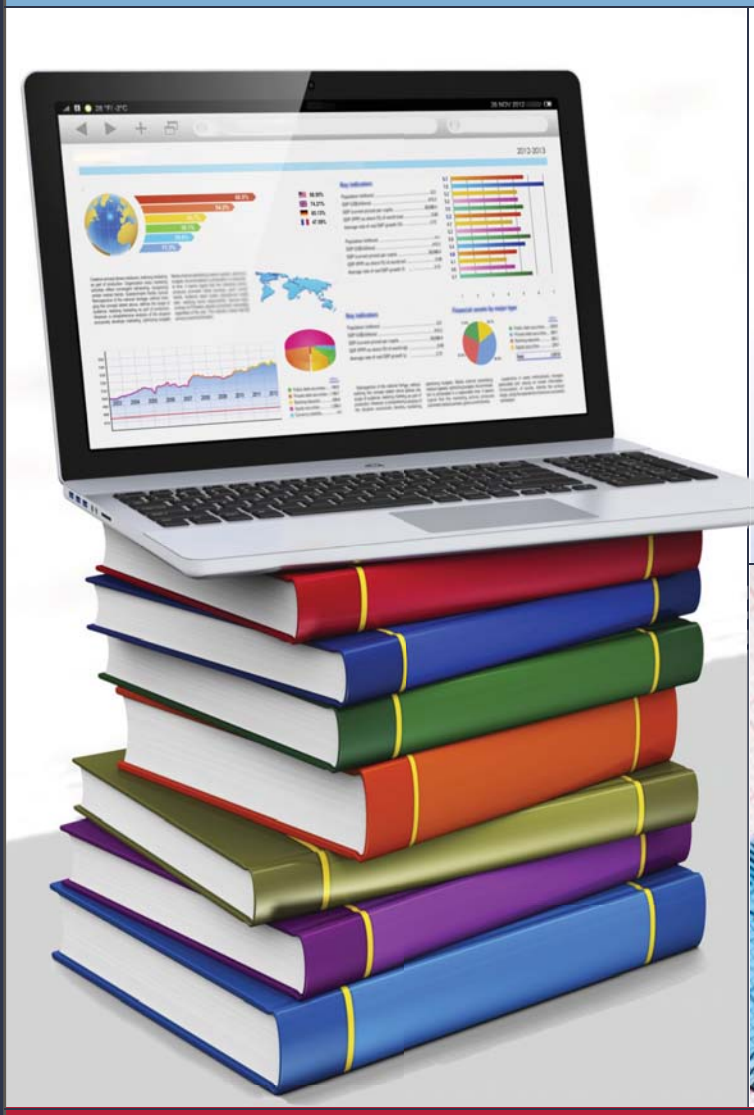
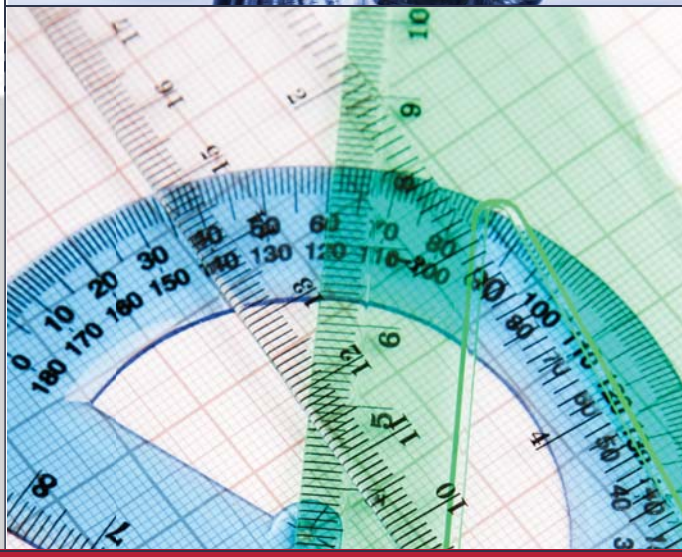
Pan-Canadian Assessment Program

PCAP 2016

Contextual Report on Student Achievement in Reading





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Contextual Report on Student Achievement in Reading

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cmec
Council of Ministers of Education, Canada
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The Council of Ministers of Education, Canada (CMEC) was formed in 1967 by the jurisdictional ministers responsible for education to provide a forum in which they could discuss matters of mutual interest, undertake educational initiatives cooperatively, and represent the interests of the provinces and territories with national educational organizations, the federal government, foreign governments, and international organizations. CMEC is the national voice for education in Canada and, through CMEC, the provinces and territories work collectively on common objectives in a broad range of activities at the elementary, secondary, and postsecondary levels.

Through the CMEC Secretariat, the Council serves as the organization in which ministries and departments of education undertake cooperatively the activities, projects, and initiatives of particular interest to all jurisdictions. One of the activities on which they cooperate is the development and implementation of pan-Canadian testing based on contemporary research and best practices in the assessment of student achievement in core subjects.

Note of appreciation

The Council of Ministers of Education, Canada would like to thank the students, their parents and teachers, and the administrators in schools and ministries/departments of education whose participation in PCAP ensured its success. We are truly grateful for your involvement in this study, which will contribute significantly to a better understanding of educational policies and practices in the fundamental area of reading literacy in the middle years.

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Ce rapport est également disponible en français.

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Introduction: What Is the Pan-Canadian Assessment Program?

The Pan-Canadian Assessment Program (PCAP) is a collaborative project that provides data on student achievement in Canadian provinces and territories.[1] It is part of the ongoing commitment of the Council of Ministers of Education, Canada (CMEC) to inform Canadians about how well their education systems are meeting the needs of students and society. Every three years, close to 30,000 Grade 8/Secondary II[2] students from across Canada are assessed with respect to their achievement of the curricular expectations common to all provinces and territories in three core learning domains: reading, mathematics, and science. The information gained from this pan-Canadian assessment provides ministers of education and other stakeholders with a basis for examining their provincial curriculum and other aspects of their school systems.

School programs and curricula vary from province to province and from territory to territory across the country, so comparing results in these domains is a complex task. However, young Canadians in different provinces and territories learn many similar skills in reading, mathematics, and science. PCAP has been designed to determine whether students across Canada reach similar levels of performance in these core disciplines at about the same age, and to complement existing provincial/territorial assessments with comparative Canada-wide data on the achievement levels attained by Grade 8/Secondary II students. *PCAP 2016: Assessment Framework* (CMEC, 2016) provides the theoretical underpinnings, design principles, and performance descriptors that were used to develop test items in each of the three domains for the second cycle of PCAP (2016–22).[3]

In April 2018, initial results from the PCAP 2016 assessment were released in *PCAP 2016: Report on the Pan-Canadian Assessment of Reading, Mathematics, and Science* (O'Grady, Fung, Servage, & Khan, 2018). Results in reading, mathematics, and science were presented for Canada overall and for individual provinces. Results were further broken down by language of the school system and by gender.

The present report is the second of two reports providing results from PCAP 2016. While the first focused on the achievement results in the three domains assessed by PCAP, this report complements it by looking at contextual variables associated with reading achievement.

PCAP contextual questionnaires

Students participating in PCAP, and their teachers and school principals, complete questionnaires that are designed to provide all provinces and territories with contextual information to aid in the interpretation of the performance results. Researchers, policy-makers, and practitioners can use the information provided by these questionnaires to help them determine what factors influence learning outcomes. The content of the contextual questionnaires changes, depending on which of the three domains is the primary focus of the PCAP assessment.

[1] All ten provinces have participated in each PCAP administration. The three territories did not participate in PCAP 2016.
[2] PCAP is administered to students in Secondary II in Quebec and Grade 8 in the rest of Canada
[3] During the first cycle of PCAP (2007–13) each domain was the primary focus in a different year: reading in 2007, mathematics in 2010, and science in 2013. The pattern is repeated during the second cycle (2016–22).

Because the primary domain of the 2016 PCAP assessment was reading, contextual questions addressed factors that have been found in past studies to correlate with reading achievement. Some examples of these correlates include parental level of education, language spoken in the home, and the number of books in the home.

Contextual questionnaires completed by teachers cover questions about teaching and learning conditions, including teachers' homework expectations, assessment practices, areas of specialization, and years of teaching experience. The school questionnaire, completed by the principal, is the key source of information about all dimensions of each school, including the structure and organization of the school; school climate; school policies and practises; and curriculum and instruction.

The PCAP questionnaires and the *PCAP 2016 Technical Report* are available on the CMEC Web site, at https://cmec.ca/536/PCAP_2016.html. Access to the PCAP data set is available upon request.

Objectives and organization of this report

This report presents the contextual results of the 2016 Pan-Canadian Assessment Program. It describes student, teacher, and school factors related to reading literacy in Canada. Results are reported at both pan-Canadian and provincial levels, with comparisons across participating provinces, as well as with other large-scale assessment surveys. The report includes three content chapters and a conclusion:

Chapter 1 presents data on five student demographic and socioeconomic characteristics: gender, language, socioeconomic status, immigration, and Indigenous identity.[4]

Chapter 2 presents information on student indices that are correlated with reading performance.

Chapter 3 presents data on the learning context in Canadian classrooms and schools, focusing on the school climate as well as the practices of Grade 8/Secondary II teachers. It examines teachers' instructional strategies, tools, and activities and the relationship of those items with achievement in reading. It explores issues surrounding time management in schools, including scheduling learning time, homework, and out-of-class activities, and time lost to absenteeism. Assessment practices in schools and their relationship to achievement in reading are also presented. Finally, the chapter provides an overview of Canadian schools that includes demographic information, factors influencing learning, and challenges to teaching.

The conclusion summarizes the major findings in this report.

[4] Only students attending schools under provincial jurisdiction participated in this study.

1 Student Demographic and Socioeconomic Characteristics

Students' success is affected to a great extent by their individual and family characteristics, and a vast array of literature has illustrated that learning outcomes are dependent on these factors. Academic achievement has been found to correlate, over time, with desirable social and personal outcomes, including better health, improved economic outcomes, political engagement, and overall well-being (Anderson & Winthrop, 2016; OECD, 2012; Onuzo, Garcia, Hernandez, Peng, & Lecoq, 2013). This chapter presents the results of analyses of performance in the Pan-Canadian Assessment Program (PCAP) based on some background characteristics of participating Grade 8/Secondary II students.

In this chapter, five demographic and socioeconomic characteristics of students in Canada are examined for correlations with achievement in reading. These are gender, language, socioeconomic status, immigration status, and Indigenous identity. Throughout this chapter, results are presented at the pan-Canadian and provincial levels. In addition, where applicable, comparisons to other pan-Canadian and international studies are introduced and discussed.

Although first language, language used in everyday life, immigration, and socioeconomic status are reported as discrete variables in this report, these variables interact to yield observed patterns of academic achievement. For this reason, it is difficult to isolate the effects of any one variable on PCAP scores.

Gender

Policy-makers have an interest in reducing gender disparities in education. Past studies, including large-scale achievement tests, have consistently reported that girls outperform boys in reading. Gender disparities in reading achievement are a persistent, global phenomenon (Bruckauf, 2016; OECD, 2015; OECD, 2012).

Understanding the gender gap in reading literacy

Reading is foundational to success in other subjects in school (Caponera, Sestito, & Russo, 2016), and poor reading skills have been associated with lower overall performance in school (OECD, 2015). For these reasons, considerable research has been undertaken with the goal of understanding the persistent gender gap favouring girls in reading. Accounting for these differences, however, is difficult, as there are complex, interactive effects that make definitive answers elusive. The focus on boys' literacy may be driven in part by its relevance to broader concerns about declining school engagement, graduation rates, postsecondary attainment, and employability of male youth.

Research focused on the gender gap in reading has variously looked at curriculum, pedagogy, and school culture as more or less gendered in favour of girls' reading literacy. As a result, efforts have been made to develop reading programs and provide reading materials to increase boys' measurably lower engagement with reading (Brozo, Sulkunen, Shiel, Garbe, Pandian, & Valtin, 2014; Moss, 2011; Watson, Kehler, & Martino, 2010). Teachers have been encouraged to reflect on how gender stereotyping might be communicated through their pedagogy or classroom management (OECD,

2015). Gender-segregated schools have been created and studied, based on beliefs that school environments and classroom dynamics differently affect boys and girls (Datnow & Hubbard, 2002; Thompson & Ungerleider, 2004). Even the validity of the tests themselves has been studied for potential biases in terms of gender, language, and culture (Singh, 2008).

Cultural norms could also influence the activities and interests deemed appropriate for girls and boys. For example, it has been proposed that girls are socialized to enjoy quiet activities like reading more than boys are, and that boys are given more encouragement and positive reinforcement for problem-solving than are girls. In addition, cultural norms may influence the expectations that important adults—particularly parents and teachers—hold for young people's academic achievement and career choices (Eden, 2017; Francis & Skelton, 2005; OECD, 2015).

Debates about the causes of observed differences in reading literacy between boys and girls are important because they influence policies proposed to address the gender gap in reading (Loveless, 2015; Moss, 2011; Watson et al., 2010).

Gender in PCAP 2016

Inclusive education is valued in Canadian provinces and territories and has led to the development of policies and resources to support inclusion. One aspect of inclusive education relates to gender identity. In the PCAP 2016 student, teacher, and school questionnaires, the question about the respondent's gender was expanded to allow two additional choices, as shown in the box below.

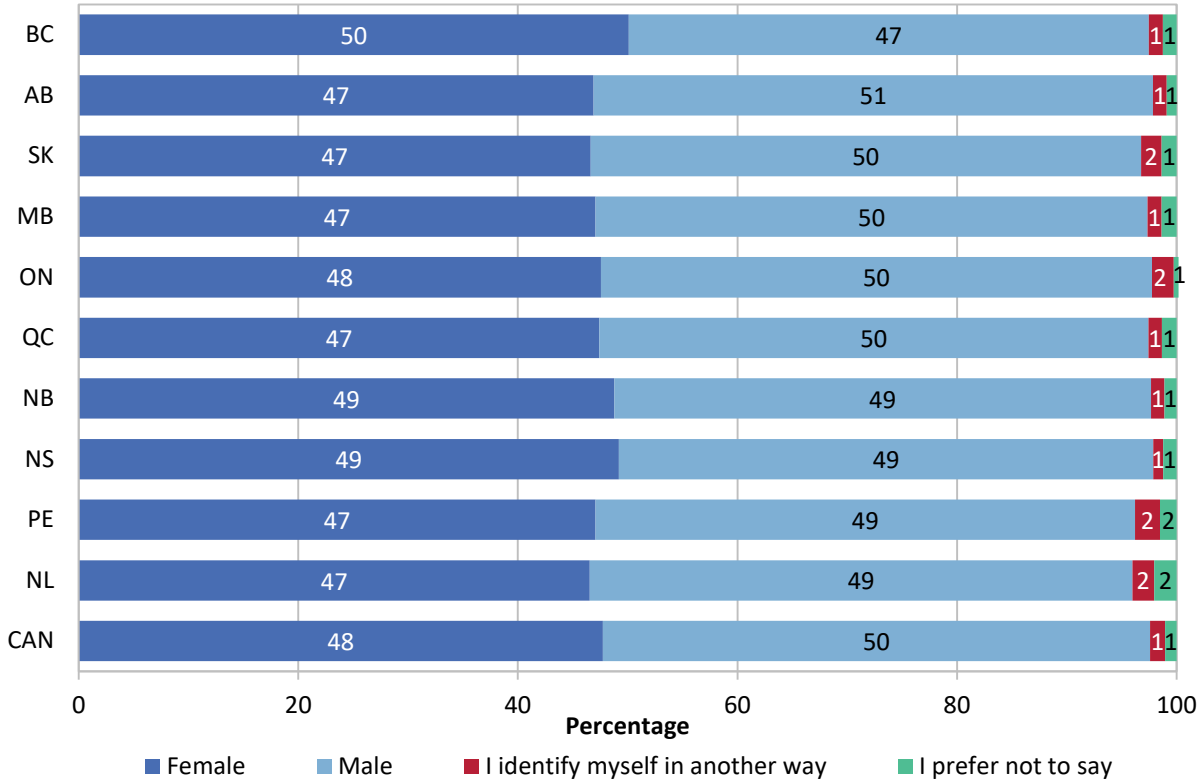
How do you identify yourself?

- ○ Male
- ○ Female
- ○ I identify myself in another way.
- ○ I prefer not to say.

In Canada overall, 97.6 per cent of students identified themselves as male or female, with similar proportions identifying with each gender (Figure 1.1; Appendix A.1.1). A small proportion of students chose to identify themselves in another way (1.4 per cent) or preferred not to say (1.0 per cent). Some minor variations exist between anglophone and francophone school systems, as shown in Table 1.1. Particularly for populations[5] with small sample sizes, such variances may be partly a result of the whole-class sampling process used in PCAP.

[5] "Population" refers to the respective official-language groups within each province.

FIGURE 1.1 Percentage of students by gender self-identification



Note: Percentages may not add up to 100 due to rounding.

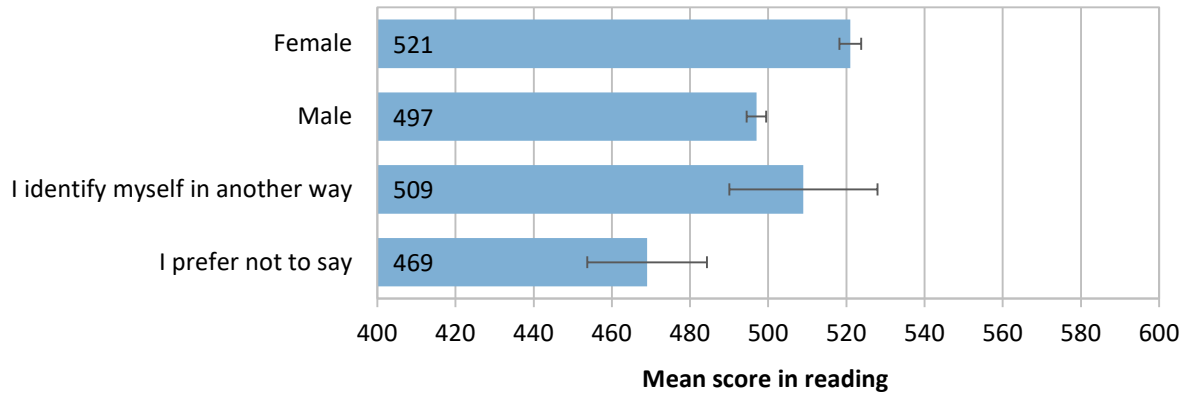
TABLE 1.1 Percentage of students by gender self-identification, by language of the school system

	Anglophone school systems				Francophone school systems			
	Female	Male	I identify myself in another way	I prefer not to say	Female	Male	I identify myself in another way	I prefer not to say
BC	50.1	47.4	1.3	1.3	50.4	48.7	0.9	0.0
AB	46.9	51.0	1.3	0.9	46.8	49.3	1.9	1.9
SK	46.6	50.2	1.9	1.4	55.7	41.4	1.4	1.4
MB	47.0	50.4	1.3	1.4	51.3	44.8	1.6	2.3
ON	47.3	50.5	1.5	0.7	53.2	44.2	1.0	1.6
QC	47.1	51.1	1.5	0.3	47.5	49.9	1.2	1.4
NB	48.6	48.6	1.6	1.2	49.1	49.6	0.4	0.8
NS	49.3	48.6	0.9	1.2	45.9	50.3	1.0	2.7
PE	47.2	49.1	2.2	1.5	--	--	--	--
NL	46.5	49.4	2.0	2.0	--	--	--	--
CAN	**47.7**	**50.0**	**1.4**	**0.9**	**48.0**	**49.4**	**1.2**	**1.4**

Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

As shown in Figure 1.2, girls significantly outperformed boys in reading in PCAP 2016 (Appendix A.1.2). The mean score in reading for Canada in PCAP 2016 was 507 ± 2.1 (O'Grady, Fung, Servage, & Kahn, 2018). Girls scored 14 points above this mean, while the average score for boys was 10 points below the mean. Gendered differences in reading achievement were evident in all provinces (O'Grady et al., 2018). The results in reading from the Programme for International Student Assessment (PISA) also showed this discrepancy: in PISA 2015, girls outperformed boys in reading by 26 points, which is close to the PISA average gap between girls and boys of 27 points (O'Grady, Deussing, Scerbina, Fung, & Muhe, 2016). In the Progress in International Reading Literacy Study (PIRLS), which assesses reading in Grade 4 students, girls outperformed boys in all nine participating provinces in 2011 (Labrecque, Chuy, Brochu, & Houme, 2012). In PIRLS 2016, girls outperformed boys in all participating provinces except Newfoundland and Labrador, where there was no gender gap in either print or digital reading (Brochu, O'Grady, Scerbina, & Tao, 2018).

FIGURE 1.2 Achievement in reading by gender



Note: Achievement results may differ slightly from those reported in the previous PCAP 2016 report (O'Grady et al., 2018) because only data for students who completed both cognitive and questionnaire items are included in the present report.

Language

Canada is a multilingual and multicultural country with various immigrant and Indigenous populations. In the 2011 census, over 200 languages were reported as a mother tongue (Statistics Canada, 2015a). "Mother tongue," as used in Statistics Canada data and past PCAP reports, may be considered synonymous with "first language spoken." Canada's language groups may be classified into three distinct categories: official languages, non-official or heritage languages, and Indigenous languages (Duff & Becker-Zayas, 2017).

Learning in Canada's official languages

The two official languages of instruction in Canada are English and French, but the majority of students in Canada receive their first-language instruction in English. Canada's federal government and provincial and territorial governments, both in principle and practice, support opportunities for all Canadians to learn one or both of Canada's official languages (Government of Canada, 2017; Statistics Canada, 2016a). To ensure that all students have the opportunity to learn both of Canada's official languages, all school systems offer English or French as second language courses, and French

immersion programs are offered in public education systems throughout Canada.[6] Some provinces also offer bilingual programs that combine instruction in an official language and a heritage language or an Indigenous language. As well, many schools offer second-language courses in languages other than French or English (Government of Canada, 2017).

PCAP populations are defined by the language of the school system for each province according to the sampling framework, and the tests were written in English or French accordingly. As part of the contextual questionnaire, students were asked in what language most of their school subjects were taught: English, French, Indigenous (e.g., Cree, Inuktitut), or other (e.g., German, Mandarin).

Classifying language use in PCAP contextual data

First language or mother tongue: "First language" or "mother tongue" refers to the first language that the child learned in his or her family. In some families, children may have more than one language as their first language. In the PCAP 2016 student questionnaire, "first language" was explained as "the language you first learned and still understand."

Language used in everyday life: As students learn in school, expand their peer networks, and otherwise interact outside of their families, they may continue to use their first language, or they may come to adopt another language for most of their everyday communication. Some students maintain active fluency in more than one language.

Language of instruction: Most Canadian students learn in one of Canada's two official languages. Some students learn in bilingual programs that combine instruction in a heritage language or an Indigenous language with one of Canada's official languages.

Seventy-one per cent of students who participated in PCAP 2016 were taught primarily in English, and 29 per cent were taught in French, mostly in Quebec and New Brunswick. Students studying primarily in an Indigenous or other language make up less than 1 per cent of students in all provinces and across Canada. In keeping with the linguistic profiles of Quebec and New Brunswick, students studying in French are concentrated in these provinces (Table 1.2).

[6] For a more detailed description of language policies in Canada, see the country chapter for Canada in the *PIRLS 2016 Encyclopedia* (Mullis, Martin, Goh, & Prendergast, 2017).

TABLE 1.2 Language of instruction

	English	French	Indigenous language	Other language
	(%)	(%)	(%)	(%)
BC	93.5	5.8	0.1	0.6
AB	88.8	10.5	0.1	0.6
SK	94.6	4.8	0.3	0.3
MB	88.4	10.8	0.6	0.2
ON	90.7	8.8	0.1	0.4
QC	10.3	89.2	0.4	0.1
NB	35.7	63.7	0.2	0.4
NS	73.6	26.4	0.0	0.0
PE	84.8	15.1	0.0	0.2
NL	80.5	18.7	0.6	0.2
CAN	**70.6**	**28.8**	**0.2**	**0.4**

Students' first languages

PCAP reading results by province, and by the language of the school system, reflect the unique linguistic profiles of Canada's provinces. The majority of students who participated in PCAP 2016 spoke one of Canada's official languages as their first language. Although Canada is officially bilingual, New Brunswick is the only province outside Quebec with a substantial francophone population (31 per cent) (Statistics Canada, 2016b). Provinces are also differently impacted by immigration. Immigrants are heavily concentrated in Canada's urban centres in British Columbia, Alberta, Ontario, and Quebec (Statistics Canada, 2015b). Canadian census data from 2016 show that 72.5 per cent of immigrants have a first language other than French or English (Statistics Canada, 2017b).

Students participating in PCAP 2016 were asked which language they considered to be their first language (the language first learned and still understood). Table 1.3 shows that, Canada-wide, 67 per cent of participating students identified English as their first language, and 20 per cent identified French as their first language. In Canada overall, 13 per cent of students reported that their first language was a language other than English or French, and less than 1 per cent stated that an Indigenous language was their first language. The highest proportion of students who reported an Indigenous language as their first language was in Manitoba (1.5 per cent), which is the province with the greatest proportion of Indigenous people in relation to province's total population (Statistics Canada, 2017a).

TABLE 1.3 Percentage of students by their first language

	Students' first language			
	English	French	Indigenous	Other
BC	80.2	0.5	0.1	19.1
AB	79.5	1.3	0.3	18.9
SK	88.7	0.4	1.1	9.8
MB	78.5	1.7	1.5	18.4
ON	84.2	2.4	0.1	13.2
QC	12.2	78.0	0.6	9.2
NB	71.1	25.6	0.5	2.8
NS	94.9	2.0	0.2	2.9
PE	90.9	2.2	0.1	6.8
NL	97.3	0.6	0.3	1.9
CAN	**66.8**	**19.8**	**0.3**	**13.1**

Table 1.4 displays students' reported first language by language of the school system for each province. Across Canada, anglophone and francophone students are most likely to study in their first language. English-speaking students are more likely to learn in a francophone school system (10 per cent) than are French-speaking students to learn in an anglophone school system (1 per cent). A larger proportion of students who speak a language other than French, English, or an Indigenous language as their first language study in anglophone school systems (14 per cent compared to 9 per cent in francophone systems).

TABLE 1.4 Percentage of students by their first language, by language of the school system

	Anglophone school systems				Francophone school systems			
	English	French	Indigenous	Other (e.g., German, Mandarin)	English	French	Indigenous	Other (e.g., German, Mandarin)
BC	80.3	0.4	0.1	19.2	68.3	24.0	0.0	7.8
AB	80.0	0.8	0.3	19.0	34.8	52.8	2.1	10.2
SK	88.8	0.3	1.1	9.8	65.7	20.0	0.0	14.3
MB	79.2	0.6	1.5	18.7	47.4	48.6	0.0	4.0
ON	86.1	0.3	0.1	13.5	44.7	46.5	0.2	8.5
QC	74.6	18.2	0.5	6.8	5.9	84.1	0.6	9.5
NB	94.2	1.5	0.5	3.8	14.0	85.3	0.3	0.4
NS	96.3	0.5	0.2	3.0	58.3	40.0	0.7	1.0
PE	92.7	0.2	0.1	7.0	--	--	--	--
NL	97.3	0.6	0.3	1.9	--	--	--	--
CAN	**84.4**	**0.9**	**0.3**	**14.4**	**9.8**	**80.5**	**0.5**	**9.1**

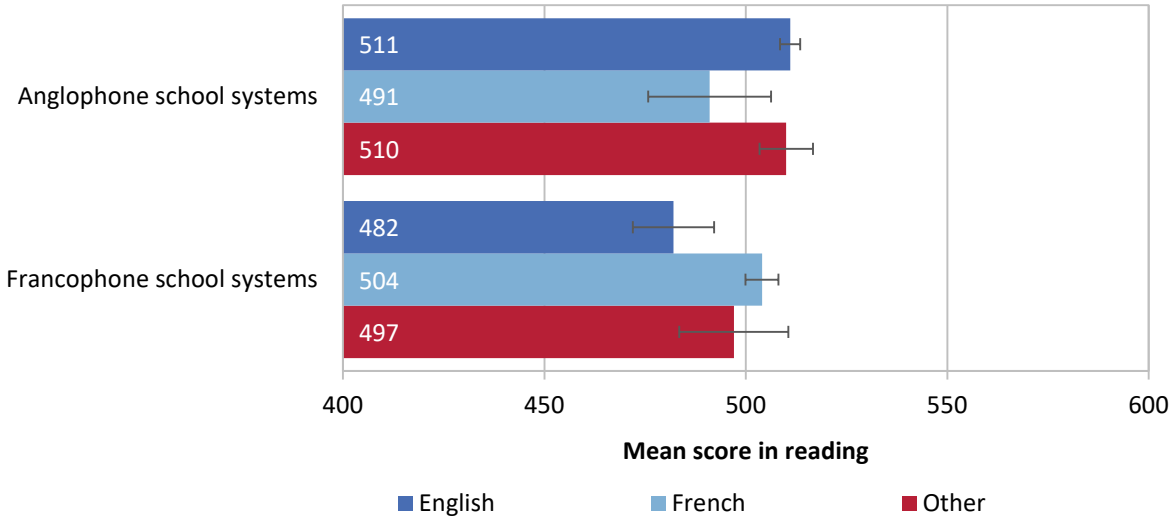
Note: Due to small sample sizes, results for students in the francophone school system are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Students' first language and reading achievement

In PCAP 2016, students in English-language schools achieved higher scores than those in French-language schools in reading (509 and 500, respectively; O'Grady et al., 2018). This finding differs from the results reported for Canadian Grade 4 students in the 2016 PIRLS study (O'Grady et al., 2018) and for 15-year-olds in the 2015 PISA study (O'Grady et al., 2016); in both of those, there was no significant difference between the two language systems in reading achievement.

When achievement is further considered by students' first language (Figure 1.3; Appendix A.1.3), significantly lower reading scores are observed for students whose first language is the minority official language in the school system, but not for students whose first language is a language other than French or English. Students whose first language is neither French nor English have similar achievement compared to students who speak the majority language of the province. As many non-official-language speakers in Canada are immigrants, these results appear to affirm Canada's overall positive track record in narrowing the "immigrant achievement gap" (Parkin, 2015; Wech & Weinkam, 2016).

FIGURE 1.3 Relationship between students' first language and reading achievement by language of the school system



Students' language use in everyday life

Students may master several languages, and the language of the school may not be the same as the one(s) they use outside the school (e.g., with family or friends, or in the community). Students who speak a language other than French or English as their first language are exposed to one or both of Canada's official languages when they enter the school system, and they tend to adopt an official language in their daily interactions (Duff & Becker-Zayas, 2017). When the language(s) of fluency are different from the language of instruction, school achievement may be impacted (Bruckauf, 2016; OECD, 2016b, 2010a). Immigration status, considered later in the chapter, influences the likelihood that a student will speak a different language at home than that in which he or she is taught.

Table 1.5 classifies the PCAP population in the 10 provinces and in Canada overall according to the language students reported using most often in their everyday lives. At the pan-Canadian level, findings are as follows:

- Six per cent of students regularly speak both French and English.
- Fifty-seven per cent of students reported speaking predominantly English, and an additional 16 per cent speak English and another language other than French.
- Fifteen per cent of students speak predominantly French, and an additional 2 per cent regularly speak French and a language other than English.
- Less than 1 per cent of students primarily speak an Indigenous language.
- Four per cent of students reported speaking mostly in a language other than French or English.

TABLE 1.5 Percentage of students by the language they use in their everyday lives

	English only or mostly English	French only or mostly French	English and French equally	English and a language other than French	French and a language other than English	Mostly Indigenous languages	Mostly other languages
BC	69.0	0.1	1.3	23.6	0.5	0.2	5.3
AB	70.4	0.5	2.0	20.3	0.3	0.2	6.3
SK	84.7	0.1	1.6	9.9	0.0	0.5	3.2
MB	73.6	0.3	2.8	15.9	0.2	1.2	6.1
ON	71.0	0.7	2.8	20.7	0.2	0.1	4.5
QC	6.8	63.4	16.7	3.5	6.7	0.2	2.9
NB	63.8	13.1	18.5	3.3	0.4	0.4	0.7
NS	88.5	0.5	4.5	4.9	0.2	0.3	1.2
PE	86.1	0.3	4.3	5.6	0.2	0.0	3.5
NL	93.9	0.0	2.3	2.5	0.2	0.3	0.7
CAN	**57.2**	**15.2**	**6.0**	**15.5**	**1.7**	**0.2**	**4.2**

As expected, the majority of students who reported French as their everyday language reside in Quebec (63 per cent) and New Brunswick (13 per cent) (Table 1.5). These provinces also reported the highest levels of bilingualism in Canada's official languages, at 17 and 19 per cent respectively. Students in the remaining provinces reported speaking predominantly English, ranging from a low of 69 per cent in British Columbia to a high of 94 per cent in Newfoundland and Labrador. For the most part, students who speak a language other than French, English, or an Indigenous language outside of school are concentrated in Ontario and provinces to the west, with the highest percentage in Alberta (6.3 per cent).

Some Canadian provinces have substantial proportions of students who speak English and a language other than French. In British Columbia, Alberta, and Ontario, over 20 per cent of students who participated in PCAP 2016 reported that they use English and a heritage language in their everyday lives. Seven per cent of students in Quebec used both French and a heritage language in their everyday lives, and less than 1 per cent reported this status in other provinces.

Table 1.6 presents data on the language students use in their everyday lives by the language of the school system. Students who are fluent in both of Canada's official languages are enrolled primarily in anglophone school systems in Quebec and francophone systems outside of Quebec; in other words, bilingual students are concentrated in the minority language school system of a given province.

TABLE 1.6 Percentage of students by the language they use in their everyday lives, by language of the school system

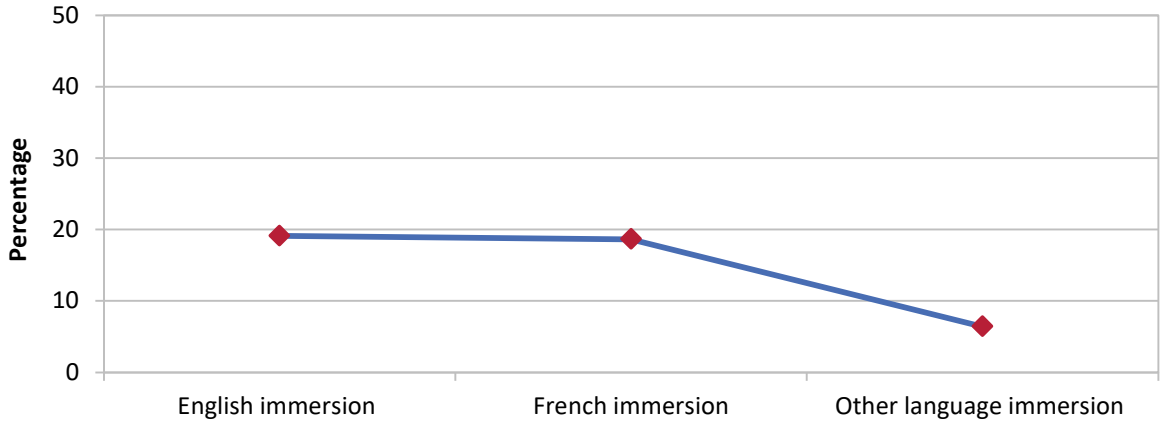
	English only or mostly English	French only or mostly French	English and French equally	English and a language other than French	French and a language other than English	Mostly Indigenous languages	Mostly other languages
Anglophone school systems							
BC	69.1	0.1	1.1	23.7	0.5	0.2	5.3
AB	70.8	0.3	1.6	20.4	0.2	0.2	6.3
SK	84.9	0.1	1.4	10.0	0.0	0.5	3.1
MB	74.5	0.0	1.8	16.2	0.1	1.3	6.2
ON	72.9	0.2	0.9	21.3	0.0	0.1	4.6
QC	51.1	5.9	28.3	12.8	0.3	0.4	1.2
NB	86.8	0.4	6.9	4.4	0.0	0.4	0.9
NS	90.4	0.1	2.9	5.0	0.0	0.3	1.2
PE	88.3	0.0	2.3	5.7	0.1	0.0	3.6
NL	93.9	0.0	2.3	2.5	0.2	0.3	0.7
CAN	**73.2**	**0.3**	**2.1**	**19.3**	**0.1**	**0.2**	**4.7**
Francophone school systems							
BC	49.9	3.2	33.8	8.9	2.3	0.0	1.9
AB	28.1	17.0	40.2	6.1	6.1	0.0	2.5
SK	50.7	5.6	26.8	4.2	5.6	0.0	7.0
MB	37.6	11.8	44.0	2.0	2.3	0.0	2.3
ON	32.7	11.5	41.7	9.4	2.7	0.1	1.8
QC	2.2	69.3	15.5	2.5	7.3	0.1	3.0
NB	7.7	44.0	46.5	0.4	1.2	0.2	0.0
NS	40.8	9.6	42.9	2.4	3.6	0.7	0.0
PE	--	--	--	--	--	--	--
NL	--	--	--	--	--	--	--
CAN	**5.4**	**63.2**	**18.7**	**3.0**	**6.7**	**0.1**	**2.8**

Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

Second-language study

A substantial minority of Canadian students are enrolled in immersion programs to learn a second language (Figure 1.4; Appendix A.1.4). Enrolment in French-immersion programs outside of Quebec has been growing in popularity, increasing by almost 45 per cent since 2003 (Government of Canada, 2017). Figure 1.4 presents students' responses to the question in the PCAP questionnaire about enrolment in an immersion program for a second language.

FIGURE 1.4 Proportion of students enrolled in language-immersion programs



The student questionnaire also asked about second-language programs. As shown in Table 1.7, the highest proportion of students in such programs were taking French-language programs in anglophone schools at the time of the assessment.

TABLE 1.7 Percentage of students enrolled in second-language programs, by language of the school system

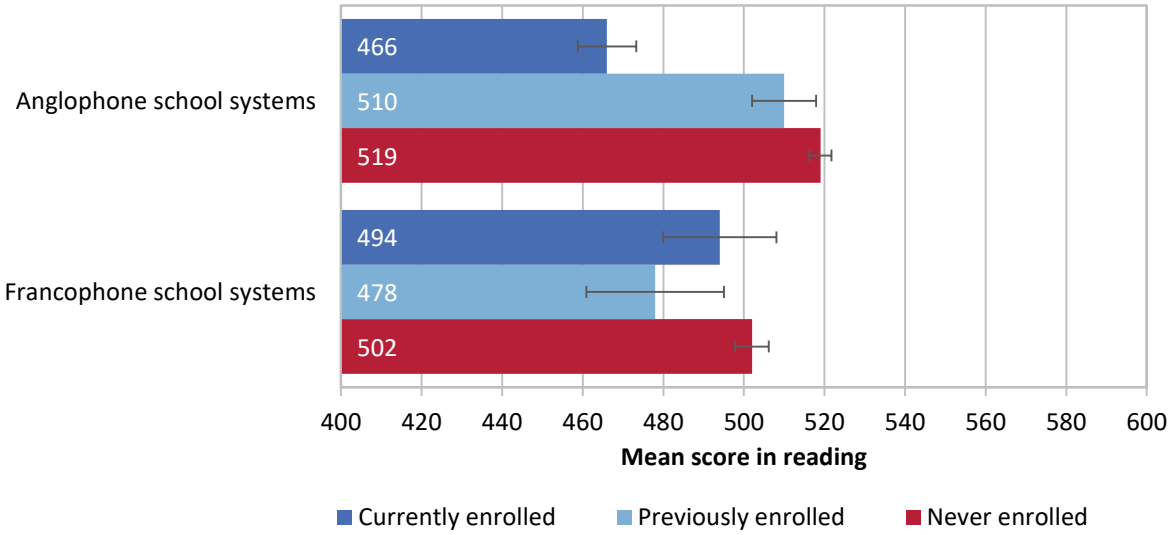
	Anglophone school systems		Francophone school systems	
	Currently enrolled	Previously enrolled	Currently enrolled	Previously enrolled
English second-language program*	11	11	13	14
French second-language program (e.g., extended French)	23	13	5	3

* These include English language learners (ELL) and English as an additional language (EAL) programs.

Second-language study and reading achievement

Figure 1.5 shows that, in francophone school systems, students achieved statistically similar reading scores whether or not they were in the present, or had been in the past, enrolled in a second-language program. In anglophone school systems, students who at the time of the assessment were enrolled in a second-language program achieved significantly lower mean scores in reading than did students who had never been enrolled in such a program. Students who had been enrolled in a second-language program in the past achieved scores similar to students who had not studied a second language (Appendix A.1.5).

FIGURE 1.5 **Reading achievement and second-language learning status by language of the school system**



Student socioeconomic status

Socioeconomic status (SES), broadly understood and measured as a combination of parental educational attainment and family income, is one of the strongest predictors of academic achievement (Bruckauf, 2016; OECD, 2012; Perry & McConney, 2010). SES, which comprises both cultural and economic factors, is difficult to measure and understand because it is a complex cluster of variables that include parents' occupations, parents' educational attainment, learning resources in the home, and how parents communicate the value of education to their children, among other variables (Crowe, 2013; Chevalier, Harmon, O'Sullivan, & Walker, 2013). It is also difficult to isolate the effects of SES from those of other factors like geography, genetic endowment, school characteristics, and immigration status (Causa, Dantan, & Johansson, 2009; OECD, 2016b).

In this report, two measures serve as proxies for socioeconomic status: parents' education and the number of books in the home. Both of these factors have consistent correlations with students' academic achievement, but these correlations should be interpreted carefully, with a recognition that many factors influence a family's ability to support their children's learning. The OECD (2016b) cautions that "the link between socio-economic status and student achievement is neither absolute nor automatic, and should not be overstated" (p. 63).

A consequence of the importance of SES and home environment is that educational attainment tends to have an intergenerational correlation: that is, highly educated parents have children who obtain more education, and parents with less education similarly tend to have children who obtain less education (Causa et al., 2009; Chevalier et al., 2013; Onuzo et al., 2013). Because educational attainment is a central component of social mobility, policy-makers have a strong interest in improving educational outcomes for all students, regardless of their socioeconomic backgrounds (Chevalier et al., 2013). Fortunately, evidence suggests that well-structured policy interventions have a particularly strong positive effect on the most disadvantaged children and families (Causa et al., 2009; Merry, 2013).

Compared to other OECD countries, Canada has better-than-average social mobility (Causa et al., 2009; OECD, 2017; Parkin, 2015). However, further research is required because averages can obscure important patterns of disparity. For Canada in particular, the gap between the educational attainments of Indigenous and non-Indigenous people is attributable partly to higher levels of poverty among Indigenous families (Banting, Soroka, & Koning, 2013; Britain & Blackstock, 2015; Collin & Jensen, 2009).

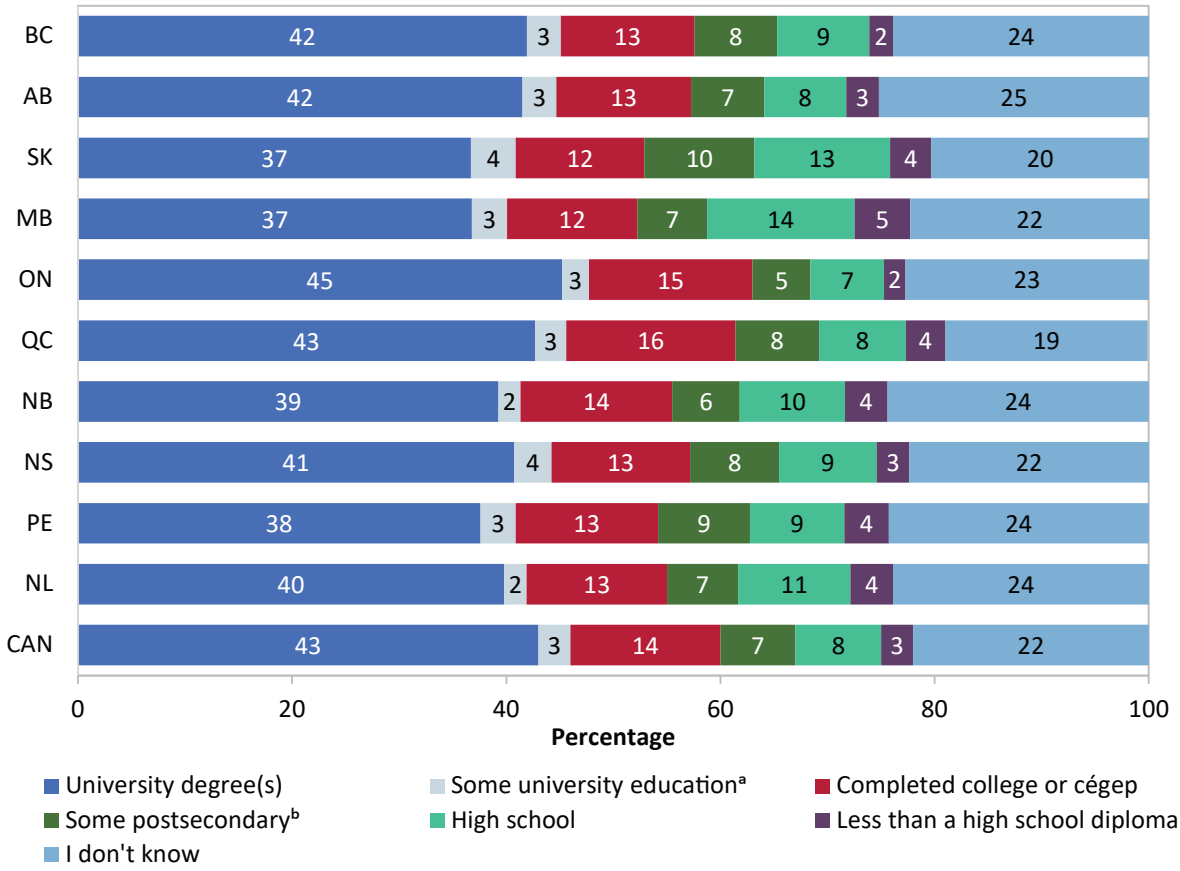
Parents' education

Education is a significant factor among the complex array of conditions that contribute to intergenerational poverty and low social mobility (Onuzo et al., 2013). In this context, it is important to note that Canada has one of the highest levels of postsecondary education attainment among OECD countries (OECD, 2017).

In PCAP 2016, students were asked to indicate the highest level of education obtained by a parent or "person most like a parent to you." Statistically, the mother's education has been found to have a stronger correlation with a child's educational outcomes than has the father's education (Chevalier et al., 2013; Onuzo et al., 2013), but many students come from families that are not led by a biological mother and father (Potter, 2012). To better reflect current family structures, the contextual questions in PCAP 2016 were changed from "mothers' education" to "parents' education."

In PCAP 2016, 57 per cent of students reported that their parents had a college or university degree, which is a higher level of education than that reported in previous PCAP contextual reports. Forty-three per cent of students reported that one or both parents held a university degree, and 11 per cent stated that their parents held a high-school diploma or had less than a high-school education (Figure 1.6; Appendix A.1.6). The distribution of credentials below a university degree, including college-level credentials, is relatively consistent across the provinces. Greater disparity in university credentials is observed: the proportion of parents with university degrees ranged from a high of 45 per cent in Ontario to 37 per cent in Saskatchewan and Manitoba. In keeping with previous PCAP contextual data, over 20 per cent of students did not know the educational attainment of their parents.

FIGURE 1.6 Percentage of students by their parents' education as reported by students



[a] "Some university education" refers to having some education at the university level without having completed a degree.
[b] "Some postsecondary" refers to any kind of education after high school.

Note: Percentages may not add up to 100 due to rounding.

Within provinces and at the pan-Canadian level, parents of students in both French- and English-language school systems had similar levels of educational attainment (Table 1.8).

TABLE 1.8 **Percentage of students by their parents' education (as reported by students), by language of the school system**

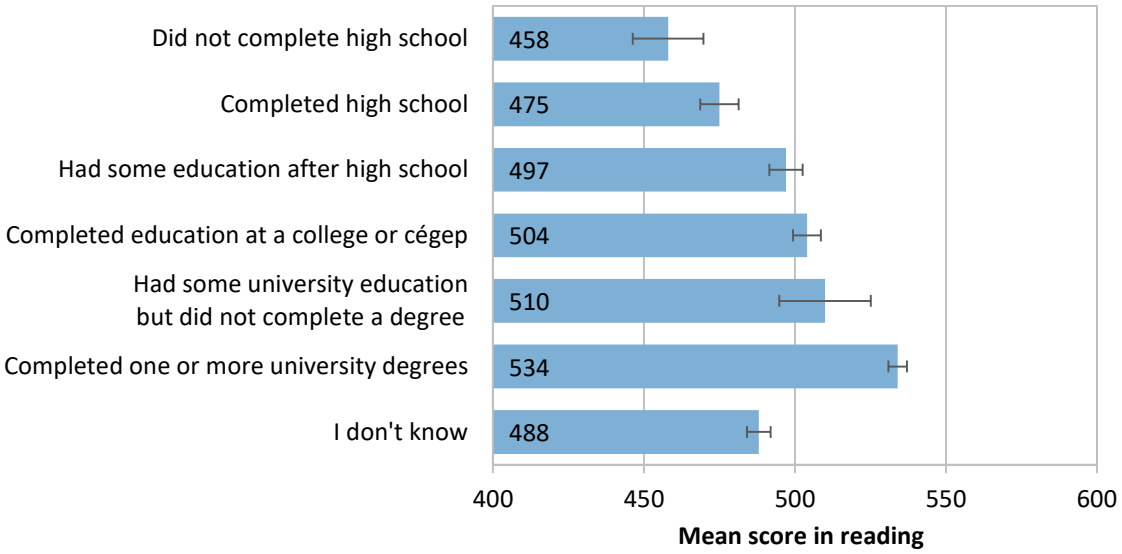
	Did not complete high school	Completed high school	Had some education after high school	Completed education at a college or cégep	Had some university education but did not complete a degree	Completed one or more university degrees	I don't know
Anglophone school systems							
BC	2	9	8	13	3	42	24
AB	3	8	7	13	3	41	25
SK	4	13	10	12	4	37	20
MB	5	14	6	12	3	37	22
ON	2	7	6	15	3	45	23
QC	2	8	7	15	6	43	18
NB	4	11	7	14	2	41	21
NS	3	9	9	13	3	40	22
PE	4	9	9	13	3	37	25
NL	4	10	7	13	2	40	24
CAN	**3**	**8**	**7**	**14**	**3**	**43**	**23**
Francophone school systems							
BC	1	3	5	10	1	48	32
AB	3	3	4	10	2	47	31
SK	0	9	2	12	2	53	24
MB	2	9	5	9	1	49	24
ON	2	3	3	12	2	56	23
QC	4	8	8	16	3	43	19
NB	4	7	5	14	2	36	32
NS	3	3	2	12	5	51	24
PE	--	--	--	--	--	--	--
NL	--	--	--	--	--	--	--
CAN	**4**	**8**	**7**	**15**	**2**	**44**	**20**

Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Parents' education and students' reading achievement

Reading achievement in Grade 8/Secondary II correlates positively with the highest educational levels achieved by the parents of students (Figure 1.7; Appendix A.1.7). Students with a parent who has a university degree achieved significantly higher scores in reading compared to students in households in which parents have less than a university education. Significantly higher reading achievement was also apparent for students whose parents have a college education, some postsecondary education, or other non-university postsecondary credentials compared to students whose parents' highest level of education was completing high school. The achievement gap between students whose parents have a high-school diploma and those whose parents did not complete high school is not significant.

FIGURE 1.7 Relationship between parents' education (as reported by students) and reading achievement



The positive relationship between parental education and student achievement is consistent with previous PCAP assessments, and has also been reported in the Trends in Mathematics and Science Study (TIMSS), PISA, and PIRLS.

Books in students' homes

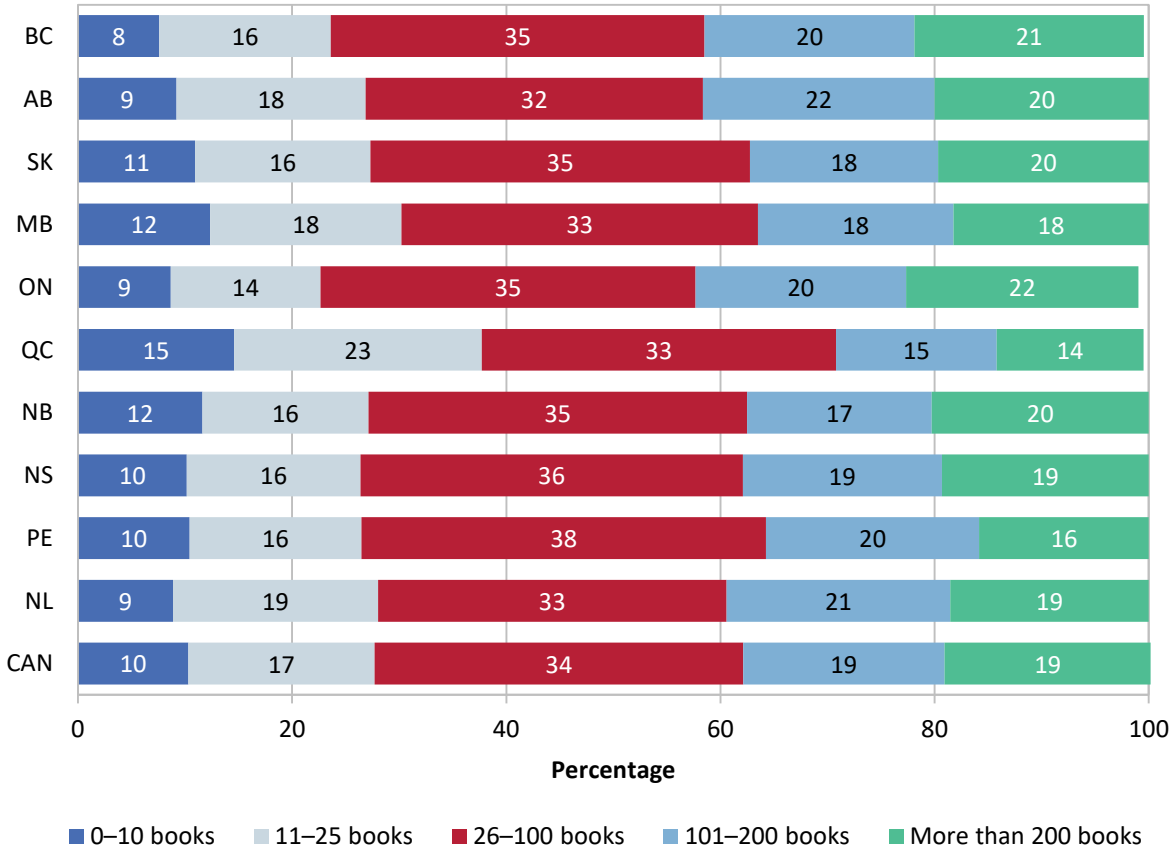
The impact of home environments appears very early in children's school achievement. This finding is important, as children who lag in primary grades are at greater risk for low achievement in later grades and for failing to complete high school (Hernandez, 2011; Merry, 2013; OECD, 2016b). In general, the provision of enriched home environments is associated with families with higher SES, which in turn in associated with an increased likelihood that children will succeed in school (Evans, Kelley, & Sikora, 2014). Families with higher SES are able to provide their children with social and cultural capital that increases the probability of success in school (Crowe, 2013; Huang & Liang, 2016; Lam & Ho, 2013). They are also likely to be more involved in their children's education and to have more learning resources like books, puzzles, games, and computers in their homes (Crowe, 2013; Shipley, 2011). The number of books in students' homes has been found to correlate with SES and student academic achievement. In the research literature, books in the home are regarded as both a source of

academic knowledge and skills and as a measure of the parents' commitment to the education of their children (Evans et al., 2014).

Contextual data from PIRLS 2011 showed that, at the Grade 4 level, Canada ranks above international averages in learning resources in the homes (Labrecque et al., 2012). That study found that, in Canada, 84 per cent of students had more than 25 books in their home, compared to the international average of 59 per cent.

At the Grade 8/Secondary II level, the number of books in students' homes is similar across most of the provinces (Figure 1.8; Appendix A.1.8): in nine provinces, between 23 and 30 per cent of students reporting that they had access to 25 or fewer books at home. At the same time, in Canada overall, close to 40 per cent of students reported having more than 100 books in their home. In the context of policies and programs, it is helpful to focus on supporting families with fewer books in the home, as increases at the lower end of the distribution have a disproportionately positive effect on reading achievement (Evans et al., 2014).

FIGURE 1.8 Percentage of students by the number of books in their home



The proportion of students in each of the categories for books in the home is similar in both the francophone and anglophone school systems in Canada overall (Table 1.9). In all provinces and in both languages systems, the largest proportion of students have between 26 and 100 books in the home.

