# Profile of New Brunswick High School Students: Their Reading Skills 

Research Program on Post-Secondary Education and Training Opportunities in New Brunswick

## Report \#2

February 27, 2007

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This report is a joint project completed under a research Memorandum of Understanding between the Government of New Brunswick and the Learning Policy Directorate, Human Resources and Social Development Canada. Under this agreement, mutually beneficial research projects in the area of learning are conducted in close collaboration between the two parties. This report is the first one to be released under this agreement.

Department of Education
Department of Post-Secondary Education, Training and Labour

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## Introduction

Strong reading skills lie at the basis of all learning. Furthermore, reading skills are necessary for successful labour market participation and overall social wellbeing. These are not only acquired in formal learning environments; they are also gained by application in all types of life experiences. Ensuring strong reading skills at early ages helps individuals make smooth transitions to further learning or the labour market.

In 2000, Canada participated in the Programme for International Student Assessment (PISA). The PISA project was initiated by countries belonging to the Organization for Economic Co-operation and Development (OECD) and aimed at measuring the competencies of students as they approach the end of their compulsory education.

The tests were not curriculum based, but rather represented competencies that should have been acquired from birth until the time of assessment. Proficiencies in reading, mathematics and science were assessed among 250,000 students world wide, with 30,000 Canadian 15-year-olds participating. In 2000, the major domain of PISA was reading, meaning that it was tested in more detail than mathematics and science. The Canadian sample was purposefully increased to allow for provincial comparisons as well as accurate estimates for minority language schools.

Both national ${ }^{1}$ and international ${ }^{2}$ reports were released in 2001, profiling the achievements of the 15 -year-old students in the three assessed domains. Internationally, Canada performed very well in PISA, achieving an average score of 534 (see appendix for more information on scoring). This ranked Canada second in the world behind only Finland in reading. When the results were analysed provincially, however, large discrepancies emerged.

## Purpose

New Brunswick is one of only few provinces to have two parallel secondary school systems - Francophone and Anglophone. The fact that PISA's sample size for New Brunswick was purposefully increased to cover the two systems gives a unique opportunity to compare reading skills of students enrolled in them. This report provides

[^0]a detailed profile of the reading proficiencies of New Brunswick 15-year-old students. Throughout this report, reading skills of Francophone and Anglophone students are compared. In addition, these results are also compared to those from the rest of Canada.

## Objectives

The objectives of this report were to:

1. To identify the difference in reading skills between students from Francophone and Anglophone school systems.
2. Profile reading scores in relation to the students' individual characteristics.
3. Compare reading scores among students from different family backgrounds.
4. Explore reading achievements of students from schools with different characteristics.

## Individual characteristics of New Brunswick students in relation to their reading proficiency

In 2000, approximately 2,600 New Brunswick 15-year-old students participated in the Programme for International Student Assessment. These students were tested in reading, mathematics and science.

Out of 10 provinces, New Brunswick obtained the lowest average score in reading (502) - which was still above the OECD average. Compared to the rest of Canada (536), students from the province scored half a proficiency level lower (see box 1 for information on proficiency levels). The differences were even more pronounced when average scores of Francophone and Anglophone schools in New Brunswick's were compared. On average, Francophone students obtained a score of 478 (below the OECD average) and Anglophone students a score of 513. Half a proficiency level separated these two groups of students, and a full proficiency level stood between Francophone students and students from the rest of Canada.

Figure 1
Average PISA scores


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 1

## Gender

Provincially, nationally and internationally, girls had higher reading skills than boys. On average, girls from New Brunswick scored 525 points compared to 478 points for boys - a difference of 47 score points or $2 / 3$ rd of a proficiency level. The gender difference was more pronounced among New Brunswick's Francophone students than their Anglophone counterparts. Fifty-four (54) points separated boys and girls from the Francophone school system compared to 44 points difference for students in the Anglophone system. Although smaller for the Anglophone students, the gender differences for both groups were significant, representing almost three-quarters of a proficiency level. In contrast, the gender difference was 33 points for students from outside of the province. New Brunswick's low standings among the provinces was largely due to the poor performance of boys.

