009-can-report.pdf>

¹² See Canadian report: <http://www.cmec.ca/Publications/Lists/Publications/Attachments/124/PCAP2007-Report.en.pdf>

In line with the previous studies, the PIRLS 2011 results demonstrate that girls continue to perform better than boys in reading, and this is consistent across Canadian provinces. In Canada overall, girls are outperforming boys by 12 points. Across provinces, the difference in the average scores gap ranges from 10 points in Alberta to 16 points in British Columbia and Newfoundland and Labrador. This pattern is also consistent across almost all participating countries. The difference in the average scores between boys and girls is smaller in Canada than the international average (12 vs. 16 points).

Canadian Results for Reading Purposes and Comprehension Processes

As described in the introduction of this report, the two aspects of students' reading literacy — *Reading Purpose* and *Comprehension Processes* — represent the foundation of the PIRLS reading assessment.

For the first aspect, *Reading Purpose*, PIRLS focuses on two scales: literary reading and informational reading. A total of five literary passages and five informational passages made up the PIRLS 2011 assessment. The literary texts were fictional stories, and the information passages included various types of content and organizational structures.

For the second aspect, PIRLS assessed four major *Comprehension Processes*: focusing on and retrieving explicitly stated information; making straightforward inferences; interpreting and integrating ideas and information; and finally, examining and evaluating content, language, and textual elements. Owing to the low number of items in each process, results have been aggregated to two combined process scales only:

1. Retrieving and straightforward inferencing: this scale combines “focusing on and retrieving explicitly stated information” and “making straightforward inferences”;
2. Interpreting, integrating, and evaluating: this scale combines “interpreting and integrating ideas and information” and “examining and evaluating content, language, and textual elements.”

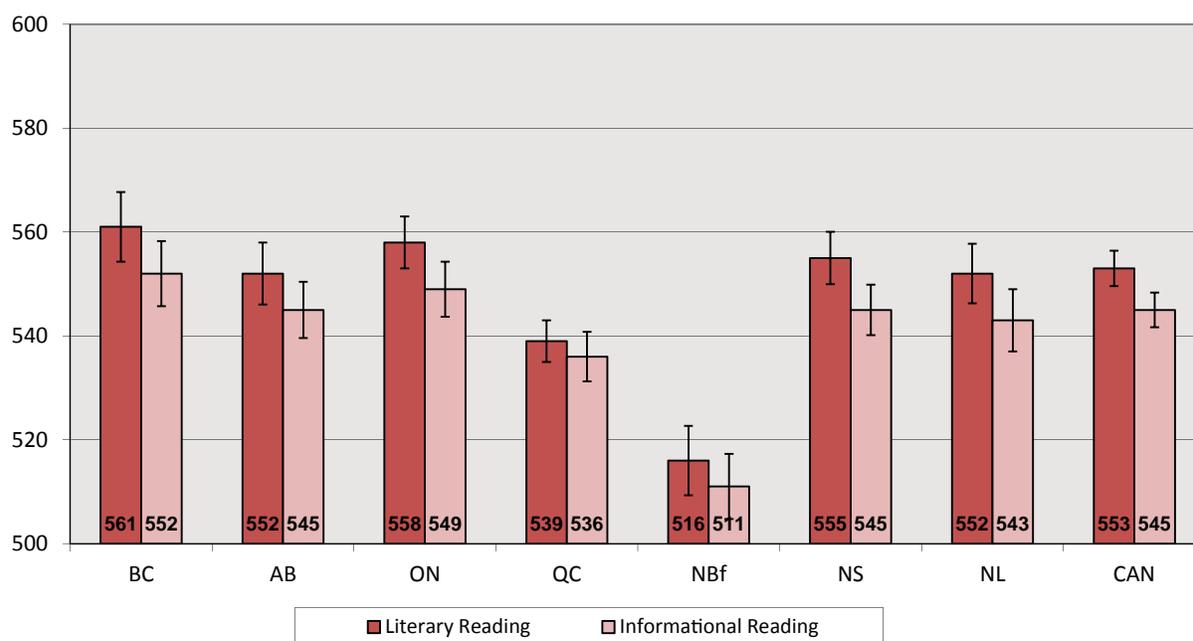
Previous PIRLS assessments have shown that most countries tend to perform relatively better in either “literary reading” or “informational reading” for the first aspect (reading purpose) and, similarly, in either “retrieving and straightforward inferencing” or “interpreting, integrating, and evaluating for the second aspect” (comprehension processes) (Mullis et al., 2012). In this context, it is important to examine Canadian results for each aspect and to compare results between different scales. Thus, in what follows, results and differences for the two aspects described above will be reported: *Reading Purpose* (literary reading and informational reading) and *Comprehension Processes* (retrieving and straightforward inferencing, and interpreting, integrating, and evaluating).

Achievement of Canadian Students by Reading Purpose — Canada and the Provinces

At the international level, countries with the highest average scores for reading overall also obtain the highest average scores in both literary and informational reading, compared to other countries. Also, within each country, most countries obtain a relatively higher average score in either literary reading or informational reading. For example, Hong Kong SAR and Chinese Taipei are performing better in informational reading than in literary reading. Conversely, Northern Ireland, United States, and Canada are performing better in literary reading than in informational reading.

Chart 1.2 illustrates the results for literary reading and informational reading for Canada and the provinces.

Chart 1.2 Average scores in literary and informational reading

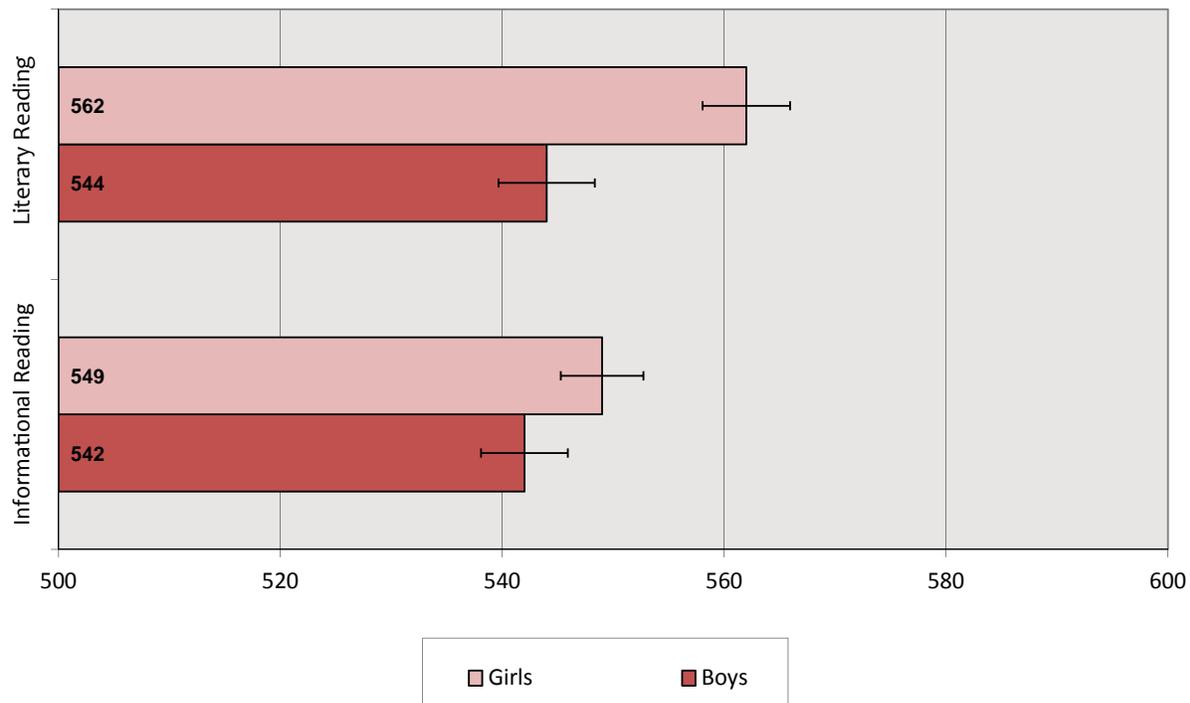


Results for Canada overall show that students are performing significantly better in literary reading than in informational reading. This pattern of higher achievement in literary reading is also consistent across provinces.

Achievement of Canadian Students in Reading Purposes, by Sex

Chart 1.3 presents the results by sex for the two reading purposes, literary and informational, for Canada overall.

Chart 1.3 Average scores in literary and informational reading, by sex



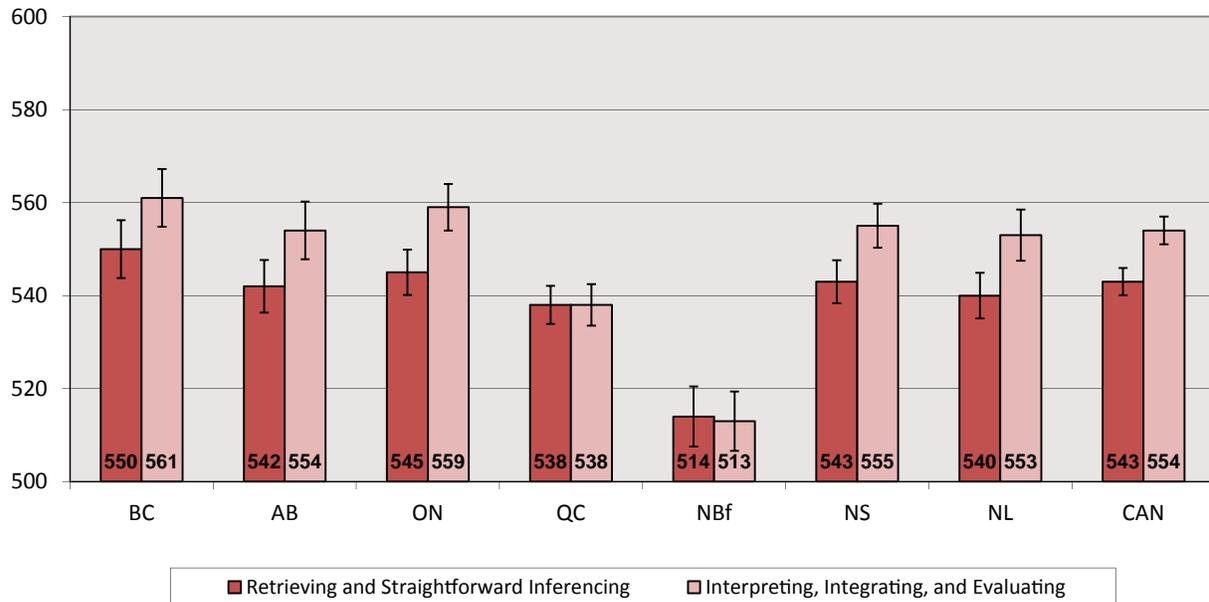
The results provide interesting findings in that Canadian girls are performing better in literary reading than informational reading, while there is no significant difference between the two reading purposes for Canadian boys. In both literary and informational reading, girls outperform boys by 18 and 7 points respectively. Internationally, girls also outperform boys on both literary and informational reading.

Achievement of Canadian Students in Comprehension Processes — Canada and the Provinces

Internationally, most of the top performing countries are performing significantly better in the interpreting, integrating, and evaluating process than in reading overall. For instance, the difference was significant for eight of the twelve highest performing countries: Canada, Hong Kong SAR, Russian Federation, Singapore, Northern Ireland, United States, Chinese Taipei, and England.

Chart 1.4 presents the results by comprehension process for Canada and the provinces.

Chart 1.4 Average scores in retrieving and straightforward inferencing, and in interpreting, integrating, and evaluating

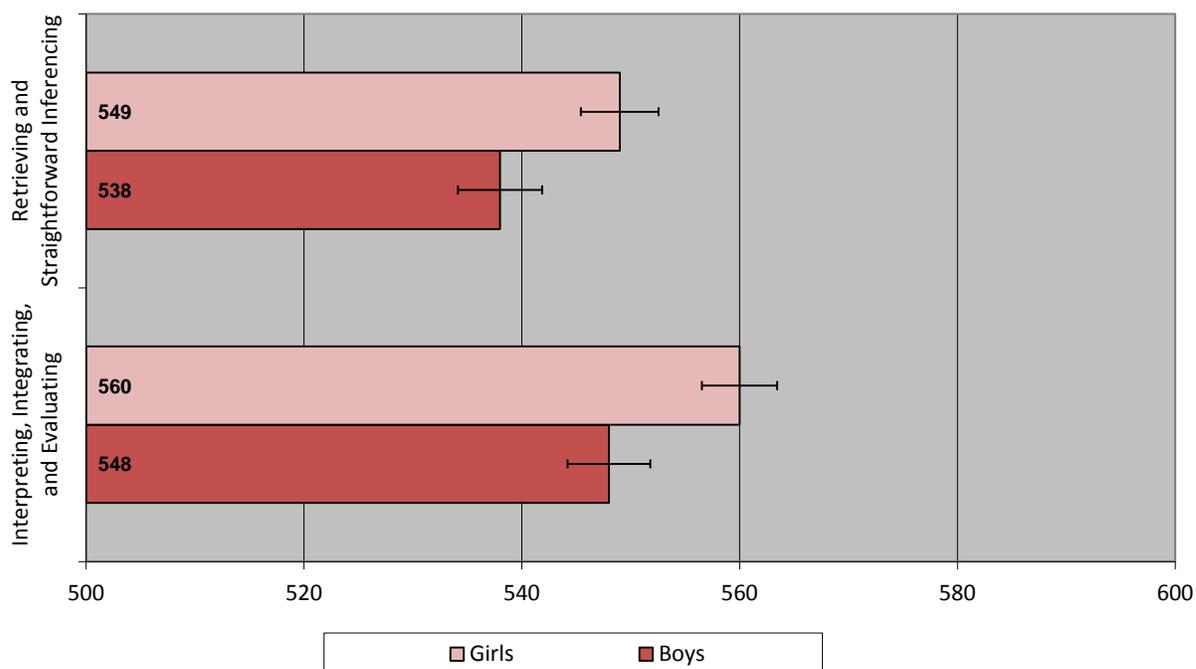


There are significant differences between the two scales for comprehension processes in Canada overall. Generally, as is the case internationally, average scores in the interpreting, integrating, and evaluating process tend to be higher across provinces.

Achievement of Canadian Students in Comprehension Processes, by Sex

As seen previously, students tend to perform better in interpreting, integrating, and evaluating than in retrieving and straightforward inferencing. Chart 1.5 presents the results for interpreting, integrating, and evaluating, and for retrieving and straightforward inferencing, by sex.

Chart 1.5 Average scores in retrieving and straightforward inferencing, and in interpreting, integrating, and evaluating, by sex



The results demonstrate that both girls and boys in Canada are performing better in interpreting, integrating, and evaluating than in retrieving and straightforward inferencing. As for the sex differences, girls outperform boys on both scales, which is consistent with the international average.

Trends in Reading Achievement

Canadian participation in large-scale assessments allows meaningful comparisons with other countries. It also provides valuable information about important features of our education systems. Ministries and departments of education consider results from these assessments and other contextual information when making political decisions to improve their education system. As many decisions and changes are implemented over time (e.g., changes to the curriculum) based in part on the results of large-scale assessments, it is important to report the results over time. In this section, the trends in reading achievement are reported for those provinces that participated in previous PIRLS assessments (PIRLS 2001 and/or PIRLS 2006). More precisely, two 5-year comparisons (2001 vs. 2006 vs. 2011) can be made for two provinces, Ontario and Quebec, since they both started their participation in 2001. One five-year comparison (2006 vs. 2011) can be made for three provinces, British Columbia, Alberta, and Nova Scotia, which joined PIRLS in 2006. No results over time can be reported for New Brunswick French, Newfoundland and Labrador, or Canada overall, since they participated in PIRLS for the first time in 2011.

Table 1.3 compares the results in reading for PIRLS 2001, 2006, and 2011 for the five provinces mentioned above.

Table 1.3 Comparison of results in reading between PIRLS 2001, 2006, and 2011

	2001		2006		2011		Difference with 2011 ¹³	
	Average score	SE	Average score	SE	Average score	SE	2001	2006
BC	–	–	558	2.6	556	3.2	–	-2
AB	–	–	560	2.4	548	2.9	–	-12
ON	548	3.3	555	2.7	552	2.6	4	-3
QC	537	3.0	533	2.8	538	2.1	0	5
NS	–	–	542	2.2	549	2.4	–	7

Ontario and Quebec have participated in PIRLS since 2001, and their performance in reading has remained stable throughout the years. There are no significant differences in the average scores between 2011 and previous years. For the three provinces that participated in PIRLS 2006 and PIRLS 2011, the performance in reading remained the same for British Columbia, while results decreased by 12 points for Alberta and increased by 7 points for Nova Scotia over the past five years.

¹³ The difference in the numbers may not add up because of rounding.

2. CANADIAN RESULTS IN READING AT THE PIRLS 2011 INTERNATIONAL BENCHMARKS

This chapter presents the percentages of students in Grade 4 reaching each international benchmark. In PIRLS 2011, four benchmarks are used to show the range of students' performance across countries. First, a description of the skills expected of students at each of these four international benchmarks will be given. Then, the percentage of students reaching the different benchmarks will be presented.

Benchmarks can be construed as points on the PIRLS scale delineating levels of achievement on this reading assessment. Table 2.1 describes the four international benchmarks set by PIRLS: Advanced International Benchmark (625 points or above), High International Benchmark (between 550 and 624 points), Intermediate International Benchmark (between 475 and 549 points), and Low International Benchmark (between 400 and 474 points).

Table 2.1 Description of the PIRLS 2011 International Benchmarks of Reading Achievement

Advanced International Benchmark (625 points or above)¹⁴	
<p>When reading <i>Literary texts</i>, students can:</p> <ul style="list-style-type: none"> • integrate ideas and evidence across a text to appreciate overall themes • interpret story events and characters' actions to provide reasons, motivations, feelings, and character traits with full text-based support 	<p>When reading <i>Informational texts</i>, students can:</p> <ul style="list-style-type: none"> • distinguish and interpret complex information from different parts of text and provide full text-based support • integrate information across a text to provide explanations, interpret significance, and sequence activities • evaluate visual and textual features to explain their function
High International Benchmark (between 550 and 624 points)	
<p>When reading <i>Literary texts</i>, students can:</p> <ul style="list-style-type: none"> • locate and distinguish significant actions and details embedded across the text • make inferences to explain relationships between intentions, actions, events, and feelings, and give text-based support • interpret and integrate story events and character actions and traits from different parts of the text • evaluate the significance of events and actions across the entire story • recognize the use of some language features (e.g., metaphor, tone, imagery) 	<p>When reading <i>Informational texts</i>, students can:</p> <ul style="list-style-type: none"> • locate and distinguish relevant information within a dense text or a complex table • make inferences about logical connections to provide explanations and reasons • integrate textual and visual information to interpret the relationship between ideas • evaluate content and textual elements to make a generalization
Intermediate International Benchmark (between 475 and 549 points)	
<p>When reading <i>Literary texts</i>, students can:</p> <ul style="list-style-type: none"> • retrieve and reproduce explicitly stated actions, events, and feelings • make straightforward inferences about the attributes, feelings, and motivations of main characters • interpret obvious reasons and causes and give simple explanations • begin to recognize language features and style 	<p>When reading <i>Informational texts</i>, students can:</p> <ul style="list-style-type: none"> • locate and reproduce two or three pieces of information from within the text • use subheadings, text boxes, and illustrations to locate parts of the text
Low International Benchmark (between 400 and 474 points)	
<p>When reading <i>Literary texts</i>, students can:</p> <ul style="list-style-type: none"> • locate and retrieve an explicitly stated detail 	<p>When reading <i>Informational texts</i>, students can:</p> <ul style="list-style-type: none"> • locate and reproduce two or three pieces of information from within the text • use subheadings, text boxes, and illustrations to locate parts of the text

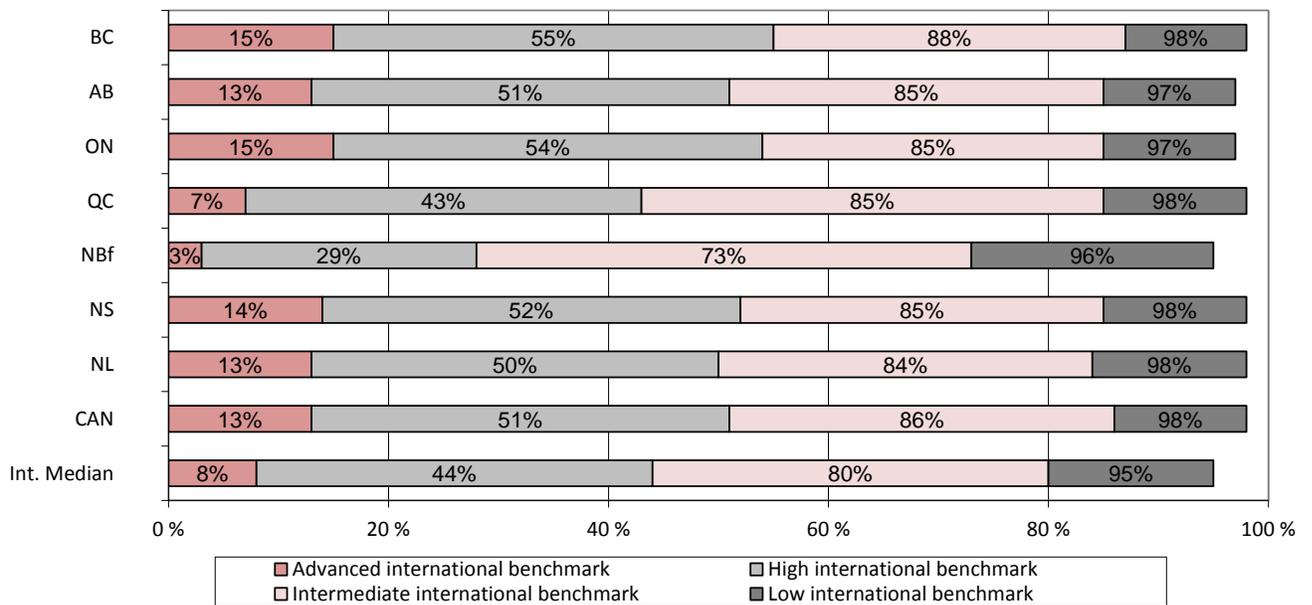
¹⁴ It is assumed that those students classified at a given level (benchmark) can perform the tasks at that level as well as those at the lower level. Further information on how the benchmarks were developed can be obtained in the PIRLS 2011 International Report (Mullis et al., 2012).

It should be noted that those students not reaching a score of 400 are not deemed to possess “no reading ability”; however, questions from this PIRLS assessment cannot measure their reading performance accurately.

Students’ Reading Performance at the International Benchmark

In the first chapter, the average scores for reading overall were presented for all participating countries and Canadian provinces. In this chapter, the percentage of students reaching each international benchmark is examined, providing an overall picture of the students’ reading skills in Grade 4 across Canada. Chart 2.1 presents results showing percentages of students reaching each international benchmark for Canada and the provinces. Table 5 in Appendix V lists the percentages for all participating countries. Please note that these percentages are cumulative, because students who attained higher benchmarks are also deemed to have reached the lower benchmarks.

Chart 2.1 Percentage of students at the international benchmarks of reading performance



In Canada, 13 per cent of the students reached the highest level, the Advanced International Benchmark. This percentage is well above the international median of 8 per cent. Canada is among the countries with the highest percentage of students reaching this level. The percentages of students at this level range from 3 per cent (New Brunswick French) to 15 per cent (British Columbia and Ontario).

Fifty-one per cent of Canadian students reached the High International Benchmark, which is significantly better than the international median of 44 per cent. It is important to note that most countries performing significantly better than Canada in reading also have a higher percentage of students reaching the High International Benchmark or above. The same pattern is repeated in Canada, where provinces with the highest average scores also have the highest percentages of students at that level. The percentages vary from 29 per cent in New Brunswick French to 55 per cent in British Columbia.

In Canada, 86 per cent of the students reached the Intermediate International Benchmark, as compared to the international median of 80 per cent. Among all participating countries, five had significantly more students at the Intermediate level than Canada: Hong Kong SAR, Russian Federation, Finland, Croatia, and Netherlands. Across Canadian provinces, the lowest percentage is 73 per cent in New Brunswick French, and the highest percentage is 88 per cent in British Columbia.

The Low International Benchmark was reached by 98 per cent of Canadian students, as compared to the international median of 95 per cent. Six countries, notably Netherlands, Russian Federation, Finland, Hong Kong SAR, Denmark, and Croatia, had significantly more students than Canada at that level. The percentages vary from 96 per cent in New Brunswick French to 98 per cent in British Columbia, Quebec, Nova Scotia, and Newfoundland and Labrador.

Very few Canadian students did not reach the Low International Benchmark (2 per cent). Compared to other countries, Canada has a very small proportion of low achievers.

Students' Reading Performance at the International Benchmarks, by Province and Language

Except for Quebec, students enrolled in majority-language school systems are performing better in reading than those enrolled in minority-language school systems. Tables 2.2 and 2.3 show the percentages of anglophone and francophone students reaching the four international benchmarks, by province.

Table 2.2 Percentage of students at the international benchmarks of reading performance — English

	Advanced International Benchmark		High International Benchmark		Intermediate International Benchmark		Low International Benchmark	
	%	SE	%	SE	%	SE	%	SE
BCe	16	1.5	55	1.9	88	1.3	98	0.7
ABe	13	1.0	51	1.6	85	1.2	97	0.5
ONe	16	1.2	55	1.7	86	1.1	98	0.4
QCe	13	1.5	49	2.0	84	1.5	97	0.8
NSe	14	1.1	53	1.5	86	1.0	98	0.3
NLe	13	1.3	50	1.8	84	1.2	98	0.5
CANe	15	0.8	54	1.3	86	0.8	98	0.3

The percentages of students enrolled in English-language schools in all provinces are very close to the percentages for Canada English overall. In fact, there are no significant differences between provincial and Canadian percentages for any of the four international benchmarks.

Table 2.3 Percentage of students at the international benchmarks of reading performance — French

	Advanced International Benchmark		High International Benchmark		Intermediate International Benchmark		Low International Benchmark	
	%	SE	%	SE	%	SE	%	SE
BCf	4	1.3	30	3.4	72	4.4	95	1.7
ONf	4	0.7	28	2.0	67	2.2	92	1.2
QCf	6	0.8	43	2.1	85	1.1	98	0.4
NBf	3	0.8	29	1.9	73	2.0	96	0.7
NSf	4	1.3	28	1.9	62	4.5	91	1.6
CANf	6	0.7	41	1.8	83	1.0	98	0.4

Note: Owing to the small sample size, the percentages for students enrolled in French schools participating in Alberta and Newfoundland and Labrador are not indicated in this table.

The percentages of students enrolled in French-language schools are less consistent across provinces. Most variations can be found at the High and Intermediate International Benchmarks.

Thus, for the High International Benchmark, the Canadian average for students enrolled in French-language schools is 41 per cent. However, the results vary remarkably at the provincial level, ranging from 28 per cent in Ontario and Nova Scotia to 43 per cent in Quebec.

For the Intermediate International Benchmark, the differences are even more noticeable. At the Canadian level, 83 per cent of students reached this level; at the provincial level, the results range from 62 per cent in Nova Scotia to 85 per cent in Quebec. Overall, less than three-quarters of the students enrolled in French minority-language school systems are reaching the intermediate level for Canadian students.

When comparing the results of English- and French-language schools at the Canadian level, it can be noted that percentages are rather similar at the lower achievement levels, but different at the higher achievement levels. For instance, the High International Benchmark was reached by more than half of the anglophone students (54 per cent), but by only 41 per cent of the francophone students. Similarly, the Advanced International Benchmark was attained by 15 per cent of the anglophone students, but by only 6 per cent of the francophone students.

Students' Reading Performance at the International Benchmarks, by Sex

As indicated in the first chapter, girls outperformed boys in reading by 12 points. In order to provide an overall picture of reading skills, the percentages of boys and girls attaining each international benchmark are provided in this section. Table 2.4 presents the percentages by sex for Canada overall; Table 6 in Appendix V presents the percentages for the provinces.

Table 2.4 Percentage of students at the international benchmarks of reading performance by sex

Sex	Advanced International Benchmark		High International Benchmark		Intermediate International Benchmark		Low International Benchmark	
	%	SE	%	SE	%	SE	%	SE
Girls	15	0.9	54	1.4	88	0.7	98	0.3
Boys	11	1.0	48	1.4	84	0.8	97	0.3

In line with the previous results, the percentages of girls are higher than those of boys for each international benchmark. All sex differences are significant except for the Low International Benchmark. The largest difference is found at the High International level: girls had an advantage of 6 per cent over boys. It is important to note that despite a significant gap, a high percentage of boys are reaching the intermediate benchmark (84 per cent).

A number of items from the PIRLS 2011 assessment have been publicly released. Some of these are provided for each benchmark as examples of Canadian students' work in order to explain how each international benchmark should be interpreted and to illustrate the kinds of questions that PIRLS uses to assess reading literacy at the Grade 4 level. Students' examples for two complete blocks, one literary passage entitled "Enemy Pie" and one informational text called "The Giant Tooth Mystery," are presented in Appendix II.

3. ACTIVITIES AT HOME RELATED TO READING LITERACY

The home environment can create a climate that encourages children to explore and experiment with learning. Moreover, the way that children experience learning is often shaped by parenting beliefs and behaviours (Mullis et al., 2009). Within this context, information about the home environment should be considered when studying factors that affect the development of reading literacy. The PIRLS 2011 Learning to Read Survey covered a variety of such factors, including economic, social, and educational resources at home; parental emphasis on literacy development; and parents' behaviours and attitudes related to learning. Since the inception of PIRLS 2001, it has been shown that the responses to several questions from this home questionnaire correlated closely with students' reading performance.

This chapter presents selected results from the Learning to Read Survey and the Student Questionnaire as they relate to the home environment and reading achievement. Taking into account the Canadian context, the following areas have been selected for analysis in this chapter: languages spoken at home, engagement of parents with their child, students' resources at home, and parents' reading habits and attitudes, as well as a few other variables of interest from this questionnaire. In each area, a number of variables will be presented, followed by descriptive statistics for Canada and participating provinces. The relationship between these variables and reading achievement will be highlighted, where pertinent.

Languages Spoken at Home

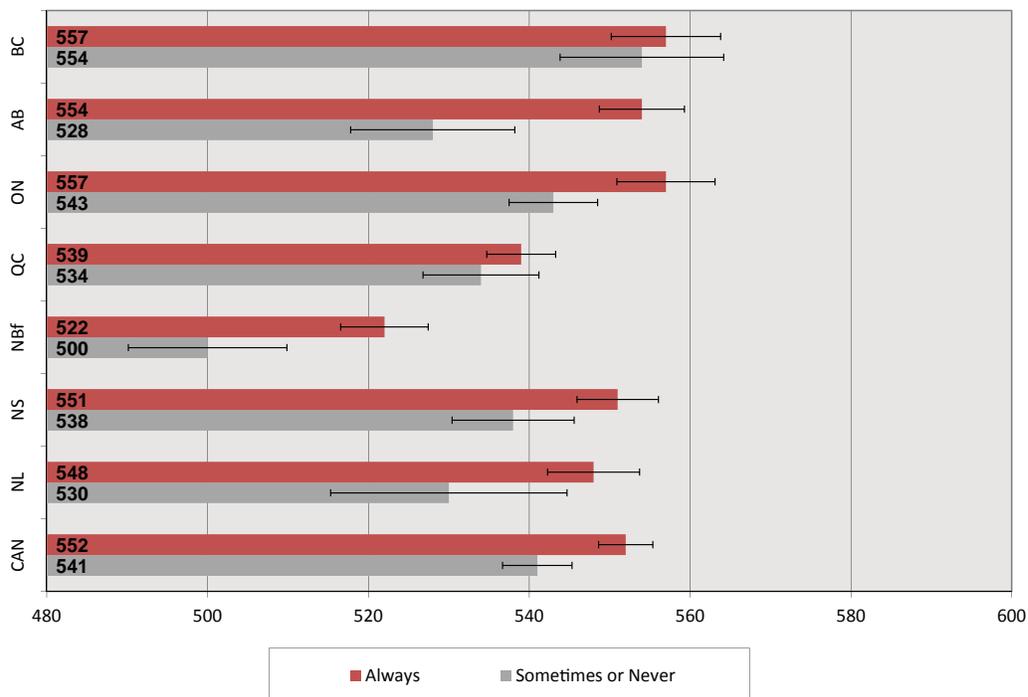
In Canada, it is expected that all students will speak English, French, or both when studying at school. However, with one in four Canadian students being of immigrant background (Brochu et al., 2011), many students may not speak the test language (or the language of instruction) at home. According to students who responded to the PIRLS 2011 Student Questionnaire, 74 per cent of Canadian students “always” speak the language of the test (English or French) at home, while 26 per cent of them “sometimes” or “never” speak the test language. This proportion is similar to the international average (73 per cent). In the provinces, percentages of students “always” speaking the language of the test at home range from 64 per cent in New Brunswick French to 93 per cent in Newfoundland and Labrador (Table 3.1).

Table 3.1 Proportion of students speaking the language of the test at home

	Always	Sometimes or Never
BC	74%	26%
AB	77%	23%
ON	68%	32%
QC	73%	27%
NBf	64%	36%
NS	86%	14%
NL	93%	7%
CAN	74%	26%
INT	73%	27%

Chart 3.1 shows that Canadian students speaking the language of the test at home performed significantly better in reading than students who “sometimes” or “never” speak the test language, with an advantage of 11 points. All provinces show a similar pattern, and the difference in the scores between students who “always” speak the language of the test at home and those who “sometimes” or “never” speak it, is significant for Alberta, Ontario, New Brunswick French, Nova Scotia, and Newfoundland and Labrador.

