



LEADERSHIP, ADVOCACY AND SERVICE FOR MANITOBA'S PUBLIC SCHOOL BOARDS

## THE FACTS ON PISA (PROGRAMME FOR INTERNATIONAL STUDENT ASSESSMENT)

### WHAT IS PISA?

Every three years, starting in 1997, 15 year old Canadian students participate in a global test that is designed to measure what these students know and can do, in reading, math and science. The test has been created by the Organization for Economic Cooperation and Development (or OECD) and most recently included over 500,000 students across 79 nations.<sup>1</sup> In the latest test, written in 2018, approximately 22,440 Canadian students participated across 804 schools in Canada's ten provinces. The test is not written by students in Canada's northern territories and students enrolled in federally funded First Nations schools do not write the test either.<sup>2</sup> The major subject tested by PISA in 2018 was reading, with other test questions focused on science and mathematics.<sup>3</sup> Manitoba also participated in a financial literacy option along with six other provinces.<sup>4</sup>

### HOW DID CANADA DO ON THE TEST?

It is important to know that PISA has been designed to test students' overall abilities on a national scale, that is to say, based on the country in which they live. In this respect, it is significant that our students' overall abilities help to place Canada among the top performing nations in the world, in all three of the subject areas that were tested by PISA in 2018. In reading, Canada stands sixth in the world after China, Singapore, Hong Kong, Macao and Estonia. Canada remains the top English-speaking nation in the global top ten for reading.<sup>5</sup> Canada stands at eighth place for science and at twelfth place for mathematics.<sup>6</sup>

### HOW DID MANITOBA'S STUDENTS DO ON THE TEST?

Because Manitoba is one of the ten provinces whose scores are used to determine Canada's overall standing in the world, Manitoba's overall contribution to the 2018 Canadian results is based on our sample size, representing approximately 10.3 per cent of the total number of students in Canada who

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<sup>1</sup> See "Measuring up: Canadian results of the OECD PISA study— the performance of Canada's youth in reading, mathematics and science – Highlights" (Council of Ministers of Education, Canada) page 2.

[https://www.cmecc.ca/docs/pisa2018/PISA2018\\_Highlights\\_EN.pdf](https://www.cmecc.ca/docs/pisa2018/PISA2018_Highlights_EN.pdf)

<sup>2</sup> See *Measuring up: Canadian results of the OECD PISA study— the performance of Canada's youth in reading, mathematics and science* (Council of Ministers of Education, Canada) page 3.

[https://www.cmecc.ca/Publications/Lists/Publications/Attachments/396/PISA2018\\_PublicReport\\_EN.pdf](https://www.cmecc.ca/Publications/Lists/Publications/Attachments/396/PISA2018_PublicReport_EN.pdf)

<sup>3</sup> See "PISA 2018: Insights and interpretations" (Organization for Economic Cooperation and Development), page 4. <http://www.oecd.org/pisa/PISA%202018%20Insights%20and%20Interpretations%20FINAL%20PDF.pdf>

<sup>4</sup> See "Measuring up— Highlights", page 2. According to CMEC, these results will be released at a later date.

<sup>5</sup> See "Figure 1" (page 6) in "PISA 2018".

<sup>6</sup> See "Figure 2" (page 7), and "Figure 3" (page 8) in "PISA 2018".

wrote PISA in 2018.<sup>7</sup> In Manitoba, 2,332 students wrote the test.<sup>8</sup> Manitoba's students' skills and abilities places our province at, above or near the average abilities of all other students worldwide, as based on the OECD average score. The 2018 PISA test shows that this fact remains true across reading, science and mathematics.<sup>9</sup> In terms of average score, Manitoba's 15 year olds achieved an average (or "mean") score of 494 in reading, 482 in mathematics, and 489 in science.<sup>10</sup> This is very comparable to the scores achieved by Manitoba students in 2015, when science was the major subject area.<sup>11</sup>

