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Council of Ministers of Education, Canada (CMEC)  
Organisation for Economic Co-operation and  
Development (OECD) Programme for International  
Student Assessment (PISA), and  
Youth in Transition Survey (YITS)



## FACT SHEET

### **GENERAL FACTS ABOUT PISA**

#### **What is PISA?**

The Programme for International Student Assessment (PISA) is one of the most ambitious international education projects ever undertaken. Coordinated by the Organisation for Economic Co-operation and Development (OECD), PISA has involved over 250,000 students from 32 countries. PISA is significant because it gives education researchers and policy-makers comprehensive international data in three core subjects: reading, science, and mathematics.

#### **What is the Youth in Transition Survey (YITS)?**

YITS is a longitudinal survey of 15-year-olds, conducted by three partners — Human Resources Development Canada (HRDC), the Council of Ministers of Education, Canada (CMEC), and Statistics Canada — and designed to collect information about major transitions in the lives of youth. Current plans for YITS are to conduct the survey every two years over a period of several years. The link between PISA and YITS will enable researchers and policy-makers to study the impact of social and economic factors on the achievement of Canadian youth as well as the influence of skills and knowledge at age 15 on their future school-to-work transitions.

#### **Why did CMEC participate in the PISA Study and the Youth in Transition Survey?**

The Council of Ministers of Education, Canada participated in PISA to assess the performance of 15-year-old students in reading, mathematics, and science literacy. This information, together with the evaluation mechanisms in individual provinces, will give the ministers of education a basis for examining their jurisdiction's own curriculum and other aspects of their school system, and compare the performance of their students with the performance of their provincial and international counterparts.

OECD allowed countries to administer simultaneously their own national options, in our case YITS. YITS gave us an opportunity to obtain initial performance data and information from

students, principals, and parents. Combining YITS and PISA allowed for efficiencies in time, administrative requirements, and costs.

### **Who participated in PISA and the Youth in Transition Survey?**

In Canada, 30,000 students from 1,000 different schools took part in both PISA and YITS. The total number of students who participated from each province is outlined in the first pages of the Canadian report. None of the territories chose to take part in the 2000 project.

### **Is OECD's PISA a one-time-only assessment?**

No. Two future assessments are planned, with a primary focus on mathematics in 2003, then on science in 2006.

### **How can student performance across the OECD countries be compared?**

Educational systems and school programs differ from one country to another. Making comparisons of results from these various countries is a complex task. However, OECD countries developed a framework for each of the three subject domains to be tested, a framework that reflected in general terms what 15 year-old students are expected to know. While PISA does assess students' knowledge and skills in reading, mathematics, and science, it focuses primarily on what students will need in their future lives. PISA, then, seeks to assess what students can do with what they have learned. The results obtained from PISA will help educators determine whether students in OECD countries reach similar levels of performance at about the same age.

### **How can student performance across Canada be compared?**

Because all provinces and territories have legislative responsibility for education, school programs differ from one part of the country to another. However, because of the universality of PISA's global benchmarks in reading, mathematical, and scientific literacy, the comparison of individual Canadian provinces with distinct countries was quite feasible.

In the Canadian report, the provincial breakdown of the PISA results allows researchers and educators to compare the performance of students within each jurisdiction with the performance of those from neighbouring provinces, as well as with the performance of students from other developed countries. In all provinces, results can also be compared on the basis of gender. In some provinces, results can be compared along linguistic lines as well.

### **How can we compare average scores?**

Because scores were based on samples of students from each country and province, we cannot say with certainty that these scores are the same as those that would have been obtained had all 15-year-olds been tested. The *confidence interval* is a range of scores within which the score for

the full population is likely to fall.

When comparing two countries or two provinces, the two average scores cannot be said to be different from each other if the confidence interval for the two average scores overlaps.

For example, countries performing about the same as Canada have a confidence interval for the average score that overlaps with Canada's confidence interval.

### **What is reading, mathematical, and scientific literacy in PISA?**

**Reading literacy** is defined in PISA as the ability to understand, use, and reflect on written texts in order to achieve one's goals, to develop one's knowledge and potential, and to participate effectively in society.

The "type of reading task" dimension is measured on three scales:

1. A "retrieving information" scale reports on students' ability to locate information in a text.
2. An "interpreting" scale reports on the ability to construct meaning and draw inferences from written information.
3. A "reflection and evaluation" scale reports on students' ability to relate text to their knowledge, ideas, and experiences.

A combined reading literacy scale summarizes the results from the three reading literacy scales. This combined scale is referred to as "reading" in the Pan-Canadian report. ?

**Mathematical literacy** is defined in PISA as the capacity to identify, understand, and engage in mathematics, and to make well-founded judgments about the role that mathematics plays in an individual's current and future private life, occupational life, social life with peers and relatives, and life as a constructive, concerned, and reflective citizen.