TABLE 1.9 **Percentage of students by the number of books in their home, by language of the school system**

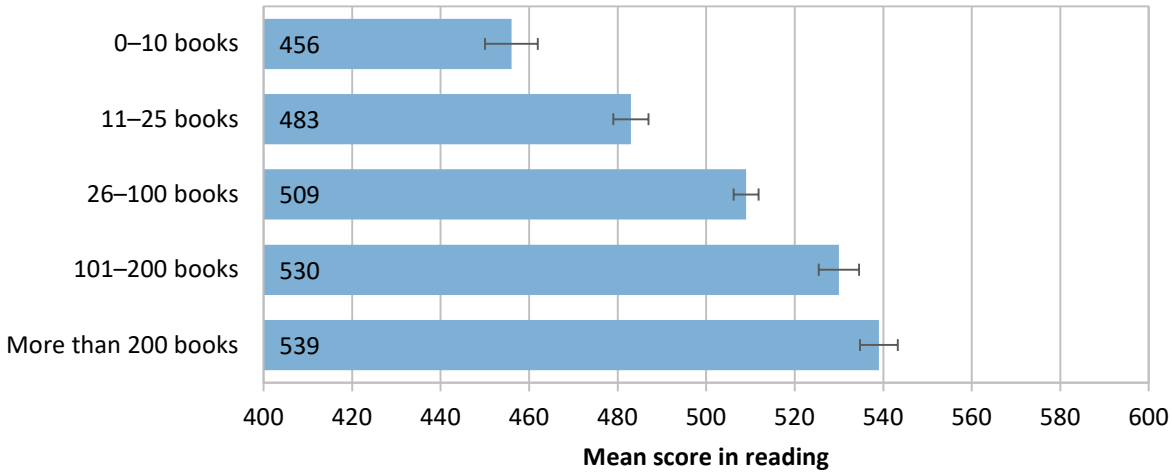
	0–10 books		11–25 books		26–100 books		101–200 books		More than 200 books	
	ENG	FR	ENG	FR	ENG	FR	ENG	FR	ENG	FR
BC	8	6	17	15	35	36	20	24	21	18
AB	9	10	18	13	32	29	22	23	20	25
SK	11	10	17	6	36	31	18	21	20	31
MB	13	5	18	16	33	28	18	27	18	23
ON	9	11	14	17	36	33	20	19	22	20
QC	5	16	14	24	33	33	20	15	27	12
NB	10	16	13	22	34	38	20	11	23	13
NS	10	12	16	20	36	38	19	18	20	12
PE	10	--	16	--	39	--	20	--	16	--
NL	9	--	19	--	33	--	21	--	19	--
CAN	**9**	**15**	**16**	**23**	**35**	**33**	**20**	**15**	**21**	**13**

Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

Books in students' homes and reading achievement

There is a clear positive relationship between the number of books in the home and achievement in reading (Figure 1.9; Appendix A.1.9). These results confirm data obtained in previous PCAP administrations in 2007, 2010, and 2013.

FIGURE 1.9 **Relationship between the number of books in the home and reading achievement**



Immigration status

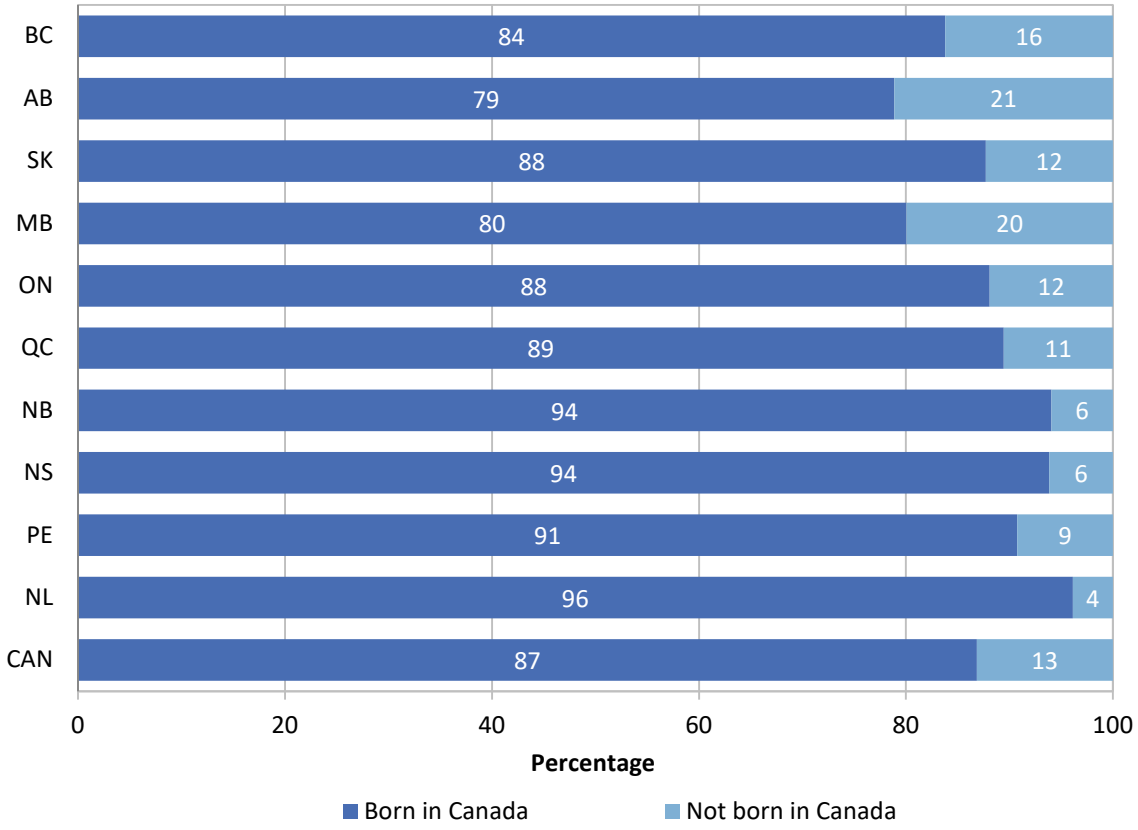
Canada has the second largest foreign-born population in the world, behind only Australia (CMEC, 2015; Duff & Becker-Zayas, 2017; Parkin, 2015). Research has found that children in immigrant families are more likely to be educationally disadvantaged (Andon, Thompson, & Becker, 2014; Bruckauf, 2016; OECD, 2010a). Using data from TIMMS, PISA, and PIRLS, Andon, Thompson, & Becker (2014) have concluded that an achievement gap occurs between immigrant and non-immigrants students in the three domains of reading, mathematics, and science.

In Canada, immigrants are more likely than native-born Canadians to fall into low-income categories (Collin & Jensen, 2009; CMEC, 2015). Despite this disadvantage, Canada is among the more successful of OECD countries in closing the "immigrant achievement gap" (Parkin, 2015; Wech & Weinkam, 2016).

Comparisons of average achievement between immigrants and those born in Canada must be treated with caution, as scores may obscure important disparities among immigrant groups (Schnepf, 2008). Immigrant children and youth are not homogeneous (Andon et al., 2014; OECD, 2010; Parkin, 2015; Schnepf, 2008; Wech & Weinkam, 2016). They vary with respect to where they completed their previous education, at what age they were immersed in schooling in one of Canada's official languages, and whether they already spoke English or French upon arriving in Canada (Bruckauf, 2016; OECD, 2016). Like their domestic-born counterparts, immigrant children and youth also vary in the levels of education held by their parents.

In PCAP 2016, British Columbia, Alberta, and Manitoba had the largest numbers of students who were not born in Canada. All three of these provinces had percentages of immigrant students above the Canadian average of 13 per cent (Figure 1.10; Appendix A.1.10).

FIGURE 1.10 Immigration status of students



Examining each province by language of the school system reveals that, where reliable data are available, the proportion of students who were not born in Canada is similar in the two official language groups, except in Manitoba, where the proportion of students not born in Canada in the anglophone school system is twice that of the francophone school system (Table 1.10).

TABLE 1.10 Percentage of students by immigration status, by language of the school system

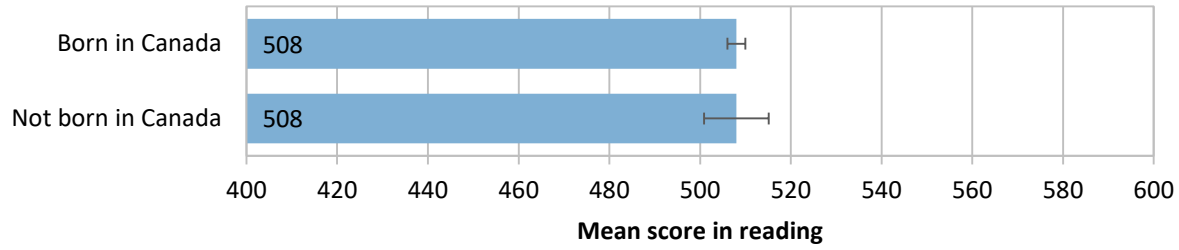
	Anglophone school systems		Francophone school systems	
	Born in Canada	Not born in Canada	Born in Canada	Not born in Canada
BC	84	16	82	18
AB	79	21	75	25
SK	88	12	85	16
MB	80	20	90	10
ON	88	12	90	10
QC	92	8	89	11
NB	93	7	97	3
NS	94	6	92	8
PE	91	9	--	--
NL	96	4	--	--
CAN	**86**	**14**	**89**	**11**

Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Immigration status and reading achievement

In PCAP 2016, there was no significant difference in reading achievement between students born in Canada and those with an immigrant background (Figure 1.11; Appendix A.1.11). This differs from results in PCAP 2007 (where reading was also the major domain), in which students not born in Canada achieved significantly lower reading scores than students born in Canada (CMEC, 2009). In past PCAP assessments, students born outside of Canada achieved similar scores in science (O'Grady & Houme, 2015) and significantly higher scores in mathematics (CMEC, 2012) compared to students born in Canada.

FIGURE 1.11 Relationship between immigration status and reading achievement



Indigenous identity

Achievement gaps between Indigenous and non-Indigenous students are a persistent educational issue in Canada. High-school non-completion for Indigenous youth living off reserve is 30 per cent, which is three times that of non-Indigenous youth, while Indigenous youth on reserve have a non-completion rate of 58 per cent (Richards, 2014). The urgency of improving outcomes for Indigenous students is stressed in *Truth and Reconciliation Commission of Canada: Calls to Action* (2012). Among school-aged children and youth, Indigenous populations are growing at much faster rates than the general population (Statistics Canada, 2017c).

Although the educational attainment of Indigenous peoples in Canada has improved over time, so too has educational attainment of all Canadians. As a result, the gap between educational outcomes for Indigenous and non-Indigenous youth in Canada has in fact widened (Parkin, 2015). The educational attainment of Indigenous peoples in Canada is affected by a range of factors. For example, status Indians, Métis, and First Nations living off reserve achieve higher levels of education than other Indigenous peoples (Gordon & White, 2014; Richards, 2014). It is also important to note that Indigenous children are twice as likely as non-Indigenous children to live in poverty (Collin & Jensen, 2009), and therefore may be more likely to be disadvantaged with respect to education.

In Canada, less than 3 per cent of the population is Indigenous; however, in Saskatchewan and Manitoba, Indigenous people make up over 10 per cent of the population (Statistics Canada, 2017c).[7] In responding to the PCAP student questionnaire, close to 20 per cent of students in these two provinces identified themselves as Indigenous (Table 1.11), with roughly half identifying themselves as First Nations and the other half as Métis. Among provinces, the largest proportion of students who identify themselves as Inuit are in Newfoundland and Labrador (2 per cent).

TABLE 1.11 Percentage of students by self-reported Indigenous identity

	Not Indigenous	First Nations	Métis	Inuit
BC	91.0	5.0	3.7	0.3
AB	90.9	4.4	4.5	0.2
SK	82.0	9.9	8.1	0.0
MB	80.3	10.7	9.0	0.0
ON	95.1	3.5	1.2	0.2
QC	96.4	1.7	1.7	0.2
NB	93.6	5.3	0.6	0.5
NS	93.4	5.0	1.5	0.1
PE	95.7	3.1	0.4	0.8
NL	91.4	5.4	1.2	2.1
CAN	**93.3**	**3.9**	**2.5**	**0.2**

[7] In 2011, school-aged Indigenous students made up only 4 per cent of school-aged students in Ontario and provinces to the east. In the four Western provinces, Indigenous students made up 14 per cent of the school-aged population. The bulk of these students were concentrated in Saskatchewan and Manitoba (Richards, 2014).

Across Canada, students who identify themselves as First Nations are more likely to be enrolled in English-language school systems, while Métis students, in most provinces, are more likely to attend school in francophone systems. Métis students in Saskatchewan and Manitoba form substantial minorities of students enrolled in these provinces' francophone school systems (16 per cent and 23 per cent, respectively). The percentage of Inuit students enrolled in francophone and anglophone systems was approximately equal (Table 1.12).

TABLE 1.12 Percentage of students by self-reported Indigenous identity, by language of the school system

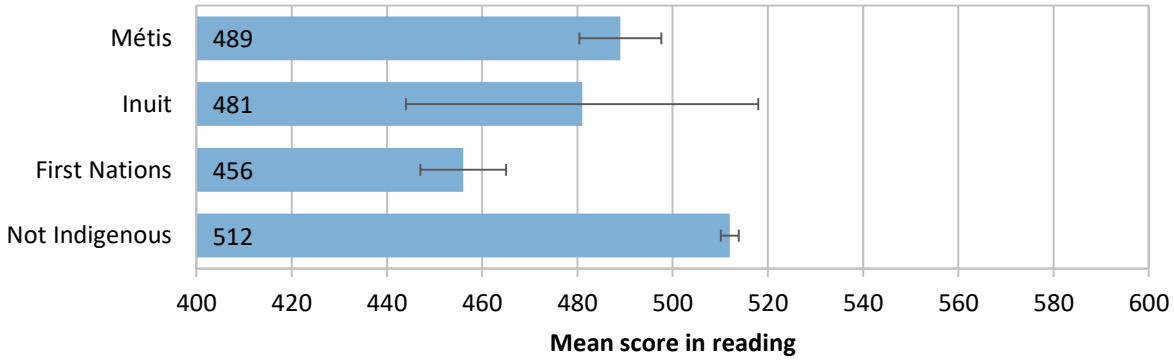
	Anglophone school systems				Francophone school systems			
	Not Indigenous	First Nations	Inuit	Métis	Not Indigenous	First Nations	Inuit	Métis
BC	91.0	5.0	0.3	3.7	92.7	3.4	0.0	3.9
AB	90.9	4.5	0.2	4.5	94.5	1.9	1.1	2.5
SK	82.0	10.0	0.0	8.0	83.8	0.0	0.0	16.2
MB	80.4	10.9	0.0	8.6	75.7	1.0	0.0	23.3
ON	95.2	3.6	0.2	1.0	93.8	2.5	0.2	3.5
QC	95.7	3.5	0.5	0.3	96.5	1.5	0.2	1.8
NB	92.1	6.9	0.5	0.6	97.4	1.4	0.5	0.6
NS	93.5	5.1	0.1	1.3	90.7	3.1	1.4	4.8
PE	95.6	3.1	0.8	0.4	--	--	--	--
NL	91.4	5.4	2.1	1.2	--	--	--	--
CAN	**92.5**	**4.7**	**0.2**	**2.6**	**96.2**	**1.6**	**0.2**	**2.0**

Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Indigenous identity and reading achievement

Figure 1.12 shows that the reading achievement of Indigenous students in PCAP 2016 was significantly lower than that of their non-Indigenous counterparts, except for Inuit students, where the difference was not statistically significant. Among Indigenous groups, Métis students achieved significantly higher reading scores than students who identified as First Nations (Appendix A.1.12). In keeping with this pattern, Richards (2014) notes higher high-school completion rates for Métis students than for First Nations students. Richards further notes significant variations in high-school completion by province. In particular, Indigenous people have better educational outcomes in British Columbia and Ontario, and poorer outcomes in Manitoba and Saskatchewan. Results for Inuit students in PCAP 2016 should be treated with caution because of the small number of students in the sample who identified themselves with this people.

FIGURE 1.12 Relationship between students' Indigenous identity and reading achievement



Summary

This chapter has presented PCAP 2016 data related to five student demographic and socioeconomic characteristics: gender, language, socioeconomic status, immigration status, and Indigenous self-identity.

With respect to gender, Canadian girls significantly outperformed boys in reading in PCAP 2016. This is in keeping with past and present findings from provinces participating in PCAP and all the countries participating in international studies such as PISA and PIRLS.

Canada-wide, in both anglophone and francophone school systems, students whose first language was the language of instruction achieved significantly higher reading scores than those whose first language was the minority official language. In both language systems, students who spoke a language other than French or English as their first language achieved reading scores similar to the mean of students whose first language was the language of instruction.

In English-language school systems, students who were enrolled in a second-language program at the time of the assessment achieved significantly lower mean scores in reading than did students who had never been enrolled in such a program, whereas in francophone schools the difference was not statistically significant.

Two proxies for socioeconomic status are used in PCAP contextual reports: parents' educational levels and the number of books in students' homes. Both measures were clearly correlated with students' reading achievement. Students with parents who have a university-level education achieved significantly higher scores than those whose parents have less education. There was a linear relationship between reading achievement and books in the home—reading achievement was highest among students with the greatest number of books in their home.

In PCAP 2016, students who were not born in Canada achieved scores statistically similar to those of their Canadian-born counterparts. Among Indigenous students, Métis students achieved the highest scores in reading. However, both Métis and First Nations students scored below the overall Canadian mean in reading.

2 A Profile of Student Engagement in Reading, Attitudes, and Approaches to Learning

Statistical note on factor analysis, index scores, and regression analysis

Factor analysis. To reduce the complexity of the analysis and to obtain more stable measures of attitudes, values, and learning experiences, some groups of questions from PCAP 2016 were subjected to factor analysis. This technique is designed to determine if item responses cluster together in some meaningful way. If meaningful groupings can be found, factor analysis permits the construction of a smaller number of factors, which are also called "indices." As an example of the efficiency of this technique, applying factor analysis to responses about student attitudes toward reading yielded a set of 3 indices, reduced from 14 individual questionnaire items.

Index scores. An index score for each student on each factor is derived from the factor analysis, in much the same way as a scaled reading score is derived from analyzing the reading test items. Factor scores are typically computed in standard score form, with a mean of 0 and a standard deviation of 1. For convenience in presentation, and to avoid negative values on charts, the scores are transformed into a mean of 50 and a standard deviation of 10 for Canada as a whole. This is analogous to the transformation of reading scores to a mean of 500 and a standard deviation of 100. However, the scale is deliberately different to avoid confusing index scores with achievement scores. Mean index scores for groups such as provinces should be examined in relation to the Canadian mean of 50 and standard deviation of 10. For example, a mean score of 52 for a group implies that the group is 0.20 standard deviation units above the mean for that index. It is important to stress that index scores should not be interpreted as percentages. It should also be noted that the Canadian means may not be exactly at 50 due to the use of unweighted data during the computation of factor scores. However, weights were used for all analyses on the index scores.

Quarters. In this report, the PCAP populations of interest are divided into four equal groups (quarters or quartiles) with regard to the value of the index under study. The mean score for each of these groups appears in the applicable tables and figures. The bottom quarter represents numbers below the 25th percentile; the third quarter represents the 25th to the 49th percentile; the second quarter represents the 50th to the 74th percentile; and the top quarter represents the 75th percentile and above.

Multiple regression analysis. Achievement is influenced by a large number of factors, which may act independently or in combination to affect the outcome. For example, previous results indicate that both mothers' education and the number of books in the home influence reading achievement. However, these two factors themselves are correlated. If taken together, one may be more prominent than the other, or one may have no effect on achievement once the other is accounted for.

In survey research, the standard statistical technique for isolating effects is known as "multiple regression analysis" or "regression modelling." This technique is based on an equation in which the outcome (or dependent variable) is seen as a linear combination of a series of factors (predictors or independent variables). The contribution of any one predictor to the outcome is represented by a regression coefficient, the value of which depends on the effect of the predictor itself and of the other variables in the model. The relative sizes of the regression coefficients in a particular model may be used to indicate the relative contributions of the factors of interest. Models that include or

exclude a particular variable may also be used to identify the unique contribution of that variable while controlling for others.

When it can be assumed that the sample units are selected by simple random sampling, the ordinary least square (OLS) method of estimation yields unbiased statistics. Yet, applying the OLS method to a complex design sample (e.g., clustered sample) can result in misleading statistical inference. To avoid such a bias, the data can be analyzed either from the design standpoint or from a modelling perspective. The design standpoint seeks to obtain statistics with a high degree of precision by taking into account the sampling design. From the modelling standpoint, a hierarchical or multilevel model would be fitted to the data with the goal of partitioning the residuals' variance into the higher-level component (e.g., between-school variation) and the lower-level component (e.g., within-school component or variation among students). The statistics reported in Chapters 2 and 3 result from a design-based or survey-based linear regression modelling. This report discusses only variables that show statistically significant relationships ($p < 0.05$) with reading achievement.

A number of items in the student questionnaire were designed to obtain data on students' attitudes toward and beliefs about school, reading, and learning. As the statistical note explains (see box), these questions were subjected to factor analysis, which allowed researchers to identify items that are related to a single construct. As a result of this technique, a total of 32 factors (also called "indices") were identified. Each index was constructed so that the average score across Canada is 50 and two-thirds of the population are between 40 and 60 (i.e., a standard deviation of 10). Highly correlated indices were combined to simplify analysis and reporting of results.

This chapter examines the relationship between student indices and reading performance through (1) multiple regression analysis, and (2) the difference in average reading scores between the top quarter and bottom quarter on the indices. As with all self-reported data, the indices are based on students' perceptions of the construct being measured. Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

Multiple regression model: Student indices that significantly affect reading achievement

Analysis to identify the correlation between student indices and reading scores was performed to determine the list of variables to be entered into a multiple regression model. While most of the indices showed a significant relationship with reading performance, only the 11 indices with a correlation coefficient equal to or above .20 were kept for a regression analysis. The selected indices are as follows:

- early home literacy
- attitude toward reading
- reading self-efficacy
- attribution of success
- motivation to read

- reading resources in the classroom
- engagement in reading
- negative perceptions of reading
- reading strategies
- student effort
- out-of-school activities

These indices were entered as predictors into a multiple regression model, while controlling for the following variables: first language, Indigenous identity, number of books at home, parents' education, homework frequency in all school subjects, and homework frequency in language arts. The model explained 33 per cent of variations in student reading performance ($R^2 = .33$).

In total, eight student indices show positive relationships with reading performance (early home literacy, attitude toward reading, reading self-efficacy, motivation to read, classroom reading resources, engagement in reading, student effort, and out-of-school activities), while three indices show a negative relationship (attribution of success, negative perceptions of reading, and reading strategies).

The following section begins at the beginning, with an index that reiterates the crucial importance of a literacy-rich and supportive home, where parents and/or caregivers are children's first teachers with respect to language and reading. The subsequent section examines students' attitudes and beliefs with respect to reading and explores attitudes toward reading, students' self-efficacy, their attribution of success, and motivation to read. The chapter then turns to students' learning experiences, including resources used in their language arts classrooms, their engagement in reading in class, as well as negative perceptions of reading. The final section looks at students' reading strategies and effort in reading and explores their out-of-school activities, including those related to reading.

Students' early literacy experiences

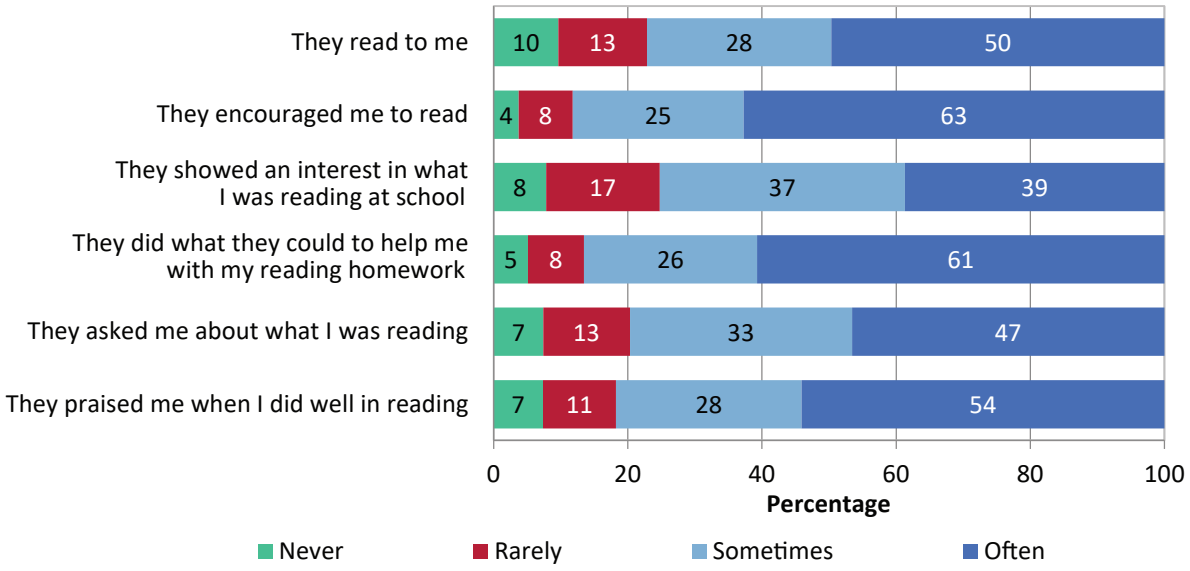
Early home literacy

Description of the index

Parents are children's first teachers when it comes to language. Reading, speaking, and language games shared with parents and/or caretakers in early childhood create the foundations for literacy learning in the primary grades. Parents' involvement in early literacy has been found to have positive effects on children's reading skills and motivation to read (OECD, 2010a; Paratore, 2011; CMEC, 2013; Brochu et al., 2018). A consistent and robust body of research has shown that students who enter school with a good foundation of reading readiness are better prepared to become good readers. Students who do not have the advantage of early literacy experiences at home are at risk of lagging behind their peers. The "Matthew effect" describes the diverging tendencies of good and poor readers over time: when it comes to reading, the "learning rich" tend to get richer, with more learning and experience, while the "learning poor" struggle and may even become less literate over time (Stanovich, 1986).

The PCAP 2016 student questionnaire asked students how often they were engaged in six literacy-related activities with their parents before they started school (Figure 2.1; Appendix A.2.1). An "early home literacy" index was created from their responses. Canadian students reported a high level of parental involvement in early home literacy activities, with almost 80 per cent of students reporting that their parents read to them sometimes or often when they were young. However, a significant minority of students reported that they lacked these early interventions.

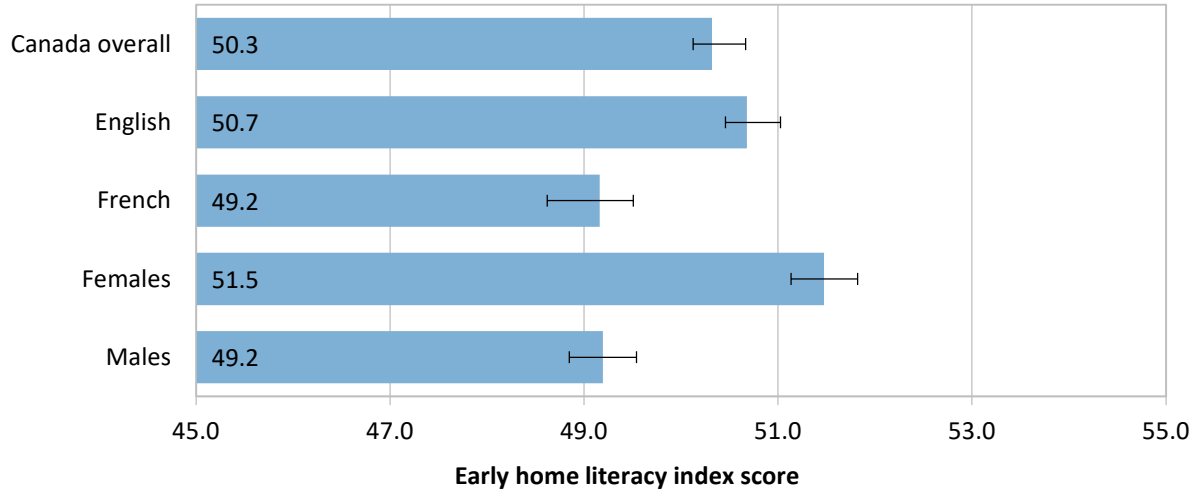
FIGURE 2.1 Percentage of students by their responses to questionnaire items related to the early home literacy index



Results for the early home literacy index

Pan-Canadian results for the home literacy index are shown in Figure 2.2. Girls scored significantly higher than boys, and students in anglophone school systems scored significantly higher than those in francophone school systems (Appendices A.2.1.2, A.2.1.3, and A.2.1.4).

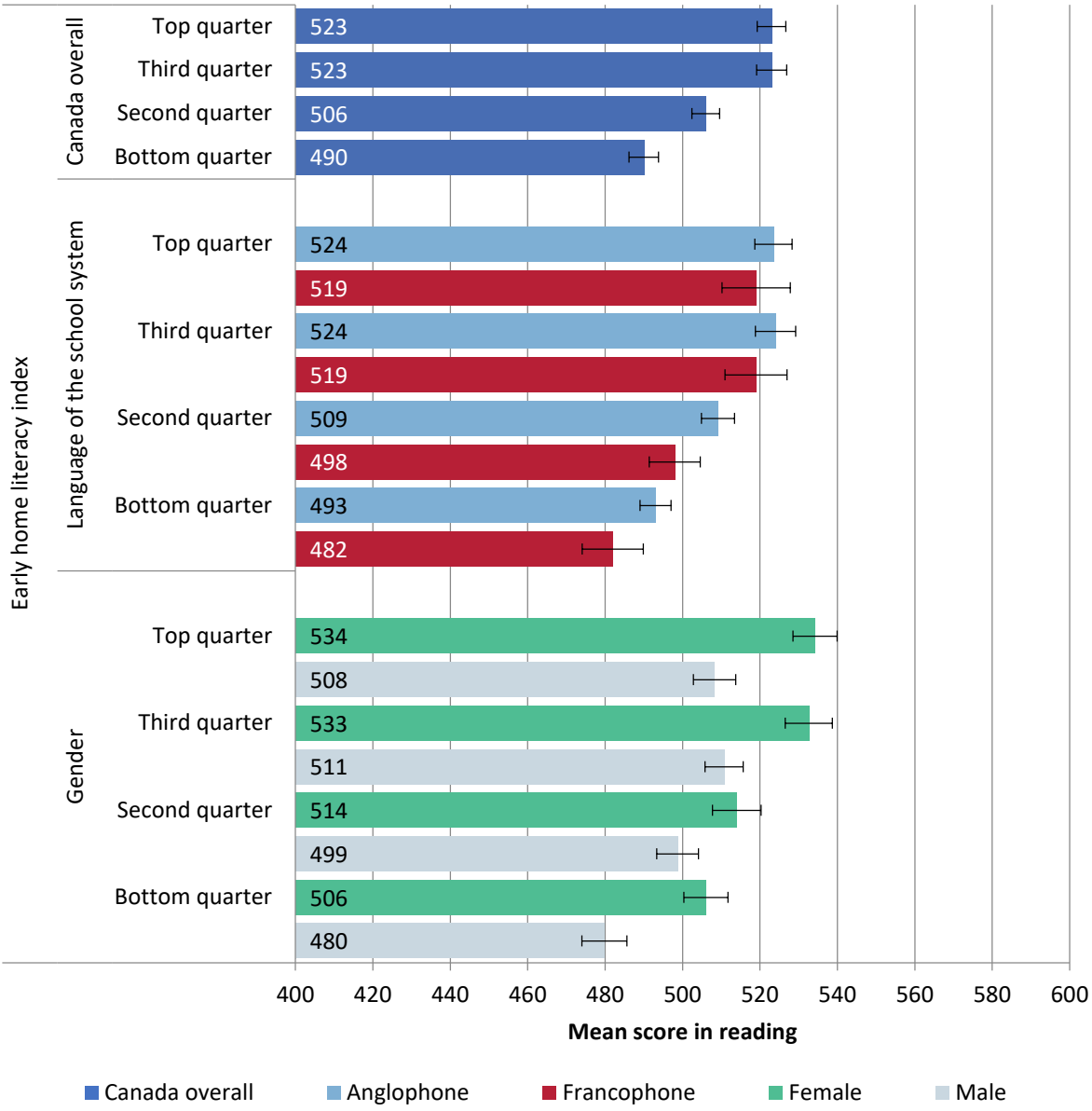
FIGURE 2.2 Results for the early home literacy index



Four groups of students (bottom quarter, second quarter, third quarter, and top quarter) were identified according to the extent to which they agreed with the early home literacy items. The top quarter represents students who reported the highest frequency of parental involvement with literacy-related activities when they were young.

Figure 2.3 show the relationship between the early home literacy index and reading achievement for Canada overall, by language of the school system, and by gender. There is a general pattern of higher reading performance with increasing frequency of literacy-related activities with young children, although no significant difference exists between the third quarter and top quarter for any of the three categories (Appendix A.2.1.1). What this threshold suggests is that investing even limited amounts of time in literacy-related activities with young children may lead to better achievement in later years. The score difference between the top and bottom quarters of this index for Canada overall is 33 points. With respect to gender, although the gap between the top and bottom quarter of this index is the same for girls and boys (28 points), the achievement of girls in the bottom quarter of this index was similar to that of boys in the top half of the index.

FIGURE 2.3 Relationship between the early home literacy index and reading achievement in Canada overall and by language of the school system and gender



The findings with respect to early literacy are consistent with those from other national and international surveys for a variety of subjects. In earlier administrations of PCAP, Grade 8/ Secondary II students who reported that their parents helped them to learn to read achieved higher scores (CMEC, 2009). Similarly, students who participated in mathematics-related play and informal learning activities with their parents achieved higher mathematics scores (CMEC, 2012). The PIRLS 2011 Canadian report provided compelling evidence that Grade 4 students whose parents read to them often before they enrolled in school performed much better in reading than those whose parents read to them sometimes, almost never, or never (CMEC, 2013; Labrecque, Chuy, Brochu, & Houme, 2012).

Students who recalled active engagement with their parents or caretakers in literacy learning in their early years had higher achievement in reading.

As shown in Table 2.1, students in Ontario and Newfoundland and Labrador scored above the Canadian mean on this index, meaning that students in these provinces reported higher levels of participation in literacy-related activities when they were young. Students in Quebec scored below the Canadian mean on this index (Appendix A.2.1.2).

TABLE 2.1 Comparison of Canadian and provincial results, early home literacy index

Above* the Canadian mean	Similar to the Canadian mean	Below* the Canadian mean
Ontario, Newfoundland and Labrador	British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Nova Scotia, Prince Edward Island	Quebec

*Denotes significant difference

As shown in Table 2.2, students in anglophone schools in Newfoundland and Labrador and francophone schools in Saskatchewan scored above the Canadian mean on this index, meaning that students in these provinces reported the highest levels of participation in literacy-related activities when they were young (Appendix A.2.1.3).

TABLE 2.2 Comparison of Canadian and provincial results by language of the school system, early home literacy index

Anglophone school systems		
Above* the Canadian English mean	**At the Canadian English mean**	**Below* the Canadian English mean**
Newfoundland and Labrador	British Columbia, Manitoba, Ontario, Quebec, Nova Scotia, Prince Edward Island	Alberta, Saskatchewan, New Brunswick
Francophone school systems		
Above* the Canadian French mean	**At the Canadian French mean**	**Below the Canadian French mean**
Saskatchewan	British Columbia, Alberta, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia	

*Denotes significant difference

A significant difference between anglophone and francophone school systems was found in five provinces. Students in anglophone schools in British Columbia, Manitoba, Ontario, and Quebec scored significantly higher in this index than students in the francophone schools within their provinces, and students in francophone schools in Saskatchewan scored significantly higher than students in anglophone schools within that province (Table 2.3; Appendix A.2.1.3).

TABLE 2.3 Summary of provincial results by language of the school system, early home literacy index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
British Columbia, Manitoba, Ontario, Quebec	Saskatchewan	Alberta, New Brunswick, Nova Scotia

As shown in Table 2.4, results on this index for both girls and boys in most provinces were similar to the respective Canadian means. However, both girls and boys in Newfoundland and Labrador scored above the respective Canadian means on this index, while boys in Quebec and New Brunswick scored below the Canadian mean for boys (Appendix A.2.1.4).

TABLE 2.4 Comparison of Canadian and provincial results by gender, early home literacy index

Girls		
Above* the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below the Canadian mean for girls**
Newfoundland and Labrador	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island	
Boys		
Above* the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below* the Canadian mean for boys**
Newfoundland and Labrador	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Nova Scotia, Prince Edward Island	Quebec, New Brunswick

*Denotes significant difference

Within provinces, girls scored higher than boys in all provinces except Prince Edward Island, where no significant difference was found by gender (Table 2.5; Appendix A.2.1.4).

TABLE 2.5 Summary of provincial results by gender, early home literacy index

Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Newfoundland and Labrador		Prince Edward Island

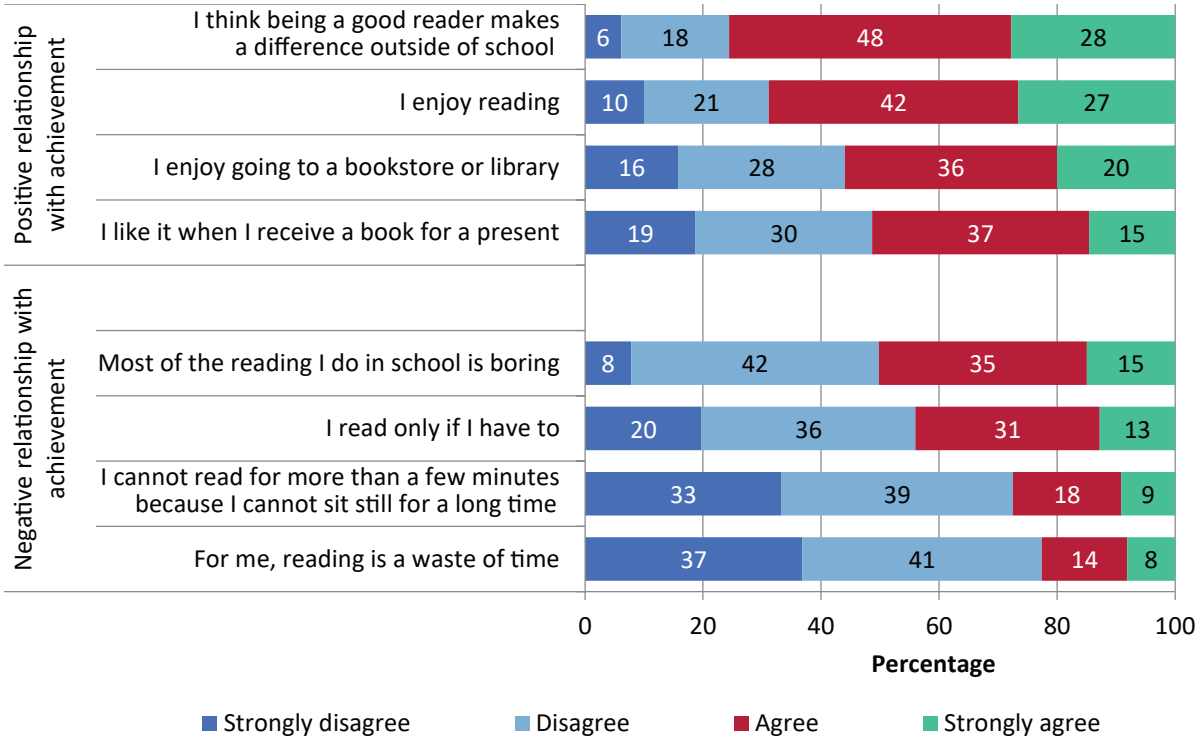
Attitude toward reading

Description of the index

As students progress through public education, they learn increasingly challenging and sophisticated curriculum, and they also learn how to learn. In recent decades, curriculum and pedagogy have evolved in response to increasing access to information, increasing demands for skilled work and knowledge on the job, and the social and citizenship complexities of a globalized world. The issues surrounding globalization and the change in focus for education have been captured in the literature under the rubric of "21st century knowledge and skills," with the recognition that assessing learning processes are as important as assessing learning outcomes (Goldman, 2012; Learned, Stockdill, & Moje, 2011; OECD, 2010b). The student questionnaires that accompanied PCAP 2016 provide insights into the attitudes, motivations, and skills that students are bringing to the process of "learning how to learn."

In PCAP 2016, students were asked to respond to eight items concerning attitudes toward reading. The pattern of response for these items is generally positive, indicating that most students feel good about reading (Figure 2.4; Appendix A.2.2). The set of items that constitutes the "attitude toward reading" index measures students' perception of their ability to read as well as their general attitudes toward reading. Overall in Canada, 76 per cent of students believed that having a good ability to read makes a difference outside of school, and the majority of students reported that they enjoy reading. However, over one in five students reported that they consider reading a waste of time.

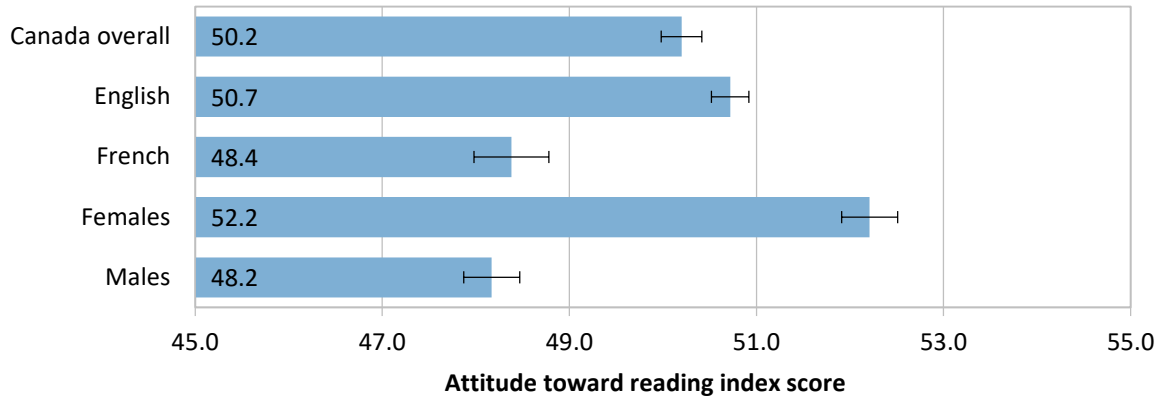
FIGURE 2.4 Percentage of students by their responses to questionnaire items related to the attitude toward reading index



Results for the attitude toward reading index

Pan-Canadian results for this index are shown in Figure 2.5. Students in anglophone school systems and girls scored much higher on this index than students in francophone schools systems or boys (Appendices A.2.2.2, A.2.2.3, and A.2.2.4).

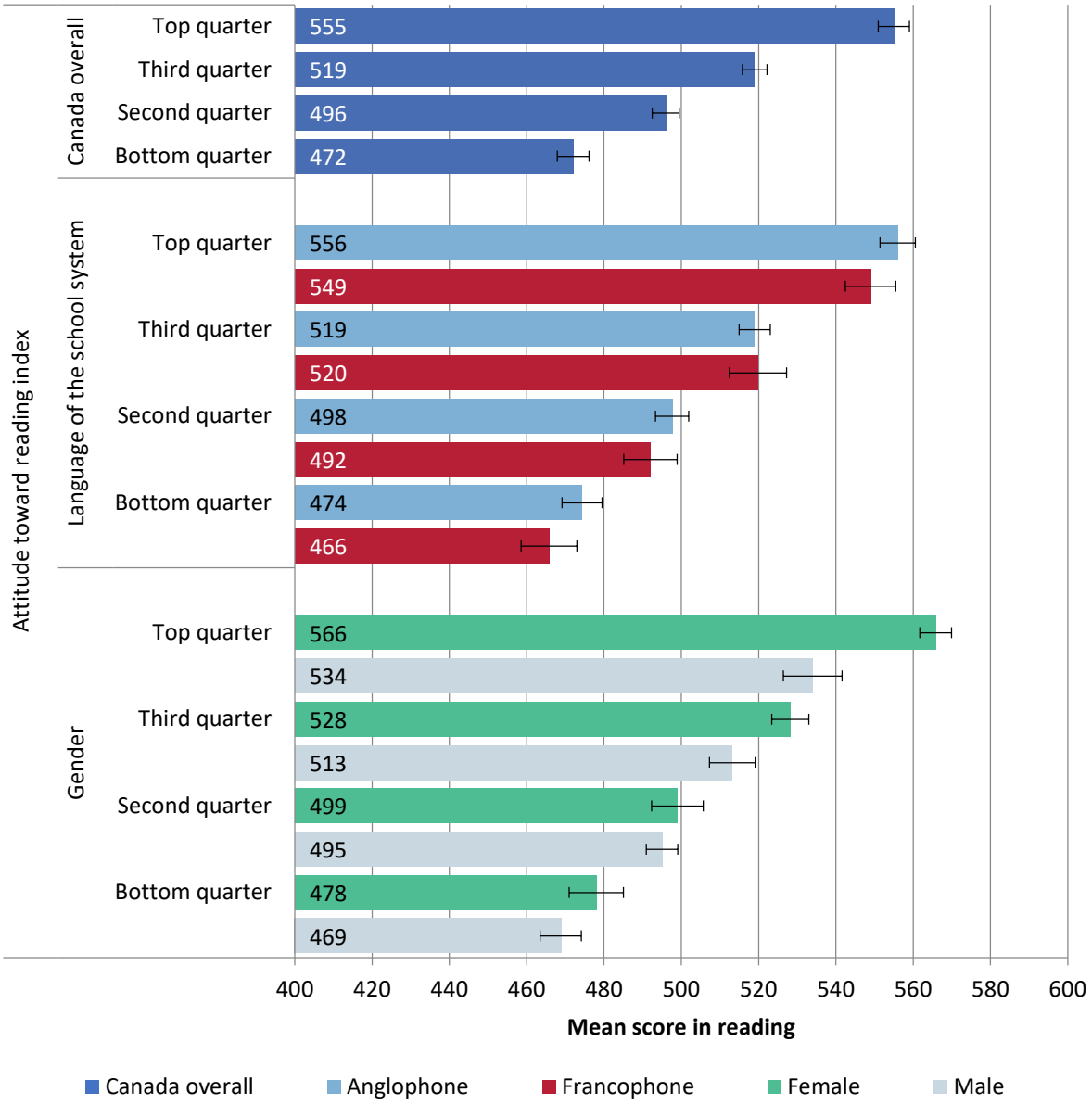
FIGURE 2.5 Results for the attitude toward reading index



In this index, the top quarter represents students who tended to have a more positive attitude toward reading. These students were more likely to agree with the first four items in Figure 2.4. Students in the bottom quarter of the index tended to have a less positive attitude toward reading and were more likely to agree with the last four items in Figure 2.4.

Figure 2.6 shows the relationship between the attitude toward reading index and reading achievement. In this case, there is a general pattern of increased performance with increasingly positive attitudes and beliefs. Of the three categories shown in Figure 2.6, the largest gap between the top and bottom quarters of the index is found among girls, with a difference of 87 points (Appendix A.2.2.1).

FIGURE 2.6 **Relationship between the attitude toward reading index and reading achievement in Canada overall and by language of the school system and gender**



As shown in Table 2.6, students in British Columbia, Alberta, and Manitoba scored above the Canadian mean on this index, meaning that students in these provinces reported the most positive attitudes toward reading (Appendix A.2.2.2).

TABLE 2.6 Comparison of Canadian and provincial results, attitude toward reading index

Above* the Canadian mean	Similar to the Canadian mean	Below* the Canadian mean
British Columbia, Alberta, Manitoba	Saskatchewan, Ontario, New Brunswick, Prince Edward Island	Quebec, Nova Scotia, Newfoundland and Labrador

*Denotes significant difference

Students in francophone schools in British Columbia, Alberta, Saskatchewan, Manitoba, and Ontario scored above the Canadian French mean on this index, as shown in Table 2.7. In anglophone school systems, students in most provinces scored at the Canadian English mean. The exceptions are Manitoba, where students scored above the Canadian English mean, and Saskatchewan, Nova Scotia, and Newfoundland and Labrador, where they scored significantly below the Canadian English mean (Appendix A.2.2.3).

TABLE 2.7 Comparison of Canadian and provincial results by language of the school system, attitude toward reading index

Anglophone school systems		
Above* the Canadian English mean	**Similar to the Canadian English mean**	**Below* the Canadian English mean**
Manitoba	British Columbia, Alberta, Ontario, Quebec, New Brunswick, Prince Edward Island	Saskatchewan, Nova Scotia, Newfoundland and Labrador
Francophone school systems		
Above* the Canadian French mean	**Similar to the Canadian French mean**	**Below the Canadian French mean**
British Columbia, Alberta, Saskatchewan, Manitoba, Ontario	Quebec, New Brunswick, Nova Scotia	

*Denotes significant difference

Within provinces, students in anglophone schools in Manitoba, Quebec, New Brunswick, and Nova Scotia reported a better attitude toward reading than did their counterparts in francophone schools, whereas the reverse was true in British Columbia and Saskatchewan (Table 2.8; Appendix A.2.2.3).

TABLE 2.8 Summary of provincial results by language of the school system, attitude toward reading index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
Manitoba, Quebec, New Brunswick, Nova Scotia	British Columbia, Saskatchewan	Alberta, Ontario

Table 2.9 shows that girls in British Columbia and Alberta and both girls and boys in Manitoba had scores on this index that were higher than the Canadian means (Appendix A.2.2.4).

TABLE 2.9 Comparison of Canadian and provincial results by gender, attitude toward reading index

Girls		
Above* the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below* the Canadian mean for girls**
British Columbia, Alberta, Manitoba	Saskatchewan, Ontario, New Brunswick, Prince Edward Island, Newfoundland and Labrador	Quebec, Nova Scotia
Boys		
Above* the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below* the Canadian mean for boys**
Manitoba	British Columbia, Alberta, Saskatchewan, Ontario, Prince Edward Island	Quebec, New Brunswick, Nova Scotia, Newfoundland and Labrador

*Denotes significant difference

Within all provinces, girls reported a more positive attitude toward reading than did boys (Table 2.10; Appendix A.2.2.4).

TABLE 2.10 Summary of provincial results by gender, attitude toward reading index

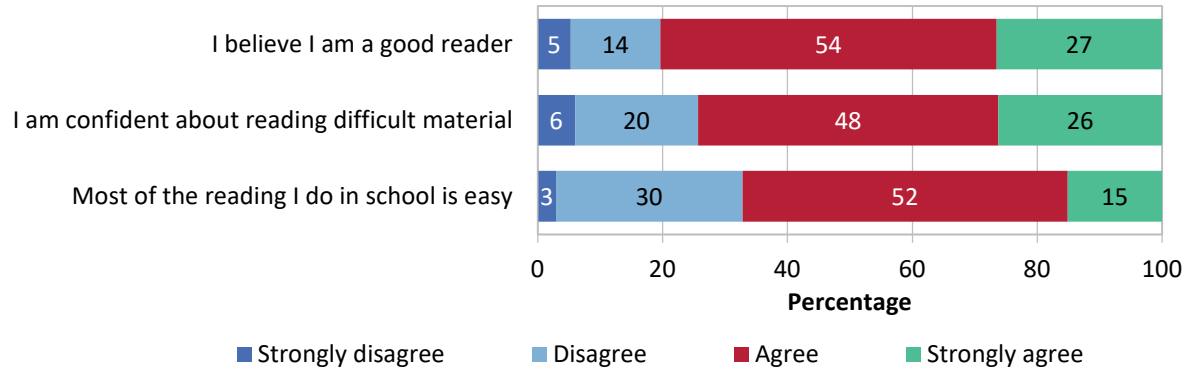
Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
All provinces		

Reading self-efficacy

Description of the index

Self-efficacy beliefs refer to one's confidence in engaging in specific activities that contribute to progress toward one's goals (Bandura, 1977). Students' belief in their ability to succeed in reading is an important outcome of education and is highly relevant to successful learning. Self-efficacy has been found to relate to students' academic achievement (Marsh, Artelt, & Peschar, 2006), and research has revealed that students reporting higher levels of self-efficacy obtained higher reading comprehension scores than students reporting lower levels of perceived competence (Schunk & Pajares, 2009).
In PCAP 2016, students were asked to respond to items that gauged their feelings about their ability in reading. As shown in Figure 2.7, three items constitute the "reading self-efficacy" index (Appendix A.2.3).

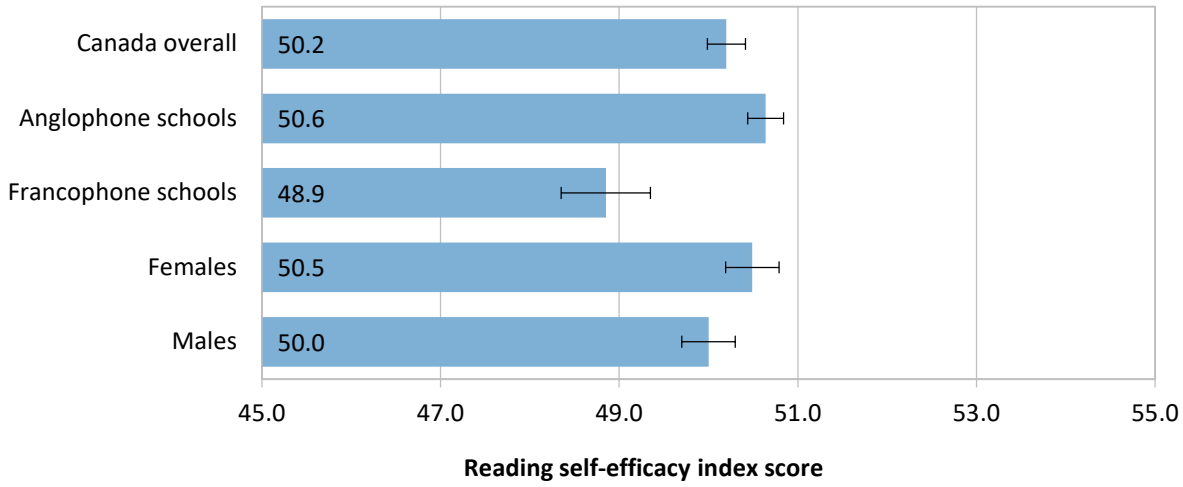
FIGURE 2.7 Percentage of students by their responses to questionnaire items related to the reading self-efficacy index



Results for the reading self-efficacy index

Figure 2.8 presents the pan-Canadian results for this index. Students in anglophone school systems reported significantly higher levels of self-efficacy than their counterparts in francophone school systems. The gender difference on this index was also significant, although the gap was much smaller than the difference between the two language systems (Appendices A.2.3.2, A.2.3.3, and A.2.3.4).

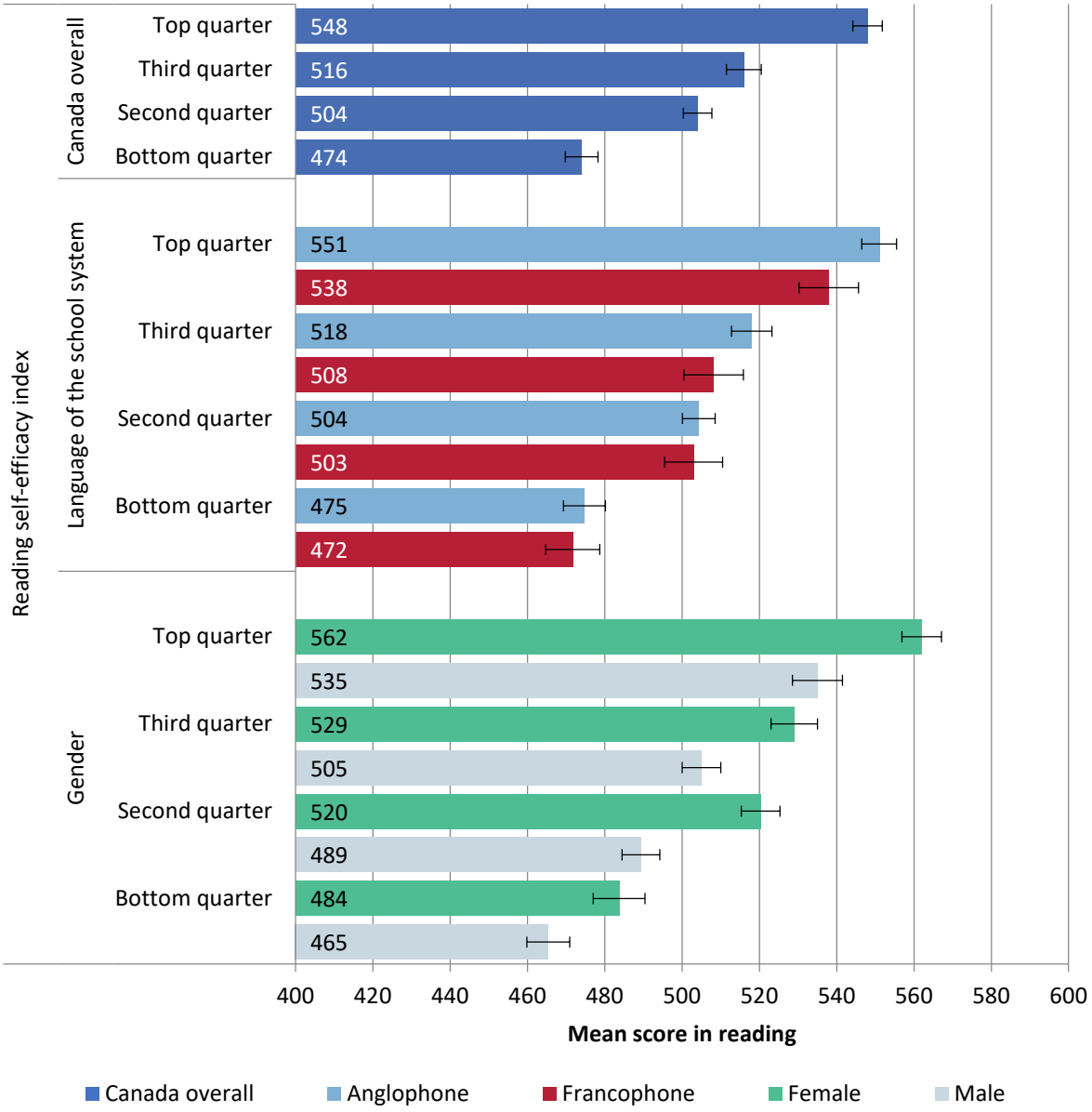
FIGURE 2.8 Results for the reading self-efficacy index



The relationship between reading self-efficacy and reading achievement is shown in Figure 2.9. Students were grouped into four quarters based on their score on this index. The bottom quarter represents students with less confidence in their reading ability, and the top quarter represents students with greater confidence. The results show that students with the highest levels of self-efficacy have significantly higher average scores in reading in all three categories in this figure. In both the gender comparisons and the language comparisons, the top quartile of the index scored significantly higher than the bottom quartile. In addition, a significant difference in reading scores is evident between girls and boys in all the quartiles (Appendix A.2.3.1).