Chart 3.1 Reading achievement scores by students speaking the language of the test at home



Engagement of Parents with Their Child

Before children even start school, parents are their first teachers. In an extensive review of several longitudinal studies conducted in the United States, the United Kingdom, and Canada, Duncan et al. (2007) concluded that early mathematics and reading skills are powerful predictors of later reading achievement. The authors also confirmed that most of the variation in school achievement cannot be explained by prior achievement alone and stressed the potential for productive intervention at school in the early years. Pagani and her colleagues (Pagani, Fitzpatrick, Archambault, & Janosz, 2010) replicated these results by extending their study to young children in Quebec and further accentuated the importance of early mathematics skills, particularly in predicting achievement in the first years of school.

PIRLS 2011 asked parents how often they were engaged in a number of literacy-related activities¹⁵ with their child before he or she started school and created an Early Literacy Activity scale from their responses. On that scale, Canadian parents showed one of the highest involvement levels, being surpassed only by those from the Russian Federation, Northern Ireland, New Zealand, Ireland, and Australia. There is a fair amount of variability across provinces on this index, as can be seen in Table 3.2, with a higher value of the index in Newfoundland and Labrador and a lower value in Quebec.

Table 3.2 Early Literacy Activity scale before beginning elementary school

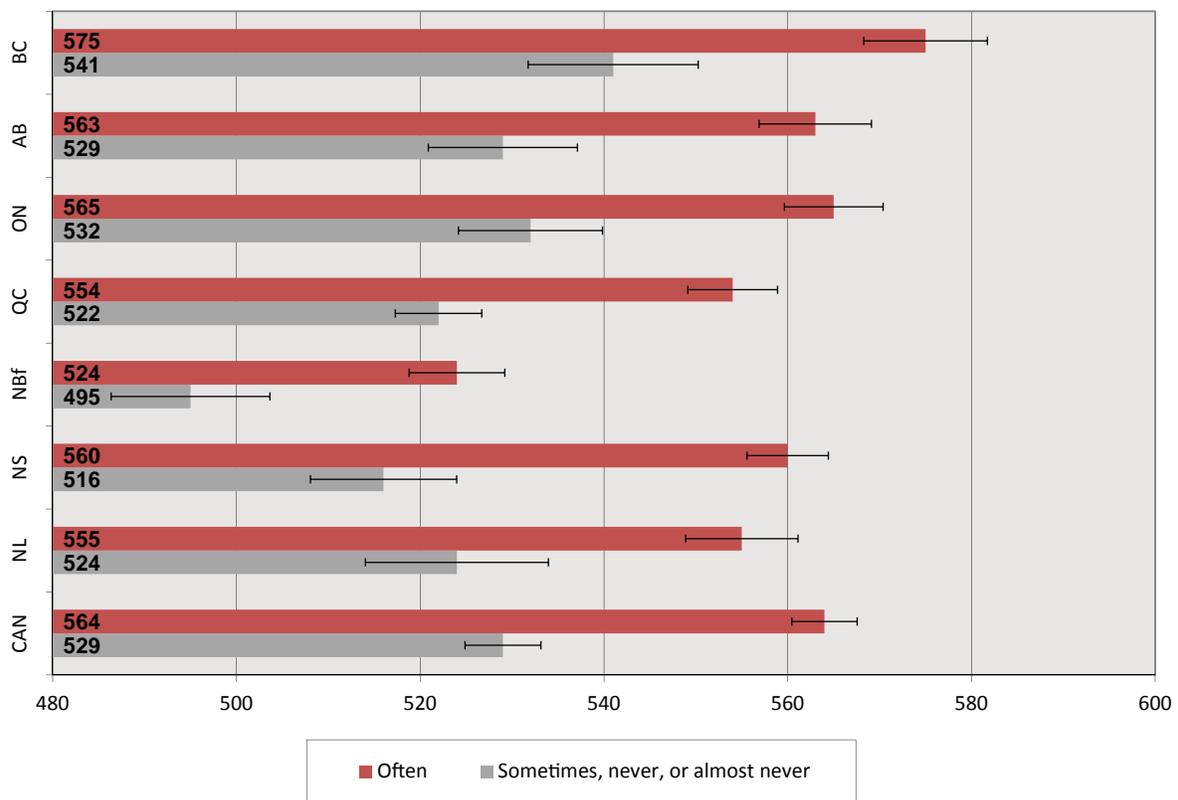
	Average scale score	SE
BC	10.8	(.08)
AB	10.8	(.05)
ON	10.9	(.05)
QC	10.2	(.04)
NBf	10.8	(.07)
NS	11.3	(.04)
NL	11.5	(.06)
CAN	10.7	(.04)
INT	10.0	–

¹⁵ Parents were surveyed on the following nine activities: reading books, telling stories, singing songs, playing with alphabet toys, talking about things they have done, talking about things they have read, playing word games, writing letters or words, and reading aloud signs and labels.

In Canada, the Grade 4 students whose parents *often* performed literacy-related activities had an advantage of 25 points over those students whose parents only *sometimes* performed these activities. As can be expected, a large proportion of Canadian parents (about 70 per cent) often read books with their children and talked about things they have done with them, before their child began primary school. A lower proportion of parents (less than 40 per cent) talked about what they had read or played word games with their child.

As shown in Chart 3.2, the Grade 4 Canadian students whose parents *often* read books at home with them before they began primary school had an advantage of 35 points over those who did that only *sometimes, never, or almost never*. This pattern is consistent across provinces.

Chart 3.2 Reading achievement scores by students whose parents read to them before they started school



Students' Resources at Home

In international large-scale assessments, results have shown that the socioeconomic level of students is one of the strongest predictors of student academic success in many countries. However, Canada is one of the very few countries showing high achievement and a lesser impact of the socioeconomic status (SES), which is a sign of high equity in achievement (OECD, 2010b). In PIRLS, in addition to the standard measures of SES such as the parental level of education and professional occupation and the number of books in the home, two other variables were added: the number of children's books and the number of home-study supports (e.g., students having their own room and an Internet connection). These two variables were later aggregated to create a Home Resources for Learning scale. From that scale, students were divided into the following three categories: *having many resources*, *having some resources*, and *having few resources*. Consistent with other studies, Canadian students were among those with the most home resources available for learning, surpassed only by Norway, Australia, and Sweden on that scale. In Canada, the difference in performance between the students *having many* such resources and those *having some* of them was one of the smallest (40 points on the PIRLS scale), with only five countries showing a smaller difference (Hong Kong SAR, the Netherlands, Norway, Portugal, and Finland). When home resources are examined individually, Canadian students have more of each of these than the international average. In particular, 84 per cent of Canadian students have more than 25 children's books in their home (the international average is 59 per cent), and 77 per cent have their own room and an Internet connection (the international average is 55 per cent). As can be seen from Table 3.3, there is some variability across provinces with respect to these resources. In spite of the more limited impact of this variable in Canada, Midraj and Midraj (2011) showed that having parents who provide learning resources to their Grade 4 children was a significant predictor of reading achievement.

Table 3.3 Proportion of students with selected home resources

	At least one parent with a university degree	At least one parent with a professional occupation	More than 25 children's books in their home	More than 100 books in their home	Own room and Internet connection in their home
BC	48%	55%	84%	38%	76%
AB	43%	54%	88%	37%	77%
ON	47%	57%	84%	37%	74%
QC	45%	55%	78%	28%	82%
NBf	38%	50%	85%	29%	80%
NS	43%	54%	93%	41%	78%
NL	31%	47%	94%	38%	86%
CAN	45%	56%	84%	35%	77%
INT	31%	36%	59%	27%	55%

Parents' Reading Habits and Attitudes

A child's home provides the first and probably most influential environment in shaping his or her attitudes toward reading. The importance of these early attitudes on future reading engagement and enjoyment, and consequently on reading achievement, cannot be overemphasized. As shown in PISA 2009, Canadian 15-year-old students who enjoyed reading more, and who spent more time reading, achieved higher reading scores than those who did not (Brochu et al., 2011).

In PIRLS 2011, a Parents Like Reading scale was constructed by aggregating responses from seven statements about reading habits and enjoyment.¹⁶ Although the average score of Canadian parents on this scale was higher than the international average, parents from 11 other countries showed a higher appreciation of reading. According to Table 3.4, 41 per cent of Canadian parents *like reading*, 50 per cent *somewhat like reading*, and 9 per cent *do not like reading*. Only six countries had fewer parents who do not like reading than Canada (Georgia, Trinidad and Tobago, Sweden, New Zealand, Malta, and Israel).

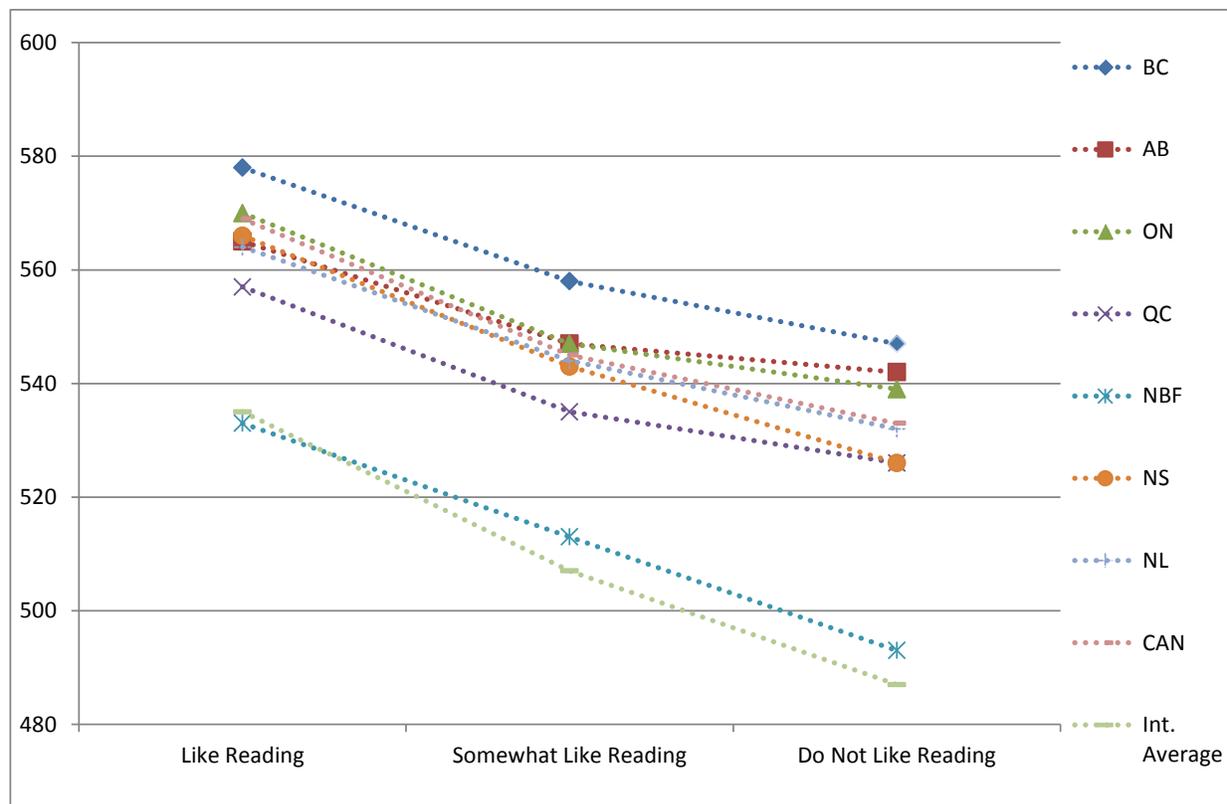
Table 3.4 Proportion of parents who like reading

	Like reading	Somewhat like reading	Do not like reading
BC	47%	45%	7%
AB	49%	43%	9%
ON	44%	48%	8%
QC	29%	58%	13%
NBf	26%	58%	16%
NS	52%	39%	9%
NL	39%	50%	11%
CAN	41%	50%	9%
INT	32%	57%	11%

¹⁶ The seven statements were as follows: I read only if I have to; I like talking about what I read with other people; I like to spend my spare time reading; I read only if I need information; reading is an important activity in my home; I would like to have more time for reading; and I enjoy reading (some statements have a reversed scale).

As shown in Chart 3.3 below, students whose parents like reading achieved higher scores than those whose parents do not, for Canada and all provinces. In Canada, these students have an advantage of 36 points.

Chart 3.3 Reading achievement scores by students whose parents like reading



Other Home-Related Variables

As part of the Learning to Read Survey, PIRLS 2011 also covered several other areas of interest that are worth looking at more closely.

Attending Kindergarten

Parents were asked whether their child had attended kindergarten¹⁷ before elementary school. Internationally, 89 per cent of participating students attended kindergarten, with a vast majority of countries having an average attendance rate at or above 95 per cent (including Canada, with a 95 per cent attendance rate). There were, however, several notable exceptions: in six countries, more than a quarter of students did not attend kindergarten (Azerbaijan, Saudi Arabia, Oman, Indonesia, Poland, and Croatia). In Canadian provinces, little variability was observed between provinces.

¹⁷ Defined as the pre-primary level of education or ISCED Level 0.

Age at the Beginning of the Elementary Grades

The age at which participating students began their elementary education varied substantially across countries. This factor does not directly influence PIRLS results, because, as a grade-based assessment, all participating students have received four years of elementary education. However, the age at which they began formal schooling needs to be considered when making international comparisons, since any difference will be carried throughout the entire formal schooling period. In Canada, 73 per cent of students were five years old or younger when they started elementary school, which was also the modal age¹⁸ in eight other countries (Northern Ireland, New Zealand, Ireland, Malta, Trinidad and Tobago, Australia, United Arab Emirates, and Colombia). In 23 countries, the modal age was six years old, while it was seven years old in 11 countries, many of which could be considered high-achieving countries in this PIRLS assessment (Bulgaria, Finland, Sweden, Romania, Croatia, Singapore, Hungary, the Russian Federation, Iran, Lithuania, and Chinese–Taipei). Interestingly, in Chinese–Taipei, over 20 per cent of students began elementary school at age eight or older. In Canadian provinces, there is less variability, as shown in Table 3.5. In all provinces, more than two-thirds of the students begin elementary school at five years old or younger. This factor needs to be considered carefully, as there is no consistent pattern of relationship across the world between the age at which students begin elementary school and their reading achievement at Grade 4.

Table 3.5 Proportion of students by age at which they began elementary school

	Five years old or younger	Six years old	Seven years old	Eight years old or older
BC	76%	22%	1%	0%
AB	66%	32%	1%	0%
ON	76%	23%	1%	0%
QC	66%	33%	1%	0%
NBf	77%	23%	0%	0%
NS	91%	8%	0%	0%
NL	91%	8%	0%	0%
CAN	73%	26%	1%	0%
INT	25%	48%	26%	2%

¹⁸ The modal age represents the age category with the highest proportion of students.

Homework

The issue of how much homework should be assigned to students in the early years is a sensitive one for both educators and parents. For some authors (e.g., Kohn, 2007), the disadvantages of giving homework far outweigh any benefit; for others, time, frequency, and effort spent on homework may have a differential effect (e.g., Trautwein, 2007). PIRLS 2011 asked parents how much time, on average, their child spends doing homework in a day. It should be noted that parents may have an impression that differs from the amount of homework that teachers would say they give every day, as well as from the amount of homework that students say they do every day.

Internationally, about one-third of parents said their child spends between 16 and 30 minutes per day on homework, and the same proportion stated that he or she spends between 31 and 60 minutes. The modal value was 15 minutes or less in only one country (the Netherlands); 16 to 30 minutes in 16 countries, including Canada; between 31 and 60 minutes in 18 countries; and over 60 minutes per day in eight countries (the Russian Federation, Hong Kong SAR, Romania, Bulgaria, Georgia, Azerbaijan, Italy, and Colombia). The relationship between time spent on homework and reading achievement on this PIRLS assessment is complex, and there is no clear pattern that applies to all countries. However, in most countries there is a relationship between reading achievement and time spent on homework — up to 60 minutes — followed by a decrease thereafter. However, in other countries, including Canada, students doing no homework or doing 15 minutes of homework or less per day performed better than those spending more time on homework. Although the modal time spent on homework in Canada is between 16 and 30 minutes, Table 3.6 shows that there is some variation across provinces.

Table 3.6 Proportion of students by time spent daily on homework

	No homework	15 minutes or less	16–30 minutes	31–60 minutes	More than 60 minutes
BC	7%	28%	37%	22%	5%
AB	10%	36%	37%	15%	2%
ON	7%	28%	40%	21%	5%
QC	1%	12%	47%	33%	7%
NBf	2%	21%	54%	21%	2%
NS	5%	30%	49%	15%	2%
NL	3%	19%	51%	24%	3%
CAN	6%	26%	41%	22%	5%
INT	2%	13%	32%	32%	20%

4. STUDENTS' READING ATTITUDES, BEHAVIOURS, AND OUT-OF-SCHOOL ACTIVITIES

Reading is universal, and many of our everyday activities require it. Students learn to read early in school and develop reading habits at a young age (CMEC, 2008). These habits not only affect students' performance at school but can also shape their future lifestyles and career practices (OECD, 2010c). For this reason, PIRLS 2011 collected data on the students' attitudes, behaviours, and reading activities outside of school.

The results presented in this chapter are obtained from the responses to the student questionnaire. Analysis is presented for four scales derived from this questionnaire: "students like reading," "students motivated to read," "students confident in reading," and "students engaged in reading lessons." Information on two additional questionnaire items is also provided: "time spent reading outside of school" and "type of reading outside of school." Descriptive statistics and the relationship with students' reading achievement are presented for each scale.

Students Like Reading

The importance of student factors, such as the time spent on reading, the enjoyment of reading, and valuing reading, has been often emphasized in the international research literature (Mullis et al., 2012). Similarly, Canadian results have shown that students' attitudes toward reading have a strong impact on their reading performance (Brochu et al., 2011). Both PISA 2009 and PCAP 2007 results show that there is a strong and positive relationship between reading for enjoyment and reading achievement.

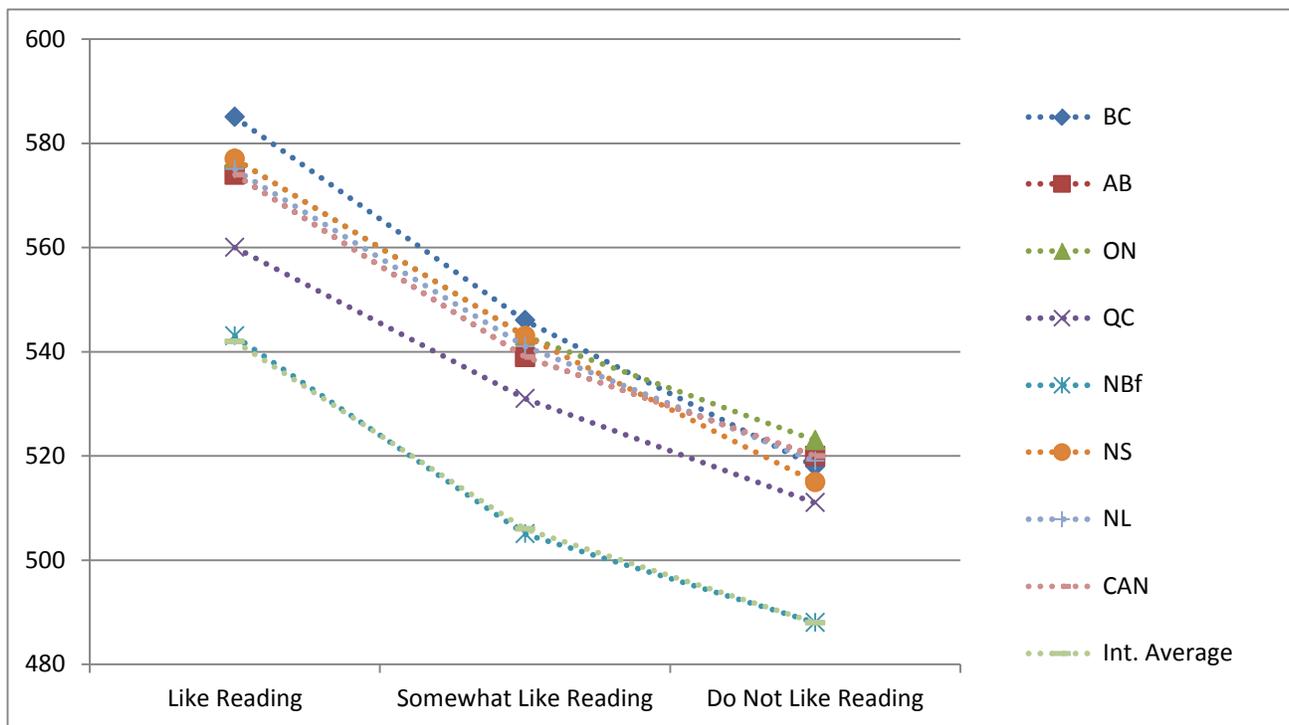
In the PIRLS 2011 Student Questionnaire, students were asked to indicate their degree of agreement with six statements related to reading enjoyment, and to report how often they did out-of-school reading activities.¹⁹ The Students Like Reading scale was constructed based on the students' responses to these statements. The results are reported based on three categories: Like Reading, Somewhat Like Reading, and Do Not Like Reading.

Worldwide, Canadian students are among those who like to read the most, being surpassed by only four countries (Portugal, Georgia, Iran, and Indonesia). The results also confirm that students' enjoyment in reading has a positive effect on their reading scores. Thus, in Canada, students who like reading have an advantage of 54 points over those who do not like reading. Similar to PISA and PCAP

¹⁹ There were six statements related to reading enjoyment: "I read only if I have to"; "I like talking about what I read with my parents or my friends"; "I would be happy if someone gave me a book as a present"; "I think reading is boring"; "I would like to have more time reading"; and "I enjoy reading." There were two statements related to out-of-school reading: "I read for fun" and "I read things that I choose myself."

results obtained at the secondary level, PIRLS results show the same pattern at the Grade 4 level: students who like to read tend to perform better in reading. Chart 4.1 shows that the pattern is very consistent across provinces. PIRLS results confirm the close relationship between reading enjoyment and reading achievement but do not specify the direction of the relationship. In other words, it is possible that reading enjoyment “causes” reading achievement, but it could also be that these students with high achievement enjoy reading more.

Chart 4.1 Reading achievement scores by students who like reading



PISA 2009 results show that the sex gap in reading performance could be the indirect result of the differences in how much boys and girls enjoy reading (OECDc, 2010). Therefore, it is important to examine the results of the Students Like Reading scale by sex. As shown in Table 4.1, a larger proportion of girls (43 per cent) than boys (27 per cent) like reading. At the other end of this scale, 20 per cent of boys do not like reading, while only 8 per cent of girls do not like it. However, it is interesting to note that boys who like reading perform as well as girls.

Table 4.1 Proportion and average scores of students who like reading, by sex — Canada

	Like reading		Somewhat like reading		Do not like reading	
	%	Average score	%	Average score	%	Average score
Girls	43	576 (2.5)	49	543 (2.3)	8	519 (4.6)
Boys	27	572 (3.6)	54	536 (2.3)	20	521 (2.8)

Results have also shown a correlation between parents who like to read and students who like to read ($r=0.14$). The more parents like to read, the more their children tend to like reading as well.

Students Motivated to Read

Students were asked to indicate their degree of agreement with six statements addressing motivational facets of reading.²⁰ The responses were aggregated to create the Students Motivated to Read scale. The results were reported on the following three categories: “motivated,” “somewhat motivated,” and “not motivated.”

Analysis of results show that Grade 4 students in 23 countries reported greater motivation to read than Canadian students. In Canada, 72 per cent of students are “motivated,” 24 per cent “somewhat motivated,” and 4 per cent “not motivated.” There is some variation across provinces, as shown in Table 4.2. In most provinces, more than 70 per cent of Canadian students defined themselves as “motivated to read.” The exceptions are Quebec and New Brunswick French, at 61 per cent and 69 per cent respectively. In Canada, students who are motivated and somewhat motivated to read performed significantly better in reading than those who are not motivated to read. The fundamental argument is not a complex one — reading achievement is influenced by the amount of reading one does, which in turn is influenced by one’s motivation to read.

Table 4.2 Proportion of students motivated to read

	Motivated	Somewhat motivated	Not motivated
BC	73%	23%	4%
AB	75%	21%	4%
ON	75%	21%	4%
QC	61%	34%	5%
NBf	69%	27%	4%
NS	73%	22%	5%
NL	76%	20%	4%
CAN	72%	24%	4%
INT	74%	21%	5%

²⁰ The six statements were as follows: “I like to read things that make me think”; “It is important to be a good reader”; “My parents like it when I read”; “I learn a lot from reading”; “I need to read well for my future;” and “I like it when a book helps me imagine other worlds.”

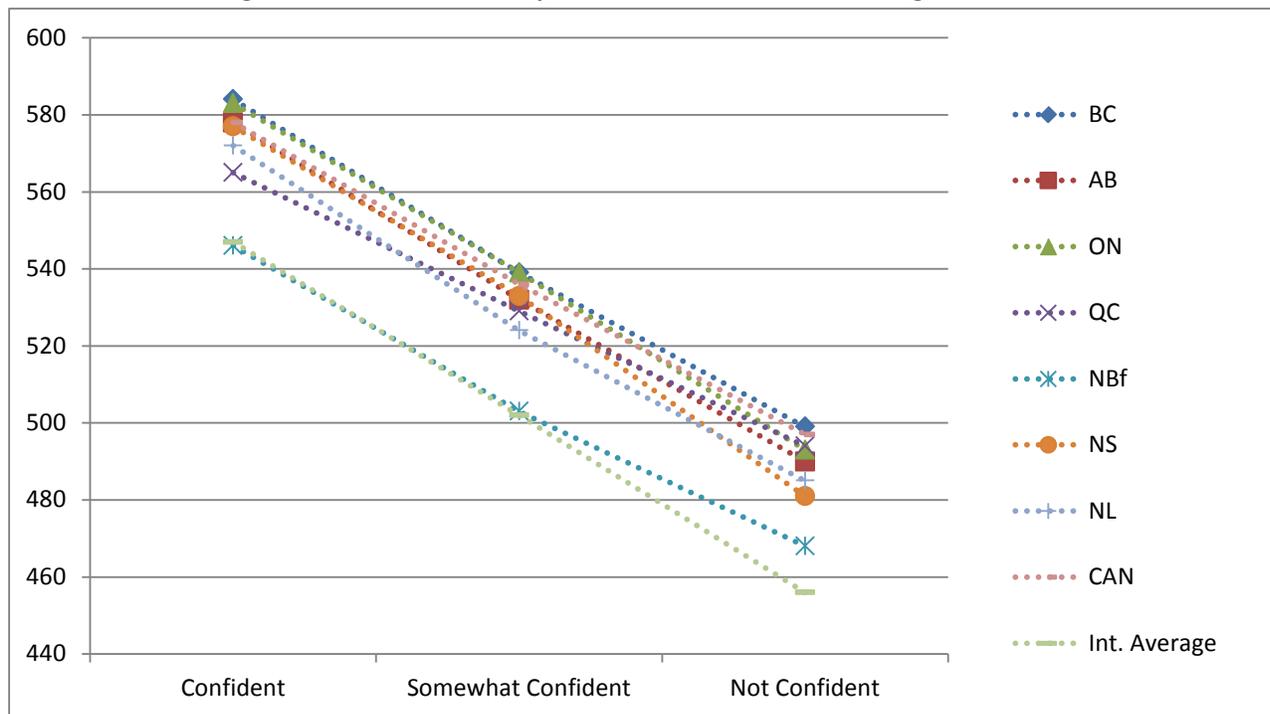
Students Confident in Reading

Previous international assessments have shown that students who have more confidence in their reading skills obtain higher reading scores. Students who practise by reading every day build their reading proficiency and then become more confident in their reading skills (OECD, 2010c).

PIRLS 2011 assessed students' confidence in reading by asking their degree of agreement with seven statements related to how well they read.²¹ Students' responses were combined to create the Students Confident in Reading scale, and the results were reported on three categories: "confident," "somewhat confident," and "not confident."

Students in 13 countries have more confidence in their reading skills than Canadian students. In Canada, 41 per cent of students defined themselves as "confident" in reading, 51 per cent "somewhat confident," and 9 per cent "not confident." The percentage of confident students in Canada is above the international average (36 per cent). Among the provinces, the largest proportion of students confident in reading was found in Newfoundland and Labrador (52 per cent) and the lowest proportion in Quebec (35 per cent). The level of confidence of Grade 4 students in their reading ability had a strong impact on their PIRLS reading scores. In Canada, the difference in student performance between "confident" and "somewhat confident" and between "somewhat confident" and "not confident" is 42 points and 39 points, respectively. The pattern is consistent across all provinces (Chart 4.2).

Chart 4.2 Reading achievement scores by students confident in reading



²¹ The seven statements were as follows: "I usually do well in reading"; "Reading is easy for me"; "Reading is harder for me than for many of my classmates"; "If a book is interesting, I don't care how hard it is to read"; "I have trouble reading stories with difficult words"; "My teacher tells me I am a good reader"; and "Reading is harder for me than any other subject."

Students Engaged in Reading Lessons

According to the PISA 2009 results, students who read more for enjoyment are more engaged and have higher scores in reading (Brochu, Gluszynsky & Cartwright, 2011). It is important for parents and teachers to nurture reading enjoyment for children (e.g., by providing more interesting texts for them to read) to improve the reading performance of students who are disengaged (OECD, 2010c).

PIRLS 2011 assessed the students' engagement in reading lessons by asking their degree of agreement with seven statements related to the reading they do at school.²² Based on the responses to these statements, the Students Engaged in Reading Lessons scale was constructed. The results were reported on the following three categories: "engaged," "somewhat engaged," and "not engaged."

Analysis of results show that Grade 4 students in 21 countries are more engaged in reading lessons than Canadian students. The percentage of "engaged" students in Canada is below the international average of 42 per cent. More precisely, in Canada, 39 per cent of students defined themselves as being "engaged" in reading lessons, 54 per cent as "somewhat engaged," and 7 per cent as "not engaged." The percentage of "engaged" students varies across provinces, from 30 per cent in Quebec to 49 per cent in Newfoundland and Labrador, with very little provincial variation in the "not engaged" category. A higher proportion of Canadian girls (45 per cent) are engaged in reading lessons, as compared to boys (33 per cent). This is consistent with past PISA results comparing reading engagement by sex to reading achievement at the high school level (Kirsch et al., 2002). In most countries, including Canada, there is a linear positive relationship between students' engagement in reading lessons and reading achievement. Table 4.3 shows the percentages of students across Canada with different levels of engagement in reading lessons. Once again, the direction of the relationship between reading engagement and achievement cannot be inferred from the PIRLS results. It is possible that more reading engagement "causes" better achievement (or vice versa).

²² The seven statements were as follows: "I like what I read about in school;" "My teacher gives me interesting things to read;" "I know what my teacher expects me to do;" "I think of things not related to the lesson;" "My teacher is easy to understand;" "I am interested in what my teacher says;" and "My teacher gives me interesting things to do."

Table 4.3 Proportion of students engaged in reading lessons

	Engaged	Somewhat engaged	Not engaged
BC	42%	52%	6%
AB	43%	51%	6%
ON	42%	52%	6%
QC	30%	61%	9%
NBf	40%	54%	7%
NS	42%	51%	7%
NL	49%	45%	6%
CAN	39%	54%	7%
INT	42%	50%	8%

Time Spent Reading Outside of School

Students' reading habits are another aspect to consider; more specifically, it is important to examine the amount of time students spend on reading outside of normal school hours. "Practice makes perfect" has been shown to apply to reading, and this is an area where both the home and the school can provide the right environment to have a significant impact on children's reading skills. Indeed, the differences between countries as well as between Canadian provinces on this variable may be due to the opportunities students have for reading outside of school, to the extent reading is valued within the students' culture, and/or to the extent students like reading (OECD, 2010c).

There was one question in the student questionnaire that asked students how much time they spent reading outside of school on a normal school day. Students had to report if they were spending on reading *less than 30 minutes, 30 minutes up to 1 hour, from 1 hour up to 2 hours, or 2 hours or more.*

The international average shows that about 40 per cent of students read less than 30 minutes per day outside of school, and about 35 per cent of them spend between 30 minutes and 1 hour per day. The *modal value* was less than 30 minutes in 32 countries, including Canada, and 30 minutes to 1 hour in 13 countries. In all participating provinces, and in most countries, there is a linear positive relationship between reading achievement and time spent reading outside of school (up to 2 hours), followed by a decrease thereafter. This negative effect of overreading is consistent with past findings using PISA data in Canada, where it was hypothesized that students who struggle more may need more time to process what they are reading (Ma & Crocker, 2007). There is some variation across provinces, from 37 per cent of the students spending less than 30 minutes in British Columbia to 50 per cent

in New Brunswick French and Newfoundland and Labrador. In three provinces (British Columbia, Alberta, and Ontario), half or more of these Grade 4 students read between 30 minutes and two hours per day, as shown in Table 4.4.

