



# What International Tests (PISA) Tell Us about Education in Canada

*By Derek J. Allison*

Canada has long maintained a high level of expenditure on education, creating and sustaining ten well-resourced provincial education systems and a highly educated workforce. Is this investment paying off? Are Canadian and provincial students attaining levels of academic performance comparable to students in other well-resourced school systems? This study draws on findings from the OECD's Programme for International Student Assessment (PISA) to compare the performance of Canada's Grade 10 students in the three core subjects of reading, math, and science with those in other countries.

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Following an overview of PISA and other international assessment programs, the study first examines Canada's international performance, then explores interprovincial results, and finally considers the influence of socio-economic status. Special attention is given to comparing the performance of Canada's students at the national and provincial levels to students in other G7 countries, which also have well-developed and resourced school systems. Attention is given to the most recent 2018 PISA results and to those from earlier assessments to identify trends. In addition to comparing average test scores, percentages of high- and low-performing students are also considered. Extensive data displays are used to highlight major findings.

In the 2018 PISA assessment, Canadian students maintained their record as highly competitive performers, placing in the upper tier of the 78 participating countries. Canadian students had their highest average scores in reading, where they outperformed students in all other G7 countries. Canadian students did least well in math, placing below the

leading G7 country, Japan, and six other OECD countries, but ahead of the other G7 countries. Canada occupied a similar relative position in science, with a slightly higher average score. Canada also demonstrated a performance edge over other G7 countries in percentages of high- and low-performing students in each of the three subjects. Most notably, Canada had fewer low-performing students in all three subjects than did other G7 countries with the exception of Japan in math and science.

Unlike other countries, Canada does not have a national education authority or a national education policy framework, so that differing provincial policies have a more direct effect on school outcomes than in other countries. Canada's four largest provinces outperformed all others in all subjects. Alberta students had the highest average scores in reading and science; Quebec students the highest scores in math. Ontario students had statistically similar reading scores to their Alberta counterparts. These three provinces scored above or close to the 95th percentile of all national and pro-

vincial scores. British Columbia scored below the other larger provinces but ahead of all other provinces. Manitoba and New Brunswick had the lowest average provincial scores in reading and science; Manitoba and Saskatchewan the lowest scores in math. Even so, New Brunswick and Manitoba outscored G7 Italy in reading and science respectively.

Even though Canada performed very well in the 2018 PISA assessment, scores have declined in all subjects over earlier assessments. The 14 score point decline in reading since 2000 was classified by PISA as following a “flat” trajectory, as were the reading scores of four other G7 countries. Steeper declines in Canada’s math and science scores were classified as “steadily negative.” No other G7 country was in this category in any of the three subjects.

Scores declined in all provinces in all three subjects, but more markedly in some. The steepest declines in the Big Four provinces were in math in Alberta and British Columbia. Reading scores in Ontario and math scores in Quebec were essentially flat. The steepest declines in the six smaller provinces were also in math, although reading and science scores in Manitoba and Saskatchewan fell steeply.

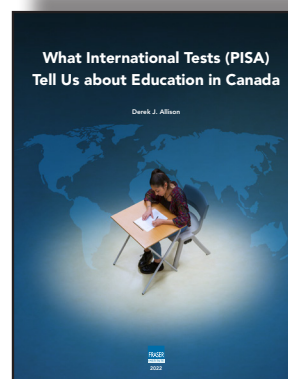
PISA measures socio-economic status using an index of economic, social, and cultural status (ESCS) derived from student questionnaire responses. Canada and eight provinces had a higher ESCS score than other G7 countries. New Brunswick and Manitoba recorded a lower score than the UK, but within the statistical margin of error. Reading scores were positively correlated with ESCS scores for G7 countries and the Canadian provinces. Canada and six provinces also had a smaller performance gap between high and low ESCS students than other G7 countries.

PISA recognizes lower-scoring ESCS students who achieve high reading scores as “resilient.” Canada has a larger share of academically resilient students than all other G7 members except the UK. Within Canada, Ontario has the highest proportion of academically resilient students, followed by Newfoundland & Labrador and Alberta. Manitoba and Saskatchewan had the smallest percentages of resilient students in Canada. Taken together with Canada’s high reading scores,

the high proportion of resilient students demonstrates both high levels of academic performance and education opportunity, especially in Alberta and Ontario.

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On balance, Canada is receiving good returns on its investments in education, outperforming all other G7 countries except Japan in math and science, while providing high levels of educational opportunity for less advantaged students. Yet performance is less than even across the provinces, with Alberta excelling in reading and science, and Quebec in math. Scores have nonetheless been declining over time, especially in math and especially in Manitoba and Saskatchewan, although recent declines in British Columbia and Alberta are notable. The shallower score declines in the largest provinces of Ontario and Quebec have moderated the erosion of Canada’s national scores. Yet, if continued, these trends will lower Canada’s currently enviable international standing.



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