**Scientific literacy** is considered a key outcome of education by age 15 for all students. Literacy in science relates to the ability to think scientifically in a world in which science and technology shape our lives.

### **What are the 5 levels of reading literacy?**

Reading achievement was described in 5 levels. Essentially, these levels represent the most difficult test items that a student could answer.

A difference of one level can be considered an important difference in student performance.

A difference of 73 points between two average reading scores can be thought of as representing about one complete level in reading literacy.

The examples below are from levels 2 and 3 in the reading retrieving scale:

**Level 2**

Students were required to state how to check that a bicycle seat was in the right position, by finding two pieces of connected information in an assembly manual. The placement of the relevant information was clearly stated in the question.

**Level 3**

Looking at a complex international airline timetable, with prominent competing information, students had to find a single piece of information that satisfied three conditions — time, destination, and connecting city. For information about one of the conditions, the reader had to refer to a separate list of abbreviations.

**Will PISA replace provincial and pan-Canadian assessments?**

PISA is designed to complement the current assessments being coordinated by CMEC. The School Achievement Indicators Program (SAIP) is a CMEC assessment, conducted in regular cycles, that provides quantitative information on the performance of 13-year-old and 16-year-old students in Canadian school systems. PISA 2000, which assessed 15-year-olds, gives educators from across Canada another bank of quantitative information to analyze and interpret as they make enhancements in the country's education systems.

**What is the cost to date of PISA?**

The direct costs for PISA have been funded by HRDC; some indirect costs have been assumed by the provinces. In each of three years, the direct costs have been \$1.9 M and the indirect costs about \$270,000 for a total of approximately \$6.5 M for this first PISA administration.

**Who are the Canadian partners involved with PISA?**

Human Resources Development Canada, Statistics Canada, and the Council of Ministers of Education, Canada are partners in administering PISA and in producing the Canadian PISA report.

**Who developed the items in the test?**

The OECD developed PISA, with contributions and regular input coming from all the countries that participated in the assessment.

### **Is the assessment fair to students across Canada?**

Canada actively participated in the development process for PISA to ensure that the uniqueness of our country's education systems would be taken into account. Factors such as linguistic differences, rural and urban school locations, and cultural influences were all considered. In addition, the universal frameworks for each subject incorporated an agreed-upon philosophy for all countries that is based upon the latest pedagogical research.

In the sense that Canadian students answered the same questions as students from every other country, it is very fair. The assessment is also unique, in that it is not tied to the curriculum of any province or participating country, but is instead a fair measure of students' abilities to use their knowledge and skills to solve real-life situations.

### **What did we learn from this assessment?**

The report gives educators important information on the home and school factors that help produce a successful student. In the Canadian report, these factors are outlined in Chapter 2.

The report indicates that the performance of Canadian students is above the international average in all three subject areas. In fact, Canadian students, on average, placed in the top tier of all countries surveyed in every domain tested in the assessment. In one measurement of reading, a majority of Canadian students were first overall.

PISA has also shown Canadian educators where improvements could be made to make our education systems even better. While, on average, Canada's students did very well, there was a significant variance between provinces, and there was a gender gap in the reading scores, favouring girls over boys. French-minority language students underperformed in relation to their English-language counterparts in a number of provinces.

In reading, the results for Canadian students were second, behind Finland. Reading was the major domain assessed in PISA 2000, while mathematics and science were the minor domains.

In science, Canadian students were in the top five, behind Japan and Korea, but within a group that included Finland, New Zealand, Australia, Switzerland, and the United Kingdom.

In mathematics, Canadian students were in the top six, behind Japan and Korea, but within a group that included Finland, New Zealand, Australia, Switzerland, and the United Kingdom.

In all categories, the difference in performance between Canada's highest-scoring and lowest-scoring students was among the smallest of all the participating countries. The inequality between Canadian students from the highest socio-economic background and those from the lowest socio-economic background was also among the smallest.

**What kind of information does the pan-Canadian report contain that differs from the OECD PISA report?**

It gives a breakdown of the PISA results by province, and includes some information from the Youth in Transition Survey (YITS). In addition, the Canadian report gives quantitative information on some of the home and school factors that influence the performance of Canadian students, and includes students' impressions of their learning environment.

**How will the results be used?**

The quantitative information in the results will be used by provincial ministries/departments of education to help determine not only where their students are succeeding, but also where there needs to be greater improvement.

As with other assessments, PISA will also be a valuable resource for education researchers and policy-makers who analyze the results to propose improvements in Canada's systems of education. The federal government, through Statistics Canada and HRDC, will conduct further analyses of the PISA-YITS data set.

OECD also plans to produce additional thematic reports, based on the PISA 2000 data.