Students who already believed themselves to be competent readers and were confident that they could read challenging material were more likely to have higher achievement in reading.

FIGURE 2.9 **Relationship between the reading self-efficacy index and reading achievement in Canada overall and by language of the school system and gender**



Students in Alberta had the highest scores on the reading self-efficacy index, while students in Quebec had the lowest levels, below the Canadian mean (Table 2.11; Appendix A.2.3.2).

TABLE 2.11 Comparison of Canadian and provincial results, reading self-efficacy index

Above* the Canadian mean	Similar to the Canadian mean	Below* the Canadian mean
Alberta	British Columbia, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador	Quebec

*Denotes significant difference

As shown in Table 2.12, in anglophone school systems, no significant differences exist between provinces and the Canadian English mean on this index. In francophone schools, students in British Columbia, Saskatchewan, Manitoba, and Ontario scored above the Canadian French mean, which suggests that these students have the highest levels of self-efficacy compared to their counterparts in the remaining four provinces for which reliable data are available (Appendix A.2.3.3).

TABLE 2.12 Comparison of Canadian and provincial results by language of the school system, reading self-efficacy index

Anglophone school systems		
Above the Canadian English mean	**Similar to the Canadian English mean**	**Below the Canadian English mean**
	All provinces	
Francophone school systems		
Above* the Canadian French mean	**Similar to the Canadian French mean**	**Below the Canadian French mean**
British Columbia, Saskatchewan, Manitoba, Ontario	Alberta, Quebec, New Brunswick, Nova Scotia	

*Denotes significant difference

Within provinces, higher index scores were found in anglophone schools in Quebec, New Brunswick, and Nova Scotia, and in francophone schools in Saskatchewan and Ontario (Table 2.13; Appendix A.2.3.3).

TABLE 2.13 Summary of provincial results by language of the school system, reading self-efficacy index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
Quebec, New Brunswick, Nova Scotia	Saskatchewan, Ontario	British Columbia, Alberta, Manitoba

As shown in Table 2.14, results on this index for both girls and boys were similar to the Canadian means for most provinces, except for boys in Quebec and New Brunswick, whose scores were below the Canadian mean for boys (Appendix A.2.3.4).

TABLE 2.14 Comparison of Canadian and provincial results by gender, reading self-efficacy index

Girls		
Above the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below the Canadian mean for girls**
	All provinces	
Boys		
Above the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below* the Canadian mean for boys**
	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Nova Scotia, Prince Edward Island, Newfoundland and Labrador	Quebec, New Brunswick

*Denotes significant difference

Within provinces, there was no significant difference between girls and boys on this index except in Quebec, New Brunswick, and Newfoundland and Labrador, where girls reported higher levels of self-efficacy in reading than did boys (Table 2.15; Appendix A.2.3.4).

TABLE 2.15 Summary of provincial results by gender, reading self-efficacy index

Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
Quebec, New Brunswick, Newfoundland and Labrador		British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Nova Scotia, Prince Edward Island

Attribution of success

Description of the index

Attribution theory is closely associated with the concept of motivation. It has been one of the most influential frameworks for understanding how individuals perceive and interpret their own thinking and behaviour. In the realm of achievement motivation, since Weiner and Kukla's influential work (1970), an array of research has attempted to explain the difference in motivation between high and low achievers and the emotional consequences of perceived causes. According to attribution theory, high achievers relate success to internal factors such as their own capability or ability, and they will approach tasks that lead to success instead of avoiding them. When high achievers encounter failures, they will attribute them to external, uncontrollable factors such as bad luck. Thus, failure does not

affect the self-esteem of high achievers, and success builds pride and self-confidence. In contrast, low achievers avoid success-related tasks because they tend to doubt their ability and assume that success—or lack thereof—is related to external factors beyond their control, such as luck. Thus, being successful does not lead to increased pride or self-confidence for low achievers because they do not feel responsible for the outcome (Weiner, 1986). Wigfield (1988) has suggested that younger children have a greater tendency to attribute success to external factors (e.g., task ease, luck) but that, by age 12 or 13, children's attributes of success shift to focusing on internal factors such as ability and effort.

In order to explore why students thought that they were successful in their language arts classes, a series of items were included in the PCAP student questionnaire that asked their opinion (on a four-point scale, from "strongly disagree" to "strongly agree") about why they do especially well or poorly in class. The items were as follows:

If I do especially well in language arts in school, it is because of …

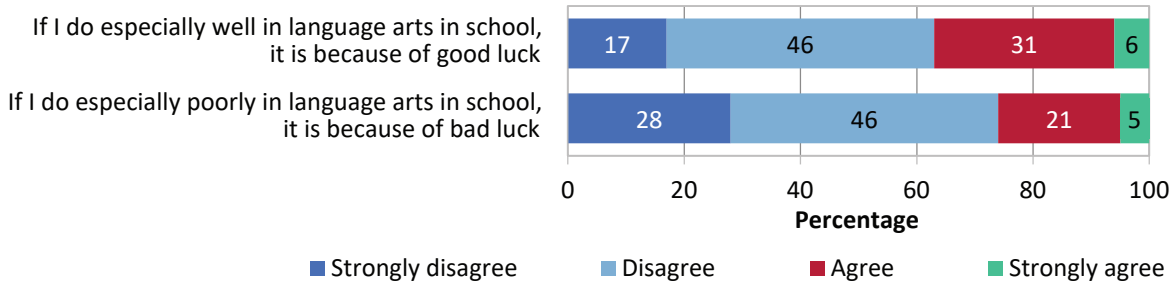
(a) natural ability
(b) good luck
(c) working especially hard
(d) the course being taught well
(e) encouragement from my parents/guardians
(f) encouragement from my friends
(g) help with homework outside of school

If I do especially poorly in language arts in school, it is because of …

(a) not enough natural ability
(b) bad luck
(c) not working especially hard
(d) the course being taught poorly
(e) no encouragement from my parents/guardians
(f) no encouragement from my friends
(g) no help with homework outside of school

Of these items, only one in each category showed a correlation of .20 or above with reading achievement—the attribution of success, and lack of success, in language arts to luck. The pattern of student responses for these two items, which constitute the "attribution of success" index, is shown in Figure 2.10 (Appendix A.2.4).

FIGURE 2.10 Percentage of students by their responses to questionnaire items related to the attribution of success index



Results for the attribution of success index

The pan-Canadian results for this index are shown in Figure 2.11. Students in anglophone schools and girls reported a lower tendency to attribute their success or lack of success in language arts to external factors such as luck (Appendices A.2.4.2, A.2.4.3, and A.2.4.4).

FIGURE 2.11 Results for the attribution of success index

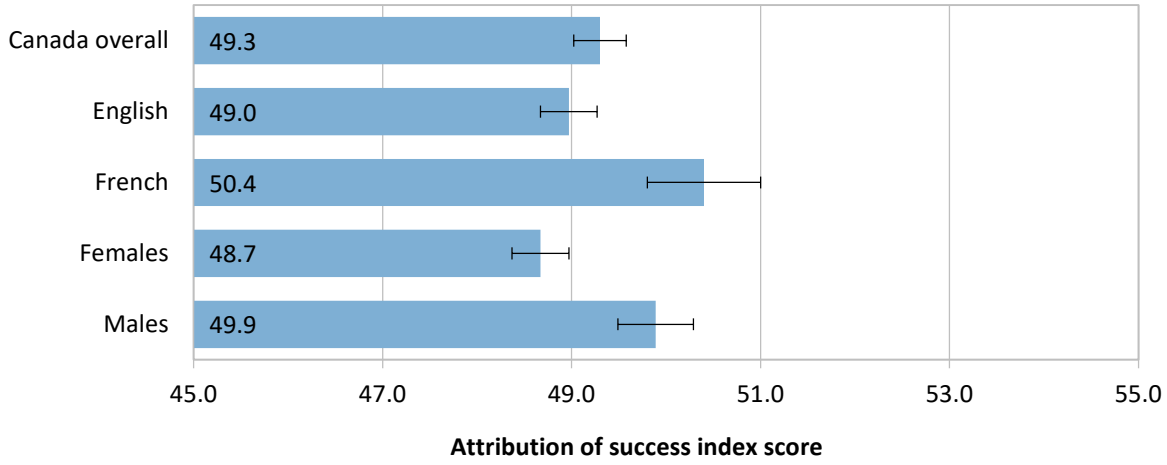
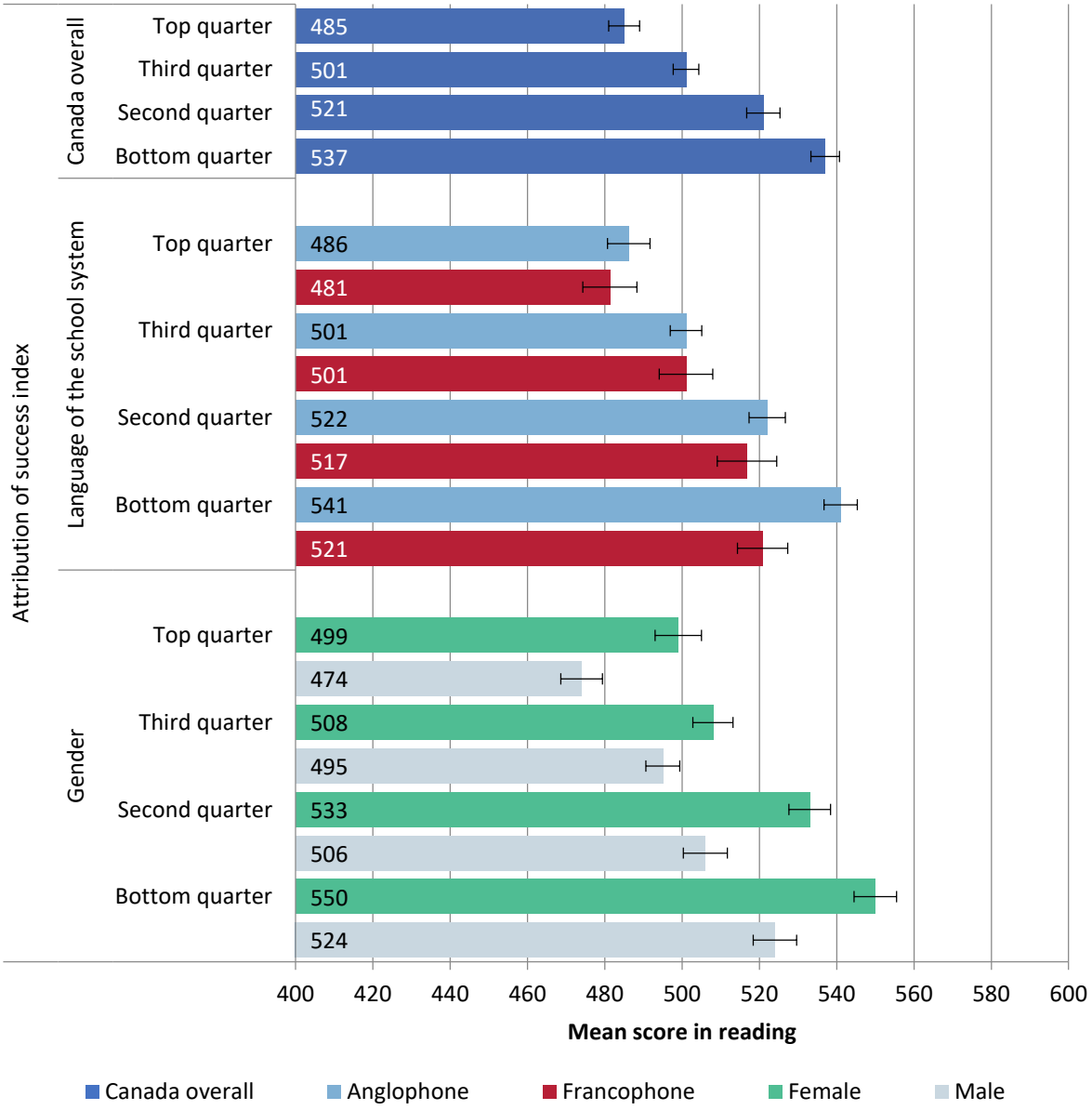


Figure 2.12 shows the relationship between the attribution of success index and reading achievement. The top quarter of the index represents students who have a greater tendency to attribute their achievement to luck, while the bottom quarter represents students with a lesser tendency to attribute success to an external factor, in this case luck.

The pattern for this index is quite clear: students who attribute their success in reading to luck have lower achievement in reading. This result is consistent for Canada overall, for both language groups, and for both girls and boys (Figure 2.12; Appendix A.2.4.1). For Canada overall, the score difference for students in the top and bottom quarters of this index is 52 points. Although this finding is consistent with those in PCAP 2007, in which reading was also the major domain, that earlier assessment also found that internal attributions of success and failure, such as ability and hard work, were correlated with reading achievement (CMEC, 2009).

FIGURE 2.12 Relationship between the attribution of success index and reading achievement in Canada overall and by language of the school system and gender



Students in New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador report the greatest tendency to attribute their success or lack of success to luck, while the responses of students the other provinces were similar to the Canadian mean (Table 2.16; Appendix A.2.4.2).

TABLE 2.16 Comparison of Canadian and provincial results, attribution of success index

Above* the Canadian mean	Similar to the Canadian mean	Below the Canadian mean
New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec	

*Denotes significant difference

As shown in Table 2.17, students in anglophone schools in half of the provinces (Saskatchewan, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador) reported a greater tendency than the Canadian English mean to attribute their success to external factors; only Quebec students in anglophone schools reported a tendency below the Canadian English mean on this index. In francophone school systems, Saskatchewan, Manitoba, and New Brunswick students scored above the Canadian French mean on this index (Appendix A.2.4.3).

TABLE 2.17 Comparison of Canadian and provincial results by language of the school system, attribution of success index

Anglophone school systems		
Above* the Canadian English mean	**Similar to the Canadian English mean**	**Below* the Canadian English mean**
Saskatchewan, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador	British Columbia, Alberta, Manitoba, Ontario	Quebec
Francophone school systems		
Above* the Canadian French mean	**Similar to the Canadian French mean**	**Below the Canadian French mean**
Saskatchewan, Manitoba, New Brunswick	British Columbia, Alberta, Ontario, Quebec, Nova Scotia	

*Denotes significant difference

Within all provinces for which reliable data are available, students in francophone schools reported a greater tendency than their counterparts in anglophone schools to attribute success to external factors, including luck (Table 2.18; Appendix A.2.4.3).

TABLE 2.18 Summary of provincial results by language of the school system, attribution of success index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
	All provinces	

As shown in Table 2.19, girls in New Brunswick, Prince Edward Island, and Newfoundland and Labrador scored above the Canadian mean for girls on this index, while girls' scores in all other provinces were similar to the Canadian mean. Boys in New Brunswick, Nova Scotia, and Newfoundland and Labrador scored above the Canadian mean, while boys in all other provinces scored at the Canadian mean on this index (Appendix A.2.4.4).

TABLE 2.19 Comparison of Canadian and provincial results by gender, attribution of success index

Girls		
Above* the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below the Canadian mean for girls**
New Brunswick, Prince Edward Island, Newfoundland and Labrador	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Nova Scotia	
Boys		
Above* the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below the Canadian mean for boys**
New Brunswick, Nova Scotia, Newfoundland and Labrador	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Prince Edward Island	

*Denotes significant difference

Within the majority of provinces, boys had a greater tendency to attribute their success to luck. The exceptions are Ontario, New Brunswick, and Prince Edward Island, where there was no gender difference for this index (Table 2.20; Appendix A.2.4.4).

TABLE 2.20 Summary of provincial results by gender, attribution of success index

Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
	British Columbia, Alberta, Saskatchewan, Manitoba, Quebec, Nova Scotia, Newfoundland and Labrador	Ontario, New Brunswick, Prince Edward Island

Motivation to read

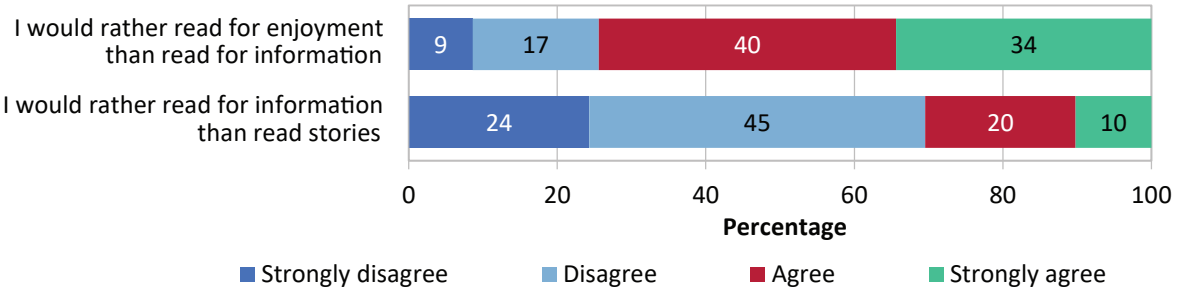
Description of the index

Although cognitive processes and strategies have been the focus of the learning-to-read research for many years, student motivation to read has been shown to be an important factor that influences the successful attainment of educational outcomes in reading. While reading strategies have been shown to be successful in classrooms, that success is contingent on the motivation of students to learn and use those strategies.

Motivation to read is important, as students who read more have higher academic achievement (OECD, 2010b). Why a student reads is a factor that contributes to motivation to read. In order to explore why students read, the PCAP student questionnaire asked students whether they preferred to read for enjoyment or to find information. These two questions constitute the "motivation to read" index.

As shown in Figure 2.13, 74 per cent of students agreed or strongly agreed that they preferred to read for enjoyment. In contrast, 30 per cent of students reported that they would rather read for information than read stories (Appendix A.2.5).

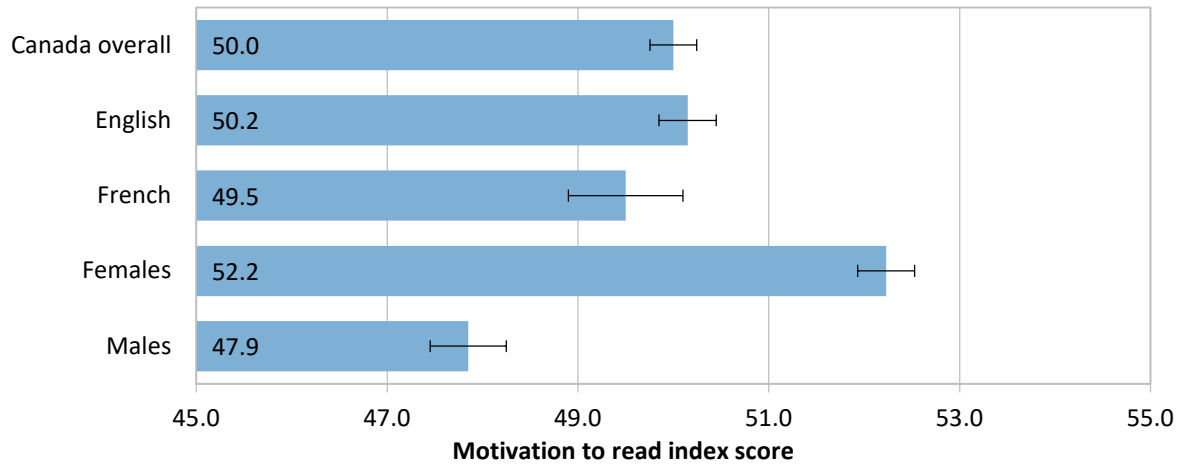
FIGURE 2.13 Percentage of students by their responses to questionnaire items related to the motivation to read index



Results for the motivation to read index

Figure 2.14 shows the results for the motivation to read index for Canada overall, by language of the school system, and by gender. At the pan-Canadian level, while there was no difference between language systems, girls scored significantly higher than boys on this index (Appendices A.2.5.2, A.2.5.3, and A.2.5.4).

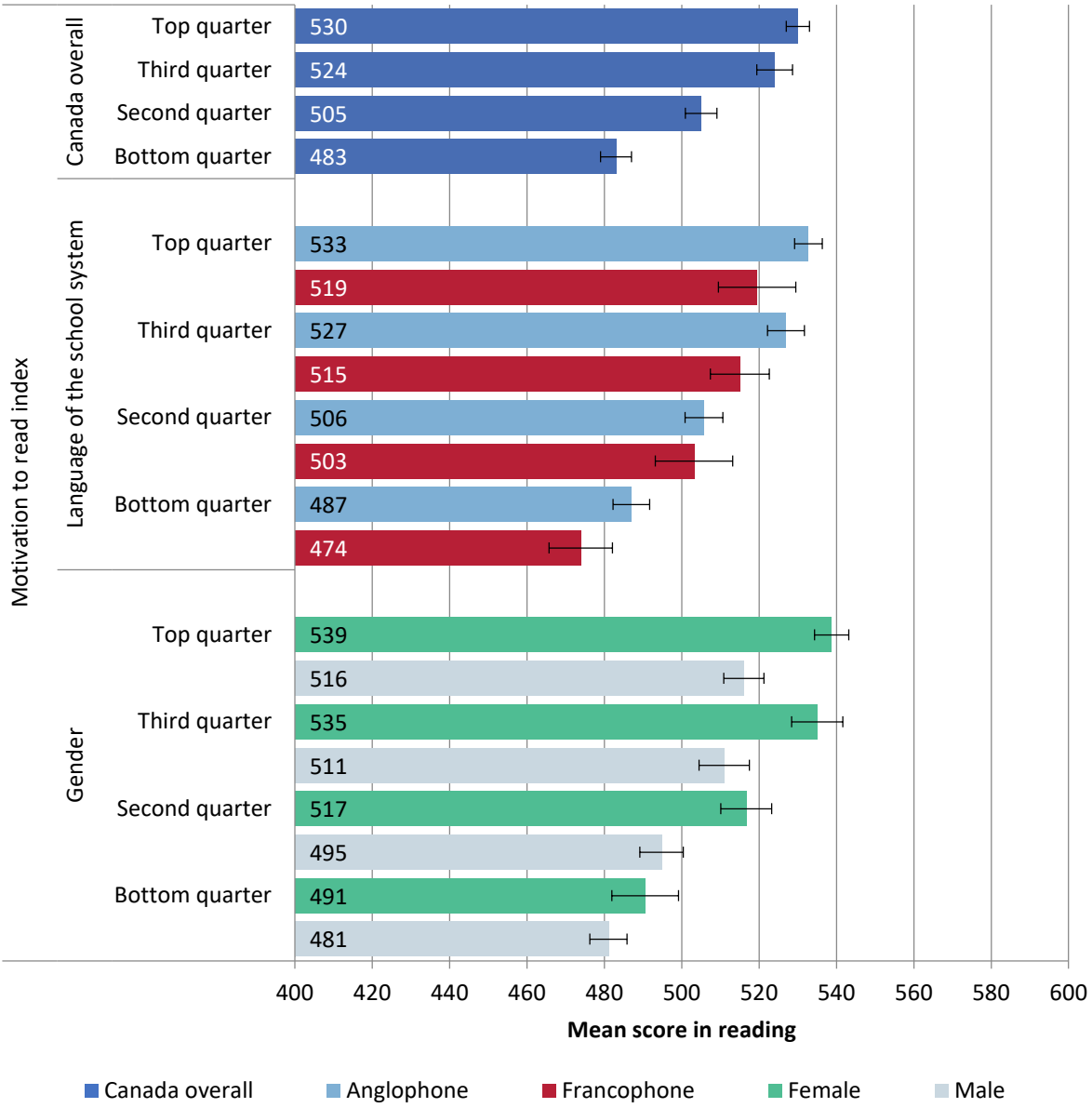
FIGURE 2.14 Results for the motivation to read index



In this index, the top quarter represents students who would rather read for enjoyment while the bottom quarter represents students who tend to read for information. Figure 2.15 shows that a greater tendency to read for enjoyment is related to higher scores in reading. However, no significant difference in reading scores is evident between the top two quartiles, suggesting that reading

preference may be a more important factor to address with students with weaker skills in reading (Appendix A.2.5.1).

FIGURE 2.15 Relationship between the motivation to read index and reading achievement in Canada overall and by language of the school system and gender



The relationship between reading habits and academic achievement has been reported in other studies, and it appears to vary by the types of texts with which students engage, their purposes for doing so, and the skills they bring to the process. Students who read for enjoyment have higher academic achievement than those who do not. Among students inclined to read, engaging with a breadth of texts, in both traditional and on-line formats, correlates with higher academic achievement (OECD, 2010b).

As shown in Table 2.21, no significant differences exist between provinces and the Canadian mean on this index (Appendix A.2.5.2).

TABLE 2.21 Comparison of Canadian and provincial results, motivation to read index

Above the Canadian mean	Similar to the Canadian mean	Below the Canadian mean
	All provinces	

*Denotes significant difference

Similarly, few differences between the provinces and the Canadian means are evident when the results are explored by language of the school system. All provinces are similar to the Canadian English mean except New Brunswick, where students scored above that mean. Likewise, all provinces for which reliable data are available are similar to the Canadian French mean except Manitoba and New Brunswick, where students scored below that mean (Table 2.22; Appendix A.2.5.3).

TABLE 2.22 Comparison of Canadian and provincial results by language of the school system, motivation to read index

Anglophone school systems		
Above* the Canadian English mean	**Similar to the Canadian English mean**	**Below the Canadian English mean**
New Brunswick	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, Nova Scotia, Prince Edward Island, Newfoundland and Labrador	
Francophone school systems		
Above the Canadian French mean	**Similar to the Canadian French mean**	**Below* the Canadian French mean**
	British Columbia, Alberta, Saskatchewan, Ontario, Quebec, Nova Scotia	Manitoba, New Brunswick

*Denotes significant difference

Within provinces, students in anglophone schools scored higher than those in francophone schools on this index in all provinces except Alberta and Quebec, where no significant difference is evident between the two language groups (Table 2.23; Appendix A.2.5.3).

TABLE 2.23 Summary of provincial results by language of the school system, motivation to read index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
British Columbia, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia		Alberta, Quebec

With respect to gender, there are also few differences between provincial scores compared to the Canadian means for the motivation to read index. All provinces have index scores similar to the Canadian means for both girls and boys except Nova Scotia, where female students scored above the Canadian mean for girls (Table 2.24; Appendix A.2.5.4).

TABLE 2.24 Comparison of Canadian and provincial results by gender, motivation to read index

Girls		
Above* the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below the Canadian mean for girls**
Nova Scotia	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Prince Edward Island, Newfoundland and Labrador	
Boys		
Above the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below the Canadian mean for boys**
	All provinces	

*Denotes significant difference

Within provinces, girls scored higher than boys on this index in all provinces (Table 2.25; Appendix A.2.5.4).

TABLE 2.25 Summary of provincial results by gender, motivation to read index

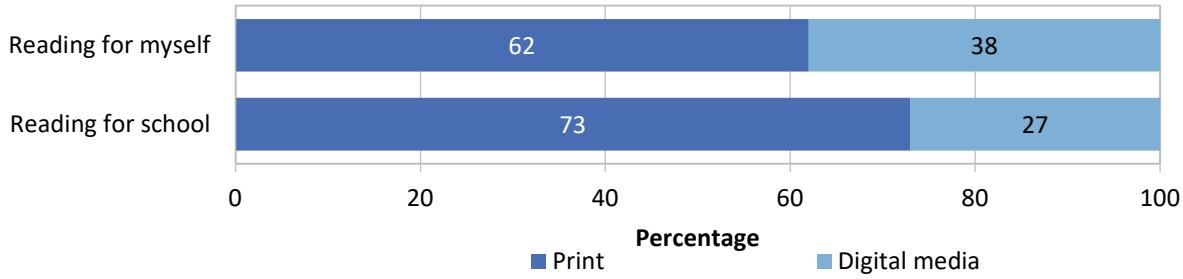
Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
All provinces		

A big challenge for teachers is not simply getting students to read—it is getting them to enjoy it too. In motivating their students to read, teachers attempt to provide a variety of age-appropriate material that is of interest to their students. In our global environment of open information, texts are being reduced to small packets—down to the 280-character "Tweet," for example, in which authorial support for coherent understanding is, of necessity, virtually eliminated. The PCAP 2016 assessment framework (CMEC, 2016) notes that on-line formats are very different from those of traditional

books, in which authors engage readers' attention over a long stretch of time and help sustain this attention by using various devices, such as surface cohesion, section headings, and, above all, orderly development of ideas. Unlike books, the world of open information requires readers to bring skills and effort to their task in order to build coherent knowledge out of numerous pieces of text information.

The PCAP 2016 student questionnaire asked students about their reading preferences, including whether they preferred to read print or digital material. Although these data were poorly correlated with reading achievement, they provide some interesting descriptive information about the reading habits of students at this grade level. As shown in Figure 2.16, the majority of students prefer to read on paper, both when reading for themselves and when reading for school (Appendix A.2.5.5). The student questionnaire also contained a constructed response item in which students were asked what type of material they like to read both during class and outside of class. The results of this item will be reported in a forthcoming issue of *Assessment Matters!*

FIGURE 2.16 Students' preferences for reading print or digital material



Students' learning experiences

The classroom is where most formal learning takes place. Since students spend several hours each day with their teacher(s) and other students in classes, PCAP focused on a number of factors that can influence classroom learning. This section explores three areas relevant to classroom learning, through indices related to reading resources in the classroom, student engagement in reading, and students' perceptions of reading in class.

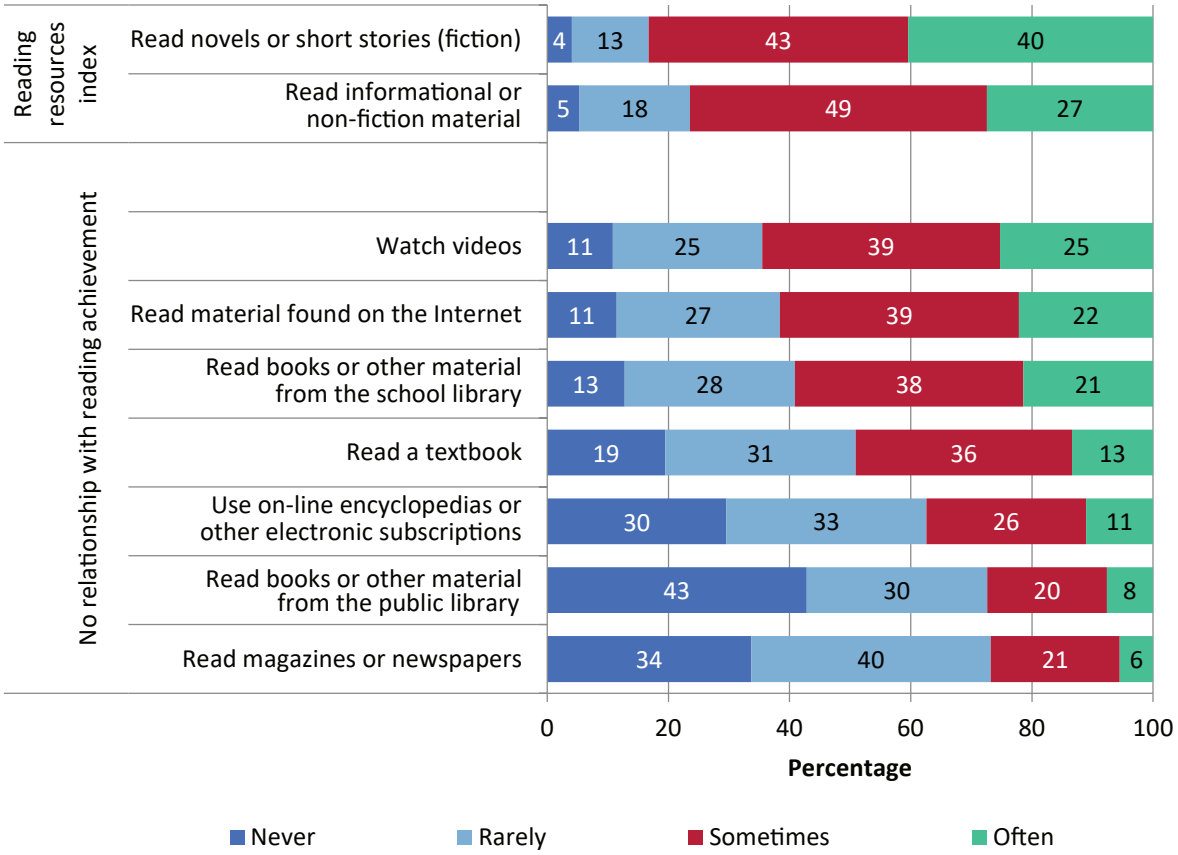
Reading resources in the classroom

Description of the index

The relationship between reading habits and academic achievement appears to vary with the types of texts with which students engage, their purposes for doing so, and the skills they bring to the process. The time that students spend actively reading, both within and outside of the classroom, contributes to reading literacy. Language arts teachers are encouraged to expose students to a wide variety of genres in their classrooms and to allow students some choice in their reading materials to increase their motivation and engagement, and to accommodate different reading skill levels (Gambrell, Marinak, Brooker, & McCrea-Andrews, 2011; Merga, 2015; Sturtevat, Boyd, Brozo, Hinchman, Moore, & Alvermann, 2010).

In PCAP 2016, students were asked about the kinds of reading resources with which they engaged in their language arts classrooms. Only two items in this set had a correlation above .20 with reading achievement: reading novels or short stories and reading informational or non-fiction material therefore constitute the "reading resources" index. As shown in Figure 2.17, students reported that these were the most frequently used resources in their classes. Material from the public library, on-line encyclopedias and electronic subscriptions, and magazines and newspapers were the least frequently used resources (Appendix A.2.6).

FIGURE 2.17 Percentage of students by their responses to questionnaire items related to classroom reading material and the reading resources index



It is important to note that the student questionnaire explored the frequency of use for particular resources but not their availability to the students. For example, students may not be offered magazines and newspapers for in-class reading materials or, alternatively, they may choose not to engage with these kinds of resources if they are available. Teachers' choices of reading materials for students can be influenced by a variety of factors, including classroom composition, school-library size, access to public libraries, Internet connectivity, and availability of on-line resources.

Results for the reading resources index

A high score on this index represents students who report reading novels, short stories, and informational material most frequently in class, whereas a low score on this index represents students who report that such resources are used to a lesser extent in their classrooms. Figure 2.18 shows that, at the pan-Canadian level, students in anglophone schools and girls achieved a higher score on this index (Appendices A.2.6.2, A.2.6.3, and A.2.6.4).

FIGURE 2.18 Results for the reading resources index

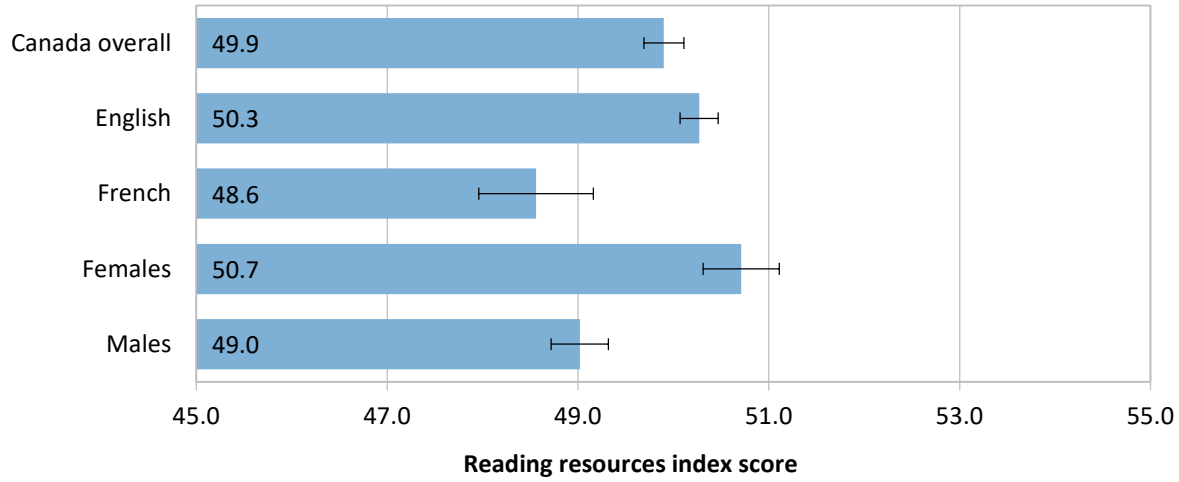


Figure 2.19 illustrates a positive relationship between reading achievement and the frequency of reading fiction and non-fiction material in class. In each of the three categories, the relationship with reading achievement is generally linear: students who most frequently read fiction and non-fiction material in class have higher scores in reading (Appendix A.2.6.1).

Students who reported that they often read novels, short stories, and informational or non-fiction texts in their language arts classes had higher mean scores in reading.

FIGURE 2.19 Relationship between the reading resources index and reading achievement in Canada overall and by language of the school system and gender

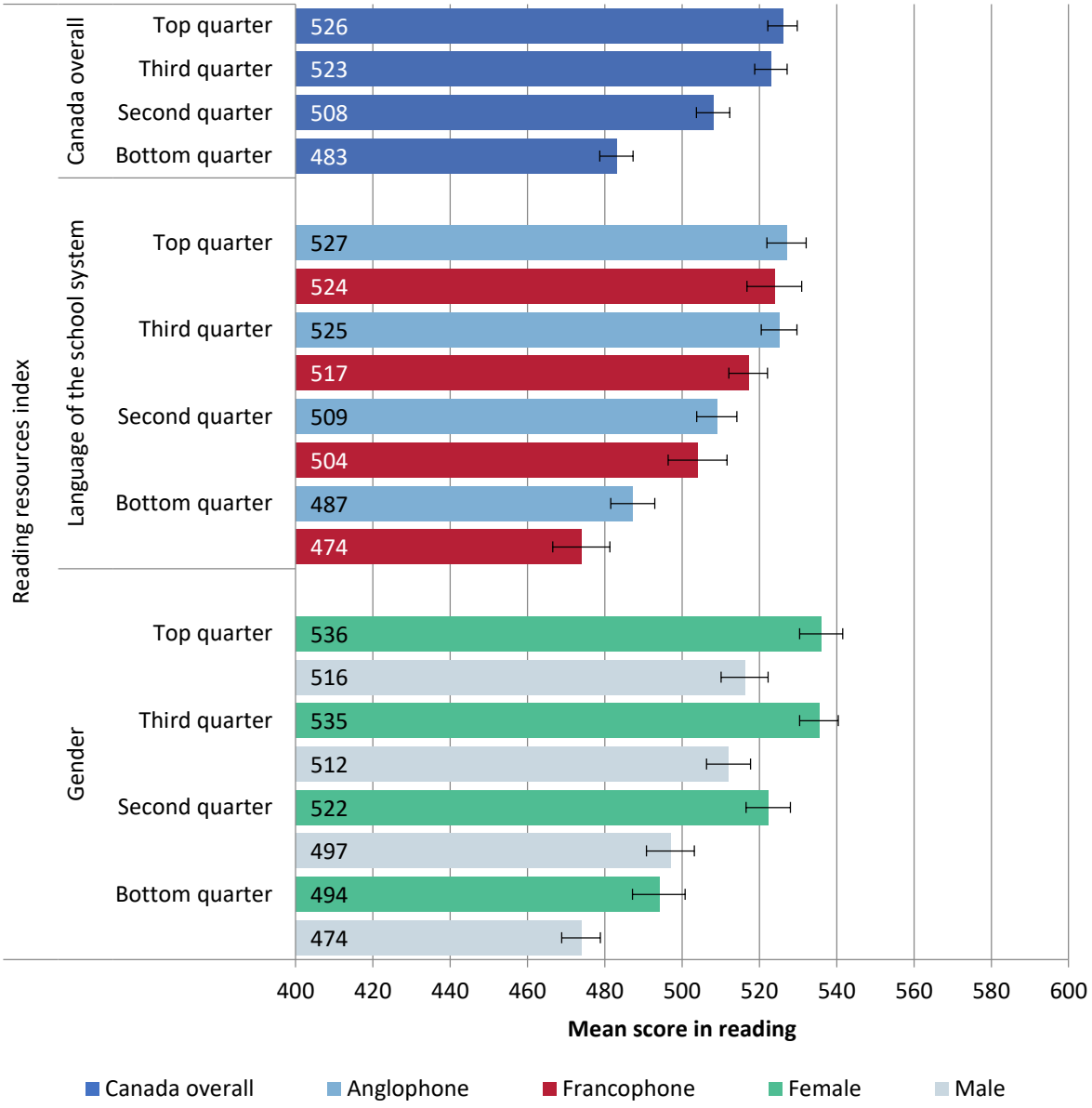


Table 2.26 shows that students in Manitoba, Prince Edward Island, and Newfoundland and Labrador scored above the Canadian average on this index (Appendix A.2.6.2).

TABLE 2.26 Comparison of Canadian and provincial results, reading resources index

Above* the Canadian mean	Similar to the Canadian mean	Below* the Canadian mean
Manitoba, Prince Edward Island, Newfoundland and Labrador	British Columbia, Alberta, Saskatchewan, Ontario, New Brunswick, Nova Scotia	Quebec

*Denotes significant difference

When this index is explored by language of the school system, reading novels and informational material in class is reported most frequently by students in anglophone schools in Manitoba and Prince Edward Island and in francophone schools in Saskatchewan (Table 2.27; Appendix A.2.6.3).

TABLE 2.27 Comparison of Canadian and provincial results by language of the school system, reading resources index

Anglophone school systems		
Above* the Canadian English mean	**Similar to the Canadian English mean**	**Below the Canadian English mean**
Manitoba, Prince Edward Island	British Columbia, Alberta, Saskatchewan, Ontario, Quebec, New Brunswick, Nova Scotia, Newfoundland and Labrador	
Francophone school systems		
Above* the Canadian French mean	**Similar to the Canadian French mean**	**Below* the Canadian French mean**
Saskatchewan	British Columbia, Alberta, Ontario, Quebec, Nova Scotia	Manitoba, New Brunswick

*Denotes significant difference

With the exception of Nova Scotia, for which no difference is evident, students in anglophone schools scored significantly higher than their counterparts in francophone schools in all provinces for which reliable data are available (Table 2.28; Appendix A.2.6.3).

TABLE 2.28 Summary of provincial results by language of the school system, reading resources index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick		Nova Scotia

When this index is explored by gender, girls and boys in Manitoba and girls in Newfoundland and Labrador reported reading novels and informational material in class more frequently than the respective Canadian means for gender (Table 2.29; Appendix A.2.6.4).

TABLE 2.29 Comparison of Canadian and provincial results by gender, reading resources index

Girls		
Above* the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below the Canadian mean for girls**
Manitoba, Newfoundland and Labrador	British Columbia, Alberta, Saskatchewan, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island	
Boys		
Above* the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below* the Canadian mean for boys**
Manitoba	British Columbia, Alberta, Saskatchewan, Ontario, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador	Quebec

*Denotes significant difference

Girls reported reading fiction and non-fiction material more frequently than did boys in all provinces except British Columbia, where there is no significant gender difference for this index (Table 2.30; Appendix A.2.6.4).

TABLE 2.30 Summary of provincial results by gender, reading resources index

Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador		British Columbia

Engagement in reading

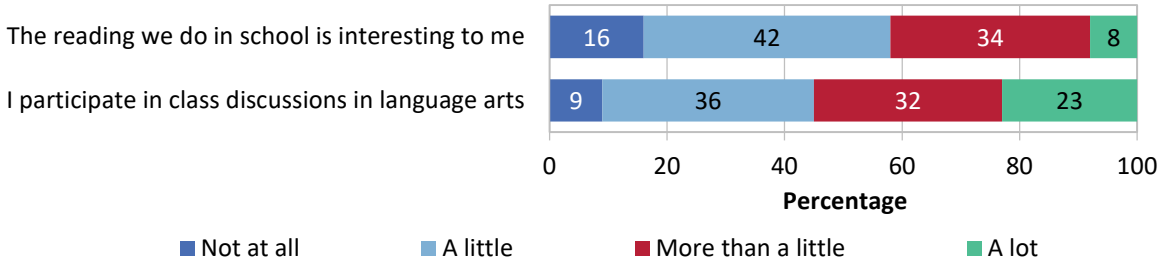
Description of the index

Guthrie, Wigfield, & You (2012) define reading engagement as "interacting with texts in ways that are both strategic and motivated" (p. 602). They argue that students' motivation to read must be engaged prior to them undertaking the reading behaviours needed to develop reading fluency. An important component of language arts pedagogy, then, is choosing curriculum and activities that can engage students who may have diverse interests and reading abilities.

Students who participated in PCAP 2016 answered questions designed to measure their level of engagement in their language arts classes. Two of the items together correlated with reading achievement and form the "engagement in reading" index. As shown in Figure 2.20, 42 per cent of students reported that they are interested in the reading they do in class either a lot or more than

a little, and 55 per cent of students participate in class discussions at the same level of engagement (Appendix A.2.7).

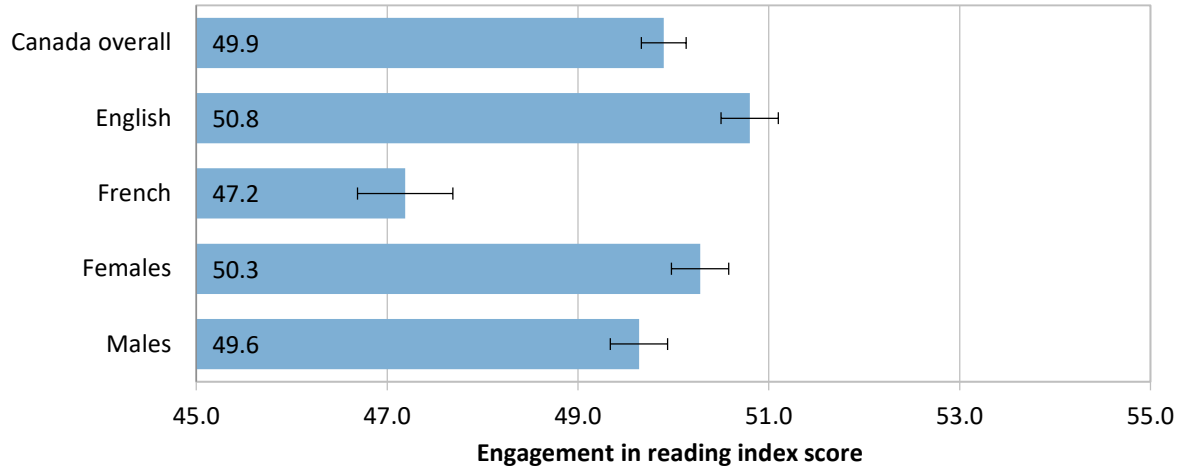
FIGURE 2.20 Percentage of students by their responses to questionnaire items related to the engagement in reading index



Results for the engagement in reading index

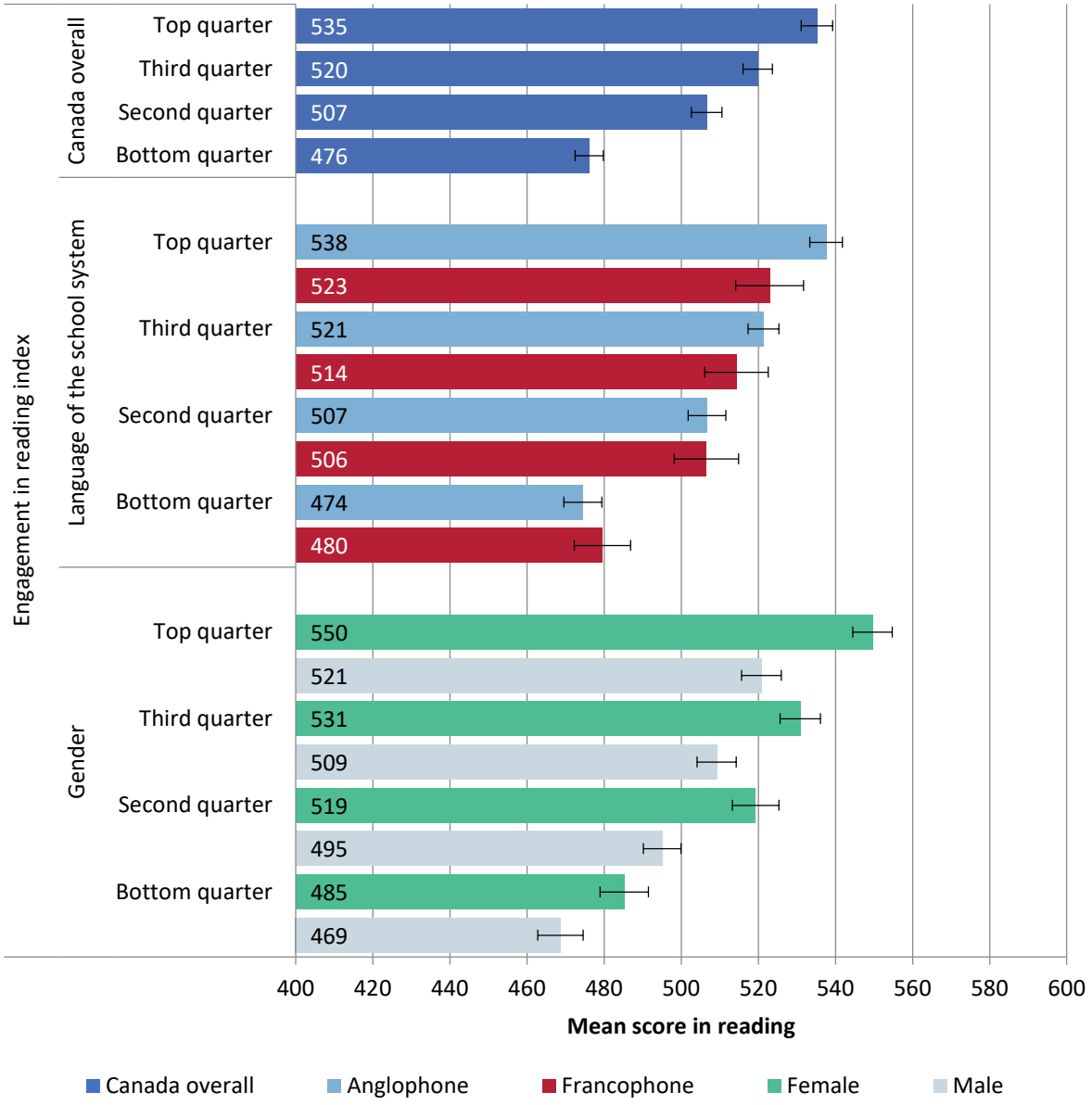
Figure 2.21 shows the index scores for the engagement in reading index. At the pan-Canadian level, the scores for this index are significantly higher in anglophone school systems and for girls (Appendices A.2.7.2, A.2.7.3, and A.2.7.4).

FIGURE 2.21 Results for the engagement in reading index



The top quarter of this index represents students who reported a high level of engagement in their language arts classes. Not surprisingly, students who had higher scores in this index also achieved higher reading scores, as shown in Figure 2.22. The score difference between the top and bottom quarters is much larger for anglophone schools compared to francophone schools (63 versus 43 points) and for girls compared to boys (64 versus 52 points) (Appendix A.2.7.1).

FIGURE 2.22 Relationship between the engagement in reading index and reading achievement in Canada overall and by language of the school system and gender



Students who reported enjoying and actively participating in their language arts classes had higher mean scores in reading.

Table 2.31 shows that, compared to the Canadian mean, students in British Columbia, Manitoba, and Ontario reported higher levels of engagement in reading, while students in Quebec reported lower levels (Appendix A.2.7.2).

TABLE 2.31 Comparison of Canadian and provincial results, engagement in reading index

Above* the Canadian mean	Similar to the Canadian mean	Below* the Canadian mean
British Columbia, Manitoba, Ontario	Alberta, Saskatchewan, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador	Quebec

*Denotes significant difference

Higher levels of engagement were reported by students in both language groups in Manitoba compared to the respective Canadian means. In francophone schools, higher levels of engagement were also reported by students in British Columbia, Alberta, Saskatchewan, Ontario, and New Brunswick (Table 2.32; Appendix A.2.7.3).

TABLE 2.32 Comparison of Canadian and provincial results by language of the school system, engagement in reading index

Anglophone school systems		
Above* the Canadian English mean	**Similar to the Canadian English mean**	**Below* the Canadian English mean**
Manitoba	British Columbia, Alberta, Ontario, Quebec, New Brunswick, Nova Scotia	Saskatchewan, Prince Edward Island, Newfoundland and Labrador
Francophone school systems		
Above* the Canadian French mean	**Similar to the Canadian French mean**	**Below the Canadian French mean**
British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick	Quebec, Nova Scotia	

*Denotes significant difference

In the majority of provinces, students in anglophone schools scored higher on the engagement index than those in francophone schools. The exceptions are Saskatchewan, where students in francophone schools scored higher than their counterparts in anglophone schools, and Alberta, where no significant difference exists (Table 2.33; Appendix A.2.7.3).

TABLE 2.33 Summary of provincial results by language of the school system, engagement in reading index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
British Columbia, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia	Saskatchewan	Alberta

Provincial scores on the engagement index were compared to the Canadian means for girls and boys. Girls and boys in British Columbia and Manitoba, along with boys in Ontario, scored above the Canadian means. In Quebec, both girls and boys reported less engagement than the Canadian means (Table 2.24; Appendix A.2.7.4).

TABLE 2.34 Comparison of Canadian and provincial results by gender, engagement in reading index

Girls		
Above* the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below* the Canadian mean for girls**
British Columbia, Manitoba	Alberta, Saskatchewan, Ontario, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador	Quebec
Boys		
Above* the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below* the Canadian mean for boys**
British Columbia, Manitoba, Ontario	Alberta, Saskatchewan, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador	Quebec

*Denotes significant difference

Although girls scored significantly higher than boys on this index at the pan-Canadian level, significant gender differences are found in only three provinces, Alberta, New Brunswick, and Newfoundland and Labrador (Table 2.35; Appendix A.2.7.4).

TABLE 2.35 Summary of provincial results by gender, engagement in reading index

Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
Alberta, New Brunswick, Newfoundland and Labrador		British Columbia, Saskatchewan, Manitoba, Ontario, Quebec, Nova Scotia, Prince Edward Island

Negative perceptions of reading

Description of the index

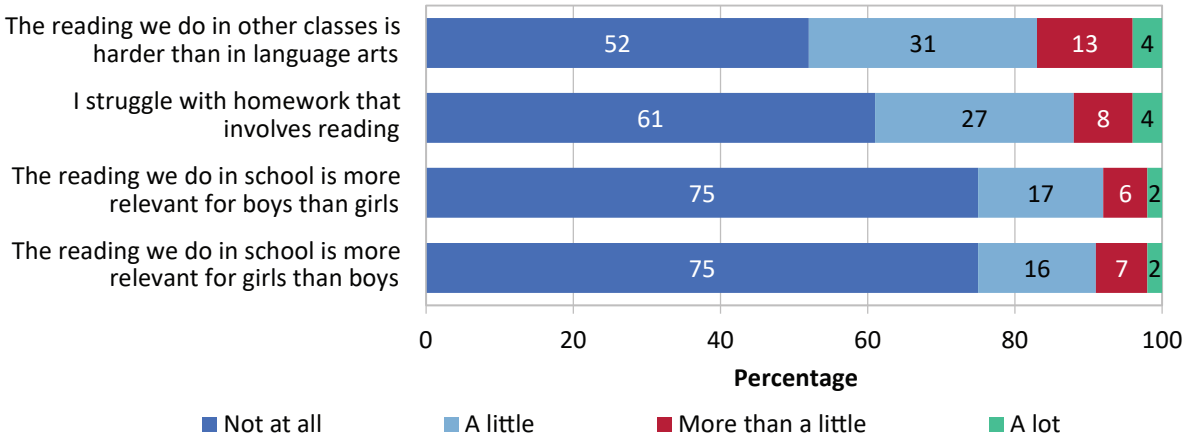
In questionnaires accompanying the PCAP 2016 assessments, students were asked questions designed to elicit their perceptions of the reading material used in class and the difficulty of its content. These items were used to develop the "negative perceptions of reading" index.

Students were asked about the difficulty of the reading materials and of the homework in their language arts classes, as this could have an impact of their level of engagement. As shown in Figure 2.23, 17 per cent of students believed that the reading they did in other classes was a lot or

more than a little harder than that in language art classes, and 12 per cent of students struggled a lot or more than a little with their homework that involved reading (Appendix A.2.8).

There have been consistent efforts to address the strong and persistent gender gap in reading that has been reported in multiple studies in which Canada participates (i.e., PCAP, PISA, and PIRLS). One explanation for this gap has been that reading material used in language arts class tends to target the interests of girls more than of boys. When students were asked about this in PCAP 2016, their responses show that most detected little or no gender bias in the reading materials they engaged with in class (Figure 2.23; Appendix A.2.8).

