3

Reading Proficiency of Canadian Youth at Ages 15 and 24

PISA-24 revealed important growth in reading skills between the ages of 15 and 24 among all individuals assessed. For example, the number of young people with scores below PISA proficiency Level 3 – a key measure of success in PISA – dropped from 21% in 2000 to 7% in 2009. However, the rate at which young people acquire skills varies considerably. Differences in performance are related to certain student characteristics that do not change over time. Though performance gaps persist, they narrowed over the nine years.

AN ASSESSMENT OF READING SKILLS AMONG 24-YEAR-OLDS AND HOW THEY RELATE TO SKILLS ACQUIRED BY THE AGE OF 15

PISA-15 provided a snapshot of what students know and can do at age 15. Canada's 2009 PISA re-assessment (PISA-24) took a second picture of the same population nearly a decade later. Both assessments not only capture the reading competencies of the youth cohort as a whole, they also collect data on individual characteristics, such as gender, family background and language spoken at home, that may be associated with performance. Analysis of this data can help in formulating policies to support struggling students.

This chapter discusses average reading scores among 15- and 24-year-old Canadians; how the distribution of reading scores has changed over time; the demographic profile of poor performers; the education and labour-market choices that predict greater reading proficiency at 24; and the risk factors associated with low reading scores for 15- and 24-year-olds.

Throughout this report, several indicators are used to describe student reading performance, including average performance, the disparity in skills, and the proportion of students with skills below PISA proficiency Level 3. Though proficiency levels may not have the same meaning for 24-year-olds and 15-year-olds, proficiency Level 3 is a well-known benchmark for PISA scores. Reading proficiency at that level has been characterised as the ability to "compare, contrast and categorise competing information according to a range of criteria" (Bussière, et al., 2001). Previous research has shown that reading performance at Level 3 or above indicates a much greater likelihood that the student will participate in post-secondary education (Bussière and Knighton, 2006).

READING PROFICIENCY AT AGES 15 AND 24

There was a marked improvement in reading proficiency among all who were re-assessed for this study. These young people had an average reading score of 541 points in PISA-15.[1] By 2009, their average reading score, measured by PISA-24, had increased by 57 points to 598 on the PISA scale (Table 3.2). In comparison, an increase of 50 score points corresponds to half a standard deviation of the original PISA scale; and the difference between two proficiency levels is more than 70 score points. Thus, the magnitude of the improvement seen among Canadian youth is similar to the difference in average proficiency scores between Canada and countries like Croatia, Israel, Luxembourg, Austria and Turkey in the recent PISA 2009 assessment (OECD, 2010b).

Canada was one of the top-performing countries in PISA-15 and one of the countries with greater equity, as measured by various indicators. For example, student outcomes in PISA 2009 were more homogeneous in Canada than in most other countries that participated in PISA-15. In PISA-15, the standard deviation – a measure of the dispersion of outcomes – was 94.6 points for Canada, as compared to the standardised measure of 100 score points across all OECD countries. Among PISA-24 participants, the standard deviation in 2000 was 92 score points. By 2009, the standard deviation had decreased by more than 14 score points to 78 points.

Reading skills generally improved between the ages of 15 and 24. Figure 3.1 shows how reading performance evolved between 2000 and 2009. In this figure, the height of the line represents the proportion of students with a particular score, shown along the X-axis. The proportions and cumulative proportions for the ranges of proficiency used in this figure are presented in Annex B, Table 3.1.

Figure 3.1 shows that at age 24 average performance has improved (the middle of the distribution has shifted to the right) and the dispersion in scores has narrowed (fewer young people now occupy the tails of the distribution, especially the left tail, which indicates the proportion of young people with very poor reading proficiency). The area under the curve, to the right of 626 score points, shows that the proportion of young people at or above proficiency Level 5 was substantially larger in 2009 than it was in 2000.

The chart at the top of Figure 3.1 shows the proportion of young people at given levels of performance, according to PISA. In 2000, 21.4% of Canadian 15-year-olds scored below 475 points, or proficiency Level 3, on the PISA scale. By 2009, this proportion had dropped to 6.7% among 24-year-olds. Similarly, in 2000, 24.8% of students scored 625 points or above, which corresponds to Level 5 on the PISA scale, while in 2009, 44.6% of those re-assessed did so. While this indicates a major positive shift in reading proficiency among Canadian youth, the nearly 7% of 24-year-olds who still failed to achieve Level 3 would benefit from general literacy training. Skills associated with proficiency Level 3 include "locating multiple pieces of information, making links between different parts of a text, and relating it to familiar everyday knowledge" (OECD 2010b).

■ Figure 3.1 ■
Comparison of distribution of reading skills, PISA-15 and PISA-24

Percentage of participants age 15 in 2000 and 24 in 2009
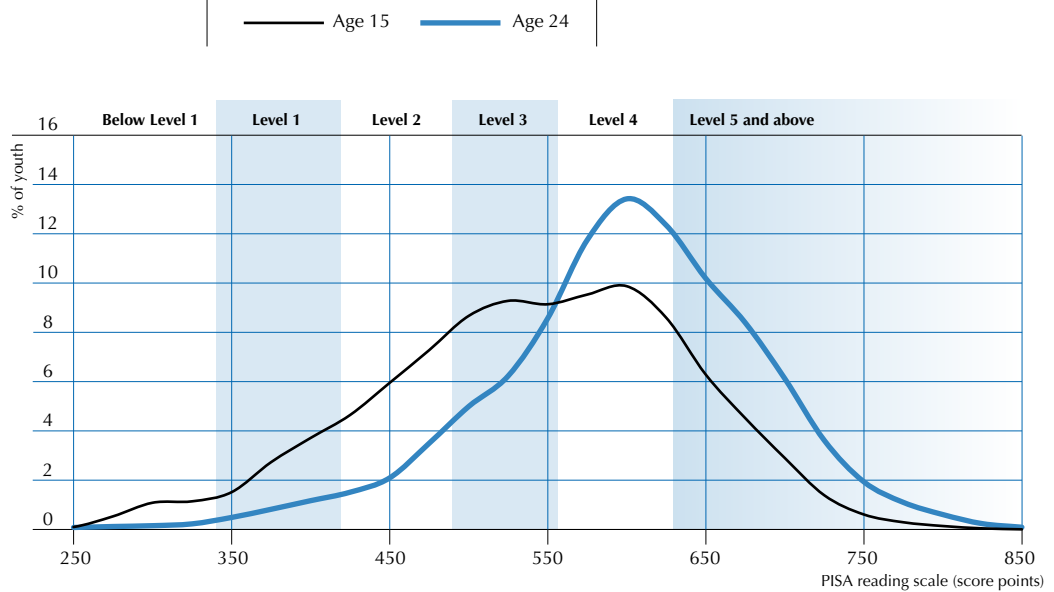
	Below Level 1	Level 1	Level 2	Level 3	Level 4	Level 5 and above
PISA-15 (2000)	2%	5%	14%	25%	29%	25%
PISA-24 (2009)	0%	2%	5%	15%	34%	45%
Difference in percentage points	-1	-4	-10	-11	5	20