Figure 2
Average PISA scores, by gender


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 2

## Rural / Urban

In New Brunswick, on average, urban students scored 511 points on the PISA reading test compared to 493 score points for their rural counterparts. There was no significant
difference in scores between urban and rural students from the province's Anglophone school system. Among the Francophone students, however, the average score for urban students was 28 points higher than for rural students. There was also a significant difference between scores of urban and rural students outside the province of New Brunswick (539 and 525 score points respectively).

Figure 3
Average PISA scores, by type of residence


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 3

## Sense of belonging to school

Information gathered from students on their perception of fitting in at school and other students' opinions about them was used to construct an index of sense of belonging in school. Higher scores in the index reflected more positive perceptions of belonging to the school. Average reading scores from quartile groups of this index were also compared.

There were significant differences in scores between students in the lowest and highest quartiles in New Brunswick, and well as all for students from outside the province. Although students in the lowest quartile of the index performed lower in reading, the highest average scores came from students not in the highest quartile, but from those in the second and third quartiles. This suggests that a moderate level of sense of belonging to school is enough for achieving higher reading abilities.

Francophone students in New Brunswick gained the greatest advantage for their reading scores due to a strong sense of belonging to the school. Over 46 points separated those in the lowest and highest quartile of the index. No significant differences in reading scores were observed for Anglophone students between the quartiles of the index.

Figure 4
Average PISA scores, by index of sense of belonging in school quartiles
$\longrightarrow$ New Brunswick - New Brunswick - Englis $\rightarrow$ New Brunswick - French $\longrightarrow$ Rest of Canada


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 4

## Family characteristics and reading proficiency of New Brunswick students

## Family type

15-year-old New Brunswick students coming from nuclear families scored an average of 511 points. This compared to 493 points for students from other types of families (a difference of 23 points). For New Brunswick's Anglophone students, the advantage for students from nuclear families was 24 score points. For Francophone students the difference was 28 points in favour of students from nuclear families. For the rest of Canada, on average, students from nuclear families scored 541 points compared to 523 points for those from other family types, a difference of 18 points. Regardless of family type, Francophone students scored well below the OECD average.

Figure 5

## Average PISA scores, by family type



Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 5

## Number of siblings

The number of siblings that the New Brunswick students had present at their household did not play a significant
difference in their reading scores. Although slightly higher scores were obtained by students from households with one or no siblings (508), the difference was not significant compared to their peers from larger households (498). This was also true for both Francophone and Anglophone students in New Brunswick. For the rest of Canada, students from smaller households scored 12 points higher than students from larger families.

Figure 6
Average PISA scores, by number of siblings


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 6

## Socio-economic status

Socio-economic status of the student's family can be measured in a variety of ways. Methods of calculation include the use of parental income, parental education, or both. The method employed for this analysis included both income and education, as well as many other types of information related to family possessions. Students were then separated into quartiles based on their socio-economic status and the average reading scores of these four groups were compared.

New Brunswick students in the lowest SES quartile (1st quartile) obtained an average reading score of 457 points compared to 542 points for students from the highest quartile. This represented a difference of 85 score points - significantly above one proficiency level. Approximately 80 score points separated students from equivalent SES quartiles among the province's Francophone and Anglophone students. The same magnitude difference was observed among students in the rest of Canada.

While Anglophone students in the second quartile scored above the OECD average, only Francophone students from the fourth quartile managed to do so. This indicates that low SES students in English schools performed better than such students in French schools.

Figure 7

> Average PISA scores, by index of socio-economic status quartiles $\begin{aligned} & \text { New Brunswick } \quad \text { New Brunswick - French } \rightarrow \text { New Brunswick - Englis }\end{aligned}$


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 7

## Cultural activities

Students who participated in PISA provided information on their involvement in culture related activities. These included the frequency of attending live theatre, attending opera, visiting ballets and frequenting museums. From these responses an index of cultural activities was created. A higher score on this index meant higher frequency of participation in such activities. Average reading scores of students in quartiles on this index were then compared.