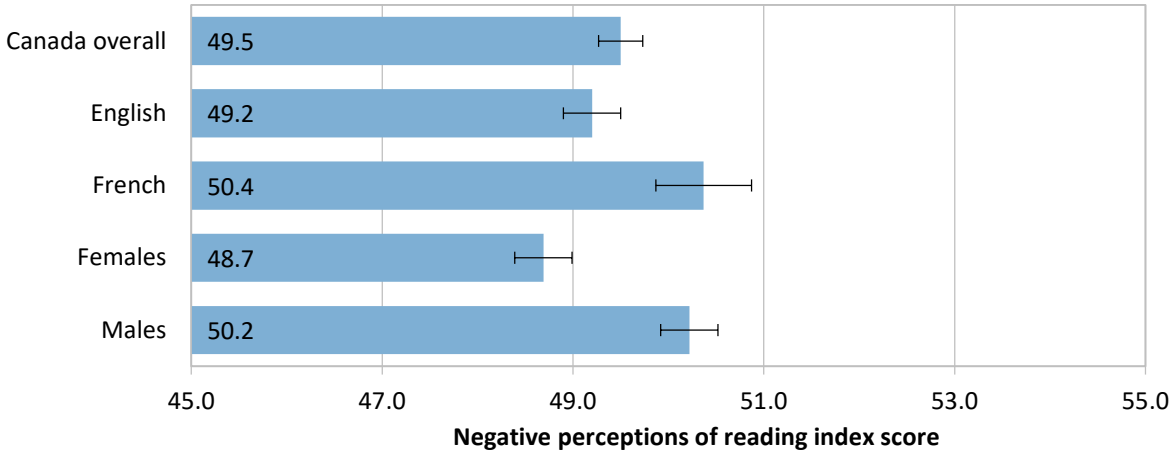
FIGURE 2.23 Percentage of students by their responses to questionnaire items related to the negative perceptions of reading index



Results for the negative perceptions of reading index

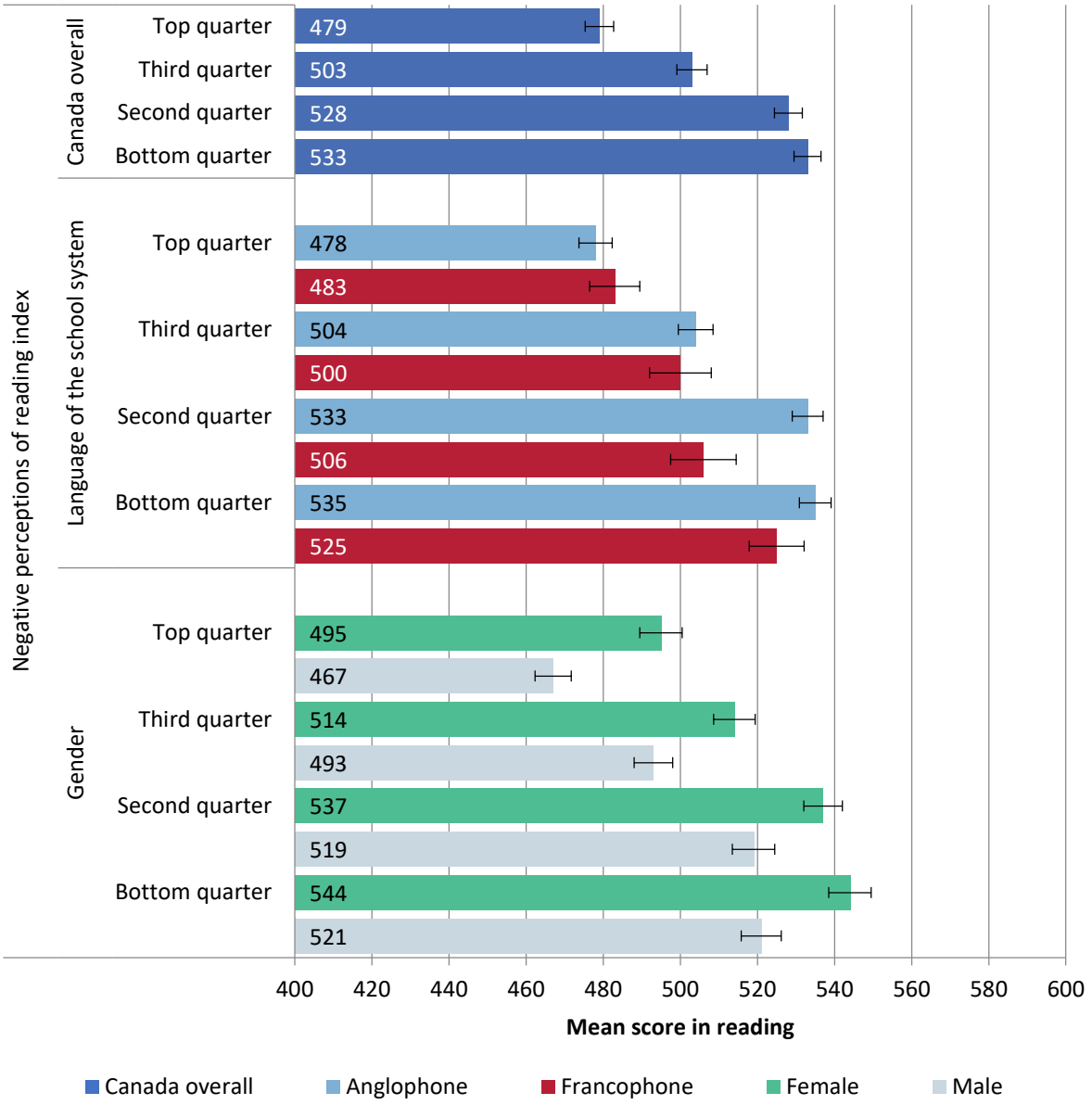
Index scores for negative perceptions of reading at the pan-Canadian level are shown in Figure 2.24. The scores in this index are highest for students in francophone school systems and for boys (Appendices A.2.8.2, A.2.8.3 and A.2.8.4).

FIGURE 2.24 Results for the negative perceptions of reading index



Students who scored in the top quarter of this index are more likely to have a negative perception of reading in their language arts classes compared to those who scored in the bottom quarter. As Figure 2.25 indicates, a strong relationship exists between this index and reading achievement scores: students in the top quarter of the index attained the poorest results in reading (Appendix A.2.8.1).

FIGURE 2.25 Relationship between the negative perceptions of reading index and reading achievement in Canada overall and by language of the school system and gender



Students with lower mean scores in reading were more likely to perceive reading materials as inappropriate for their gender and to find reading for homework more difficult.

The provincial results for this index are very consistent across Canada, with all provinces' scores similar to the Canadian mean (Table 2.36; Appendix A.2.8.2).

TABLE 2.36 Comparison of Canadian and provincial results, negative perceptions of reading index

Above the Canadian mean	Similar to the Canadian mean	Below the Canadian mean
	All provinces	

As shown in Table 2.37, students in francophone schools in Alberta, Saskatchewan, Manitoba, Ontario, and Nova Scotia scored above the Canadian mean on this index, meaning that students in French-language systems in these provinces have a greater tendency to believe that their language arts classes have more difficult reading materials than their other classes and that there is a gender bias in their classroom reading material. They are also more likely to struggle with homework (Appendix A.2.8.3).

TABLE 2.37 Comparison of Canadian and provincial results by language of the school system, negative perceptions of reading index

Anglophone school systems		
Above the Canadian English mean	**Similar to the Canadian English mean**	**Below the Canadian English mean**
	All provinces	
Francophone school systems		
Above* the Canadian French mean	**Similar to the Canadian French mean**	**Below the Canadian French mean**
Alberta, Saskatchewan, Manitoba, Ontario, Nova Scotia	British Columbia, Quebec, New Brunswick	

*Denotes significant difference

Outside of Quebec, students in francophone schools were more likely to score higher on this index than their counterparts in anglophone schools (Table 2.38; Appendix A.2.8.3).

TABLE 2.38 Summary of provincial results by language of the school system, negative perceptions of reading index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia	Quebec

With respect to the results for girls, the scores in all provinces were similar to the Canadian mean. Compared to the Canadian mean, boys in Quebec and New Brunswick had a more negative perception of reading, while boys in Prince Edward Island had a less negative perception (Table 2.39; Appendix A.2.8.4).

TABLE 2.39 Comparison of Canadian and provincial results by gender, negative perceptions of reading index

Girls		
Above the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below the Canadian mean for girls**
	All provinces	
Boys		
Above* the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below* the Canadian mean for boys**
Quebec, New Brunswick	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Nova Scotia, Newfoundland and Labrador	Prince Edward Island

*Denotes significant difference

In all provinces except Prince Edward Island and Newfoundland and Labrador, boys had a more negative perception of reading than did girls (Table 2.40; Appendix A.2.8.4).

TABLE 2.40 Summary of provincial results by gender, negative perceptions of reading index

Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia	Prince Edward Island, Newfoundland and Labrador

Students' reading behaviours and strategies

Almost everything that is done in school requires reading. Students are taught to read in the earliest grades, and reading-related activities become increasingly challenging throughout schooling. The reading strategies employed and the effort applied to reading activities might be expected to have some impact on reading performance. This section looks at students' reading strategies in their language arts classes, as well as their level of effort while in class. At the same time, reading is not confined to schools, and so this section also explores students' reading-related activities outside of school hours.

Students' reading strategies

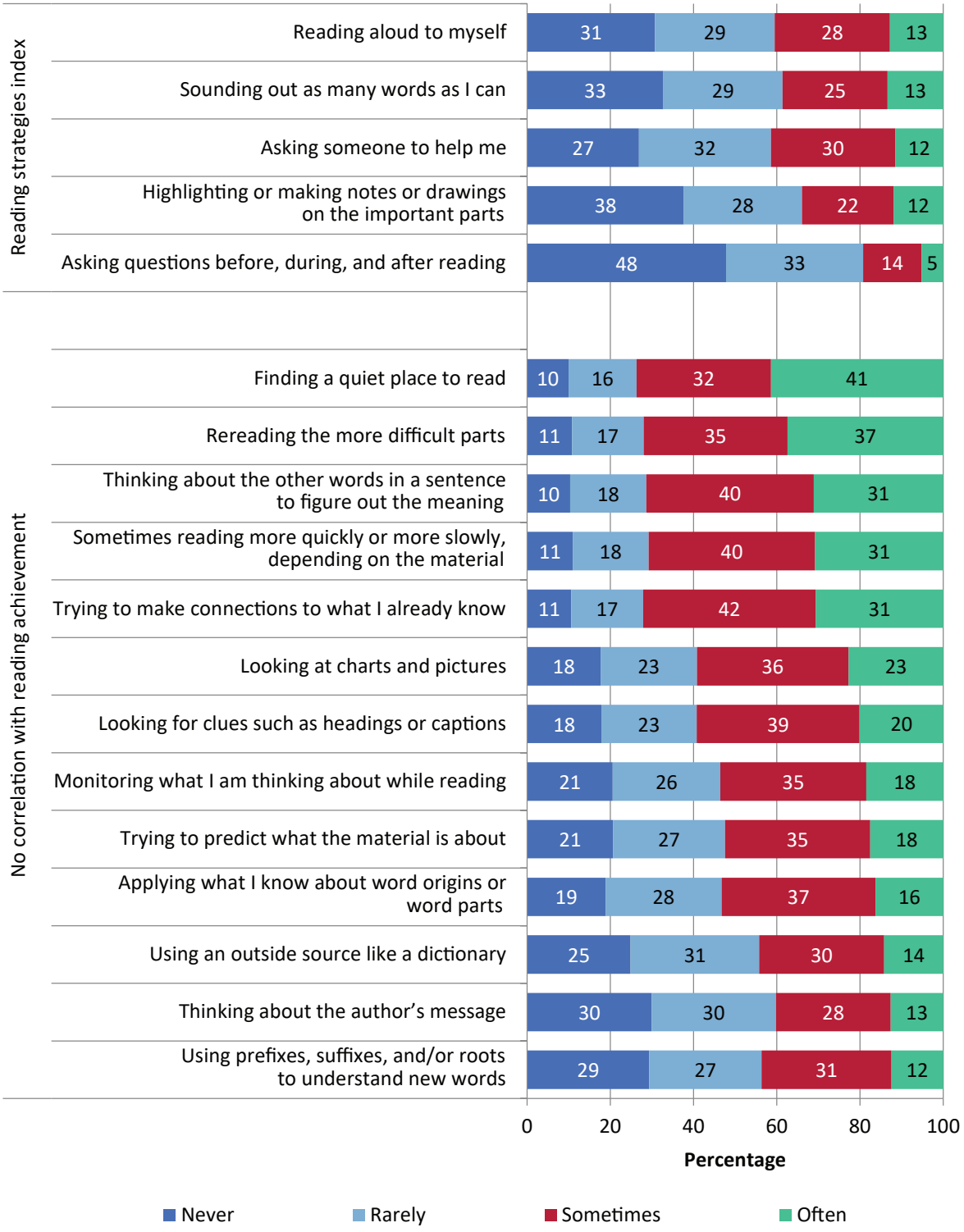
Description of the index

As Jang (2016) observes, "One of the most notable trends in literacy theory and research is the increasing interest in the reading and writing practices of adolescents." Interest has been driven in part by concerns about adolescent disengagement from reading and by the demands of complex global societies and knowledge economies (Goldman, 2012; Guthrie et al., 2012; McKenna, Conradi, Lawrence, Jang, & Meyer, 2012; OECD, 2010b). These factors have led policy-makers and some researchers to call for a shift in the role of the middle-school (or lower secondary) language arts teacher from literature teacher to literacy teacher. In other words, secondary language arts teachers—and, indeed, secondary teachers in other subject areas—need to recognize that, over and above their role as content-area teachers, they are also reading teachers (Wigent, 2013).

Good pedagogy in secondary grades calls for teachers to explicitly teach and guide students in the practice of effective reading strategies (Goldman, 2012). Reading strategies have been widely researched, and their effectiveness tested, and reading research has established that students can learn strategies to help themselves when they encounter difficulties in their reading (Learned et al., 2011). Pedagogically, it is most helpful when the teacher can teach, and give students the opportunity to practise, an array of strategies and guide them effectively toward independent use of these strategies (Goldman, 2012; Wigent, 2013).

In the questionnaire accompanying the PCAP 2016 assessments, students were asked to report on the frequency with which they employed a variety of reading strategies. Figure 2.26 provides an interesting overview of the reading strategies that Canadian youth are using in school. Only the first five strategies listed in the figure are correlated with reading achievement; these form the "student reading strategies" index. The remaining strategies are included in this figure to provide some descriptive information about how students approach their reading assignments. The strategies are ordered by decreasing frequency of use in the "often" category (Appendix A.2.9).

FIGURE 2.26 **Percentage of students by their responses to questionnaire items related to reading strategies and the student reading strategies index**



Several considerations should be taken into account when interpreting students' reported use of reading strategies. First, it is important to note that strategies not included in the index have been found to be effective. Indeed, the items listed in this question that correlated with reading achievement did so negatively; that is, use of these strategies corresponded to lower scores in reading literacy. For example, "sounding out as many words as I can" suggests that students are decoding individual words, leaving fewer cognitive resources for comprehension, and slowing down the reading process. It is also important to recognize that different reading strategies reflect different approaches to language and can be indicative of different areas of reading difficulty. On the other hand, strategies such as strategic rereading of difficult passages and connecting to prior knowledge are strategies employed by skillful readers (Wigent, 2013).

Second, students may not have learned some of the effective readings strategies on this list, or may not be able to use them independently. In addition, students may apply different strategies to different kinds of texts, depending on the genre and level of difficulty. Both genres and modes of disciplinary thinking influence not only the ways in which students approach texts but also the kinds of reading strategies that might be effective for comprehension (Goldman, 2012; Yoo, 2015).

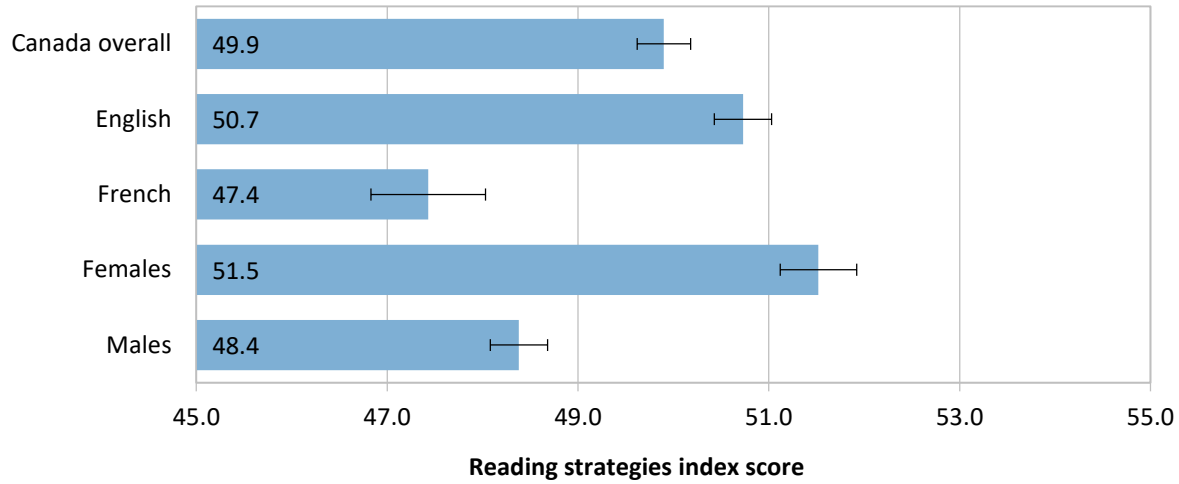
Finally, students require a degree of metacognition to identify the strategies they are using. Effective reading instruction helps students to develop their metacognitive skills (Learned et al., 2011; Wigent, 2013), but students may not be able to name some of the strategies they are using or may lack the metacognitive awareness that they are using some strategies (Yoo, 2015).

Most of the strategies in the index are indicators that a student has not mastered fluid, independent reading. An exception is the item "asking questions before, during, and after reading." A possible explanation for its grouping with the other strategies constituting the index is that students interpreted this item as referring to their asking questions of the teacher, rather than as a set of independent reading strategies used for reading comprehension at different stages of the reading process.

Results for the reading strategies index

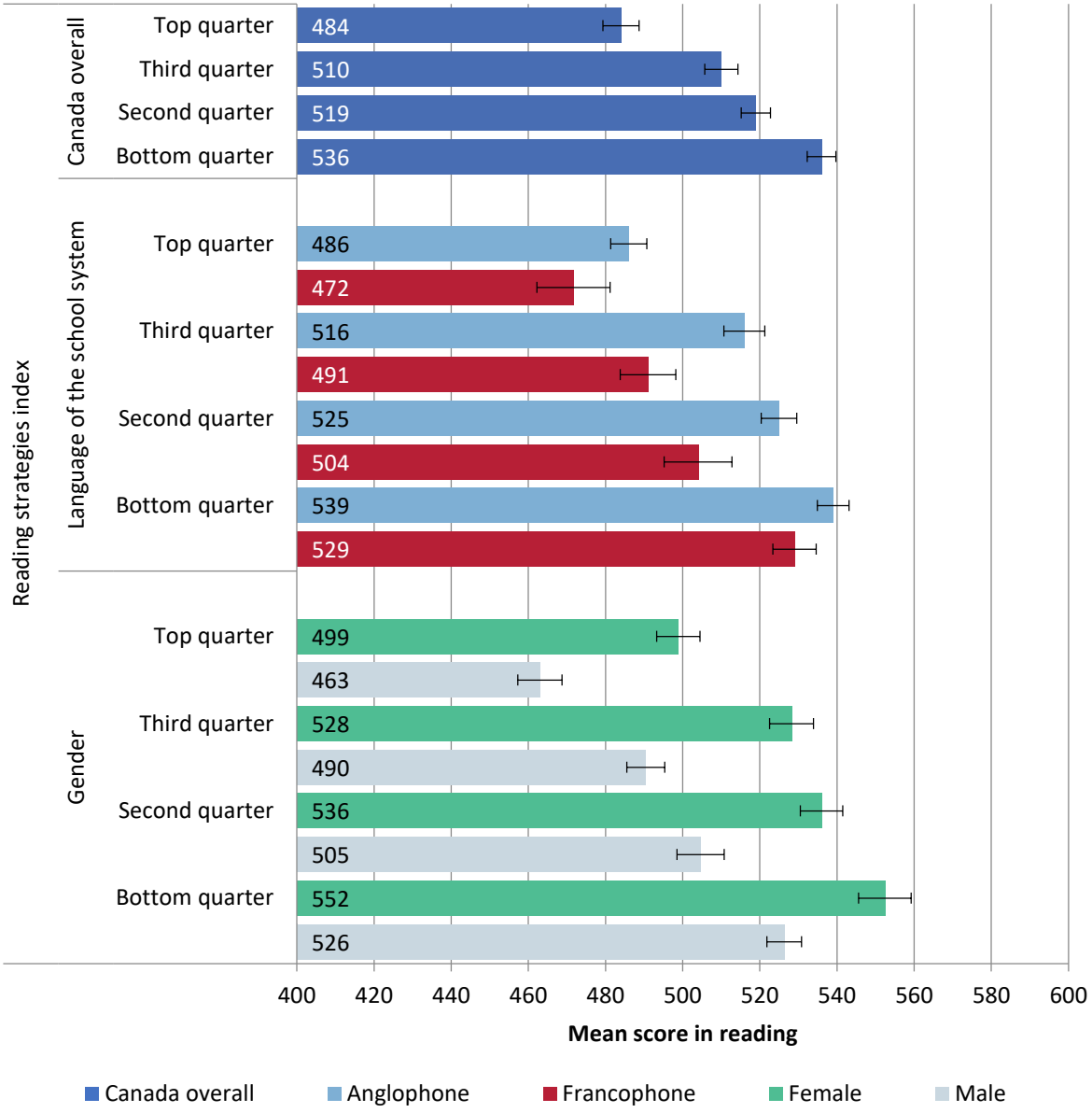
Index scores for the reading strategies index at the Canadian level are shown in Figure 2.27. The scores in this index are highest for students in anglophone school systems and for girls (Appendices A.2.9.2, A.2.9.3, and A.2.9.4).

FIGURE 2.27 Results for the reading strategies index



Students who scored high on this index have a greater tendency to use reading strategies such as reading aloud or highlighting compared to those students in the bottom quarter of this index. Figure 2.28 shows that this index has a negative relationship with achievement: students who relied most frequently on these types of strategies had lower mean scores in reading (Appendix A.2.9.1).

FIGURE 2.28 Relationship between the reading strategies index and reading achievement in Canada overall and by language of the school system and gender



Students in Saskatchewan, Manitoba, Ontario, Nova Scotia, and Newfoundland and Labrador used the index's reading strategies with greater frequency than the Canadian mean. Students in Quebec relied on these strategies the least (Table 2.41; Appendix A.2.9.2).

TABLE 2.41 Comparison of Canadian and provincial results, reading strategies index

Above* the Canadian mean	Similar to the Canadian mean	Below* the Canadian mean
Saskatchewan, Manitoba, Ontario, Nova Scotia, Newfoundland and Labrador	British Columbia, Alberta, New Brunswick, Prince Edward Island	Quebec

*Denotes significant difference

The results for this index by language of the school system are shown in Table 2.42. For anglophone schools, the results for all provinces are similar to the Canadian English mean, except for Prince Edward Island, where students reported less frequent use of the reading strategies that make up this index. Students in francophone schools in Saskatchewan, Manitoba, Ontario, and Nova Scotia reported using these strategies at a higher frequency than the Canadian mean (Appendix A.2.9.3).

TABLE 2.42 Comparison of Canadian and provincial results by language of the school system, reading strategies index

Anglophone school systems		
Above the Canadian English mean	**Similar to the Canadian English mean**	**Below* the Canadian English mean**
	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Newfoundland and Labrador	Prince Edward Island
Francophone school systems		
Above* the Canadian French mean	**Similar to the Canadian French mean**	**Below the Canadian French mean**
Saskatchewan, Manitoba, Ontario, Nova Scotia	British Columbia, Alberta, Quebec, New Brunswick	

*Denotes significant difference

Within provinces, there is no significant difference between the two language systems for this index in Alberta, Saskatchewan, Manitoba, and Nova Scotia; anglophone schools scored higher than francophone schools on this index in all other provinces for which reliable data are available (Table 2.43; Appendix A.2.9.3).

TABLE 2.43 Summary of provincial results by language of the school system, reading strategies index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
British Columbia, Ontario, Quebec, New Brunswick		Alberta, Saskatchewan, Manitoba, Nova Scotia

With respect to gender, results for this index are similar to the Canadian means for most provinces, as shown in Table 2.44. Girls in Ontario and Newfoundland and Labrador scored above the Canadian mean for girls, and boys in Saskatchewan and Manitoba scored above the Canadian mean for boys (Appendix A.2.9.4).

TABLE 2.44 Comparison of Canadian and provincial results by gender, reading strategies index

Girls		
Above* the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below* the Canadian mean for girls**
Ontario, Newfoundland and Labrador	British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Nova Scotia, Prince Edward Island	Quebec
Boys		
Above* the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below* the Canadian mean for boys**
Saskatchewan, Manitoba	British Columbia, Alberta, Ontario, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador	Quebec

*Denotes significant difference

Across all provinces, girls scored significantly higher than boys on this index (Table 2.45; Appendix A.2.9.4).

TABLE 2.45 Summary of provincial results by gender, reading strategies index

Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
All provinces		

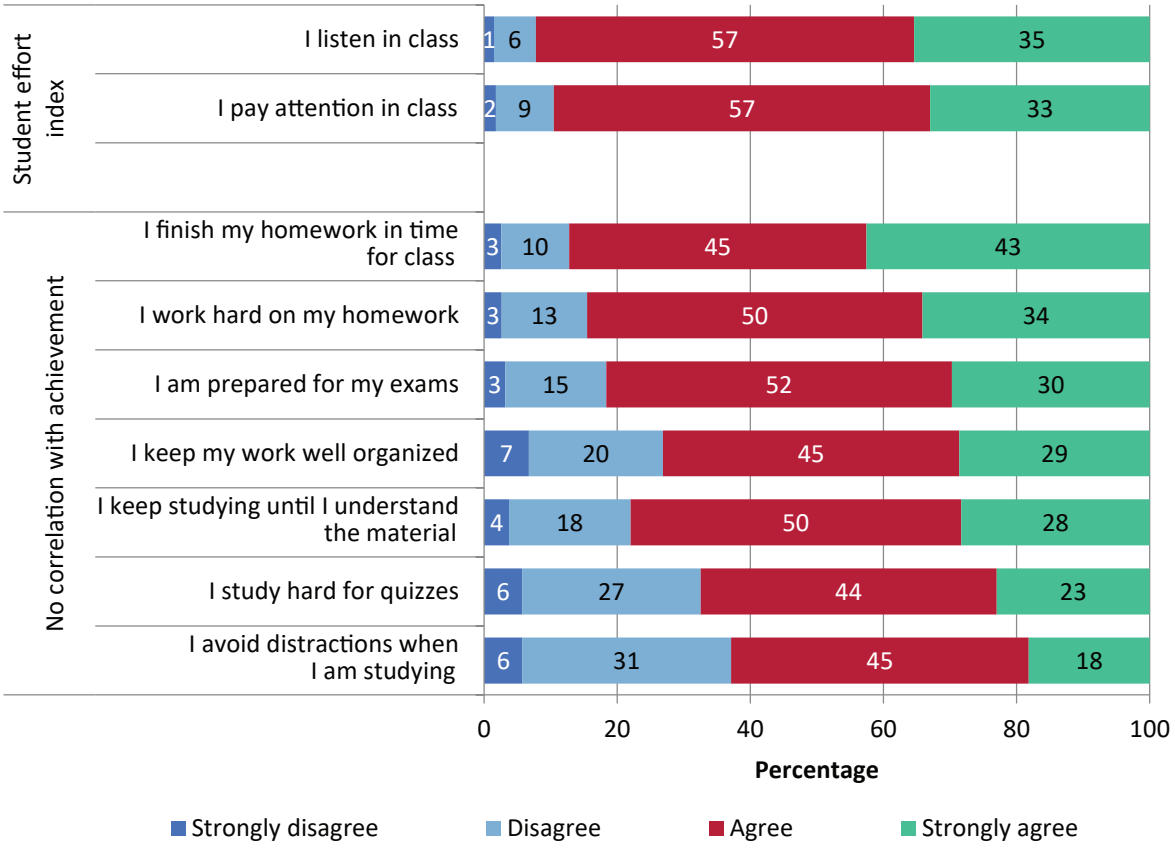
Student effort

Description of the index

The relationship between instructional time and student achievement is influenced by a wide variety of factors, including the curriculum, instructional approaches, and student engagement and motivation. It is difficult to develop precise measures related to this item because the amount of time and effort actually spent on learning tasks and the efficiency of learning is difficult to determine. Despite the difficulty in studying its effects, learning time remains important when considering students' opportunity to learn and the effort they put into their learning.

In order to characterize student effort in their language arts class, students were asked to indicate the extent to which they agreed with nine statements about their behaviour in class. These questions used a four-point frequency scale, as shown in Figure 2.29. Only two of these items—those related to listening and paying attention in class—were correlated with reading achievement and were thus used to create the "student effort" index. The remaining items are included as descriptive information (Appendix A.2.10).

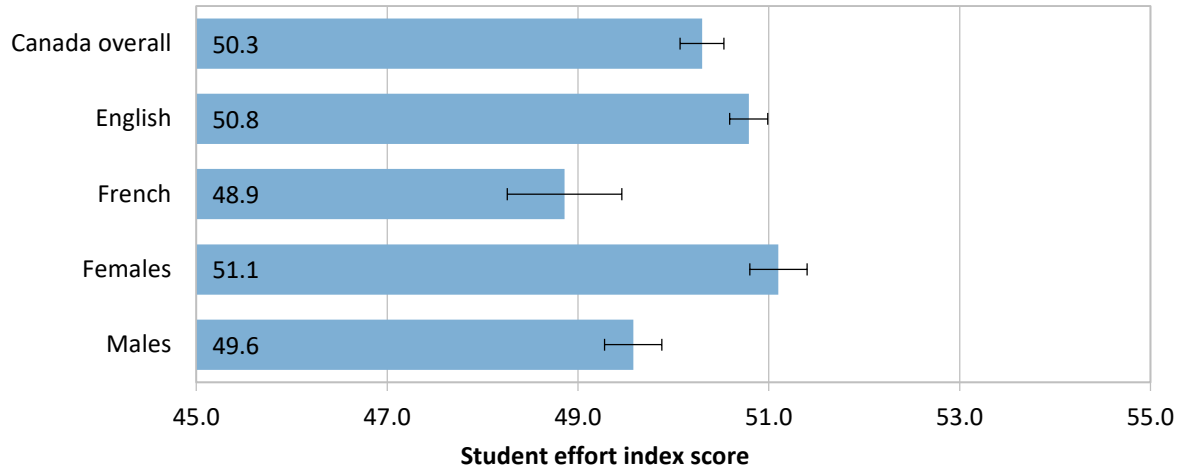
FIGURE 2.29 Percentage of students by their responses to questionnaire items related to student effort in language arts class and the student effort index



Results for the student effort index

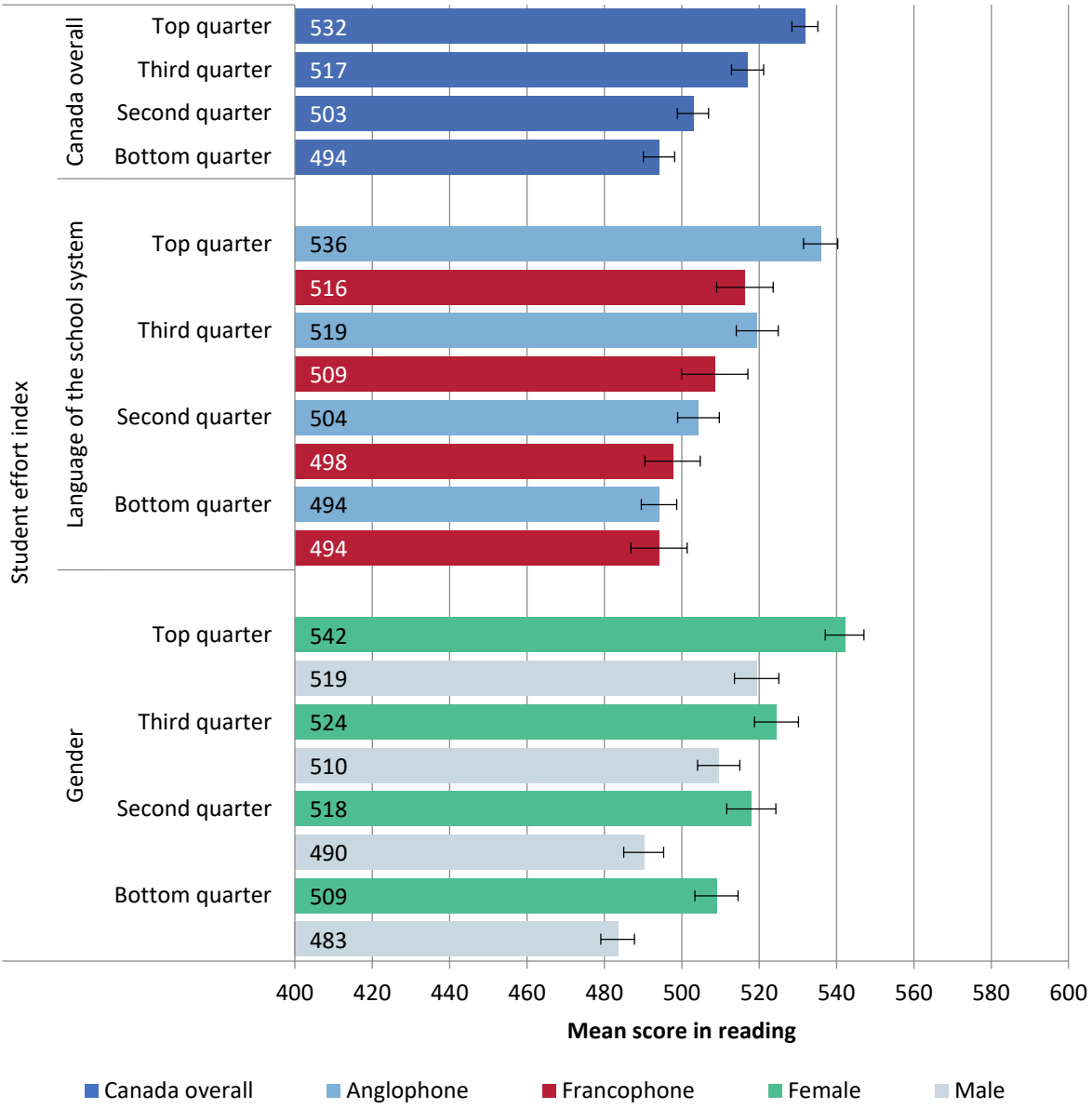
The pan-Canadian results for this index are shown in Figure 2.30. The scores in this index are highest for students in anglophone school systems and for girls (Appendices A.2.10.2, A.2.10.3, and A.2.10.4).

FIGURE 2.30 Results for the student effort index



Students in the top quarter of the student effort index reported a greater tendency to listen and pay attention in class than those students in the bottom quarter of this index. Unsurprisingly, there is, as shown in Figure 2.31, a positive, linear correlation between this index and reading achievement. Students who agreed most strongly with the statements that they listen and pay attention in class attained the highest mean scores in reading in PCAP 2016 (Appendix A.2.10.1).

FIGURE 2.31 Relationship between the student effort index and reading achievement in Canada overall and by language of the school system and gender



According to the scores for this index, student in Manitoba and Ontario put more effort into their language arts classes than did their counterparts in other provinces (Table 2.24; Appendix A.2.10.2).

TABLE 2.46 Comparison of Canadian and provincial results, student effort index

Above* the Canadian mean	Similar to the Canadian mean	Below* the Canadian mean
Manitoba, Ontario	British Columbia, Alberta, Saskatchewan, New Brunswick, Newfoundland and Labrador	Quebec, Nova Scotia, Prince Edward Island

*Denotes significant difference

Table 2.47 presents the index results by language of the school system. In anglophone schools, scores were similar to the Canadian English mean in half of the provinces, while the other provinces scored below that mean. In francophone schools, students in British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, and New Brunswick scored above the Canadian French mean for this index (Appendix A.2.10.3).

TABLE 2.47 Comparison of Canadian and provincial results by language of the school system, student effort index

Anglophone school systems		
Above the Canadian English mean	**Similar to the Canadian English mean**	**Below* the Canadian English mean**
	British Columbia, Alberta, Manitoba, Ontario, Quebec	Saskatchewan, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador
Francophone school systems		
Above* the Canadian French mean	**Similar to the Canadian French mean**	**Below the Canadian French mean**
British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick	Quebec, Nova Scotia	

*Denotes significant difference

The results were similar between the two language systems in most provinces. However, higher effort in reading was reported by students in anglophone schools in Quebec and in francophone schools in New Brunswick (Table 2.48; Appendix A.2.10.3).

TABLE 2.48 Summary of provincial results by language of the school system, student effort index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
Quebec	New Brunswick	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Nova Scotia

Table 2.49 presents the student effort index results by gender. Girls in the majority of provinces scored at the Canadian mean for girls, except in Quebec and Nova Scotia, where the results were below that mean. Manitoba boys scored above the Canadian mean for boys, while boys in Quebec and Prince Edward Island scored below that mean (Appendix A.2.10.4).

TABLE 2.49 Comparison of Canadian and provincial results by gender, student effort index

Girls		
Above the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below* the Canadian mean for girls**
	British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Prince Edward Island, Newfoundland and Labrador	Quebec, Nova Scotia
Boys		
Above* the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below* the Canadian mean for boys**
Manitoba	British Columbia, Alberta, Saskatchewan, Ontario, New Brunswick, Nova Scotia, Newfoundland and Labrador	Quebec, Prince Edward Island

*Denotes significant difference

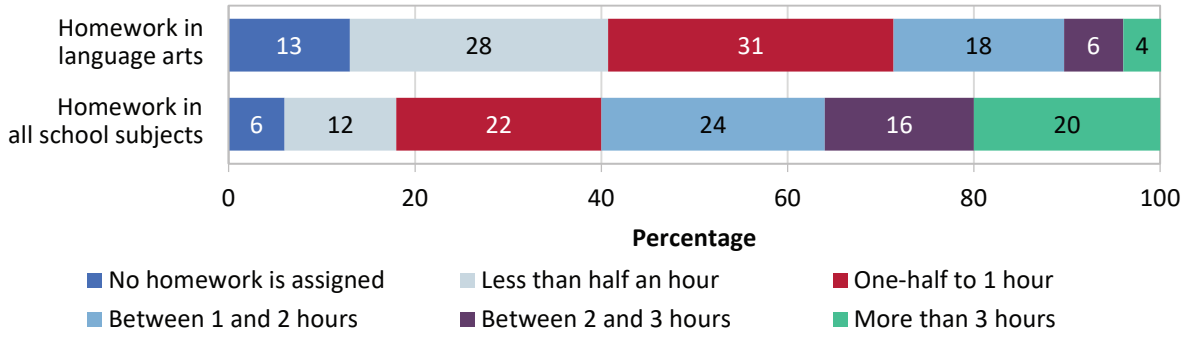
Girls reported higher effort in reading than boys in all provinces except Quebec and Prince Edward Island, where there is no gender difference for this index (Table 2.50; Appendix A.2.10.4).

TABLE 2.50 Summary of provincial results by gender, student effort index

Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, New Brunswick, Nova Scotia, Newfoundland and Labrador		Quebec, Prince Edward Island

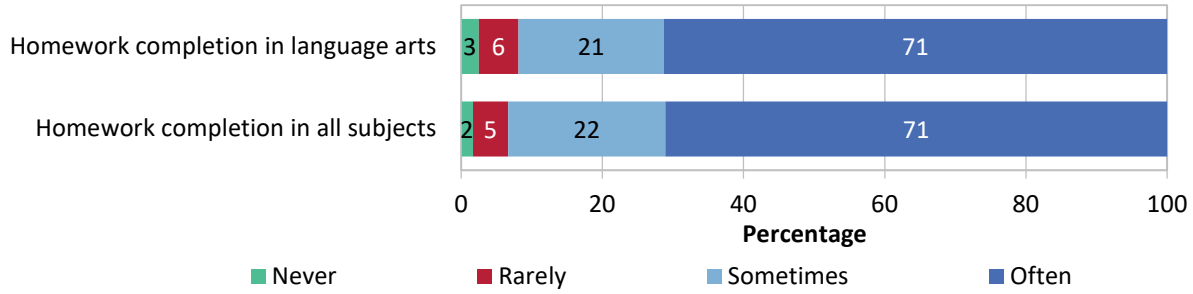
Also connected to the factor of student effort is the issue of homework. The PCAP student questionnaire asked about both the time and effort students put into their homework. First, students were asked how much time they spent every week on homework in all their school subjects and specifically on language arts. As shown in Figure 2.32, most students reported spending less than 1 hour weekly on language arts and between 30 minutes and 3 hours doing homework each week in all their school subjects (Appendix A.2.10.5).

FIGURE 2.32 Amount of time students spend on homework



Second, the questionnaire measured student effort on homework by asking students how often they completed their homework, using a four-point scale from "never" to "often." Less than 10 per cent of students reported never or rarely completing their homework in both language arts and in all their school subjects, while 71 per cent reported often completing their homework (Figure 2.33; Appendix A.2.10.6). In previous PCAP assessments, the amount of time that students spent on homework correlated with achievement scores in mathematics and science (CMEC, 2012; O'Grady & Houme, 2015). However, this was not the case in PCAP 2016, which revealed no meaningful correlation between homework and reading achievement.

FIGURE 2.33 Frequency of homework completion by students



While it is generally accepted that time required for homework and independent study necessarily increases as a student progresses into higher grades, the benefits of homework as well as the type and amount of homework to assign have been ongoing sources of controversy (Baş, Şentürk, & Ciğerci, 2017; Galloway, Conner, & Pope, 2013; Zuzanek, 2009). Meta-analyses of homework studies find small positive overall relationships between homework and achievement but also note many variables that influence this relationship, including the socioeconomic status of the school, cultural differences, student ability, subject area, and parental involvement (Baş et al., 2017; Cooper, Robinson, & Patall, 2006; Dettmers, Trautwein, & Lüdtke, 2009).

Out-of-school activities

Description of the index

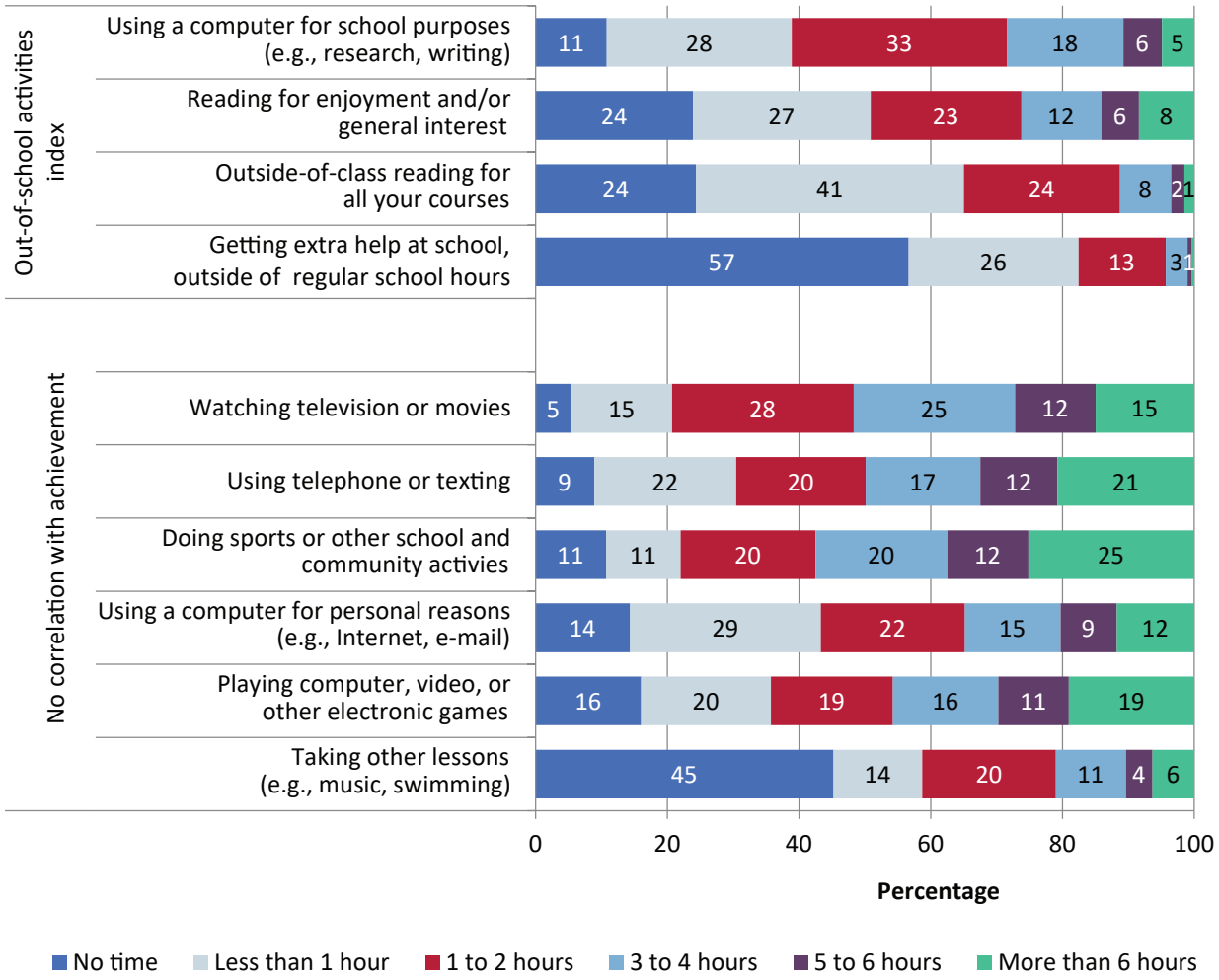
Student's use of time outside of the classroom, including the time they devote to studying and independent reading, reflects their interests and priorities. Time outside the classroom also includes learning opportunities through structured out-of-school activities such as sports or community activities as well as social interactions and technology-based entertainment. Studies have found that structured extracurricular activities have a positive relationship with students' school engagement and academic achievement (Galloway et al., 2013; Knifsend & Graham, 2012).

An important objective of language instruction is to build a cycle of student engagement and independent reading practice (Gambrell et al., 2011; OECD, 2016a). As students become stronger readers, they are more likely to find reading interesting and enjoyable. Enjoyment and interest mean that students are more likely to read and to strengthen their reading skills. In early literacy, considerable emphasis is placed on building home-school partnerships that will encourage independent reading outside of school hours (Merga, 2015). As students get older, independent content reading becomes an important component of studying for school subjects (Guthrie et al., 2012).

A set of 10 items was used to explore how students use their time outside of school. Four of these items were found to be related to reading achievement, and they form the "out-of-school activities" index. Half of students reported that they read for enjoyment or general interest one or more hours each week, while 35 per cent of student reported course-related reading of one or more hours each week. The activity that they engaged in the least frequently involved getting extra help in their studies (Figure 2.34; Appendix A.2.11).

Although the remaining six items did not show a significant relationship with student achievement, it is interesting to discover how students in this age group use their time when they are not in the classroom. Students were asked to report on a six-point scale, from "no time" to "more than six hours," the number of hours in an average week that they usually spent doing a variety of activities. As Figure 2.34 shows, 25 per cent of students reported that they spent more than six hours a week on sports and other community activities, and almost 60 per cent of all students reported that they participated in such activities three or more hours per week. Many students were involved with other lessons, such as music or swimming lessons, and over 41 per cent of students reported that they were involved with out-of-school lessons for at least an hour weekly (Appendix A.2.11).

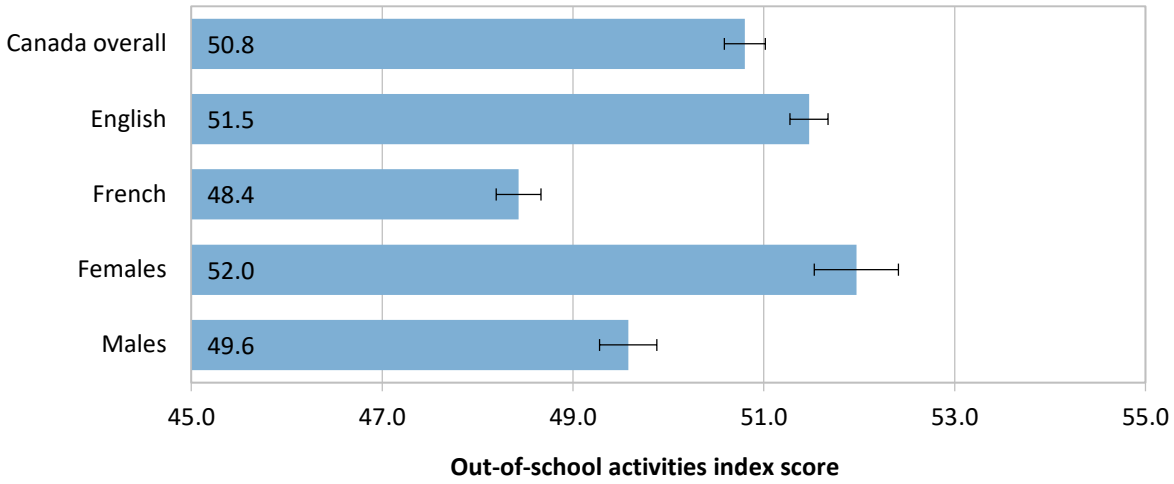
FIGURE 2.34 Percentage of students by their responses to questionnaire items related to out-of-school time and the out-of-school activities index



Results for the out-of-school activities index

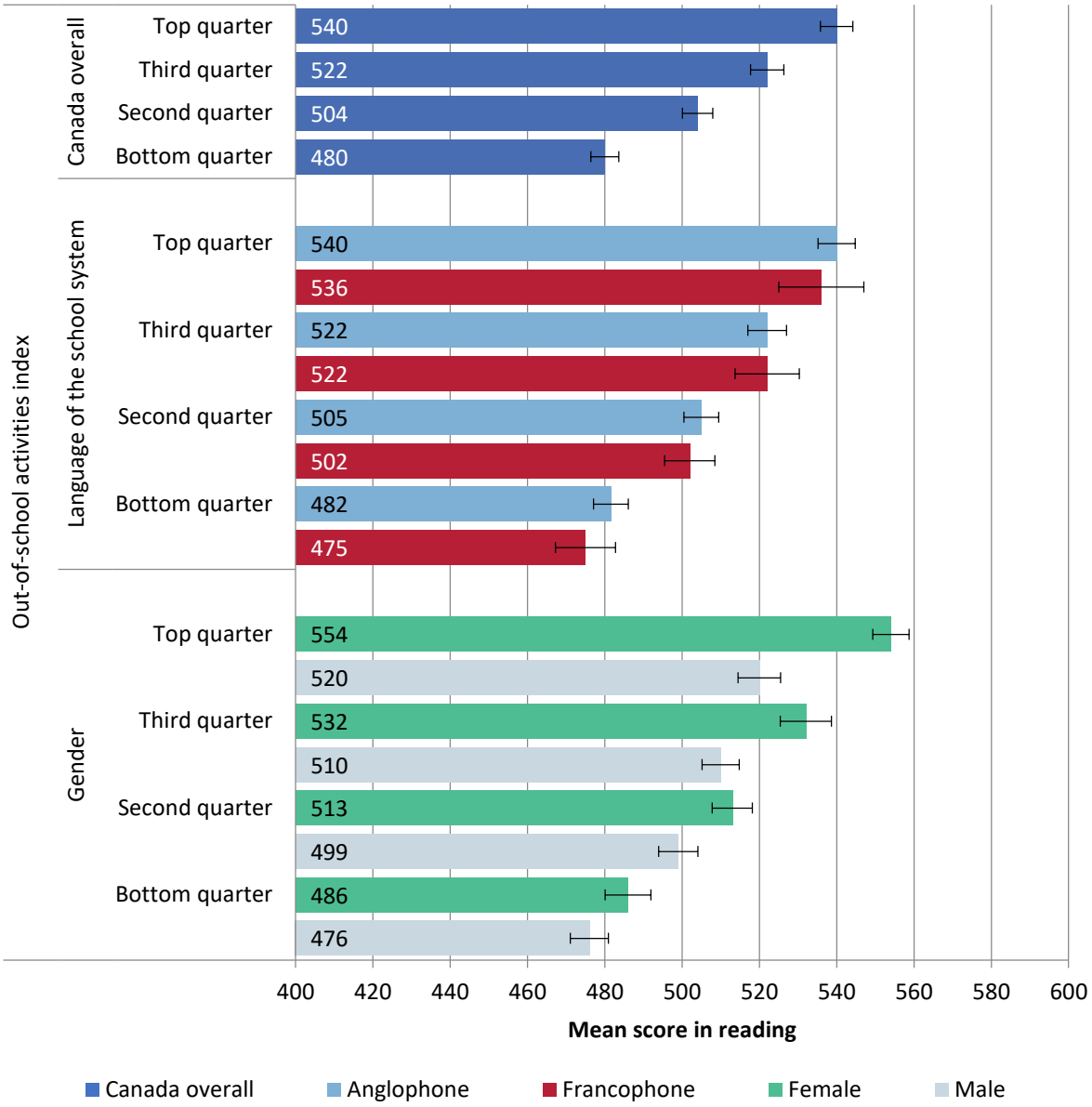
Figure 2.35 presents the pan-Canadian results for this index. Significant differences are evident between the two language systems and by gender (Appendices A.2.11.2, A.2.11.3, and A.2.11.4).

FIGURE 2.35 Results for the out-of-school activities index



The top quarter of this index represents students who reported that they use more of their extended learning time for reading and other school-related activities compared to those students in the bottom quarter, who have a tendency to use less out-of-class time for such activities. Figure 2.36 shows a positive, linear relationship between the scores on this index and reading achievement in each of the three categories (Appendix A.2.11.1).

FIGURE 2.36 Relationship between the out-of-school activities index and reading achievement in Canada overall and by language of the school system and gender



Students who spent more of their out-of-school time reading and studying achieved higher mean scores in reading.

As shown in Table 2.51, British Columbia and Ontario students reported that more of their out-of-class time is spent on reading and school-related activities compared to the Canadian mean for this index. Of the other provinces, only Alberta scored similar to the Canadian mean, with the rest scoring below that mean (Appendix A.2.11.2).

TABLE 2.51 Comparison of Canadian and provincial results, out-of-school activities index

Above* the Canadian mean	Similar to the Canadian mean	Below* the Canadian mean
British Columbia, Ontario	Alberta	Saskatchewan, Manitoba, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador

*Denotes significant difference

Index scores higher than the respective Canadian means were found in anglophone schools in British Columbia and in francophone schools in British Columbia, Alberta, Saskatchewan, Manitoba, and Ontario (Table 2.52; Appendix A.2.11.3).

TABLE 2.52 Comparison of Canadian and provincial results by language of the school system, out-of-school activities index

Anglophone school systems		
Above* the Canadian English mean	**Similar to the Canadian English mean**	**Below* the Canadian English mean**
British Columbia	Alberta, Ontario, Quebec	Saskatchewan, Manitoba, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador
Francophone school systems		
Above* the Canadian French mean	**Similar to the Canadian French mean**	**Below* the Canadian French mean**
British Columbia, Alberta, Saskatchewan, Manitoba, Ontario	Quebec, Nova Scotia	New Brunswick

*Denotes significant difference

The results by language of the school system were quite variable within provinces (Table 2.53; Appendix A.2.11.3).

TABLE 2.53 Summary of provincial results by language of the school system, out-of-school activities index

Anglophone schools scored significantly higher than francophone schools	Francophone schools scored significantly higher than anglophone schools	No significant difference between school systems
Quebec, New Brunswick	Alberta, Saskatchewan, Nova Scotia	British Columbia, Manitoba, Ontario

As shown in Table 2.54, provincial results on this index for girls and boys were at or above the respective Canadian means for girls in British Columbia, Alberta, Manitoba, and Ontario and for boys in British Columbia, Alberta, and Ontario (Appendix A.2.11.4).

TABLE 2.54 Comparison of Canadian and provincial results by gender, out-of-school activities index

Girls		
Above* the Canadian mean for girls	**Similar to the Canadian mean for girls**	**Below* the Canadian mean for girls**
British Columbia	Alberta, Manitoba, Ontario	Saskatchewan, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador
Boys		
Above* the Canadian mean for boys	**Similar to the Canadian mean for boys**	**Below* the Canadian mean for boys**
British Columbia, Ontario	Alberta	Saskatchewan, Manitoba, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador

*Denotes significant difference

This index showed that, in all provinces, girls have a greater tendency than boys to read and spend time doing other school-related activities outside of school hours (Table 2.55; Appendix A.2.11.4).

TABLE 2.55 Summary of provincial results by gender, out-of-school activities index

Girls scored significantly higher than boys	Boys scored significantly higher than girls	No significant difference between girls and boys
All provinces		

Summary

Of the 11 indices analyzed in this chapter, 8 show positive relationships with achievement in reading. Higher mean scores in reading were found for students with high scores in the following indices: early home literacy, attitude toward reading, reading self-efficacy, motivation to read, classroom reading resources, engagement in reading, student effort, and out-of-school activities. The general pattern for each of these indices is that students who scored in the top quarter of the index attained the highest scores in reading, while those with scores in the bottom quarter had the lowest reading performance. This finding was consistent when the indices were examined for Canada overall, by language of the school system, and by gender.

Significant variation in index scores is evident between students who attended anglophone and francophone schools. Student in anglophone schools have index scores similar to those of Canadian students overall for most of the eight indices correlated with higher reading performance. In Canada overall, students in anglophone school systems scored higher than their counterparts in francophone school systems on all of these eight indices except for the motivation to read index, where there was no significant difference between the two language systems.

The index scores for girls were significantly higher than those for boys on all eight indices that had a positive relationship with reading achievement.

Three student indices showed a negative relationship with reading performance: attribution of success, negative perceptions of reading, and reading strategies. The general pattern for these indices was opposite to the other eight indices: students who scored in the top quarter of the index attained the lowest scores in reading. This finding was consistent when the indices were examined for Canada overall, by language of the school system, and by gender. Students in francophone school systems scored higher than those in anglophone school systems, and boys scored higher than girls on two of the three indices.

Taken together, these 11 indices account for 33 per cent of the variation in student reading performance.

3 The Context of Learning: Characteristics of Classrooms, Teachers, and Schools

This chapter describes the characteristics of Canadian Grade 8/Secondary II classrooms and, where they are meaningful, relationships between these characteristics and student achievement in reading. The first part of this chapter focuses on a number of classroom characteristics, such as class size, additional support in the classroom, the presence of substitute teachers, and the number of lost instructional days. The next section, on language arts pedagogy, provides data gleaned from the PCAP teacher questionnaire related to:

- differentiating instruction;
- the use of accommodations, adaptations, and/or modifications in the classroom;
- classroom groupings of students;
- teaching and learning activities in the language arts classroom;
- the time spent on reading instruction in the classroom;
- teachers' reading choices for their students;
- the types of assignments in language arts;
- the amount of homework; and
- the types of assessment and assessment criteria used by teachers in the classroom.