Table 4.4 Proportion of students by time spent reading outside of school

	Less than 30 minutes	30 minutes up to 1 hour	From 1 hour up to 2 hours	2 hours or more
BC	37%	42%	11%	11%
AB	39%	40%	10%	11%
ON	40%	39%	11%	11%
QC	44%	38%	9%	9%
NBf	50%	37%	7%	6%
NS	44%	38%	9%	9%
NL	50%	34%	7%	8%
CAN	41%	39%	10%	10%
INT	40%	35%	13%	11%

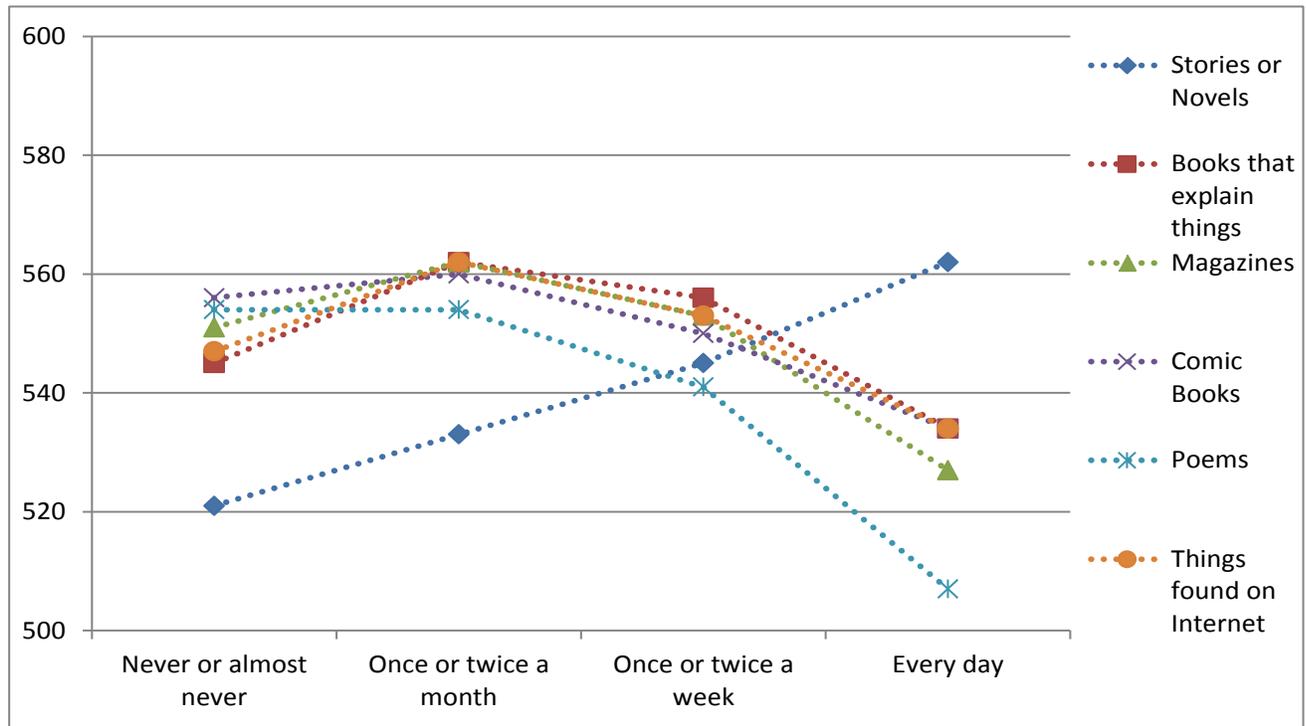
Type of Reading Outside of School (Print or On-Line)

This section presents the results on different types of reading outside of school. Students were asked to report how often they read stories or novels, books that explain things, magazines, comic books, poems, or things found on the Internet. Four frequency categories were proposed for each particular type of reading: “every day or almost every day,” “once or twice a week,” “once or twice a month,” or “never or almost never.”

On average across countries, about 32 per cent of the students read “books that explain things” every day or almost every day outside of school, while only 24 per cent of the students read magazines. The percentages are different for Canadian students. About 46 per cent of Canadian students read stories or novels every day or almost every day. Only New Zealand and Colombia have a higher percentage of students reading stories or novels every day or almost every day. In Canada, only 6 per cent of the students read poems every day or almost every day. Although the pattern is consistent, there is some variation across provinces: the proportion of students reading stories or novels every day or almost every day ranges from 41 per cent in Quebec to 51 per cent in British Columbia. In Canada, reading stories or novels has a positive significant impact on the reading scores. The more often students read stories or novels, the better they tend to perform in reading. As for other reading materials, such as books that explain things, magazines, comic books, poems, and things found on the Internet, students

reading them once or twice a month tend to perform better in reading than those who never read them or those who read them more than once a week (see Chart 4.3).

Chart 4.3 Reading achievement scores by type of reading outside of school — Canada



These results suggest that to improve achievement, reading a variety of materials every week might be preferable to focusing on only one type every day. Finally, it should not be surprising that PIRLS confirms that the relationship between the sex of the student and the type of reading gets engrained much earlier than in high school (Kirsch et al, 2002). At the Grade 4 level, girls read more stories and novels than boys every day (53 per cent vs. 39 per cent), and boys read more comic books than girls every day (32 per cent vs. 19 per cent).

5. TEACHERS AND TEACHING READING

Teachers, in particular in the early years, have a profound impact on how children learn basic skills such as reading (see Dénomme, 2006, for teacher determinants on reading achievement). Grade 4 is a rather interesting moment in students' lives, as they transition from learning to read to reading to learn in the primary grades (Chall, 1996; Sun, Zhang & Scardamalia, 2010). At that point, reading skills become the main tool that enables and supports most of their other learning in school. Moreover, deficiencies in reading in the early years may translate into deficiencies in other learning in future years.

This chapter presents results from the PIRLS 2011 Teacher Questionnaire with a particular focus on describing the background of those Grade 4 teachers who were involved with the study, as well as some of their working conditions and classroom resources, and activities surrounding their teaching of reading.

Teacher Characteristics and Working Conditions

In this PIRLS assessment, female teachers outnumbered male teachers. The proportion by sex in Canada was very similar to the proportion at the international level, with slightly more male teachers in British Columbia and Ontario and fewer in New Brunswick French. The prevalence of female teachers in the early years in general and in language arts in particular is well documented in previous IEA studies (Mullis et al., 2004; Mullis et al., 2007; Martin et al., 2008), as well as in pan-Canadian assessments (CMEC, 2009). Interestingly, although students having female teachers tended to perform better on this PIRLS reading assessment internationally, in Canada there was no difference between the scores of students with a male teacher and those with a female teacher (548 vs. 548).

Although more than half of Canadian teachers working in elementary and secondary schools were 40 years old or older, there were substantial differences in age across provinces (Statistics Canada, 2011). In 2011, the proportion of Grade 4 teachers in the different age groups in Canada was quite similar to the international distribution, with slightly more than 50 per cent of teachers being over 40 years old. Across provinces, the tendency was to have older teachers in British Columbia, and younger teachers in Ontario and New Brunswick French (Table 5.1). Although internationally, there seems to be a positive linear relationship between the age of the teacher and student achievement, there is no observable pattern in Canada and across provinces.

Canadian teachers are also slightly less experienced than the international average, with approximately 14 years of teaching experience compared to an international average of 17 years. At the provincial

level, teachers in Newfoundland and Labrador have the most experience (approximately 19 years) and those in Ontario the least (12 years).

Table 5.1 Proportion of teachers by sex, age group, and years of experience

	Sex		Age group						Years of experience
	Male	Female	Under 25	25–29	30–39	40–49	50–59	60 or more	
BC	17%	83%	1%	5%	27%	28%	37%	2%	16.8
AB	14%	86%	7%	14%	28%	23%	28%	1%	14.1
ON	17%	83%	1%	13%	43%	21%	17%	4%	11.9
QC	12%	88%	0%	11%	35%	29%	22%	2%	15.6
NBf	10%	90%	0%	24%	36%	26%	14%	0%	13.1
NS	13%	87%	0%	10%	34%	27%	27%	1%	15.3
NL	14%	86%	1%	10%	22%	38%	28%	2%	18.5
CAN	16%	84%	1%	12%	35%	27%	22%	3%	14.3
INT	17%	84%	3%	11%	30%	32%	21%	4%	17.4

From the PCAP 2007 assessment (CMEC, 2009), it was found that the level of formal education of teachers in the middle years varied substantially across Canadian jurisdictions, and that this factor had little impact on student achievement in reading. It should be noted that previous PIRLS assessments did not provide the same level of detail on the education level of teachers that is now available in 2011.

As seen in Table 5.2, university level is almost universal among PIRLS Grade 4 teachers in Canada, with 15 per cent having completed a master’s or doctorate. Internationally, a quarter of all teachers have completed a graduate level of education. In seven countries, the proportion of teachers with graduate level education is 70 per cent or more — well exceeding that of Canada (Slovak Republic, Poland, Czech Republic, Finland, Russian Federation, France, and Georgia). Conversely, in 19 countries, 5 per cent of teachers or less had completed their graduate education. In three countries, at least one third of these Grade 4 teachers had completed high school only (Italy, Morocco, and Romania). The relationship between the level of education of the teachers and student reading achievement is positive and linear for levels up to the bachelor’s degree. For the graduate levels, the gains are uneven across countries, and there is no difference in Canada.

Table 5.2 Proportion of teachers by highest level of education completed

	Highest level of education completed		
	Below university	Bachelor's	Master's or doctorate
BC	2%	66%	32%
AB	1%	94%	5%
ON	0%	87%	13%
QC	0%	86%	14%
NBf	0%	90%	10%
NS	3%	62%	35%
NL	0%	62%	38%
CAN	1%	84%	15%
INT	21%	53%	26%

Although past research seems to support the positive impact of teacher specialization on student achievement in mathematics and science at the secondary level (Schmidt et al., 2007; Bolyard & Moyer-Packenham, 2008), the relationship between content-area specialization and achievement is not well understood for the primary grades (Vandersall, Vruwink & LaVenia., 2012). The PCAP 2007 assessment found a positive relationship between teacher specialization in the middle years and student achievement in reading (CMEC, 2009) but no significant relationship in mathematics (CMEC, 2012).

Table 5.3 presents the percentage of Grade 4 teachers who specialized in teaching at the primary/elementary level or in teaching language arts (English/French) during their postsecondary education. More than 80 per cent of Canadian teachers who participated in PIRLS are specialized in teaching at the primary level. This is about the same proportion as observed internationally. However, only a quarter of Canadian teachers have language arts as a major area of specialization. This is lower than the international average of 32 per cent. Canadian provinces show substantial variations for these two background variables. Between 69 per cent (Ontario) and 92 per cent (Quebec) of teachers are specialized at the primary level, while between 16 per cent (Quebec) and 33 per cent (Newfoundland and Labrador) have majored in language arts.

Table 5.3 Proportion of teachers by area of specialization

	Primary/elementary education	Language arts (English/French)
BC	86%	25%
AB	87%	24%
ON	69%	23%
QC	92%	16%
NBf	88%	25%
NS	84%	32%
NL	86%	33%
CAN	81%	25%
INT	79%	32%

As outlined in the PIRLS 2011 International Report (Mullis et al., 2012), past studies are not conclusive on the impact of teacher professional development (PD) and student literacy achievement, in some cases even pointing to the ineffectiveness of PD (Harris & Sass, 2011). PIRLS 2011 focused on the number of hours that participating Grade 4 teachers spent on PD activities such as workshops or seminars directly related to reading or the teaching of reading in the previous two years. Across all participating countries, a quarter of all teachers did not spend any time on PD activities in the previous two years, while almost as many spent 16 hours or more. Interestingly, in four countries, more than half the teachers had not spent any time on PD activities in the previous two years (Morocco, Finland, France and Bulgaria).

The vast majority of Canadian teachers (93 per cent) devoted some time to this type of activity, with 30 per cent spending 16 hours or more. Table 5.4 presents the breakdown by province. Of mention is the contrasting situation between Nova Scotia and Quebec: In Nova Scotia, only 1 per cent of teachers had not spent any time on PD activities during the previous two years compared to 15 per cent in Quebec. At the other end of the spectrum, more than half (55 per cent) of Nova Scotia teachers had spent more than 16 hours compared to 14 per cent of teachers in Quebec.

Table 5.4 Proportion of teachers who spent time on professional development activities related to reading in the previous two years

	No time	Some time but less than 16 hours	16 hours or more
BC	7%	62%	32%
AB	9%	54%	37%
ON	4%	58%	38%
QC	15%	70%	14%
NBf	6%	62%	33%
NS	1%	43%	55%
NL	13%	64%	23%
CAN	7%	63%	30%
INT	25%	50%	24%

Internationally and across Canada, the impact of this variable on achievement is quite limited for the durations measured (no time, up to 16 hours, more than 16 hours). At the provincial level, the tendency is for improved achievement from those students whose teachers spent “some time but less than 16 hours” on PD over those whose teachers spent “no time,” with no achievement gain for “16 hours or more.”

The PIRLS 2011 Teacher Questionnaire asked Grade 4 teachers about their working conditions in terms of the severity of problems in their schools, the adequacy of their working environment, and the availability of instructional materials and supplies. From their responses, a Teacher Working Conditions scale²³ was created.

Across Canada, teachers perceive their working conditions as better than the international average, with only five countries showing a higher average scale score than Canada (Poland, United States, England, Czech Republic, and Australia). Provincially, teachers in Ontario and Newfoundland and Labrador rated their satisfaction among the highest of all participating jurisdictions (average scale score of 11.0), while Nova Scotia teachers had the lowest average scale score (this was equivalent to the international average of 10). Among the five areas covered by this questionnaire, overcrowded classrooms and the lack of adequate workspace were mentioned as serious problems by 7 per cent of Canadian teachers.

²³ This index covered the following five areas: the state of repair of the school building, classroom overcrowding, teaching load, adequacy of the workspace, and adequacy of instructional materials and supplies.

As a correlate of teachers' working conditions, PIRLS investigated teachers' career satisfaction through the Teacher Career Satisfaction scale.²⁴ Canadian teachers rated their career satisfaction with an average of 9.9 on this scale, which is very close to the international mean of 10. Teachers in Quebec rated lower (9.4) than the Canadian or international average on this scale. Provincial values for the Teacher Working Conditions and the Teacher Career Satisfaction scales are presented in Table 5.5.

Table 5.5 Teacher Working Conditions and Career Satisfaction scales

	Working Conditions scale		Career Satisfaction scale		Correlation (r)
	Average scale score	SE	Average scale score	SE	
BC	10.4	.19	10.0	.20	.43*
AB	10.8	.16	10.0	.15	.38*
ON	11.0	.12	10.2	.15	.20*
QC	10.4	.16	9.4	.15	.32*
NBf	10.5	.25	9.8	.26	.26*
NS	10.0	.16	10.0	.17	.30*
NL	11.0	.22	10.2	.21	.16*
CAN	10.6	.09	9.9	.09	.31*

* $p < .01$

Offering good working conditions and a satisfying career may go a long way in addressing the important issue of teacher retention: “To freeze the revolving door of professional educators, we must make the inside of a classroom a far more attractive and rewarding place to work.” (Brill & McCartney, 2008, p. 772). Table 5.5 also presents the correlation coefficients between working conditions and career satisfaction, as it can be argued that creating good working conditions for teachers may increase career satisfaction, which may ultimately contribute to teacher retention. As can be expected, the correlations are positive and significant for all provinces, with the highest correlation in British Columbia (.43).

²⁴ This scale was constructed from the following six Likert-scale items: “I am content with my profession as a teacher”; “I am satisfied with being a teacher at this school”; “I had more enthusiasm when I began teaching than I have now”; “I do important work as a teacher”; “I plan to continue as a teacher for as long as I can”; and “I am frustrated as a teacher.”

The Classroom Environment

Not everything students bring to school fits in their backpacks. Several student characteristics may have a significant impact on how they do in school, and teachers often face a situation where students in their classrooms do not have everything they should have to optimize their learning opportunities. PIRLS teachers were asked to share their views on the extent to which their teaching was limited by a number of characteristics students may be lacking when they are in their classroom. More specifically, they were asked whether any of the following factors limit how they teach their classes: students lacking prerequisite knowledge and skills, students suffering from a lack of basic nutrition, students suffering from a lack of sleep, disruptive students, and uninterested students. Internationally, three of these factors were considered by teachers as limiting teaching to some extent or a lot in over half of students: the lack of prerequisite knowledge and skills (72 per cent of students), uninterested students (70 per cent of students), and disruptive students (64 per cent of students). As can be expected internationally, the average reading achievement was much lower in classrooms where teachers felt that instruction was limited a lot by a lack of prior knowledge, as compared to those classrooms where this was not at all a problem (mean reading scores of 485 and 525, respectively). The same pattern was observed in Canada overall (529 vs. 562) and across provinces. Table 5.6 presents the proportion of students in classrooms where teachers report that instruction is limited by the five factors mentioned above. Chart 5.1 summarizes the impact these factors have on achievement in Canada overall.

Table 5.6 Proportion of students in classrooms where teachers felt that instruction was limited by a number of student-related factors

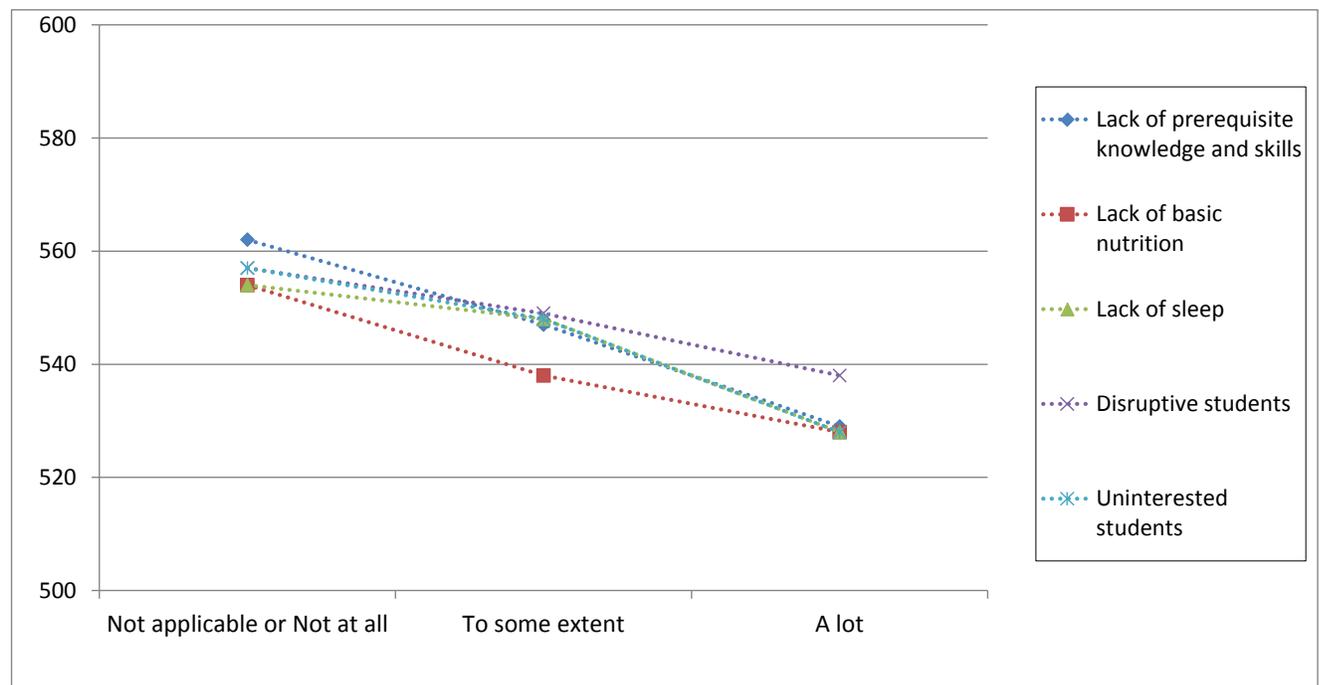
	Lack of prerequisite knowledge/skills			Lack of basic nutrition			Lack of sleep			Disruptive students			Uninterested students		
	N/A or not at all	Some	A lot	N/A or not at all	Some	A lot	N/A or not at all	Some	A lot	N/A or not at all	Some	A lot	N/A or not at all	Some	A lot
BC	12%	72%	16%	55%	41%	5%	28%	66%	6%	22%	59%	19%	32%	63%	5%
AB	19%	63%	18%	54%	41%	5%	24%	69%	8%	15%	69%	15%	23%	70%	7%
ON	19%	64%	16%	69%	28%	3%	36%	56%	8%	14%	67%	19%	21%	74%	5%
QC	27%	58%	15%	72%	27%	1%	33%	56%	11%	9%	68%	23%	17%	73%	10%
NBf	21%	68%	11%	70%	28%	2%	26%	72%	3%	13%	61%	26%	4%	83%	13%
NS	24%	70%	6%	61%	38%	1%	29%	68%	4%	28%	59%	13%	25%	69%	5%
NL	13%	76%	11%	77%	23%	0%	38%	60%	2%	32%	58%	9%	24%	74%	2%
CAN	21%	65%	14%	67%	30%	3%	33%	59%	8%	16%	65%	18%	22%	72%	6%
INT	28%	61%	11%	73%	23%	4%	51%	43%	6%	35%	52%	12%	30%	60%	10%

As is the case internationally, Canadian teachers feel that, among those factors that were suggested, students' lack of prerequisite knowledge and skills is most limiting in how they teach their classes. More than 85 per cent of teachers in British Columbia and Newfoundland and Labrador think that their students' lack of prerequisite knowledge and skills limit how they teach to some extent or a lot. This is an area of concern for educators in all provinces, since this gap in knowledge and skills is increasingly difficult to fill as students progress in their schooling: "If the struggling reader does not have the prerequisite reading skills for comprehending middle school content reading, they are not able to employ higher-order thinking skills to evaluate evidence, draw conclusions, make inferences, [or] defend their line of thinking" (Sousa, 2005, p. 104).

However, it is also relatively surprising to note that in Canada, Grade 4 teachers for 67 per cent of students cite lack of sleep as limiting how they teach their classes to some extent or a lot, as compared to the international average of 49 per cent. In addition, according to teachers, 10 per cent or more of students in New Brunswick and Quebec were in classes where instruction was limited a lot by uninterested students. Also surprising and disconcerting were teachers' reports that for one third of Canadian students, the lack of basic nutrition limits how they teach to some extent or a lot, with a high of 46 per cent of students in British Columbia and Alberta. Considering the relationship between nutrition and educational outcomes, the repercussions of a deficient diet on school experiences and attainment cannot be understated (Sorhaindo and Feinstein, 2006).

As can be expected, Chart 5.1 confirms that, according to Canadian teachers, the more these factors limit instruction, the lower the reading achievement.

Chart 5.1 Reading achievement scores by impact of student-related factors — Canada

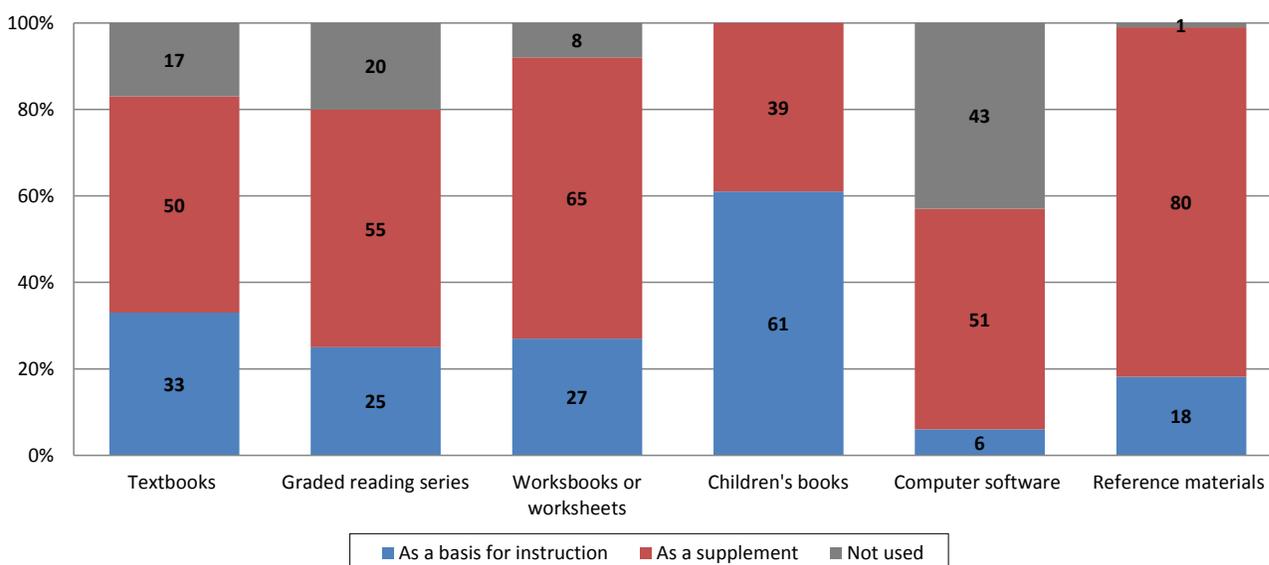


Classroom Resources and Activities

The PIRLS Teacher Questionnaire also covered the resources that teachers use when teaching reading. In particular, teachers were asked whether they used the following resources *as a basis for instruction*, *as a supplement*, or *not at all*: textbooks, graded reading series, workbooks or worksheets, a variety of children’s books, computer software, and reference materials such as encyclopedias or dictionaries. In what follows, results for resources used *as a basis for instruction* are reported.

Internationally, textbooks are the most used resource (72 per cent of Grade 4 teachers), while computer software is the least used resource as a basis for instruction (8 per cent). In Canada, textbooks are far less used (33 per cent). Also, internationally, 27 per cent of teachers use children’s books as a basis for instruction, while more than 61 per cent of teachers do so in Canada. Chart 5.2 presents the use of these resources for Canada overall.

Chart 5.2 Proportion of resources teachers use for reading instruction — Canada



There were also interesting provincial differences (Table 5.7). For instance, textbooks were used as a basis for instruction by 62 per cent of teachers in Quebec and by only 10 per cent of teachers in Nova Scotia. While workbooks are used as a basis for instruction by 60 per cent of teachers in Quebec and 46 per cent in New Brunswick French, this resource is used by less than 20 per cent of teachers in all other provinces. The same pattern is apparent in the use of reference materials, which are used as a basis for instruction by about 40 per cent of teachers in these two provinces but by 15 per cent or less in the rest of Canada. Children’s books are heavily used by 80 per cent or more of teachers in Nova Scotia and British Columbia but only by 36 per cent of teachers in Quebec.

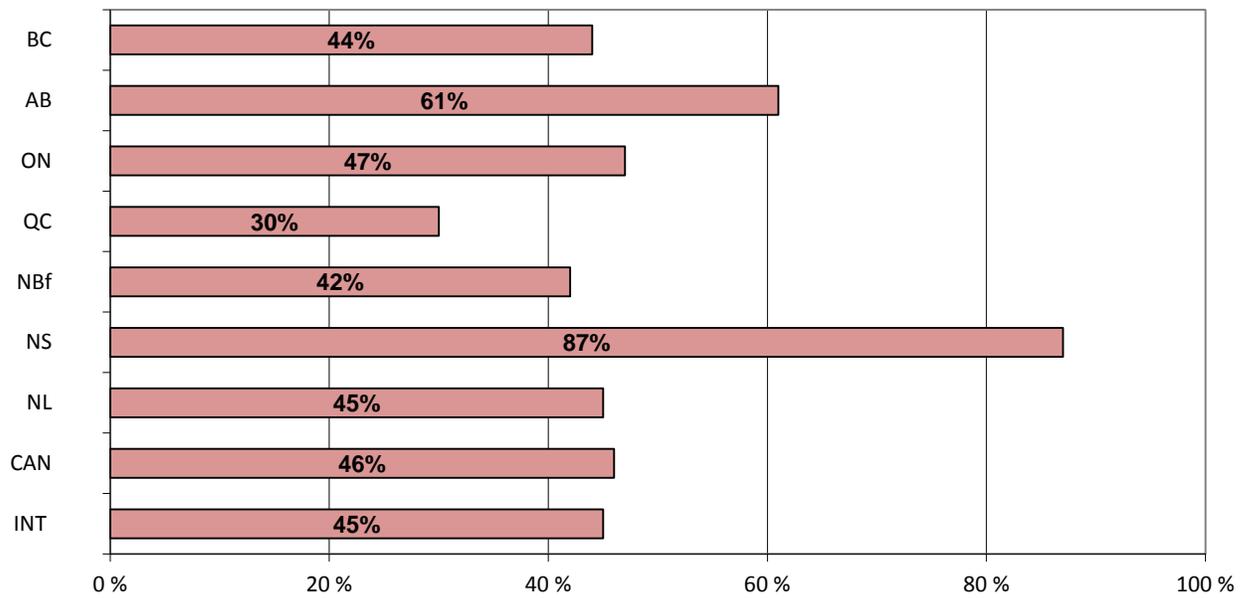
Among these four resources, students in Canadian classrooms where teachers use children’s books as a basis for instruction perform better in reading than those in classrooms where children’s books are not used (550 vs. 530).

Table 5.7 Proportion of teachers using a number of resources as a basis for reading instruction

	Textbooks	Workbooks	Children’s books	Reference materials
BC	32%	19%	80%	13%
AB	18%	10%	67%	9%
ON	28%	16%	62%	14%
QC	62%	60%	36%	39%
NBf	40%	46%	53%	40%
NS	10%	12%	83%	15%
NL	38%	5%	51%	7%
CAN	33%	27%	61%	18%
INT	72%	40%	27%	16%

Availability of computers and their use by students during reading lessons is an area where very significant international differences exist. Indeed, although the number of computers available for instruction has increased substantially among OECD countries in the past 10 years (OECD, 2010d), their availability in the early years remains uneven. In PIRLS 2011, 45 per cent of Grade 4 teachers reported that computers were available during reading lessons. In five countries (Norway, Denmark, New Zealand, Netherlands, and Australia), this proportion is more than 80 per cent, but it is only 46 per cent in Canada. As shown in Chart 5.3, there is some variation across provinces. Less than one third of Grade 4 teachers in Quebec reported computers being available for reading lessons, while the percentage is much higher in Nova Scotia (87 per cent) and Alberta (61 per cent). The fact that more than 98 per cent of students have access to computers at age 15 (OECD, 2011b) raises the question whether the lower availability at the primary level is a consequence of economic or pedagogical conditions.

Chart 5.3 Proportion of students with computers available for reading lessons



To monitor the progress of their students, teachers assess them continuously through a variety of methods. PIRLS teachers were asked to indicate the level of emphasis they place on three sources of information to monitor the progress of their students in reading: the evaluation of students' ongoing work, classroom tests, and (national) provincial/territorial tests (Table 5.8). Not surprisingly, more than 80 per cent of teachers across all provinces placed a major emphasis on the assessment of students' ongoing work in reading with a Canadian average of 89 per cent, slightly higher than the international average of 84 per cent. On the other hand, fewer teachers in Canada (37 per cent) placed a major emphasis on classroom-based tests than in the other countries (58 per cent). More interprovincial variations can be observed in the use of this source of information, with more than two-thirds of teachers in New Brunswick French and Quebec (but only 15 per cent of those in Nova Scotia) placing a major emphasis on classroom-based tests. Overall, Canadian teachers focused far less on (national) provincial/territorial tests than those in other countries — only 7 per cent of Canadian teachers place a major emphasis on this type of tests, compared to 32 per cent internationally. Interestingly, teachers in New Brunswick stand out among other Canadian provinces, with 31 per cent. It should be noted that for the vast majority of countries as well as for Canada, there is little variation in student reading achievement between classrooms where teachers state that they place a major emphasis any of those three factors and those stating that they place some or little emphasis.

Table 5.8 Proportion of teachers by major emphasis on sources of information to monitor students' progress in reading

	Evaluation of students' ongoing work	Classroom tests	Provincial achievement tests
BC	90%	29%	3%
AB	91%	30%	3%
ON	91%	29%	9%
QC	82%	66%	8%
NBf	87%	67%	31%
NS	94%	15%	3%
NL	92%	20%	5%
CAN	89%	37%	7%
INT	84%	58%	32%

6. SCHOOL CONTEXT

A number of school-related factors can have a determinant influence on student learning environments and outcomes. For instance, studies have shown that the more resources schools have, the higher students' achievement is²⁵ (Greenwald, Hedges & Laine, 1996). Students from advantaged home backgrounds may attend the same schools because of its location. In return, these schools may invest more money in equipment or material. Therefore, these socioeconomically advantaged students attend the most successful schools and have access to better resources (Mullis et al., 2012).

Another important aspect to consider is the schools' educational mission and values. Students attending schools aiming for high achievement can influence the school culture and encourage other students to perform well. On the other hand, students attending schools with disciplinary problems may experience difficulties concentrating on their academics, which can affect their school performance (Mullis et al., 2012).

Results related to school resources and school climate will be presented in this chapter. More specifically, school resources will be examined through two indices: School Composition by Student Economic Background and Schools with Computers Available for Instruction. School climate will be analyzed through four scales: School Emphasis on Academic Success, Safe and Orderly School, School Discipline and Safety, and Students Bullied at School. The results were obtained mostly from the PIRLS 2011 school questionnaire but also from the teacher and student questionnaires.

School Composition by Student Economic Background

Studies have recognized that a range of factors have an impact on students' success in schools. As seen in Chapter 3, a variety of student characteristics (e.g., demographics and family characteristics) are found to be related to their achievement. Student socioeconomic background is among the strongest predictors of academic success as measured by standardized tests (Sirin, 2005).