Source: Table 3.1; YITS cycle 5.5: Reading Skills Reassessment.
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Many improvements seen between the ages of 15 and 24 are the result of an overall shift in the distribution of reading proficiency. However, as explored in the following sections and shown in Figure 3.1, improvements were not uniform across the distribution. For instance, the distribution of proficiency in PISA-15 was relatively dispersed, with two distinct modes, or "bumps", in the distribution. In contrast, the 2009 reading proficiency distribution has only one mode and it is much narrower with a strong peak, indicating that at age 24 reading proficiency is more evenly distributed than at age 15. The rest of this chapter examines in detail how individual characteristics are associated with performance at ages 15 and 24.

## DEMOGRAPHIC CHARACTERISTICS AND READING PROFICIENCY GAINS BETWEEN THE AGES OF 15 AND 24

Demographic factors, such as gender and socio-economic background, are closely related to performance differences at ages 15 and 24. The rates of skills acquisition, as measured by PISA-24, are also associated with demographic characteristics.

Gender

PISA-24 shows that by age 24, women outperform men in reading, but by a smaller margin than they did when they were 15-year-old girls and boys. Girls outperform boys in reading by a large margin in practically every country and economy that participates in PISA. Among PISA-24 participants, girls outscored boys in PISA-15 by an average of 32 points; by 2009, that gap had narrowed to 18 points. On average, these young women attained 558 points in the 2000 assessment and 608 points in the 2009 assessment – an increase of 50 points. Young men attained an average score of 526 points in the 2000 assessment and 590 points in the 2009 re-assessment – an improvement of 63 points (Table 3.2). As will be seen in many of the following cases, the poorer-performing groups acquired reading skills at a somewhat faster pace than the better-performing groups.

Figure 3.2 depicts the average performance of both girls/women (triangles) and boys/men (circles) in each assessment. The line between each measure of average performance (triangle or circle) shows the progression across assessments, or the rate of skills growth for each group (assuming that growth between the two time periods is perfectly linear). In this case, the line for young women is slightly flatter, reflecting a slower pace of improvement in reading proficiency. However, average performance is higher among young women than young men at both points in time. The difference in average performance in PISA-15 between boys and girls was large and significant; in PISA-24, however, the performance gap is narrower and the differences can be established with less confidence than in PISA-15.
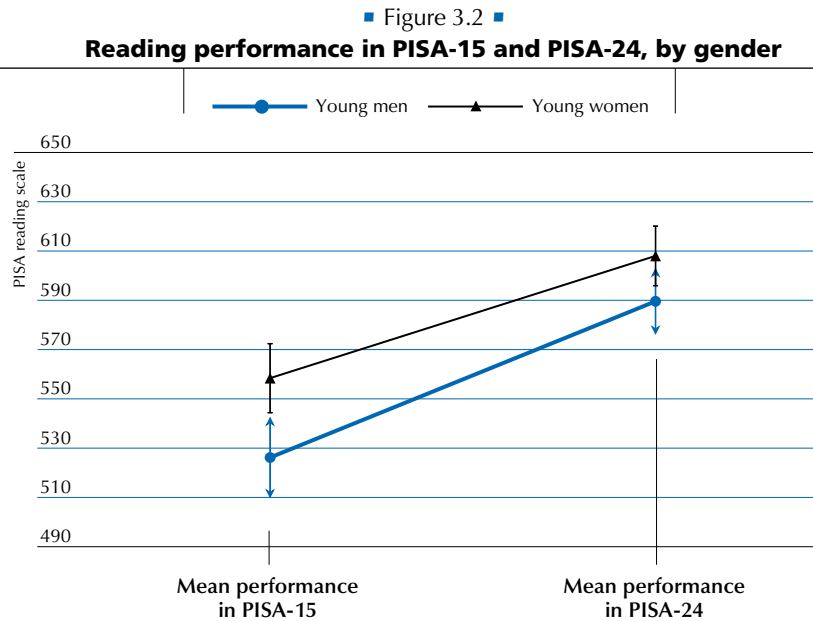
■ Figure 3.2 ■
Reading performance in PISA-15 and PISA-24, by gender

Note: The vertical lines on each measure of mean performance indicate the degree of precision with which these average scores are calculated. In statistical terms, the range of performance covered by these lines is referred to as the confidence interval. In general, overlapping vertical lines (joined confidence intervals) suggest that the differences are not statistically significant with a high degree of confidence.
Source: Table 3.2; YITS cycle 5.5: Reading Skills Reassessment.
StatLink ⌫⌦ http://dx.doi.org/10.1787/888932576795

The distribution of scores by gender highlights important differences between young men and women at ages 15 and 24 (Figure 3.3). In particular, the difference in average performance between boys and girls at age 15 is largely the result of two large clusters, or subpopulations, of boys with low proficiency, visible as two bumps in the distribution, one centred at approximately 300 points and the other at approximately 500 points. These subpopulations are no longer present in the distribution of 24-year-old men, hence the distribution among men is similar to that among women. However, there remains a large number of poorly performing men, as seen by the "heavy tail" at the lower end of the distribution. This accounts for the lingering difference in average performance between 24-year-old men and women, despite near-identical shapes at the high end of the scale. The large proportion of men with low reading proficiency reflects initial poor performance among 15-year-old boys; however, changes to the distribution between the ages of 15 and 24 suggest that this disadvantage may decrease with time. Table 3.3 in Annex B shows the performance distribution in both assessments for both young men and women.