New Brunswick students belonging to the lowest quartile on this index (1st quartile) obtained an average reading score of 472 points. This compared to 532 score points for students in the highest end of the index - representing a difference of 60 points. The difference in reading scores among the province's Anglophone students was 71 points or one proficiency level. A much smaller difference of 42 score points was found between highest and lowest quartiles among Francophone students. Although a much smaller difference was found among Francophone students, however, the average score for students from the highest quartile was 498 points compared to 548 points for Anglophone students in the highest quartile (a difference of 50 score points). As was the case for the rest of Canada, the difference in New Brunswick's average scores between the highest and lowest quartiles on the index of cultural activities was 67 points.

In addition, Francophone students in the fourth quartile gained less from their cultural participation than Anglophone students with respect to reading.

Figure 8

> Average PISA scores, by index of activities related to culture quartiles $$
\begin{array}{l}\text { New Brunswick } \quad — \text { New Brunswick - Englis }\end{array}
$$



Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 8

## Family educational support

An index of family educational support was constructed out of information collected from participating students about the level of parental involvement in their schooling. It measured the frequency with which various members of their families were involved in assisting them in their homework. More frequent family involvement meant higher scores on the index. Average reading scores of students divided into quartiles on the index were then analyzed.

Overall for New Brunswick, there were no significant differences in reading scores between the quartile groups. The same was observed for both Francophone and Anglophone students in New Brunswick. A very small and insignificant reading disadvantage was observed among all analyzed groups who were in the highest quartile of the index. This was also true for students from outside of the province of New Brunswick. One possible explanation might be that students experiencing learning difficulties report higher rates of family involvement in their schooling.

Figure 9


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 9

## Social communication with parents

Information on students' frequency of communication with parents in various situations was used to construct an index of social communication with parents. Reading score averages were calculated for quartile groups of students as they ranked on the index. Significant differences were observed between average reading scores within New Brunswick and the rest of Canada. Students reporting the least social communication with parents scored on average 36 and 37 points lower for New Brunswick overall and for the province's Anglophone students respectively. For Francophone students this difference was smaller at 20 score points. In the rest of Canada, in contrast, 41 reading score points separated students in the lowest and highest quartile of the index.

Figure 10


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 10

## School characteristics and reading proficiency of New Brunswick students

## School educational resources

School principals of students participating in PISA also completed questionnaires that collected information on schools. Among the collected information, the principals' perception of the extent to which lack of school educational resources hindered students' learning was measured. The educational resources included science laboratory equipment, facilities for fine arts, multi-media resources and library materials. An index of school educational resources was created from this information, and average reading scores of students in quartiles of this index were compared.

Overall in New Brunswick, students from schools with the best level of educational resources scored on average 506 points, compared to an average of 488 points for students
from schools with the worst levels of educational resources No significant differences in reading scores were found among Francophone and Anglophone students in the province. This was also the case for students from the rest of Canada.

Figure 11

> Average PISA scores, by index of the quality of schools' educational resources quartiles $\begin{aligned} & \text { New Brunswick } \\ & \text { New Brunswick - French } \longrightarrow \text { - Rest of Canada }\end{aligned}$


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 11

## School physical resources

School principals also provided information on the extent to which lack of school physical resources affected students' learning. School physical resources consisted of information on building condition, heating and cooling, and instructional space. Using this information, an index of school physical resources was formulated, and average reading scores between quartiles of this index were compared.

Only students attending New Brunswick's Anglophone schools experienced reading score differences between the best and worst equipped schools - with 22 reading score points separating them. No significant differences were observed for Francophone students, or for students in other provinces.

Figure 12
Average PISA scores, by index of the quality of schools'
physical resources quartiles
$\longrightarrow$ New Brunswick $\quad$ - New Brunswick - Englis $\longrightarrow$ New Brunswick - French $\longrightarrow$ Rest of Canada


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 12

## Computers per student

The number of computers available to students at school was measured by the number of computers per student. This information was collected from school principals who possessed good understanding of the total number of computers at their school as well as the total number of students.