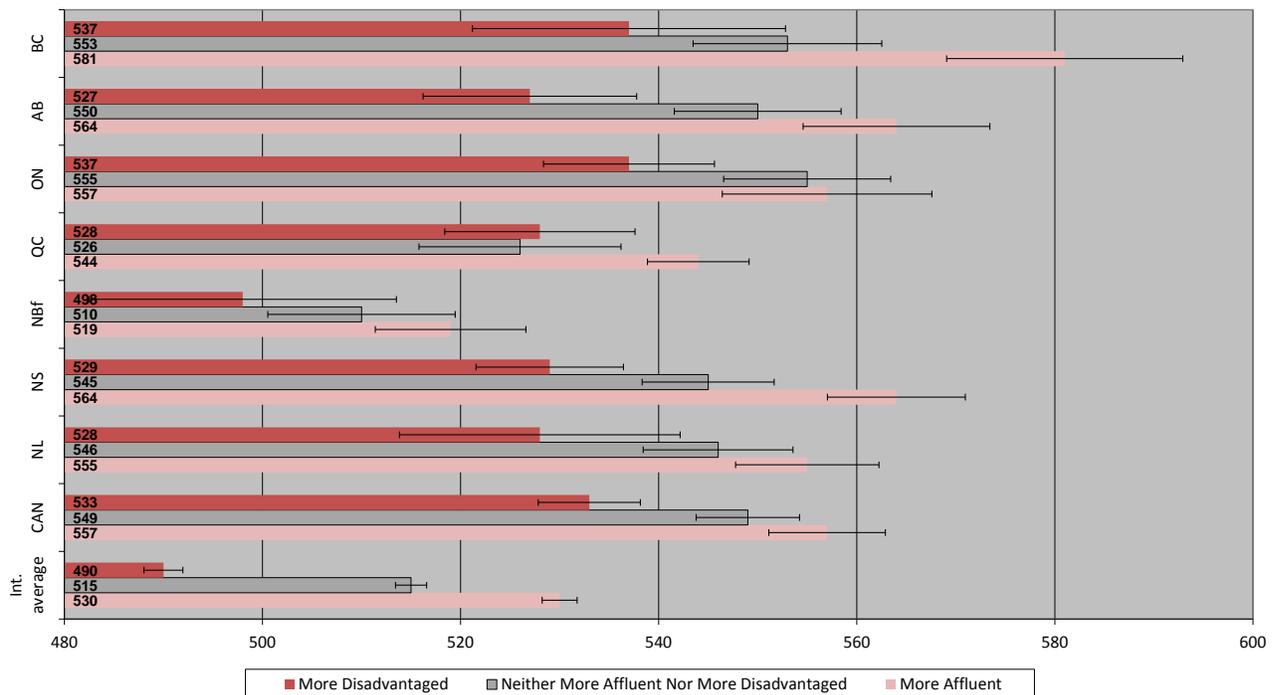
In the school questionnaire, principals had to estimate the percentage of students in their schools coming from economically disadvantaged homes and the percentage of students coming from economically affluent homes. The responses were aggregated and results reported for the following three categories: Schools with more affluent than disadvantaged students (schools where more than 25 per cent of students come from economically affluent homes and not more than 25 per cent from economically disadvantaged homes); schools with neither more affluent nor more disadvantaged students; and schools with more disadvantaged than affluent students (schools where more than 25 per cent of students come from economically disadvantaged homes and not more than 25 per cent

²⁵ Once again, the direction of the relationship between the number of school resources and reading achievement cannot be inferred from the PIRLS results.

from economically affluent homes). According to the principals' responses, there were 39 per cent of schools with more affluent than disadvantaged students, 34 per cent of schools with neither more affluent nor more disadvantaged students, and 28 per cent with more disadvantaged students in Canada. The percentages of schools with more affluent than disadvantaged students ranged from 28 per cent in British Columbia to 60 per cent in Quebec, while the percentage of schools with more disadvantaged than affluent students ranged from 9 per cent in New Brunswick French to 34 per cent in Ontario.

Chart 6.1 shows the differences in reading scores for school composition by student socioeconomic background. As expected, Canadian students attending schools with more affluent than disadvantaged students are performing better than students attending schools with more disadvantaged students than affluent students, with an advantage of 24 points. At the international level, schools with more affluent students have an advantage of 40 points. The difference in reading scores between students attending schools with more affluent students and those attending schools with more disadvantaged students is smaller in Canada than in most other countries. Thus, the socioeconomic composition of the school has a smaller effect on students' performance in reading in Canada. This is consistent with the results obtained from the PISA 2009 second report (Brochu et al., 2011). The results are also consistent across provinces. Students attending schools with more affluent students tend to perform better than students attending schools with more disadvantaged students. The difference in the reading scores between students attending schools with more disadvantaged students and students attending schools with more advantaged students is greater in British Columbia with 44 points and less in Quebec with 16 points.

Chart 6.1 Reading achievement scores by school composition by student economic background



Schools with Computers Available for Instruction

Over the last few years, the use of electronic texts and other technologies has become an integral part of literacy instruction and learning (Kamil, Intrator & Kim, 2000). In Canada as in most countries participating in PIRLS, students can now easily access computers and the Internet in schools, which can be used for instructional purposes.

When completing the school questionnaire, principals had to report the availability of computers for reading instruction. The responses were combined and reported based on the following four categories: 1 Computer for 1–2 Students, 1 Computer for 3–5 Students, 1 Computer for 6 or More Students, and No Computers Available.

As shown in Table 6.1, the results demonstrate that about three-quarters of Canadian students were in schools that had one computer for every one to two students, as compared to 41 per cent of schools internationally. Among all participating countries, only England, Denmark, Slovak Republic, and Northern Ireland show a higher percentage for this category. It is also important to note that all Canadian students had access to some computers for instruction, while internationally, 7 per cent of the students did not have any access to a computer. Also, although computers are available in schools, according to teachers, these computers may not always be available for reading instruction, as seen in Chapter 5.

Table 6.1 Proportion of schools with computers available for instruction²⁶

	1 Computer for 1–2 Students	1 Computer for 3–5 Students	1 Computer for 6 Students or More	No Computers Available
CAN	76%	17%	8%	0%
INT	41%	29%	23%	7%

Internationally, there is a pattern where students having access to computers for reading instruction tend to have a higher level of reading achievement, when compared to those without any access to computers, including Canada. Although the results suggest that school computers are an important resource for students' learning in reading, this finding should be interpreted with caution since it is highly interrelated with socioeconomic levels and reading instructional practices, as noted in the PIRLS International Report (Mullis et al., 2012).

²⁶ The data are available for at least 70 per cent, but less than 85 per cent, of the students.

School Emphasis on Academic Success

Previous studies have shown that school climate factors are closely related to student academic success. Among these factors is the school emphasis on academic success that is positively related to students' achievement, regardless of their socioeconomic background (Hoy, Tarter and Bliss, 1990). Students have better chances to succeed academically if schools are aiming to reach standards of excellence and high achievable goals, if the learning environment is serious, if the teachers believe in the students' abilities to succeed, and, finally, if teachers and students show respect toward the highest performing students (Hoy, 2012).

School emphasis on academic success was assessed through a series of five questions. For each question, the principal of participating students had to characterize five aspects of academic optimism.²⁷ The responses were aggregated to create the School Emphasis on Academic Success scale. The results are reported on the following three categories: Very High Emphasis, High Emphasis, and Medium Emphasis.

Table 6.2 shows that 12 per cent of Canadian students are attending schools with very high emphasis on students' academic success; two-thirds of students are attending schools with high emphasis, while 21 per cent of the students are attending schools with medium emphasis. Canadian students are attending schools with higher emphasis on students' academic success than most countries. Among provinces, most variations are found within the upper and lower categories. Thus, the results for the "very high emphasis" category vary from 5 per cent in Quebec to 25 per cent in Alberta, and results for the "medium emphasis" category range from 11 per cent in Nova Scotia and Newfoundland and Labrador to 28 per cent in Ontario.

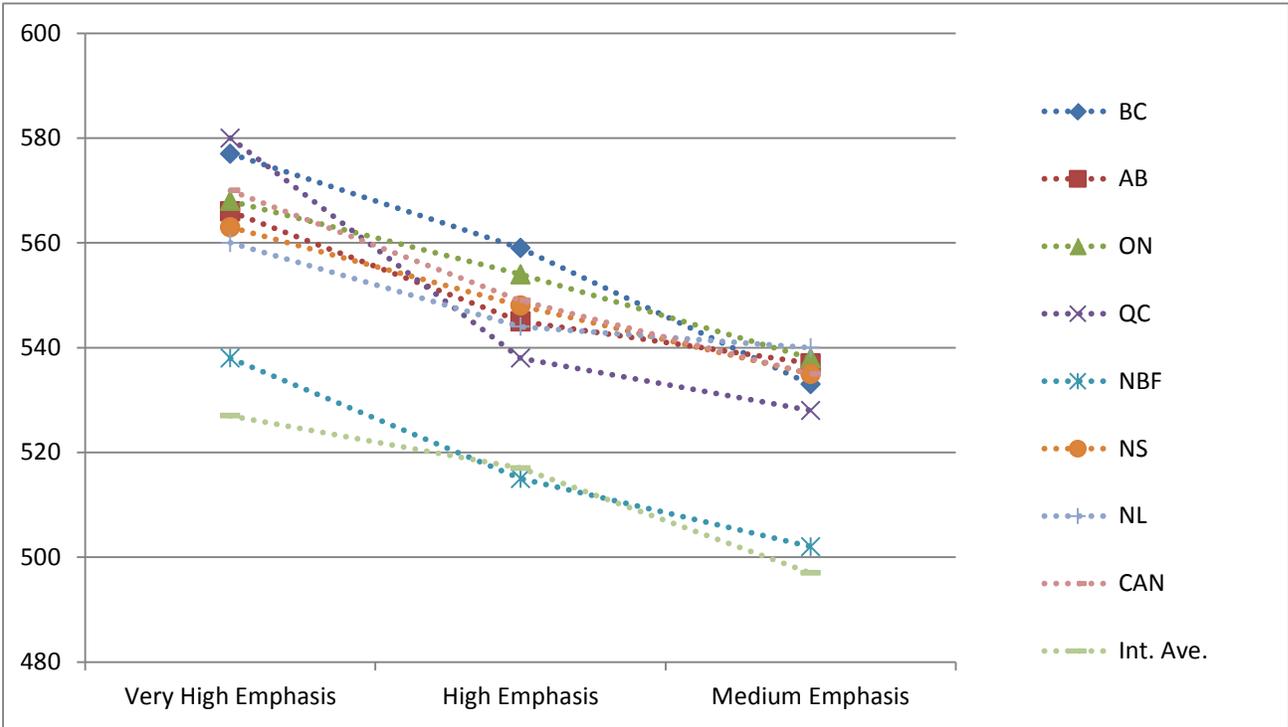
Table 6.2 Proportion of students by School Emphasis on Academic Success scale

	Very high emphasis	High emphasis	Medium emphasis
BC	14%	63%	23%
AB	25%	62%	13%
ON	10%	62%	28%
QC	5%	75%	21%
NBf	7%	73%	21%
NS	20%	69%	11%
NL	16%	74%	11%
CAN	12%	67%	21%
INT	9%	59%	32%

²⁷ The five aspects were as follows: Teachers' understanding of the school's curricular goals, Teachers' degree of success in implementing the school's curriculum, Teachers' expectations for student achievement, Parental support for student achievement, and Students' desire to do well in school.

Chart 6.2 demonstrates the relationship between school emphasis on academic success and reading achievement. The results show a clear pattern: Canadian students attending schools with *very high* emphasis on academic success performed better than students from schools with *high* emphasis, who in turn performed better than students from schools with *medium* emphasis. Internationally, students attending schools with very high emphasis have an advantage of 30 points, as compared to those attending schools with medium emphasis. This advantage is even greater for Canadian students, reaching a difference of 35 points. The same pattern is observed across provinces. In Quebec, the impact of school emphasis on academic success is especially pronounced, with a difference of 51 points between students in very high emphasis and those in medium emphasis schools. Internationally, as well as in Canada, these results confirm that schools that can create a climate that is conducive to learning provide one of the key ingredients to academic success: "... schools and countries where students work in a climate characterized by expectations of high performance and a readiness to invest effort, good teacher-student relations, and a high teacher morale tend to achieve better results (OECD, 2010d, p. 106).

Chart 6.2 Reading achievement scores by School Emphasis on Academic Success scale



Teachers were also asked to answer the same set of questions on this topic in the teacher questionnaire. The results were consistent with those obtained from principals (see Table 22 and Table 25 in Appendix V for results in Canada and the provinces).

Safe and Orderly Schools

Learning in a stable and safe school environment has a significant impact on students' academic success, and schools with no or minor problems related to behaviours or safety provide students with a sense of security (Mullis et al., 2012). Research has shown that students' academic performance will be affected if they perceive their school as being "unsafe" (Milam, Furr-Holden & Leaf., 2010).

In order to assess the impact of school safety on students' reading achievement, the Safe and Orderly School scale was constructed, using the data from the teacher questionnaire. In this questionnaire, teachers were asked to indicate the degree to which they agreed or disagreed with five statements related to school safety.²⁸ The results were aggregated and reported on the following three categories: Safe and Orderly, Somewhat Safe and Orderly, and Not Safe and Orderly.

The results show that the majority of students in Canada (62 per cent) attend schools considered to be safe and orderly by teachers, as compared to 55 per cent of students internationally. About one-third of Canadian students (34 per cent) attend schools judged to be somewhat safe and orderly. Only a few Canadian students (4 per cent) attend schools considered not safe and orderly. As shown in Table 6.3, there is some variation across provinces, with a high of 100 per cent of schools in Nova Scotia and Newfoundland and Labrador being considered at least somewhat safe and orderly and a low of 94 per cent of schools in Ontario.

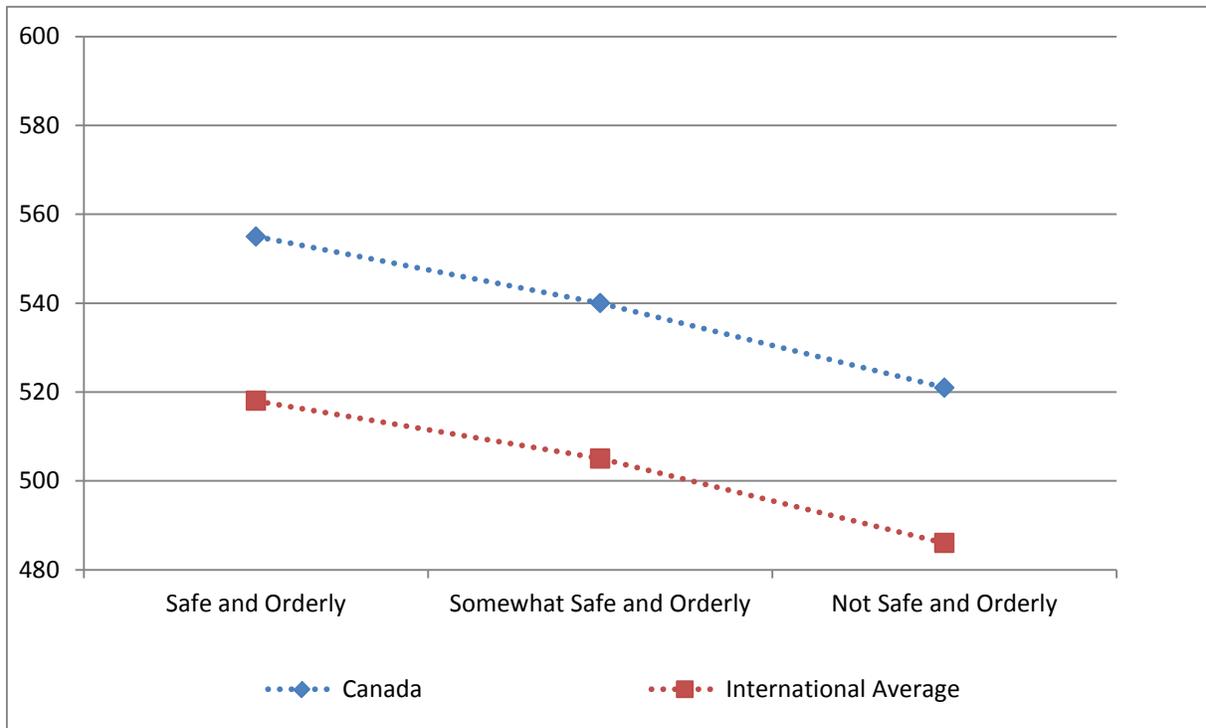
Table 6.3 Proportion of students by Safe and Orderly School scale

	Safe and orderly	Somewhat safe and orderly	Not safe and orderly
BC	75%	22%	2%
AB	72%	27%	1%
ON	60%	34%	6%
QC	45%	51%	5%
NBf	60%	39%	1%
NS	79%	21%	0%
NL	83%	17%	0%
CAN	62%	34%	4%
INT	55%	41%	4%

²⁸ The five statements were as follows: "The school is located in a safe neighborhood"; "I feel safe at this school"; "This school's security policies and practices are sufficient"; "The students behave in an orderly manner"; and "The students are respectful of the teachers."

As shown in Chart 6.3, the higher the degree of safety and order in school, the better student achievement in reading is. This pattern is consistent at both the international and Canadian levels, as well as across Canadian provinces.

Chart 6.3 Reading achievement scores by Safe and Orderly School scale



School Discipline and Safety

Disciplinary problems within classrooms can affect students’ learning process, since teachers can spend more time handling discipline issues and trying to create an orderly environment. Interruptions in instruction due to lack of discipline affect students’ concentration and engagement in the class (OECD, 2011a).

PIRLS 2011 is studying the impact of school discipline and safety on students’ reading achievement. Principals of participating schools had to answer a series of questions about the extent of 10 different discipline and school safety problems in their schools.²⁹ The responses were aggregated to construct the School Discipline and Safety scale, and results were reported for the following three categories: Hardly Any Problems, Minor Problems, and Moderate Problems.

²⁹ The statements related to students’ behaviours were as follows: Arriving late at school; Absenteeism (i.e., unjustified absences); Classroom disturbance; Cheating; Profanity; Vandalism; Theft; Intimidation or verbal abuse among students (texting, e-mailing, etc.); Physical fights among students; and Intimidation or verbal abuse of teachers or staff (texting, e-mailing, etc.).

The results in Table 6.4 show that principals in most Canadian schools (60 per cent) reported having hardly any problems; more than one third (37 per cent) reported having minor problems; while only a few (3 per cent) reported having moderate problems with discipline and school safety. The School Discipline and Safety scale, which has been centred at a value of 10, is only marginally higher in Canada at 10.3.

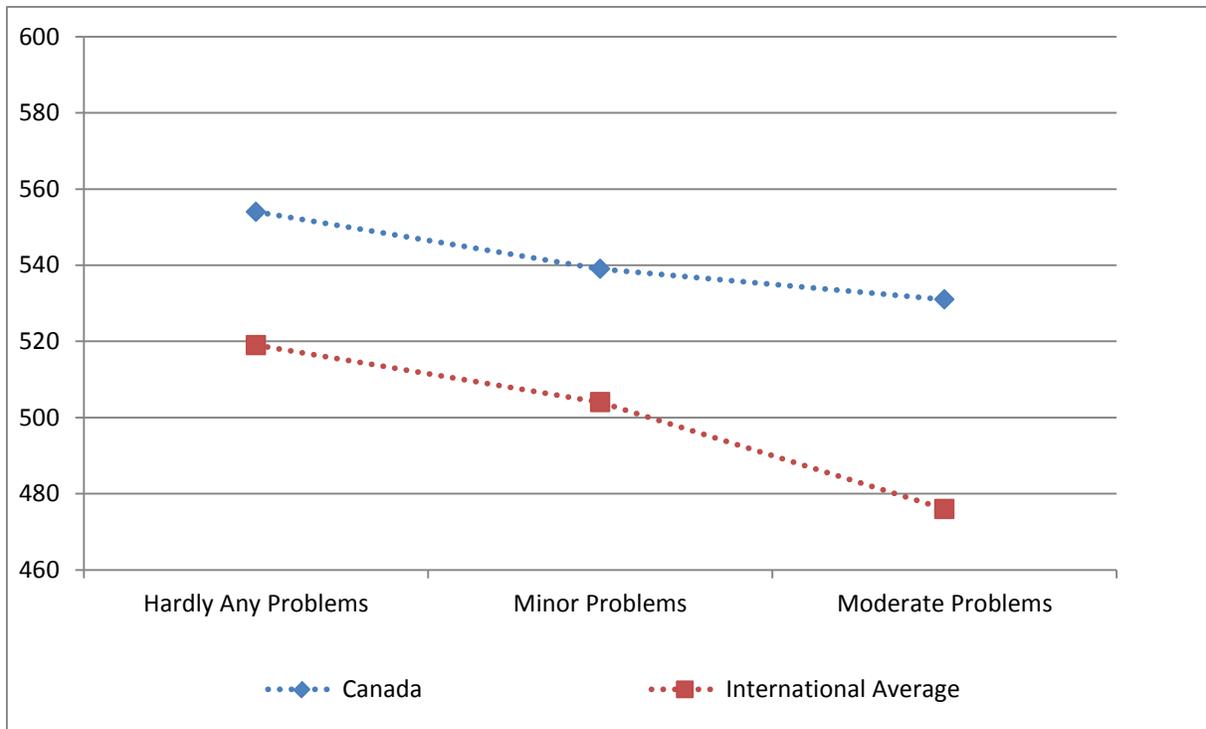
There is some variation across provinces on this scale, as shown in Table 6.4, with the proportions ranging from 56 per cent in Quebec to 77 per cent in Newfoundland and Labrador, where principals reported having hardly any problems. Less than 5 per cent of principals in all provinces reported having moderate problems in schools, which is below the international average (11 per cent).

Table 6.4 Proportion of students by School Discipline and Safety scale

	Hardly any problems	Minor problems	Moderate problems
BC	67%	32%	1%
AB	68%	30%	2%
ON	61%	36%	4%
QC	56%	40%	4%
NBf	63%	35%	2%
NS	68%	31%	1%
NL	77%	23%	0%
CAN	60%	37%	3%
INT	58%	31%	11%

The results in Chart 6.4 show that students in Grade 4 attending schools having hardly any problems related to discipline and safety performed better in reading than those attending schools with minor or moderate problems. In Canada, the achievement difference between schools with hardly any problems and those with moderate problems is 24 points. Internationally, this difference is even greater, reaching 43 points. This pattern is uniform across provinces and consistent with PISA 2009 Canadian results, where higher discipline in schools is correlated with better reading scores (Brochu et al., 2012).

Chart 6.4 Reading achievement scores by School Discipline and Safety scale



Keeping in mind that PIRLS is administered in primary schools, it is worth stressing that 17 per cent of Canadian principals felt that classroom disturbances among Grade 4 students were a moderate or serious problem in their school and that intimidation or verbal abuse among students was the second most serious issue, with 16 per cent of principals seeing this as a moderate or serious problem (see Table 27 in Appendix V for the School Discipline and Safety scale).

Students Bullied at School

There is growing concern over students being bullied at school, since this violence occurs in most schools (Maliki et al., 2009). Ministers of education across Canada consider bullying a serious issue, and all provinces are implementing a number of initiatives to counter it: “While each province and territory is working with its education community in its own way to counter bullying, all ministers of education are united in their commitment to ensuring that schools in Canada provide a safe and welcoming environment for all students” (Ramona Jennex, Chair of CMEC, July 2012).³⁰ School bullying can be physical, verbal, or emotional, and many students will experience different types of bullying in their school careers:

- physical bullying (e.g., pushing, shoving, kicking);

³⁰ CMEC (2012). Ministers of education mark a milestone in education cooperation. Communiqué. Available at http://cmecc.ca/278/Press-Releases/Press-Releases-Detail/Ministers-of-Education-Mark-a-Milestone-in-Education-Cooperation.html?id_article=508

- emotional bullying (e.g., spreading rumours about people, making fun of people, harassment);
- verbal bullying (e.g., using foul language or derogatory terms, laughing at someone); and
- cyber-bullying (e.g., using technology such as e-mail, blogs, or social networking sites to abuse the person).

Students will most likely feel both short-term and long-term effects of being bullied. They can experience effects such as depression, anxiety, anger, excessive stress or sensitivity, insecurity, and lower school performance, but bullying can also lead to a need for revenge or suicide. Children who bully, especially in the early years, tend to demonstrate future antisocial behaviour in adolescence and adulthood (NCPC, 2008).

It is therefore important and necessary to study school bullying more closely, and this topic was examined in PIRLS 2011. The proportion of students being bullied and the impact on their performance in reading will be reported in this section.

Table 6.5 shows the frequency and proportion of Canadian students experiencing certain types of school bullying behaviours.

Table 6.5 Proportion of Canadian students experiencing school bullying behaviours

	Never	A few times a year	Once or twice a month	At least once a week
I was made fun of or called names	39%	31%	13%	17%
I was left out of games or activities by other students	42%	28%	17%	14%
Someone spread lies about me	51%	25%	13%	12%
Something was stolen from me	60%	25%	8%	7%
I was hit or hurt by other student(s) (e.g., shoving, hitting, kicking)	45%	31%	13%	11%
I was made to do things I didn't want to do by other students	65%	19%	8%	7%

Depending on the type of school bullying behaviour, between 7 per cent and 17 per cent of Canadian Grade 4 students are being bullied at least once a week. Bullies are mostly making fun of the bullied students or calling them names. In addition, between 8 per cent and 17 per cent of students are being bullied once or twice a month, most of them being left out of games or activities by other students.

Based on the students’ responses to how often they experienced these bullying behaviours in schools, a Bullied at School scale was constructed. The results are reported on the following three categories: Almost Never, About Monthly, and About Weekly.

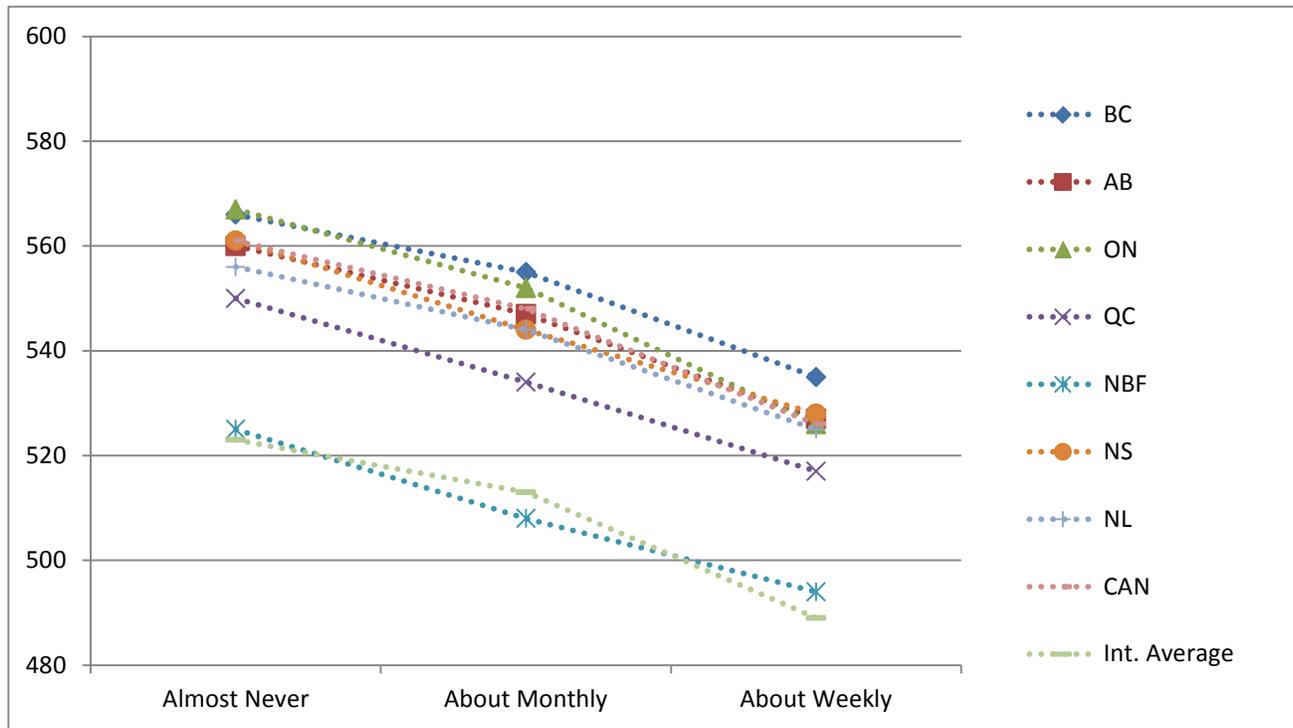
Internationally, more than half of Grade 4 students (53 per cent) reported being bullied “about monthly” or “about weekly.” In Canada, the percentage of bullied students is even higher (56 per cent). The percentages are very consistent across provinces, with between 18 per cent and 22 per cent of students being bullied about weekly at school (Table 6.6).

Table 6.6 Proportion of students by Bullied at School scale

	Almost Never	About Monthly	About Weekly
BC	49%	34%	18%
AB	44%	35%	21%
ON	40%	38%	22%
QC	44%	37%	19%
NBf	51%	32%	17%
NS	50%	32%	18%
NL	55%	26%	19%
CAN	44%	36%	20%
INT	47%	33%	20%

Chart 6.5 presents the relationship between reading achievement and being bullied at school. The results suggest that students who are bullied the most tend to have a lower performance in reading. In Canada, there is a difference of 35 points between students who are almost never bullied and students who are often bullied. This difference is mostly consistent across provinces. In Ontario, bullying has a greater impact on students’ performance in reading, with a difference of 41 points between almost never and often bullied students.

Chart 6.5 Reading achievement scores by Bullied at School scale



7. TEACHING OF READING IN THE EARLY YEARS: CANADIAN CONTEXT

Canada is the world's second largest country, with a total area of 9,985,000 square kilometres. It has a population of approximately 34 million, 81 per cent of whom live in urban areas. The population density is only about 4 people per square kilometre, with two out of three Canadians living within 100 kilometres of the southern border with the United States. There are approximately 15,500 schools in Canada, with an overall average of 350 students per school. About 65 per cent of these schools are elementary, 22 per cent are secondary, and 13 per cent are mixed elementary and secondary. Public expenditure on education in Canada is 5 per cent of GDP.³¹

Overview of the Education Systems in Canada

Governance

Education in Canada is under provincial/territorial responsibility. There are 13 jurisdictions (10 provinces and 3 territories), each having one or two departments/ministries of education responsible for developing and implementing their own curriculum and assessment. Education services are delivered locally through boards of education, public schools, and independent schools. The ministries and departments provide leadership, develop policy and legislation, oversee system governance, set curriculum learning standards, and build accountability frameworks in partnership with school boards (CMEC, 2012a).

Age of Compulsory Schooling

The age for compulsory education in Canada varies across jurisdictions, spanning from 5 to 19. The official policy on the age of entry to elementary school fluctuates from 5 to 7, with most children beginning school during the calendar year of their sixth birthday. In the provinces where children enter school at age 5 (i.e., British Columbia, New Brunswick French, and Nova Scotia), parents have the option to defer their child's enrolment until the next school year. There are also provinces permitting parents to home-school their children (e.g., Ontario). Table 1 in Appendix IV presents official policies on schooling for provinces that participated in PIRLS 2011 (data collected through the PIRLS 2011 Curriculum Questionnaire).

³¹ Data in this section come from *2011 World Development Indicators*, published by World Bank in 2011, and from the CMEC official Web site (<http://www.cmec.ca/>).

Pre-Elementary Education

Pre-elementary education is not mandatory in most Canadian provinces; however, all jurisdictions have some form of kindergarten or pre-school programs prior to Grade 1 (CMEC, 2012a). These programs are operated by local authorities and may be available from age 5, 4, or even earlier. Intensity of the programs varies from half-day to full day, depending on the jurisdiction and the school board. For instance, new full-day kindergarten programs have been recently implemented by the Ministry of Education in British Columbia (2012) and by the Ministry of Education in Ontario (2012).

School Levels

Educational levels are differently grouped and named from one province or territory to another. Generally, there are two school levels: elementary and secondary. Outside of Quebec, the elementary level can range from Kindergarten to Grade 8 (depending on the province), and the secondary level can range from Grade 7 to Grade 12 (depending on the province). In Quebec, elementary school ranges from Kindergarten to Grade 6. Secondary-level education consists of five years of studies divided into two “cycles” — the first comprising Secondary I and II (Grades 7 and 8), and the second, Secondary III to V (Grades 9–11). Although two-level school systems are most commonly used in Canada, some provinces also introduce an intermediate level for the middle years (e.g., British Columbia, Manitoba, New Brunswick, and Saskatchewan). The mandated number of school days per year varies from jurisdiction to jurisdiction, ranging from 180 to 200 days (see Table 1 in Appendix IV for details).

Languages and Language Instruction in Canada

Official Languages

English and French are the two official languages of instruction in Canada, with the majority of students receiving English first-language instruction. According to the 2006 Census, 57 per cent of Canadians speak English as their first language, and 22 per cent speak French (Statistics Canada, 2010). More than 85 per cent of French-mother-tongue Canadians live in Quebec. In order to ensure that all students have the opportunity to learn both of Canada’s official languages, French immersion programs are offered in the public education systems throughout Canada. In these programs, students who do not speak French as their first language receive some or all of their instruction and perform their school work in French. Similar English language programs are also available for students who have not had previous training in English.

Aboriginal Languages

Canada has a rich cultural diversity that includes numerous Aboriginal populations. According to the 2006 Census, about 4 per cent of Canadians report some Aboriginal identity, which corresponds to over 1 million people (Statistics Canada, 2009). In order to support Aboriginal cultures and eliminate the gap in literacy achievement, several bilingual programs are offered for First Nation languages in combination with English, French, or both. Among the most notable Aboriginal language programs are Cree and Inuktitut. Considerable benefits of bilingual education in Aboriginal communities have been already identified in Canada (Ball, 2011).

Second-Language Programs

Being a multilingual and multicultural country, Canada has a significant and increasing immigrant population, with more than 200 ethnic origins reported (HRSDC, 2009). In some large urban areas, school boards have identified more than 75 different home languages and dialects among the students. Many second-language programs are available in American Sign Language, Arabic, German, Italian, Japanese, Korean, Mandarin, Punjabi, Spanish, Ukrainian, and other languages. Since the number of students who speak English as a second, third, or even fourth language continues to grow, it is important that the needs of these students be met. Depending on the jurisdiction, schools may offer English- or French-as-a-second-language services. These services are delivered in a number of ways, including (but not limited to) separate instruction to students, support services within a mainstream classroom, and specialist support for the classroom teacher. In addition to these services, some jurisdictions provide official guides for teaching second-language students,³² or perform an annual assessment of students' progress.³³

Language/Reading Curricula in Elementary Grades

As an important tool for communication and the development of thinking, reading is at the heart of Canadian education. It enables students to understand cultures within Canada and around the world, and contributes to the construction of students' identity and world view.