Immigrant background

Canadian students who were born outside of Canada performed relatively well, by international standards, in PISA-15.[2] In fact, the performance gap between students born in Canada and those born outside of Canada was particularly narrow.

Figure 3.4 shows mean student performance in both assessments by location of birth. Students born outside of Canada scored an average of 524 points in PISA-15, while those born in Canada averaged 545 points. In the 2009 re-assessment, all participants scored around 600 points, whether they were born in Canada or not. The growth in skills among foreign-born youth in Canada is remarkable and highlights the learning gains possible beyond compulsory education. Measured in score points, the skills growth among foreign-born students amounted to 77 points – more than one proficiency level on the PISA reading scale – and 54 points among those students born in Canada (Table 3.2).

■ Figure 3.3 ■

Comparison of the distribution of young men's and women's reading skills, PISA-15 and PISA-24

—— Age 15   ——— Age 24

Distribution of young women's reading skills

Distribution of young men's reading skills
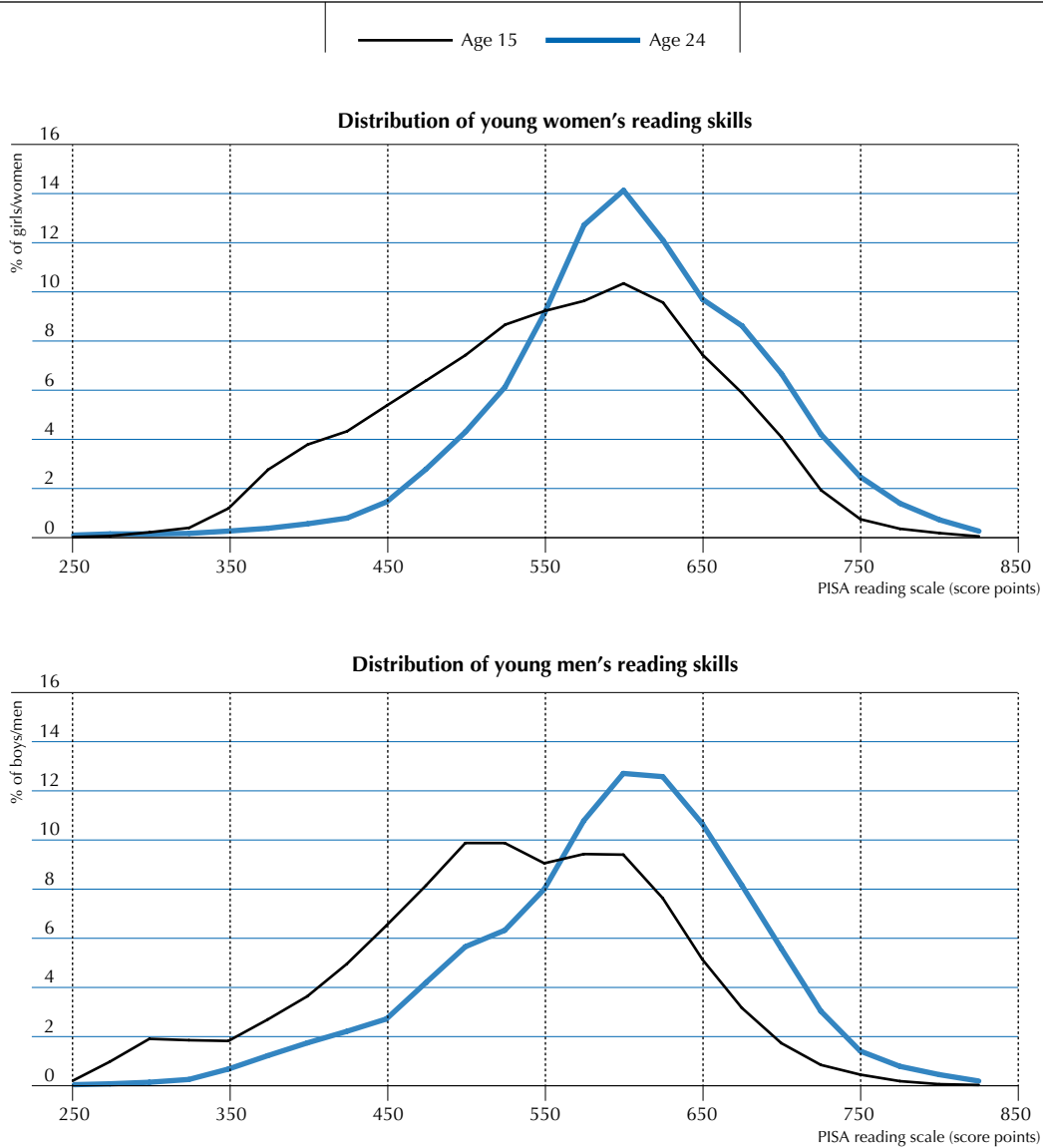
Source: Table 3.3; YITS cycle 5.5: Reading Skills Reassessment.
StatLink 🔗 http://dx.doi.org/10.1787/888932576795

Family socio-economic background

Results from every PISA cycle and other international and national data show that students' socio-economic background is strongly related to their performance in school. This was also true for Canadian youth in 2000. PISA-24 provides the opportunity to analyse the evolution of skills according to socio-economic background and to determine if a disadvantaged background at age 15 continues to influence performance and the acquisition of skills beyond compulsory education.

The evidence from PISA-24 suggests that a disadvantaged background at age 15 does not impede the acquisition of skills after compulsory education. However, students who came from a disadvantaged background still have poorer skills at age 24 than their more advantaged peers. In other words, while equity in reading skills improved after compulsory education, in the sense that the more disadvantaged youth were catching up somewhat, the differences were not completely eliminated.