The final section of this chapter describes the school environment for participating Grade 8/Secondary II students, starting with a number of demographic attributes of the schools (number of students in the school, the size of the school community, the different grade configurations in schools, and data on public and private schools and on the diversity of the school population). This is followed by details on schools' instructional time, their facilities and resources, as well as the enrichment and extracurricular activities they offer. Finally, specific factors related to the school climate are described, such as the students' sense of belonging, student absenteeism and related skipping and tardiness, and characteristics related to the psychological and physical safety of students in the school.

Classroom characteristics

Canadian classrooms vary in size and composition; there is no such thing as a "typical" or average classroom in Canada. A large urban school may have multiple sections of a Grade 8/Secondary II class, while small schools, typically in rural and remote areas, may have multiple grade levels in a single classroom. The questionnaires accompanying the PCAP 2016 assessment asked teachers, students, and school administrators questions in order to capture the complexity and breadth of their classroom and school environments.

Class size

Class-size reduction is a topic of importance among stakeholders in education. For provinces, class sizes are one of the most important determinants of education budgets. To reduce class sizes, more

teachers are required, with a concomitant increase in budgets to cover additional teachers' salaries and benefits. Parents prefer smaller classes because they believe that their children will receive more individualized attention from their teachers. Teachers, teachers' unions, and administrators prefer small classes for the same reasons as parents, but also because they are influenced by issues related to managing student behaviour and teacher workload.

Class size is also a controversial topic because the research on its relationship to student achievement is positive in some settings and mixed or not discernable in other circumstances (Whitehurst & Chingos, 2011). Further, class sizes on their own do not indicate the quality of learning or of the daily, lived experiences of teachers and students in the classroom.

In PCAP 2016, as was the case in the previous cycle, class sizes reported by teachers varied considerably, both by language of the school system and by province. In Canada overall, the modal class size was between 25 and 29 students. More classes in francophone school systems had class sizes of 30 students or more. Very small classes participating in PCAP are rare: 3 per cent of language arts classes in anglophone school systems and 4 per cent of those in francophone school systems had very small classes of fewer than 15 students. Table 3.1 displays class sizes by province for both language systems. In anglophone school systems, Alberta had the highest proportion of classes with 30 or more students (37 per cent); in francophone school systems, Quebec had the same proportion of classes of this size. Compared to PCAP 2013, responses to the 2016 questionnaires revealed wider variations in class size across provinces, possibly due to the major domains in the respective assessments (science in 2013, language arts in 2016), suggesting that class sizes can vary by subject area at the Grade 8/ Secondary II level.

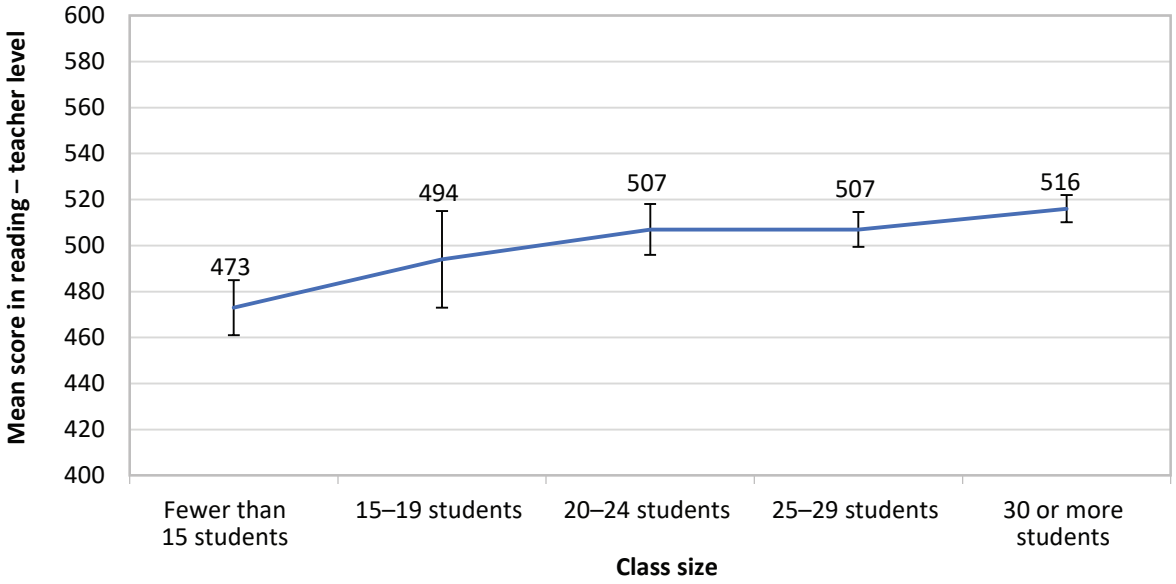
TABLE 3.1 Percentage of students by class size, by language of the school system

	Anglophone school systems					Francophone school systems				
	Fewer than 15 students	15–19 students	20–24 students	25–29 students	30 or more students	Fewer than 15 students	15–19 students	20–24 students	25–29 students	30 or more students
BC	3.1	6.4	12.6	51.6	26.3	12.5	37.5	12.5	37.5	0.0
AB	6.6	9.0	17.7	29.9	36.8	16.0	32.0	24.0	24.0	4.0
SK	2.9	30.2	27.3	24.5	15.1	--	--	--	--	--
MB	7.1	16.8	39.1	29.8	7.2	28.6	9.5	38.1	4.8	19.0
ON	1.8	8.4	28.8	47.4	13.7	4.0	12.4	27.5	28.2	27.8
QC	7.5	19.8	18.9	48.9	4.9	3.0	2.7	18.9	38.1	37.3
NB	4.7	12.9	40.3	35.6	6.4	5.9	22.5	27.5	38.2	5.9
NS	3.8	18.0	23.9	29.8	24.5	23.5	23.5	23.5	11.8	17.6
PE	7.4	13.2	25.0	35.3	19.1	--	--	--	--	--
NL	10.3	21.9	29.2	27.5	11.2	--	--	--	--	--
CAN	**3.5**	**10.6**	**24.8**	**42.3**	**18.8**	**4.0**	**5.9**	**20.9**	**35.9**	**33.3**

Note: Due to small sample sizes, results for students in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

When class size is considered in relation to mean scores in reading, the relationship with achievement is positive and linear: students in larger classrooms achieve higher reading scores. This is consistent with the previous PCAP 2007 assessment of reading. However, as was mentioned in the 2007 PCAP contextual report (CMEC, 2009), care must be taken in interpreting this finding, as class size may be confounded with many other factors such as school size, school location, and school resources (Figure 3.1; Appendix A.3.1).

FIGURE 3.1 Relationship between class sizes and reading achievement



Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

Additional support in the classroom

Class sizes on their own may not indicate student-to-adult ratios, which can be altered when adults other than the teacher are present to assist in the classroom and, ideally, educational assistants are present to provide additional support to students with special needs. Table 3.2 shows that a majority of Grade 8/Secondary II language arts teachers (55 per cent) were in classes with no adults present besides themselves, while 10 per cent had another adult with them most or all of the time. Large differences are evident across provinces: more than 60 per cent of teachers in Ontario and Quebec stated that another adult was never present in the class; in the four Atlantic provinces and Manitoba, this proportion is below 40 per cent. In addition, more than one in five teachers in British Columbia and Manitoba stated that there was another adult with them in the language arts classroom most or all the time.

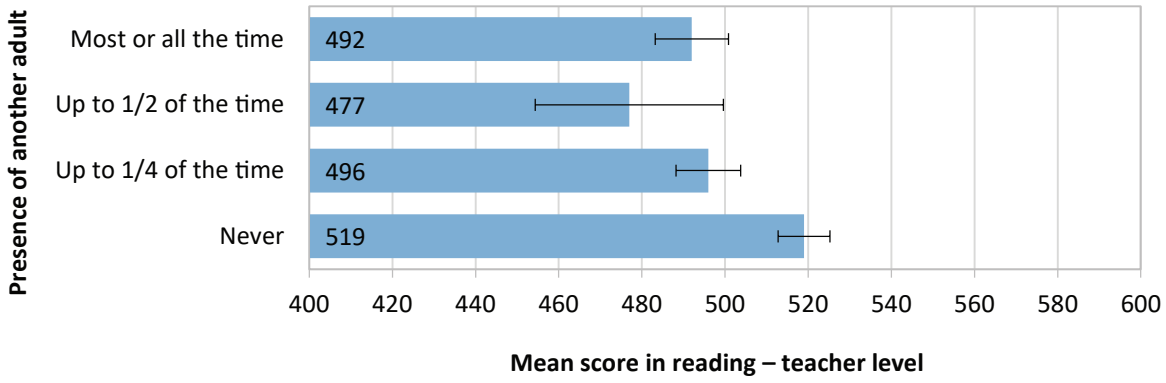
TABLE 3.2 **Percentage of teachers indicating that other adults were present in their language arts class**

	Never	Up to 1/4 of the time	Up to 1/2 of the time	Most or all of the time
BC	40.2	25.2	10.2	24.3
AB	42.5	31.5	8.6	17.4
SK	53.2	18.4	13.5	14.9
MB	39.0	25.9	14.9	20.2
ON	64.5	27.9	4.8	2.8
QC	68.5	23.4	5.3	2.7
NB	34.4	37.3	11.0	17.4
NS	37.7	44.1	8.7	9.5
PE	36.8	55.9	1.5	5.9
NL	39.0	40.9	8.7	11.3
CAN	**55.3**	**27.9**	**7.2**	**9.6**

Note: Percentages may not add up to 100 due to rounding.

As shown in Figure 3.2, students in language arts classrooms where there was never another adult besides the teacher present achieved a higher mean score than those where another adult was present for part or all of the school day (Appendix A.3.2). Again, as was the case with class size, this finding needs to be interpreted with caution. Based on these results, it cannot be concluded that the presence of another adult in the classroom "causes" lower student achievement. In fact, the relationship is probably the inverse, as classrooms with lower average reading achievement may be composed of students requiring additional support.

FIGURE 3.2 **Relationship between the presence of another adult in the language arts classroom and reading achievement**



Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

Class composition

Multi-grade classrooms represent additional challenges for teachers needing to address the diverse learning needs of their students. Among other important distinctions between urban and rural schools, rural schools are more likely to have multi-grade classrooms, given their smaller enrolments. Although in Canada, for the most part, multi-grade classrooms arise out of necessity rather than choice, most research has found that they are not detrimental to student achievement (Ares Abalde, 2014). Table 3.3 displays teachers' reports on the number of grades in their language arts classrooms. Across Canada, more than one-third of classrooms have multiple grades. Teachers in Saskatchewan, Manitoba, and Ontario reported the most multi-grade classrooms, while those in Quebec and Nova Scotia reported the fewest. Of note is that over 15 per cent of teachers in Manitoba, Ontario, and New Brunswick reported that they are teaching three or more grade levels in their classrooms.

TABLE 3.3 Number of grade levels in language arts classrooms

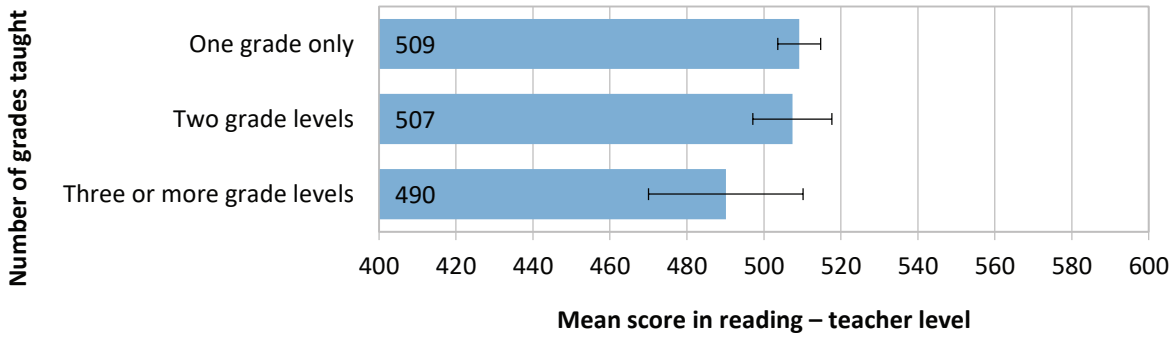
	One grade only	Two grade levels	Three or more grade levels
	%	%	%
BC	69.7	19.2	11.1
AB	74.0	15.0	11.0
SK	51.1	38.3	10.7
MB	54.2	30.5	15.3
ON	50.2	34.2	15.7
QC	88.0	4.0	8.0
NB	67.2	15.1	17.6
NS	84.1	--	8.2
PE	69.6	--	--
NL	83.2	--	--
CAN	**62.8**	**24.3**	**13.0**

Note: Categories with a very small number of responses are not reported.

Multiple grades in the same classroom are only one among many potential sources of diversity in Canadian classrooms. While there are many reasons to value this diversity, it can pose challenges for teachers who lack the time, resources, and/or expertise to meet the needs of a heterogeneous group of students.

Consistent with results from the 2007 PCAP assessment, when reading was also the major domain (CMEC, 2009), there is no statistically significant difference in reading achievement between single-grade classrooms and those where two grades are taught. However, students in classrooms where more than two grades at taught achieved lower average scores (Figure 3.3; Appendix A.3.3).

FIGURE 3.3 Reading achievement in single-grade and multi-grade classrooms



Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

Students in larger schools, those in larger classrooms, and those with no adult other than the teacher in the classroom had higher achievement in reading in PCAP 2016. Students in classrooms where more than two grades are taught had lower results than those where one or two grades are taught.

Substitute teachers

School administrators and school districts must strike a healthy balance between providing a structured learning environment and a culture fostering high academic expectations while accommodating staffing and scheduling issues such as the absence of the regular teacher or interruptions from regular instructional time.

The presence of a substitute teacher is one potential source of disruption in student routines. Substitute teachers have appropriate licences and credentials to fill in when full-time teachers are sick or are using professional development days, but they may not know the students and the curriculum as well as the regular teacher they are replacing. Further, qualified teachers in some fields may be difficult to find, an example being the current shortage of French-as-a-second-language teachers (Office of the Commissioner of Official Languages, 2019).

At the pan-Canadian level, the majority (54 per cent) of teachers who participated in PCAP 2016 reported that their classes were taught by a substitute teacher for five or fewer days out of the school year (Table 3.4). Quebec has the largest proportion of teachers reporting both the least number of days and the most number of days taught by a substitute teacher. Over one-quarter of Grade 8 teachers in Manitoba reported that their class was taught by a substitute teacher for more than 10 days.

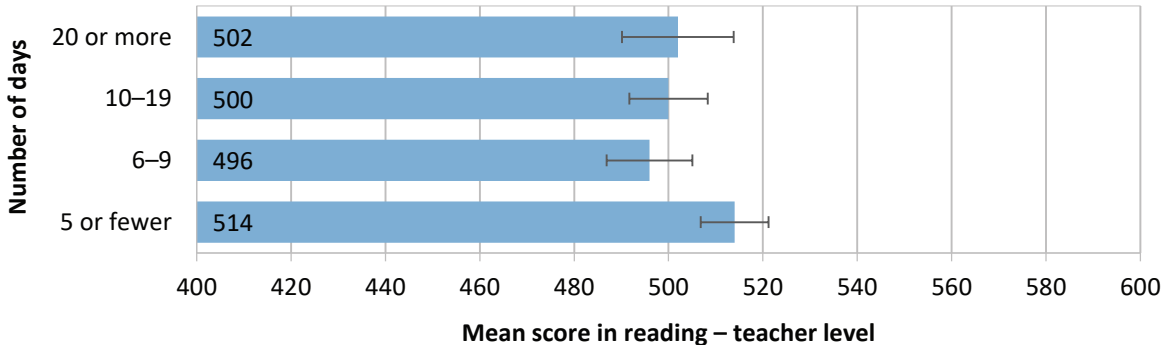
TABLE 3.4 Percentage of teachers by the number of days taught by a substitute

	5 or fewer days	6–9 days	10 –19 days	20 days or more
BC	58.3	29.7	3.1	9.0
AB	50.1	28.4	13.0	8.5
SK	43.2	39.0	14.2	3.5
MB	41.0	32.7	17.9	8.4
ON	53.2	29.8	13.1	3.9
QC	69.2	13.8	5.9	11.1
NB	51.5	30.0	7.9	10.6
NS	33.9	43.9	19.4	2.8
PE	39.1	37.7	20.3	2.9
NL	32.2	46.8	17.6	3.4
CAN	**53.7**	**28.7**	**11.2**	**6.4**

Note: Percentages may not add up to 100 due to rounding.

Figure 3.4 shows the relationship between reading achievement and the number of days that language arts classes were taught by someone other than the assigned teacher (Appendix A.3.4). As was the case with science achievement in PCAP 2013, the relationship between the number of substitute teaching days and reading achievement is not conclusive and can be explained by a number of related factors, as described in the PCAP 2013 contextual report (O'Grady and Houme, 2015).

FIGURE 3.4 Relationship between the number of days taught by a substitute or alternate teacher and reading achievement



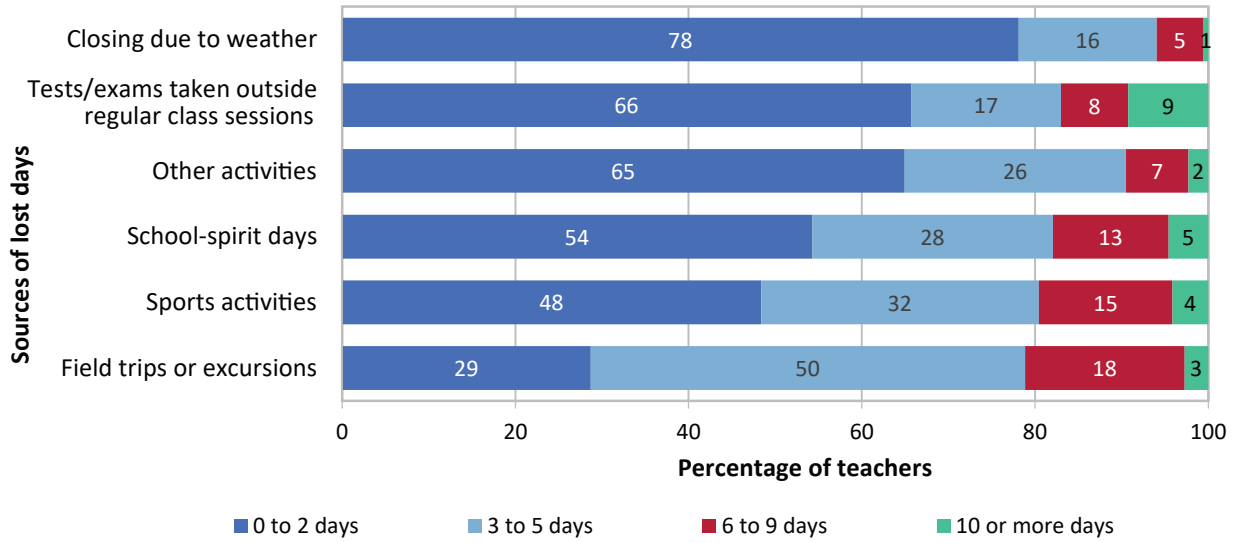
Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

Lost instructional days

Instructional time and continuity of student learning may also be disrupted by planned school events like assemblies, and unplanned events like weather closure days. In most schools (a minimum of 79 per cent), language arts teachers reported that between zero and five instructional days had been lost in each category over the course of the school year (Figure 3.5; Appendix A.3.5). On average,

the largest number of days was lost to field trips or excursions and the least to school closing due to weather. The data do not show the total number of days lost for a given teacher or the extent to which these lost instructional days are voluntary or mandated.

FIGURE 3.5 Sources of lost instructional days in a school year



Note: Percentages may not add up to 100 due to rounding.

Language arts pedagogy

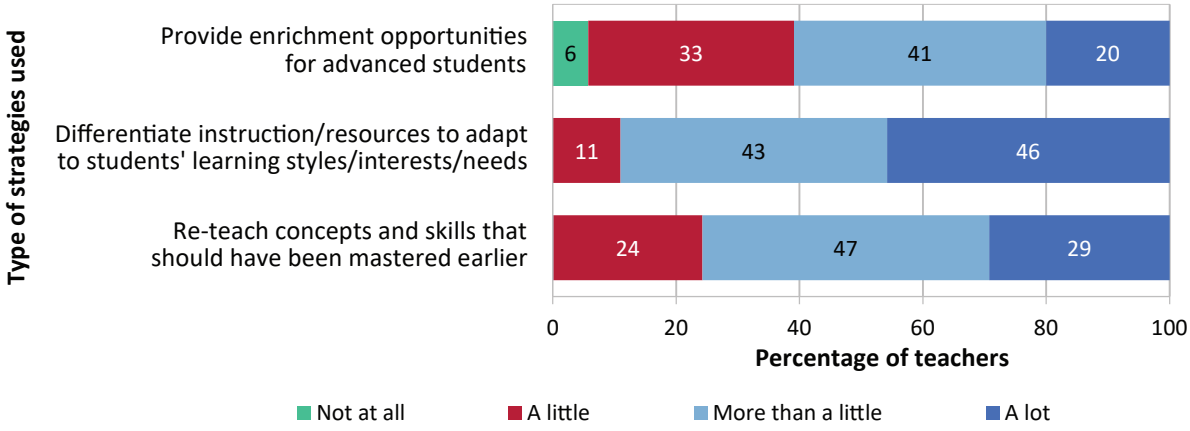
Independent reading is an essential component of language arts pedagogy (Gambrell, Marinak, Brooker, & McCrea-Andrews, 2011; Harrison, 2004). In the secondary grades, pedagogy is generally organized with the assumption that students are capable independent readers. Some adolescents, however, are "invisible" struggling readers, and since explicit instruction in reading declines after the primary grades, these students struggle not only in reading but in all their school work (Berkeley & Taboada Barber, 2015).

Differentiating instruction

A growing challenge for teachers is to meet the needs of a diverse array of learners in their classrooms. As noted above, multi-grade classrooms are one source of diversity (Table 3.3), as are students whose first language is not the language of instruction (Table 1.4). However, even if students in the same grade come from similar cultural and linguistic backgrounds, they can vary in their abilities and in their motivation to engage and achieve proficiency in language arts.

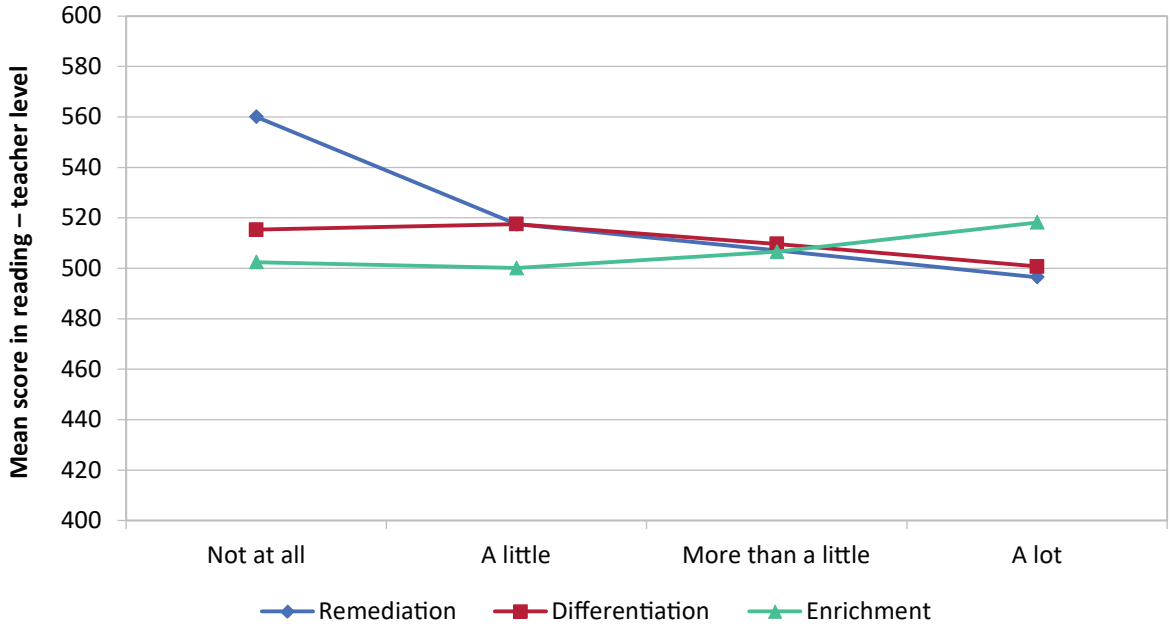
Based on the PCAP 2016 results, 12 per cent of Grade 8/Secondary II students in Canada did not meet the baseline level for reading (O'Grady, Fung, Servage, & Khan, 2018). According to Berkeley and Taboada Barber (2015), between 15 and 20 per cent of children and adolescents have some form of learning disability in reading, and teachers must adapt their teaching to the needs of these and other students. As shown in Figure 3.6, the vast majority of teachers use remediation, differentiation, and/or enrichment strategies "more than a little" or "a lot" to accommodate the needs of either struggling or advanced students (Appendix A.3.6).

FIGURE 3.6 Remediation, differentiation, and enrichment strategies in language arts classrooms



The relationship between these teaching strategies and reading achievement is shown in Figure 3.7. There is a negative relationship between remediation strategies and reading achievement, a weak but positive relationship for enrichment strategies, and virtually no relationship for differentiation strategies (Appendix A.3.6.1). These results are consistent with those from PCAP 2013, in which science was the major domain, suggesting that the relationship between the use of these strategies and achievement is not subject dependent. As noted in the PCAP 2013 contextual report (O'Grady & Houme, 2015), the relationship between these strategies and achievement does not assess their efficacy or imply cause and effect. It is merely a reflection of how teachers adapt their teaching to the specific needs of their students. For example, using more remediation strategies does not "cause" lower achievement. It is more likely to be a reflection that students with lower reading achievement require more remediation strategies.

FIGURE 3.7 Relationship between differentiating instruction strategies and reading achievement



Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

Use of accommodations, adaptations, and modifications

Table 3.5 provides further details about the strategies and resources that teachers draw on to differentiate instruction for students who need extra support in language arts. Teachers were asked about their use of a number of accommodation strategies in their classrooms. The list is not meant to be exhaustive, but it illustrates the different ways in which teachers try to adapt instruction to the needs of their students.

Close to 100 per cent of teachers provide extra time, and almost all (98 per cent) alter their teaching methods for students who need additional support. Over 85 per cent of teachers have used assistive technologies, special assistance in a specific language art skill, or program modifications. Two-thirds of teachers have used the support of an educational assistant. Two items pertained specifically to students' medical needs: 52 per cent of teachers have called on the help of a medical assistant, and 32 per cent have provided some form of medical attention to one or more students in their classes. For those methods that are not subject specific (e.g., more time in which to accomplish a task, program modifications), results are very consistent with those from PCAP 2013, suggesting that the use of these methods by teachers is not necessarily subject specific. There are, however, two notable differences: language arts teachers use more assistive technologies than do science teachers (88 per cent versus 63 per cent), and more students withdraw from class in language arts than in science (49 per cent versus 31 per cent).

TABLE 3.5 Accommodations, adaptations, and instructional modifications attempted by language arts teachers

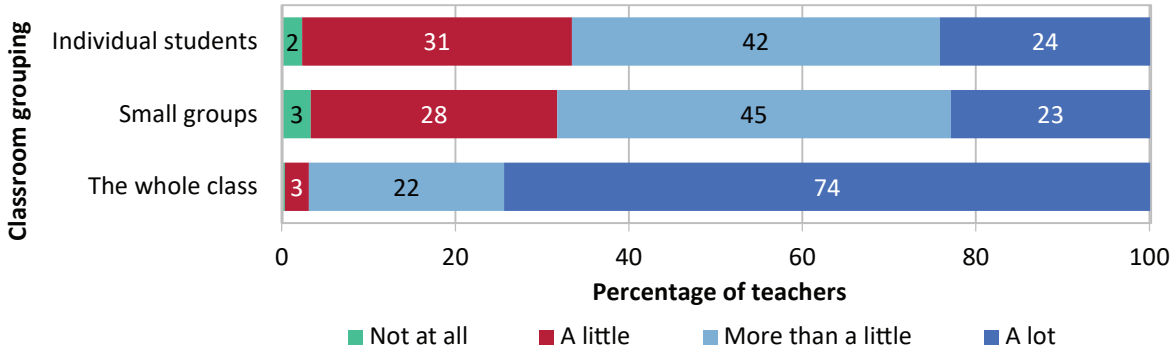
Accommodations, adaptations, or modifications	Percentage of teachers
More time in which to accomplish task	99.8
Adapted teaching methods	98.0
Assistive technologies	88.2
Program modifications	87.3
Special assistance: speaking, listening, reading, or writing	86.5
Help of an educational assistant	67.2
Help of a medical assistant	51.8
Withdrawal of student from class	49.3
Medical attention	32.0

Classroom grouping

In language arts classes, different groupings may be appropriate for different types of learning activities. For example, the whole class may listen to oral reading by the teacher or classmates, while silent reading in class is an individual activity. Group or pair work may be used for projects or other learning activities. Different combinations of group work and individual activities may be used as a strategy to differentiate learning.

Teachers who participated in PCAP 2016 were most likely to use whole-class instruction (Figure 3.8; Appendix A.3.7). Seventy-five per cent did this "a lot," and 22 per cent "more than a little." Ample use was still made of small-group and individual modes of instruction, with two-thirds of teachers using these "a lot" or "more than a little."

FIGURE 3.8 Classroom groupings used by teachers in language arts class



Teaching and learning activities in language arts classrooms

Students gain confidence and develop persistence in reading when they have a variety of strategies to draw upon (Guthrie, Wigfield, & You, 2012). In PCAP 2016, teachers were asked about the extent to which they emphasized an array of reading strategies at different stages of the reading process (see Table 3.6 for the list of strategies).

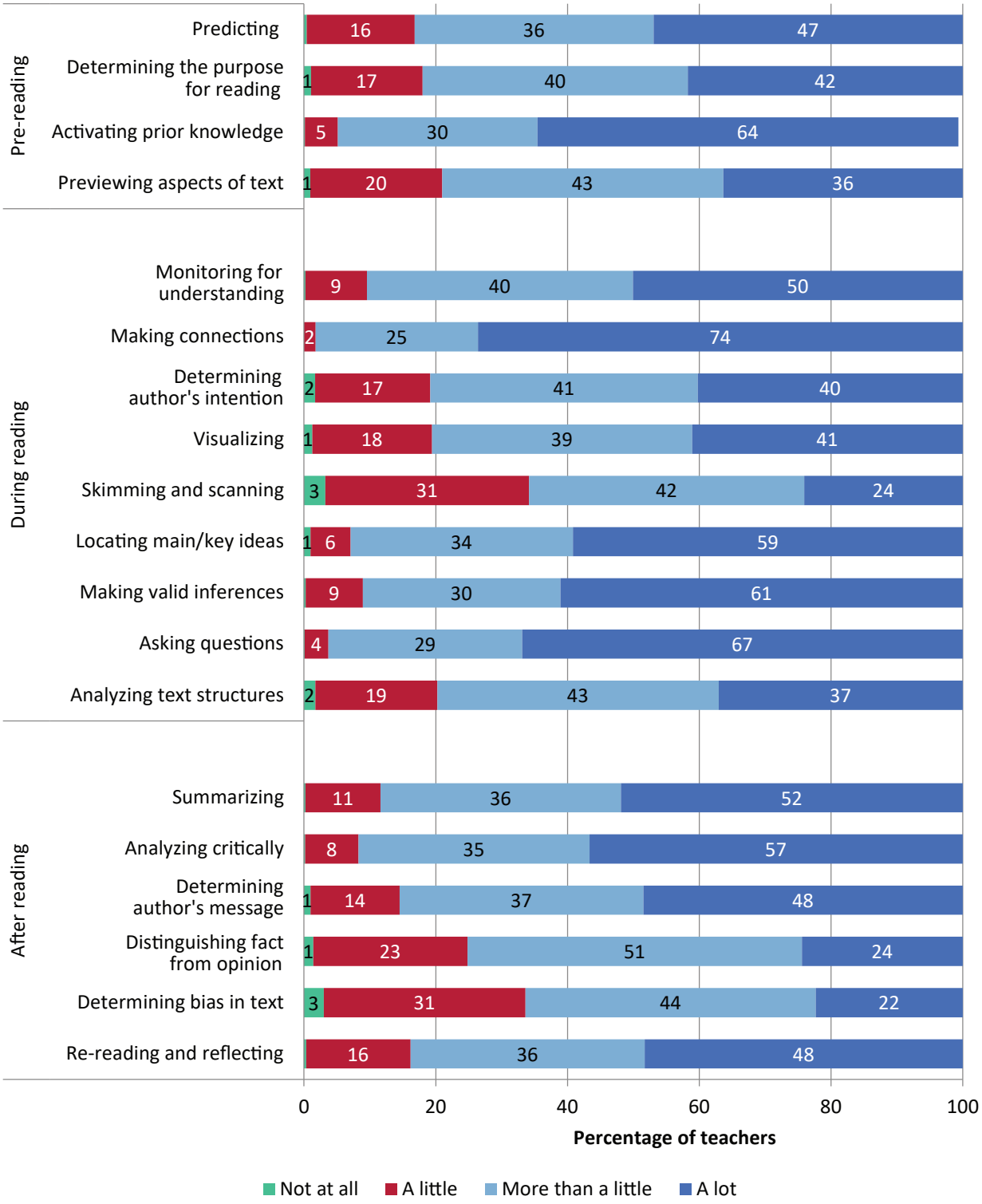
TABLE 3.6 Strategies before, during, and after reading

Before reading	During reading	After reading
• Predicting	• Monitoring for understanding	• Summarizing
• Determining the purpose for reading	• Making connections	• Analyzing critically
• Activating prior knowledge	• Determining author's intention	• Determining author's message
• Previewing aspects of text	• Visualizing	• Distinguishing fact from opinion
	• Skimming and scanning	• Determining bias in text
	• Locating main/key ideas	• Re-reading and reflecting
	• Making valid inferences	
	• Asking questions	
	• Analyzing text structures	

Berkeley and Taboada Barber (2015) state that traditional modes of reading instruction have emphasized after-reading strategies, while contemporary modes place much more emphasis on before-reading strategies. Responses to the teacher questionnaire show that language arts teachers use all of these strategies regularly in their classrooms. In terms of pre-reading strategies, teachers rely "a lot" on activating prior knowledge and the least on previewing aspects of the text. Among the during-reading strategies, making connections and asking questions are used "a lot" or "more than a little" by almost

all teachers, while skimming and scanning is least used. With respect to after-reading strategies, analyzing critically and summarizing are used the most, while determining bias in the text is used the least (Figure 3.9; Appendix A.3.8).

FIGURE 3.9 Frequency of use of pre-reading, during-reading, and after-reading strategies by language arts teachers

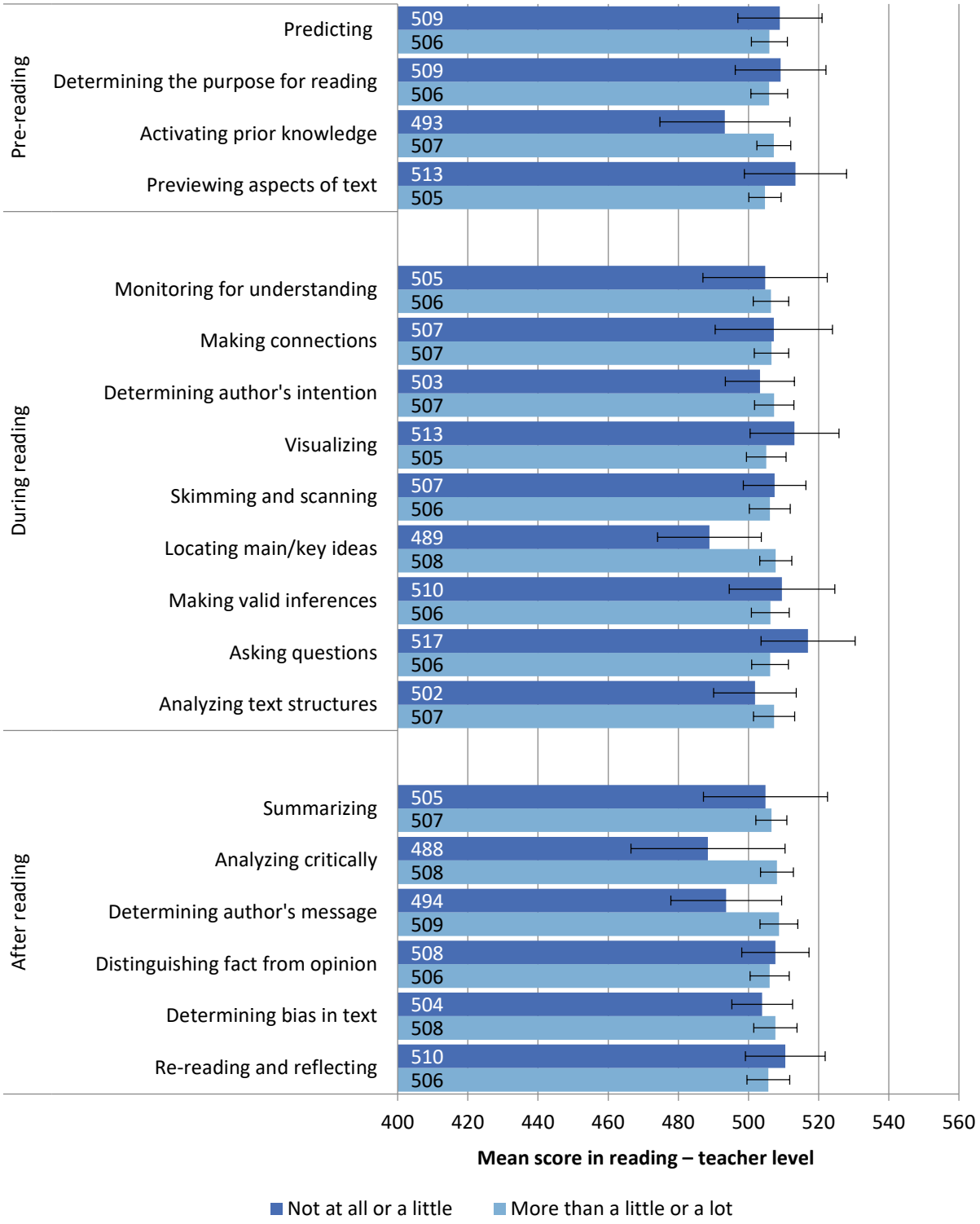


Note: Percentages may not add up to 100 due to rounding.

The relationship between the frequency of teachers' use of these reading instruction strategies, as reported by teachers, and achievement in reading is difficult to establish in a large-scale assessment such as PCAP. Figure 3.10 shows the average reading achievement of students in classrooms where teachers reported using these strategies "a lot" or "more than a little" compared to "not at all" or "a little" (Appendix A.3.8.1). In most cases, differences are minor, but some are worth noting. However, one should be cautious when interpreting differences in scores, as there were fewer responses in the "not at all" and "a little" categories, resulting in larger confidence intervals:

- With respect to pre-reading strategies, students whose teachers used the strategy of activating prior knowledge "more than a little" or "a lot" performed better in reading by 14 points compared to those whose teachers used it "not at all" or "a little."
- Regarding during-reading strategies, students whose teachers used the strategy of locating main or key ideas "more than a little" or "a lot" performed better by 19 points compared to those whose teachers used it "not at all" or "a little." Students whose teachers used the strategy of asking questions "not at all" or "a little" achieved results 11 points higher compared to those whose teachers used it "more than a little" or "a lot."
- In the after-reading strategies category, students whose teachers used the analyzing critically strategy "more than a little" or "a lot" performed better by 20 points compared to those whose teachers used it "not at all" or "a little." Similarly, students whose teachers used the strategy of determining the author's message "more than a little" or "a lot" performed better by 15 points compared to those whose teachers used it "not at all" or "a little."

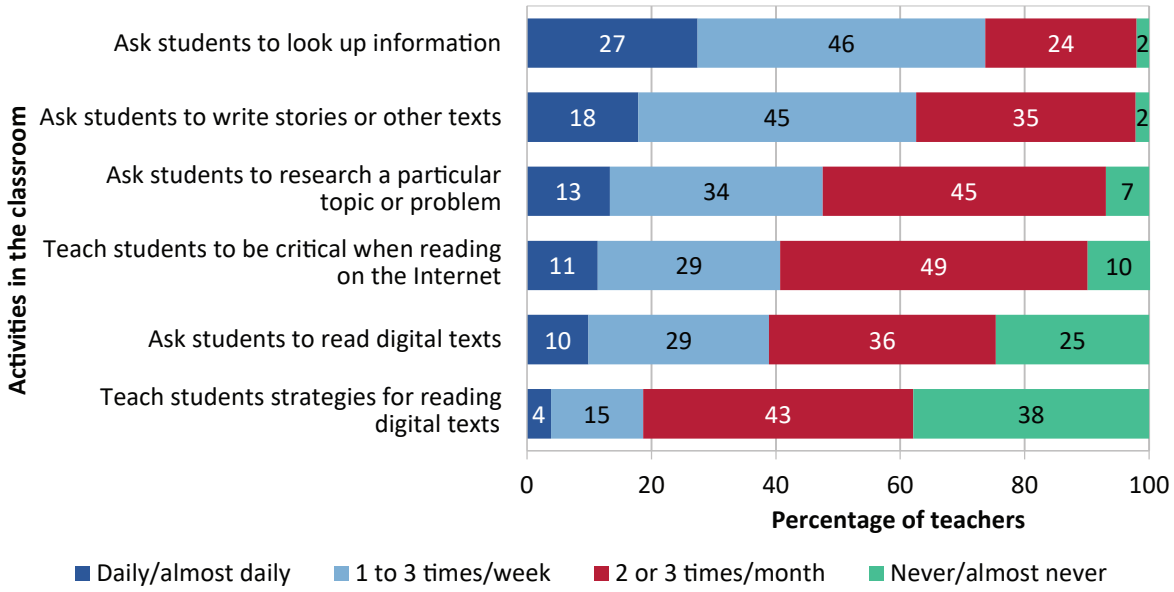
FIGURE 3.10 Relationship between frequency of use of reading instruction strategies by language arts teachers and reading achievement



Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

The type of reading instruction used by teachers has only a marginal relationship with reading achievement. In PCAP 2016, teachers were also asked to estimate the frequency with which they performed a number of language-arts-related activities in the classroom. As seen in Figure 3.11, the most frequent activity by far is asking students to look up information, which was done at least once per week by almost three-quarters of teachers. This type of task is related to the sub-domain of "understanding texts" in the PCAP framework (CMEC, 2016). Somewhat surprisingly, over 35 per cent of Grade 8/Secondary II teachers asked students to write stories or other texts only two or three times per month or less. Related to exploiting digital texts in the classroom, about 39 per cent of teachers taught students to be critical when reading on the Internet and asked them to read digital texts at least once a week. Teaching students strategies for reading digital texts was done far less frequently, with less than 20 per cent of teachers doing so at least once a week and almost 40 per cent of teachers never or almost never doing so (Appendix A.3.9).

FIGURE 3.11 Frequency of activities used in language arts classes



Note: Percentages may not add up to 100 due to rounding.

There are marked differences in the frequency of the use of these pedagogical practices by language of the school system. As seen in Table 3.7, teachers in anglophone school systems asked students to write stories or other texts considerably more frequently than did teachers in francophone school systems. They also asked students more frequently to research a particular topic or problem or to read digital texts, and they taught them more frequently to be critical when reading on the Internet. Based on their responses, teachers from francophone school systems deal with digital texts in the classroom far less frequently than do teachers in anglophone schools.

TABLE 3.7 Frequency of activities used in language arts by language of the school system

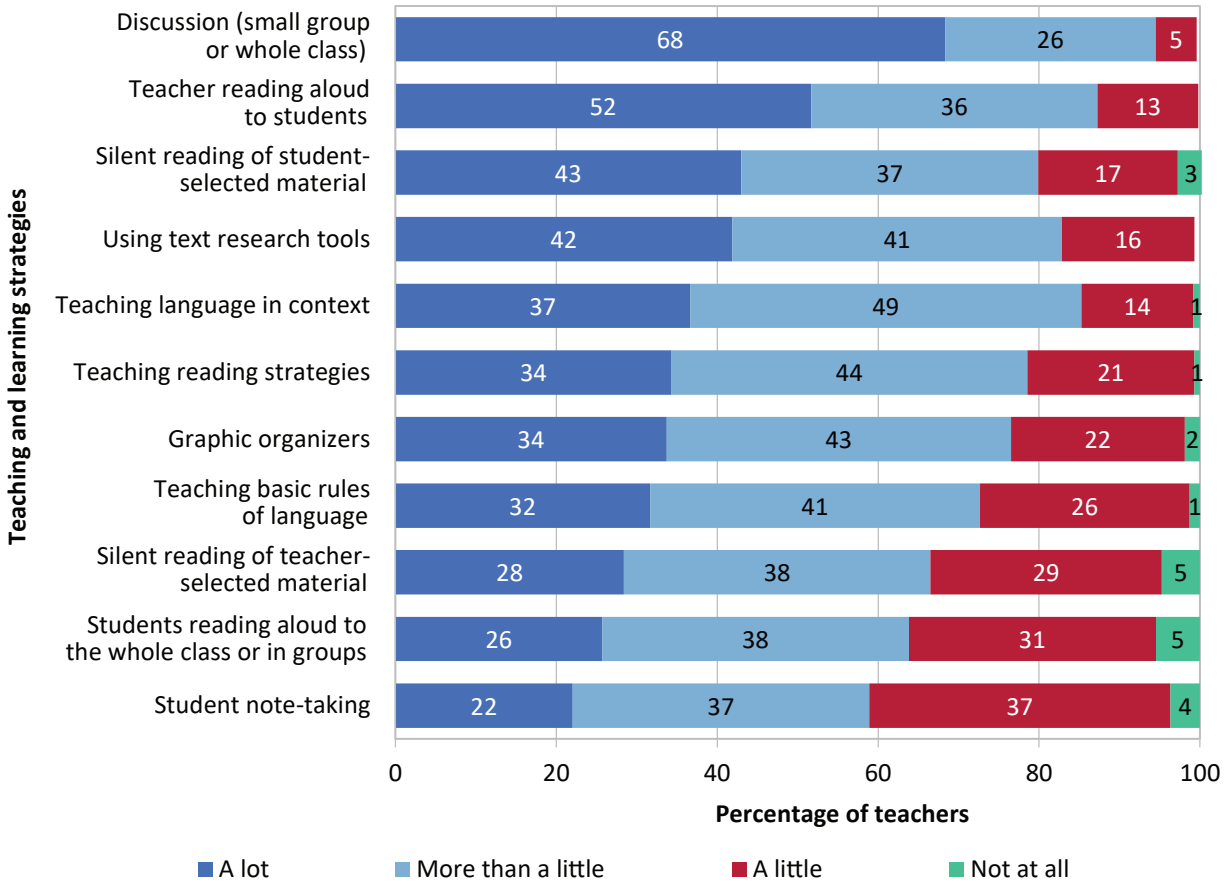
Activity	School system	Never or almost never	2 or 3 times per month	1 to 3 times per week	Daily or almost daily
		%	%	%	%
Ask students to look up information	Anglophone	1	23	46	30
	Francophone	7	30	49	14
Ask students to write stories or other texts	Anglophone	2	32	46	20
	Francophone	2	54	37	7
Ask student to research a particular topic or problem	Anglophone	5	43	37	14
	Francophone	17	60	15	8
Teach students to be critical when reading on the Internet	Anglophone	8	48	32	12
	Francophone	23	58	14	5
Ask students to read digital texts	Anglophone	20	38	31	11
	Francophone	56	25	15	5
Teach students strategies for reading digital texts	Anglophone	33	47	16	4
	Francophone	68	21	7	4

Note: Percentages may not add up to 100 due to rounding.

As was the case in 2007, when reading was the major domain in PCAP's first cycle, teachers were also asked in PCAP 2016 to estimate the extent to which they emphasize a number of instructional strategies and tools specific to language arts. Figure 3.12 shows the pan-Canadian results for the eleven strategies and tools included in the teacher questionnaire, ordered by frequency of use by language arts teachers.

More than two-thirds of teachers used group discussions in their language arts classes "a lot." Somewhat surprisingly at the Grade 8/Secondary II level, almost 90 per cent of teachers read aloud to students "a lot" or "more than a little," while over 60 per cent stated that students read aloud to the whole class. It is also worth noting that close to 30 per cent of teachers spent little or no time teaching the basic rules of language (Appendix A.3.10).

FIGURE 3.12 Use of instructional strategies and tools related to language arts



Note: Percentages may not add up to 100 due to rounding.

The PCAP 2007 contextual report (CMEC, 2009) noted strong differences by language of the school system with regard to the use of some of the tools and strategies listed in Figure 3.12, and Table 3.8 confirms this finding for PCAP 2016. Some of the most noteworthy differences by language are that teachers in anglophone school systems use group discussions much more frequently, and that teachers in francophone systems are much more likely to use text research tools, teach reading strategies and basic rules of language, and use silent reading of teacher-selected material.

TABLE 3.8 Use of instructional strategies and tools related to language arts by language of the school system

Activity	School system	A lot	More than a little	A little	Not at all
		%	%	%	%
Discussion (small group or whole class)	Anglophone	73	24	3	0
	Francophone	36	41	20	3
Teacher reading aloud to students	Anglophone	51	36	13	0
	Francophone	57	32	10	0
Silent reading of student-selected material	Anglophone	44	37	16	3
	Francophone	35	36	22	7
Using text research tools	Anglophone	37	44	18	0
	Francophone	72	24	4	0
Teaching language in context	Anglophone	34	50	15	1
	Francophone	53	41	5	1
Teaching reading strategies	Anglophone	30	47	23	1
	Francophone	62	28	10	0
Graphic organizers	Anglophone	35	44	20	1
	Francophone	29	32	32	6
Teaching basic rules of language	Anglophone	24	45	30	1
	Francophone	81	16	3	0
Silent reading of teacher-selected material	Anglophone	23	40	32	5
	Francophone	63	27	10	0
Students reading aloud to the whole class or in groups	Anglophone	24	38	32	6
	Francophone	36	39	22	3
Student note-taking	Anglophone	20	34	41	4
	Francophone	33	52	16	0

Note: Percentages may not add up to 100 due to rounding.

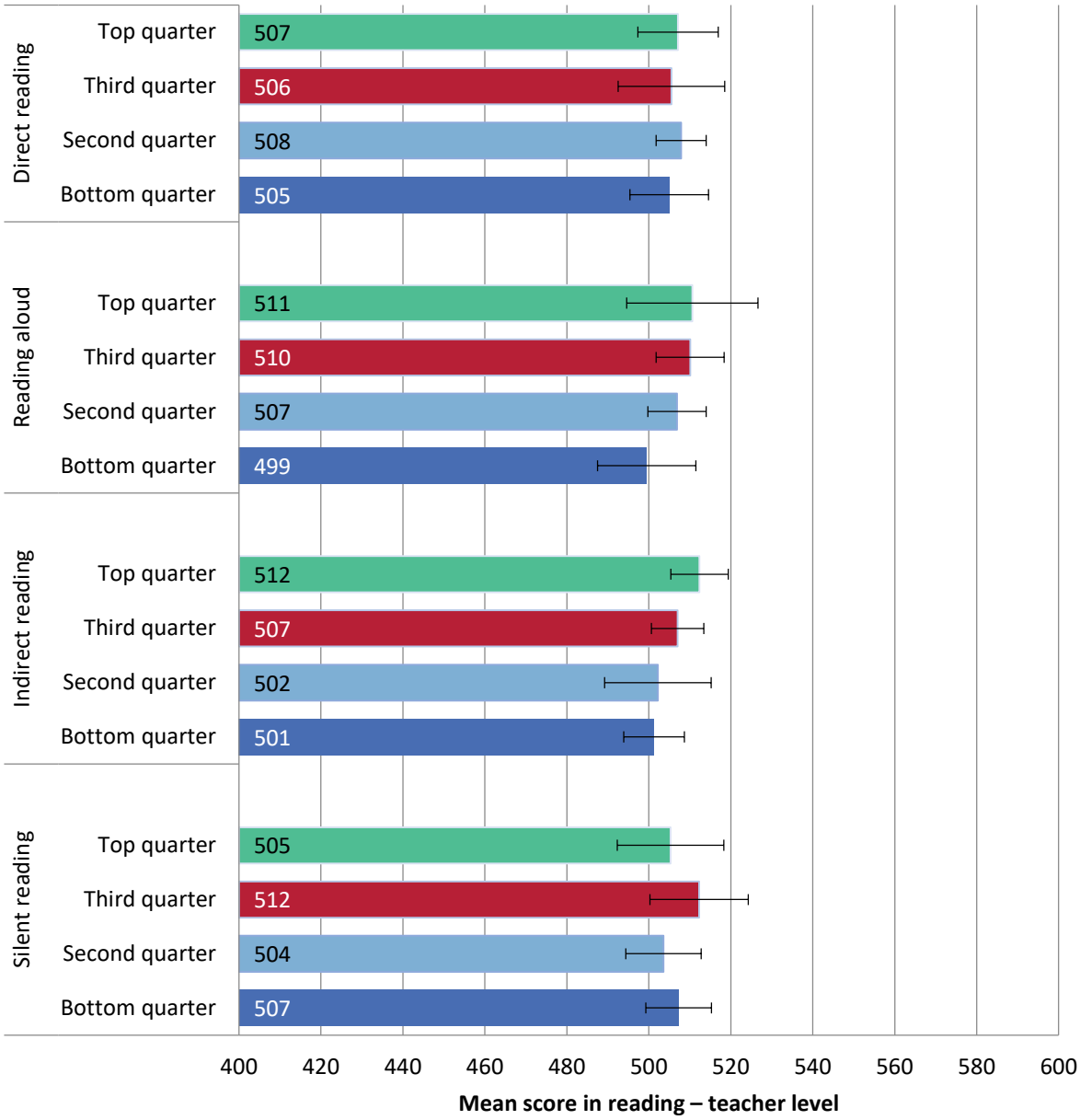
To investigate the relationship between these instructional strategies and tools and reading achievement, the PCAP 2007 contextual report (CMEC, 2009) grouped these eleven items into four categories: direct reading, reading aloud, indirect reading, and silent reading, as shown in Table 3.9.

TABLE 3.9 Questionnaire items and categories related to instructional strategies

Category	Item
Direct reading	Teaching reading strategies Teaching basic rules of language Teaching language in context Using text research tools Student note-taking
Reading aloud	Teacher reading aloud to students Students reading aloud to the whole class or in groups
Indirect reading	Discussion in small groups or the whole class Graphic organizers
Silent reading	Silent reading of teacher-selected material Silent reading of student-selected material

Students' reading scores were computed for each of the four categories. Students were divided into four equal groups (quarters) in each category, and mean scores were computed at the classroom level for each group (Figure 3.13; Appendix A.3.11). In 2007, no clear trend in achievement seemed to emerge from these categories except for direct reading, where students in classrooms making less use of this strategy achieved a lower reading score then those making more use of this strategy. In 2016, reading aloud and indirect reading show a modest trend in increased reading scores as the use of these strategies increased in the classroom.

FIGURE 3.13 Relationship between categories of instructional strategies and reading achievement

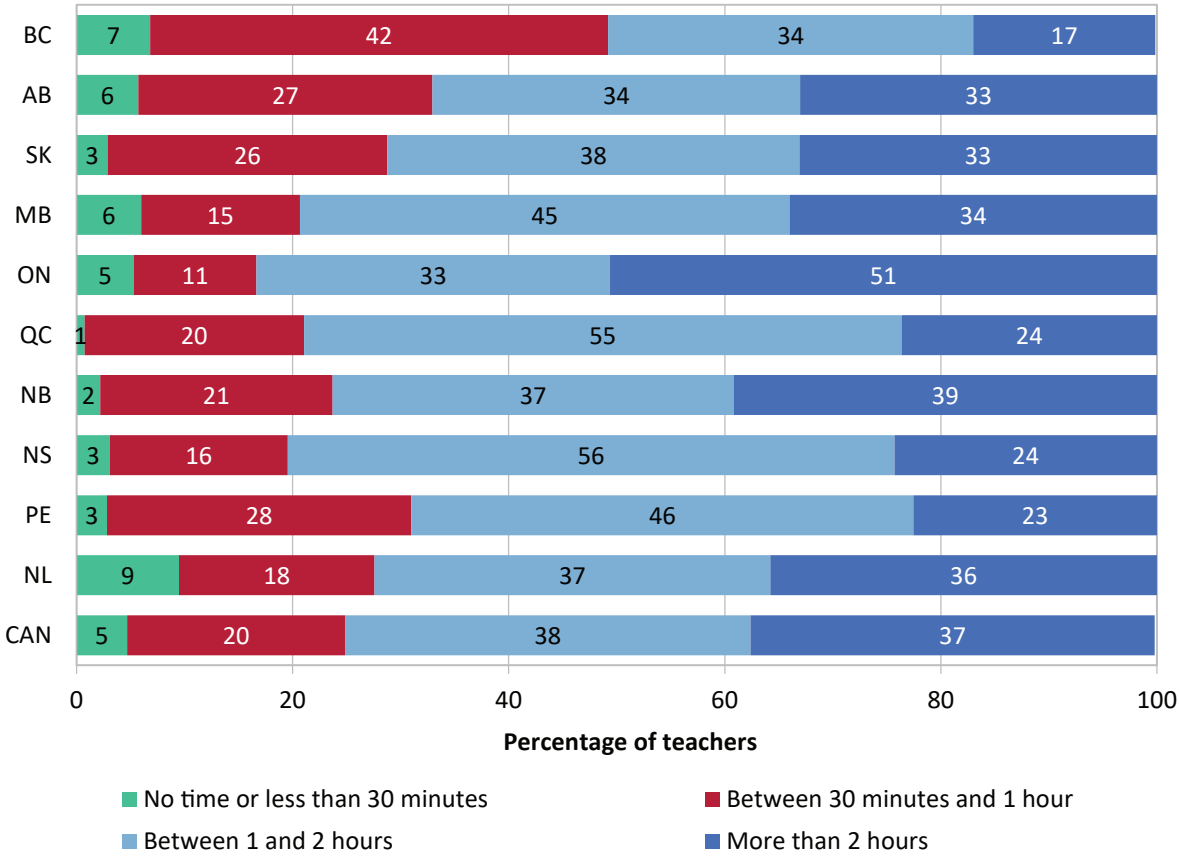


Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

Time spent on reading instruction in the classroom

As part of the teacher questionnaire, teachers were asked to estimate the amount of time they spent on reading instruction and/or activities with students on a weekly basis, regardless of whether this was done across the curriculum or during formally scheduled reading instruction. As shown in Figure 3.14, on average, three-quarters of Canadian Grade 8/Secondary II teachers spent one hour or more per week on reading instruction, while 5 per cent spent less than 30 minutes. Across provinces, more than half of Ontario teachers spent more than two hours on reading instruction, while almost half of teachers in British Columbia spent less than one hour (Appendix A.3.12).