General Structure of Language Arts Curricula

Given that education is the exclusive jurisdiction of provinces and territories, there is no official reading policy and no integrated national reading curriculum in Canada. Each province develops curriculum and policies that are adapted to the specific needs of its own population. However, Canadian jurisdictions share expertise and collaborate in developing a shared vision of language arts

³² See, for example, the implementation guides for English as a second language in Alberta (Alberta Education, 2007, 2009).

³³ See the policy and guidelines provided by the Ministry of Education, British Columbia (2009).

as well as other subject areas. For instance, the Western provinces and Northern territories, through the Western and Northern Canadian Protocol, developed a common curriculum framework in language arts for Kindergarten to Grade 12, along with authorized resources and information for publishers. In the same manner, the Atlantic provinces, through the Council of Atlantic Ministers of Education and Training, developed foundation documents as well as programs of study in a number of subject areas, including language arts.

Reading is generally instructed as part of the English/French language arts curricula, which differ from jurisdiction to jurisdiction. While some jurisdictions present reading as a separate component of the curriculum (e.g., Ontario³⁴ and Manitoba French³⁵), others fully integrate it throughout the curriculum. In addition to reading, language arts curricula usually include several interrelated language arts elements, such as writing, listening, speaking, viewing, and representing. In some jurisdictions, there is also a special connection between reading and the cross-curricular competencies that focus on using information and communication technology, as well as the exercise of critical thinking.³⁶ Students are expected to achieve the outcomes (e.g., knowledge, skills, attitudes) outlined in the programs by the end of each school level. Grade structure of the provincial language arts curricula and percentages of total instructional time are presented in Table 1 of Appendix IV (for participating provinces only).

Prescribed Standards and Outcomes

Depending on the jurisdiction, new English/French language arts curricula were introduced between 1997 and 2006 (with subsequent revisions since 2010 in most jurisdictions). These programs generally prescribe goals and objectives, as well as assessment standards and methods. The Atlantic provinces (New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador) additionally specify instructional processes and prescribe educational materials.³⁷ In jurisdictions in which standards are not prescribed (e.g., British Columbia), teachers are supported through curriculum documents that include suggestions and recommendations on instruction, assessment, teaching units, supporting resources, textbooks, and established best practices. Table 2 in Appendix IV summarizes components prescribed by the language arts curricula in participating provinces.

³⁴ See curriculum published by the Ministry of Education, Ontario (2006).

³⁵ See curriculum published by the Ministère de l'Éducation et de la Formation Professionnelle, Manitoba (1997).

³⁶ See the program for progression of learning in elementary school, published by the Ministère de l'Éducation, du Loisir et du Sport, Quebec (2009).

³⁷ See curricula published by the Department of Education, New Brunswick (1998) and by the Ministère de l'Éducation et du Développement de la Petite Enfance, New Brunswick (2011).

Most provincial/territorial curricula place a strong emphasis on reading improvement, literary experience, information acquisition, and reading for enjoyment. A number of reading processes studied by PIRLS are expected to be achieved by the end of Grade 4: retrieving explicitly stated information, making straightforward inferences, interpreting and integrating ideas and information, and, finally, examining and evaluating context language and textual elements. In addition to these processes, some curricula incorporate the use of analytical, critical, and meta-cognitive thinking skills and the exploration of multiple perspectives,³⁸ or the use of language cues and pragmatic, textual, syntactic, and other conventions.³⁹

Students are challenged across all language arts curricula to engage in meaningful involvement with contemporary and traditional texts in a variety of forms (oral, print, other media). They are expected to make sense of information and be able to gather information from everyday material, reflect, pose questions, discover connections, justify critical assessments, discover literature, construct cultural references, and communicate what they have learned. Overall, the common aim is to enable each student to understand and appreciate language, and to use it confidently and competently in a variety of situations for learning, communication, and personal satisfaction.

Instructional Practices

In order to develop reading competence, teachers are encouraged to employ a number of strategies to ensure that students are successful.⁴⁰ Some examples of frequently used practices are the following:

- stressing the connection between different language arts components (i.e., reading, writing, listening, speaking, viewing, and representing);
- providing scaffolded support to help students learn new literacy strategies and skills by modelling, guiding, thinking aloud, and supporting students as they practise reading;
- monitoring student achievement using varied assessment approaches that are adapted to the intended purpose (i.e., assessment *for* learning, assessment *as* learning, assessment *of* learning);
- differentiating instruction for individuals and small groups of students;
- explicitly teaching and modelling the use of higher-level thinking skills that enable students to understand, appreciate, and evaluate what they read;
- encouraging students to reflect on and talk about the strategies that help them construct meaning in reading (meta-cognition); and
- using meaningful and interesting texts on topics that matter to students.

³⁸ See curriculum published by the Ministry of Education, Ontario (2006).

³⁹ See curriculum published by Manitoba Education (1999).

⁴⁰ See materials published by Alberta Education (2012) and the Ministry of Education, Ontario (2004a,b).

To help students become better readers, education practices in Canada reflect the belief that reading must be practised, purposeful, modelled, and supported. This commitment underscores the importance of literacy in the 21st century and the need to extend the traditional concept of literacy to encompass media and information literacies.

Instructional Materials and Resources

Most jurisdictions make their curriculum content available in the forms of official publications outlining the curricular outcomes, ministry notes and directives, compulsory and recommended textbooks, instructional and pedagogical guides, standards of performance, and, finally, specifically developed or recommended instructional activities. In the jurisdictions where specific textbooks are not assigned, classroom resources generally need to be evaluated to ensure that eligibility criteria are met, including consistency with curriculum policy, social considerations (e.g., Canadian orientation and products), the teacher's resource guide, and age appropriateness.

In addition to the materials mentioned above, some jurisdictions also provide achievement indicators; blackline masters; graphic and visual organizers to support teachers in using the curriculum documents; a summary of key concepts and how they progressively build throughout the grades;⁴¹ the assessment framework for provincial exams;⁴² and regular professional development sessions, which provide direction to teachers and opportunities for professional learning.⁴³

In some cases, such as in Ontario with the Literacy and Numeracy Secretariat, formal structures are put in place to work directly with schools and school boards to build capacity and implement strategies to improve reading, writing, and math skills.

All ministries/departments of education recognize that information technology is essential for the 21st-century student and that it can potentially transform the ways a student communicates, collaborates, and learns. Therefore, technology is widely used in the elementary classrooms in Canada. Teachers are encouraged to embrace a variety of educational technologies in their classrooms, such as using video and audio tools, digital tablets, interactive whiteboards (e.g., SMART Boards™), and a variety of software to help students develop critical-thinking skills to support reading and writing instruction.

⁴¹ See materials provided by the Ministry of Education, British Columbia (2006).

⁴² See the framework proposed by the Ministère de l'Éducation, New Brunswick (2009) for French-speaking schools.

⁴³ See the Active Young Readers Initiative launched by the Department of Education, Nova Scotia (2000).

Teachers and Teacher Education

Elementary school teachers generally complete four years of postsecondary education to receive a bachelor of education degree from an accredited university. At least one supervised practicum in the field is required in any teacher education program. The duration of this practicum varies among jurisdictions, ranging from 40 days to six months. Some jurisdictions also require a qualifying examination, completion of a probationary teaching period, and/or completion of a mentoring or induction program (this program may provide another full year of professional support, including orientation, mentoring, and professional development in areas such as literacy, classroom management, and effective communication). Table 3 in Appendix IV summarizes information on the main preparation route and current requirements for Grade 4 teachers in Canada (for participating provinces only).

Although there are no requirements specific to teaching reading, basic language arts curriculum courses are generally offered to teacher-education students, with several instructional courses taken by those specializing in language arts. The opportunities for ongoing professional development can include university programs, special training programs offered by the department/ministry of education or teacher' colleges, participation in educational conferences, research projects, on-line learning communities, and large-scale assessment development or scoring sessions. In addition to these opportunities, some jurisdictions, such as Quebec, create special centres that offer professional support to new teachers.⁴⁴ The number of professional development hours is not generally regulated, but some jurisdictions, such as Nova Scotia, do have such regulations, requiring teachers to complete 100 hours of professional development every five years (Nova Scotia Government, 2011).

Students with Reading Difficulties

Canada is committed to equality of opportunity and fairness to students. Every reasonable effort is made to identify students with reading difficulties as early as possible, to support them through appropriate instruction, and to enable them to demonstrate learning.

Diagnostic Testing

A variety of ways are used to identify students with reading difficulties: teacher observations, informal assessments (such as paper-and-pencil tests, inventories, questionnaires, reading records, and surveys), progressive assessment (administered in multiple but complementary steps), and systematic documentation processes. Teacher assessments may include tests on concepts about print, surveys of reading attitudes or strategies, and assessments of a student's ability to read sight words and passages orally. Diagnostic processes can be performed in a progressive manner, from pre-referral

⁴⁴ See, for instance, Centres of excellence developed by English-speaking school boards in Quebec (Commission scolaire English-Montréal, 2010).

activities (e.g., teacher observation) to referral to the school-based team (e.g., consultation on possible classroom strategies and services), to extended assessments (e.g., psycho-educational, behavioural, speech and language, orientation, and mobility assessments). In order to facilitate the diagnostic process, some jurisdictions provide teachers with screening tools.⁴⁵ Formal diagnostic testing is usually conducted by a reading specialist and explained in provincial manuals and guidelines.

Instruction for Children with Reading Difficulties

Depending on the school and the jurisdiction, students with reading disabilities can be either integrated into the regular classroom (most commonly) or organized into small groups that receive special assistance from a reading specialist/teacher/teaching assistant, or, in rare cases, segregated in special-needs classrooms. Students are generally supported through the use of remedial, corrective, or skill-building instruction; specific learning strategies; alternative reading materials; adapted curriculum; tutors; and assistive technology (e.g., optical character-recognition systems or screen readers). Accommodations may include using spell checkers, organizers, and/or coloured paper; allowing extra time; providing alternative seating; dividing a test into parts; providing a test in large print or Braille; and using scribes. Individualized education plans in literacy are implemented as required in most jurisdictions.⁴⁶

Reading Specialists

The role of a reading specialist may include participating as a member of the learning team, supporting the teacher, aiding in the development of student programs, instructing students, and/or administering assessments. However, some Canadian schools may not have designated reading specialists. In that case, the students who have reading difficulties may benefit from other specialized programs and services.

⁴⁵ See, for instance, a Web-based tool implemented in Ontario (Ministry of Education, Ontario, 2003) or the Early Years Evaluation (EYE) assessment tool implemented in New Brunswick (KSI Research International Inc., 2012).

⁴⁶ See, for example, individualized program planning used in Alberta (Alberta Education, 2006).

Reading Assessment in Canada

In order to monitor student progress, Canadian classroom teachers use a variety of evaluation approaches adapted to the purpose of assessment, as well as to the teaching/learning situation. These could include ongoing classroom assessments as well as jurisdictional and national assessments.

Classroom Assessments

Teachers generally use a variety of informal assessment strategies for reading, including teacher observations, portfolios, and classroom-based tests for formative and summative purposes. Student progress is usually documented through report cards, which indicate a student's performance in relation to the jurisdiction's curriculum and include information on attitudes, work habits, effort, and social responsibility. In some schools and school boards, teachers may also use a variety of standardized tests to assess reading achievement, such as the Canadian Achievement Test (CAT; Canadian Test Centre, 2008), the Stanford Diagnostic Reading Test (Karlsen & Gardner, 1995), the Test of Early Reading Ability (TERA; Reid, Hresko, & Hammil, 2001), and others. Student progress is communicated to parents by means of report cards, parent-teacher conferences, and e-mails, or informally through regular communications.

Jurisdictional Assessments

The type of jurisdiction-level tests and the point of their administration (i.e., grade) differ from jurisdiction to jurisdiction. In general, each jurisdiction has a number of curriculum-based assessment programs that evaluate students' reading ability at different moments of elementary and/or secondary school. For instance, the three PIRLS benchmarking provinces have the following assessments:

- Alberta requires students to take a provincial examination in language arts in Grades 3, 6, and 9, with a further diploma examination in Grade 12.
- Quebec has an examination in language arts in Grades 4 and 6 of elementary and in Secondary V.
- Ontario students are assessed in reading and writing in Grades 3 and 6, and, starting in Grade 10, they take the Ontario Secondary School Literacy Test (OSSLT).

The marks from jurisdiction-level tests are used to different extents to inform instruction and as part of the final class mark and/or graduation requirement. In general, following the administration of a provincial/territorial test, detailed reports at the district, school, class, and individual student levels are generated and sent back to schools and teachers in order to help them identify their students' strengths as well as areas for improvement.

National Assessment

The Pan-Canadian Assessment Program (PCAP) is the most recent commitment from the Council of Ministers of Education, Canada, to inform Canadians about student achievement in reading, mathematics, and science. The program assesses the performance of Grade 8 students (Secondary II in Quebec) every three years, choosing one of the areas as the major subject to be assessed and the other two as minor subjects. In PCAP 2007, reading was the major subject (CMEC 2008, 2009). In PCAP 2010, it was one of the minor subjects, as will be the case again in PCAP 2013.

International Assessments

Two international large-scale assessment programs are conducted in Canada to evaluate student reading skills: the Progress in International Reading Literacy Study (PIRLS) and the Program for International Student Assessment (PISA). As mentioned earlier in this report, PIRLS assesses reading in Grade 4 students on a five-year cycle. Some Canadian jurisdictions have participated in PIRLS since 2001, whereas PIRLS 2011 marks the first participation at the pan-Canadian level. PISA is carried out under the auspices of the Organisation for Economic Co-operation and Development and assesses reading, mathematics, and science literacy levels of 15-year-old students in all 10 Canadian provinces. Canada has been involved in PISA since its inception in 2000, with subsequent participation on a three-year cycle. Assessment of reading as a major domain was conducted in PISA 2000 and 2009. In both assessments Canada scored in the top quarter on the combined reading scale, being surpassed by only a few countries (Brochu, Gluszynsky & Cartwright, 2010).

CONCLUSION

The Progress in International Reading Literacy Study (PIRLS) is an international assessment that measures trends in reading literacy for Grade 4 students. This study is carried out under the auspices of the International Association for the Evaluation of Educational Achievement (IEA), a consortium of research institutions in 60 countries. PIRLS has been administered every five years since 2001.

Although a few individual provinces participated in PIRLS 2001 and 2006, PIRLS 2011 marks the first participation for Canada overall. In total, 45 countries participated in this third cycle. PIRLS not only provides information on the reading skills of Canadian students in Grade 4 in comparison with other participating countries, it also allows provinces to benchmark themselves at the Canadian and international levels. In this assessment, students were required to answer both multiple-choice and constructed-response questions. Over a quarter of a million students, their parents, school principals, and classroom teachers also completed questionnaires asking about a number of contextual factors related to reading achievement at home and at school.

From a global perspective, the PIRLS 2011 results show that Grade 4 students in Canada are performing well in reading, with higher levels of achievement than most participating countries. Canadian students enrolled in English-language schools are outperforming students enrolled in French-language schools, and this pattern is consistent across provinces. As is the case in all PIRLS countries, there is also a difference in reading performance between Canadian boys and girls, in favour of girls. As reading literacy is directly related to the reasons why people read, PIRLS focused on two reading purposes: literary and informational. In Canada, Grade 4 students performed slightly better when they read for literary purposes (e.g., reading fiction or narration) than when they read to acquire and use information (e.g., reading informative articles or instructional texts). The assessment also looked at how young readers make sense of or construct meaning from these texts, using a variety of comprehension processes. As is the case in most top-performing countries, Canadian students performed significantly better on items requiring the *Interpreting, Integrating, and Evaluation* process than on items calling for the *Retrieving and Straightforward Inferencing* process. PIRLS also examined how reading achievement changed over time, as 2011 marked the third cycle of assessment. For those Canadian provinces that participated in previous PIRLS assessments, the performance in reading remained relatively stable over time between 2001 and 2011, except for Alberta, where results decreased between 2006 and 2011, and Nova Scotia, where results increased between 2006 and 2011.

PIRLS also uses four benchmarks to show the range of students' performance across countries. About half of Canadian students are reaching the high achievement benchmark, which is a higher proportion than the international average. Compared with other countries, Canada has a smaller percentage of low achievers, but also has a lower proportion of advanced achievers than the other high achieving countries. There were also more Canadian students reaching the high or advanced benchmarks in

English-language schools than in French-language schools. In regard to differences in the results by sex, proportionally more girls than boys reached the higher benchmarks in Canada.

The home environment plays a critical role in shaping children's development in reading literacy. Factors such as resources at home and parents' behaviours and attitudes toward learning in general, and reading in particular, were studied in this report. The results reveal that about three-quarters of Canadian students always speak the language of the test at home, while the others sometimes or never speak it. Students who always speak the language of the test at home performed better in reading. Compared to other countries, Canadian parents are quite engaged in literacy-related activities with their child, and this has a positive impact on students' reading performance. Children whose parents read to them at home before they started school perform better in reading than those who do not. Also, Canadian students are among those with the most home resources available for learning, but the difference in reading performance between students having many resources and those having fewer was among the smallest. PIRLS also confirmed the indisputable importance of parents as the primary source of positive modelling behaviours in reading. Internationally, as well as in Canada, students whose parents say they like reading performed much better than those whose parents do not like reading. Another variable that was explored is the time children spend on homework. Most Canadian students in Grade 4 spend between 16 and 30 minutes per day on homework. Interestingly, in Canada as well as in other countries, students doing little or no homework each day performed better than those spending more time on homework.

In this report, students' reading performance in relation to their attitudes, behaviours, and activities outside of school was also examined. Results show that Canadian students are among those who like to read the most in the world, and this has a strong positive relationship with reading performance. Girls also like reading more than boys, but PIRLS results also show that boys who like reading perform as well as girls. Students' motivation to read and students' engagement in reading lessons are two other factors that have a positive relationship with reading achievement. The more students are motivated or engaged in their reading lessons, the higher their reading scores are. Interestingly, Canadian students reported that they "are less motivated to read" than they "like reading." Another factor that influences students' achievement in reading the most is their confidence in their reading skills. There is a significant difference in the reading scores between students who are "confident" and those who are "not confident" in their reading skills. The results also showed a positive relationship between reading achievement and student engagement during reading lessons, as well as between reading achievement and the time students spend reading outside of school. However, "dosage is everything," as those students who spend more than two hours reading every day did not perform as well as those students reading less. Regarding the type of reading students do outside of school, nearly half of Canadian students read stories or novels every day or almost every day, which also has a positive relationship with their reading achievement.

PIRLS also provides information on Grade 4 teachers' personal characteristics and their working conditions for teaching reading. In regard to their backgrounds, the results show that these Canadian primary teachers are mostly female, that half of them are 40 years old and older, and that they have

an average of about 14 years of teaching experience. Only one in seven of these Grade 4 teachers has completed a master's degree or a doctorate, which is much lower than the international average of one in four. Although most Canadian teachers are specialized in teaching at the primary level, only a quarter of them have language arts as a major area of specialization. The vast majority of teachers devoted some time to professional development activities over the previous two years. According to teachers' perceptions, their working conditions are better than in most countries, but their satisfaction with their teaching careers is near the international average. Teachers also face some limitations when teaching children in their classrooms. Results reveal that many teachers are limited in their ability to provide instruction by the children's lack of prior knowledge and skills, which in turn undermines the foundation of scaffolding for potential development. Interestingly, a number of Canadian teachers also find that many students do not come to school ready to learn because of a lack of sleep or a lack of basic nutrition. In terms of classroom resources and activities, most countries use textbooks as a basis for instruction, while in Canadian classrooms most teachers use children's books. However, the types of resources used by teachers vary across provinces. It should also be noted that less than half of Grade 4 students have computers available for reading lessons across Canada. As for how Canadian teachers monitor the progress of their students in reading, most place a major emphasis on the assessment of students' ongoing work rather than on classroom or external tests.

School-related factors also have a significant impact on the students' learning environment and outcomes. PIRLS results show that Canadian students attending schools with more affluent students perform better than those with more disadvantaged students. Although student socioeconomic background is a strong predictor of academic success, its impact on reading achievement scores is smaller in Canada than in most countries. According to school principals, students in Canada have more access to computers and the Internet for instruction than those in most countries, which has a positive relationship with their achievement. However, according to Grade 4 teachers, these computers may not always be available for reading lessons. Several other school-related factors showed a positive relationship with reading achievement in Canada: students attending schools with a higher emphasis on academic success; students attending schools perceived as safe and orderly; and students attending schools with few discipline problems. This study also presents the relationship between bullying behaviours and reading achievement. From the perspective of school principals, a small number of schools have discipline or safety problems. However, PIRLS also confirms the growing issue of student bullying, even in the early grades, as results show that the percentage of students being bullied in Canada is higher than the international average. The results show that the more students are being bullied, the more their performance tends to decrease in reading.

For the first time in Canada, the results from the PIRLS 2011 assessment provide a comprehensive picture of Grade 4 students' reading skills at the provincial and pan-Canadian levels in comparison with other participating countries. It also highlighted the different factors in the students' home, classroom, and school environments contributing to their performance in reading. Although Canadian students are performing well in reading, this report helps to identify areas that could be improved. Over the coming months, CMEC in collaboration with ministries and departments of education will

continue to analyze the results from PIRLS in conjunction with other education indicators to better inform the teaching of reading and related educational policies.

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APPENDIX I

Countries participating in PIRLS 2011

Australia
Austria
Azerbaijan
Belgium (French)
Botswana
Bulgaria
Canada
Chinese Taipei
Colombia
Croatia
Czech Republic
Denmark
England
Finland
France
Georgia
Germany
Honduras
Hong Kong SAR
Hungary
Indonesia
Iran, Islamic Rep. of
Ireland
Israel
Italy
Kuwait
Lithuania
Malta
Morocco
Netherlands
New Zealand
Northern Ireland

Norway
Oman
Poland
Portugal
Qatar
Romania
Russian Federation
Saudi Arabia
Singapore
Slovak Republic
Slovenia
Spain
Sweden
Trinidad and Tobago
United Arab Emirates
United States

Benchmarking Participants

Alberta, Canada
Ontario, Canada
Quebec, Canada
Maltese – Malta
English/Afrikaans – South Africa
Andalusia, Spain
Abu Dhabi, UAE
Dubai, UAE
Florida, USA

prePIRLS Participants¹

Botswana
Colombia
South Africa

¹ prePIRLS is a less difficult reading assessment designed to test basic skills (as a stepping stone to PIRLS).

APPENDIX II

Sample Passages, Questions, and Scoring Guides

There were 16 questions for “Enemy Pie” and 14 questions for “Giant Tooth Mystery.” In each case, we present the actual question, the purpose of the question according to the PIRLS framework, and the corresponding item statistics by province, as well as the Canadian and international averages. For multiple-choice questions, readers will find the proportion of students who selected each option and whether the proportion of students that had the correct answer in each province is lower than, the same as, or higher than the Canadian average (with up and down arrows indicating a significantly higher or lower percentage of students than the Canadian average). For open-response questions, examples of student responses, as well as the proportion of students who received each possible code, are provided. In addition, the overall mean score on the item for each province is compared to the Canadian average.

Enemy Pie: Question 1

Process: Examine and Evaluate Content, Language, and Textual Elements

1. Who is telling the story?

- (A) Jeremy
- (B) Dad
- (C) Stanley
- (D) Tom

Correct response: D

Item Statistics

Province	Percentage of students ¹ (SE)			
	D Correct Response	A	B	C
BC	89 (1.5)	2 (0.7)	6 (1.1)	3 (0.9)
AB	81 (2.0)	4 (0.9)	11 (1.2)	2 (0.6)
ON	86 (1.4)	4 (0.8)	7 (1.1)	2 (0.7)
QC	86 (1.4)	7 (1.0)	6 (0.9)	1 (0.4)
NBf	79 (3.6)	10 (2.1)	8 (1.5)	4 (1.4)
NS	83 (1.3)	4 (0.7)	9 (1.2)	3 (0.7)
NL	86 (1.3)	4 (1.2)	7 (1.3)	2 (0.7)
CAN	86 (0.9)	4 (0.5)	7 (0.7)	2 (0.5)
INT	71	11	14	4

This was an easy question for Canadian students, with more than three-quarters of students in all provinces able to identify that Tom was the character telling this story. Internationally, this proportion was slightly lower (71%), with a quarter of all Grade 4 students selecting either Jeremy or Dad as the narrator.

¹ Percentages may not add up to 100% because of rounding.

Enemy Pie: Question 2

Process: Make Straightforward Inferences

2. At the beginning of the story, why did Tom think Jeremy was his enemy?



Item Statistics

Province	Percentage of students (SE)		
	Correct Response	Incorrect Response	Not Reached or Omitted
BC	85 (2.0)	14 (1.9)	0 (0.3)
AB	82 (1.7)	18 (1.7)	1 (0.3)
ON	83 (1.7)	16 (1.7)	1 (0.4)
QC	81 (1.9)	17 (1.9)	1 (0.5)
NBf	75 (3.1)	24 (3.0)	1 (0.6)
NS	83 (1.4)	16 (1.3)	1 (0.3)
NL	86 (2.1)	13 (2.1)	1 (0.2)
CAN	83 (1.0)	16 (1.0)	1 (0.2)
INT	70	26	3

Example Code 1:

 He thought Jeremy was his enemy because Jeremy had a party and Tom wasn't invited, but his best friend was.

Example Code 0:

 because he never met him

For this item, all provinces achieved higher than the international average (70%). Students with the correct response were able to make an inference about a character's reaction from the beginning of the story. They showed an understanding that Tom considered Jeremy his enemy either because Jeremy did not invite him to his party, or because Jeremy invited Tom's best friend, Stanley, and not him. To achieve Code 1, students could have showed an understanding that Tom was afraid that Jeremy would take his place as Stanley's best friend.

Enemy Pie: Question 3

Process: Focus on and Retrieve Explicitly Stated Information and Ideas

3. Write **one** ingredient that Tom thought would be in Enemy Pie.



Item Statistics

Province	Percentage of students (SE)		
	Correct Response	Incorrect Response	Not Reached or Omitted
BC	82 (2.0)	17 (2.0)	1 (0.5)
AB	78 (1.8)	19 (1.6)	3 (0.8)
ON	79 (1.9)	18 (1.8)	3 (0.7)
QC	84 (1.8)	14 (1.6)	2 (0.6)
NBf	76 (2.8)	21 (2.4)	3 (1.6)
NS	82 (1.6)	17 (1.4)	2 (0.5)
NL	83 (1.8)	16 (1.7)	1 (0.4)
CAN	81 (1.2)	17 (1.0)	2 (0.4)
INT	67	27	6

Example Code 1:



Worms

Example Code 0:



Stuff to make you lose a lot of hair.

Internationally, about two-thirds of Grade 4 students were able to identify one of the two ingredients in the pie: (earth) worms or rocks. Across Canada, more than 80% of students responded correctly, with little variation between provinces.

Enemy Pie: Question 4

Process: Interpret and Integrate Ideas and Information

4. Find the part of the story next to the picture of a piece of pie:  Why did Tom think it could be a great summer after all?

- (A) He liked playing outside.
- (B) He was excited about Dad's plan.
- (C) He made a new friend.
- (D) He wanted to taste Enemy Pie.

Correct response: B

Item Statistics

Province	Percentage of students (SE)				
	B Correct Response	A	C	D	Not Reached or Omitted
BC	56 (3.0)	12 (1.6)	27 (2.5)	4 (0.8)	1 (0.5)
AB	53 (2.3)	11 (1.5)	29 (1.9)	6 (1.0)	1 (0.4)
ON	57 (2.0)	9 (1.3)	27 (1.8)	5 (0.9)	1 (0.4)
QC	47 (2.1)	11 (1.1)	35 (2.0)	7 (1.3)	1 (0.4)
NBf 	37 (2.9)	8 (1.7)	43 (3.0)	9 (1.7)	3 (1.2)
NS	52 (2.3)	10 (1.1)	33 (2.2)	5 (0.8)	1 (0.5)
NL	52 (2.6)	13 (2.2)	27 (3.2)	7 (1.4)	1 (0.4)
CAN	53 (1.3)	11 (0.9)	29 (1.2)	6 (0.6)	1 (0.2)
INT	42	18	27	12	1

 Percentage significantly lower than Canadian average.

This is a difficult multiple-choice question with less than half of PIRLS students being able to identify the correct answer — Option B (that Tom thought this would be a great summer because of his Dad's plan to make Enemy Pie). More than 50% of Canadian students chose the correct response, with only New Brunswick French being below the Canadian average. More than a quarter of students in all provinces mistakenly chose Option C (at this point in the story, Tom was not happy that he had made a new friend).

Enemy Pie: Question 5

Process: Make Straightforward Inferences

5. How did Tom feel when he first smelled Enemy Pie? Explain why he felt this way.



Item Statistics

Province	Percentage of students (SE)			
	Correct Response	Partially Correct Response	Incorrect Response	Not Reached or Omitted
BC	49 (2.4)	20 (1.8)	27 (2.3)	3 (0.8)
AB	45 (2.6)	23 (2.1)	30 (2.2)	2 (0.6)
ON	49 (2.6)	19 (1.7)	29 (2.2)	3 (0.8)
QC ▼	35 (2.2)	29 (1.9)	31 (1.6)	4 (1.0)
NBf ▼	32 (3.6)	27 (2.7)	32 (3.8)	9 (1.7)
NS	42 (1.9)	25 (1.8)	31 (1.9)	3 (0.6)
NL	49 (3.2)	26 (2.4)	22 (2.2)	3 (0.8)
CAN	44 (1.3)	23 (1.0)	30 (1.4)	3 (0.4)
INT	29	20	45	6

▼ Percentage significantly lower than Canadian average.

Example Code 2:

He felt surprised that it didn't smell bad.

Example Code 1:

Tom felt confused because he thought "Enemy Pie" did something bad to enemies.

Example Code 0:

Disgusted because it smells evil and poisonous.

This is a rather difficult open-response question with less than 30% of all students achieving full credit (Code 2). To obtain full credit, students had to understand that Tom was confused because he thought Enemy Pie was supposed to smell bad, or that Tom was surprised because the pie his dad had made actually smelled good. Although the proportion of students receiving Code 2 is lower in New Brunswick French and Quebec than in Canada overall, it is comparable to the international average. Across provinces, between 19% and 29% of students received partial credit for identifying Tom's feeling but not providing an appropriate explanation for it (Code 1). Internationally, 45% of students provided neither the appropriate feeling nor an explanation (Code 0).

Enemy Pie: Question 6

Process: Focus on and Retrieve Explicitly Stated Information and Ideas

6. What did Tom think could happen when his enemy ate Enemy Pie?
Write **one** thing.



Item Statistics

Province	Percentage of students (SE)		
	Correct Response	Incorrect Response	Not Reached or Omitted
BC	78 (1.8)	20 (1.8)	2(0.4)
AB	82 (1.8)	16 (1.7)	3(0.6)
ON	81 (1.9)	17 (1.7)	3(0.8)
QC	83 (1.8)	15 (1.5)	2(0.6)
NBf	71 (3.7)	26 (3.4)	3(1.2)
NS	83 (2.1)	14 (2.0)	3(0.9)
NL	82 (1.6)	16 (1.5)	3(0.6)
CAN	80 (1.0)	17 (1.0)	3(0.5)
INT	71	23	6

Percentage significantly lower than Canadian average.

Example Code 1:

He might get bad breath.

Example Code 0:

He would become his enemy again.

In Canada, 80% of students identified one of the consequences of eating Enemy Pie (i.e., His hair would fall out/His breath would stink/He would go away/Something bad would happen/He would get sick, or die). This percentage was higher than the international average (71%).

Enemy Pie: Question 7

Process: Focus on and Retrieve Explicitly Stated Information

7. What were the **two** things Tom's dad told Tom to do for Enemy Pie to work?



Item Statistics

Province	Percentage of students (SE)			
	Correct Response	Partially Correct Response	Incorrect Response	Not Reached or Omitted
BC	55 (2.1)	21 (2.0)	20 (1.9)	4 (1.1)
AB	50 (2.0)	22 (1.4)	23 (1.8)	5 (1.0)
ON	53 (2.5)	21 (2.0)	21 (2.0)	5(0.9)
QC	52 (2.0)	15 (1.5)	27 (1.8)	6 (1.1)
NBf	40 (3.6)	17 (2.7)	33 (2.9)	11 (2.3)
NS	55 (1.8)	20 (1.6)	20 (1.5)	5 (0.7)
NL	55 (3.3)	21 (2.7)	19 (2.4)	5 (1.1)
CAN	53 (1.3)	19 (1.0)	22 (1.0)	5(0.7)
INT	46	19	27	9

Percentage significantly lower than Canadian average.

Example Code 2:

He must spend a day with his enemy and you have to be nice to him.

Example Code 1:

Tom had to spend the day with his enemy

Example Code 0:

get a earthworm and rocks.

More than half of Canadian students showed their complete comprehension (Code 2), by identifying both actions that make Enemy Pie work: (1) spending the day with his enemy and (2) being nice to him. Internationally, this proportion was slightly lower (46%) than the Canadian average (53%), with less than one in five students receiving partial credit (Code 1 was assigned when only one of the two actions was provided). In New Brunswick French, one third of students did not provide any accurate action (Code 0).

Enemy Pie: Question 8

Process: Make Straightforward Inferences

8. Why did Tom go to Jeremy's house?

- (A) To invite Jeremy to dinner.
- (B) To ask Jeremy to leave Stanley alone.
- (C) To invite Jeremy to play.
- (D) To ask Jeremy to be his friend.

Correct response: C

Item Statistics

Province	Percentage of students (SE)				
	C Correct Response	A	B	D	Not Reached or Omitted
BC	84 (1.6)	11 (1.4)	0 (0.3)	3 (0.7)	1 (0.6)
AB	80 (1.8)	12 (1.4)	1 (0.4)	4 (0.7)	3 (0.9)
ON	80 (1.7)	13 (1.5)	0 (0.1)	6 (1.0)	2 (0.5)
QC	75 (1.7)	15 (1.5)	1 (0.4)	7 (0.9)	2 (0.6)
NBf ▼	65 (3.5)	21 (3.6)	2 (0.8)	9 (1.6)	4 (1.4)
NS	80 (1.7)	12 (1.2)	1 (0.5)	5 (0.7)	2 (0.4)
NL	83 (1.7)	10 (1.4)	1 (0.7)	4 (0.8)	2 (0.6)
CAN	78 (1.2)	14 (0.8)	0 (0.1)	5 (0.8)	2 (0.3)
INT	71	17	2	7	3

▼ Percentage significantly lower than Canadian average.