■ Figure 3.4 ■
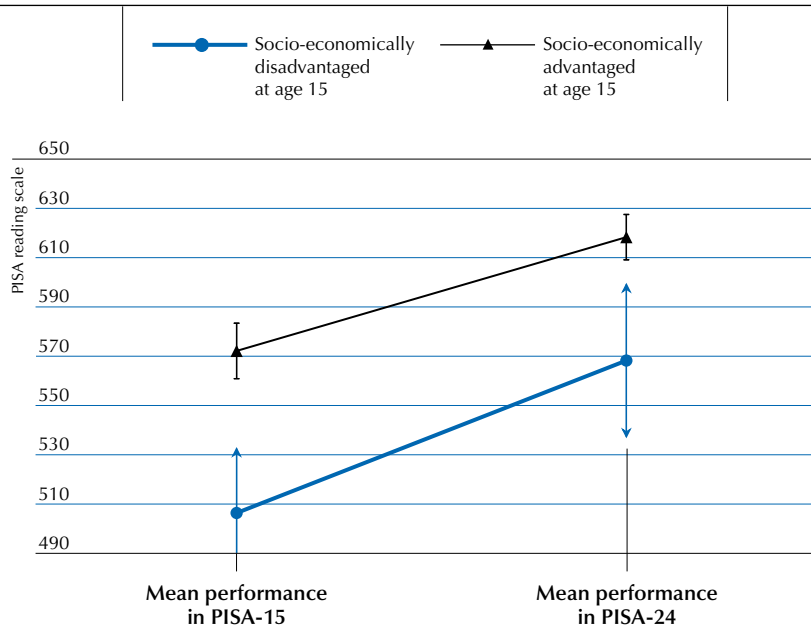## Reading performance in PISA-15 and PISA-24, by country of birth
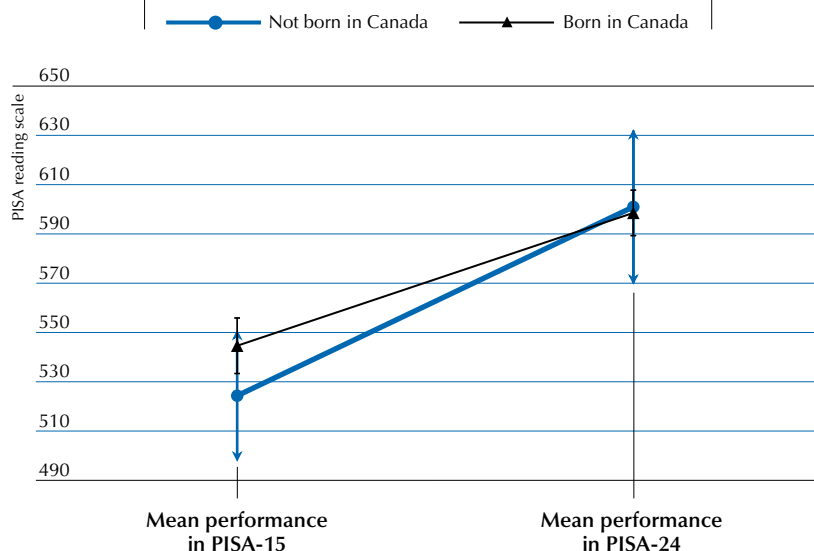
Note: The vertical lines on each measure of mean performance indicate the degree of precision with which these average scores are calculated. In statistical terms, the range of performance covered by these lines is referred to as the confidence interval. In general, overlapping vertical lines (joined confidence intervals) suggest that the differences are not statistically significant with a high degree of confidence.

Source: Table 3.2; YITS cycle 5.5: Reading Skills Reassessment.

StatLink ⬛ http://dx.doi.org/10.1787/888932576795

■ Figure 3.5 ■
Reading performance in PISA-15 and PISA-24, by socio-economic background

Note: The vertical lines on each measure of mean performance indicate the degree of precision with which these average scores are calculated. In statistical terms, the range of performance covered by these lines is referred to as the confidence interval. In general, overlapping vertical lines (joined confidence intervals) suggest that the differences are not statistically significant with a high degree of confidence.

Source: Table 3.2; YITS cycle 5.5: Reading Skills Reassessment.

StatLink ⬛ http://dx.doi.org/10.1787/888932576795

Figure 3.5 plots the average performance among students from advantaged backgrounds and among those from disadvantaged backgrounds. For this analysis, students were grouped in thirds according to the *PISA index of economic, social and cultural status.* The bottom third of students – referred to here as socio-economically disadvantaged students – were compared to the top third of students – socio-economically advantaged students. This classification is country specific and therefore these students are advantaged or disadvantaged relative to their peers in Canada, but they might or might not be so with respect to students or individuals in other countries. Because the socio-economic status of PISA-24 participants was measured in PISA-15, this variable refers to their family background when they were 15 years old and not to how their individual socio-economic status might have evolved between 2000 and 2009.

As Figure 3.5 shows, in 2000, socio-economically disadvantaged PISA-15 participants attained an average of 506 score points in the PISA reading assessment, just above the OECD average. The average performance of those from an advantaged background was almost one full proficiency level higher, at 572 score points. By 2009, the average performance among those from a disadvantaged background improved by more than 62 score points, reaching 568 points; however, this is still below the average performance of the more advantaged youth at age 15. Meanwhile, the average performance of socio-economically advantaged participants increased by a smaller margin, 46 score points, up to 618 score points (Table 3.2).

Figure 3.5 also shows just how convincing the evidence of this persistent gap is. The confidence intervals for each of the four measures highlighted in the figures are relatively large, given the large variations in performance within each group and relatively fewer individuals assessed in each of these groups (a third of the whole sample in each case). Despite this lack of precision in the measures of average performance, the confidence intervals observed in 2000 and 2009 are not overlapping for the two groups (the upper ends of the confidence intervals in 2000 are below the lower ends of the intervals in 2009).

As the results of Chapters 4 and 5 of this report suggest, the persistent performance gap between these two groups is partly related to differences in educational pathways. Previous research (OECD, 2010a) shows that socio-economically disadvantaged students take longer to finish high school, have lower educational attainment, and are more likely to enter the labour market earlier. These factors are related to lower rates of skills acquisition and may partly explain persistently poorer reading proficiency among socio-economically disadvantaged students.

Language

Canada has two official languages, and compulsory education is provided in both English and French. The distribution of Francophones and Anglophones varies across the ten provinces. While Francophones are the majority in Québec, they are a minority in the other provinces. The following analysis considers both these aspects of language in the context of improvements in reading proficiency. The four categories are not mutually exclusive: for instance, the category of minority-language speakers consists of both Anglophones and Francophones, as does majority-language speakers. In the following analysis, language is determined by the language of the PISA test.