The average reading scores of New Brunswick students were not affected by the availability of computers at school. This was also true for New Brunswick's Anglophone students, Francophone students and for students from the rest of Canada.

Figure 13
Average PISA scores, by number of computers per student quartiles
$\longrightarrow$ New Brunswick $\quad$ New Brunswick - Englis! $\square$ New Brunswick - French $\longrightarrow$ Rest of Canada


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 13

## School size

Information on school size was also collected from the school principals. The average reading score of students from the largest schools in New Brunswick was 514 and 489 for those from the smallest schools - a difference of 25 reading score points. However, there were no significant differences in scores among Anglophone and Francophone students in New Brunswick. For students from the rest of Canada, the average reading score of students from the smallest school was 31 points lower than those from the largest schools - representing half a proficiency level.

Figure 14
Average PISA scores, by school size quartiles
$\longrightarrow$ New Brunswick $\quad$ New Brunswick - Englis $\longrightarrow$ New Brunswick - French $\longrightarrow$ Rest of Canada


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 14

## Student-teacher relations

Students participating in PISA were asked a series of questions in regards to their relationships with their teachers. These questions included getting along with teachers, teachers' interest in their well-being, teachers listening to what they have to say, and teachers providing extra help and fair treatment. This information was used to create an index of teacher-student relations. The students were separated into four groups based on this index, and their average reading scores were compared.

Overall in New Brunswick, students who experienced positive relationships with their teachers scored on average 513 points in reading. This compared to 470 score points for those with the least positive relations, representing more than a half of a proficiency level. The difference was even greater for the province's Anglophone students, with 51 score points separating the two groups of students. No significant differences were observed for Francophone students, however, and among students from the rest of Canada, the difference was 38 reading score points.

Figure 15


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 15

## Teacher achievement pressure

PISA collected information from the students on the frequency with which their teachers want them to; work hard, can do better, do not like careless work and have a lot to learn. This information was combined to create an index of teacher achievement pressure. Average reading scores of quartile groups of this index were then compared.

Overall for New Brunswick and its Anglophone students, there were no significant differences in reading scores between the four groups. For Francophone students, however, higher levels of achievement pressure from teachers meant lower average reading scores. Students with the least pressure from teachers scored on average 494 compared to 438 points for those experiencing the highest levels of pressure. This represented a difference of almost a third of a proficiency level. A similar pattern was noted for students from the rest of Canada, although the difference nationally was only 19 score points.

Figure 16
Average PISA scores, by index of teacher achievement pressure quartiles


Source: 2000 Programme for International Student Assessment and Youth in Transition Survey - Table 16

## Conclusion

In 2000, approximately 2,600 15-year-old students from New Brunswick participated in the Programme for International Student Assessment (PISA). PISA was designed to test reading skills of youth that they should have acquired from birth until the time of the assessment. Therefore, it was not a curriculum based assessment.

Although nationally Canada performed very well on the reading test, New Brunswick students scored significantly lower than their peers from all other provinces. This report provided an overview of reading results for students in New Brunswick. In doing so, it focused on the 15-year-olds’ individual, family and school characteristics.

Findings showed that students from the Francophone school system were especially disadvantaged in reading
scores throughout the analyses. Groups identified as particularly disadvantaged in reading skills were; Francophone boys, Francophone rural students, and Francophone students from household with two or more siblings.

Compared to individual and family characteristics, school characteristics did not prove to be very significant in terms of reading skills of New Brunswick students. This was also the case for the rest of Canada.

## Appendix

PISA scoring information
The PISA test scores were adjusted by the Organization for Economic Co-operation and Development to have an international average of 500 . Also, the assessment was designed in a way where a 70 point difference in score represented a proficiency level, so that students scoring at different levels were assumed to possess a different set of skills in the assessed domain. An example of complexity of each level of proficiency is illustrated by examples below.

## Level 1 (score from 335 to 407)

Students were shown a notice from a personnel department about a service that would help with job mobility. They were asked to find a single explicitly stated piece of information - how to find out more about the service - which was signalled by a heading in the text that matched the term used in the question.