For this question, almost 80% of Canadian students inferred correctly that Tom went to Jeremy's house to invite him to play (Option C), with only New Brunswick French being below the Canadian average but close to the international average. Across provinces and internationally, between 10% and 21% of students mistakenly chose Option A. At this point in the story, Tom did not go to Jeremy's house to invite him to dinner.

Enemy Pie: Question 9

Process: Make Straightforward Inferences

9. What surprised Tom about the day he spent with Jeremy?



Item Statistics

Province	Percentage of students (SE)		
	Correct Response	Incorrect Response	Not Reached or Omitted
BC	86 (1.9)	10 (1.6)	4 (1.0)
AB	83 (1.9)	13 (1.8)	4 (0.9)
ON	84 (1.5)	12 (1.4)	4 (0.9)
QC	78 (2.0)	17 (1.8)	4 (0.9)
NBf ▼	65 (5.4)	24 (4.2)	10 (2.9)
NS	84 (2.2)	11 (2.1)	5 (1.0)
NL	85 (1.5)	11 (1.4)	4 (0.6)
CAN	83 (1.0)	13 (0.9)	4 (0.5)
INT	66	26	8

▼ Percentage significantly lower than Canadian average.

Example Code 1:

he got to know each other and they were becoming friends.

Example Code 0:

he liked the pie.

Overall, two-thirds of all PIRLS students inferred correctly that Tom had a positive experience with Jeremy (Code 1). In Canada, this proportion was more than 80% in all provinces, except in New Brunswick French and Quebec, where more than 15% of students did not accurately describe what surprised Tom.

Enemy Pie: Question 10

Process: Make Straightforward Inferences

10. At dinner, why did Tom begin to think he and his dad should forget about Enemy Pie?

- (A) Tom did not want to share dessert with Jeremy.
- (B) Tom did not think Enemy Pie would work.
- (C) Tom was beginning to like Jerzemy.
- (D) Tom wanted to keep Enemy Pie a secret.

Correct response: C

Item Statistics

Province	Percentage of students (SE)				
	C Correct Response	A	B	D	Not Reached or Omitted
BC	93 (1.4)	1 (0.6)	2 (0.7)	2 (0.6)	2 (0.8)
AB	86 (2.0)	1 (0.5)	5 (1.1)	5 (1.2)	3 (0.7)
ON	88 (1.4)	1 (0.6)	4 (1.0)	4 (0.8)	2 (0.5)
QC	87 (1.4)	1 (0.4)	5 (0.9)	4 (0.9)	3 (0.7)
NBf ▼	78 (2.9)	1 (0.4)	7 (2.0)	8 (1.5)	6 (2.1)
NS	90 (1.0)	1 (0.2)	3 (0.6)	4 (0.7)	3 (0.5)
NL	88 (1.7)	1 (0.6)	4 (1.0)	4 (1.2)	3 (0.7)
CAN	89 (0.7)	1 (0.3)	4 (0.5)	3 (0.4)	2 (0.3)
INT	76	4	9	8	3

▼ Percentage significantly lower than Canadian average.

This was an easy question for Canadian students, with almost 90% choosing the correct answer — Option C (that at dinner, Tom was beginning to like Jeremy and his dad should forget about Enemy Pie). Across provinces, the percentages of correct answers ranged from 78% in New Brunswick French (slightly above the international average) to 93% in British Columbia.

Enemy Pie: Question 11

Process: Make Straightforward Inferences

11. How was Tom feeling when Dad passed the piece of Enemy Pie to Jeremy?

- (A) alarmed
- (B) satisfied
- (C) surprised
- (D) confused

Correct response: A

Item Statistics

Province	Percentage of students (SE)				
	A Correct Response	B	C	D	Not Reached or Omitted
BC	79 (1.8)	7 (1.2)	5 (0.8)	6 (1.0)	3 (1.0)
AB	74 (1.8)	5 (0.8)	8 (1.2)	9 (1.6)	3 (0.8)
ON	80 (1.8)	7 (1.0)	5 (0.9)	6 (1.2)	2(0.5)
QC ▼	70 (1.9)	4 (0.7)	7 (1.1)	16 (1.3)	3(0.8)
NBf ▼	75 (3.0)	3 (1.2)	8 (1.7)	9 (2.3)	5(1.9)
NS	79 (1.6)	5 (0.7)	6 (0.9)	7 (1.0)	3(0.7)
NL	74 (2.6)	8 (1.8)	8 (1.5)	6 (1.2)	4(0.9)
CAN	77 (1.1)	6 (0.6)	7 (0.8)	8 (0.6)	3(0.3)
INT	64	6	11	15	4

▼ Percentage significantly lower than Canadian average.

More than three-quarters of Canadian students inferred correctly that Tom was alarmed when his dad passed the piece of Enemy Pie to Jeremy. In all provinces, the proportion of students choosing the correct response (Option A) was higher than the international average. In Quebec, 16% of students incorrectly identified Tom’s feeling as confused (Option D).

Enemy Pie: Question 12

Process: Interpret and Integrate Ideas and Information

12. What was it about Enemy Pie that Dad kept secret?

- (A) It was a normal pie.
- (B) It tasted disgusting.
- (C) It was his favourite food.
- (D) It was a poisonous pie.

Correct response: A

Item Statistics

Province	Percentage of students (SE)				
	A Correct Response	B	C	D	Not Reached or Omitted
BC ▲	78 (1.9)	4 (1.1)	13 (1.6)	3 (0.7)	2 (0.9)
AB	72 (1.9)	6 (1.0)	16 (1.7)	2 (0.7)	3 (0.8)
ON	71 (2.0)	7 (1.2)	17 (1.8)	3 (0.7)	3(0.6)
QC ▼	59 (2.1)	9 (1.3)	25 (2.0)	5 (1.1)	3(0.7)
NBf ▼	49 (3.3)	10 (1.8)	29 (3.0)	7 (1.4)	5(1.9)
NS	73 (1.8)	6 (1.1)	14 (1.3)	5 (0.8)	2(0.5)
NL	70 (2.7)	5 (1.1)	17 (2.1)	4 (1.0)	4(0.8)
CAN	69 (1.1)	7 (0.7)	18 (1.0)	3 (0.4)	2(0.3)
INT	55	10	22	8	4

▲ Percentage significantly higher than Canadian average.

▼ Percentage significantly lower than Canadian average.

The central point to this story was that Tom’s dad had kept secret the fact that this was a normal pie. Internationally, as well as in New Brunswick French and in Quebec, less than 60% of students understood this point. In these two provinces, more than a quarter of students incorrectly thought that Tom’s dad kept secret the fact that Enemy Pie was his favourite food (Option C). More students from British Columbia than in the rest of Canada had the correct response to this question.

Enemy Pie: Question 13

Process: Examine and Evaluate Content, Language, and Textual Elements

13. Look at this sentence from the end of the story:

“After dessert, Jeremy invited me to come over to his house the next morning.”

What does this suggest about the boys?

- (A) They are still enemies.
- (B) They do not like to play at Tom’s house.
- (C) They wanted to eat some more Enemy Pie.
- (D) They might be friends in the future.

Correct response: D

Item Statistics

Province	Percentage of students (SE)				
	D Correct Response	A	B	C	Not Reached or Omitted
BC	90 (1.5)	2 (0.6)	2 (0.6)	5 (1.0)	2 (0.9)
AB	83(1.7)	2 (0.5)	2 (0.5)	10 (1.3)	3 (0.9)
ON	85(1.2)	2 (0.6)	3 (0.7)	7 (1.0)	3 (0.6)
QC	90(1.2)	2 (0.6)	1 (0.5)	3 (0.7)	4 (0.7)
NBf	88(2.3)	1 (0.7)	0 (0.3)	2 (0.9)	8 (2.3)
NS	87(1.0)	2 (0.6)	3 (0.6)	5 (0.8)	3 (0.5)
NL 	81(2.0)	3 (0.9)	5 (1.2)	6 (1.6)	5 (1.2)
CAN	87(0.8)	2 (0.3)	2 (0.4)	6 (0.5)	3 (0.3)
INT	79	5	4	8	4

 Percentage significantly lower than Canadian average.

This question was easier for Canadian students than for the other countries, with more than 80% across all provinces providing the right answer — that Jeremy and Tom might become friends in the future (Option D).

Enemy Pie: Question 14

Process: Interpret and Integrate Ideas and Information

14. Use what you have read to explain why Tom's dad really made Enemy Pie.



Item Statistics

Province	Percentage of students (SE)		
	Correct Response	Incorrect Response	Not Reached or Omitted
BC ▲	73 (1.8)	23 (1.8)	4 (1.3)
AB	66 (2.1)	29 (2.0)	6 (1.1)
ON	62 (2.3)	32 (2.3)	6 (0.9)
QC ▼	51 (2.0)	41 (2.1)	8 (1.3)
NBf ▼	41 (4.1)	43 (3.2)	17 (3.0)
NS ▼	69 (1.9)	27 (1.9)	4 (0.6)
NL	61 (2.8)	30 (2.6)	8 (1.6)
CAN	61 (1.4)	33 (1.7)	7 (0.6)
INT	50	39	11

▲ Percentage significantly higher than Canadian average.

▼ Percentage significantly lower than Canadian average.

Example Code 1:

Tom's dad wanted them to get used to each other and become friends.

Example Code 0:

for him, tom and jeremy to have for dinner

This was a difficult question internationally with only half of all students correctly integrating evidence across the text to show their understanding of a character's intention (that Tom's dad's plan for Enemy Pie was for Tom and Jeremy to become friends). There was a significant variation across provinces, with a low of 41% in New Brunswick French and a high of 73% in British Columbia. Over 40% of students in New Brunswick French and Quebec did not provide an appropriate explanation for why Tom's dad really made Enemy Pie.

Enemy Pie: Question 15

Process: Interpret and Integrate Ideas and Information

15. What kind of person is Tom's dad? Give an example of what he did in the story that shows this.



Item Statistics

Province	Percentage of students (SE)			
	Correct Response	Partially Correct Response	Incorrect Response	Not Reached or Omitted
BC	44 (2.7)	27 (2.3)	24 (1.7)	6 (1.3)
AB	39 (2.2)	28 (2.1)	26 (1.9)	6 (1.1)
ON ▲	54 (2.2)	21 (1.9)	17 (1.8)	8 (1.0)
QC ▼	23 (1.8)	33 (2.0)	32 (1.9)	13 (1.8)
NBf ▼	18 (2.9)	29 (3.0)	31 (3.4)	21 (3.2)
NS	41 (2.1)	24 (1.4)	27 (1.8)	7 (0.8)
NL	47 (2.2)	22 (1.8)	19 (1.9)	11 (2.0)
CAN	43 (1.1)	26 (1.2)	23 (1.0)	9 (0.6)
INT	24	29	34	13

▲ Percentage significantly higher than Canadian average.

▼ Percentage significantly lower than Canadian average.

Example Code 2:

② Tom's dad is a nice person because he help the boys become friends.

Example Code 1:

② Tom's dad is a man that wants the best for his son.

Example Code 0:

② He help his son make a friend.

This was a very difficult question internationally, with two-thirds of students unable to interpret and integrate this text by describing one plausible character trait of Tom's dad and by providing one example of his actions that is evidence of the character trait. There was a lot of variation in full marks (Code 2) across Canadian provinces, with a low of 18% in New Brunswick French and a high of 54% in Ontario. One quarter of Canadian students demonstrated a partial understanding (Code 1), by providing one plausible character trait of Tom's dad that is central to his role in the story. Although lacking substantiation, responses such as "He was nice" were considered partially correct. It should also be noted that over 20% of students in New Brunswick French did not respond to this question.

Enemy Pie: Question 16

Process: Examine and Evaluate Content, Language, and Textual Elements

16. What lesson might you learn from this story?



Item Statistics

Province	Percentage of students (SE)		
	Correct Response	Incorrect Response	Not Reached or Omitted
BC	47 (2.6)	48 (2.4)	4 (1.2)
AB	39 (1.8)	56 (2.0)	5 (1.0)
ON	46 (2.5)	48 (2.2)	6 (0.9)
QC	36 (2.2)	56 (2.4)	8 (1.2)
NBf	31 (2.8)	54 (3.5)	15 (2.8)
NS	46 (3.0)	43 (3.0)	11 (1.6)
NL	45 (2.2)	50 (2.3)	5 (0.8)
CAN	43 (1.4)	51 (1.3)	6(0.5)
INT	30	58	11

Percentage significantly lower than Canadian average.

Example Code 1:

Before you judge someone you should try and see if their really nice.

Example Code 0:

Don't think everf one is your enemy

This question required students to evaluate the text to identify the main message or theme of the story. For a response to be acceptable (Code 1), they were expected to acknowledge the importance of giving a relationship the chance to grow before deciding whether someone is your friend, or indicating that it is possible to change how you feel about someone. Although more students in Canada achieved Code 1 than internationally, half or more of all students in four provinces (Alberta, Quebec, New Brunswick French, and Newfoundland and Labrador) did not provide a plausible evaluation of the main message or theme of the story (Code 0).

The Giant Tooth Mystery: Question 1

Process: Focus on and Retrieve Explicitly Stated Information and Ideas

1. What is a fossil?

- (A) the surface of rocks and cliffs
- (B) the bones of a giant
- (C) the remains of very old living things
- (D) the teeth of elephants

Correct response: C

Item Statistics

Province	Percentage of students (SE)			
	C Correct Response	A	B	D
BC	85 (1.9)	4 (0.9)	9 (1.5)	1 (0.5)
AB	87 (1.4)	5 (0.8)	8 (1.0)	0(0.1)
ON	83 (1.8)	5 (1.0)	11 (1.6)	1(0.6)
QC	78 (1.7)	7 (1.0)	13 (1.5)	1(0.6)
NBf 	69 (2.8)	10 (2.0)	18 (2.2)	3(0.8)
NS	81 (1.5)	8 (0.9)	9 (1.2)	1(0.5)
NL	76 (3.6)	9 (2.2)	12 (1.7)	3(0.9)
CAN	82 (1.3)	5 (0.6)	11 (1.1)	1(0.3)
INT	75	7	14	3

 Percentage significantly lower than Canadian average.

More than 80% of Canadian students were able to identify what a fossil is, with only New Brunswick French students achieving below the Canadian average. Almost 20% of these students gave preference to Option B (the bones of a giant), even though the definition of a fossil was explicitly stated in the text.

The Giant Tooth Mystery: Question 2

Process: Make Straightforward Inferences

2. According to the article, why did some people long ago believe in giants?



Item Statistics

Province	Percentage of students (SE)		
	Correct Response	Incorrect Response	Not Reached or Omitted
BC	62 (2.6)	35 (2.5)	3 (0.8)
AB	58 (2.2)	39 (2.2)	3 (0.7)
ON	61 (2.3)	35 (2.3)	4 (0.8)
QC ▼	45 (2.0)	48 (2.1)	7 (1.3)
NBf ▼	31 (3.5)	58 (3.6)	10 (2.3)
NS	61 (1.8)	36 (1.9)	3 (0.6)
NL	63 (2.4)	32 (2.2)	5 (1.8)
CAN	57 (1.3)	38 (1.4)	5 (0.6)
INT	53	40	7

▼ Percentage significantly lower than Canadian average.

Example Code 1:

① Some people long ago believed in Giants because they had found these big bones that could not be bones of creatures on earth.

Example Code 0:

① They belived in giants because they were huge.

This was a difficult question, with less than 60% of Canadian students being able to show their understanding that people long ago believed in giants because they found huge bones/skeletons/fossils. This proportion was below 50% in New Brunswick French (31%) and in Quebec (45%).

The Giant Tooth Mystery: Question 3

Process: Focus on and Retrieve Explicitly Stated Information and Ideas

3. Where did Bernard Palissy find fossils?

- (A) on the cliffs
- (B) in the clay
- (C) by a river
- (D) on a path

Correct response: B

Item Statistics

Province	Percentage of students (SE)				
	B Correct Response	A	C	D	Not Reached or Omitted
BC	76 (2.4)	6 (1.3)	10 (1.4)	6 (1.2)	1 (0.4)
AB	80 (1.6)	5 (0.9)	9 (1.1)	5 (0.9)	1 (0.4)
ON	76 (1.7)	6 (0.9)	12 (1.6)	5 (0.9)	1 (0.5)
QC	74 (1.7)	9 (1.1)	9 (1.4)	7 (1.1)	1 (0.4)
NBf 	57 (2.4)	14 (2.4)	19 (2.3)	8 (1.9)	1 (0.8)
NS	78 (1.5)	7 (0.9)	9 (1.0)	6 (1.0)	1 (0.3)
NL	79 (2.8)	6 (1.3)	7 (1.2)	6 (2.0)	1 (0.5)
CAN	75 (1.1)	7 (0.5)	11 (0.8)	6 (0.8)	1 (0.2)
INT	71	10	13	5	1

 Percentage significantly lower than Canadian average.

Across Canada, three quarters of Grade 4 students were able to retrieve the explicitly stated information that Palissy found fossils in the clay (Option B). One in five students in New Brunswick French incorrectly assumed that he found the fossils by a river (Option C), a choice that may have been triggered by the accompanying picture.

The Giant Tooth Mystery: Question 4

Process: Interpret and Integrate Ideas and Information

4. What was Bernard Palissy's new idea?



Item Statistics

Province	Percentage of students (SE)		
	Correct Response	Incorrect Response	Not Reached or Omitted
BC	30 (2.4)	57 (2.5)	13 (1.9)
AB	23 (1.8)	64 (2.0)	13 (1.5)
ON	27 (1.9)	62 (2.0)	11 (1.1)
QC	23 (2.1)	68 (1.9)	9 (1.3)
NBf	13 (2.7)	71 (4.7)	16 (3.1)
NS	20 (1.4)	66 (1.8)	14 (1.2)
NL	28 (2.4)	62 (2.5)	10 (1.2)
CAN	25 (1.1)	64 (1.4)	11 (0.9)
INT	25	59	16

Percentage significantly lower than Canadian average.

Example Code 1:

Some of these creatures no longer lived on earth they were extinct.

Example Code 0:

to show them a new dinosaur

This was one of the most difficult questions on the test, with only a quarter of all students internationally and across Canada responding correctly. Almost two-thirds of Canadian students were unable to explain that Palissy's new idea was that some fossils belonged to animals that no longer lived on Earth, had completely disappeared, or were extinct. Many students incorrectly determined that Palissy's new idea was simply that he found/studied fossils. In New Brunswick French, only 13% of students responded correctly, while 16% did not respond at all.

The Giant Tooth Mystery: Question 5

Process: Make Straightforward Inferences

5. Why was Bernard Palissy put into prison?

- (A) People were not open to new ideas.
- (B) He copied his ideas from Gideon Mantell.
- (C) He left tiny fossils in his pottery.
- (D) Studying fossils was forbidden in France.

Correct response: A

Item Statistics

Province	Percentage of students (SE)				
	A Correct Response	B	C	D	Not Reached or Omitted
BC	60 (2.8)	14 (1.7)	6 (1.2)	18 (1.8)	2 (0.8)
AB	56 (2.4)	14 (1.3)	8 (1.1)	20 (1.8)	1 (0.5)
ON	59 (2.5)	17 (1.6)	5 (1.1)	18 (2.1)	1 (0.4)
QC	59 (2.1)	22 (1.8)	5 (1.1)	12 (1.4)	1 (0.4)
NBf ▼	47 (3.9)	32 (3.7)	7 (1.7)	13 (1.9)	1 (0.6)
NS	62 (1.9)	12 (1.2)	7 (1.0)	16 (1.4)	2 (0.5)
NL	52 (3.6)	15 (2.0)	10 (1.6)	21 (3.1)	2 (0.8)
CAN	58 (1.6)	17 (1.1)	7 (1.0)	17 (1.0)	1 (0.2)
INT	54	16	11	18	2

▼ Percentage significantly lower than Canadian average.

This was also a difficult multiple-choice question, with between 47% and 62% of students across provinces getting a correct response (Option A). Although the question called for a straightforward inference, words such as “copied” (Option B) or “forbidden” (Option D) may have misled some students.

The Giant Tooth Mystery: Question 6

Process: Focus on and Retrieve Explicitly Stated Information and Ideas

6. Who found the fossil tooth in England?

- (A) Bernard Palissy
- (B) Mary Ann Mantell
- (C) Richard Owen
- (D) Gideon Mantell

Correct response: B

Item Statistics

Province	Percentage of students (SE)				
	B Correct Response	A	C	D	Not Reached or Omitted
BC	75 (2.2)	5 (1.4)	2 (0.5)	16 (1.9)	2 (0.7)
AB	71 (1.8)	7 (1.0)	2 (0.6)	18 (1.6)	2 (0.6)
ON	72 (2.1)	7 (1.1)	3 (0.7)	17 (1.9)	1 (0.4)
QC	77 (1.5)	7 (1.2)	2 (0.6)	13 (1.4)	
NBf	72 (2.9)	5 (1.5)	3 (1.3)	18 (1.9)	2 (0.7)
NS	74 (1.7)	7 (0.8)	2 (0.3)	16 (1.5)	1 (0.4)
NL	72 (2.9)	10 (2.1)	1 (0.7)	16 (2.0)	1 (0.6)
CAN	74 (1.3)	7 (0.7)	3 (0.7)	16 (1.1)	1 (0.2)
INT	68	11	3	18	1

Canadian performance on this question was very uniform across provinces, with between 71% (Alberta) and 77% (Quebec) selecting the right answer — Option B, which was explicitly stated in the text (that Mary Ann Mantel found the fossil tooth while taking a walk in England).

The Giant Tooth Mystery: Question 7

Process: Make Straightforward Inferences

7. What did Gideon Mantell know about reptiles that made the fossil tooth puzzling?

- (A) Reptiles had no teeth.
- (B) Reptiles were found under rocks.
- (C) Reptiles lived long ago.
- (D) Reptiles gulped their food.

Correct response: D

Item Statistics

Province	Percentage of students (SE)				
	D Correct Response	A	B	D	Not Reached or Omitted
BC ▲	69 (2.5)	4 (0.9)	5 (0.9)	20 (2.3)	1 (0.6)
AB	67 (2.4)	5 (0.9)	5 (1.0)	22 (1.7)	1 (0.5)
ON	64 (2.0)	5 (1.0)	6 (1.0)	24 (1.5)	1 (0.4)
QC ▼	46 (2.1)	4 (0.9)	13 (1.7)	36 (2.1)	1 (0.4)
NBf ▼	44 (4.2)	5 (1.3)	12 (1.9)	36 (4.3)	3 (1.3)
NS ▲	67 (1.6)	3 (0.6)	6 (0.9)	23 (1.5)	2 (0.4)
NL ▲	69 (2.5)	4 (1.1)	3 (0.7)	23 (2.4)	1 (0.6)
CAN	61 (1.1)	5 (0.8)	7 (0.6)	26 (1.1)	1 (0.2)
INT	57	7	10	25	2

▲ Percentage significantly higher than Canadian average.

▼ Percentage significantly lower than Canadian average.

Contrary to the previous question, the proportion of correct responses varied across Canada, with three provinces achieving above the Canadian average of 61% (British Columbia, Newfoundland and Labrador, and Nova Scotia) and two provinces achieving below it (New Brunswick French and Quebec). About a quarter of all students were drawn to Option C. Although the statement in this option is correct, it does not answer the question.

The Giant Tooth Mystery: Question 8

Process: Interpret and Integrate Ideas and Information

8. Gideon Mantell thought the tooth might have belonged to different types of animals. Complete the table to show what made him think this.

Type of animal	What made him think this
A plant eater	The tooth was flat with ridges.
 1 A giant creature	
 1 A reptile	

Item Statistics

Province	Percentage of students (SE)			
	Correct Response	Partially Correct Response	Incorrect Response	Not Reached or Omitted
BC	26 (2.3)	33 (2.3)	34 (2.1)	8 (1.4)
AB	20 (1.4)	31 (1.9)	41 (1.7)	8 (1.3)
ON	22 (2.1)	34 (2.0)	36 (2.1)	8 (1.3)
QC	19 (1.6)	30 (1.7)	44 (2.0)	8 (1.4)
NBf 	12 (2.5)	36 (3.6)	41 (4.2)	11 (2.1)
NS	23 (1.6)	32 (2.1)	36 (1.8)	10 (1.1)
NL	26 (2.5)	28 (2.7)	37 (2.8)	9 (1.6)
CAN	22 (1.1)	32 (1.1)	38 (1.2)	8 (0.7)
INT	12	26	47	15

 Percentage significantly lower than Canadian average.

Example Code 2:

Type of animal	What made him think this
A plant eater	The tooth was flat with ridges
 1 A giant creature	The tooth was really big
 1 A reptile	the kind of rock he found on it

0
8
9
0
8
9

Example Code 1:

Type of animal	What made him think this
A plant eater	The tooth was flat with ridges
 1 A giant creature	like an elephant
 1 A reptile	Iguana's have the same shape tooth

Type of animal	What made him think this
A plant eater	The tooth was flat with ridges
 1 A giant creature	It was a very big tooth.
 1 A reptile	The tooth was very very old.

Example Code 0:

	Type of animal	What made him think this
	A plant eater	The tooth was flat with ridges
 1	A giant creature	just swallow their food.
 1	A reptile	It gulpes their food

1

8

9

1

8

9

	Type of animal	What made him think this
	A plant eater	The tooth was flat with ridges
 1	A giant creature	The bones were huge.
 1	A reptile	Teeth are flat.

1

8

9

1

8

9

Although this was a difficult question for Canadian students, it was even more challenging internationally, with only 12% answering both parts of the question correctly. To obtain a Code 2, students had to (1) identify the large size of the fossil tooth in the first part, and (2) indicate that the rock in which it was found was the kind of rock where reptile fossils were found OR that the fossil tooth was similar to/looked like an iguana/reptile tooth. Generally, the second part was more difficult for students. The fairly high proportion of non-response, reaching 15% internationally and more than 20% in several countries, may suggest that this type of graphic organizer is not familiar to some Grade 4 students.

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The Giant Tooth Mystery: Question 9

Process: Make Straightforward Inferences

9. Why did Gideon Mantell take the tooth to a museum?
- (A) to ask if the fossil belonged to the museum
 - (B) to prove that he was a fossil expert
 - (C) to hear what scientists thought of his idea
 - (D) to compare the tooth with others in the museum

Correct response: C

Item Statistics

Province	Percentage of students (SE)				
	C Correct Response	A	B	D	Not Reached or Omitted
BC	61 (2.2)	1 (0.5)	6 (1.2)	28 (2.2)	3 (0.8)
AB	54 (2.1)	3 (0.7)	6 (0.9)	34 (1.9)	3 (0.9)
ON	59 (2.3)	6 (1.1)	8 (1.0)	26 (2.0)	1 (0.5)
QC	63 (2.0)	2 (0.4)	8 (1.2)	26 (2.0)	1 (0.5)
NBf	58 (3.3)	2 (1.1)	9 (1.9)	28 (2.1)	2 (1.0)
NS	58 (1.8)	3 (0.6)	7 (1.1)	30 (1.8)	2 (0.5)
NL	53 (2.6)	4 (1.0)	8 (1.7)	32 (2.3)	4 (1.1)
CAN	60 (1.4)	4 (0.6)	7 (0.5)	28 (1.0)	2 (0.4)
INT	58	6	11	23	2

Student performance on this multiple-choice question was quite consistent across provinces and across countries, with slightly more than 50% of students demonstrating their ability to make an inference from a series of statements in a continuous text containing complex ideas. They correctly identified that Mantell took the tooth to a museum to discuss his idea with other scientists (Option C). More than a quarter of Canadian students chose Option D, which, although it seemed plausible, was an incorrect inference.

The Giant Tooth Mystery: Question 10

Process: Interpret and Integrate Ideas and Information

10. A scientist showed Gideon Mantell an iguana tooth.
Why was this important to Gideon Mantell?



Item Statistics

Province	Percentage of students (SE)		
	Correct Response	Incorrect Response	Not Reached or Omitted
BC	46 (2.4)	46 (2.4)	8 (1.4)
AB	49 (1.9)	45 (2.3)	7 (1.4)
ON	46 (2.3)	49 (2.3)	5 (1.1)
QC	48 (2.4)	45 (2.5)	7 (1.2)
NBf	37 (3.4)	50 (2.7)	13 (2.8)
NS	45 (3.4)	47 (3.4)	7 (1.6)
NL	43 (1.9)	50 (1.9)	7 (0.9)
CAN	46 (1.1)	47 (1.2)	7 (0.8)
INT	34	54	13

Example Code 1:

Because the iguana tooth looked very similar to the one he had

Example Code 0:

Because it helped him

Less than half of students in all provinces provided a correct response to this interpretation question. To achieve Code 1, students had to understand that the iguana tooth provided evidence supporting Gideon Mantell's theory that the fossil tooth might have belonged to a giant reptile OR show a more general understanding that the iguana tooth looked like the fossil tooth. Internationally, the question was even more challenging, with only about one-third of all students responding correctly and 13% not responding at all.

The Giant Tooth Mystery: Question 11

Process: Focus on and Retrieve Explicitly Stated Information

11. What did Gideon Mantell use when trying to figure out what the *Iguanodon* looked like?

- (A) bones he collected
- (B) ideas from other scientists
- (C) pictures in books
- (D) teeth from other reptiles

Correct response: A

Item Statistics

Province	Percentage of students (SE)				
	A Correct Response	B	C	D	Not Reached or Omitted
BC	61 (2.5)	8 (1.1)	6 (1.2)	21 (1.9)	4 (0.8)
AB	55 (2.1)	10 (1.1)	7 (1.0)	26 (1.7)	3 (0.7)
ON	54 (2.0)	9 (1.3)	5 (0.9)	27 (1.8)	4 (1.1)
QC	59 (2.3)	10 (1.4)	6 (0.9)	24 (2.0)	1 (0.5)
NBf	49 (3.5)	12 (2.2)	8 (1.8)	27 (2.8)	4 (1.4)
NS	57 (2.3)	7 (0.8)	7 (1.0)	26 (1.7)	3 (0.5)
NL	54 (3.4)	11 (1.8)	9 (1.4)	22 (2.4)	5 (1.4)
CAN	57 (1.4)	10 (0.9)	6 (0.6)	25 (1.1)	3 (0.6)
INT	57	10	8	22	3

Canadian students performed at the international average on this question, with more than half of students choosing the right answer — Option A (that Mantell used bones he had collected to figure out what the *Iguanodon* looked like. This was explicitly stated in the text. About a quarter of students incorrectly assumed that Mantell used teeth from other reptiles (Option D).

The Giant Tooth Mystery: Question 12

Process: Examine and Evaluate Content, Language, and Textual Elements

12. Look at the two pictures of the *Iguanodon*. What do they help you to understand?



Item Statistics

Province	Percentage of students (SE)			
	Correct Response	Partially Correct Response	Incorrect Response	Not Reached or Omitted
BC	18 (1.8)	13 (1.7)	60 (2.4)	9 (1.4)
AB	15 (1.6)	14 (1.5)	62 (2.0)	9 (1.5)
ON	15 (1.6)	11 (1.7)	66 (2.2)	8 (1.1)
QC	14 (1.6)	21 (1.9)	57 (2.7)	9 (1.3)
NBf	8 (2.8)	15 (2.7)	58 (3.0)	18 (2.9)
NS	14 (1.3)	13 (1.2)	64 (1.8)	9 (1.0)
NL	15 (1.7)	10 (1.7)	62 (3.1)	12 (2.4)
CAN	15 (0.8)	14 (1.1)	62 (1.4)	9 (0.8)
INT	10	12	63	15

Example Code 2:

That Gideon Mantell was wrong about his discoveries.

Example Code 1:

how different they are but still how they have the same stuff like a spike

Example Code 0:

They help me understand that the Iguanodon was a plant eater and are large animals.

For this question, students had to examine and evaluate the content of the text and the two pictures of the *Iguanodon* to determine the purpose of those two pictures. Very few students (from 8% in New Brunswick French to 18% in British Columbia) demonstrated their understanding that the pictures show the changes in scientific ideas, OR that the pictures show different people's ideas about the *Iguanodon*, OR that they illustrate the mistakes that Gideon Mantell or other people might have made. Very few students (from 10% in Newfoundland and Labrador to 21% in Quebec) demonstrated a partial comprehension, by providing a more general response, OR by lacking an appropriate reference to the text. A sizeable number of students from New Brunswick French (18%) did not respond to this question at all.

The Giant Tooth Mystery: Question 13

Process: Interpret and Integrate Ideas and Information

13. Later discoveries proved that Gideon Mantell was wrong about what the *Iguanodon* looked like. Fill in the blanks to complete the table.

	What Gideon Mantell thought the <i>Iguanodon</i> looked like	What scientists today think the <i>Iguanodon</i> looked like
 1	The <i>Iguanodon</i> walked on four legs.	
 1		The <i>Iguanodon</i> had a spike on its thumb.
 1	The <i>Iguanodon</i> was over 30 metres long.	

Item Statistics

Province	Percentage of students (SE)				
	Correct Response	Almost Correct Response	Partially Correct Response	Incorrect Response	Not Reached or Omitted
BC	41 (2.4)	20 (1.9)	13 (1.4)	16 (1.9)	10 (1.6)
AB	40 (1.9)	18 (1.6)	12 (1.4)	20 (1.7)	10 (1.3)
ON	42 (2.3)	16 (1.8)	12 (1.4)	21 (1.8)	10 (1.2)
QC	42 (2.0)	17 (1.5)	14 (1.4)	17 (1.3)	9 (1.2)
NBf 	30 (2.5)	17 (2.7)	14 (2.1)	18 (2.4)	21 (2.5)
NS	40 (1.6)	20 (1.7)	15 (1.3)	17 (1.3)	9 (1.0)
NL	39 (2.5)	19 (2.4)	14 (2.3)	15 (1.9)	13 (2.1)
CAN	42 (1.4)	16 (0.8)	13 (1.0)	19 (1.2)	10 (0.8)
INT	32	13	15	25	16

 Percentage significantly lower than Canadian average.