Anglophones outscored Francophone students by 16 score points in PISA-15, with average performances of 546 and 530 score points, respectively. The gap between minority and majority speakers in 2000 was similar (17 score points), with average performances of 545 score points for majority-language speakers and 528 score points for minority-language speakers (Table 3.2).

While the performance gap between minority and majority speakers narrowed to nearly no difference in 2009, the differences between Anglophones and Francophones remained fairly stable. The average score of minority speakers increased by 69 points compared to 54 points for majority-language speakers. As a result, average reading scores among both groups were nearly identical in 2009: 597 points for minority-language speakers and 600 points for majority-language speakers. In contrast, improvements in scores were similar among Anglophone and Francophone youth (about 56 and 58 score points, respectively). This resulted in a relatively consistent gap in reading proficiency between the average performance of Anglophone and Francophone youth in 2009. At age 24, young Anglophones had an average score of 602 points compared to 588 points for young Francophones (Table 3.2).

Figure 3.6 highlights the main differences in the distribution and the evolution of reading proficiency between Anglophone and Francophone youth in Canada. At age 15, the distribution of reading proficiency among the two groups differed in two ways. First, there were relatively fewer Francophone students (top panel of Figure 3.6) with high PISA scores – above 550, or approximately Level 4 in the PISA reading scale – than Anglophone students. Second, while there was a cluster of poorly-performing students, with scores of around 400 points, among Francophone participants, there was no such cluster of poor performers among Anglophone students.

At age 24, the difference at the high end of the distribution persists (bottom panel of Figure 3.6), while it has disappeared at the lower end. In other words, French speakers remain less likely to be highly proficient in reading at age 24, but the cluster of poor performers no longer exists. The differences between the top ends of the French and English distributions look almost identical in 2000 and 2009, despite the systematic improvement in proficiency across the entire distribution. Table 3.4 in Annex B describes the performance distribution for young Anglophone and Francophone men and women in both assessments.

■ Figure 3.6 ■

Comparison of the distribution of reading skills in PISA-15 and PISA-24, by test language

Distribution of reading skills at age 15 (PISA 2000)

Distribution of reading skills at age 24 (PISA 2009)
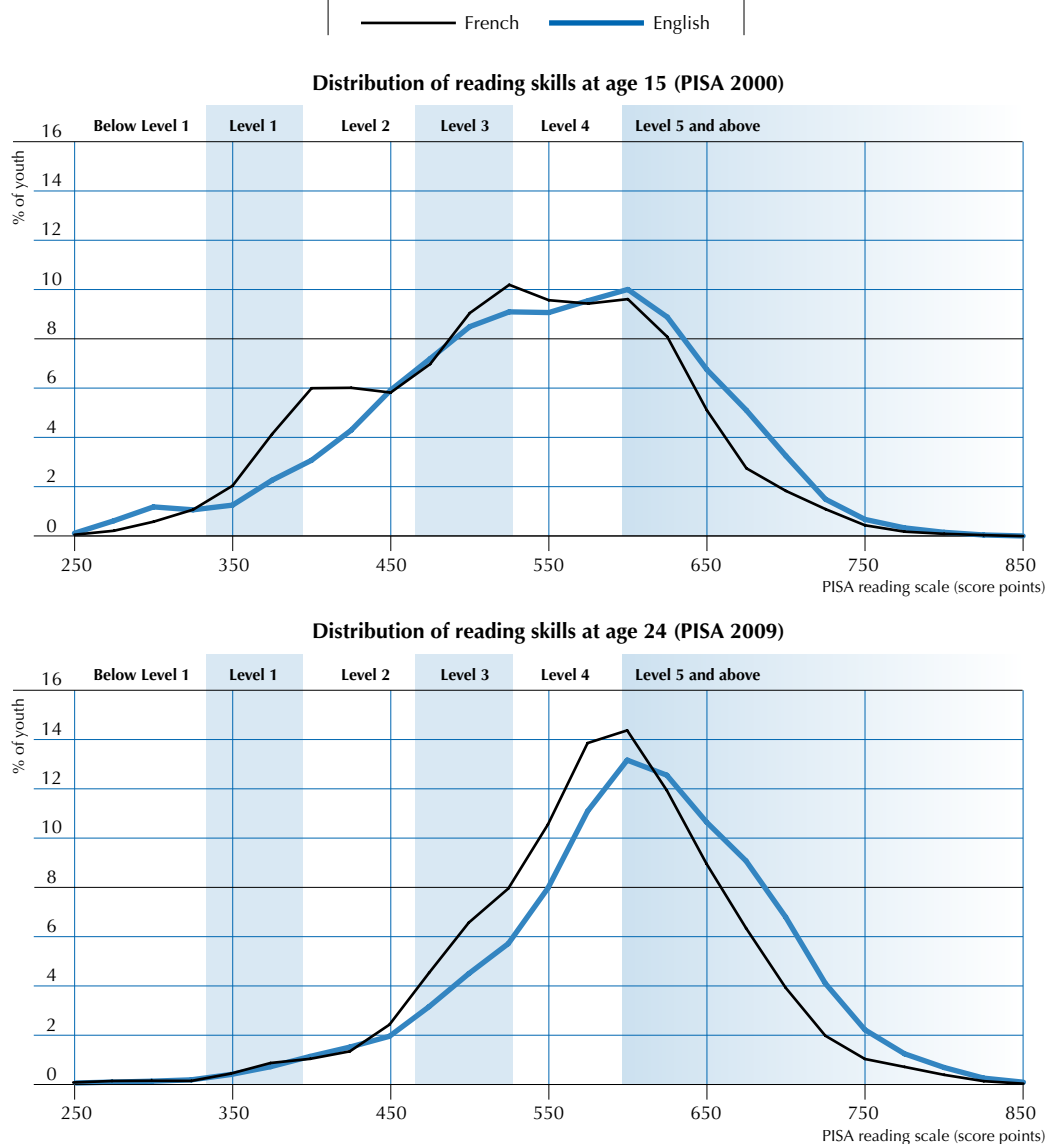
Source: Table 3.4; YITS cycle 5.5: Reading Skills Reassessment.
StatLink ⌫ http://dx.doi.org/10.1787/888932576795

Urban and rural schools

Students in rural schools tend to come from socio-economically disadvantaged families (Bussière, et al., 2001). In addition, students in rural areas tend to have less access to educational resources outside of their homes and schools. For example, there may be fewer public libraries in these areas or they are less accessible. Museums and other cultural institutions are also relatively rare in rural areas compared to urban areas. These disadvantages were evident in the relationship between school location and student performance in PISA-15.