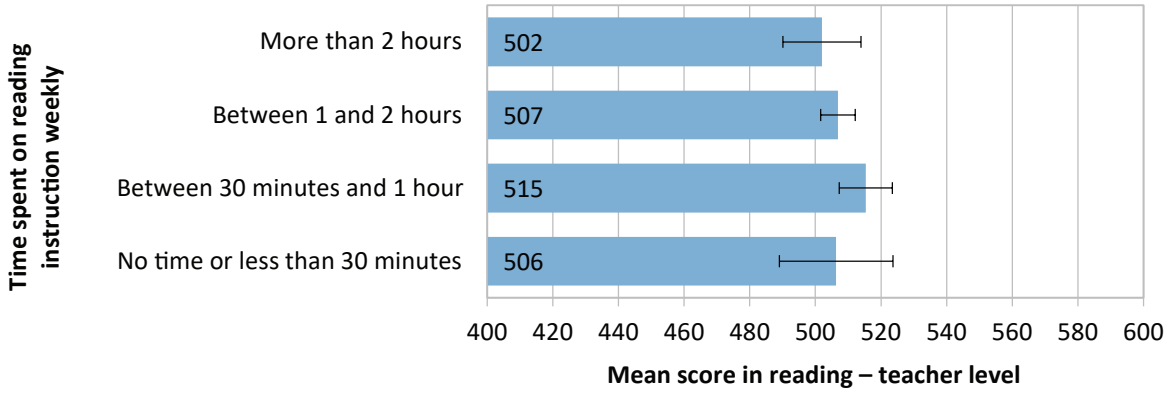
FIGURE 3.14 Time spent on reading instruction weekly



Note: Percentages may not add up to 100 due to rounding.

Based on the PCAP 2016 results, the amount of time teachers spent on reading instruction every week is not strongly related to reading achievement, although students in classrooms where the teacher spent between 30 minutes and 1 hour on such instruction achieved a higher mean score than students in classrooms where teachers spent both more and less time (Figure 3.15; Appendix A.3.12.1).

FIGURE 3.15 Relationship between the time spent on reading instruction by teachers and reading achievement

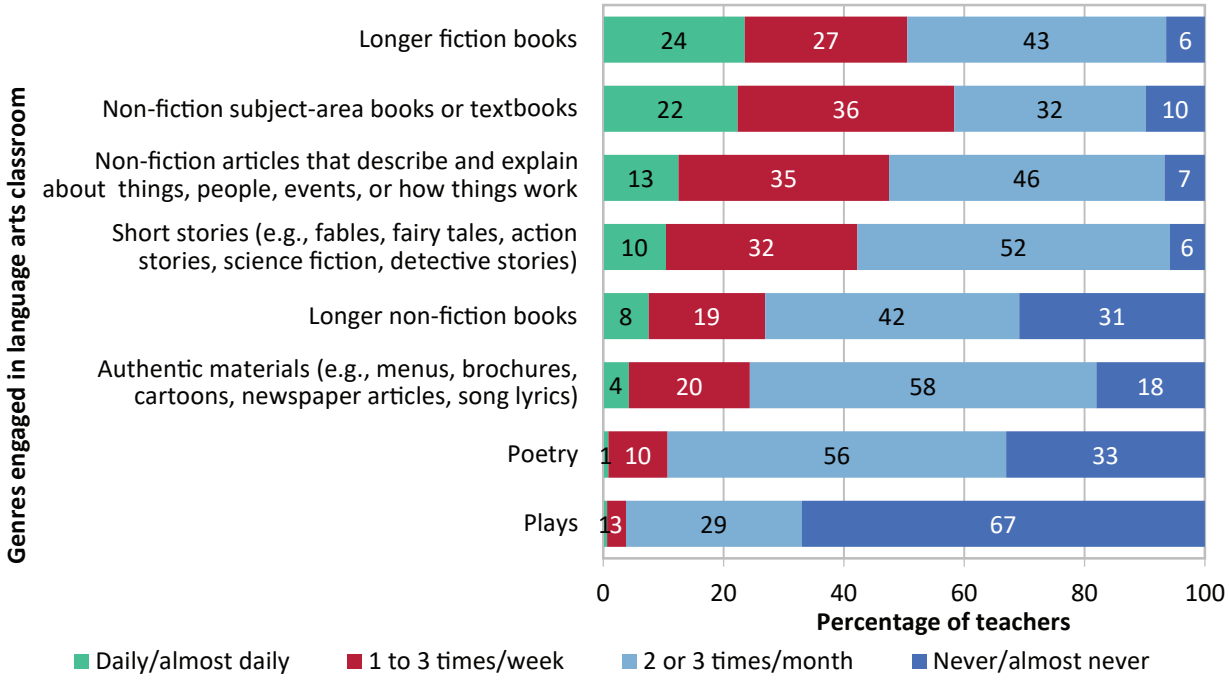


Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

Reading choices

Teachers can increase students' motivation to read by having an array of interesting and developmentally appropriate texts available in the classroom (Guthrie, Wigfield, & You, 2012; Berkeley & Taboada Barber, 2015). The PCAP teacher questionnaire asked Grade 8/Secondary II teachers to indicate the frequency with which they had students read a variety of genres. As Figure 3.16 shows, the majority of teachers asked students to read fiction and non-fiction books at least once a week, and non-fiction articles slightly less frequently. Poetry and plays were least frequently assigned to students (Appendix A.3.13).

FIGURE 3.16 Frequency with which teachers assign genres for reading in language arts classrooms

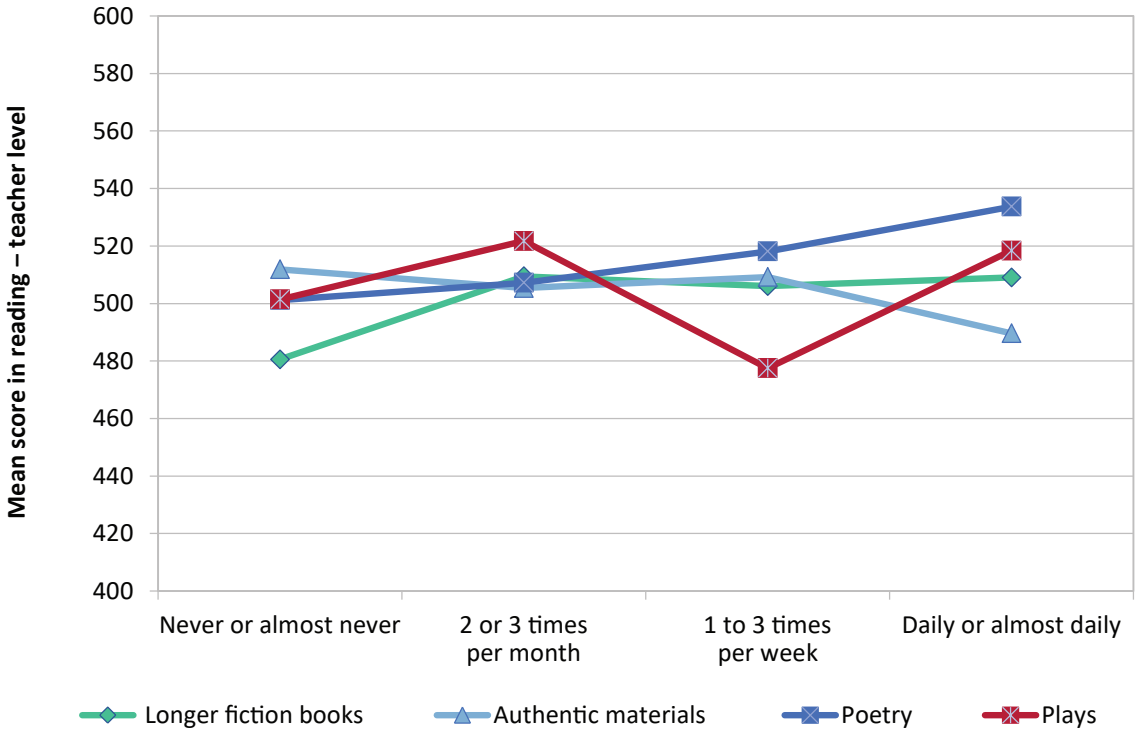


Note: Percentages may not add up to 100 due to rounding.

The relationship between reading achievement and the frequency with which teachers asked their students to read different genres varies across genres. For four of the genres (non-fiction subject-area books or textbooks, non-fiction articles, short stories, and longer non-fiction books), there is no relationship with reading achievement. Results are shown for the other four genres for illustrative purposes (Figure 3.17; Appendix A.3.13.1). The PCAP 2016 results show a positive linear relationship between reading achievement and the frequency with which teachers asked students to read poetry. Students who were asked to read authentic materials more often achieved lower reading scores than those being assigned this genre less frequently. As the biggest decrease in achievement occurs when students were asked to read this genre daily or almost daily, it could be hypothesized that teachers expose weaker students more frequently to this more accessible genre. The relationship between reading achievement and the frequency of asking students to read plays is unstable: students in classrooms where the teacher asked them to never or almost never read this genre had lower scores than students who were assigned this genre daily or almost daily, but this pattern is not consistent with the results for those who were asked to read plays once a week or less. In PCAP 2007, students

whose teachers used creative genres more frequently achieved higher reading performance than those reading these types of texts less frequently (CMEC, 2009). Generally, this is also the case in PCAP 2016.

FIGURE 3.17 Relationship between the frequency with which teachers assign genres and reading achievement



Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

Task assignment in language arts

Language arts teachers may assign a number of tasks to students. As was the case in 2007, PCAP 2016 asked teachers to indicate how often they assigned four specific tasks related to reading: written reports that demonstrate understanding of assigned reading, oral presentations that demonstrate interpretations of reading selections, students' personal responses to reading selections, and reading to be done outside of class. Figure 3.18 shows the proportion of teachers who often assigned these tasks. As was the case in 2007, oral presentations were least often assigned by Grade 8/Secondary II teachers in Canada overall and in all provinces, while personal-response tasks were assigned most often in all provinces except Quebec. Assigning written reports varies greatly across jurisdictions, from a high of 61 per cent of teachers in Prince Edward Island to a low of 18 per cent in New Brunswick (Appendix A.3.14).

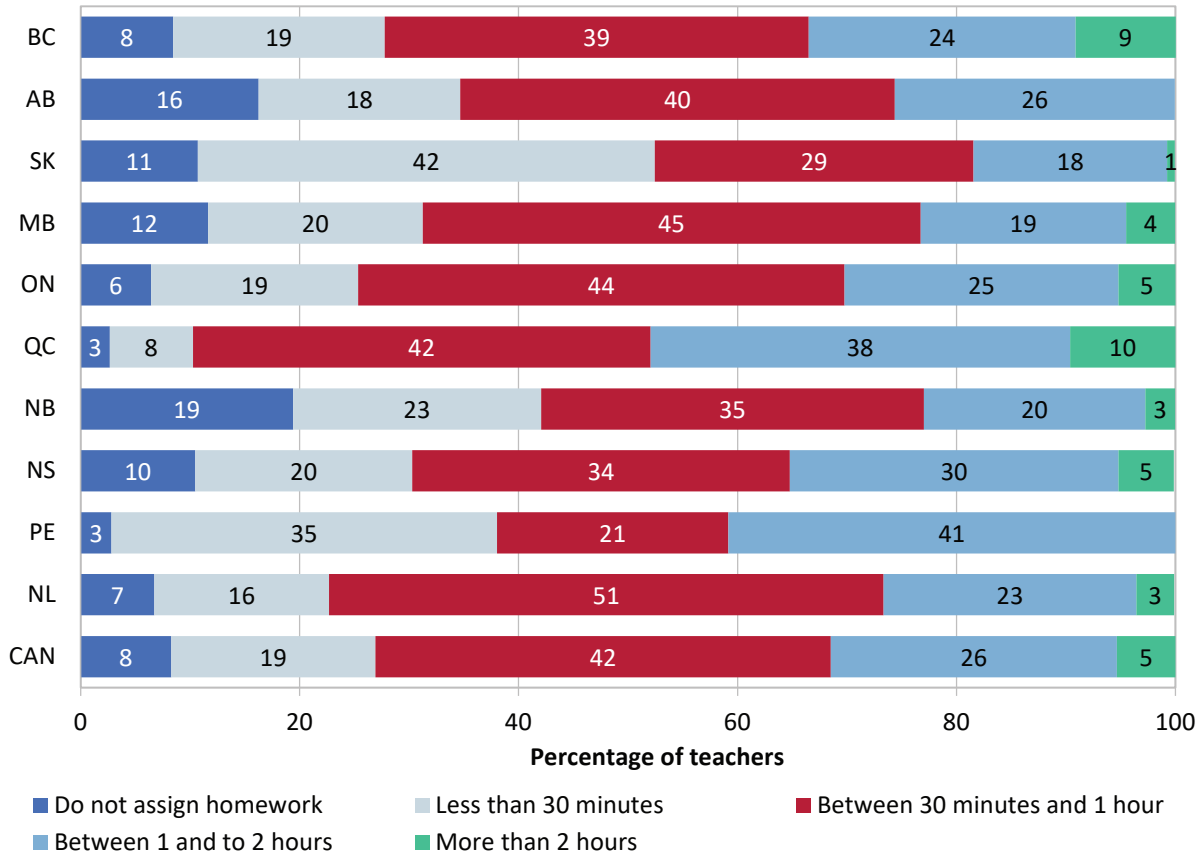
FIGURE 3.18 Types of student tasks often assigned by teachers in language arts classrooms

Homework

Teachers' homework expectations and students' time spent doing homework are not always in sync (O'Grady & Houme, 2015). Also, the amount of time spent on homework and its relationship with achievement varies across subject areas and grade levels. Generally, in the middle years, the benefits of homework on achievement are greatest up to one hour per week and then remain stable (CMEC, 2014).

In PCAP 2016, teachers were asked to indicate the amount of language arts homework they assigned each week. In Canada overall, close to 70 per cent of teachers assigned less than one hour of homework in language arts per week (Figure 3.19; Appendix A.3.15). The proportion of teachers not assigning any homework varies greatly, from a low of 3 per cent in Quebec and Prince Edward Island to a high of 19 per cent in New Brunswick. The proportion of teachers assigning an average of one hour or more of homework in language arts per week varies from a low of 19 per cent (Saskatchewan) to a high of 48 per cent (Quebec).

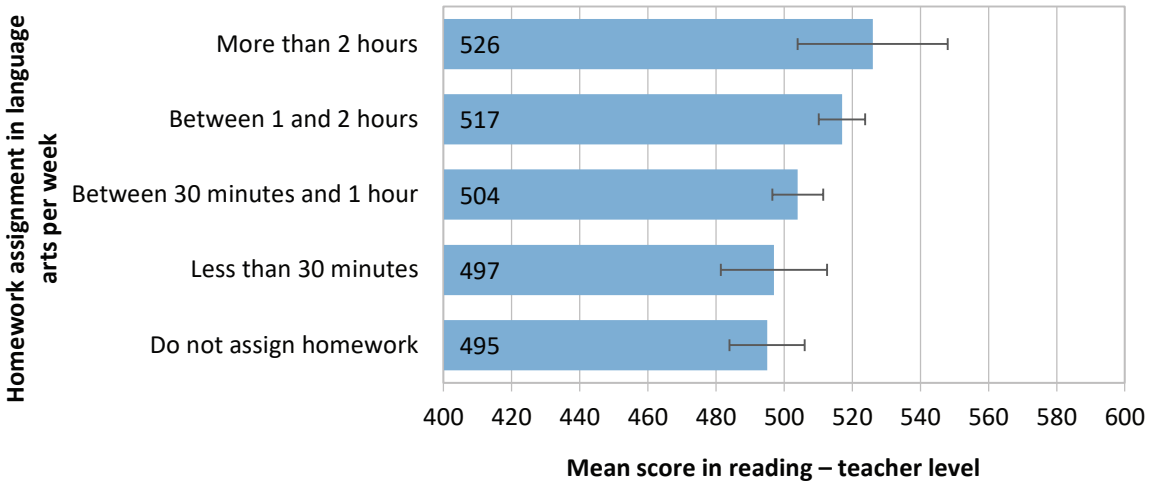
FIGURE 3.19 Homework assigned each week in language arts



Note: Percentages may not add up to 100 due to rounding.

The relationship between the amount of homework teachers assign in language arts per week and reading achievement is positive and linear, with a difference of 31 points between those students who were not assigned any homework and those who were assigned more than two hours (Figure 3.20; Appendix A.3.15.1). This pattern is generally consistent with the results for language arts from PCAP 2007.

FIGURE 3.20 Relationship between homework assigned in language arts and reading achievement



Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

Assessment

Language arts is a complex subject area. In addition to traditional reading and writing and comprehension of written texts, language arts has evolved to incorporate new literacies (Unsworth & Thomas, 2014). Course content is covered through both classroom work and homework, and teachers use a variety of assessment approaches to ensure that students master the learning outcomes. In PCAP 2016, teachers responded to numerous questions about their assessment practices. Descriptive data show that most Canadian teachers are using a breadth of practices, particularly assessment practices that elicit and give student feedback on higher-order learning.

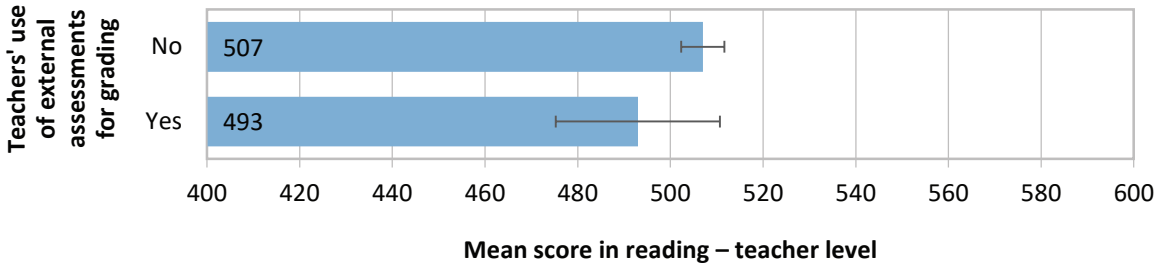
The practice of using results from external tests and assessments to determine students' final grades or evaluations for the language arts course is a matter of policy either at the school, district, or provincial level, and it varies across provinces. This practice is used by almost a quarter of Grade 8/Secondary II teachers in Quebec but by no more than 11 per cent of teachers in the other provinces (Table 3.10).

TABLE 3.10 Percentage of teachers using external tests or assessments in determining students' final grades or evaluations in language arts

	Yes, external tests are used	No, external tests are not used
BC	7	93
AB	5	95
SK	9	91
MB	6	94
ON	1	99
QC	24	76
NB	4	96
NS	5	95
PE	4	96
NL	11	89
CAN	**6**	**94**

As was the case for PCAP 2007, there is no significant relationship between reading achievement scores and teachers' use of external assessment results for grading purposes (Figure 3.21; Appendix A.3.16). This is in contrast to results from PCAP 2013, which showed a negative relationship between such use and achievement in science.

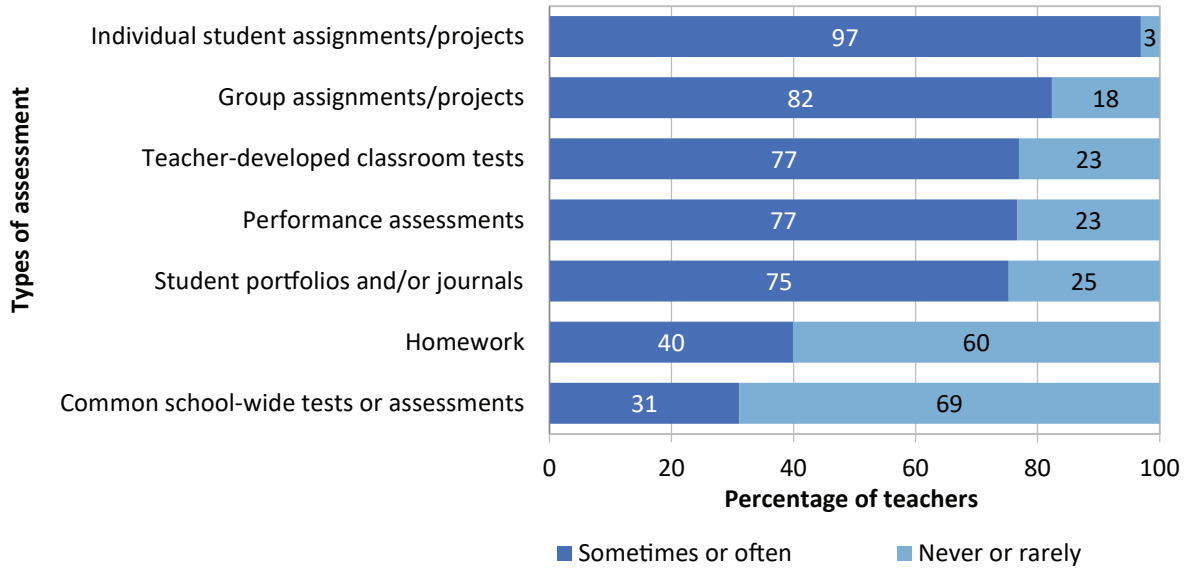
FIGURE 3.21 Relationship between the use of external test results as part of students' final grades and reading achievement



Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

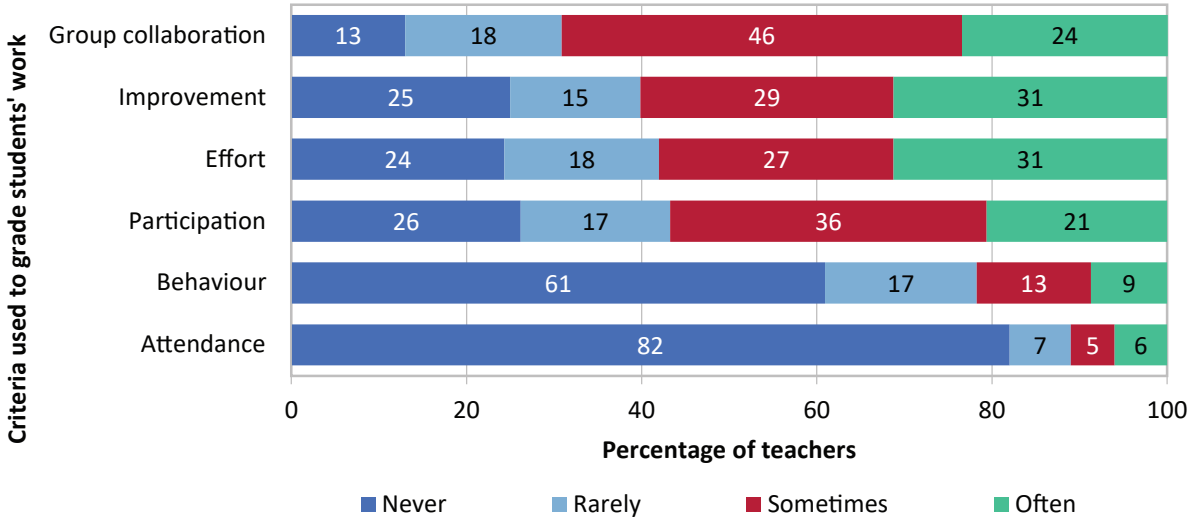
Participating language arts teachers were asked to provide details on the types of assessments they used in their classrooms. As seen in Figure 3.22, 97 per cent of Grade 8/Secondary II teachers reported that they used individual assignments or projects sometimes or often, and three-quarters or more reported that they used student portfolios and/or journals, performance assessments, teacher-developed classroom tests, and group assignments/projects sometimes or often. Almost 70 per cent of teachers indicated that they rarely or never used common school-wide tests or assessments, and 60 per cent reported that they rarely or never used homework as a type of assessment in the classroom (Appendix A.3.17).

FIGURE 3.22 Types of assessments used in language arts classrooms



The practice of using non-cognitive factors in assessing students' work is controversial (Feldman, 2019), and its use by teachers is often a matter of school, school board, or provincial policy. In PCAP 2016, teachers were asked about the frequency with which they assigned marks or values to a number of non-cognitive factors in their assessments. Over 60 per cent of teachers never used behaviour or attendance as criteria, while over 20 per cent often considered group collaboration, improvement, effort, and/or participation (Figure 3.23; Appendix A.3.18).

FIGURE 3.23 Frequency of the use of non-academic criteria in assessment in language arts classrooms



Note: Percentages may not add up to 100 due to rounding.

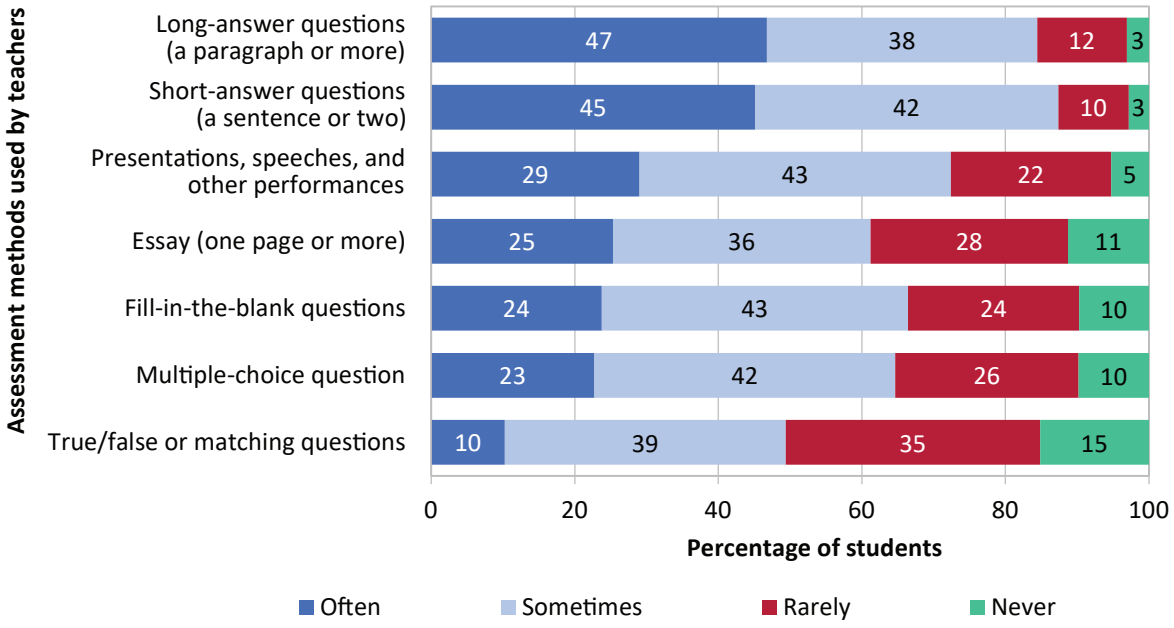
The practice of using non-cognitive criteria when assigning marks to students varies across provinces. Teachers in Quebec and New Brunswick considered attendance more frequently than do their counterparts in other provinces when assigning grades (Table 3.11). For the other five factors, teachers in Ontario, Quebec, and New Brunswick generally used these more frequently when assigning students' marks, compared to teachers in the other provinces.

TABLE 3.11 Percentage of teachers using non-cognitive factors rarely or never when assigning students' marks

	Group collaboration	Improvement	Effort	Participation	Behaviour	Attendance
BC	46	48	59	59	88	96
AB	39	59	60	77	88	96
SK	41	41	46	55	84	96
MB	29	37	44	53	84	96
ON	23	34	34	29	77	90
QC	30	32	29	31	55	68
NB	29	34	38	38	75	80
NS	32	43	47	47	89	94
PE	32	61	46	55	82	97
NL	38	51	47	70	87	100
CAN	**31**	**40**	**42**	**43**	**78**	**89**

Depending on their purpose, assessment practices can vary based on the methods used by teachers to generate marks. The PCAP 2016 student questionnaire asked Grade 8/Secondary II students to indicate the frequency with which their teacher used a number of methods to generate grades or marks in language arts. As seen in Figure 3.24, teachers used a variety of methods to assess students, with long- and short-answer questions the most frequently used and true/false or matching questions the least frequently used (Appendix A.3.19).

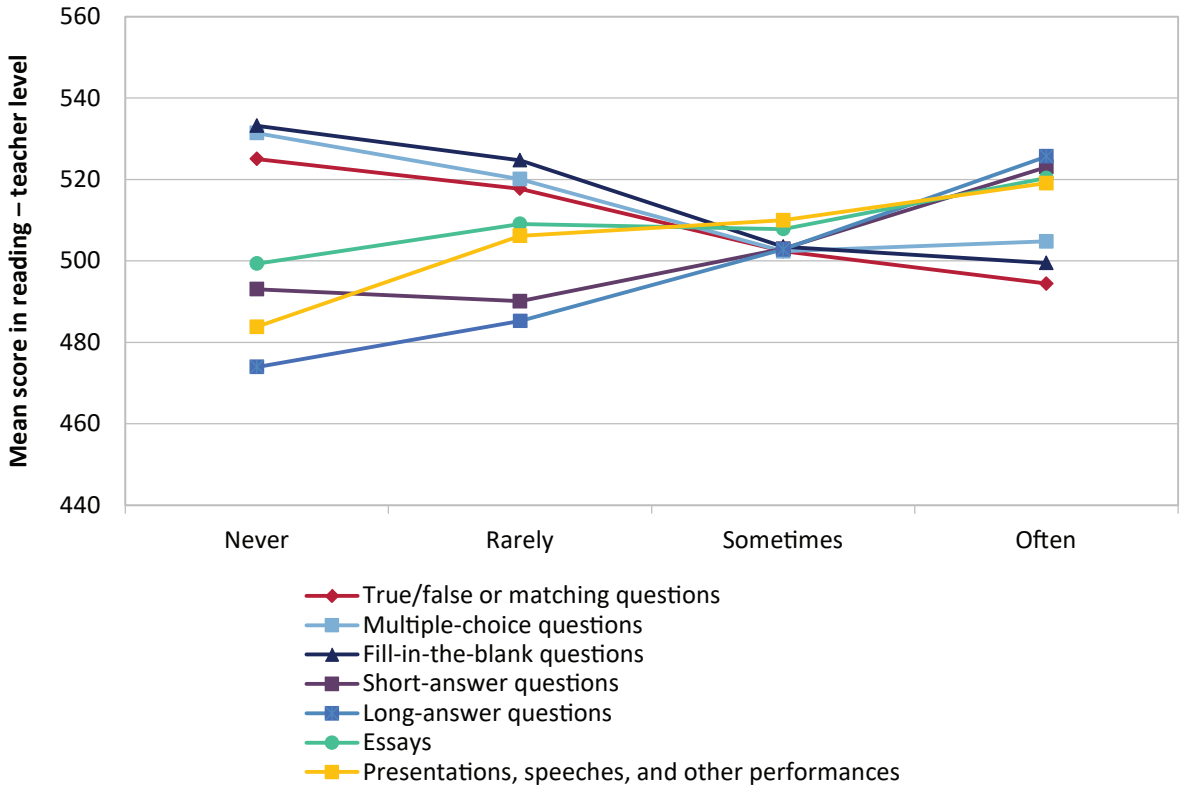
FIGURE 3.24 Frequency of assessment methods in language arts as reported by students



Note: Percentages may not add up to 100 due to rounding.

There is a relationship between the frequency with which teachers use some assessment methods and reading achievement as measured by PCAP 2016. Students whose teachers used restricted questions (true-false or matching, multiple-choice, and fill-in-the-blank) more frequently performed less well in reading than those whose teachers use these types of questions less frequently (Figure 3.25; Appendix A.3.19.1). Conversely, students whose teachers more frequently used open questions (short-answer and long-answer questions; essays; and presentations, speeches, and other performances) performed better in reading. This finding is consistent with results observed in PCAP 2007 (CMEC, 2009).

FIGURE 3.25 Relationship between frequency of use of different assessment methods in language arts and reading achievement



Note: "Mean score in reading – teacher level" refers to the mean student score in a teacher's classroom. The scores shown are the Canadian average of those means.

School characteristics

No one factor on its own offers a clear picture of the efficiency or effectiveness of a school. As complex, open systems, schools are always changing in response to the actions of people and institutions, both within and outside their permeable boundaries. At the heart of schooling are the daily choices and interactions of teachers and students in the classroom, but this classroom environment nests within a complex ecology of wider institutions, resource networks, policies, and practices. Provinces determine the statutory contexts of schooling, and school districts in turn craft policies that apply these statutes to best meet the unique needs of the schools and families within their jurisdictions. Within districts' guidelines, school administrators, professionals, and parents come together to adapt the learning environment to the specific circumstances, resources, and needs in individual schools.

Over 1,300 schools from the 10 Canadian provinces participated in PCAP 2016. Schools were randomly selected, with the probability of selection proportional to the size of the school based on the list of all schools with Grade 8/Secondary II students under the purview of the ministry/department of education in each province. Schools were selected separately in the anglophone and francophone school systems. Students in French immersion programs were considered part of the anglophone population. Each of the participating schools received a school questionnaire, to be answered by the school principal.

School demographics

An ongoing challenge in educational research is to determine effective practices for student learning, given the variations between individual schools. Some of these variations come from the ways in which schools are organized. This section describes some key variables of school organization, as reported by school administrators. These include school size, the size of the school community, the grade configurations of schools, and the proportions of Indigenous students and English or French language learners in the school.

School size and configuration are important determinants of how schools use resources to meet student needs. These factors in turn are determined by the size and concentrations of the populations that schools serve. Canadian provinces range in size from under 1 million (the Atlantic provinces) to over 14 million (Ontario) (Statistics Canada, 2018). Provinces also vary in the extent to which their populations are concentrated in large urban centres.

Number of students in the school

The number of students in a school is related to several school factors that may impact student achievement, including socioeconomic status, number of grade levels in a school, teacher instructional practices, the school environment (Jones & Ezeife, 2011; Vogl & Preckel, 2014), and opportunities for teacher collaboration and collaborative professional development (Ares Abalde, 2014). However, in and of itself, the number of students in a school is not deterministic of student achievement.

In school questionnaires, principals reported the number of students in their schools (Table 3.12). In anglophone school systems, the majority of participating schools had between 101 and 500 students. There was a greater number of larger schools of more than 1,000 students in francophone school systems, owning to the high proportion of very large schools in Quebec.

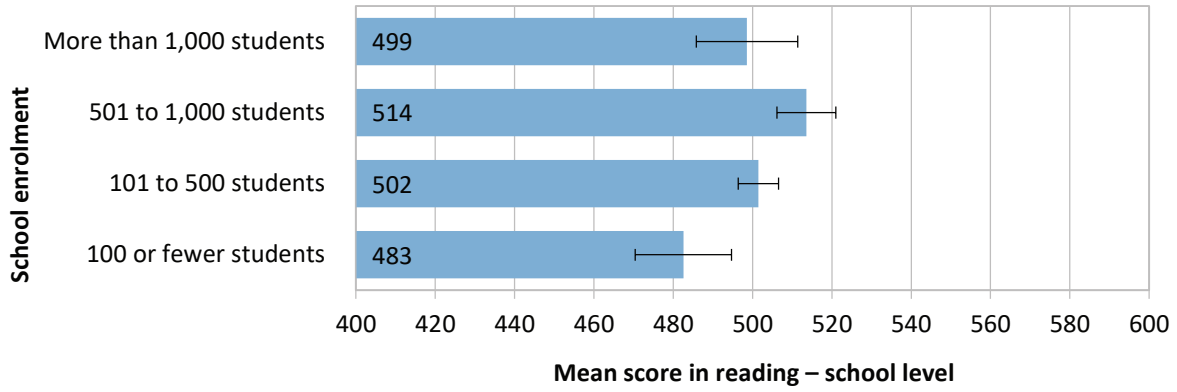
TABLE 3.12 Total enrolment of students in schools participating in PCAP 2016, by language of the school system

	Anglophone school systems				Francophone school systems			
	100 or fewer students	101–500 students	501–1,000 students	More than 1,000 students	100 or fewer students	101–500 students	501–1,000 students	More than 1,000 students
BC	6.1	46.3	30.7	16.9	30.0	40.0	30.0	0.0
AB	8.1	61.8	29.3	0.8	11.1	83.3	5.6	0.0
SK	9.3	80.2	7.0	3.5	--	--	--	--
MB	13.3	73.4	12.6	0.7	16.7	72.2	11.1	0.0
ON	1.6	71.7	24.4	2.4	10.3	72.9	13.1	3.7
QC	9.6	51.0	31.2	8.2	10.2	27.7	31.1	31.0
NB	4.8	75.9	19.3	0.0	8.6	82.8	8.6	0.0
NS	5.5	78.2	16.4	0.0	0.0	100.0	0.0	0.0
PE	4.5	77.3	18.2	0.0	--	--	--	--
NL	14.8	75.0	10.2	0.0	--	--	--	--
CAN	**4.7**	**69.1**	**22.9**	**3.3**	**10.3**	**45.2**	**23.9**	**20.6**

Note: Due to small sample sizes, results for students in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Figure 3.26 shows that students in schools with 101 students or more achieved higher reading scores in PCAP 2016 than those in very small schools (Appendix A.3.20). This is consistent with results from previous PCAP administrations (CMEC 2009, 2012).

FIGURE 3.26 Relationship between school size and reading achievement



Note: "Mean score in reading – school level" refers to the mean student score in a school. The scores shown are the Canadian average of those means.

Size of the school community

The size of a school community influences the characteristics of schools by delimiting the options of a given school or school district to allocate resources and configure schools by grade levels. Rural schools in particular may have difficulty keeping their doors open. School districts that are predominantly rural must manage aspects of their operations, including student transportation, facilities

management, and teacher professional development, over greater distances and without the economies of scale possible in urban school districts (Ares Abalde, 2014). On the other hand, research has found important benefits to smaller rural schools: they are characterized by closer relationships among staff and students, and with parents and the school community (Ares Abalde, 2014).

In PCAP 2016, 27 per cent of schools in anglophone school systems and 28 per cent of schools in francophone school systems in Canada overall were located in a rural area or small town (Table 3.13). At the provincial level, the percentage of small rural schools in anglophone school systems varies in accordance with provincial populations: the Atlantic provinces with the smallest populations also have the largest number of rural schools, while Canada's most populous provinces have much smaller proportions of rural schools. The proportion of rural schools in anglophone school systems varies from a high of 79 per cent in Newfoundland and Labrador to a low of 16 per cent in Ontario. The pattern is somewhat different in francophone school systems, where the highest percentage of rural schools is found in Manitoba (72 per cent), and the lowest in British Columbia, which reported no rural schools in francophone school systems. Across Canada, 20 per cent of schools in anglophone school systems and 23 per cent of schools in francophone school systems are located in large cities. Canada's largest proportion of schools in large cities is in Alberta (40 per cent) and Quebec (36 per cent) for anglophone school systems, and in Quebec (29 per cent) and Manitoba (28 per cent) for francophone school systems. The distribution of schools across communities of various sizes is very similar to that found in PCAP 2013, with the exception that there were slightly more schools in small cities in 2016.

TABLE 3.13 Community size in which schools participating in PCAP 2016 were located, by language of the school system

	Anglophone school systems					Francophone school systems				
	Rural/ small town	Medium-sized town	Small city	Medium city	Large city	Rural/ small town	Medium-sized town	Small city	Medium city	Large city
BC	22	15	23	25	15	0	20	40	30	10
AB	38	8	11	2	40	22	17	33	6	22
SK	43	8	8	40	1	--	--	--	--	--
MB	50	8	9	4	29	72	0	0	0	28
ON	16	13	18	33	20	24	23	19	20	15
QC	18	21	16	10	36	24	15	19	14	29
NB	58	10	24	8	0	67	14	16	3	0
NS	60	16	8	13	3	46	18	27	9	0
PE	77	9	14	0	0	--	--	--	--	--
NL	79	11	2	8	0	--	--	--	--	--
CAN	**27**	**12**	**16**	**25**	**20**	**28**	**16**	**19**	**14**	**23**

Note: Due to small sample sizes, results for students in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Grade configuration

As observed in the last administration of PCAP (O'Grady & Houme, 2015), the grade configuration in a school has several implications for students, including the number of transitions students will have to face in their education journey. The configuration of grade levels in a school is of particular interest for the age group that includes students participating in PCAP. Stand-alone junior high schools or middle schools first appeared in Canada in the 1920s, approximately a decade after American research and reforms based on the belief that a stand-alone environment would best meet the needs of students at this developmental stage (Dhuey, 2013). In recent years, concerns about the decline in academic achievement in middle-school grades have led researchers and policy-makers to revisit the efficacy of stand-alone middle schools (Dhuey, 2013).

In PCAP school questionnaires, administrators were asked how many grades were taught in their schools. In anglophone school systems, two-thirds of schools in Canada overall had nine or more grades, while over 60 per cent of schools in francophone school systems had between five and eight grades (Table 3.14). Across provinces, the range of grades reported is very broad, but some patterns can be seen. For example, in anglophone school systems, schools with four or fewer grades can be found with some frequency in the Atlantic provinces and in British Columbia; by contrast, there were very few schools with four or fewer grades in francophone school systems.

TABLE 3.14 Number of grade levels in schools participating in PCAP 2016, by language of the school system

	Anglophone school systems			Francophone school systems		
	1–4 grades	5–8 grades	9 or more grades	1–4 grades	5–8 grades	9 or more grades
BC	23	46	31	0	50	50
AB	21	26	54	6	11	83
SK	2	31	67	--	--	--
MB	17	22	62	0	6	94
ON	4	17	79	7	43	49
QC	9	62	30	9	80	11
NB	33	22	44	9	21	70
NS	40	21	39	0	30	70
PE	38	10	52	--	--	--
NL	21	17	62	--	--	--
CAN	**10**	**23**	**67**	**8**	**64**	**29**

Note: Due to small sample sizes, results for students in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Principals in schools participating in PCAP also provided the number of Grade 8/Secondary II students in their schools—a variable that influences how individual schools configure classes to optimize human resources and best meet students' learning needs. In anglophone school systems, a majority of schools had 50 or fewer Grade 8/Secondary II students, while francophone school systems

had more schools with over 100 Grade 8/Secondary II students. In anglophone school systems, those in British Columbia and Quebec stand out as having a greater proportion of schools with more than 100 students at the PCAP target grade; in francophone school systems, only Quebec had a similar proportion of schools with such a number of students (Table 3.15).

TABLE 3.15 Percentage of schools reporting in each category for number of students enrolled in Grade 8/Secondary II, by language of the school system

	Anglophone school systems						Francophone school systems					
	25 or fewer students	26–50 students	51–75 students	76–100 students	101–200 students	More than 200 students	25 or fewer students	26–50 students	51–75 students	76–100 students	101–200 students	More than 200 students
BC	20	16	8	8	32	16	60	20	20	0	0	0
AB	34	17	14	11	20	3	71	24	0	6	0	0
SK	55	29	10	2	5	0	--	--	--	--	--	--
MB	46	23	10	11	10	1	78	17	6	0	0	0
ON	28	35	20	9	8	2	49	23	7	8	9	4
QC	31	11	13	15	21	10	9	12	13	10	26	30
NB	29	23	22	7	17	2	47	38	7	3	3	2
NS	16	29	14	18	21	2	64	9	27	0	0	0
PE	45	18	5	14	14	5	--	--	--	--	--	--
NL	55	20	6	4	11	5	--	--	--	--	--	--
CAN	**32**	**29**	**16**	**9**	**12**	**3**	**24**	**17**	**11**	**8**	**19**	**20**

Note: Due to small sample sizes, results for schools in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Diversity of the school population

Two indicators of school populations' diversity were included in the school questionnaire for PCAP 2016: school administrators were asked to estimate the proportion of Indigenous students in their schools as well as the proportion of students in their schools who were English/French-as-a-second-language or English/French-as-a-first-language learners.

Among OECD countries, Canada has been a leader in equitable education outcomes for immigrant students. However, focusing on overall success can obscure important work that remains to be done at the provincial level. In addition, while Canada leads in closing the "immigrant achievement gap," the gap between Indigenous and non-Indigenous people in Canada remains wide, even if Indigenous educational attainment has risen in recent years.

In a majority of schools in anglophone and francophone school systems in Canada overall, fewer than 6 per cent of students do not speak English or French, respectively, as their first language (Table 3.16). In anglophone school systems, Alberta, Saskatchewan, Manitoba, and Quebec stand out as having

a higher proportion of schools where over a quarter of students to do not speak English as their first language. In francophone school systems in all Western provinces and Ontario, over a quarter of students in over 25 per cent of schools do not speak French as their first language.

TABLE 3.16 Proportion of students identified as second-language learners in schools participating in PCAP 2016, by language of the school system

	Anglophone school systems						Francophone school systems					
	0%	1–5%	6–10%	11–25%	26–50%	More than 50%	0%	1–5%	6–10%	11–25%	26–50%	More than 50%
BC	15	50	18	12	2	2	20	30	0	10	0	40
AB	13	35	18	16	13	6	22	17	11	6	33	11
SK	19	29	24	18	8	2	--	--	--	--	--	--
MB	24	35	11	14	12	3	11	22	11	28	17	11
ON	23	51	12	5	7	2	19	21	10	10	17	23
QC	21	39	13	5	12	10	41	30	8	7	4	10
NB	42	37	11	4	5	1	26	59	5	5	2	3
NS	43	47	4	5	1	1	36	18	18	9	0	18
PE	41	50	5	5	0	0	--	--	--	--	--	--
NL	80	16	1	1	0	3	--	--	--	--	--	--
CAN	**23**	**45**	**14**	**8**	**7**	**3**	**34**	**29**	**8**	**8**	**8**	**12**

Note: Due to small sample sizes, results for students in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

As noted, the school questionnaire asked principals to estimate the proportion of students in their schools that identify as Indigenous (i.e., First Nations, Métis, or Inuit). As discussed in Chapter 1, in Canada overall, 3.9 per cent of students identify themselves as First Nations, 2.5 per cent as Métis, and 0.2 per cent as Inuit (Table 1.11). As seen in Table 3.17, Indigenous students were somewhat concentrated in Saskatchewan (in the anglophone school system) and in Manitoba (in both school systems), with over a quarter of the student population in over 20 per cent of schools in those systems identified as Indigenous.

TABLE 3.17 Percentage of Indigenous students, by language of the school system, schools participating in PCAP 2016

	Anglophone school systems						Francophone school systems					
	0%	1–5%	6–10%	11–25%	26–50%	More than 50%	0%	1–5%	6–10%	11–25%	26–50%	More than 50%
BC	6	46	12	25	7	3	0	60	20	20	0	0
AB	6	52	16	16	3	7	39	56	6	0	0	0
SK	2	34	13	29	12	9	--	--	--	--	--	--
MB	6	26	18	18	18	13	0	44	11	17	22	6
ON	31	55	6	6	2	0	21	69	7	4	0	0
QC	27	55	9	7	0	3	70	29	0	0	0	1
NB	35	55	2	5	2	0	60	34	3	2	0	0
NS	6	64	17	9	3	0	0	82	9	0	9	0
PE	18	73	5	5	0	0	--	--	--	--	--	--
NL	51	27	7	5	5	5	--	--	--	--	--	--
CAN	**22**	**50**	**10**	**11**	**4**	**3**	**54**	**40**	**2**	**2**	**1**	**1**

Note: Due to small sample sizes, results for students in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Public and private schools

The relative strengths and weaknesses of public and private education have long been debated. On the one hand, market or quasi-market systems are thought to promote innovation and greater choice for parents; on the other hand, observers have argued that marketized education contributes to greater stratification of educational opportunities and outcomes (OECD, 2012). In OECD countries and in Canada, higher academic achievement in private schools has been found to be primarily associated with the higher socioeconomic status and education levels of the families they serve (OECD, 2012; Frenette & Chan, 2015).

Principals' responses to the PCAP 2016 school questionnaire indicate that 92 per cent of participating schools in anglophone school systems in Canada overall were publicly funded, as were 84 per cent of schools in francophone school systems (Table 3.18). The largest numbers of private anglophone schools are in British Columbia (28 per cent) and Quebec (25 per cent). Only Ontario and Quebec reported private francophone schools, at 3 per cent and 25 per cent respectively. These proportions are similar to those observed in past administrations of PCAP, except in 2013.

TABLE 3.18 Percentage of public and private schools, by language of the school system, schools participating in PCAP 2016

	Anglophone school systems		Francophone school systems	
	Public school	Private school	Public school	Private school
BC	72	28	100	0
AB	94	6	100	0
SK	98	2	--	--
MB	90	10	100	0
ON	94	6	97	3
QC	75	25	75	25
NB	100	0	100	0
NS	100	0	100	0
PE	100	0	--	--
NL	97	3	--	--
CAN	**92**	**8**	**84**	**16**

Note: Due to small sample sizes, results for schools in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

Instructional time

Among OECD countries, the number of school instructional days ranges from 162 to over 200 days per year. The OECD average in 2015 was 183 days (OECD, 2016a). In Canada, the number of instructional days is a matter of provincial and school district policy, and so this number varies across schools. Canada-wide, for anglophone school systems, the modal value was between 190 and 195 days of instruction, with a small minority (1–9 per cent) having 200 or more instructional days in British Columbia, Alberta, Ontario, Nova Scotia, and Newfoundland and Labrador (Table 3.19). A majority (57 per cent) of administrators in French-language schools reported 180 or fewer instructional days, compared to just 7 per cent for English-language schools. With the exception of Ontario (2 per cent), no schools in francophone school systems reported more than 200 instructional days.

TABLE 3.19 Percentage of schools reporting in each category for number of instructional days, by language of the school system

	Anglophone school systems						Francophone school systems					
	180 or fewer days	181–185 days	186–190 days	190–195 days	196–200 days	More than 200 days	180 or fewer days	181–185 days	186–190 days	190–195 days	196–200 days	More than 200 days
BC	17	36	29	6	3	9	10	60	20	0	10	0
AB	19	39	20	11	11	2	22	67	0	6	6	0
SK	7	38	33	12	11	0	--	--	--	--	--	--
MB	5	21	33	21	20	0	6	17	50	11	17	0
ON	2	9	26	45	15	2	5	10	36	41	7	2
QC	51	39	4	0	6	0	85	13	1	0	0	0
NB	9	45	21	24	1	0	3	62	14	21	0	0
NS	1	12	17	68	2	1	0	27	18	55	0	0
PE	5	50	27	5	14	0	--	--	--	--	--	--
NL	3	9	47	38	2	1	--	--	--	--	--	--
CAN	**7**	**20**	**26**	**32**	**13**	**2**	**57**	**20**	**10**	**11**	**2**	**0**

Note: Due to small sample sizes, results for schools in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Scheduling (i.e., by the semester or full year) affects classrooms by influencing the continuity of instruction and the types of pedagogy teachers employ. At the Grade 8/Secondary II level, language arts classes are offered on a full-year or semestered basis, depending on the policy of the school, school district, or province. As seen in Table 3.20, among anglophone systems, only British Columbia has a sizeable number of schools offering the Grade 8/Secondary II language arts course on a semestered basis. Many more schools in francophone school systems schedule their language arts courses on a semestered basis, including 20 per cent in British Columbia. Compared to PCAP 2013, some minor differences are evident across jurisdictions in the proportion of science courses being scheduled on a semestered basis.

TABLE 3.20 Percentage of schools reporting semestered and full-year language arts instruction, by language of the school system

	Anglophone school systems		Francophone school systems	
	Semester	Full year	Semester	Full year
BC	17	83	20	80
AB	2	98	11	89
SK	1	99	--	--
MB	1	99	6	94
ON	1	99	10	90
QC	0	100	9	91
NB	0	100	3	97
NS	0	100	9	91
PE	0	100	--	--
NL	0	100	--	--
CAN	**2**	**98**	**9**	**91**

Note: Due to small sample sizes, results for schools in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

School administrators were also asked to indicate the number of minutes of instruction their school was offering each week in language arts. At least 75 per cent of schools in both language systems offered over 250 minutes of language arts instruction per week. In anglophone school systems, Manitoba and Ontario stand out as having the greatest proportion of schools offering the most minutes of instruction per week, with Quebec having the least. In francophone school systems, New Brunswick has the largest proportion of schools offering the most minutes of language arts instruction. Francophone schools in British Columbia offer the shortest instructional time in language arts (Table 3.21).

TABLE 3.21 Number of minutes of language arts instruction offered each week, by language of the school system, schools participating in PCAP 2016

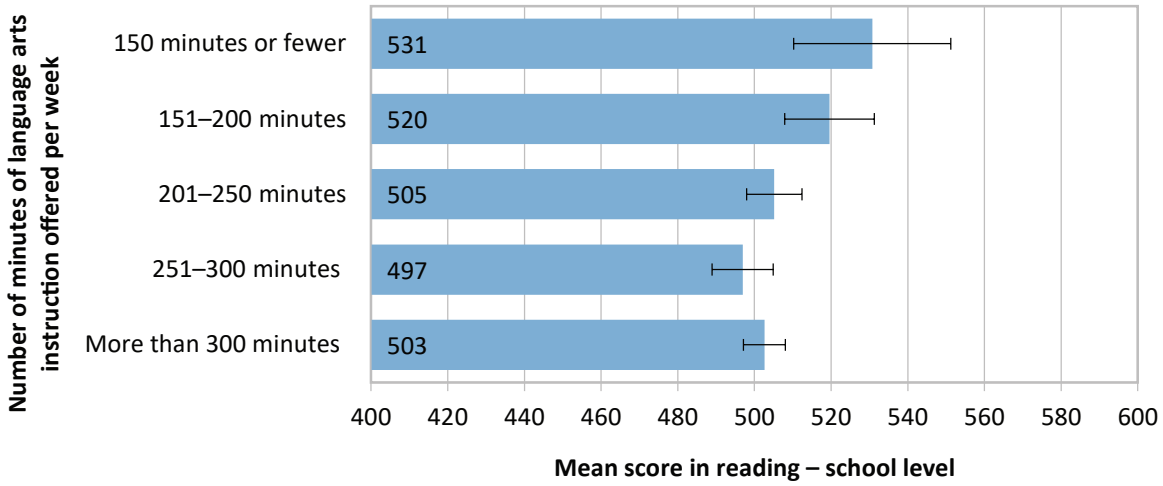
	Anglophone school systems					Francophone school systems				
	150 or fewer	151–200	201–250	251–300	More than 300	150 or fewer	151–200	201–250	251–300	More than 300
BC	4	30	27	12	27	10	40	40	0	10
AB	1	7	34	43	16	0	11	39	28	22
SK	0	3	10	50	36	--	--	--	--	--
MB	0	6	11	27	55	0	6	33	56	6
ON	2	6	11	27	54	0	2	17	32	49
QC	3	6	57	26	8	5	6	12	35	43
NB	0	2	17	61	19	0	0	2	12	86
NS	1	0	2	70	27	0	9	18	64	9
PE	0	0	5	52	43	--	--	--	--	--
NL	2	3	10	60	25	--	--	--	--	--
CAN	**2**	**7**	**16**	**32**	**43**	**3**	**5**	**14**	**32**	**46**

Note: Due to small sample sizes, results for schools in francophone school systems are not reported for Saskatchewan and Prince Edward Island; however they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016. Percentages may not add up to 100 due to rounding.

Comparisons to PCAP 2013 (O'Grady & Houme, 2015) show, as may be expected, that more instructional minutes per week are offered in language arts than in science. A majority of schools in all jurisdictions offered less than 200 minutes of science instruction per week, while, in language arts, a majority of schools in all jurisdictions except British Columbia and Quebec in anglophone school systems and British Columbia in francophone school systems offer at least 250 minutes of instruction per week. Compared to PCAP 2010, in which mathematics was the major domain, the number of minutes of instruction in science was generally lower than in mathematics, which, in turn, was generally lower than in language arts. While, in 2010, 47 per cent of schools across Canada offered 250 minutes or less of instruction in mathematics per week, in 2016 less than 25 per cent of schools did so in language arts, based on responses to the PCAP 2016 school questionnaire.

The relationship between reading achievement and the number of minutes per week offered in language arts is shown in Figure 3.27. As was the case for PCAP 2007, students in schools offering less instructional time in language arts per week tend to perform better than those receiving more time (Appendix A.3.21). This finding is consistent with what was observed in PCAP 2010, in which mathematics was the major domain. It should be noted that this relationship in PCAP 2016 is very weak, which is also consistent with the pattern in PCAP 2010. Interestingly, according to PCAP 2013, there was no significant relationship between instructional time in science and science achievement. As noted in previous PCAP reports, care must be taken with respect to drawing conclusions between instructional time and achievement, as it is conceivable that instructional time may be confounded with other variables, such as schools offering more instructional time to students who have been identified as lower achievers in a given domain.