Example Code 3:

 1	The <i>Iguanodon</i> walked on four legs.	The <i>Iguanodon</i> walks on 2 legs.
 1	The <i>Iguanodon</i> had a spike on his nose.	The <i>Iguanodon</i> had a spike on its thumb.
 1	The <i>Iguanodon</i> was 100 feet long.	The <i>Iguanodon</i> was 30 feet long.



Example Code 2:

	What Gideon Mantell thought the <i>Iguanodon</i> looked like	What scientists today think the <i>Iguanodon</i> looked like
	The <i>Iguanodon</i> walked on four legs.	no they do not walk on four legs.
	the spike was on its head	The <i>Iguanodon</i> had a spike on its thumb.
	The <i>Iguanodon</i> was 100 feet long.	30 ft long

Example Code 1:

	What Gideon Mantell thought the <i>Iguanodon</i> looked like	What scientists today think the <i>Iguanodon</i> looked like
	The <i>Iguanodon</i> walked on four legs.	It is a reptile.
	They thought the <i>Iguanodon</i> got a spike on its head.	The <i>Iguanodon</i> had a spike on its thumb.
	The <i>Iguanodon</i> was 100 feet long.	It's a giant

	What Gideon Mantell thought the <i>Iguanodon</i> looked like	What scientists today think the <i>Iguanodon</i> looked like
	The <i>Iguanodon</i> walked on four legs.	walked on two
	did not have a spike on his thumb.	The <i>Iguanodon</i> had a spike on its thumb.
	The <i>Iguanodon</i> was 100 feet long.	was 50 feet long

Example Code 0:

	What Gideon Mantell thought the <i>Iguanodon</i> looked like	What scientists today think the <i>Iguanodon</i> looked like
	The <i>Iguanodon</i> walked on four legs.	The <i>Iguanodon</i> has four legs.
	It has a spike on its back	The <i>Iguanodon</i> had a spike on its thumb.
	The <i>Iguanodon</i> was 100 feet long.	It look very big.

This question was presented using another graphic organizer, contrasting three scientific beliefs from the past with those of scientists today. The question had three parts: these were scored separately, and the results were aggregated. A Code 3 (Correct response) meant that all three parts were correct; Code 2 (Almost correct) was used for two parts correct; Code 1 (Partially correct) for one part correct; and Code 0 (Incorrect) for none of the parts correct. From an international perspective, Canadian students did well on this question, with all provinces at the Canadian average, except New Brunswick French. This province had a lower proportion of students with all three parts correct (30%) and a higher proportion of no response (21%). Results varied substantially across countries, possibly because of the complex format of the question.

The Giant Tooth Mystery: Question 14

Process: Make Straightforward Inferences

14. What were found that showed Gideon was wrong about what the *Iguanodon* looked like?

- (A) more fossil teeth
- (B) scientific drawings
- (C) living *Iguanodons*
- (D) whole skeletons

Correct response: D

Item Statistics

Province	Percentage of students (SE)				
	D Correct Response	A	B	C	Not Reached or Omitted
BC	61 (2.3)	8 (1.4)	17 (1.8)	7 (1.5)	7 (1.4)
AB	55 (2.2)	11 (1.2)	19 (1.3)	7 (1.0)	8 (1.2)
ON	54 (2.0)	12 (1.4)	16 (1.5)	11 (1.6)	8 (1.3)
QC	52 (2.0)	11 (1.4)	21 (1.5)	9 (1.2)	7 (1.1)
NBf	43 (4.1)	15 (2.1)	22 (3.3)	9 (2.2)	12 (2.8)
NS	58 (1.7)	10 (1.0)	17 (1.1)	8 (1.1)	8 (1.0)
NL	51 (2.9)	7 (1.4)	21 (2.7)	10 (1.5)	11 (1.8)
CAN	55 (1.2)	11 (0.8)	17 (0.8)	10 (0.9)	7 (0.7)
INT	52	15	15	11	7

This question required students to make a straightforward inference about the last part of the story, where it was explained that whole skeletons were found and that these proved that Mantell had made some mistakes (Option D). Canadian students achieved about the same as the international average, with a low of 43% correct responses in New Brunswick French and a high of 61% in British Columbia.

APPENDIX III

Exclusion and Response Rates in Canada

As with any other large-scale survey, PIRLS 2011 endeavoured to ensure the international comparability of results. Therefore, the national target population for PIRLS 2011 consisted of all students in their fourth grade of primary schooling. As explained in the international report (Mullis et al., 2012), care must be exercised when comparing countries in a grade-based assessment, as students in participating countries may be of different ages and levels of maturation.

All countries participating in PIRLS 2011 were encouraged to do everything possible to maximize coverage of their national population. However, exclusions are unavoidable and could occur at the school level, at the student level, or both. In Canada, as explained previously, one province (Prince Edward Island) and the three territories did not participate in the study. In addition, only schools in the French-language system were tested in New Brunswick. In two provinces (Saskatchewan and Manitoba), a minimal number of students participated to ensure adequate national geographic coverage, whereas in the other seven provinces (British Columbia, Alberta, Ontario, Quebec, New Brunswick French, Nova Scotia, and Newfoundland and Labrador), students were oversampled to obtain robust provincial results.

In Canada, the national population of Grade 4 students was covered at 90.1 per cent, with an overall weighted exclusion rate of 9.9 per cent.¹ From an international perspective, this is one of the highest exclusion rates, with only three participants having more exclusions than Canada: Hong Kong SAR (11.8 per cent), Israel (24.6 per cent), and Florida, USA (12.9 per cent). In most other countries, the exclusion rate did not exceed 5 per cent. Thus, although Canada had the largest sample size of all participating countries, care must be taken when generalizing PIRLS results to the entire population of Grade 4 students in Canada. Table III.1 shows the exclusion rates for each level, by province.²

The total weighted rate of school-level exclusions in Canada was 4.1 per cent. These included geographically remote schools, schools having very few students, schools with a radically different grade structure or curriculum, and schools providing instruction solely to students with special needs, as determined by the provincial education authority. At the provincial level, school-level exclusions ranged from 0.2 per cent in New Brunswick French to 3.8 per cent in Nova Scotia and Newfoundland and Labrador.

¹ The exclusion rates for Canada take into account students and schools from the non-participating jurisdictions: Prince Edward Island, New Brunswick English, Yukon, Northwest Territories, and Nunavut.

² The exclusion and participation rates are not reported individually for Saskatchewan and Manitoba, since these two provinces participated at the Canadian level only. However, data from these provinces were taken into account when calculating the totals for Canada overall. (This note applies to all tables in Appendix III).

The total weighted rate of student-level exclusions in Canada was 5.8 per cent. These included:

- *Students with functional disabilities.* This category comprised students who had permanent physical disabilities such that they could not perform in the PIRLS testing situation. Students with physical disabilities who were able to perform on the test had to be included.
- *Students with intellectual disabilities.* This category consisted of students who were considered, in the professional opinion of the school principal or by other qualified staff, to have intellectual disabilities and/or who had been psychologically tested as such. This included students who were emotionally or mentally unable to follow even the general instructions of the test. It should be noted that students could not be excluded solely because of poor academic performance or normal disciplinary problems. Systematic exclusion of all students with dyslexia, or other such learning disabilities, was not acceptable (students had to be accommodated in the test situation if possible, rather than excluded).
- *Non-native language speakers.* This category included students who were unable to read or speak the language of the test (English or French) and would be unable to overcome the language barrier in the test situation. Typically, a student who had received less than one year of instruction in the language of the test had to be excluded.

It was the responsibility of individual schools to determine whether a student should be included or excluded from participating in the PIRLS assessment, based on the international guidelines described above. At the provincial level, student-level exclusions ranged from 1 per cent in Quebec to 9.7 per cent in British Columbia.

Table III.1 PIRLS 2011 exclusion rates by type of exclusion

	School-level exclusions	Student-level exclusions	Overall
BC	1.7%	9.7%	11.4%
AB	1.5%	5.4%	6.8%
ON	1.0%	7.0%	7.9%
QC	2.7%	1.0%	3.7%
NBf*	0.2%	5.2%	5.3%
NS	3.8%	4.5%	8.4%
NL	3.8%	6.0%	9.7%
CAN**	4.1%	5.8%	9.9%

* Covering the French-language school system only.

** Non-participating jurisdictions are taken into account when calculating the exclusion rates for Canada overall.

In order to minimize the potential for non-response bias,³ PIRLS quality standards require minimum participation rates for schools and students. At the national level, a minimum school participation rate must be 85 per cent, based on originally sampled schools, and a minimum student participation rate must be 85 per cent within all participating schools (including both sampled schools and replacement schools). In Canada overall, the unweighted school participation rate was 99 per cent (varying slightly from 96 per cent in Quebec to 100 per cent in British Columbia, New Brunswick French, and Nova Scotia), and the unweighted student participation rate was 95 per cent (varying slightly from 93 per cent in Newfoundland and Labrador to 97 per cent in Ontario). The total unweighted participation rate for Canada (at both school and student levels) was 94 per cent. Thus, the international standards for participation in the assessment were successfully maintained in Canada. Internationally, several countries achieved an overall participation rate below 85 per cent (Norway, Northern Ireland, United States, England, and Belgium French). Tables III.2 and III.3 show school and student sample sizes, as well as response rates across the seven participating provinces.

Table III.2 School sample sizes and school participation rates

	Number of schools in original sample*	Number of eligible schools in original sample**	Number of schools in original sample that participated	Number of replacement schools that participated	Total number of schools that participated	School participation rate*** (unweighted)
BC	150	150	147	1	148	99%
AB	150	147	143	2	145	99%
ON	200	191	188	1	189	99%
QC	200	197	189	1	190	96%
NBf	73	73	73	0	73	100%
NS	204	203	203	0	203	100%
NL	153	152	151	0	151	99%
CAN	1,142	1,125	1,106	5	1,111	99%

* This number includes participating, not participating, and excluded schools.

** This number includes participating and not participating schools.

*** School participation rate is based on originally sampled schools.

³ Non-response bias may occur when all sampled units (schools and students in the case of PIRLS) do not participate in the survey (Bose, 2001).

Table III.3 Student sample sizes in participating schools and student participation rate

	Number of sampled students in participating schools*	Number of eligible students in the sample**	Number of students absent	Number of students assessed	Student participation rate (unweighted)
BC	2,991	2,772	125	2,647	95%
AB	4,292	3,990	201	3,789	95%
ON	4,932	4,718	157	4,561	97%
QC	4,529	4,446	202	4,244	95%
NBf	1,375	1,299	58	1,241	96%
NS	4,902	4,619	231	4,388	95%
NL	2,461	2,308	173	2,135	93%
CAN	25,707	24,358	1,152	23,206	95%

* This number includes participating, not participating, and excluded students.

** This number includes participating and not participating students.

APPENDIX IV

Table IV.1 Provincial policies on schooling¹

Provinces	Age of entry to elementary school	Age of compulsory schooling	Grades provided for schooling	Number of school days per year	Percentage of total instructional time devoted to language/reading at Grade 4	Grade structure of language/reading curriculum (elementary school)
British Columbia	5 on or before December 31	5–19	1–12	varies from 192 to 194 days	25%–50% (suggestion)	Kindergarten–Grade 7
Alberta	6 on or before September 1	6–16	1–12	varies from 190 to 200 days	25%	Grades 1, 2, 3, 4
Saskatchewan	6	7–16	1–12	200 days	approximately 37%	Grades 1, 2, 3, 4, 5
Manitoba	7 on or before December 31	7–18	1–12	varies from 194 to 196	<i>French-speaking schools: 20%–30%</i> <i>English-speaking schools: 35%</i>	Kindergarten, Grades 1, 2, 3, 4
Ontario	6 on or before September 1	6–18	1–12	194 days at elementary level	not specified in curriculum	Grade 1–8
Quebec	6 on or before September 30	6–16	1–11	180 days	28% (suggestion)	Grades 1–6
New Brunswick French	5 on or before December 31	5–18	1–12	185 days	35%	Kindergarten–Grade 8
Nova Scotia	5 on or before December 31	5–16	1–12	195 days	approximately 32%	Grades primary–3, 4–6
Newfoundland and Labrador	6 on or before December 31	6–16	1–12	195 days	24%	Kindergarten, Grades 1–3, 4–6

¹ Data collected through the PIRLS 2011 Curriculum Questionnaire (as reported by provincial coordinators).

Table IV.2 Components prescribed by the language/reading curriculum²

Provinces	Goals and objectives	Instructional methods or processes	Materials	Assessment standards and methods
British Columbia	●	○	○	○
Alberta	●	○	○	○
Saskatchewan	●	○	○	●
Manitoba	●	●	English language: ○ French language: ●	English language: ○ French language: ●
Ontario	●	○	○	●
Quebec	○	○	○	●
New Brunswick French	●	●	●	●
Nova Scotia	●	●	○	○
Newfoundland and Labrador	●	●	●	●

● Yes ○ No

² Data collected through the PIRLS 2011 Curriculum Questionnaire (as reported by provincial coordinators).

Table IV.3 Main preparation route and current requirements for Grade 4 teachers³

Provinces	Supervised practicum		Qualifying examination	Probationary teaching period		Mentoring or induction program
	Yes/No	Duration		Yes/No	Duration	
British Columbia	●	3 to 6 months	○	●	about 6 months	○
Alberta	●	2–3 practicums (few weeks each)	○	●	2 years	○
Saskatchewan	●	16 weeks	○	○	—	○
Manitoba	●	23 weeks	○	○	—	○
Ontario	●	minimum of 40 days	○	○	—	●
Quebec	●	4 practicums (the last one is 3 months)	●	○	—	○
New Brunswick French	●	4 months	●	○	—	●
Nova Scotia	●	minimum of 15 weeks	○	●	2 years	○
Newfoundland and Labrador	●	13 weeks	○	●	2 years	○

● Yes ○ No

³ Data collected through the PIRLS 2011 Curriculum Questionnaire (as reported by provincial coordinators).

APPENDIX V

Table V.1 Reading achievement scores by country and province

Country and Province	Average Score	SE
Hong Kong SAR	571	(2.3)
Russian Federation	568	(2.7)
Finland	568	(1.9)
Singapore	567	(3.3)
Northern Ireland	558	(2.4)
British Columbia	556	(3.2)
United States	556	(1.5)
Denmark	554	(1.7)
Croatia	553	(1.9)
Chinese Taipei	553	(1.9)
Ontario	552	(2.6)
Ireland	552	(2.3)
England	552	(2.6)
Nova Scotia	549	(2.4)
Alberta	548	(2.9)
Canada	548	(1.6)
Newfoundland and Labrador	546	(2.8)
Netherlands	546	(1.9)
Czech Republic	545	(2.2)
Sweden	542	(2.1)
Italy	541	(2.2)
Germany	541	(2.2)
Israel	541	(2.7)
Portugal	541	(2.6)
Hungary	539	(2.9)
Quebec	538	(2.1)
Slovak Republic	535	(2.8)
Bulgaria	532	(4.1)
New Zealand	531	(1.9)
Slovenia	530	(2.0)
Austria	529	(2.0)
Lithuania	528	(2.0)
Australia	527	(2.2)
Poland	526	(2.1)
France	520	(2.6)
New Brunswick French	514	(2.7)
Spain	513	(2.3)
Norway	507	(1.9)
Belgium (French)	506	(2.9)
Romania	502	(4.3)
PIRLS Scale Centrepoint	500	
Georgia	488	(3.1)
Malta	477	(1.4)
Trinidad and Tobago	471	(3.8)
Azerbaijan	462	(3.3)
Iran, Islamic Rep. of	457	(2.8)
Colombia	448	(4.1)
United Arab Emirates	439	(2.2)
Saudi Arabia	430	(4.4)
Indonesia	428	(4.2)
Qatar	425	(3.5)
Oman	391	(2.8)
Morocco	310	(3.9)

Table V.2 Reading achievement scores by country, province, and sex

Country and Province	Girls		Boys		Difference (Absolute Value)	SE
	Average Score	SE	Average Score	SE		
Colombia	447	(4.6)	448	(4.6)	1	(3.9)
Italy	543	(2.4)	540	(2.7)	3	(2.4)
France	522	(3.4)	518	(2.4)	5	(2.7)
Spain	516	(2.5)	511	(2.8)	5	(2.5)
Belgium (French)	509	(3.1)	504	(3.1)	5	(2.3)
Israel	544	(3.1)	538	(3.4)	6	(3.4)
Czech Republic	549	(2.5)	542	(2.5)	6	(2.6)
Netherlands	549	(2.1)	543	(2.2)	7	(2.0)
Austria	533	(2.2)	525	(2.3)	8	(2.3)
Germany	545	(2.3)	537	(2.7)	8	(2.5)
Slovak Republic	540	(3.1)	530	(2.8)	10	(2.1)
United States	562	(1.9)	551	(1.7)	10	(1.8)
Alberta	553	(3.1)	543	(3.1)	10	(2.2)
Denmark	560	(1.9)	548	(2.1)	12	(2.2)
Canada	555	(1.7)	542	(2.1)	12	(2.0)
Ontario	558	(3.3)	546	(2.8)	13	(3.4)
New Brunswick French	520	(3.5)	507	(4.4)	13	(5.9)
Nova Scotia	556	(2.6)	543	(2.8)	13	(2.6)
Quebec	544	(2.6)	531	(2.4)	14	(2.5)
Poland	533	(2.5)	519	(2.7)	14	(3.1)
Azerbaijan	470	(3.6)	456	(3.5)	14	(2.3)
Croatia	560	(2.1)	546	(2.2)	14	(2.2)
Sweden	549	(2.4)	535	(2.5)	14	(2.7)
Portugal	548	(3.0)	534	(2.8)	14	(2.4)
Norway	514	(2.2)	500	(2.7)	14	(3.1)
Chinese Taipei	561	(2.1)	546	(2.1)	15	(2.1)
Bulgaria	539	(4.5)	524	(4.3)	15	(3.5)
Romania	510	(4.8)	495	(4.3)	15	(3.3)
Ireland	559	(2.9)	544	(3.0)	15	(3.9)
British Columbia	564	(3.5)	548	(3.7)	16	(3.7)
Newfoundland and Labrador	555	(3.1)	538	(3.1)	16	(2.8)
Hungary	547	(3.2)	532	(3.2)	16	(2.6)
Slovenia	539	(2.2)	523	(2.7)	16	(3.1)
Northern Ireland	567	(2.5)	550	(3.2)	16	(3.4)
Hong Kong SAR	579	(2.3)	563	(2.5)	16	(2.2)
Australia	536	(2.7)	519	(2.7)	17	(3.1)
Singapore	576	(3.5)	559	(3.6)	17	(2.6)
Malta	486	(1.9)	468	(2.0)	18	(2.8)
Indonesia	437	(4.5)	419	(4.3)	18	(2.3)
Lithuania	537	(2.4)	520	(2.4)	18	(2.8)
Russian Federation	578	(2.8)	559	(3.1)	18	(2.3)
Iran, Islamic Rep. of	467	(4.3)	448	(4.3)	20	(6.4)
New Zealand	541	(2.2)	521	(2.7)	20	(3.1)
Finland	578	(2.3)	558	(2.2)	21	(2.3)
Georgia	499	(2.7)	477	(4.0)	22	(3.0)
England	563	(3.0)	540	(3.1)	23	(3.0)
United Arab Emirates	452	(3.0)	425	(3.5)	27	(4.8)
Morocco	326	(4.0)	296	(4.6)	29	(3.9)
Qatar	441	(4.7)	411	(4.2)	30	(6.0)
Trinidad and Tobago	487	(4.5)	456	(4.3)	31	(4.6)
Oman	411	(3.0)	371	(3.4)	40	(2.9)
Saudi Arabia	456	(3.1)	402	(8.2)	54	(8.8)
International Average	520	(0.5)	504	(0.5)	16	(0.5)

Table V.3 Achievement scores in reading purposes by country and province

Country and Province	Overall Reading		Reading Purpose			
			Literary		Informational	
	Average Score	SE	Average Score	SE	Average Score	SE
Hong Kong SAR	571	(2.3)	565	(2.5)	578	(2.2)
Russian Federation	568	(2.7)	567	(2.7)	570	(2.7)
Finland	568	(1.9)	568	(2.0)	568	(2.0)
Singapore	567	(3.3)	567	(3.5)	569	(3.3)
Northern Ireland	558	(2.4)	564	(2.7)	555	(2.6)
British Columbia	556	(3.2)	561	(3.4)	552	(3.2)
United States	556	(1.5)	563	(1.8)	553	(1.6)
Denmark	554	(1.7)	555	(1.7)	553	(1.8)
Croatia	553	(1.9)	555	(1.9)	552	(1.6)
Chinese Taipei	553	(1.9)	542	(1.9)	565	(1.8)
Ontario	552	(2.6)	558	(2.6)	549	(2.7)
Ireland	552	(2.3)	557	(2.7)	549	(2.3)
England	552	(2.6)	553	(2.8)	549	(2.6)
Nova Scotia	549	(2.4)	555	(2.6)	545	(2.5)
Alberta	548	(2.9)	552	(3.0)	545	(2.8)
Canada	548	(1.6)	553	(1.7)	545	(1.7)
Newfoundland and Labrador	546	(2.8)	552	(2.9)	543	(3.1)
Netherlands	546	(1.9)	545	(2.4)	547	(1.9)
Czech Republic	545	(2.2)	545	(2.1)	545	(2.0)
Sweden	542	(2.1)	547	(2.4)	537	(2.4)
Italy	541	(2.2)	539	(2.0)	545	(2.0)
Germany	541	(2.2)	545	(2.2)	538	(2.5)
Israel	541	(2.7)	542	(2.7)	541	(2.6)
Portugal	541	(2.6)	538	(2.8)	544	(2.6)
Hungary	539	(2.9)	542	(2.8)	536	(3.0)
Quebec	538	(2.1)	539	(2.0)	536	(2.4)
Slovak Republic	535	(2.8)	540	(2.9)	530	(3.0)
Bulgaria	532	(4.1)	532	(4.4)	533	(4.0)
New Zealand	531	(1.9)	533	(2.3)	530	(2.0)
Slovenia	530	(2.0)	532	(2.4)	528	(2.0)
Austria	529	(2.0)	533	(2.2)	526	(2.0)
Lithuania	528	(2.0)	529	(1.8)	527	(2.0)
Australia	527	(2.2)	527	(2.2)	528	(2.2)
Poland	526	(2.1)	531	(2.1)	519	(2.4)
New Brunswick French	514	(2.7)	516	(3.4)	510	(3.2)
France	520	(2.6)	521	(2.6)	519	(2.6)
Spain	513	(2.3)	516	(2.1)	512	(2.0)
Norway	507	(1.9)	508	(2.0)	505	(2.3)
Belgium (French)	506	(2.9)	508	(2.9)	504	(3.2)
Romania	502	(4.3)	504	(4.2)	500	(4.6)
Georgia	488	(3.1)	491	(2.9)	482	(3.1)
Malta	477	(1.4)	470	(1.7)	485	(1.5)
Trinidad and Tobago	471	(3.8)	467	(4.1)	474	(3.8)
Azerbaijan	462	(3.3)	461	(3.0)	460	(3.9)
Iran, Islamic Rep. of	457	(2.8)	459	(2.9)	455	(2.9)
Colombia	448	(4.1)	453	(4.1)	440	(4.4)
United Arab Emirates	439	(2.2)	427	(2.4)	452	(2.2)
Saudi Arabia	430	(4.4)	422	(4.6)	440	(4.5)
Indonesia	428	(4.2)	418	(4.0)	439	(4.5)
Qatar	425	(3.5)	415	(3.9)	436	(3.4)
Oman	391	(2.8)	379	(2.8)	404	(3.0)
Morocco	310	(3.9)	299	(3.6)	321	(3.6)

Table V.4 Achievement scores in comprehension processes by country and province

Country and Province	Overall Reading		Comprehension Process			
			Retrieving and Straightforward Inferencing		Interpreting, Integrating, and Evaluating	
	Average Score	SE	Average Score	SE	Average Score	SE
Hong Kong SAR	571	(2.3)	562	(2.0)	578	(2.4)
Russian Federation	568	(2.7)	565	(2.7)	571	(2.6)
Finland	568	(1.9)	569	(2.0)	567	(1.8)
Singapore	567	(3.3)	565	(3.4)	570	(3.4)
Northern Ireland	558	(2.4)	555	(2.5)	562	(2.5)
British Columbia	556	(3.2)	550	(3.2)	561	(3.2)
United States	556	(1.5)	549	(1.5)	563	(1.6)
Denmark	554	(1.7)	556	(1.9)	553	(1.5)
Croatia	553	(1.9)	554	(2.0)	552	(1.7)
Chinese Taipei	553	(1.9)	551	(1.8)	555	(1.9)
Ontario	552	(2.6)	545	(2.5)	559	(2.6)
Ireland	552	(2.3)	552	(2.8)	553	(2.2)
England	552	(2.6)	546	(2.6)	555	(2.7)
Nova Scotia	549	(2.4)	543	(2.4)	555	(2.4)
Alberta	548	(2.9)	542	(2.9)	554	(3.2)
Canada	548	(1.6)	543	(1.5)	554	(1.5)
Newfoundland and Labrador	546	(2.8)	540	(2.5)	553	(2.8)
Netherlands	546	(1.9)	549	(2.2)	543	(2.0)
Czech Republic	545	(2.2)	548	(2.4)	544	(2.0)
Sweden	542	(2.1)	543	(2.1)	540	(2.1)
Italy	541	(2.2)	539	(1.9)	544	(2.0)
Germany	541	(2.2)	548	(2.3)	536	(2.2)
Israel	541	(2.7)	538	(2.9)	543	(3.0)
Portugal	541	(2.6)	539	(2.8)	542	(2.6)
Hungary	539	(2.9)	537	(2.8)	542	(2.7)
Quebec	538	(2.2)	538	(2.1)	538	(2.3)
Slovak Republic	535	(2.8)	534	(2.9)	536	(2.7)
Bulgaria	532	(4.1)	532	(4.0)	532	(3.9)
New Zealand	531	(1.9)	527	(2.0)	535	(1.9)
Slovenia	530	(2.0)	533	(1.9)	530	(2.2)
Austria	529	(2.0)	539	(2.3)	521	(2.0)
Lithuania	528	(2.0)	530	(1.9)	527	(2.0)
Australia	527	(2.2)	527	(2.6)	529	(2.2)
Poland	526	(2.1)	526	(2.1)	525	(2.1)
New Brunswick French	514	(2.7)	514	(3.3)	513	(3.3)
France	520	(2.6)	528	(2.4)	512	(2.8)
Spain	513	(2.3)	516	(2.1)	510	(2.1)
Norway	507	(1.9)	511	(1.8)	502	(2.6)
Belgium (French)	506	(2.9)	512	(2.9)	499	(3.2)
Romania	502	(4.3)	500	(4.2)	503	(4.5)
Georgia	488	(3.1)	484	(3.0)	491	(3.1)
Malta	477	(1.4)	479	(1.9)	475	(1.8)
Trinidad and Tobago	471	(3.8)	474	(3.8)	464	(4.0)
Azerbaijan	462	(3.3)	469	(3.2)	449	(3.7)
Iran, Islamic Rep. of	457	(2.8)	458	(2.9)	456	(3.0)
Colombia	448	(4.1)	450	(4.1)	442	(4.6)
United Arab Emirates	439	(2.2)	439	(2.3)	438	(2.3)
Saudi Arabia	430	(4.4)	433	(4.6)	424	(4.6)
Indonesia	428	(4.2)	431	(4.3)	423	(4.7)
Qatar	425	(3.5)	424	(3.6)	425	(3.8)
Oman	391	(2.8)	395	(2.4)	382	(3.0)
Morocco	310	(3.9)	325	(3.2)	288	(4.3)

Table V.5 Reading performance at the international benchmarks by country and province

Country and Province	Advanced International Benchmark (625)		High International Benchmark (550)		Intermediate International Benchmark (475)		Low International Benchmark (400)	
Singapore	24	(1.6)	62	(1.8)	87	(1.1)	97	(0.4)
Russian Federation	19	(1.2)	63	(1.7)	92	(1.1)	99	(0.2)
Northern Ireland	19	(1.2)	58	(1.4)	87	(0.9)	97	(0.6)
Finland	18	(0.9)	63	(1.3)	92	(0.7)	99	(0.2)
England	18	(1.1)	54	(1.3)	83	(1.1)	95	(0.5)
Hong Kong SAR	18	(1.2)	67	(1.5)	93	(0.8)	99	(0.2)
United States	17	(0.7)	56	(0.8)	86	(0.6)	98	(0.3)
Ireland	16	(0.9)	53	(1.4)	85	(0.8)	97	(0.5)
British Columbia	15	(1.5)	55	(1.9)	88	(1.3)	98	(0.7)
Ontario	15	(1.3)	54	(1.7)	85	(1.1)	97	(0.4)
Israel	15	(0.9)	49	(1.3)	80	(1.3)	93	(0.8)
New Zealand	14	(0.7)	45	(1.1)	75	(0.9)	92	(0.5)
Nova Scotia	14	(1.1)	52	(1.4)	85	(0.9)	98	(0.3)
Alberta	13	(1.0)	51	(1.6)	85	(1.2)	97	(0.5)
Canada	13	(0.7)	51	(1.1)	86	(0.6)	98	(0.2)
Newfoundland and Labrador	13	(1.3)	50	(1.8)	84	(1.2)	98	(0.5)
Chinese Taipei	13	(0.9)	55	(1.3)	87	(0.7)	98	(0.3)
Denmark	12	(0.8)	55	(1.2)	88	(0.8)	99	(0.2)
Hungary	12	(0.9)	48	(1.5)	81	(1.2)	95	(0.7)
Bulgaria	11	(0.8)	45	(2.0)	77	(1.9)	93	(1.0)
Croatia	11	(0.7)	54	(1.3)	90	(0.7)	99	(0.2)
Australia	10	(0.7)	42	(1.1)	76	(1.0)	93	(0.7)
Italy	10	(0.7)	46	(1.4)	85	(1.1)	98	(0.4)
Germany	10	(0.8)	46	(1.4)	85	(1.0)	98	(0.3)
Portugal	9	(1.1)	47	(1.8)	84	(1.2)	98	(0.5)
Sweden	9	(0.8)	47	(1.6)	85	(1.0)	98	(0.3)
Czech Republic	8	(0.9)	50	(1.4)	87	(0.9)	98	(0.5)
Slovak Republic	8	(0.6)	44	(1.5)	82	(1.3)	96	(0.8)
Slovenia	8	(0.7)	42	(1.2)	79	(0.9)	95	(0.6)
Quebec	7	(0.7)	43	(1.9)	85	(1.0)	98	(0.3)
Poland	7	(0.6)	39	(1.2)	77	(0.9)	95	(0.5)
Romania	7	(0.7)	32	(1.6)	65	(2.1)	86	(1.5)
Netherlands	7	(0.5)	48	(1.5)	90	(0.8)	100	(0.2)
Lithuania	6	(0.5)	39	(1.4)	80	(1.2)	97	(0.4)
France	5	(0.5)	35	(1.6)	75	(1.5)	95	(0.8)
Austria	5	(0.5)	39	(1.5)	80	(0.9)	97	(0.3)
Malta	4	(0.4)	24	(0.7)	55	(0.8)	78	(0.6)
Spain	4	(0.5)	31	(1.3)	72	(1.2)	94	(0.7)
New Brunswick French	3	(0.8)	29	(1.9)	73	(2.0)	96	(0.7)
Trinidad and Tobago	3	(0.5)	19	(1.4)	50	(1.9)	78	(1.5)
United Arab Emirates	3	(0.3)	14	(0.6)	38	(1.0)	64	(0.9)
Georgia	2	(0.3)	21	(1.2)	60	(1.6)	86	(1.4)
Belgium (French)	2	(0.5)	25	(1.4)	70	(1.7)	94	(1.1)
Qatar	2	(0.5)	12	(1.2)	34	(1.4)	60	(1.5)
Norway	2	(0.4)	25	(1.5)	71	(1.3)	95	(0.7)
Iran, Islamic Rep. of	1	(0.2)	13	(0.9)	45	(1.6)	76	(1.1)
Colombia	1	(0.3)	10	(1.3)	38	(2.1)	72	(1.9)
Saudi Arabia	1	(0.2)	8	(1.0)	34	(2.0)	65	(1.9)
Azerbaijan	0	(0.3)	9	(0.9)	45	(2.1)	82	(1.6)
Oman	0	(0.1)	5	(0.4)	21	(0.9)	47	(1.2)
Indonesia	0	(0.1)	4	(0.6)	28	(1.9)	66	(2.2)
Morocco	0	(0.0)	1	(0.2)	7	(0.7)	21	(1.3)
International Median	8		44		80		95	

Table V.6 Reading performance at the international benchmarks by province and sex

Province	Sex	Advanced International Benchmark (625)		High International Benchmark (550)		Intermediate International Benchmark (475)		Low International Benchmark (400)	
		%	SE	%	SE	%	SE	%	SE
British Columbia	Girls	18	2.3	60	2.4	90	1.4	99	0.5
	Boys	12	1.5	51	2.2	86	1.7	98	1.0
Alberta	Girls	15	1.3	54	2.0	87	1.3	97	0.7
	Boys	11	1.1	48	1.9	84	1.5	97	0.7
Ontario	Girls	18	1.8	57	2.2	87	1.4	98	0.6
	Boys	12	1.4	51	2.1	83	1.3	97	0.5
Quebec	Girls	8	1.1	47	2.4	88	1.1	99	0.3
	Boys	6	0.6	39	2.0	82	1.3	98	0.6
New Brunswick French	Girls	4	1.0	32	2.7	76	2.9	97	0.8
	Boys	3	1.1	25	2.7	70	3.4	95	1.0
Nova Scotia	Girls	16	1.3	55	1.6	87	1.2	98	0.3
	Boys	12	1.3	48	1.7	83	1.3	97	0.5
Newfoundland and Labrador	Girls	15	2.1	54	2.3	87	1.6	98	0.5
	Boys	10	1.1	46	2.3	81	1.6	97	0.6
Canada	Girls	15	0.9	54	1.4	88	0.7	98	0.3
	Boys	11	1.0	48	1.4	84	0.8	97	0.3