 LEARNING BEYOND FIFTEEN – TEN YEARS AFTER PISA

PISA-24 participants who had attended a rural school when they were 15 – a school in a community described as "a village, hamlet or rural area; with fewer than 3 000 people" – scored, on average, 23 points lower in the 2000 PISA reading assessment than those who had attended an urban school. The average PISA-15 performance among those who had attended rural schools at age 15 stood at 523 score points, while those who had attended urban schools at age 15 reached 546 score points (Table 3.2).

By age 24, individuals who had attended rural schools in 2000 had been able to overcome much of the performance disadvantage. By 2009, the average performance of PISA-24 participants who had attended rural schools when they were 15 was 590 points, a skills growth of 67 points. The average 2009 performance of PISA-24 participants who had attended urban schools when they were 15 was 600 score points, a smaller skills gain of 54 points (Table 3.2). Thus, while still evident, the gap between these two groups had narrowed to about 10 score points, a relatively small difference.

DIFFERENCES IN READING PROFICIENCY BY EDUCATION AND LABOUR-MARKET PATHWAYS, AGES 15 AND 24

The previous section has shown that a high proportion of young people can overcome disadvantages associated with demographic characteristics or school location. Where students do not converge in reading proficiency, the persistent gaps appear to be the consequence of explicit student behaviours between the ages of 15 and 24, rather than demographic characteristics. This section focuses on actual behaviour and individual choices of educational and labour-market pathways. It describes performance gaps in both PISA-15 and PISA-24 by groups of students identified by their educational attainment at age 24 and whether or not they have acquired labour-market experience.

The descriptive analysis in this section supports one of the main messages emerging from the analysis of PISA-24: sustained engagement in education is associated with strong growth in reading skills by the age of 24.

Educational attainment at age 24

Differences in reading skills among Canadian youth are associated with differences in educational attainment. In 2009, 24-year-old university graduates had higher average scores than young people with non-university level post-secondary education, who, in turn, had higher scores than those whose highest level of educational attainment was high school. Performance in PISA-24 mirrored that in PISA-15, when these groups of young people were 15 years old (Figure 3.7).

■ Figure 3.7 ■

Comparison of reading performance in PISA-15 and PISA-24, by educational attainment at age 24
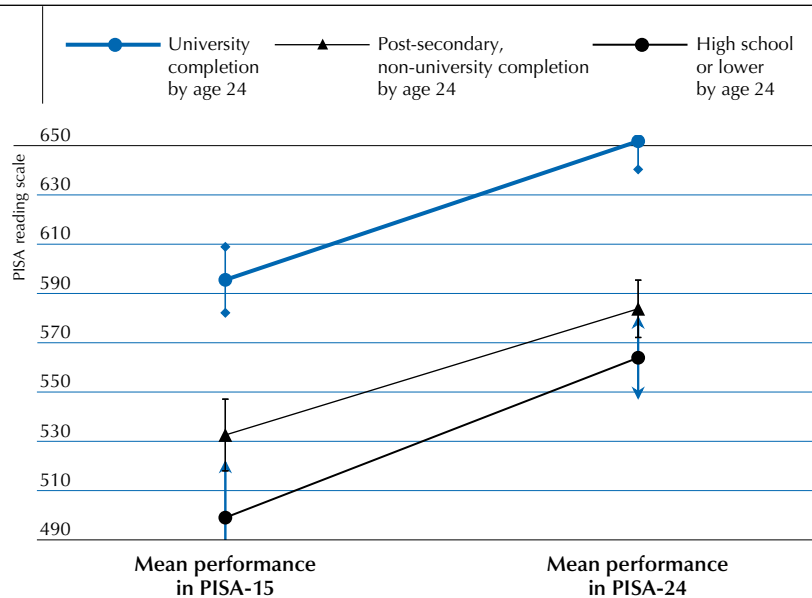
Note: The vertical lines on each measure of mean performance indicate the degree of precision with which these average scores are calculated. In statistical terms, the range of performance covered by these lines is referred to as the confidence interval. In general, overlapping vertical lines (joined confidence intervals) suggest that the differences are not statistically significant with a high degree of confidence.
Source: Table 3.5; YITS cycle 5.5: Reading Skills Reassessment.
StatLink ⊞≡▶ http://dx.doi.org/10.1787/888932576795

For example, on average, young people who graduated from university by 2009 achieved 596 score points in PISA-15 and 652 in PISA-24. In contrast, non-university, post-secondary graduates had an average score of 533 points in PISA-15 and 584 points in PISA-24; and those individuals whose highest level of educational attainment was high school had scores of only 499 points in PISA-15 and 564 points in PISA-24 (Table 3.5).

Despite a faster rate of skills acquisition among young adults who have only a high-school education – indicated by the steeper line in Figure 3.7 – these youth continue to show the weakest performance at age 24. In fact, they have lower scores at age 24 than individuals with a university education had when they were 15.

The strong associations between performance and higher levels of educational attainment suggest that education is related both to initial skills at age 15 and to skills growth between the ages of 15 and 24. Nevertheless, evidence of skills growth among those with the lowest levels of educational attainment shows that skills acquisition, as measured by PISA-15 and PISA-24, occurs through various pathways.

Many factors are related to these differences in average performance. For example, the socio-economic background of those who follow an educational pathway leading to a university degree is likely to be very different than the socio-economic background of those whose highest level of attainment was a high school degree. In general, young women have higher levels of educational attainment than young men, and this is likely to have an impact on these observed differences. Individual characteristics explain some of the performance differences depicted in Figure 3.7. Chapters 4, 5 and 6 present more details and comprehensive analyses that show that even after taking these factors into account, educational attainment and years spent in education are strongly related to skills acquisition between the ages of 15 and 24.