These scores tell us about the general level of skill or ability of our students, and explain how much they know and what they can do in each of the tested subject areas.<sup>12</sup>

## WHAT "GRADE" DID OUR STUDENTS GET ON THE TEST?

The scores obtained by Manitoba students relate to broad categories of general proficiency or ability, on a scale of 1 to 6 (where Level 2 is the basic requirement needed to participate in the economy).<sup>13</sup> Using this scale, what PISA 2018 tells us is that in Manitoba, when it comes to the major subject tested—reading—over half (56 per cent) of our students have ability and proficiency that corresponds to Level 3 through to 6, with close to a third (28 per cent) corresponding to the upper Levels (4, 5 and 6).<sup>14</sup> The results for mathematics and science also clearly demonstrate that the majority of Manitoba students perform at or above Level 3 (at 51 per cent in mathematics and 52 per cent in science).<sup>15</sup>

Unlike most tests, PISA is not based on traditional "grading" scales (for example, letter grade scales based on "A, B, C, D, F", or 100 point scales based on percentages). Instead, the scores achieved by Manitoba's students tend to reflect their overall knowledge and skill. The test is designed to determine how much students "know" and "can do". The test does not determine "how well" they perform, which is what a traditional grade scale tells us. PISA is thus not focused on how well students know the subject or how well they can perform but rather what they know and how they can do. The distinction is slight but is nevertheless very important.

Put another way, there are no "right" or "wrong" scores on a PISA test. The way that students answer questions on the test show us how much a student knows or what they can do, according to their overall level of ability or proficiency. The scores also show us where we need to focus so that, as a public school

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<sup>7</sup> See "Table A.1a" in "*Measuring up—Public Report*", page 82.

<sup>8</sup> See "Table A.2" in "*Measuring up—Public Report*", page 83.

<sup>9</sup> See "Figure 1.4" (page 16), "Figure 2.1" (page 33), and "Figure 2.2" (page 34) in "*Measuring up*".

<sup>10</sup> Ibid.

<sup>11</sup> In 2015, Manitoba achieved average scores of 498 in reading, 489 in mathematics, and 499 in science, average outcomes that are regarded by CMEC and the OECD as stable performance over time, given margins of error and other significant factors such as socio-economic status.

<sup>12</sup> For explanations, see Table 1.2 (pages 10-11), Table 3.1 (page 50) and Table 3.2 (page 51) in "*Measuring up—Public Report*".

<sup>13</sup>Ibid.

<sup>14</sup> See "Figure 1.3" (page 12) in "*Measuring up—Public Report*".

<sup>15</sup> See Figure 3.1 (page 52) and Figure 3.2 (page 53) in "*Measuring up—Public Report*".

system, we can help students build upon their existing skills and proficiency by the time they graduate from high school.

## **HOW DO MANITOBA'S STUDENTS COMPARE TO OTHER STUDENTS?**

The results and outcomes that are achieved by Manitoba's students on national and international tests have often been used for a variety of different purposes, one of which involves comparing Manitoba's students with those in other provinces, as well as those in other countries. However, for many different reasons, using the PISA test and its scores to compare one group of students to others is very difficult.

It is important to understand that across all of the nations of the world, the PISA test is written in the specific language of each nation. It is also important to understand that there can be up to four different tests that are used to measure students' abilities in each of the major subject areas (science, mathematics and reading).

In practical terms, what this means is that students writing PISA do not write the exact same test, even in the same subject area. In Canada, even when they do write the same test, this may or may not be in the same language, depending on what program they are taking (whether English and French Immersion who write the test in English, or Francophone who write the test in French).

In many nations and across Canada's many provinces, some students also do not write the PISA test due to their physical or intellectual disabilities. Some students do not write the test due to language abilities (in the case of newcomer or refugee students). How such students are chosen for exclusion, and the number of students who do not write the test because of their abilities, is also very different across the many nations and Canadian provinces that participate in the PISA test. In Canada, the total exclusion rate in 2018 ranged as high as 7.6 percent in Nova Scotia and as low as 3.7 percent in Quebec.