Table V.7 Percentiles and the interquartile range (IQR) for overall reading achievement by province

Province	5 th percentile	SE	25 th percentile	SE	75 th percentile	SE	95 th percentile	SE	IQR (difference between the 75 th percentile and the 25 th percentile)
British Columbia	434	9.5	512	4.0	603	3.3	666	5.7	91
Alberta	423	6.0	504	3.6	596	2.4	658	2.4	93
Ontario	423	2.8	506	2.6	603	2.7	663	3.5	96
Quebec	434	6.9	498	2.5	579	1.6	634	2.2	81
New Brunswick French	406	8.3	471	4.6	557	3.7	614	3.7	86
Nova Scotia	426	4.8	504	3.3	599	3.3	659	4.0	94
Newfoundland and Labrador	427	8.9	501	4.5	595	4.4	656	4.8	94
Canada	429	4.3	504	1.7	596	1.5	658	3.0	92

Table V.8a Percentiles and the interquartile range (IQR) for literary reading by province

Province	5 th percentile	SE	25 th percentile	SE	75 th percentile	SE	95 th percentile	SE	IQR (difference between the 75 th percentile and the 25 th percentile)
British Columbia	432	7.6	514	5.7	612	3.6	676	5.3	99
Alberta	419	8.9	505	3.8	604	3.4	670	5.4	99
Ontario	420	4.7	508	2.9	613	3.2	679	5.8	105
Quebec	427	5.1	497	1.7	583	2.4	642	5.2	86
New Brunswick French	401	7.5	471	4.2	562	2.8	625	12.4	90
Nova Scotia	422	3.6	507	3.5	607	3.0	671	3.2	100
Newfoundland and Labrador	422	5.8	504	4.7	604	3.4	667	6.8	100
Canada	425	2.8	506	1.7	604	2.3	670	3.6	98

Table V.8b Percentiles and the interquartile range (IQR) for informational reading by province

Province	5 th percentile	SE	25 th percentile	SE	75 th percentile	SE	95 th percentile	SE	IQR (difference between the 75 th percentile and the 25 th percentile)
British Columbia	431	7.3	506	3.7	600	3.3	664	3.5	94
Alberta	419	6.7	499	2.8	594	3.1	658	2.8	95
Ontario	419	5.6	500	2.7	601	4.3	663	4.6	101
Quebec	429	3.0	495	2.2	579	4.0	639	4.5	84
New Brunswick French	403	6.8	467	3.3	555	5.2	616	7.6	88
Nova Scotia	419	3.1	497	3.3	595	4.0	657	3.9	98
Newfoundland and Labrador	421	6.9	494	3.9	593	3.4	654	4.8	98
Canada	425	3.5	499	2.2	593	2.3	658	2.6	94

Table V.9a Percentiles and the interquartile range (IQR) for retrieving and straightforward inferencing by province

Province	5 th percentile	SE	25 th percentile	SE	75 th percentile	SE	95 th percentile	SE	IQR (difference between the 75 th percentile and the 25 th percentile)
British Columbia	428	5.9	505	3.4	598	4.9	660	6.0	93
Alberta	418	6.9	497	3.2	590	3.4	651	3.0	94
Ontario	414	5.0	500	5.0	596	3.1	657	4.4	96
Quebec	431	3.6	498	3.7	580	1.7	637	5.1	83
New Brunswick French	409	7.4	472	4.4	557	3.6	614	11.4	85
Nova Scotia	420	3.8	497	2.7	592	2.7	652	3.7	94
Newfoundland and Labrador	418	10.6	496	4.9	589	3.3	650	4.1	93
Canada	423	4.2	499	2.3	591	1.7	653	2.8	92

Table V.9b Percentiles and the interquartile range (IQR) for interpreting, integrating, and evaluating by province

Province	5 th percentile	SE	25 th percentile	SE	75 th percentile	SE	95 th percentile	SE	IQR (difference between the 75 th percentile and the 25 th percentile)
British Columbia	443	7.7	517	5.0	608	4.5	669	4.3	90
Alberta	431	6.6	510	5.7	602	3.5	663	3.8	92
Ontario	429	4.4	515	2.8	610	4.8	671	5.0	96
Quebec	434	7.6	497	2.9	580	2.8	636	4.9	83
New Brunswick French	409	12.5	471	3.3	556	4.4	614	9.7	85
Nova Scotia	432	4.5	510	2.9	604	2.1	665	2.9	94
Newfoundland and Labrador	432	5.0	508	4.8	601	2.5	662	5.5	93
Canada	434	4.6	509	2.4	601	2.1	663	2.3	92

Table V.10 Proportion and reading achievement scores by Students Bullied at School scale (reported by students) by province

Province	Almost Never				About Monthly				About Weekly				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Newfoundland and Labrador	55	(1.6)	556	(2.9)	26	(1.3)	544	(3.8)	19	(1.2)	525	(6.6)	10.3	(0.08)
New Brunswick French	51	(1.9)	525	(4.0)	32	(1.4)	507	(3.6)	17	(1.4)	494	(4.8)	10.2	(0.08)
Nova Scotia	50	(1.3)	561	(3.0)	32	(1.0)	544	(2.4)	18	(0.8)	528	(3.3)	10.1	(0.05)
British Columbia	49	(1.4)	566	(3.4)	34	(1.1)	555	(3.6)	18	(1.1)	535	(4.5)	10.1	(0.06)
Quebec	44	(1.3)	550	(2.3)	37	(1.1)	534	(3.0)	19	(1.1)	517	(3.2)	9.9	(0.05)
Canada	44	(0.7)	561	(2.0)	36	(0.6)	548	(2.0)	20	(0.6)	526	(2.5)	9.8	(0.03)
Alberta	44	(1.1)	560	(3.4)	35	(1.0)	547	(3.3)	21	(0.8)	527	(3.4)	9.8	(0.04)
Ontario	40	(1.2)	567	(2.8)	38	(1.1)	552	(3.5)	22	(1.0)	526	(4.7)	9.7	(0.05)
International Average	47	(0.2)	523	(0.5)	33	(0.1)	513	(0.5)	20	(0.1)	489	(0.7)	-	-

Note: Centrepoint of scale set at 10.

Table V.11 Proportion and reading achievement scores by Students Like Reading scale (reported by students) by province

Province	Like Reading				Somewhat Like Reading				Do Not Like Reading				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
British Columbia	37	(1.5)	585	(4.2)	50	(1.1)	546	(3.5)	13	(1.0)	518	(5.2)	10.4	(0.07)
Ontario	36	(1.1)	577	(3.8)	49	(1.1)	543	(2.7)	15	(1.0)	523	(4.7)	10.3	(0.06)
Canada	35	(0.6)	574	(2.1)	51	(0.6)	539	(1.9)	14	(0.5)	520	(2.7)	10.3	(0.03)
Alberta	35	(1.0)	574	(3.0)	51	(1.0)	539	(3.4)	14	(0.7)	520	(3.7)	10.3	(0.05)
Nova Scotia	34	(1.5)	577	(2.8)	48	(1.2)	543	(2.7)	18	(0.8)	515	(2.7)	10.1	(0.07)
Quebec	33	(1.1)	560	(2.9)	54	(1.0)	531	(2.6)	13	(0.8)	511	(2.7)	10.3	(0.05)
Newfoundland and Labrador	30	(1.7)	575	(4.0)	51	(1.9)	541	(3.2)	20	(1.1)	519	(4.2)	10.0	(0.07)
New Brunswick French	30	(1.7)	543	(3.7)	53	(1.5)	505	(3.1)	17	(1.7)	488	(5.1)	10.0	(0.08)
International Average	28	(0.2)	542	(0.5)	57	(0.1)	506	(0.5)	15	(0.1)	488	(0.8)	-	-

Note: Centrepoint of scale set at 10.

Table V.12 Proportion and reading achievement scores by Students Motivated to Read scale (reported by students) by province

Province	Motivated				Somewhat Motivated				Not Motivated				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Alberta	75	(1.1)	550	(3.1)	21	(1.0)	551	(3.2)	4	(0.3)	519	(6.3)	10.0	(0.05)
Newfoundland and Labrador	76	(1.4)	550	(2.8)	20	(1.3)	541	(5.1)	4	(0.6)	~	~	10.0	(0.05)
Ontario	75	(1.3)	554	(2.7)	21	(0.9)	551	(3.8)	4	(0.6)	537	(8.8)	9.9	(0.05)
British Columbia	73	(1.1)	559	(3.2)	23	(0.9)	556	(4.7)	4	(0.5)	527	(7.5)	9.9	(0.05)
Nova Scotia	73	(1.0)	554	(2.6)	22	(0.8)	545	(2.8)	5	(0.3)	518	(5.8)	9.9	(0.05)
Canada	72	(0.6)	551	(1.7)	24	(0.6)	549	(2.2)	4	(0.2)	530	(5.2)	9.8	(0.03)
New Brunswick French	69	(1.7)	516	(3.3)	27	(1.7)	512	(4.2)	4	(0.7)	~	~	9.7	(0.07)
Quebec	61	(1.1)	537	(2.3)	34	(1.0)	542	(3.2)	5	(0.5)	526	(5.5)	9.2	(0.05)
International Average	74	(0.1)	518	(0.4)	21	(0.1)	503	(0.7)	5	(0.1)	474	(1.3)	-	-

Note: Centrepoint of scale set at 10. A tilde (~) indicates insufficient data to report achievement.

Table V.13 Proportion and reading achievement scores by Students Confident in Their Reading scale (reported by students) by province

Province	Confident				Somewhat Confident				Not Confident				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Newfoundland and Labrador	52	(1.3)	572	(3.5)	42	(1.2)	524	(3.8)	6	(0.7)	485	(6.6)	10.7	(0.05)
Nova Scotia	46	(0.9)	577	(2.4)	48	(0.8)	533	(2.7)	7	(0.5)	481	(5.5)	10.4	(0.04)
British Columbia	45	(1.2)	584	(3.4)	48	(1.3)	539	(3.6)	6	(0.5)	499	(7.0)	10.4	(0.05)
Alberta	44	(1.2)	578	(2.7)	48	(0.9)	532	(3.1)	8	(0.6)	490	(6.1)	10.4	(0.05)
Canada	41	(0.7)	578	(1.7)	51	(0.6)	536	(1.7)	9	(0.4)	497	(3.1)	10.2	(0.04)
Ontario	40	(1.4)	583	(3.0)	52	(1.4)	539	(2.7)	8	(0.6)	493	(5.7)	10.2	(0.06)
New Brunswick French	36	(2.0)	546	(3.4)	52	(1.6)	502	(3.0)	12	(0.9)	468	(4.9)	10.0	(0.09)
Quebec	35	(1.2)	565	(2.5)	55	(1.1)	529	(2.7)	10	(0.6)	494	(4.9)	10.0	(0.04)
International Average	36	(0.2)	547	(0.4)	53	(0.1)	502	(0.4)	11	(0.1)	456	(0.8)	-	-

Note: Centrepoint of scale set at 10.

Table V.14 Proportion and reading achievement scores by Students Engaged in Reading Lessons scale (reported by students) by province

Province	Engaged				Somewhat Engaged				Not Engaged				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Newfoundland and Labrador	49	(1.5)	556	(3.2)	45	(1.3)	541	(3.6)	6	(0.8)	521	(6.6)	10.3	(0.06)
Alberta	43	(1.3)	557	(3.4)	51	(1.3)	544	(3.1)	6	(0.5)	531	(5.3)	10.1	(0.05)
British Columbia	42	(1.7)	565	(3.9)	52	(1.5)	553	(3.4)	6	(0.6)	537	(6.4)	10.1	(0.06)
Nova Scotia	42	(1.2)	562	(2.7)	51	(1.1)	543	(2.8)	7	(0.5)	518	(5.3)	10.1	(0.06)
Ontario	42	(1.2)	561	(3.6)	52	(1.2)	548	(2.8)	6	(0.7)	531	(7.2)	10.1	(0.05)
New Brunswick French	40	(1.6)	522	(4.0)	53	(1.4)	511	(3.3)	7	(1.1)	488	(7.2)	10.0	(0.08)
Canada	39	(0.9)	558	(1.9)	54	(0.7)	545	(1.9)	7	(0.4)	531	(4.4)	9.9	(0.03)
Quebec	30	(1.4)	546	(3.2)	61	(1.3)	537	(2.3)	9	(0.8)	522	(5.3)	9.5	(0.06)
International Average	42	(0.2)	519	(0.5)	50	(0.2)	510	(0.5)	8	(0.1)	494	(1.0)	-	-

Note: Centrepoint of scale set at 10.

Table V.15 Proportion and reading achievement scores by Parents Like Reading scale (reported by parents) by province

Province	Like				Somewhat like				Do not like				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Nova Scotia	52	(0.9)	566	(2.8)	39	(0.9)	543	(3.1)	9	(0.5)	526	(4.4)	10.8	(0.04)
Alberta	49	(1.3)	565	(3.6)	43	(1.2)	547	(3.4)	9	(0.5)	542	(5.1)	10.7	(0.05)
British Columbia	47	(1.7)	578	(3.5)	45	(1.6)	558	(3.9)	7	(0.8)	547	(6.2)	10.8	(0.08)
Ontario	44	(1.3)	570	(3.6)	48	(1.3)	547	(2.8)	8	(0.5)	539	(5.8)	10.6	(0.06)
Canada	41	(0.7)	569	(2.1)	50	(0.6)	545	(1.7)	9	(0.4)	533	(2.7)	10.4	(0.03)
Newfoundland and Labrador	38	(1.5)	564	(3.3)	50	(1.6)	544	(3.8)	11	(0.9)	532	(7.4)	10.3	(0.07)
Quebec	29	(1.0)	557	(2.9)	58	(0.8)	535	(2.3)	13	(0.8)	526	(4.3)	9.9	(0.05)
New Brunswick French	26	(1.7)	533	(4.3)	58	(1.9)	513	(3.4)	16	(1.3)	493	(5.0)	9.7	(0.09)
International Average	32	(0.2)	535	(0.5)	57	(0.2)	507	(0.5)	11	(0.1)	487	(0.9)	-	-

Note: Centrepoint of scale set at 10.

Table V.16 Proportion and reading achievement scores by Early Literacy Activities scale (reported by parents) by province

Province	Often				Sometimes				Never or Almost Never				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Newfoundland and Labrador	66	(1.4)	560	(3.1)	34	(1.4)	533	(4.2)	0	(0.1)	~	~	11.5	(0.06)
Nova Scotia	62	(0.9)	563	(2.2)	37	(0.9)	538	(3.2)	1	(0.1)	~	~	11.3	(0.04)
Ontario	54	(1.3)	566	(3.1)	45	(1.3)	545	(3.2)	1	(0.2)	~	~	10.9	(0.05)
New Brunswick French	53	(1.8)	528	(3.5)	46	(1.7)	502	(3.0)	1	(0.4)	~	~	10.8	(0.07)
Alberta	52	(1.3)	568	(3.6)	47	(1.3)	542	(3.7)	1	(0.2)	~	~	10.8	(0.05)
Canada	51	(0.9)	566	(1.9)	48	(0.9)	541	(1.8)	1	(0.1)	~	~	10.7	(0.04)
British Columbia	50	(1.6)	578	(3.3)	49	(1.6)	554	(4.1)	1	(0.3)	~	~	10.8	(0.08)
Quebec	40	(1.0)	554	(3.0)	59	(1.0)	531	(2.4)	2	(0.3)	~	~	10.2	(0.04)
International Average	37	(0.2)	529	(0.5)	60	(0.2)	506	(0.5)	3	(0.1)	430	(2.6)	-	-

Note: Centrepoint of scale set at 10. A tilde (~) indicates insufficient data to report achievement.

Table V.17 Proportion and reading achievement scores by Early Literacy Tasks scale (reported by parents) by province

Province	Very Well				Moderately Well				Not Well				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Ontario	27	(1.4)	582	(3.2)	45	(1.1)	557	(2.7)	28	(1.2)	531	(4.0)	10.2	(0.06)
Newfoundland and Labrador	26	(1.4)	574	(4.2)	53	(1.2)	550	(3.0)	22	(1.3)	525	(4.8)	10.3	(0.06)
Alberta	23	(1.1)	584	(4.5)	49	(1.1)	554	(3.2)	28	(1.0)	537	(4.1)	10.0	(0.04)
British Columbia	23	(1.2)	592	(4.4)	48	(1.3)	567	(3.8)	29	(1.3)	546	(4.6)	10.0	(0.06)
Canada	22	(0.7)	581	(2.3)	46	(0.6)	554	(1.6)	32	(0.6)	535	(1.9)	9.9	(0.03)
Nova Scotia	20	(0.7)	578	(3.4)	51	(0.8)	556	(2.7)	29	(0.8)	531	(3.0)	10.0	(0.04)
New Brunswick French	17	(1.3)	545	(5.5)	48	(1.7)	515	(3.4)	35	(1.5)	500	(4.0)	9.7	(0.06)
Quebec	15	(0.8)	567	(3.4)	45	(0.9)	542	(2.6)	40	(1.0)	529	(2.5)	9.5	(0.04)
International Average	26	(0.1)	537	(0.6)	42	(0.2)	511	(0.5)	32	(0.2)	489	(0.7)	-	-

Note: Centrepoint of scale set at 10.

Table V.18 Proportion and reading achievement scores by Teacher Career Satisfaction scale (reported by teachers) by province

Province	Satisfied				Somewhat Satisfied				Less Than Satisfied				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Ontario	60	(4.1)	549	(3.4)	36	(4.1)	553	(4.2)	4	(1.6)	553	(9.2)	10.2	(0.15)
Newfoundland and Labrador	54	(5.6)	545	(3.9)	41	(5.2)	549	(4.5)	5	(2.3)	527	(4.5)	10.2	(0.21)
Nova Scotia	53	(4.0)	552	(3.8)	42	(3.9)	548	(3.7)	5	(1.7)	543	(5.4)	10.0	(0.17)
British Columbia	53	(4.9)	563	(4.3)	42	(4.8)	554	(4.5)	5	(2.1)	518	(11.6)	10.0	(0.20)
Alberta	52	(3.6)	550	(4.2)	43	(3.5)	547	(4.2)	5	(1.7)	545	(12.1)	10.0	(0.15)
Canada	52	(2.3)	550	(2.1)	43	(2.0)	547	(3.2)	5	(1.0)	540	(4.4)	9.9	(0.09)
New Brunswick French	46	(8.0)	515	(4.5)	53	(8.0)	512	(4.0)	1	(0.7)	502	(4.6)	9.8	(0.26)
Quebec	40	(3.6)	542	(3.7)	50	(4.1)	534	(3.2)	10	(2.8)	536	(4.7)	9.4	(0.15)
International Average	54	(0.5)	516	(0.6)	40	(0.5)	509	(0.8)	5	(0.2)	511	(1.9)	-	-

Note: Centrepoint of scale set at 10.

Table V.19 Proportion and reading achievement scores by Collaborate to Improve Teaching scale (reported by teachers) by province

Province	Very Collaborative				Collaborative				Somewhat Collaborative				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Newfoundland & Labrador	52	(3.9)	548	(4.1)	39	(3.9)	546	(3.9)	9	(1.8)	536	(6.5)	10.5	(0.16)
Alberta	36	(3.7)	548	(5.8)	51	(3.8)	549	(3.6)	12	(2.8)	544	(9.8)	10.0	(0.17)
New Brunswick French	35	(6.5)	513	(3.4)	56	(6.5)	518	(3.4)	9	(3.6)	492	(7.3)	9.9	(0.22)
Nova Scotia	32	(3.4)	552	(4.8)	53	(3.7)	550	(3.5)	15	(2.4)	546	(6.9)	9.7	(0.14)
Ontario	26	(3.8)	550	(4.8)	59	(4.5)	551	(3.8)	15	(3.0)	552	(6.6)	9.7	(0.18)
Canada	24	(2.1)	546	(2.7)	58	(2.3)	549	(2.7)	17	(1.7)	550	(3.7)	9.5	(0.10)
Quebec	21	(4.1)	534	(5.1)	62	(4.6)	537	(2.9)	17	(3.1)	542	(5.7)	9.3	(0.17)
British Columbia	21	(3.8)	563	(6.8)	55	(4.4)	556	(4.0)	25	(4.1)	554	(6.1)	9.0	(0.22)
International Average	35	(0.5)	513	(0.8)	54	(0.5)	512	(0.6)	11	(0.3)	510	(1.9)	-	-

Note: Centrepoint of scale set at 10.

Table V.20 Proportion and reading achievement scores by Instruction to Engage Students in Learning scale (reported by teachers) by province

Province	Most Lessons				About Half the Lessons				Some Lessons				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Alberta	85	(2.7)	550	(3.0)	15	(2.7)	536	(7.9)	0	(0.0)	~	~	10.4	(0.12)
Ontario	84	(2.5)	552	(2.6)	16	(2.5)	543	(7.7)	0	(0.0)	~	~	10.4	(0.16)
Newfoundland & Labrador	81	(4.8)	545	(3.0)	19	(4.7)	552	(6.7)	0	(0.4)	~	~	10.3	(0.21)
Nova Scotia	79	(2.9)	551	(2.9)	21	(2.9)	545	(4.2)	0	(0.0)	~	~	10.4	(0.13)
British Columbia	78	(3.9)	557	(3.8)	22	(3.9)	556	(5.7)	0	(0.2)	~	~	10.1	(0.16)
Canada	76	(1.6)	549	(1.7)	23	(1.7)	546	(4.0)	1	(0.5)	~	~	10.1	(0.09)
Quebec	60	(4.0)	538	(3.1)	39	(4.1)	537	(3.4)	1	(0.6)	~	~	9.3	(0.13)
New Brunswick French	60	(6.5)	516	(3.5)	40	(6.5)	510	(3.8)	0	(0.0)	~	~	9.4	(0.22)
International Average	71	(0.5)	513	(0.5)	27	(0.5)	509	(1.1)	2	(0.1)	~	~	-	-

Note: Centrepoint of scale set at 10. A tilde (~) indicates insufficient data to report achievement.

Table V.21 Proportion and reading achievement scores by Teacher Working Conditions scale (reported by teachers) by province

Province	Hardly Any Problem				Minor Problems				Moderate Problems				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Nova Scotia	48	(4.0)	548	(3.3)	41	(3.8)	551	(4.0)	10	(2.7)	556	(10.1)	11.0	(0.16)
Ontario	46	(3.6)	555	(4.0)	47	(3.8)	546	(3.8)	7	(2.3)	555	(12.2)	11.0	(0.12)
Newfoundland and Labrador	42	(5.6)	547	(4.2)	45	(6.2)	545	(4.2)	13	(4.3)	543	(8.4)	10.9	(0.22)
Alberta	42	(3.7)	551	(4.0)	42	(3.5)	546	(4.5)	17	(2.9)	546	(6.5)	10.8	(0.16)
Canada	38	(2.2)	551	(2.4)	45	(2.8)	545	(2.2)	17	(2.4)	549	(7.0)	10.6	(0.09)
New Brunswick French	36	(6.9)	519	(4.2)	50	(7.7)	512	(3.8)	13	(6.0)	508	(12.4)	10.5	(0.25)
British Columbia	35	(4.1)	562	(4.9)	44	(4.7)	557	(4.9)	20	(4.0)	549	(6.1)	10.4	(0.19)
Quebec	34	(4.5)	545	(4.1)	49	(4.7)	536	(2.5)	17	(3.8)	527	(5.1)	10.4	(0.16)
International Average	27	(0.5)	518	(0.9)	48	(0.6)	514	(0.7)	25	(0.5)	509	(0.9)	-	-

Note: Centrepoint of scale set at 10.

Table V.22 Proportion and reading achievement scores by School Emphasis on Academic Success scale (reported by teachers) by province

Province	Very High Emphasis				High Emphasis				Medium Emphasis				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Alberta	22	(3.4)	569	(5.5)	68	(3.9)	546	(3.1)	11	(2.8)	520	(7.8)	11.2	(0.17)
Nova Scotia	18	(2.6)	564	(5.6)	63	(3.6)	550	(2.9)	19	(2.8)	538	(4.9)	10.8	(0.14)
New Brunswick French	13	(4.8)	524	(5.5)	71	(7.4)	515	(3.8)	16	(6.0)	500	(9.9)	10.5	(0.31)
Newfoundland and Labrador	13	(3.7)	545	(8.9)	78	(4.3)	548	(2.9)	9	(2.4)	532	(8.5)	11.0	(0.16)
British Columbia	12	(2.7)	583	(9.1)	70	(4.3)	557	(3.4)	17	(3.7)	538	(7.1)	10.6	(0.18)
Canada	10	(1.2)	570	(4.3)	68	(2.5)	549	(2.2)	22	(2.4)	536	(3.4)	10.4	(0.11)
Ontario	8	(2.5)	572	(12.6)	68	(4.2)	550	(3.2)	24	(3.7)	545	(6.3)	10.3	(0.18)
Quebec	6	(1.9)	558	(9.9)	66	(4.1)	541	(2.6)	28	(4.1)	525	(2.8)	10.2	(0.15)
International Average	9	(0.3)	529	(1.8)	60	(0.6)	517	(0.6)	31	(0.5)	497	(0.8)	-	-

Note: Centrepoint of scale set at 10.

Table V.23 Proportion and reading achievement scores by Safe and Orderly School scale (reported by teachers) by province

Province	Safe and Orderly				Somewhat Safe and Orderly				Not Safe and Orderly				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Newfoundland and Labrador	83	(4.1)	550	(3.0)	17	(4.1)	527	(4.8)	0	(0.0)	~	~	11.2	(0.15)
Nova Scotia	79	(3.3)	552	(3.0)	21	(3.3)	544	(4.4)	0	(0.02)	~	~	11.2	(0.14)
British Columbia	75	(4.1)	561	(3.6)	22	(4.1)	545	(5.8)	2	(1.3)	~	~	11.0	(0.19)
Alberta	72	(3.9)	555	(3.0)	27	(3.9)	531	(6.0)	1	(0.7)	~	~	10.9	(0.15)
Canada	62	(2.8)	555	(2.2)	34	(2.6)	540	(2.6)	4	(0.9)	521	(4.5)	10.3	(0.13)
New Brunswick French	60	(8.6)	517	(3.7)	39	(8.6)	509	(5.6)	1	(0.9)	~	~	10.1	(0.31)
Ontario	60	(4.4)	557	(3.6)	34	(4.2)	545	(5.0)	6	(1.9)	522	(6.6)	10.0	(0.20)
Quebec	45	(4.5)	540	(2.8)	51	(4.5)	537	(3.2)	5	(1.9)	519	(6.7)	9.7	(0.17)
International Average	55	(0.5)	518	(0.6)	41	(0.5)	505	(0.8)	4	(0.2)	486	(3.6)	-	-

Note: Centrepoint of scale set at 10. A tilde (~) indicates insufficient data to report achievement.

Table V.24 Proportion and reading achievement scores by Instruction Affected by Reading Resource Shortages scale (reported by principals) by province

Province	Not Affected				Somewhat Affected				Affected A Lot				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Quebec	46	(4.8)	540	(2.7)	53	(4.8)	536	(3.0)	1	(0.7)	~	~	11.0	(0.14)
Alberta	43	(3.9)	549	(5.0)	57	(3.9)	549	(3.3)	0	(0.0)	~	~	11.1	(0.14)
Nova Scotia	41	(3.2)	548	(4.1)	58	(3.2)	551	(3.3)	1	(0.5)	~	~	11.1	(0.12)
Canada	36	(2.3)	548	(2.4)	64	(2.4)	549	(2.2)	1	(0.5)	~	~	10.8	(0.09)
Newfoundland and Labrador	35	(5.6)	549	(3.8)	63	(6.0)	545	(3.9)	2	(1.8)	~	~	10.7	(0.15)
New Brunswick French	32	(8.2)	528	(4.4)	68	(8.2)	507	(3.5)	0	(0.0)	~	~	10.7	(0.26)
Ontario	30	(4.3)	551	(4.4)	70	(4.3)	551	(3.3)	0	(0.0)	~	~	10.7	(0.19)
British Columbia	27	(3.7)	556	(6.4)	73	(3.7)	556	(3.8)	0	(0.0)	~	~	10.5	(0.16)
International Average	24	(0.5)	523	(1.1)	71	(0.5)	511	(0.5)	5	(0.2)	478	(3.0)	-	-

Note: Centrepoint of scale set at 10. A tilde (~) indicates insufficient data to report achievement.

Table V.25 Proportion and reading achievement scores by School Emphasis on Academic Success scale (reported by principals) by province

Province	Very High Emphasis				High Emphasis				Medium Emphasis				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Alberta	25	(4.0)	566	(5.7)	62	(4.5)	545	(3.6)	13	(2.7)	537	(7.2)	11.4	(0.17)
Nova scotia	20	(3.1)	563	(6.9)	69	(3.3)	548	(2.7)	11	(1.9)	535	(7.0)	11.1	(0.14)
Newfoundland and Labrador	16	(3.9)	560	(4.7)	74	(4.8)	544	(3.8)	11	(2.9)	540	(7.4)	11.1	(0.20)
British Columbia	14	(3.4)	577	(8.2)	63	(5.0)	559	(3.5)	23	(4.4)	533	(7.9)	10.6	(0.20)
Canada	12	(1.7)	570	(3.8)	67	(2.5)	549	(2.4)	21	(2.0)	535	(2.8)	10.5	(0.09)
Ontario	10	(3.1)	568	(10.7)	62	(4.0)	554	(3.3)	28	(4.1)	538	(4.4)	10.2	(0.17)
New Brunswick French	7	(2.6)	538	(6.0)	73	(6.0)	515	(3.1)	21	(5.9)	502	(6.0)	10.2	(0.23)
Quebec	5	(1.6)	580	(8.3)	75	(3.6)	538	(2.1)	21	(3.4)	528	(4.8)	10.3	(0.12)
International Average	9	(0.3)	527	(1.9)	59	(0.6)	517	(0.6)	32	(0.5)	497	(0.8)	-	-

Note: Centrepoint of scale set at 10.

Table V.26 Proportion and reading achievement scores by Emphasis in Early Grades on Reading Skills and Strategies scale (reported by principals) by province

Province	At or Before Second Grade				At Third Grade				At Fourth Grade or Later				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Ontario	75	(4.0)	550	(3.0)	25	(4.0)	553	(5.4)	0.0	(0.1)	~	~	12.5	(0.19)
Nova Scotia	68	(3.0)	552	(3.1)	32	(3.0)	543	(3.8)	0.0	(0.0)	~	~	12.0	(0.13)
New Brunswick French	58	(7.5)	518	(2.9)	40	(7.0)	508	(5.1)	2.6	(2.6)	~	~	11.1	(0.26)
British Columbia	54	(4.9)	556	(5.3)	45	(4.8)	555	(4.7)	1.0	(1.0)	~	~	11.1	(0.17)
Canada	55	(2.7)	549	(2.5)	44	(2.7)	547	(2.9)	1.0	(0.4)	~	~	11.4	(0.09)
Newfoundland and Labrador	53	(5.2)	548	(3.6)	46	(5.2)	543	(4.1)	0.3	(0.30)	~	~	11.2	(0.25)
Alberta	52	(4.5)	551	(4.4)	48	(4.5)	548	(4.4)	0.0	(0.0)	~	~	11.2	(0.17)
Quebec	23	(3.9)	536	(4.4)	75	(4.1)	538	(2.8)	2.0	(1.5)	~	~	9.8	(0.15)
International Average	28	(0.5)	522	(1.1)	68	(0.5)	511	(0.6)	4	(0.2)	450	(3.3)	-	-

Note: Centrepoint of scale set at 10. A tilde (~) indicates insufficient data to report achievement.

Table V.27 Proportion and reading achievement scores by School Discipline and Safety scale (reported by principals) by province

Province	Hardly Any Problem				Minor Problems				Moderate Problems				Average Scale Score	
	% of Students		Average Score		% of Students		Average Score		% of Students		Average Score			
Newfoundland and Labrador	77	(4.6)	545	(3.3)	23	(4.6)	550	(5.5)	0	(0.3)	~	~	10.8	(0.15)
Alberta	68	(3.8)	553	(3.6)	30	(3.6)	545	(4.8)	2	(1.2)	~	~	10.4	(0.11)
Nova Scotia	68	(3.0)	554	(3.3)	31	(3.0)	541	(3.3)	1	(0.8)	~	~	10.4	(0.09)
British Columbia	67	(4.3)	564	(3.9)	32	(4.3)	539	(5.9)	1	(0.9)	~	~	10.5	(0.14)
New Brunswick French	63	(7.5)	515	(3.5)	35	(7.4)	514	(4.7)	2	(1.6)	~	~	10.2	(0.17)
Ontario	61	(4.6)	556	(3.6)	36	(4.5)	544	(4.3)	4	(1.7)	540	(5.2)	10.3	(0.15)
Canada	60	(2.4)	554	(2.0)	37	(2.4)	539	(2.4)	3	(0.7)	531	(4.5)	10.3	(0.07)
Quebec	56	(4.3)	542	(3.0)	40	(4.1)	533	(3.3)	4	(1.9)	526	(6.3)	10.1	(0.12)
International Average	58	(0.5)	519	(0.7)	31	(0.5)	504	(1.0)	11	(0.3)	476	(2.0)	-	-

Note: Centrepoint of scale set at 10. A tilde (~) indicates insufficient data to report achievement.