Education pathways

Pathways through education can vary. For example, some individuals go from one stage of their education career to the next without taking any time out. This is known as a linear education pathway. For others, the path to post-secondary education is not so straightforward. They may have delayed beginning their post-secondary education to work or travel, or interrupted their studies part-way through.

Those who chose a non-linear pathway had an average score of 559 points in PISA-15, when they were 15 – some 20 points higher than those 15-year-olds who later continued along a linear pathway. However, as Figure 3.8 shows, by the age of 24, the gap in proficiency was narrowed to only 8 score points, as those who followed a linear pathway showed greater improvements in their scores.

■ Figure 3.8 ■

Comparison of reading performance in PISA-15 and PISA-24, by educational pathways
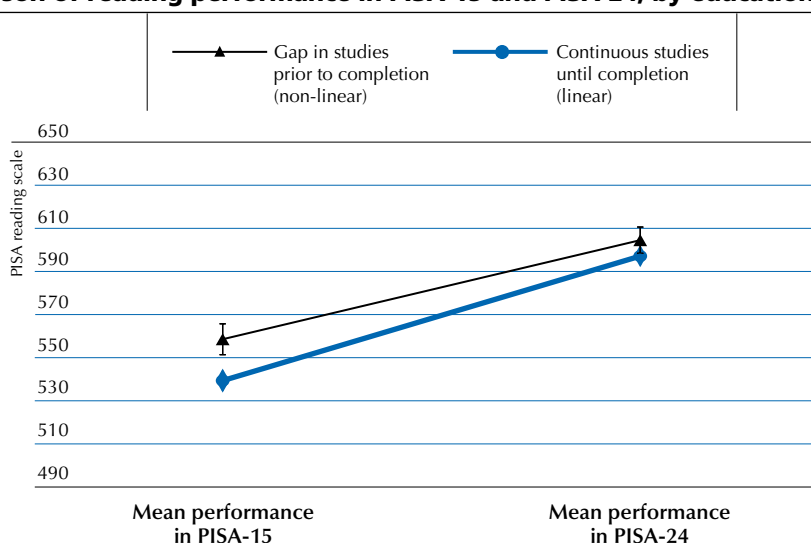
Note: The vertical lines on each measure of mean performance indicate the degree of precision with which these average scores are calculated. In statistical terms, the range of performance covered by these lines is referred to as the confidence interval. In general, overlapping vertical lines (joined confidence intervals) suggest that the differences are not statistically significant with a high degree of confidence.

Source: Table 3.5; YITS cycle 5.5: Reading Skills Reassessment.

*StatLink* ⌦ http://dx.doi.org/10.1787/888932576795

Professional experience at age 24

While many young people chose to focus on education between 15 and 24, others moved into the labour market more quickly and, as a result, gained significant work experience by the age of 24. Individuals who had spent three or more years in full-time employment by the age of 24 are identified here as having focused on work after age 15. In PISA-15, these individuals scored an average of 529 points (Table 3.5). In contrast, those who focused on education, thus limiting their work experience to less than three years by the age of 24, scored, on average, 549 points in PISA-15. The performance gap between these two groups did not narrow in PISA-24: those with more than three years of work experience had an average score of 585 points in 2009, while those with less than three years of work experience had an average score of 606 points (Figure 3.9). This finding is particularly interesting since, in this case, the group with the lower average score did not narrow the gap between 2000 and 2009.

■ Figure 3.9 ■

Comparison of reading performance in PISA-15 and PISA-24, by professional experience at age 24
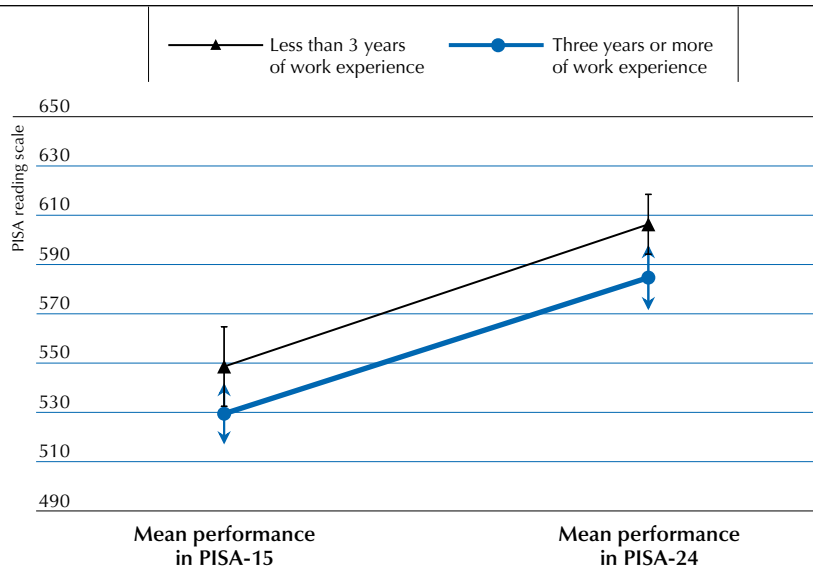
Note: The vertical lines on each measure of mean performance indicate the degree of precision with which these average scores are calculated. In statistical terms, the range of performance covered by these lines is referred to as the confidence interval. In general, overlapping vertical lines (joined confidence intervals) suggest that the differences are not statistically significant with a high degree of confidence.
Source: Table 3.5; YITS cycle 5.5: Reading Skills Reassessment.
StatLink ⧉ http://dx.doi.org/10.1787/888932576795

CHAPTER SUMMARY AND CONCLUSIONS

Ideally, compulsory education should equip students with a level of reading proficiency that will serve them well beyond school. By re-testing the students who participated in PISA-15, PISA-24 shows that reading skills continue to be acquired between the ages of 15 and 24, after compulsory education ends. The results show that Canadian youth made significant improvements in reading proficiency between the ages of 15 and 24. On average, young people in Canada had a gain of 57 score points in the PISA reading scale between 2000 and 2009, improving from 541 to 598 score points–or almost three-quarters of a PISA proficiency level.