FIGURE 3.27 Relationship between the number of minutes of language arts instruction and reading achievement

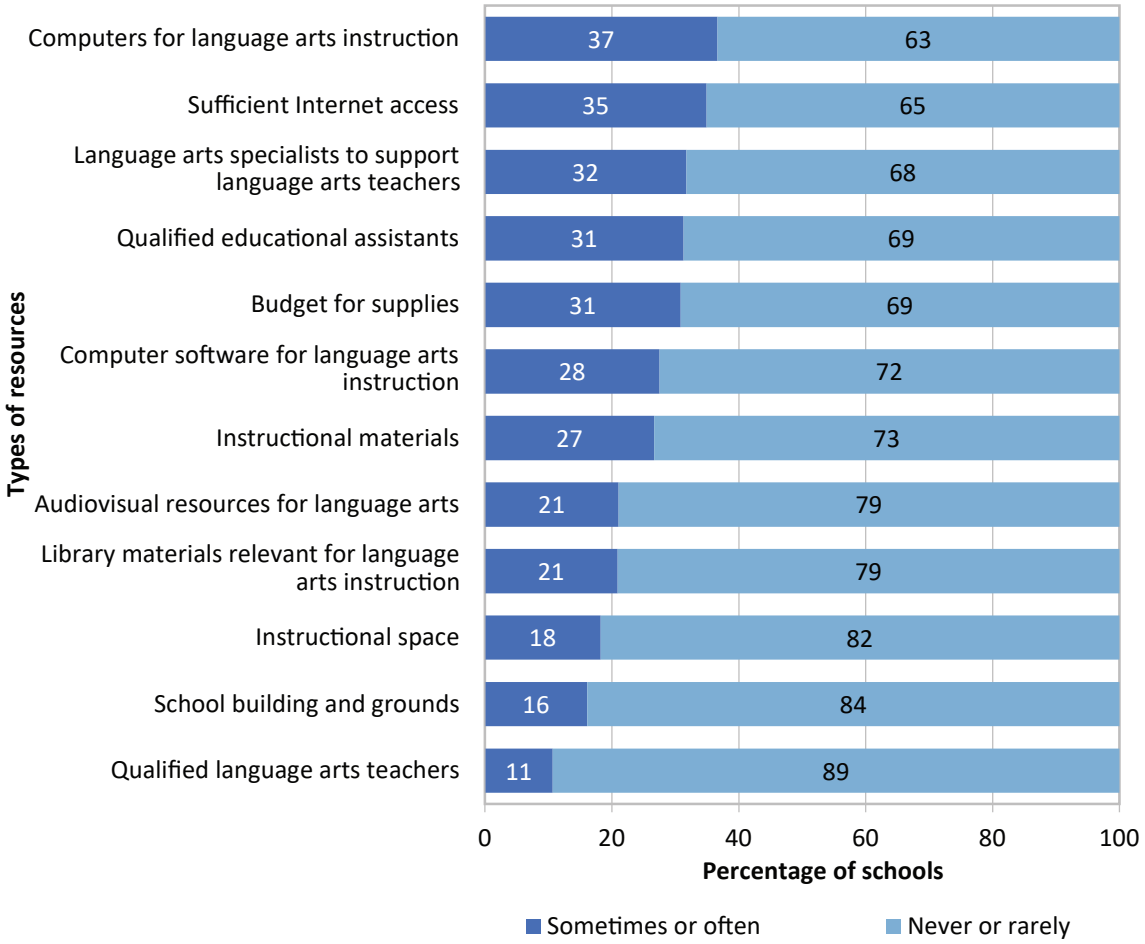


Note: "Mean score in reading – school level" refers to the mean student score in a school. The scores shown are the Canadian average of those means.

School facilities and resources

As was the case in the previous cycle of PCAP, principals were asked to share their views on how shortages or an inadequate number of resources affected the capacity of their schools to provide instruction. Figure 3.28 summarizes administrators' perspectives on the adequacy of school facilities, human resources, and instructional resources, ordered from the most to the least frequent inadequate resource. Of these three broad categories, shortages of instructional resources for language arts was the most oft-cited issue. Shortages of computers and insufficient Internet access were noted somewhat more than shortages of traditional resources like instructional materials, library materials, and audiovisual resources (Appendix A.3.22).

FIGURE 3.28 Frequency with which resource shortages limit instruction, as reported by principals of schools participating in PCAP 2016



The vast majority (89 per cent) of school principals who responded to the school questionnaire reported that qualified teachers are never or rarely a concern. However, shortages of language arts specialists (32 per cent) and qualified educational assistants for language arts classrooms (31 per cent) sometimes or often affect the capacity of the school to provide instruction. In general, participating Canadian principals reported being less concerned about the space and quality of school facilities than about most other resources.

Compared to principals' responses in PCAP 2013, in which science was the major domain, principals in 2016 indicated that, in general, shortages or inadequacies in all these categories were less frequently affecting their school's capacity to provide instruction. However, based on the PCAP data, it is not possible to state if this change is due to an improvement in school resources or to language arts being less affected by resource issues than is science.

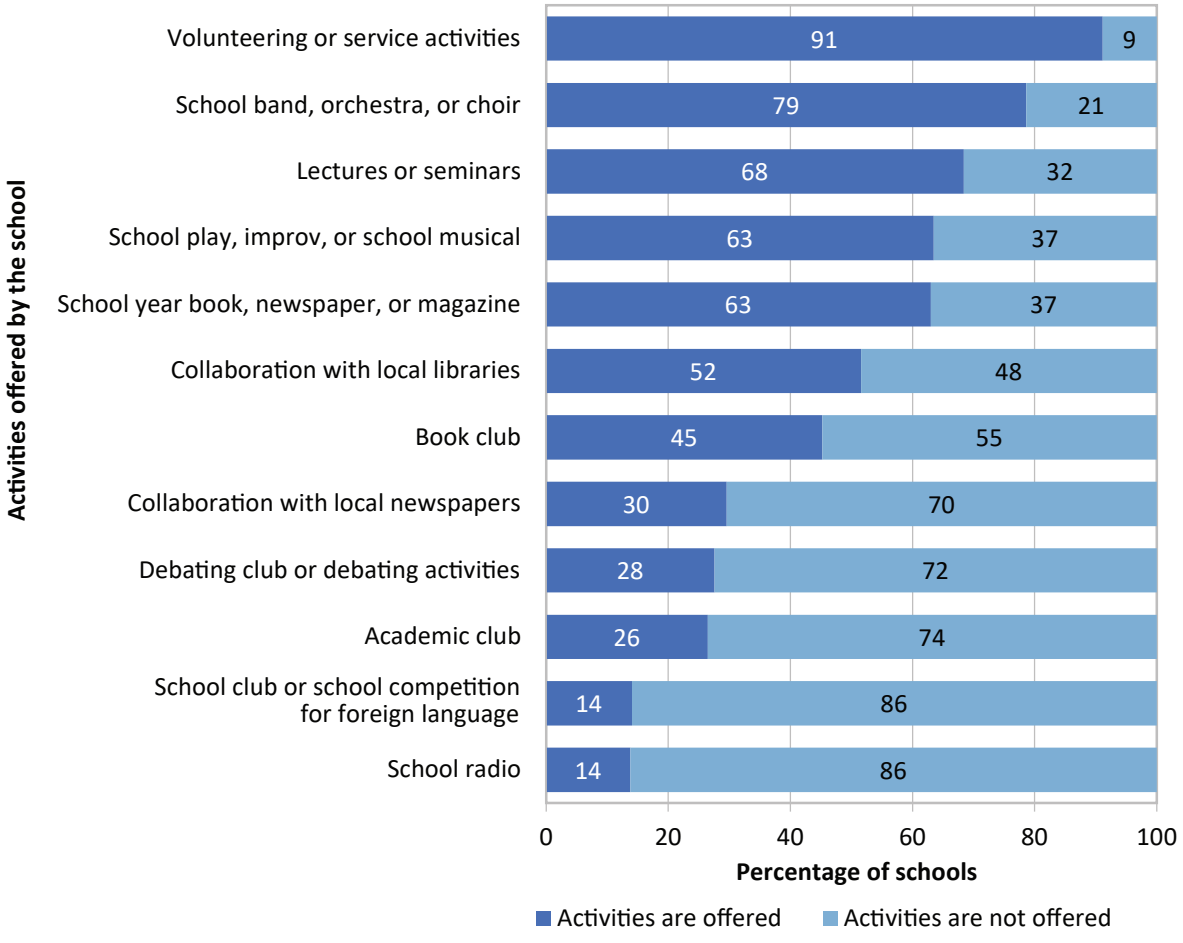
Enrichment and extracurricular activities

Over and above the resources required for academic learning described above, school resources are deployed to enrich students' learning with extracurricular activities. Ideally, a school is able to engage students with a wide variety of activities that appeal to their different interests and talents. It is

interesting to note from school-size research that student engagement in extracurricular learning does not depend only on the availability of these activities. In larger schools offering a wider complement of extracurricular learning, advantaged students are more likely to participate in and benefit from these activities, while smaller schools appear to be able to leverage a stronger sense of community to encourage more equitable participation in extracurricular activities (Ares Abalde, 2014).

Figure 3.29 lists extracurricular and enrichment activities offered by schools participating in PCAP 2016, ordered from the most to the least frequently offered. These items include activities related to arts and communication but do not include athletics. Among participating schools, volunteering or some form of service learning was offered most often (in 91 per cent of schools), followed by music programs (79 per cent) and lectures or seminars (68 per cent). Schools were least likely to offer activities related to foreign language learning (14 per cent) and school radio (14 per cent) (Appendix A.3.23).

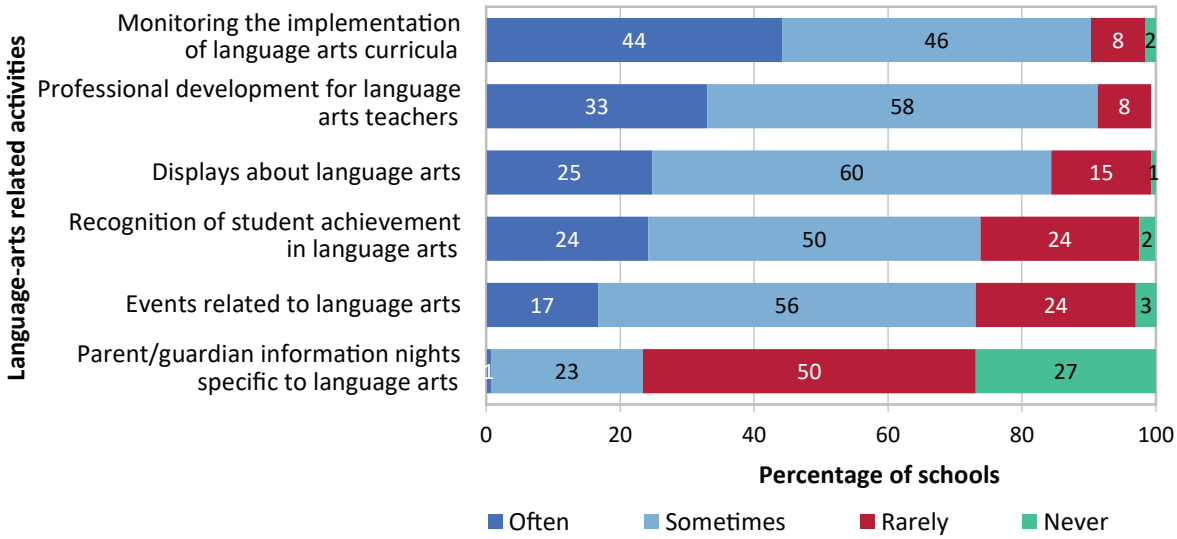
FIGURE 3.29 Enrichment activities related to language arts offered by schools participating in PCAP 2016



Given that language arts was the major domain of assessment, PCAP 2016 was interested in the frequency of a number of language-arts-related activities and events in schools. Figure 3.30 shows the findings with respect to six such activities and events, from the most to the least frequently occurring at the pan-Canadian level. The two most frequently occurring activities are monitoring the

implementation of the language arts curricula (44 per cent) and professional development for language arts teachers (33 per cent). Conversely, information nights specific to language arts for parents or guardians never or rarely take place in more than three-quarters of schools (Appendix A.3.24).

FIGURE 3.30 School events related to language arts in schools participating in PCAP 2016



Note: Percentages may not add up to 100 due to rounding.

School climate

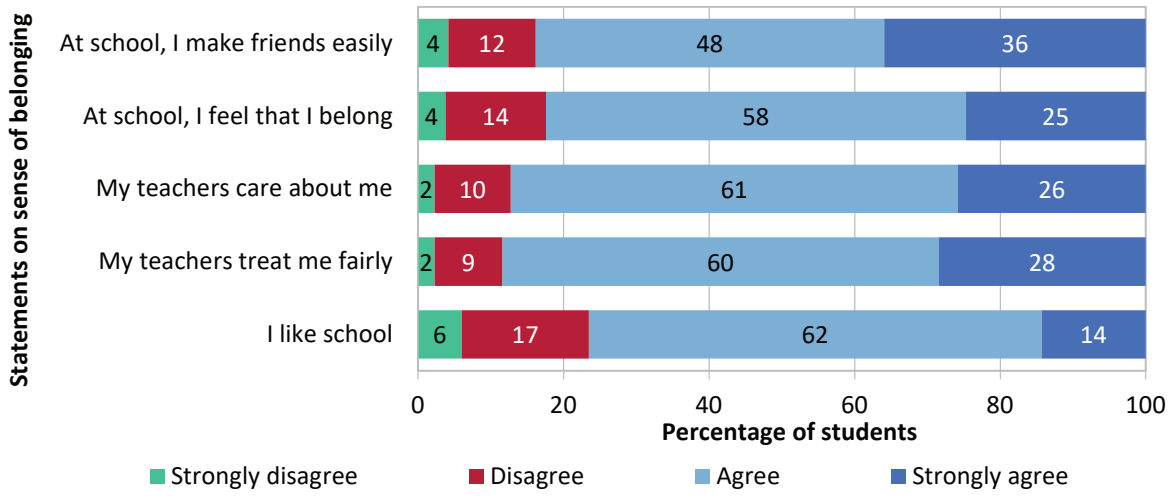
Although the exact relationship between school climate and student achievement is elusive, research has consistently indicated that a positive school climate benefits students in many ways. School climate plays a significant role in helping students develop a sense of control and resilience in their lives (OECD, 2017). Students who are positively engaged at school are better behaved and more inclined to try and persist in their academic studies (Guthrie, Wigfield, & You, 2012).

In this section, the following indicators are analyzed based on participating students' responses to questions related to the school climate: students' sense of belonging, student absenteeism, and physical and psychological safety at school. Student absenteeism is looked at both from the students' and the principals' perspectives.

Students' sense of belonging

Students who participated in PCAP 2016 were asked to indicate the extent to which they agreed with a number of statements about their sense of belonging in school. The vast majority of students agreed or strongly agreed with all statements related to this sense of belonging (Figure 3.31; Appendix A.3.25). Although almost one in four students did not agree with the statement "I like school," that proportion is slightly less than in PCAP 2007, when it was 29 per cent.

FIGURE 3.31 Students' sense of belonging in school, schools participating in PCAP 2016



The statement related to students liking school yielded some contrasts across provinces. For example, while approximately 80 per cent of students in British Columbia, Alberta, Saskatchewan, Manitoba, and Ontario agreed or strongly agreed that they liked school, less than 70 per cent did so in Quebec, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador (Table 3.22).

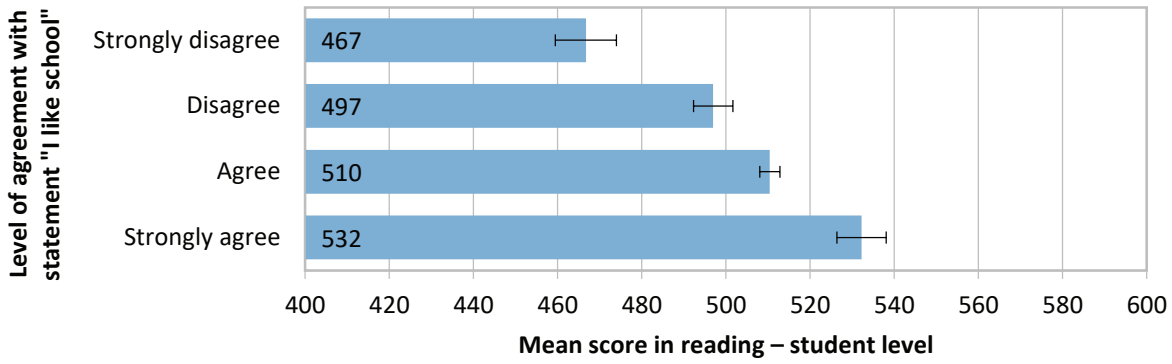
TABLE 3.22 Proportion of students agreeing/disagreeing with the statement "I like school"

	Strongly disagree	Disagree	Agree	Strongly agree
BC	5.0	14.2	66.1	14.7
AB	4.6	14.9	62.2	18.3
SK	5.6	15.1	62.3	16.9
MB	5.3	14.2	62.6	18.0
ON	5.4	15.1	63.4	16.2
QC	7.6	24.2	59.3	8.9
NB	9.7	19.5	58.8	12.0
NS	9.6	23.1	56.0	11.3
PE	8.0	24.2	61.6	6.2
NL	10.0	23.2	57.3	9.5
CAN	**6.0**	**17.5**	**62.2**	**14.3**

Note: Percentages may not add up to 100 due to rounding.

The relationship between students' level of agreement about liking school and their reading achievement is positive and linear, with a difference of about 65 points between students stating that they strongly disagree with the statement "I like school" and those who strongly agree with it (Figure 3.32; Appendix A.3.25.1).

FIGURE 3.32 Relationship between reading achievement and students' response to the statement "I like school"



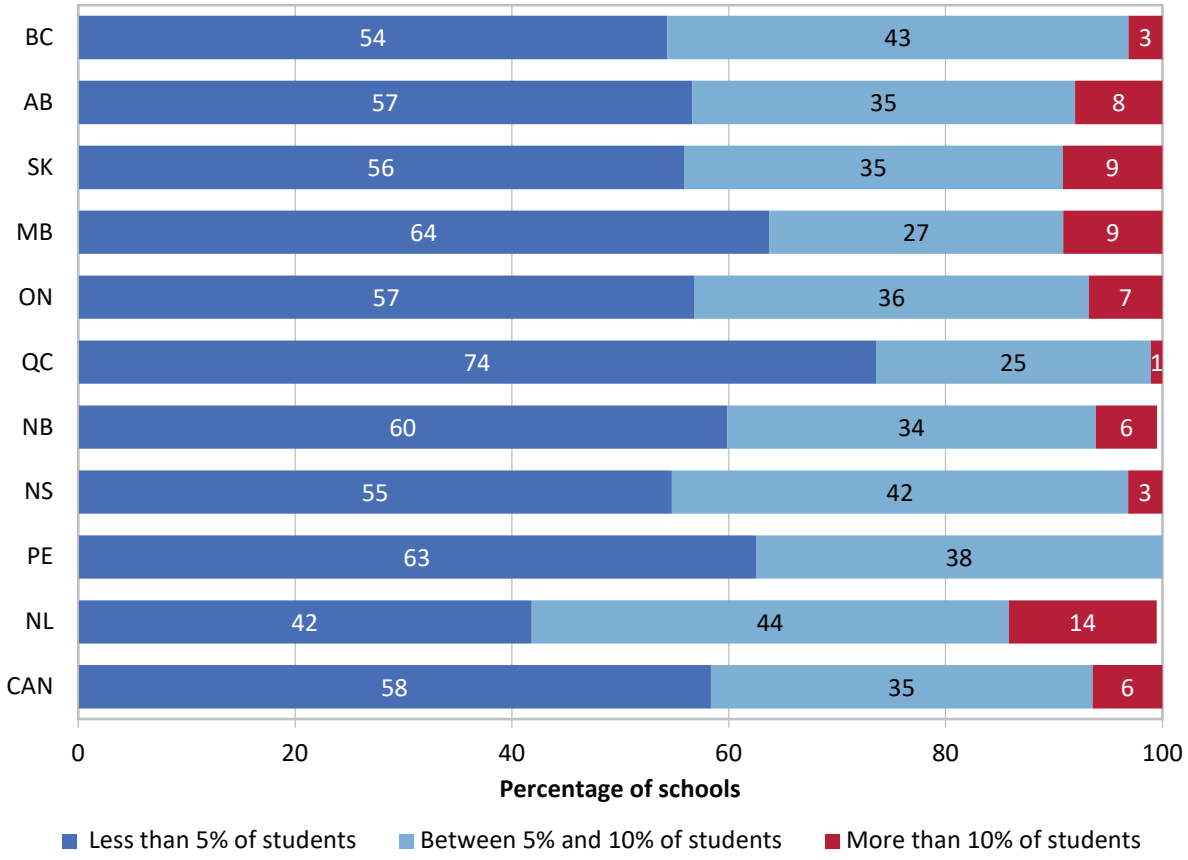
Student absenteeism

Studies have identified relationships between school climate and student absenteeism (Hendron & Kearney, 2016; Van Eck, Johnson, Bettencourt, & Lindstrom, 2017). Student attendance can be an important indicator of school climate, which in turn may impact student engagement and achievement. In PCAP 2016, student attendance was reported on by both school administrators and by students themselves.

Absenteeism based on principals' reports

In most jurisdictions, student absenteeism is not a serious concern, with only 6 per cent of schools reporting that more than 10 per cent of students are absent on a typical school day (Figure 3.33; Appendix A.3.26). This proportion ranges from a high of 14 per cent in Newfoundland and Labrador to 0 per cent in Prince Edward Island.

FIGURE 3.33 Proportion of students absent from school, as reported by school principals in schools participating in PCAP 2016

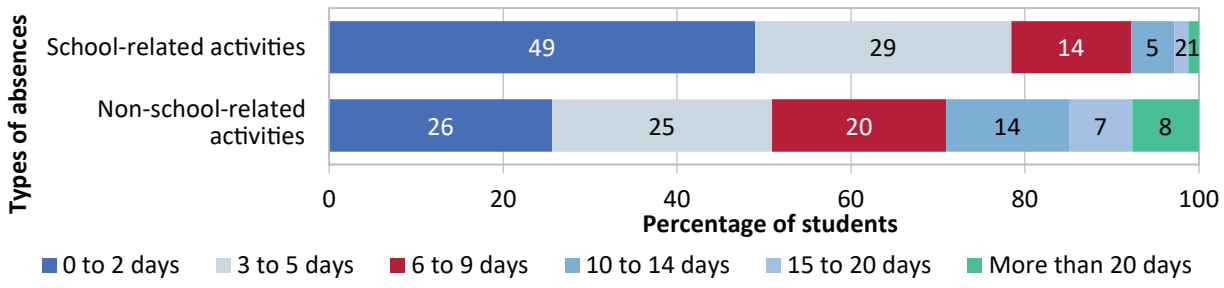


Note: Percentages may not add up to 100 due to rounding.

Absenteeism based on students' reports

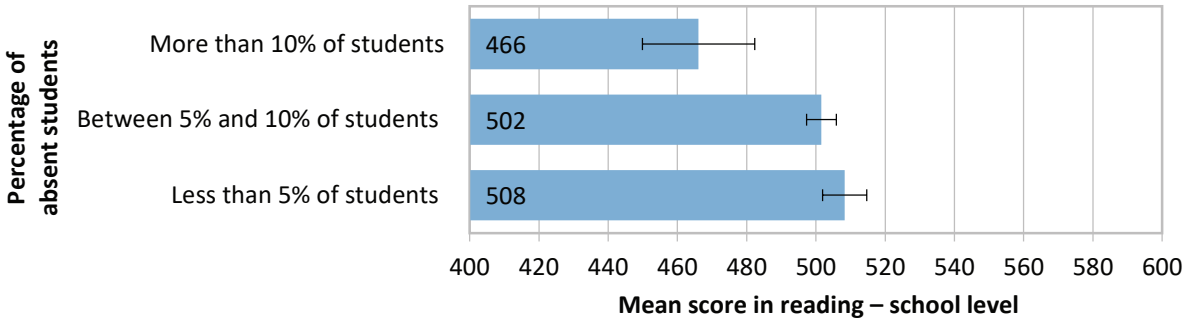
Students were asked to report on their absences in the current school year and whether they were for non-school-related reasons (e.g., illness, appointments, travel) or the result of school-related activities (e.g., field trips, sports activities, music or cultural events). Almost 30 per cent of students reported being absent from school for 10 days or more in that school year for non-school-related reasons, while 8 per cent reported being absent for the same duration for school-related reasons. Based on students' responses, absences for school-related reasons are more widespread but shorter in duration than those for non-school-related reasons (Figure 3.34; Appendix A.3.27).

FIGURE 3.34 Proportion of students absent from school, as reported by students in schools participating in PCAP 2016



If reading scores are analyzed in relation to principals' reports regarding absenteeism, a pattern emerges in which mean reading performance is higher in schools where fewer students (i.e., less than 10 per cent) were absent than in schools where more students (i.e., over 10 per cent) were absent (Figure 3.35; Appendix A.3.26.1). This finding is consistent with what was observed in previous PCAP reports.

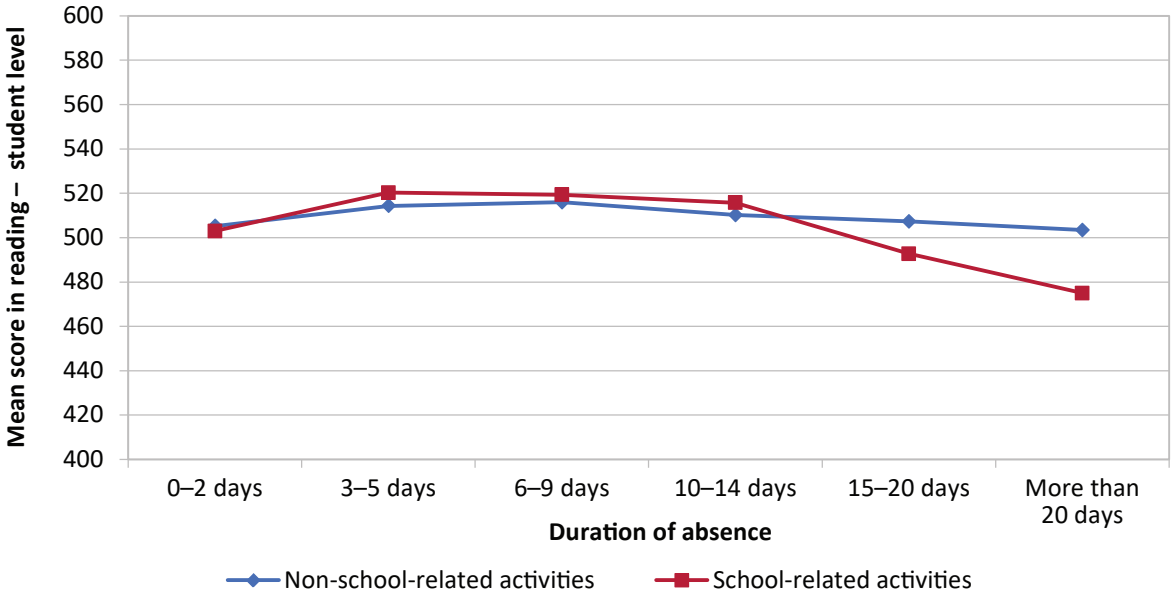
FIGURE 3.35 Relationship between student absences, as reported by school principals, and reading achievement



Note: "Mean score in reading – school level" refers to the mean student score in a school. The scores shown are the Canadian average of those means.

With respect to students' reports of absenteeism, the relationship between absence and reading achievement depends on the type of absence. For non-school-related reasons, there is no pattern in the relationship, as students perform about the same, regardless of the number of days they missed (Figure 3.36; Appendix A.3.27.1). For school-related activities, student performance decreases markedly for students who missed more than 15 days of school. As was mentioned in the PCAP 2010 contextual report (CMEC, 2012), these results suggest that some involvement in school-related activities such as field trips, sports, music, and so on, may be desirable, but that, at extreme levels, such absences may negatively influence achievement.

FIGURE 3.36 Relationship between student absences, as reported by students, and reading achievement

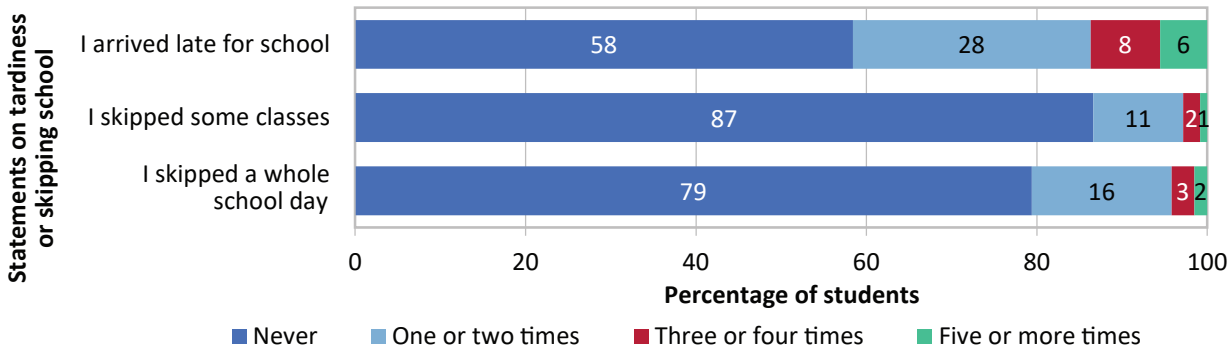


Student skipping and tardiness

Students may skip individual classes, or days of school, for a variety of reasons. Difficult home circumstances, poor relationships at school, substance abuse, and mental health problems are among the risk factors associated with chronic skipping of school. It makes intuitive sense that this type of absence would have a relationship to student achievement, and, indeed, the correlation is well established in large-scale achievement research. Data from PISA 2012, for example, showed that students who skipped classes were more likely to be low achievers, and more likely to drop out of school, than their counterparts (OECD, 2016b).

Students participating in PCAP were asked whether they had skipped full days or classes or had been late for classes over the two weeks preceding the PCAP 2016 assessment. Figure 3.37 shows that most students were never absent or late during that period. Tardiness occurred more often than skipping school. For the minority that skipped one or more times during the two-week period, it is noteworthy that this group was more likely to miss entire days of school, not just individual classes (Appendix A.3.28).

FIGURE 3.37 Student-reported skipping and tardiness in schools participating in PCAP 2016

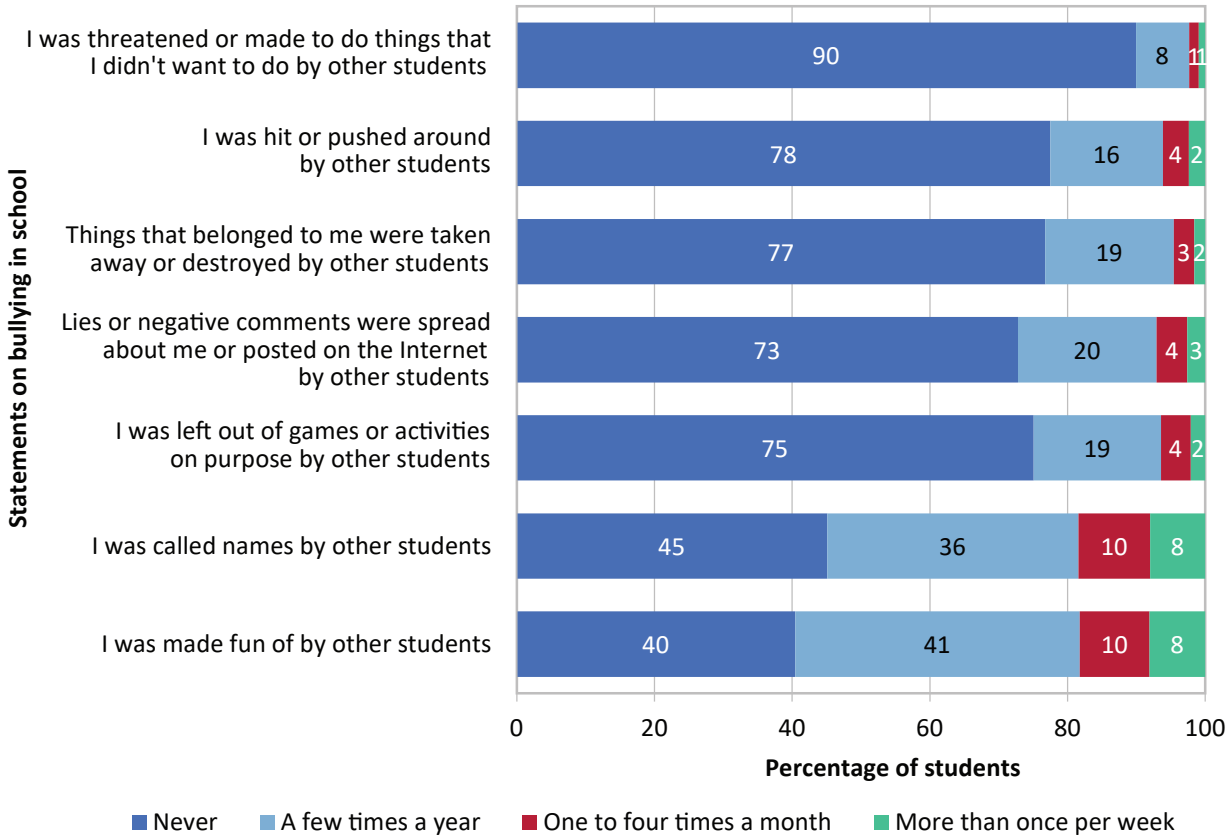


Note: Percentages may not add up to 100 due to rounding.

Psychological and physical safety

A recent research note by CMEC showed how serious and widespread bullying is in school across all grade levels and discussed what could be done to counter its negative impact on students (CMEC, 2019). To gather information on this indicator of school climate, the PCAP student questionnaire asked participating students about their psychological and physical safety, focusing on the frequency with which they experienced threats, violence, or harassment in school during that school year. The questionnaire included seven statements related to bullying in school and overall. In their responses, at least 70 per cent of students reported that they had never experienced five of the seven behaviours during that school year (Figure 3.38; Appendix A.3.29). The most frequent forms of bullying were being called names by other students or being made fun of by other students, forms experienced by 18 per cent of students at least once per month.

FIGURE 3.38 Students' responses to questionnaire items related to their physical and psychological safety at school in schools participating in PCAP 2016



Note: Percentages may not add up to 100 due to rounding.

Summary

This chapter has presented information on characteristics of classrooms and schools and on the practices of teachers, based on data gleaned from the contextual questionnaires from PCAP 2016.

As was the case in the earlier PCAP cycle, class sizes vary considerably across school systems, with francophone systems having a greater number of classrooms of 30 or more students. Although students in larger classrooms performed better in reading than those in smaller classes, care must be taken in interpreting a cause-and-effect relationship between these variables.

In Canada overall, a majority of Grade 8/Secondary II teachers never have another adult to assist them in their language arts classrooms. Although students in classrooms where teachers never have another adult to assist them performed better than students in classrooms that have assistance for any period of time, that is likely because classrooms having another adult present besides the teacher are composed of students requiring additional support.

Based on the PCAP 2016 data, more than one-third of Grade 8/Secondary II classrooms in Canada overall have multiple grades. Students in classrooms with two grade levels performed as well in reading as students in single-grade classrooms. It is only when more than two grades were taught in the classroom that students achieved less well in reading.

At the pan-Canadian level, almost half of teachers participating in PCAP had a substitute to teach in their class for six days or more in the school year. Although students in classrooms where a substitute teacher was present for five or fewer days tended to perform better in reading than those in classrooms where a substitute was present for more days, the relationship between those two variables is not conclusive.

Based on teacher reports, 18 per cent or more of teachers stated that their language arts class had lost six days or more of instruction in each of the following categories: school-spirit days, sports activities, and field trips or excursions.

The vast majority of teachers use remediation, differentiation, and/or enrichment strategies "a lot" or "more than a little" to accommodate the needs of struggling and/or advanced students. Consistent with results from the previous PCAP cycle, there is a negative relationship between remediation strategies and reading achievement, a weak but positive relationship with enrichment strategies, and virtually no relationship with differentiation strategies.

In terms of accommodations, adaptations, and modifications, the vast majority of teachers alter their teaching methods for students who need additional support. Also, teachers adapt classroom groupings based on different types of learning activities in language arts classes. While three-quarters of teachers used whole-class instruction "a lot," close to a quarter of teachers used small-group or individual modes of instruction "a lot."

Teachers teach students a number of before, during, and after reading strategies. Although language arts teachers use all of these strategies regularly in their classroom, the relationship between the frequency of use of these strategies and reading achievement is difficult to establish in a large-scale assessment context such as PCAP.

Teachers use a number of broad language arts activities in the classrooms. For example, almost three-quarters of teachers asked students to look up information at least once a week. Across jurisdictions, there are marked differences in the use of these pedagogical practices by language of the school system.

PCAP 2016 looked at a number of instructional strategies and tools related to language arts. Many differences are evident by language of the school system for strategies and tools such as group discussions, using text research tools, teaching reading strategies, teaching basic rules of language, and silent reading of teacher-selected materials. For the purposes of analysis, these strategies were classified into four categories: direct reading, reading aloud, indirect reading, or silent reading strategies. Within that framework, strategies related to reading aloud (the teacher reading aloud to students, and students reading aloud to the whole class or in groups) and indirect reading (discussion in small groups or the whole class, and using graphic organizers) show a modest trend in increased reading scores as the use of these strategies increased in the classroom.

Teachers were asked to estimate the amount of time they spent on reading instruction and/or activities with students on a weekly basis, regardless of whether this was done across the curriculum or during formally scheduled reading instruction. On average, three-quarters of Canadian Grade 8/Secondary II teachers spent one hour or more per week on reading instruction, while 5 per cent spent less than 30 minutes, with some provincial differences noted. The amount of time teachers spent on reading instruction every week is not strongly related to reading achievement, although students in classrooms

where the teacher spent between 30 minutes and 1 hour on such instruction achieved a higher mean score than students in classrooms where teachers spent both more and less time.

In terms of the types of reading assigned by the teachers, a majority of teachers asked students to read fiction and non-fiction books at least once a week, with non-fiction articles assigned slightly less frequently. As was noted in PCAP 2007, students whose teachers more frequently assigned creative genres achieved higher scores in reading than those reading these types of texts less frequently.

The teacher questionnaire asked teachers to indicate how often they assigned four specific tasks related to reading: written reports, oral presentations, students' personal responses to reading selections, and reading to be done outside of class. As was the case in 2007, oral presentations were least often assigned by Grade 8/Secondary II teachers across Canada and in all provinces, while personal-response tasks were assigned most often in all provinces except Quebec.

Participating teachers were asked to indicate the amount of language arts homework they assigned each week. In Canada overall, close to 70 per cent of teachers assigned less than one hour of homework in language arts per week, but there are notable provincial differences. The relationship between the amount of homework in language arts per week and reading achievement is positive and linear, with a difference of 31 points between those students who were not assigned any homework and those who were assigned more than two hours. This pattern is generally consistent with results from PCAP 2007.

The practice of using results from external tests and assessments to determine students' final grades or evaluations for the language arts course varies across provinces: it is used by almost a quarter of Grade 8/Secondary II teachers in Quebec but by no more than 11 per cent of teachers in the other provinces. As was the case for PCAP 2007, there is no significant relationship between reading achievement scores and teachers' use of standardized assessment results for grading purposes.

Participating language arts teachers were asked to provide details on the types of assessments they use in their classroom. Almost all Grade 8/Secondary II teachers used individual assignments or projects "sometimes or often." Furthermore, although some variations between provinces should be noted, over 60 per cent of teachers never used behaviour or attendance as criteria for grading, while over 20 per cent often considered group collaboration, improvement, effort, and/or participation.

Related to assessment, students were asked to indicate the frequency with which their teacher used a number of methods to generate grades or marks in language arts. Teachers used a variety of methods to assess students, with long- and short-answer questions being the most frequently used methods and true/false or matching questions being the least frequently used. Students whose teachers more frequently used restricted-type questions performed less well in reading than those whose teachers used these types of questions less frequently. Conversely, students whose teachers more frequently used open questions performed better on the PCAP reading assessment.

PCAP provides valuable information regarding a number of demographic characteristics of schools. Among the finding are the following:

- In anglophone school systems, the majority of participating schools had between 101 and 500 students. Francophone school systems had a greater number of schools with more than 1,000 students, owing to the high proportion of very large schools in Quebec. Students in schools

with 101 students or more achieved higher reading scores than those in very small schools. This is consistent with results from the previous PCAP cycle.

- The distribution of schools across communities of various sizes is very similar to that in PCAP 2013, with the exception that there were slightly more schools in small cities in 2016.
- In terms of grade configuration in Canada overall, two-thirds of schools in anglophone school systems had nine or more grades, while over 60 per cent of schools in francophone school systems had between five and eight grades.
- According to numbers reported by principals in participating schools, a majority of schools in anglophone school systems had 50 or fewer Grade 8/Secondary II students, while francophone school systems had more schools with over 100 Grade 8/Secondary II students.
- The responses of principals to the school questionnaire indicated that 92 per cent of participating schools in anglophone school systems were publicly funded, as were 84 per cent of schools in francophone school systems.
- In Canada overall, in a majority of schools in both anglophone and francophone school systems, fewer than 6 per cent of students do not speak English or French as their first language.
- In Canada, Indigenous students are somewhat concentrated in Saskatchewan (in the anglophone school system) and in Manitoba (in both school systems), with over a quarter of the student population in over 20 per cent of schools in those systems identified as Indigenous.
- The number of instructional days per school year varies by language of the school system. In anglophone school systems, the modal value was between 190 and 195 days of instruction, with a small minority of schools in five provinces having 200 or more instructional days. A majority of administrators in French-language schools reported 180 or fewer instructional days, compared to just 7 per cent for English-language schools.
- Among anglophone systems in the provinces, only British Columbia had a sizeable number of schools offering the Grade 8/Secondary II language arts course on a semestered basis. Many more schools in francophone school systems scheduled their language arts courses on a semestered basis.
- More than 75 per cent of schools in both language systems offered over 250 minutes of language arts instruction per week. Students in schools offering less instructional time in language arts per week tended to perform better in the reading assessment than those receiving more time.
- PCAP 2016 gathered school administrators' perspectives on the adequacy of school facilities and of human and instructional resources. Overall, shortages of instructional resources for language arts was the most oft-cited issue. Shortages of computers and insufficient Internet access were noted somewhat more frequently than shortages of traditional resources like instructional and library materials and audiovisual resources.
- The school questionnaire also covered enrichment and extracurricular activities offered by schools. Among schools participating in PCAP, volunteering or some form of service learning was offered most often, followed by music programs and lectures or seminars.

PCAP 2016 was interested in the frequency with which a number of language-arts-related activities and events occurred at school. The two most frequent activities are monitoring the implementation of the language arts curriculum and professional development for language arts teachers.

Finally, PCAP looked at the following indicators related to school climate: students' sense of belonging, student absenteeism, and physical and psychological safety at school. The vast majority of students provided positive views on their sense of belonging, agreeing or strongly agreeing with all statements in the student questionnaire related to their sense of belonging in school. However, almost one in four students did not agree with the statement "I like school," with some variations across provinces. The relationship between students' level of agreement with the statement about liking school and their reading achievement is positive and linear, with a difference of over 65 points between students stating that they strongly disagree with the statement "I like school" and those who strongly agree with it.

In most jurisdictions, student absenteeism is not a serious concern, with only 6 per cent of schools reporting that more than 10 per cent of students were absent on a typical school day. Almost 30 per cent of students reported that they were absent from school for 10 days or more for non-school-related reasons in the school year during which PCAP was administered, while 8 per cent reported being absent for the same duration for school-related reasons. The mean reading performance in schools where, according to principals' reports, fewer students (less than 10 per cent) were absent is higher than in schools where more students were absent. At the student level, the relationship between student absence and reading achievement depends on the type of absence. For non-school-related reasons, there is a no pattern in the relationship; in contrast, for school-related activities, student performance decreased markedly for students who missed more than 15 days of school.

Students participating in PCAP were also asked whether they had skipped full days or classes or had been late for classes over the two weeks preceding the PCAP 2016 assessment. Most students indicated that they were never absent or late during that period.

Finally, students were asked about their psychological and physical safety, with questions about the frequency with which they had experienced threats, violence, or harassment in school. Overall, three-quarters or more of Canadian Grade 8/Secondary II students had never experienced five of the seven identified bullying behaviours in the school year during which PCAP was administered. The most frequent forms of bullying were being called names by other students or being made fun of by other students.

Conclusion

This report is the second of two reports providing results from PCAP 2016. While the first focused on the achievement results in the three domains assessed by PCAP (reading, mathematics, and science), this second report complements it by looking at contextual variables associated with reading achievement. The variables presented are drawn from three questionnaires and illustrate possible areas of interest for educational policy-makers and researchers. This report has focused on only selected context variables to demonstrate the types of analysis that are possible from the wealth of data provided by PCAP. Over the coming months, further analysis will be published by CMEC on specific factors of interest.

Student background characteristics

This report has presented information on five student demographic and socioeconomic characteristics: gender, language, socioeconomic status, immigration, and Indigenous self-identity. In keeping with past and present findings from PCAP, girls continued to significantly outperform boys in reading. In both language systems across Canada, students whose first language is the language of instruction achieved significantly higher reading scores than those whose first language is the minority official language.

Two proxies for socioeconomic status are used in PCAP contextual reports: parents' educational levels and the number of books in students' homes. Students with parents who have a university degree achieved significantly higher scores than those whose parents have less education, and student achievement was highest in homes with the greatest number of books.

The immigration status of students who wrote PCAP 2016 showed no relationship with reading achievement: no significant difference in achievement was found between students who were not born in Canada and their Canadian-born counterparts. Among students who reported Indigenous self-identity, Métis students achieved the highest scores in reading, while both Métis and First Nations students scored below the overall Canadian mean in reading.

A profile of students

This report has focused on 11 indices related to students' attitudes toward and beliefs about school, reading, and learning. Of these indices, eight showed positive relationships with achievement in reading. Higher achievement in reading in PCAP 2016 was found for students with higher scores in the following indices: early home literacy, attitude toward reading, reading self-efficacy, motivation to read, classroom reading resources, engagement in reading, student effort, and out-of-school activities. The general pattern for each of these indices was that students who scored in the top quarter of an index attained the highest scores in reading, while those with scores in the bottom quarter had the lowest reading performance. This finding is consistent when the indices are examined for Canada overall, by language of the school system, and by gender.

Three student indices have a negative relationship with reading performance: attribution of success, negative perceptions of reading, and reading strategies. The general pattern for these indices is opposite to that of the other eight indices: students who scored in the top quarter of the index attained the lowest scores in reading. This finding is also consistent when the indices are examined for Canada overall, by language of the school system, and by gender.

There is significant variation in index scores between students who attended anglophone schools and francophone schools. For most of the indices correlated with higher reading performance, students in anglophone schools have index scores similar to those of Canadian students overall. In Canada overall, students in anglophone school systems scored higher than their counterparts in francophone school systems on all of these eight indices except for the motivation to read index, where there was no significant difference between the two language systems. Significant differences between the two language systems are evident for half or more of the provinces on the majority of indices. For two indices, student effort and reading strategies, no significant differences exist between anglophone and francophone school systems in the majority of provinces.

At the pan-Canadian level, girls attained higher index scores on all eight indices that were positively correlated with reading achievement, while boys attained higher index scores on two of the three indices that were negatively correlated with performance in reading. At the provincial level, no gender gap exists in the majority of provinces for two indices: reading self-efficacy and engagement in reading.

Taken together, these 11 indices account for 32 per cent of the variation in student reading performance.

A profile of teaching practices and schools

School programs and curricula vary from province to province and from territory to territory across the country, so comparing school systems is a complex task. The PCAP 2016 contextual questionnaires provide data that can be used to examine characteristics of classrooms and schools and the practices of teachers at the provincial and pan-Canadian levels.

As was the case in the earlier PCAP cycle, class sizes vary considerably across provinces, with francophone school systems having a greater number of classrooms of 30 or more students. More than one-third of Grade 8/Secondary II classrooms in Canada overall are multi-grade classrooms.

Canadian teachers alter their teaching methods for students who need additional support, and they adapt their classroom groupings (whole-class, small-group, and individual modes of instruction) based on the different types of learning activities in language arts classes. The vast majority of teachers use remediation, differentiation, and/or enrichment strategies “a lot” or “more than a little” to accommodate the needs of either struggling or advanced students.

Teachers use a number of before-, during-, and after-reading strategies regularly in their classrooms as well as a number of broader language arts instructional strategies and tools such as group discussions, using text research tools, teaching reading strategies, teaching basic rules of language, and silent reading of teacher-selected materials. Across provinces, there are marked differences in terms of these pedagogical practices by language of the school system. The relationship between the frequency of use

of these strategies and reading achievement is difficult to establish in a large-scale assessment context such as PCAP.

The majority of Canadian Grade 8/Secondary II teachers spent one hour or more per week on reading instruction. Teachers asked students to read fiction and non-fiction books at least once a week, and non-fiction articles slightly less frequently. PCAP 2016 asked teachers to indicate how often they assigned four specific tasks related to reading: written reports, oral presentations, students' personal responses to reading selections, and reading to be done outside of class. Oral presentations were least often assigned by teachers across Canada and in provinces, while personal-response tasks were assigned most often in all provinces except Quebec.

In Canada overall, close to 70 per cent of teachers assigned less than one hour of homework in language arts per week, but there are notable provincial differences in the amount of homework assigned.

Teachers used a variety of methods to assess students, with long- and short-answer questions being the most frequently used and true/false or matching questions the least frequently used. Students whose teachers more frequently asked them to construct their own responses to open questions performed better on the PCAP reading assessment.

The demographic information provided in this study helps to portray the variability among schools across this country. Students who participated in PCAP 2016 attended schools located in our largest cities and in small rural settings. The schools, which were both public and private, ranged in size from more than 1,000 to fewer than 100 students, with as few as 2 to more than 10 different grade levels. The number of Grade 8/Secondary II students, the target population for this study, ranged from more than 200 to fewer than 25 students per school and were organized into between one and more than five classes per school, sometimes with two or more grade levels in the class. While this variability might seem problematic, the challenge that school principals reported most frequently was shortages of instructional resources for language arts. Although they face challenges relating to personnel, teaching resources, and physical space, schools appear to remain focused on what is needed to provide quality education for their students, including enrichment and extracurricular activities. Among schools participating in PCAP, volunteering or some form of service learning was offered most often, followed by music programs and lectures or seminars.

Finally, PCAP looked at three indicators related to school climate: students' sense of belonging, student absenteeism, and physical and psychological safety at school. The vast majority of students provided positive views on their sense of belonging. However, almost one in four students indicated that they did not like school, an attitude that is correlated with lower reading performance. In most jurisdictions, student absenteeism was not a serious concern, with only 6 per cent of schools reporting that more than 10 per cent of students were absent on a typical school day. Reading performance was shown to be higher in schools with lower rates of absenteeism. At the student level, the relationship between student absence and reading achievement depends on the type of absence. Where absences were for non-school-related reasons, there is a no pattern in the relationship; with respect to absences for school-related activities, student performance decreased markedly for students who missed more than 15 days of school. The majority of students participating in PCAP indicated that they had never skipped full days or classes or been late for classes over the two weeks preceding the PCAP 2016 assessment.

With respect to students' psychological and physical safety, the student questionnaires asked about the frequency with which students had experienced threats, violence, or harassment in school. The most frequent forms of bullying were being called names or being made fun of by other students: about 8 per cent of students reported experiencing these behaviours more than once per week. An in-depth report on bullying in Canadian schools can be found in Issue 12 of *Assessment Matters!*

Final statement

The results from the PCAP 2016 assessment provide a comprehensive picture of Grade 8/Secondary II students' reading skills at the provincial and pan-Canadian levels. Data from the PCAP contextual questionnaires also highlight different factors in the students' homes, classrooms, and school environments contributing to their performance in reading. This report helps to contextualize the learning and teaching of language arts in Canadian schools. Over the coming months, CMEC, in collaboration with ministries and departments of education, will continue to analyze the results from PCAP in conjunction with other education indicators to better inform the teaching of reading and related educational policies.