Manitoba's exemption rate was 6.3 percent.<sup>16</sup> When measuring students' abilities, PISA makes every effort to account for such differences. Doing so however, remains a significant challenge.

## **WHAT ELSE DOES PISA TELL US?**

There is a lot of valuable information that PISA 2018 tells us, based on Canada's and also Manitoba's scores in reading, mathematics and science. However, it is important to understand that what it tells us is based on a particular "snapshot in time". PISA was not designed as a traditional benchmark test. Those who do wish to use PISA to compare student proficiency across a select time or period, must take several factors in account.

As a test that is written every three years, it is generally possible to see how the skills and abilities of 15 year olds might change over time, in the same subject areas. However, it is important to understand that the same group of students do not write the test every three years. PISA does not measure how the same group of students' skills and abilities in a certain subject area may have changed by the time they complete high school. Instead, only students who are 15 years of age, every three years, write each test.

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<sup>16</sup> See "Table A.1a" (page 82) in "*Measuring up—Public report*".

It is also important to understand that every three years, PISA focuses on one major subject area and two other minor subject areas, but these do not stay the same. That means that in 2018, most of the test questions were on reading, with some questions on mathematics and science. In previous years however, most of the test questions were on mathematics (2012) and science (2015). In 2021, PISA will focus on mathematics, while reading and science will become a minor subject foci. The major and minor subject foci changes every three years according to a fixed schedule, so it is not the exact same test that different groups of 15 year olds write every three years.<sup>17</sup>

It is also important to understand that what PISA scores mean does not stay the same from one test to another. According to the OECD itself, the scores are revisited and updated and reflect revisions to the framework and new tasks for each time the test is written. This is equally true for the 2018 major focus on reading.<sup>18</sup> PISA also reports many different outcomes across all tested subject areas, based on language of instruction, gender identity, immigration, and socio-economic status, among other factors.<sup>19</sup>

## **IN CONCLUSION: THE MANITOBA SCHOOL BOARD ASSOCIATION'S MAJOR OBSERVATIONS ABOUT PISA IN 2018**

Our students' overall abilities help to place Canada among the top six nations in the world in the major reading domain that was tested by PISA in 2018. Manitoba's contribution to this result remains important. In Manitoba, our students' skills and abilities also places our province at, above or near the average abilities of all other students worldwide, as based on the OECD average score. The 2018 PISA test shows that this fact remains true across reading, mathematics and science.

It is reasonable to expect that in Canada and in Manitoba, students' abilities in reading, mathematics and science will change across PISA tests. This is because PISA is not intended to serve as a benchmark. The results and outcomes in select subject areas across several years provide some valuable information, but mainly about a select group of students at any given time.

Into the future, additional reports and analyses will be released by the OECD and also by CMEC concerning the 2018 PISA outcomes. Notwithstanding this additional reporting, the observations and facts provided in this fact sheet will remain valid and applicable.

## **WHERE CAN I GET MORE INFORMATION ABOUT PISA?**

All information and references contained in this fact sheet have been cited from or interpreted based on the reports and summaries provided at the website of the Organization for Economic Cooperation and Development at: [www.pisa.oecd.org](http://www.pisa.oecd.org) and also at the website of the Council of Ministers of Education, Canada at: [www.pisacan.ca](http://www.pisacan.ca).

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<sup>17</sup> See "Measuring up— Highlights", page 5.

<sup>18</sup> See generally *How does PISA define and measure reading literacy?* (OECD), page 2. <https://www.oecd-ilibrary.org/docserver/efc4d0fe-en.pdf?Expires=1575364777&id=id&accname=guest&checksum=81E3CFE3B6980ED8A4F83FAF1B3560B7>

<sup>19</sup> See generally *Measuring up—Public report*.