PISA-24 shows that the strongest predictor of reading proficiency at age 24 is, in fact, reading proficiency at age 15. While not surprising, this is a significant result. It confirms that the investments in compulsory education made by governments, and the efforts parents and teachers make in helping their children and students learn, have a lasting impact. Further, it corroborates findings that young people can build on their reading proficiency at age 15. It also validates PISA's approach to measuring skills at age 15.

Comparing the degree of skills growth observed between the ages of 15 and 24 with skills acquisition by age 15, it is clear that the largest gains in reading proficiency occur during the years spent in compulsory education. Given the true costs of dropping out of school, efforts to prevent dropping out are more economical than applying corrective policies later. Results show that formal education continues to be the most effective means of acquiring skills.

One of the major goals of compulsory education is to ensure that all students graduate from compulsory education with the essential foundation skills. An indication of this would be a narrow distribution of proficiency, with the average located above Level 3. The distribution of reading proficiency scores was narrower in 2009 than in 2000, with a standard deviation of 78 points in 2009, compared to 92 points in 2000.

The proportion of young people with a score above the baseline proficiency Level 3 increased from 79% at age 15 to 93% at age 24. Level 3 is a key measure of success in PISA. Individuals proficient at this level are adept at "locating multiple pieces of information, making links between different parts of a text, and relating it to familiar everyday knowledge". This represents an important increase in the number of students who have attained a level of proficiency that will enable them to participate fully in society. Since the odds of participating in higher education are greatest among individuals at these levels, learning gains between the ages of 15 and 24 increased the pool of students who could succeed at post-secondary education to over 90%.

PISA-24 also identifies and quantifies a small but significant group of individuals with poor reading skills at age 24. The proportion of young people who scored below PISA reading proficiency Level 3 fell substantially between 2000 and 2009, but in 2009, 7% of 24-year-old Canadians still performed below this important threshold. These young people would likely benefit from general literacy training. Since the proportion of young people below proficiency Level 3 on the PISA scale dropped from 21% at age 15 to 7% at age 24, policy makers could more easily target and design programmes to improve the reading skills of these young Canadians. These findings highlight the need for continued attention to reading skills beyond compulsory education and into adulthood.

Improvements in reading proficiency do not necessarily occur at a faster pace among those students who are highly proficient. In fact, most disadvantages tend to decrease over time as the distribution of reading proficiency tends towards convergence. While some observers might have expected a "fanning-out" of skills levels and proficiencies between the ages of 15 and 24, PISA-24 shows no evidence to support this assumption.

Where skills acquisition has not tended towards convergence, the descriptive analyses suggest that education pathways may influence the differences. Young people who completed university-level studies maintained a large performance advantage over their peers. These issues are examined in subsequent chapters.

Young men, Francophones, rural students, and those from more socio-economically disadvantaged backgrounds were able to narrow the gap in performance that was evident at age 15, and a large proportion scored above Level 3 at age 24. But the gaps between these groups and others are still a concern. Characteristics associated with poorer proficiency at age 15 were still associated with lower proficiency at age 24. Socio-economically advantaged students outscored their disadvantaged peers by more than 66 score points in PISA-15; by 2009 that gap had narrowed to 50 score points. However, by age 24, the average performance of young people who were considered socio-economically disadvantaged at age 15 (568 score points in PISA-24) remained below the average performance of socio-economically advantaged students nine years earlier (572 score points in PISA-15). From a policy point of view, the persistent gap between these two groups indicates that students from low-income families and whose parents have low levels of education continue to be disadvantaged. Even if fewer individuals from these groups scored at Levels 1 and 2 at age 24, they still deserve the attention of policy makers.

The first key insight emerging from PISA-24 is that the disadvantages observed at age 15 are, for the most part, still evident at age 24. Those who underperformed in PISA-24 were more likely to be from a socio-economically disadvantaged background, to be Francophone, and to be male. These are the same individual characteristics that were associated with underperformance in PISA-15. While skills acquisition takes place at slightly different rates among the various groups of students, for the most part, these differences are not large enough to compensate for initial gaps in reading skills. In other words, performance gaps are not easily narrowed over time.

The exception to this pattern is seen in immigrant status. Most countries are hosting growing numbers of children from immigrant backgrounds. These students tend to come from disadvantaged backgrounds and speak a language at home that is not the same as the language of the PISA test. Reading proficiency among students with immigrant backgrounds was lower than that of native-born students in most countries in PISA-15. However, in Canada, students with an immigrant background, though initially disadvantaged, show that it is possible to catch up with their native peers. By age 24, young people with an immigrant background fully bridged the gap that separated them from 15-year-olds born in Canada. Students born outside of Canada scored an average of 524 points in PISA-15, while those born in Canada averaged 545 points.

In the 2009 re-assessment, all participants scored around 600 points on average, whether they were born in Canada or not. In addition to highlighting the value of integration, this shows that appropriate policies can help to reduce, if not eliminate, differences in student performance.

This finding also shows that it is possible for groups of students who perform poorly at age 15 to acquire skills and catch up with the rest of the population in the years following compulsory education. Further analysis of this group may help to determine the behaviours, attitudes and education and professional pathways that are related to faster skills acquisition.

Notes

1. The mean score of 541 points among those in the PISA-24 sample who were assessed in 2000 is somewhat higher than the mean score of 534 points for the full sample of Canadian students who participated in PISA-15. The higher average of the PISA-24 subsample is the result of differences in the two samples that were not accounted for by the survey weights. Changes to the sample composition in longitudinal surveys are often referred to as sample attrition. Sample attrition bias can occur when certain characteristics make some individuals more likely to respond to the survey than others. Survey weights are used to keep the composition of the sample representative of the population in question, in this case 15-year-old students in Canada in 2000. However, sample attrition can affect the degree to which the results can be generalised to the population level.

2. Note that the distinction here is made based on the country where the student was born. Some students who were born in Canada might have parents born outside of Canada. In other PISA reports, these students would be typically considered as students with an immigrant background, and they are commonly referred to as second-generation students.
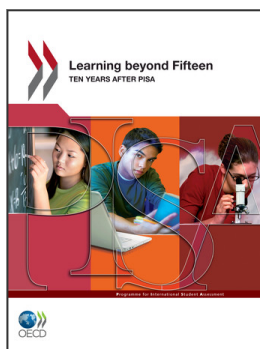
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