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Appendix: Data Tables

Table A.1.1 Percentage of students by gender self-identification

Province	Female	Male	I identify myself in another way	I prefer not to say
	%	%	%	%
British Columbia	50	47	1	1
Alberta	47	51	1	1
Saskatchewan	47	50	2	1
Manitoba	47	50	1	1
Ontario	48	50	1	1
Quebec	47	50	1	1
New Brunswick	49	49	1	1
Nova Scotia	49	49	1	1
Prince Edward Island	47	49	2	2
Newfoundland and Labrador	47	49	2	2
Canada	**48**	**50**	**1**	**1**

Table A.1.2 Achievement in reading by gender

Gender	Mean score	SE
Female	521	(1.4)
Male	497	(1.3)
I identify myself in another way	509	(9.7)
I prefer not to say	469	(7.8)

TABLE A.1.3 Relationship between students' first language and reading achievement by language of the school system

Language of school system	First language	Mean score	SE
Anglophone school systems			
	English	511	(1.3)
	French	491	(7.8)
	Other	510	(3.4)
Francophone school systems			
	English	482	(5.1)
	French	504	(2.1)
	Other	497	(6.9)

TABLE A.1.4 Proportion of students enrolled in language-immersion programs

Province	English immersion	French immersion	Other-language immersion
	%	%	%
British Columbia	19	21	6
Alberta	19	27	10
Saskatchewan	15	17	5
Manitoba	19	24	8
Ontario	14	15	6
Quebec	28	12	7
New Brunswick	21	48	3
Nova Scotia	22	37	2
Prince Edward Island	23	35	2
Newfoundland and Labrador	17	42	3
Canada	**19**	**19**	**6**

TABLE A.1.5 Reading achievement and second-language learning status by language of the school system

Language of school system	Enrolment in a second-language program	Mean score	SE
Anglophone school systems			
	Currently enrolled	466	(3.7)
	Previously enrolled	510	(4.1)
	Never enrolled	519	(1.4)
Francophone school systems			
	Currently enrolled	494	(7.2)
	Previously enrolled	478	(8.7)
	Never enrolled	502	(2.1)

TABLE A.1.6 Percentage of students by their parents' education as reported by students

Province	University degree(s)	Some university education	Completed college or cégep	Some post-secondary	High school	Less than a high school diploma	I don't know
	%	%	%	%	%	%	%
British Columbia	42	3	12	8	9	2	24
Alberta	41	3	13	7	8	3	25
Saskatchewan	37	4	12	10	13	4	20
Manitoba	37	3	12	6	14	5	22
Ontario	45	3	15	5	7	2	23
Quebec	43	3	16	8	8	4	19
New Brunswick	39	2	14	6	10	4	24
Nova Scotia	41	3	13	8	9	3	22
Prince Edward Island	38	3	13	9	9	4	24
Newfoundland and Labrador	40	2	13	7	10	4	24
Canada	**43**	**3**	**14**	**7**	**8**	**3**	**22**

TABLE A.1.7 Relationship between parents' education (as reported by students) and reading achievement

Parents' education	Mean score	SE
Did not complete high school	458	(6.0)
Completed high school	475	(3.3)
Had some education after high school	497	(2.8)
Completed education at a college or cégep	504	(2.4)
Had some university education but did not complete a degree	510	(7.7)
Completed one or more university degrees	534	(1.6)
I don't know	488	(2.0)

TABLE A.1.8 Percentage of students by the number of books in their home

Province	0–10 books	11–25 books	26–100 books	101–200 books	More than 200 books
	%	%	%	%	%
British Columbia	8	16	35	20	21
Alberta	9	18	32	22	20
Saskatchewan	11	16	35	18	20
Manitoba	12	18	33	18	18
Ontario	9	14	35	20	22
Quebec	15	23	33	15	14
New Brunswick	12	16	35	17	20
Nova Scotia	10	16	36	19	19
Prince Edward Island	10	16	38	20	16
Newfoundland and Labrador	9	19	33	21	19
Canada	**10**	**17**	**34**	**19**	**19**

TABLE A.1.9 Relationship between the number of books in the home and reading achievement

Number of books	Mean score	SE
0–10 books	456	(3.0)
11–25 books	483	(2.0)
26–100 books	509	(1.4)
101–200 books	530	(2.3)
More than 200 books	539	(2.2)

TABLE A.1.10 Immigration status of students

Province	Born in Canada	Not born in Canada
	%	%
British Columbia	84	16
Alberta	79	21
Saskatchewan	88	12
Manitoba	80	20
Ontario	88	12
Quebec	89	11
New Brunswick	94	6
Nova Scotia	94	6
Prince Edward Island	91	9
Newfoundland and Labrador	96	4
Canada	**87**	**13**

TABLE A.1.11 Relationship between immigration status and reading achievement

Immigration status	Mean score	SE
Born in Canada	508	(1.0)
Not born in Canada	508	(3.6)

TABLE A.1.12 Relationship between students' Indigenous identity and reading achievement

Indigenous identity	Mean score	SE
Métis	489	(4.4)
Inuit	481	(18.9)
First Nations	456	(4.7)
Not Indigenous	512	(1.0)

TABLE A.2.1 Percentage of students by their responses to questionnaire items related to the early home literacy index

Items related to the early home literacy index	Never	Rarely	Sometimes	Often
	%	%	%	%
They read to me	10	13	28	50
They encouraged me to read	4	8	25	63
They showed an interest in what I was reading at school	8	17	37	39
They did what they could to help me with my reading homework	5	8	26	61
They asked me about what I was reading	7	13	33	47
They praised me when I did well in reading	7	11	28	54

TABLE A.2.1.1 Relationship between the early home literacy index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**523**	**(1.9)**	**523**	**(2.0)**	**506**	**(1.8)**	**490**	**(1.9)**
Language of the school system								
Anglophone school systems	524	(2.4)	524	(2.7)	509	(2.2)	493	(2.0)
Francophone school systems	519	(4.5)	519	(4.1)	498	(3.4)	482	(4.0)
Gender								
Female	534	(2.9)	533	(3.1)	514	(3.2)	506	(2.9)
Male	508	(2.8)	511	(2.5)	499	(2.8)	480	(2.9)

TABLE A.2.1.2 Early home literacy index scores

Province	Index score	SE
British Columbia	50.6	(0.2)
Alberta	49.7	(0.3)
Saskatchewan	49.8	(0.2)
Manitoba	50.0	(0.2)
Ontario	51.1*	(0.2)
Quebec	49.3*	(0.3)
New Brunswick	49.9	(0.2)
Nova Scotia	50.6	(0.2)
Prince Edward Island	50.2	(0.5)
Newfoundland and Labrador	51.7*	(0.2)
Canada	**50.3**	**(0.1)**

* Significant difference compared to Canada

TABLE A.2.1.3 Early home literacy index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	50.6	(0.2)	49.3	(0.2)	1.2**
Alberta	49.7*	(0.2)	48.8	(0.5)	0.9
Saskatchewan	49.8*	(0.2)	50.6*	(0.0)	-0.8**
Manitoba	50.0	(0.2)	49.2	(0.3)	0.8**
Ontario	51.2	(0.2)	49.5	(0.2)	1.7**
Quebec	50.8	(0.4)	49.1	(0.3)	1.6**
New Brunswick	49.7*	(0.3)	50.3	(0.3)	-0.5
Nova Scotia	50.6	(0.2)	49.4	(0.7)	1.2
Prince Edward Island	50.3	(0.6)	--	--	--
Newfoundland and Labrador	51.7*	(0.2)	--	--	--
Canada	**50.7**	**(0.1)**	**49.2**	**(0.3)**	**1.5****

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.1.4 Early home literacy index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	51.5	(0.3)	49.7	(0.4)	1.7**
Alberta	50.6	(0.3)	48.8	(0.4)	1.8**
Saskatchewan	50.9	(0.4)	48.7	(0.3)	2.3**
Manitoba	50.7	(0.3)	49.5	(0.4)	1.2**
Ontario	52.2	(0.3)	50.0	(0.3)	2.2**
Quebec	50.7	(0.3)	47.8*	(0.4)	3.0**
New Brunswick	51.9	(0.4)	47.8*	(0.3)	4.1**
Nova Scotia	51.9	(0.3)	49.3	(0.3)	2.6**
Prince Edward Island	51.0	(0.7)	49.2	(0.7)	1.8
Newfoundland and Labrador	53.0*	(0.4)	50.6*	(0.4)	2.3**
Canada	**51.5**	**(0.2)**	**49.2**	**(0.2)**	**2.3****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.2.2 Percentage of students by their responses to questionnaire items related to the attitude toward reading index

Items related to the attitude toward reading index	Strongly disagree	Disagree	Agree	Strongly agree
	%	%	%	%
Positive relationship with achievement				
I think being a good reader makes a difference outside of school	6	18	48	28
I enjoy reading	10	21	42	27
I enjoy going to a bookstore or library	16	28	36	20
I like it when I receive a book for a present	19	30	37	15
Negative relationship with achievement				
Most of the reading I do in school is boring	8	42	35	15
I read only if I have to	20	36	31	13
I cannot read for more than a few minutes because I cannot sit still for a long time	33	39	18	9
For me, reading is a waste of time	37	41	14	8

TABLE A.2.2.1 Relationship between the attitude toward reading index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**555**	**(2.0)**	**519**	**(1.6)**	**496**	**(1.8)**	**472**	**(2.1)**
Language of the school system								
Anglophone school systems	556	(2.3)	519	(2.0)	498	(2.2)	474	(2.6)
Francophone school systems	549	(3.3)	520	(3.8)	492	(3.5)	466	(3.7)
Gender								
Female	566	(2.1)	528	(2.5)	499	(3.4)	478	(3.6)
Male	534	(3.9)	513	(3.0)	495	(2.1)	469	(2.7)

TABLE A.2.2.2 Attitude toward reading index scores

Province	Index score	SE
British Columbia	51.1*	(0.3)
Alberta	51.2*	(0.3)
Saskatchewan	50.1	(0.2)
Manitoba	51.4*	(0.3)
Ontario	50.7	(0.2)
Quebec	48.3*	(0.3)
New Brunswick	49.9	(0.2)
Nova Scotia	48.9*	(0.2)
Prince Edward Island	50.3	(0.5)
Newfoundland and Labrador	48.7*	(0.3)
Canada	**50.2**	**(0.1)**

* Significant difference compared to Canada

TABLE A.2.2.3 Attitude toward reading index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	51.1	(0.2)	51.9*	(0.2)	-0.8**
Alberta	51.2	(0.2)	51.4*	(0.5)	-0.2
Saskatchewan	50.1*	(0.2)	53.2*	(0.0)	-3.2**
Manitoba	51.4*	(0.2)	50.0*	(0.4)	1.4**
Ontario	50.7	(0.3)	50.6*	(0.3)	0.1
Quebec	49.9	(0.3)	48.1	(0.4)	1.7**
New Brunswick	50.3	(0.3)	49.0	(0.3)	1.2**
Nova Scotia	49.0*	(0.2)	46.7	(0.6)	2.3**
Prince Edward Island	50.4	(0.5)	--	--	--
Newfoundland and Labrador	48.7*	(0.2)	--	--	--
Canada	**50.7**	**(0.1)**	**48.4**	**(0.2)**	**2.3****

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.2.4 Attitude toward reading index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	53.2*	(0.3)	49.1	(0.4)	4.2**
Alberta	53.4*	(0.3)	49.1	(0.4)	4.3**
Saskatchewan	52.0	(0.3)	48.2	(0.2)	3.8**
Manitoba	53.3*	(0.3)	49.8*	(0.3)	3.5**
Ontario	52.4	(0.3)	48.9	(0.3)	3.5**
Quebec	50.6*	(0.4)	46.0*	(0.4)	4.6**
New Brunswick	52.6	(0.3)	47.0*	(0.3)	5.6**
Nova Scotia	51.0*	(0.3)	46.7*	(0.4)	4.3**
Prince Edward Island	52.4	(0.7)	48.1	(0.7)	4.3**
Newfoundland and Labrador	51.2	(0.4)	46.3*	(0.5)	4.9**
Canada	**52.2**	**(0.2)**	**48.2**	**(0.1)**	**4.0****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.2.3 Percentage of students by their responses to questionnaire items related to the reading self-efficacy index

Items related to the reading self-efficacy index	Strongly disagree	Disagree	Agree	Strongly agree
	%	%	%	%
I believe I am a good reader	5	14	54	27
I am confident about reading difficult material	6	20	48	26
Most of the reading I do in school is easy	3	30	52	15

TABLE A.2.3.1 Relationship between the reading self-efficacy index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**548**	**(2.0)**	**516**	**(2.3)**	**504**	**(1.9)**	**474**	**(2.1)**
Language of the school system								
Anglophone school systems	551	(2.3)	518	(2.7)	504	(2.2)	475	(2.8)
Francophone school systems	538	(3.9)	508	(3.9)	503	(3.8)	472	(3.6)
Gender								
Female	562	(2.6)	529	(3.1)	520	(2.6)	484	(3.4)
Male	535	(3.3)	505	(2.5)	489	(2.5)	465	(2.8)

TABLE A.2.3.2 Reading self-efficacy index scores

Province	Index score	SE
British Columbia	50.2	(0.2)
Alberta	51.0*	(0.2)
Saskatchewan	50.5	(0.2)
Manitoba	50.6	(0.2)
Ontario	50.8	(0.3)
Quebec	48.7*	(0.3)
New Brunswick	49.6	(0.2)
Nova Scotia	50.2	(0.2)
Prince Edward Island	50.8	(0.5)
Newfoundland and Labrador	50.2	(0.3)
Canada	**50.2**	**(0.1)**

* Significant difference compared to Canada

TABLE A.2.3.3 Reading self-efficacy index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	50.2	(0.2)	50.4*	(0.2)	-0.2
Alberta	51.0	(0.2)	50.5	(0.5)	0.6
Saskatchewan	50.5	(0.2)	51.3*	(0.0)	-0.8**
Manitoba	50.6	(0.2)	50.4*	(0.3)	0.1
Ontario	50.8	(0.3)	52.1*	(0.3)	-1.3**
Quebec	50.1	(0.3)	48.6	(0.3)	1.6**
New Brunswick	49.9	(0.3)	48.6	(0.3)	1.3**
Nova Scotia	50.3	(0.2)	47.5	(0.5)	2.7**
Prince Edward Island	50.7	(0.6)	--	--	--
Newfoundland and Labrador	50.2	(0.3)	--	--	--
Canada	**50.6**	**(0.1)**	**48.9**	**(0.3)**	**1.8****

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.3.4 Reading self-efficacy index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	49.9	(0.3)	50.5	(0.4)	-0.6
Alberta	51.1	(0.3)	51.0	(0.4)	0.0
Saskatchewan	50.6	(0.3)	50.4	(0.3)	0.2
Manitoba	50.9	(0.3)	50.2	(0.3)	0.7
Ontario	50.9	(0.4)	50.8	(0.4)	0.1
Quebec	49.6	(0.4)	47.8*	(0.4)	1.8**
New Brunswick	50.9	(0.3)	48.3*	(0.4)	2.7**
Nova Scotia	50.0	(0.3)	50.5	(0.3)	-0.6
Prince Edward Island	51.0	(0.6)	50.6	(0.6)	0.4
Newfoundland and Labrador	51.4	(0.4)	49.0	(0.6)	2.4**
Canada	**50.5**	**(0.1)**	**50.0**	**(0.2)**	**0.5****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.2.4 Percentage of students by their responses to questionnaire items related to the attribution of success index

Items related to the attribution of success index	Strongly disagree	Disagree	Agree	Strongly agree
	%	%	%	%
If I do especially well in language arts in school, it is because of good luck	17	46	31	6
If I do especially poorly in language arts in school, it is because of bad luck	28	46	21	5

TABLE A.2.4.1 Relationship between the attribution of success index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**485**	**(2.0)**	**501**	**(1.7)**	**521**	**(2.2)**	**537**	**(1.9)**
Language of the school system								
Anglophone school systems	486	(2.8)	501	(2.1)	522	(2.4)	541	(2.2)
Francophone school systems	481	(3.6)	501	(3.5)	517	(3.9)	521	(3.3)
Gender								
Female	499	(3.1)	508	(2.6)	533	(2.8)	550	(2.8)
Male	474	(2.8)	495	(2.2)	506	(2.9)	524	(2.8)

TABLE A.2.4.2 Attribution of success index scores

Province	Index score	SE
British Columbia	48.4	(0.3)
Alberta	49.7	(0.3)
Saskatchewan	50.0	(0.2)
Manitoba	49.6	(0.2)
Ontario	48.7	(0.3)
Quebec	50.1	(0.3)
New Brunswick	50.8*	(0.2)
Nova Scotia	50.2*	(0.2)
Prince Edward Island	51.0*	(0.6)
Newfoundland and Labrador	51.4*	(0.3)
Canada	**49.3**	**(0.1)**

* Significant difference compared to Canada

TABLE A.2.4.3 Attribution of success index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	48.4	(0.3)	50.7	(0.1)	-2.3**
Alberta	49.7	(0.2)	51.7	(0.5)	-2.0**
Saskatchewan	49.9*	(0.2)	52.9*	(0.0)	-2.9**
Manitoba	49.6	(0.2)	52.6*	(0.3)	-3.0**
Ontario	48.6	(0.3)	50.1	(0.3)	-1.5**
Quebec	47.6*	(0.3)	50.4	(0.3)	-2.7**
New Brunswick	50.4*	(0.3)	51.7*	(0.3)	-1.2**
Nova Scotia	50.1*	(0.2)	52.2	(0.6)	-2.1**
Prince Edward Island	51.0*	(0.6)	--	--	--
Newfoundland and Labrador	51.4*	(0.3)	--	--	--
Canada	**49.0**	**(0.2)**	**50.4**	**(0.3)**	**-1.4****

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.4.4 Attribution of success index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	47.8	(0.4)	49.1	(0.4)	-1.3**
Alberta	48.5	(0.4)	50.7	(0.4)	-2.2**
Saskatchewan	49.3	(0.2)	50.6	(0.3)	-1.3**
Manitoba	48.7	(0.3)	50.4	(0.4)	-1.7**
Ontario	48.2	(0.4)	49.0	(0.3)	-0.8
Quebec	49.4	(0.4)	50.7	(0.4)	-1.3**
New Brunswick	50.6*	(0.3)	51.0*	(0.3)	-0.4
Nova Scotia	49.2	(0.3)	51.3*	(0.3)	-2.1**
Prince Edward Island	51.8*	(0.6)	50.2	(1.0)	1.6
Newfoundland and Labrador	50.4*	(0.3)	52.3*	(0.5)	-1.9**
Canada	**48.7**	**(0.2)**	**49.9**	**(0.2)**	**-1.2****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.2.5 Percentage of students by their responses to questionnaire items related to the motivation to read index

Items related to the motivation to read index	Strongly disagree	Disagree	Agree	Strongly agree
	%	%	%	%
I would rather read for enjoyment than read for information	9	17	40	34
I would rather read for information than read stories	24	45	20	10

TABLE A.2.5.1 Relationship between the motivation to read index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**530**	**(1.5)**	**524**	**(2.3)**	**505**	**(2.2)**	**483**	**(2.0)**
Language of the school system								
Anglophone school systems	533	(1.9)	527	(2.4)	506	(2.5)	487	(2.4)
Francophone school systems	519	(5.3)	515	(3.9)	503	(5.1)	474	(4.2)
Gender								
Female	539	(2.3)	535	(3.4)	517	(3.4)	491	(4.4)
Male	516	(2.7)	511	(3.3)	495	(2.8)	481	(2.4)

TABLE A.2.5.2 Motivation to read index scores

Province	Index score	SE
British Columbia	50.7	(0.2)
Alberta	50.1	(0.2)
Saskatchewan	50.3	(0.2)
Manitoba	50.1	(0.3)
Ontario	49.9	(0.2)
Quebec	49.6	(0.3)
New Brunswick	50.2	(0.2)
Nova Scotia	50.4	(0.2)
Prince Edward Island	51.4	(0.5)
Newfoundland and Labrador	50.5	(0.3)
Canada	**50.0**	**(0.1)**

TABLE A.2.5.3 Motivation to read index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	50.7	(0.3)	49.1	(0.2)	1.6**
Alberta	50.2	(0.2)	49.0	(0.6)	1.1
Saskatchewan	50.3	(0.2)	49.6	(0.0)	0.7**
Manitoba	50.1	(0.3)	47.7*	(0.4)	2.4**
Ontario	49.9	(0.3)	49.1	(0.2)	0.9**
Quebec	50.1	(0.3)	49.6	(0.3)	0.5
New Brunswick	51.1*	(0.3)	47.9*	(0.3)	3.2**
Nova Scotia	50.5	(0.2)	49.2	(0.6)	1.3**
Prince Edward Island	51.3	(0.6)	--	--	--
Newfoundland and Labrador	50.5	(0.3)	--	--	--
Canada	**50.2**	**(0.1)**	**49.5**	**(0.3)**	**0.6**

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.5.4 Motivation to read index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	52.6	(0.3)	48.7	(0.4)	3.9**
Alberta	52.5	(0.3)	48.0	(0.3)	4.5**
Saskatchewan	52.1	(0.2)	48.5	(0.3)	3.5**
Manitoba	52.3	(0.4)	48.1	(0.4)	4.2**
Ontario	52.0	(0.3)	47.9	(0.4)	4.1**
Quebec	52.2	(0.4)	47.2	(0.5)	5.1**
New Brunswick	52.7	(0.3)	47.7	(0.4)	5.0**
Nova Scotia	53.1*	(0.3)	47.6	(0.3)	5.6**
Prince Edward Island	52.9	(0.6)	49.5	(0.8)	3.3**
Newfoundland and Labrador	52.5	(0.4)	48.6	(0.5)	4.0**
Canada	**52.2**	**(0.1)**	**47.9**	**(0.2)**	**4.4****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.2.5.5 Students' preferences for reading print or digital material

Type of reading	Print	Digital
	%	%
Reading for myself	62	38
Reading for school	73	27

TABLE A.2.6 Percentage of students by their responses to questionnaire items related to classroom reading material and the reading resources index

	Never	Rarely	Sometimes	Often
	%	%	%	%
Reading resources index				
Read novels or short stories (fiction)	4	13	43	40
Read informational or non-fiction material	5	18	49	27
No correlation with reading achievement				
Watch videos	11	25	39	25
Read material found on the Internet	11	27	39	22
Read books or other material from the school library	13	28	38	21
Read a textbook	19	31	36	13
Use on-line encyclopedias or other electronic subscriptions	30	33	26	11
Read books or other material from the public library	43	30	20	8
Read magazines or newspapers	34	40	21	6

TABLE A.2.6.1 Relationship between the reading resources index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**526**	**(1.9)**	**523**	**(2.1)**	**508**	**(2.2)**	**483**	**(2.2)**
Language of the school system								
Anglophone school systems	527	(2.6)	525	(2.3)	509	(2.7)	487	(2.9)
Francophone school systems	524	(3.6)	517	(2.6)	504	(3.9)	474	(3.8)
Gender								
Female	536	(2.9)	535	(2.6)	522	(2.9)	494	(3.5)
Male	516	(3.1)	512	(2.9)	497	(3.2)	474	(2.6)

TABLE A.2.6.2 Reading resources index scores

Province	Index score	SE
British Columbia	49.8	(0.3)
Alberta	49.7	(0.2)
Saskatchewan	50.4	(0.2)
Manitoba	51.3*	(0.2)
Ontario	50.3	(0.2)
Quebec	48.8*	(0.3)
New Brunswick	49.2	(0.3)
Nova Scotia	50.5	(0.2)
Prince Edward Island	51.4*	(0.4)
Newfoundland and Labrador	51.4*	(0.3)
Canada	**49.9**	**(0.1)**

* Significant difference compared to Canada

TABLE A.2.6.3 Reading resources index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	49.8	(0.2)	47.7	(0.2)	2.1**
Alberta	49.7	(0.2)	48.3	(0.5)	1.4**
Saskatchewan	50.4	(0.2)	49.8*	(0.0)	0.6**
Manitoba	51.4*	(0.2)	47.0*	(0.4)	4.3**
Ontario	50.4	(0.2)	48.1	(0.2)	2.3**
Quebec	50.0	(0.4)	48.7	(0.4)	1.3**
New Brunswick	50.9	(0.3)	44.9*	(0.4)	6.0**
Nova Scotia	50.5	(0.2)	49.1	(0.7)	1.4
Prince Edward Island	51.6*	(0.5)	--	--	--
Newfoundland and Labrador	51.4	(0.3)	--	--	--
Canada	**50.3**	**(0.1)**	**48.6**	**(0.3)**	**1.7****

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.6.4 Reading resources index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	50.2	(0.4)	49.3	(0.3)	0.9
Alberta	50.4	(0.3)	49.1	(0.4)	1.3**
Saskatchewan	51.1	(0.3)	49.7	(0.3)	1.5**
Manitoba	51.9*	(0.3)	50.8*	(0.4)	1.1**
Ontario	51.0	(0.3)	49.5	(0.3)	1.5**
Quebec	50.2	(0.4)	47.5*	(0.4)	2.6**
New Brunswick	50.7	(0.3)	47.7	(0.4)	3.0**
Nova Scotia	51.1	(0.2)	49.8	(0.3)	1.3**
Prince Edward Island	52.3	(0.6)	50.2	(0.6)	2.1**
Newfoundland and Labrador	52.5*	(0.3)	50.3	(0.5)	2.2**
Canada	**50.7**	**(0.2)**	**49.0**	**(0.2)**	**1.7****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.2.7 Percentage of students by their responses to questionnaire items related to the engagement in reading index

Items related to the engagement in reading index	Not at all	A little	More than a little	A lot
	%	%	%	%
The reading we do in school is interesting to me	16	42	34	8
I participate in class discussions in language arts	9	36	32	23

TABLE A.2.7.1 Relationship between the engagement in reading index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**535**	**(2.1)**	**520**	**(1.9)**	**507**	**(2.0)**	**476**	**(1.9)**
Language of the school system								
Anglophone school systems	538	(2.2)	521	(2.0)	507	(2.5)	474	(2.5)
Francophone school systems	523	(4.5)	514	(4.2)	506	(4.3)	480	(3.7)
Gender								
Female	550	(2.6)	531	(2.7)	519	(3.1)	485	(3.2)
Male	521	(2.6)	509	(2.6)	495	(2.5)	469	(3.0)

TABLE A.2.7.2 Engagement in reading index scores

Province	Index score	SE
British Columbia	51.1*	(0.3)
Alberta	50.5	(0.2)
Saskatchewan	49.8	(0.2)
Manitoba	52.0*	(0.2)
Ontario	50.8*	(0.2)
Quebec	47.3*	(0.3)
New Brunswick	49.7	(0.2)
Nova Scotia	50.1	(0.2)
Prince Edward Island	49.1	(0.5)
Newfoundland and Labrador	49.7	(0.3)
Canada	**49.9**	**(0.1)**

* Significant difference compared to Canada

TABLE A.2.7.3 Engagement in reading index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	51.1	(0.2)	49.7*	(0.2)	1.4**
Alberta	50.5	(0.2)	49.9*	(0.5)	0.5
Saskatchewan	49.8*	(0.2)	51.0*	(0.0)	-1.2**
Manitoba	52.0*	(0.2)	50.3*	(0.3)	1.7**
Ontario	50.9	(0.3)	49.4*	(0.2)	1.5**
Quebec	51.5	(0.3)	46.9	(0.3)	4.5**
New Brunswick	50.1	(0.3)	48.6*	(0.3)	1.5**
Nova Scotia	50.2	(0.2)	46.9	(0.6)	3.3**
Prince Edward Island	49.1*	(0.6)	--	--	--
Newfoundland and Labrador	49.7*	(0.3)	--	--	--
Canada	**50.8**	**(0.1)**	**47.2**	**(0.2)**	**3.6****

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.7.4 Engagement in reading index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	51.6*	(0.4)	50.7*	(0.4)	0.9
Alberta	51.0	(0.3)	50.0	(0.3)	1.0**
Saskatchewan	49.9	(0.3)	49.7	(0.3)	0.2
Manitoba	51.7*	(0.3)	52.1*	(0.3)	-0.4
Ontario	51.0	(0.3)	50.6*	(0.3)	0.3
Quebec	47.8*	(0.4)	46.9*	(0.4)	0.9
New Brunswick	50.2	(0.3)	49.1	(0.3)	1.2**
Nova Scotia	50.4	(0.3)	49.7	(0.3)	0.7
Prince Edward Island	49.9	(0.6)	48.0	(0.9)	1.9
Newfoundland and Labrador	50.8	(0.5)	48.6	(0.4)	2.2**
Canada	**50.3**	**(0.2)**	**49.6**	**(0.1)**	**0.6****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.2.8 Percentage of students by their responses to questionnaire items related to the negative perceptions of reading index

Items related to the negative perception of reading index	Not at all	A little	More than a little	A lot
	%	%	%	%
The reading we do in other classes is harder than in language arts	52	31	13	4
I struggle with homework that involves reading	61	27	8	4
The reading we do in school is more relevant for boys than girls	75	17	6	2
The reading we do in school is more relevant for girls than boys	75	16	7	2

TABLE A.2.8.1 Relationship between the negative perceptions of reading index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**479**	**(1.9)**	**503**	**(2.0)**	**528**	**(1.8)**	**533**	**(1.8)**
Language of the school system								
Anglophone school systems	478	(2.2)	504	(2.3)	533	(2.0)	535	(2.1)
Francophone school systems	483	(3.3)	500	(4.1)	506	(4.4)	525	(3.6)
Gender								
Female	495	(2.8)	514	(2.7)	537	(2.6)	544	(2.8)
Male	467	(2.4)	493	(2.6)	519	(2.8)	521	(2.7)

TABLE A.2.8.2 Negative perceptions of reading index scores

Province	Index score	SE
British Columbia	49.3	(0.2)
Alberta	49.3	(0.2)
Saskatchewan	49.9	(0.2)
Manitoba	49.5	(0.3)
Ontario	49.2	(0.2)
Quebec	50.2	(0.3)
New Brunswick	49.8	(0.2)
Nova Scotia	49.3	(0.2)
Prince Edward Island	48.4	(0.4)
Newfoundland and Labrador	49.8	(0.2)
Canada	**49.5**	**(0.1)**

TABLE A.2.8.3 Negative perceptions of reading index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	49.3	(0.2)	51.1	(0.2)	-1.9**
Alberta	49.3	(0.2)	53.0*	(0.5)	-3.7**
Saskatchewan	49.9	(0.2)	51.5*	(0.0)	-1.6**
Manitoba	49.4	(0.3)	53.6*	(0.4)	-4.2**
Ontario	49.1	(0.2)	51.7*	(0.3)	-2.6**
Quebec	50.2	(0.3)	50.2	(0.3)	0.0
New Brunswick	49.4	(0.3)	50.7	(0.3)	-1.3**
Nova Scotia	49.1	(0.2)	53.4*	(0.7)	-4.3**
Prince Edward Island	48.3	(0.4)	--	--	--
Newfoundland and Labrador	49.8	(0.2)	--	--	--
Canada	**49.2**	**(0.1)**	**50.4**	**(0.2)**	**-1.1****

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.8.4 Negative perceptions of reading index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	48.3	(0.3)	50.3	(0.4)	-2.0**
Alberta	48.7	(0.3)	49.9	(0.3)	-1.2**
Saskatchewan	49.4	(0.3)	50.4	(0.3)	-1.0**
Manitoba	48.3	(0.2)	50.5	(0.4)	-2.1**
Ontario	48.6	(0.3)	49.6	(0.3)	-1.0**
Quebec	48.9	(0.4)	51.4*	(0.4)	-2.4**
New Brunswick	48.4	(0.3)	51.2*	(0.3)	-2.8**
Nova Scotia	48.7	(0.2)	49.9	(0.3)	-1.1**
Prince Edward Island	48.8	(0.6)	48.1*	(0.5)	0.7
Newfoundland and Labrador	49.5	(0.3)	50.0	(0.4)	-0.4
Canada	**48.7**	**(0.1)**	**50.2**	**(0.1)**	**-1.5****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.2.9 Percentage of students by their responses to questionnaire items related to reading strategies and the student reading strategies index

	Never	Rarely	Sometimes	Often
	%	%	%	%
Reading strategies index				
Reading aloud to myself	31	29	28	13
Sounding out as many words as I can	33	29	25	13
Asking someone to help me	27	32	30	12
Highlighting or making notes or drawings on the important parts	38	28	22	12
Asking questions before, during, and after reading	48	33	14	5
No correlation with reading achievement				
Finding a quiet place to read	10	16	32	41
Rereading the more difficult parts	11	17	35	37
Thinking about the other words in a sentence to figure out the meaning	10	18	40	31
Sometimes reading more quickly or more slowly, depending on the material	11	18	40	31
Trying to make connections to what I already know	11	17	42	31
Looking at charts and pictures	18	23	36	23
Looking for clues such as headings or captions	18	23	39	20
Monitoring what I am thinking about while reading	21	26	35	18
Trying to predict what the material is about	21	27	35	18
Applying what I know about word origins or word parts	19	28	37	16
Using an outside source like a dictionary	25	31	30	14
Thinking about the author's message	30	30	28	13
Using prefixes, suffixes, and/or roots to understand new words	29	27	31	12

TABLE A.2.9.1 Relationship between the reading strategies index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**484**	**(2.4)**	**510**	**(2.2)**	**519**	**(1.9)**	**536**	**(1.9)**
Language of the school system								
Anglophone school systems	486	(2.4)	516	(2.7)	525	(2.3)	539	(2.1)
Francophone school systems	472	(4.8)	491	(3.7)	504	(4.5)	529	(2.8)
Gender								
Female	499	(2.8)	528	(2.9)	536	(2.8)	552	(3.5)
Male	463	(2.9)	490	(2.5)	505	(3.1)	526	(2.3)

TABLE A.2.9.2 Reading strategies index scores

Province	Index score	SE
British Columbia	50.6	(0.3)
Alberta	49.9	(0.3)
Saskatchewan	50.8*	(0.2)
Manitoba	50.8*	(0.2)
Ontario	51.0*	(0.2)
Quebec	47.6*	(0.3)
New Brunswick	49.7	(0.2)
Nova Scotia	50.7*	(0.2)
Prince Edward Island	48.8	(0.5)
Newfoundland and Labrador	50.8*	(0.3)
Canada	**49.9**	**(0.1)**

* Significant difference compared to Canada

TABLE A.2.9.3 Reading strategies index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	50.7	(0.3)	47.5	(0.2)	3.2**
Alberta	49.9	(0.3)	49.1	(0.6)	0.8
Saskatchewan	50.8	(0.2)	50.4*	(0.0)	0.4
Manitoba	50.8	(0.2)	51.0*	(0.4)	-0.1
Ontario	51.0	(0.2)	49.2*	(0.2)	1.9**
Quebec	50.6	(0.4)	47.2	(0.3)	3.4**
New Brunswick	50.4	(0.3)	47.7	(0.3)	2.8**
Nova Scotia	50.7	(0.2)	49.7*	(0.6)	1.0
Prince Edward Island	48.9*	(0.5)	--	--	--
Newfoundland and Labrador	50.8	(0.3)	--	--	--
Canada	**50.7**	**(0.1)**	**47.4**	**(0.3)**	**3.3****

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.9.4 Reading strategies index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	52.6	(0.4)	48.7	(0.4)	3.9**
Alberta	51.5	(0.3)	48.3	(0.4)	3.2**
Saskatchewan	52.4	(0.3)	49.3*	(0.3)	3.1**
Manitoba	51.9	(0.3)	49.9*	(0.4)	2.0**
Ontario	52.6*	(0.3)	49.4	(0.3)	3.2**
Quebec	49.0*	(0.4)	46.1*	(0.4)	2.8**
New Brunswick	50.5	(0.3)	48.8	(0.3)	1.7**
Nova Scotia	52.3	(0.3)	48.9	(0.3)	3.4**
Prince Edward Island	50.3	(0.7)	47.4	(0.6)	2.9**
Newfoundland and Labrador	53.2*	(0.3)	48.3	(0.4)	5.0**
Canada	**51.5**	**(0.2)**	**48.4**	**(0.1)**	**3.1****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.2.10 Percentage of students by their responses to questionnaire items related to student effort in language arts class and the student effort index

	Strongly disagree	Disagree	Agree	Strongly agree
	%	%	%	%
Student effort index				
I listen in class	1	6	57	35
I pay attention in class	2	9	57	33
No correlation with achievement				
I finish my homework in time for class	3	10	45	43
I work hard on my homework	3	13	50	34
I am prepared for my exams	3	15	52	30
I keep my work well organzed	7	20	45	29
I keep studying until I understand the material	4	18	50	28
I study hard for quizzes	6	27	44	23
I avoid distractions when I am studying	6	31	45	18

TABLE A.2.10.1 Relationship between the student effort index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**532**	**(1.7)**	**517**	**(2.1)**	**503**	**(2.1)**	**494**	**(2.1)**
Language of the school system								
Anglophone school systems	536	(2.3)	519	(2.8)	504	(2.7)	494	(2.3)
Francophone school systems	516	(3.7)	509	(4.4)	498	(3.6)	494	(3.7)
Gender								
Female	542	(2.6)	524	(2.9)	518	(3.2)	509	(2.8)
Male	519	(2.9)	510	(2.8)	490	(2.6)	483	(2.2)

TABLE A.2.10.2 Student effort index scores

Province	Index score	SE
British Columbia	50.6	(0.2)
Alberta	50.5	(0.2)
Saskatchewan	50.2	(0.2)
Manitoba	51.3*	(0.2)
Ontario	51.2*	(0.2)
Quebec	48.7*	(0.3)
New Brunswick	50.4	(0.2)
Nova Scotia	49.4*	(0.2)
Prince Edward Island	48.2*	(0.5)
Newfoundland and Labrador	49.3	(0.4)
Canada	**50.3**	**(0.1)**

* Significant difference compared to Canada

TABLE A.2.10.3 Student effort index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	50.6	(0.3)	50.7*	(0.2)	-0.1
Alberta	50.5	(0.2)	50.4*	(0.4)	0.1
Saskatchewan	50.2*	(0.2)	50.3*	(0.0)	-0.1
Manitoba	51.3	(0.2)	51.6*	(0.4)	-0.3
Ontario	51.2	(0.3)	50.9*	(0.2)	0.3
Quebec	50.0	(0.3)	48.6	(0.3)	1.4**
New Brunswick	49.9*	(0.3)	51.6*	(0.3)	-1.7**
Nova Scotia	49.4*	(0.2)	50.3	(0.7)	-0.9
Prince Edward Island	48.2*	(0.5)	--	--	--
Newfoundland and Labrador	49.3*	(0.3)	--	--	--
Canada	**50.8**	**(0.1)**	**48.9**	**(0.3)**	**1.9****

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.10.4 Student effort index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	51.8	(0.3)	49.6	(0.3)	2.2**
Alberta	51.2	(0.3)	49.9	(0.3)	1.3**
Saskatchewan	51.1	(0.2)	49.4	(0.3)	1.8**
Manitoba	51.8	(0.3)	50.8*	(0.3)	1.0**
Ontario	52.1	(0.3)	50.3	(0.3)	1.8**
Quebec	49.3*	(0.4)	48.2*	(0.4)	1.1
New Brunswick	51.5	(0.3)	49.2	(0.4)	2.3**
Nova Scotia	50.2*	(0.2)	48.6	(0.3)	1.6**
Prince Edward Island	49.0	(0.9)	47.5*	(0.6)	1.5
Newfoundland and Labrador	50.0	(0.4)	48.6	(0.5)	1.5**
Canada	**51.1**	**(0.2)**	**49.6**	**(0.1)**	**1.6****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.2.10.5 Amount of time students spend on homework

Homework subject	No homework is assigned	Less than half an hour	One-half to 1 hour	Between 1 and 2 hours	Between 2 and 3 hours	More than 3 hours
	%	%	%	%	%	%
Homework in language arts	13	28	31	18	6	4
Homework in all school subjects	6	12	22	24	16	20

TABLE A.2.10.6 Frequency of homework completion by students

Homework subject	Never	Rarely	Sometimes	Often
	%	%	%	%
Homework completion in language arts	3	6	21	71
Homework completion in all school subjects	2	5	22	71

TABLE A.2.11 Percentage of students by their responses to questionnaire items related to out-of-school time and the out-of-school activities index

	No time	Less than 1 hour	1 to 2 hours	3 to 4 hours	5 to 6 hours	More than 6 hours
	%	%	%	%	%	%
Out-of-school activities index						
Using a computer for school purposes (e.g., research, writing)	11	28	33	18	6	5
Reading for enjoyment and/or general interest	24	27	23	12	6	8
Outside-of-class reading for all your courses	24	41	24	8	2	1
Getting extra help at school, outside of regular school hours	57	26	13	3	1	0
No correlation with achievement						
Watching television or movies	5	15	28	25	12	15
Using telephone or texting	9	22	20	17	12	21
Doing sports or other school and community activies	11	11	20	20	12	25
Using a computer for personal reasons (e.g., Internet, e-mail)	14	29	22	15	9	12
Playing computer, video, or other electronic games	16	20	19	16	11	19
Taking other lessons (e.g., music, swimming)	45	14	20	11	4	6

TABLE A.2.11.1 Relationship between the out-of-school activities index and reading achievement in Canada overall and by language of the school system and gender

	Top quarter		Third quarter		Second quarter		Bottom quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Canada overall	**540**	**(2.2)**	**522**	**(2.2)**	**504**	**(2.0)**	**480**	**(1.9)**
Language of the school system								
Anglophone school systems	540	(2.5)	522	(2.6)	505	(2.3)	482	(2.3)
Francophone school systems	536	(5.4)	522	(4.2)	502	(3.3)	475	(4.0)
Gender								
Female	554	(2.4)	532	(3.4)	513	(2.7)	486	(3.0)
Male	520	(2.8)	510	(2.4)	499	(2.6)	476	(2.5)

TABLE A.2.11.2 Out-of-school activities index scores

Province	Index score	SE
British Columbia	52.9*	(0.3)
Alberta	51.4	(0.2)
Saskatchewan	49.1*	(0.2)
Manitoba	49.8*	(0.2)
Ontario	51.9*	(0.3)
Quebec	48.5*	(0.3)
New Brunswick	48.1*	(0.2)
Nova Scotia	48.2*	(0.2)
Prince Edward Island	47.8*	(0.5)
Newfoundland and Labrador	48.5*	(0.3)
Canada	**50.8**	**(0.1)**

* Significant difference compared to Canada

TABLE A.2.11.3 Out-of-school activities index scores by language of the school system

Province	Anglophone school systems		Francophone school systems		Difference** (A – F)
	Index score	SE	Index score	SE	
British Columbia	52.9*	(0.3)	52.4*	(0.2)	0.5
Alberta	51.4	(0.2)	53.8*	(0.4)	-2.4**
Saskatchewan	49.1*	(0.2)	53.2*	(0.0)	-4.1**
Manitoba	49.8*	(0.2)	50.2*	(0.4)	-0.3
Ontario	51.9	(0.2)	51.9*	(0.2)	0.0
Quebec	51.8	(0.3)	48.1	(0.3)	3.7**
New Brunswick	48.6*	(0.3)	46.9*	(0.3)	1.6**
Nova Scotia	48.2*	(0.2)	49.3	(0.5)	-1.1**
Prince Edward Island	47.8*	(0.6)	--	--	--
Newfoundland and Labrador	48.5*	(0.3)	--	--	--
Canada	**51.5**	**(0.1)**	**48.4**	**(0.2)**	**3.0****

* Significant difference compared to Canada
** Significant difference within the jurisdiction
Note: Due to small sample sizes, results for students in the francophone school systems are not reported for Prince Edward Island; however, they are included in the calculations for the overall Canadian and provincial means. Francophone schools in Newfoundland and Labrador did not participate in PCAP 2016.

TABLE A.2.11.4 Out-of-school activities index scores by gender

Province	Females		Males		Difference** (F – M)
	Index score	SE	Index score	SE	
British Columbia	54.4*	(0.4)	51.6*	(0.4)	2.8**
Alberta	52.9	(0.3)	50.0	(0.4)	2.9**
Saskatchewan	50.9*	(0.3)	47.4*	(0.3)	3.5**
Manitoba	51.2	(0.4)	48.6*	(0.3)	2.7**
Ontario	53.1	(0.4)	50.7*	(0.3)	2.5**
Quebec	49.2*	(0.4)	47.7*	(0.3)	1.5**
New Brunswick	49.6*	(0.3)	46.6*	(0.4)	3.0**
Nova Scotia	49.3*	(0.3)	47.1*	(0.3)	2.2**
Prince Edward Island	49.3*	(0.8)	46.2*	(0.6)	3.1**
Newfoundland and Labrador	50.2*	(0.3)	46.8*	(0.4)	3.3**
Canada	**52.0**	**(0.2)**	**49.6**	**(0.2)**	**2.4****

* Significant difference compared to Canada
** Significant difference within the jurisdiction

TABLE A.3.1 Relationship between class sizes and reading achievement

Class size	Mean score	SE
Fewer than 15 students	473	(6.2)
15 to 19 students	494	(10.6)
20 to 24 students	507	(5.8)
25 to 29 students	507	(3.9)
30 or more students	516	(3.1)

TABLE A.3.2 Relationship between the presence of another adult in the language arts classroom and reading achievement

Presence of another adult	Mean score	SE
Most or all of the time	492	(4.5)
Up to 1/2 of the time	477	(11.6)
Up to 1/4 of the time	496	(4.0)
Never	519	(3.2)

TABLE A.3.3 Reading achievement in single-grade and multi-grade classrooms

Number of grades taught	Mean score	SE
One grade only	509	(2.8)
Two grade levels	507	(5.2)
Three or more grade levels	490	(10.2)

TABLE A.3.4 Relationship between the number of days taught by a substitute or alternate teacher and reading achievement

Number of days	Mean score	SE
20 or more days	502	(6.0)
10 to 19 days	500	(4.2)
6 to 9 days	496	(4.6)
5 or fewer days	514	(3.7)

TABLE A.3.5 Sources of lost instructional days in a school year

Sources of lost days	0 to 2 days	3 to 5 days	6 to 9 days	10 or more days
	%	%	%	%
Closing due to weather	78	16	5	1
Tests/exams taken outside regular class sessions	66	17	8	9
Other activities	65	26	7	2
School-spirit days	54	28	13	5
Sports activities	48	32	15	4
Field trips or excursions	29	50	18	3

TABLE A.3.6 Remediation, differentiation, and enrichment strategies in language arts classrooms

Type of strategies used	Not at all	A little	More than a little	A lot
	%	%	%	%
Provide enrichment opportunities for advanced students	6	33	41	20
Differentiate instruction/resources to adapt to students' learning styles/interests/needs	0	11	43	46
Re-teach concepts and skills that should have been mastered earlier	0	24	47	29

TABLE A.3.6.1 Relationship between differentiating instruction strategies and reading achievement

Type of strategies used	Not at all		A little		More than a little		A lot	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Provide enrichment opportunities for advanced students	502	(5.7)	500	(4.6)	507	(3.5)	518	(7.4)
Differentiate instruction/resources to adapt to students' learning styles/ interests/needs	515	(7.3)	518	(6.1)	510	(2.5)	501	(4.5)
Re-teach concepts and skills that should have been mastered earlier	560	(30.7)	517	(4.8)	507	(2.8)	496	(6.0)

TABLE A.3.7 Classroom groupings used by teachers in language arts class

Classroom grouping	Not at all	A little	More than a little	A lot
	%	%	%	%
Individual students	2	31	42	24
Small groups	3	28	45	23
The whole class	0	3	22	74

TABLE A.3.8 Frequency of use of pre-reading, during-reading, and after-reading strategies by language arts teachers

	Not al all	A little	More than a little	A lot
	%	%	%	%
Pre-reading				
Predicting	0	16	36	47
Determining the purpose for reading	1	17	40	42
Activating prior knowledge	0	5	30	64
Previewing aspects of text	1	20	43	36
During reading				
Monitoring for understanding	0	9	40	50
Making connections	0	2	25	74
Determining author's intention	2	17	41	40
Visualizing	1	18	39	41
Skimming and scanning	3	31	42	24
Locating main/key ideas	1	6	34	59
Making valid inferences	0	9	30	61
Asking questions	0	4	29	67
Analyzing text structures	2	19	43	37
After reading				
Summarizing	0	11	36	52
Analyzing critically	0	8	35	57
Determining author's message	1	14	37	48
Distinguishing fact from opinion	1	23	51	24
Determining bias in text	3	31	44	22
Re-reading and reflecting	0	16	36	48

TABLE A.3.8.1 Relationship between frequency of use of reading instruction strategies by language arts teachers and reading achievement

	Not at all or a little		More than a little or a lot	
	Mean score	SE	Mean score	SE
Pre-reading				
Predicting	509	(6.1)	506	(2.6)
Determining the purpose for reading	509	(6.6)	506	(2.7)
Activating prior knowledge	493	(9.5)	507	(2.5)
Previewing aspects of text	513	(7.4)	505	(2.3)
During reading				
Monitoring for understanding	505	(9.0)	506	(2.6)
Making connections	507	(8.5)	507	(2.5)
Determining author's intention	503	(5.0)	507	(2.9)
Visualizing	513	(6.5)	505	(2.9)
Skimming and scanning	507	(4.6)	506	(3.0)
Locating main/key ideas	489	(7.5)	508	(2.3)
Making valid inferences	510	(7.7)	506	(2.7)
Asking questions	517	(6.8)	506	(2.7)
Analyzing text structures	502	(6.0)	507	(3.0)
After reading				
Summarizing	505	(9.0)	507	(2.3)
Analyzing critically	488	(11.2)	508	(2.4)
Determining author's message	494	(8.1)	509	(2.8)
Distinguishing fact from opinion	508	(4.9)	506	(2.8)
Determining bias in text	504	(4.4)	508	(3.1)
Re-reading and reflecting	510	(5.8)	506	(3.1)

TABLE A.3.9 Frequency of activities used in language arts classes

Activities in the classroom	Daily/ almost daily	1 to 3 times/week	2 or 3 times/ month	Never/ almost never
	%	%	%	%
Ask students to look up information	27	46	24	2
Ask students to write stories or other texts	18	45	35	2
Ask students to research a particular topic or problem	13	34	45	7
Teach students to be critical when reading on the Internet	11	29	49	10
Ask students to read digital texts	10	29	36	25
Teach students strategies for reading digital texts	4	15	43	38

TABLE A.3.10 Use of instructional strategies and tools related to language arts

Teaching and learning strategies	A lot	More than a little	A little	Not at all
	%	%	%	%
Discussion (small group or whole class)	68	26	5	0
Teacher reading aloud to students	52	36	13	0
Silent reading of student-selected material	43	37	17	3
Using text research tools	42	41	16	0
Teaching language in context	37	49	14	1
Teaching reading strategies	34	44	21	1
Graphic organizers	34	43	22	2
Teaching basic rules of language	32	41	26	1
Silent reading of teacher-selected material	28	38	29	5
Students reading aloud to the whole class or in groups	26	38	31	5
Student note-taking	22	37	37	4

TABLE A.3.11 Relationship between categories of instructional strategies and reading achievement

	Top Quarter		Third Quarter		Second Quarter		Bottom Quarter	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Direct reading	507	(5.0)	506	(6.8)	508	(3.1)	505	(4.9)
Reading aloud	511	(7.9)	510	(4.3)	507	(3.6)	499	(6.0)
Indirect reading	512	(3.6)	507	(3.3)	502	(6.5)	501	(3.8)
Silent reading	505	(6.4)	512	(6.3)	504	(4.7)	507	(4.1)

TABLE A.3.12 Time spent on reading instruction weekly

Province	No time or less than 30 minutes	Between 30 minutes and 1 hour	Between 1 and 2 hours	More than 2 hours
	%	%	%	%
British Columbia	7	42	34	17
Alberta	6	27	34	33
Saskatchewan	3	26	38	33
Manitoba	6	15	45	34
Ontario	5	11	33	51
Quebec	1	20	55	24
New Brunswick	2	21	37	39
Nova Scotia	3	16	56	24
Prince Edward Island	3	28	46	23
Newfoundland and Labrador	9	18	37	36
Canada	**5**	**20**	**38**	**37**

TABLE A.3.12.1 Relationship between the time spent on reading instruction by teachers and reading achievement

Times spent on reading instruction weekly	Mean score	SE
More than 2 hours	502	(6.1)
Between 1 and 2 hours	507	(2.7)
Between 30 minutes and 1 hour	515	(4.1)
No time or less than 30 minutes	506	(8.8)

TABLE A.3.13 Frequency with which teachers assign genres for reading in language arts classrooms

Genres assigned in language arts classroom	Daily/ almost daily	1 to 3 times/week	2 or 3 times/ month	Never/ almost never
	%	%	%	%
Longer fiction books	24	27	43	6
Non-fiction subject-area books or textbooks	22	36	32	10
Non-fiction articles that describe and explain about things, people, events, or how things work	13	35	46	7
Short stories (e.g., fables, fairy tales, action stories, science fiction, detective stories)	10	32	52	6
Longer non-fiction books	8	19	42	31
Authentic materials (e.g., menus, brochures, cartoons, newspaper articles, song lyrics)	4	20	58	18
Poetry	1	10	56	33
Plays	1	3	29	67

TABLE A.3.13.1 Relationship between the frequency with which teachers assign genres and reading achievement

Genres assigned in language arts classroom	Daily/ almost daily		1 to 3 times/ week		2 or 3 times/ month		Never/ almost never	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Longer fiction books	509	(4.9)	506	(5.8)	509	(3.9)	481	(12.0)
Non-fiction subject-area books or textbooks	511	(4.4)	504	(3.9)	508	(5.1)	501	(9.0)
Non-fiction articles that describe and explain about things, people, events, or how things work	500	(11.8)	505	(4.0)	508	(3.7)	517	(7.9)
Short stories (e.g., fables, fairy tales, action stories, science fiction, detective stories)	505	(5.1)	507	(5.8)	505	(2.9)	508	(7.6)
Longer non-fiction books	507	(5.9)	512	(4.5)	501	(4.9)	510	(3.1)
Authentic materials (e.g., menus, brochures, cartoons, newspaper articles, song lyrics)	490	(15.8)	509	(6.8)	505	(3.5)	512	(3.5)
Poetry	534	(17.6)	518	(9.6)	507	(3.5)	501	(4.2)
Plays	518	(9.7)	478	(21.6)	522	(4.5)	501	(2.7)

TABLE A.3.14 Types of student tasks often assigned by teachers in language arts classrooms

Province	Reading outside of class	Personal responses	Oral presentations	Written reports
	%	%	%	%
British Columbia	33	53	13	42
Alberta	21	49	11	35
Saskatchewan	10	42	10	25
Manitoba	20	51	15	31
Ontario	31	56	27	33
Quebec	57	47	9	27
New Brunswick	49	58	16	18
Nova Scotia	26	60	15	30
Prince Edward Island	48	53	15	61
Newfoundland and Labrador	21	64	15	43
Canada	**32**	**53**	**19**	**33**

TABLE A.3.15 Homework assigned each week in language arts

Province	Do not assign homework	Less than 30 minutes	Between 30 minutes and 1 hour	Between 1 and 2 hours	More than 2 hours
	%	%	%	%	%
British Columbia	8	19	39	24	9
Alberta	16	18	40	26	0
Saskatchewan	11	42	29	18	1
Manitoba	12	20	45	19	4
Ontario	6	19	44	25	5
Quebec	3	8	42	38	10
New Brunswick	19	23	35	20	3
Nova Scotia	10	20	34	30	5
Prince Edward Island	3	35	21	41	0
Newfoundland and Labrador	7	16	51	23	3
Canada	**8**	**19**	**42**	**26**	**5**

TABLE A.3.15.1 Relationship between homework assigned in language arts and reading achievement

Homework assignment in language arts per week	Mean score	SE
More than 2 hours	526	(11.3)
Between 1 and 2 hours	517	(3.5)
Between 30 minutes and 1 hour	504	(3.8)
Less than 30 minutes	497	(8.0)
Do not assign homework	495	(5.6)

TABLE A.3.16 Relationship between the use of external test results as part of students' final grades and reading achievement

Teachers' use of external assessment for grading	Mean score	SE
No	507	(2.4)
Yes	493	(9.0)

TABLE A.3.17 Types of assessments used in language arts classrooms

Types of assessment	Sometimes or often	Never or rarely
	%	%
Individual student assignments/projects	97	3
Group assignments/projects	82	18
Teacher-developed classroom tests	77	23
Performance assessments	77	23
Student portfolios and/or journals	75	25
Homework	40	60
Common school-wide tests or assessments	31	69

TABLE A.3.18 Frequency of the use of non-academic criteria in assessment in language arts classrooms

Criteria used to grade students' work	Never	Rarely	Sometimes	Often
	%	%	%	%
Group collaboration	13	18	46	24
Improvement	25	15	29	31
Effort	24	18	27	31
Participation	26	17	36	21
Behaviour	61	17	13	9
Attendance	82	7	5	6

TABLE A.3.19 Frequency of assessment methods in language arts, as reported by students

Assessment methods used by teachers	Never	Rarely	Sometimes	Often
	%	%	%	%
Long-answer questions (a paragraph or more)	3	12	38	47
Short-answer questions (a sentence or two)	3	10	42	45
Presentations, speeches, and other performances	5	22	43	29
Essays (one page or more)	11	28	36	25
Fill-in-the-blank questions	10	24	43	24
Multiple-choice questions	10	26	42	23
True/false or matching questions	15	35	39	10

TABLE A.3.19.1 Relationship between frequency of use of different assessment methods in language arts and reading achievement

Assessment methods used by teachers	Never		Rarely		Sometimes		Often	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
Long-answer questions (a paragraph or more)	474	(6.3)	485	(2.9)	503	(1.7)	526	(1.3)
Short-answer questions (a sentence or two)	493	(5.2)	490	(3.6)	503	(1.4)	523	(1.4)
Presentations, speeches, and other performances	484	(4.5)	506	(2.7)	510	(1.4)	519	(2.0)
Essays (one page or more)	499	(2.7)	509	(1.7)	508	(1.9)	520	(1.8)
Fill-in-the-blank questions	533	(3.7)	525	(2.0)	503	(1.5)	499	(1.6)
Multiple-choice questions	531	(3.3)	520	(2.3)	502	(1.7)	505	(1.9)
True/false or matching questions	525	(2.4)	518	(1.7)	502	(1.6)	494	(2.7)

TABLE A.3.20 Relationship between school size and reading achievement

School enrolment	Mean score	SE
More than 1,000 students	499	(6.5)
501 to 1,000 students	514	(3.8)
101 to 500 students	502	(2.6)
100 or fewer students	483	(6.2)

TABLE A.3.21 Relationship between the number of minutes of language arts instruction and reading achievement

Number of minutes of language arts instruction offered per week	Mean score	SE
150 minutes or fewer	531	(10.5)
Between 151 and 200 minutes	520	(6.0)
Between 201 and 250 minutes	505	(3.7)
Between 251 and 300 minutes	497	(4.1)
More than 300 minutes	503	(2.8)

TABLE A.3.22 Frequency with which resource shortages limit instruction, as reported by principals of schools participating in PCAP 2016

Types of resources	Sometimes or often	Never or rarely
	%	%
Computers for language arts instruction	37	63
Sufficient Internet access	35	65
Language arts specialists to support language arts teachers	32	68
Qualified educational assistants	31	69
Budget for supplies	31	69
Computer software for language arts instruction	28	72
Instructional materials	27	73
Audiovisual resources for language arts	21	79
Library materials relevant for language arts instruction	21	79
Instructional space	18	82
School building and grounds	16	84
Qualified language arts teachers	11	89

TABLE A.3.23 Enrichment activities related to language arts offered by schools participating in PCAP 2016

	Activities are offered	Activities are not offered
Activities offered by the school	%	%
Volunteering or service activities	91	9
School band, orchestra, or choir	79	21
Lectures or seminars	68	32
School play, improv, or school musical	63	37
School year book, newspaper, or magazine	63	37
Collaboration with local libraries	52	48
Book club	45	55
Collaboration with local newspapers	30	70
Debating club or debating activities	28	72
Academic club	26	74
School club or school competition for foreign language	14	86
School radio	14	86

TABLE A.3.24 School events related to language arts in schools participating in PCAP 2016

Language-arts-related activities	Often	Sometimes	Rarely	Never
	%	%	%	%
Monitoring the implementation of language arts curricula	44	46	8	2
Professional development for language arts teachers	33	58	8	0
Recognition of student achievement in language arts	25	60	15	1
Displays about language arts	24	50	24	2
Events related to language arts	17	56	24	3
Parent/guardian information nights specific to language arts	1	23	50	27

TABLE A.3.25 Students' sense of belonging in school, schools participating in PCAP 2016

Statements on sense of belonging	Strongly disagree	Disagree	Agree	Strongly agree
	%	%	%	%
At school, I make friends easily	4	12	48	36
At school, I feel that I belong	4	14	58	25
My teachers care about me	2	10	61	26
My teachers treat me fairly	2	9	60	28
I like school	6	17	62	14

TABLE A.3.25.1 Relationship between reading achievement and students' response to the statement "I like school"

Level of agreement with liking school	Mean score	SE
Strongly disagree	467	(3.7)
Disagree	497	(2.4)
Agree	510	(1.2)
Strongly agree	532	(3.0)

TABLE A.3.26 Proportion of students absent from school, as reported by school principals in schools participating in PCAP 2016

Province	Less than 5% of students	Between 5% and 10% of students	More than 10% of students
	%	%	%
British Columbia	54	43	3
Alberta	57	35	8
Saskatchewan	56	35	9
Manitoba	64	27	9
Ontario	57	36	7
Quebec	74	25	1
New Brunswick	60	34	6
Nova Scotia	55	42	3
Prince Edward Island	63	38	0
Newfoundland and Labrador	42	44	14
Canada	**58**	**35**	**6**

TABLE A.3.26.1 Relationship between student absences, as reported by school principals, and reading achievement

Percentage of absent students	Mean score	SE
More than 10% of students	466	(8.3)
Between 5% and 10% of students	502	(2.2)
Less than 5% of students	508	(3.3)

TABLE A.3.27 Proportion of students absent from school, as reported by students in schools participating in PCAP 2016

Types of absences	0 to 2 days	3 to 5 days	6 to 9 days	10 to 14 days	15 to 20 days	More than 20 days
	%	%	%	%	%	%
School-related activities	49	29	14	5	2	1
Non-school-related activities	26	25	20	14	7	8

TABLE A.3.27.1 Relationship between student absences, as reported by students, and reading achievement

Types of absences	0 to 2 days		3 to 5 days		6 to 9 days		10 to 14 days		15 to 20 days		More than 20 days	
	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE	Mean score	SE
School-related activities	503	(1.3)	520	(1.9)	519	(3.2)	516	(4.4)	493	(7.8)	475	(7.5)
Non-school-related activities	505	(2.1)	514	(2.2)	516	(2.2)	510	(2.4)	507	(3.4)	503	(3.5)

TABLE A.3.28 Student-reported skipping and tardiness over a two-week period in schools participating in PCAP 2016

Statements on tardiness or skipping school	Never	One or two times	Three or four times	Five or more times
	%	%	%	%
I arrived late for school	58	28	8	6
I skipped some classes	87	11	2	1
I skipped a whole school day	79	16	3	2

TABLE A.3.29 Students' responses to questionnaire items related to their physical and psychological safety at school in schools participating in PCAP 2016

Statements on bullying in school	Never	A few times a year	One to four times a month	More than once per week
	%	%	%	%
I was threatened or made to do things that I didn't want to do by other students	90	8	1	1
I was hit or pushed around by other students	77	16	4	2
Things that belonged to me were taken away or destroyed by other students	77	19	3	2
Lies or negative comments were spread about me or posted on the Internet by other students	73	20	4	3
I was left out of games or activities on purpose by other students	75	19	4	2
I was called names by other students	45	36	10	8
I was made fun of by other students	40	41	10	8