## Level 2 (score from 408 to 480)

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 (score from 481 to 552)

Looking at a complex international airline timetable, with prominent competing information, students had to find a single piece of information that satisfies 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.

## Level 4 (score from 553 to 626)

Presented with a relatively long, dense extract from a play, students had to use information embedded in a stage direction in order to mark the positions of two actors on a diagram of the stage.

## Level 5 (score above 626)

Students were give a complex and unfamiliar set of instructions about how to make telephone calls from a hotel room and a letter with a phone number of a friend in

## Table 1

Average PISA scores

|  | Average <br> score | Std. Error |
| :--- | :---: | :---: |
| New Brunswick | 501.8 | 2.01 |
| New Brunswick - English | 512.9 | 2.68 |
| New Brunswick - French | 478.3 | 3.07 |
| Rest of Canada | 535.7 | 1.73 |

## Table 2

Average PISA scores, by gender

|  | Average <br> score | Std. Error |
| :--- | :---: | :---: |
| Girls - New Brunswick | 524.6 | 2.64 |
| Boys - New Brunswick | 478.2 | 3.00 |
| Girls - English | 534.7 | 3.44 |
| Boys - English | 490.6 | 3.82 |
| Girls - French | 503.5 | 3.91 |
| Boys - French | 449.1 | 4.63 |
| Girls - rest of Canada | 552.3 | 1.89 |
| Boys - rest of Canada | 519.1 | 2.02 |

a different country. They were required to find and organise in correct sequence four pieces of information and to draw inferences to work out exactly how to dial the number.

Source: Bussière et al (2001)

## Table 3

Average PISA scores, by residence type

|  | Average <br> score | Std. Error |
| :--- | :---: | :---: |
| Urban student | 510.8 | 3.12 |
| Rural student | 492.6 | 2.81 |
| Urban - English | 516.1 | 3.76 |
| Rural - English | 508.7 | 3.73 |
| Urban - French | 494.6 | 5.45 |
| Rural - French | 466.3 | 4.24 |
| Urban - rest of Canada | 538.7 | 2.10 |
| Rural - rest of Canada | 524.7 | 2.04 |

## Table 4

Average PISA score, by index of sense of belonging in school quartiles

|  | 1st quartile | Std. Error | 2nd quartile | Std. Error | 3rd quartile | Std. Error | 4th quartile | Std. Error |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 489.7 | 5.04 | 512.5 | 4.83 | 503.9 | 4.97 | 504.2 | 3.33 |
| New Brunswick - English | 507.6 | 6.43 | 522.5 | 5.41 | 522.9 | 8.79 | 508.6 | 4.63 |
| New Brunswick - French | 451.7 | 7.07 | 470.1 | 6.32 | 491.9 | 7.71 | 498.1 | 5.57 |
| Rest of Canada | 522.7 | 2.96 | 539.4 | 2.23 | 540.7 | 2.28 | 536.5 | 2.23 |

Table 5
Average PISA score, by family type

|  | Average <br> score | Std. Error |
| :--- | :---: | :---: |
| Nuclear family | 508.7 | 2.30 |
| Other family type | 485.8 | 4.06 |
| Nuclear family - English | 520.4 | 2.96 |
| Other family type - English | 495.7 | 5.06 |
| Nuclear family - French | 485.0 | 3.32 |
| Other family type - French | 456.9 | 7.07 |
| Nuclear family - rest of Canada | 541.3 | 1.68 |
| Other family type - rest of <br> Canada | 522.6 | 2.51 |

Table 6
Average PISA score, by number of siblings

|  | Average <br> score | Std. Error |
| :--- | :---: | :---: |
| 0-1 sibling | 507.8 | 2.88 |
| 2+ siblings | 498.0 | 2.92 |
| 0-1 sibling - English | 521.5 | 3.95 |
| 2+ siblings - English | 507.4 | 3.55 |
| 0-1 sibling - French | 484.7 | 4.04 |
| 2+ siblings - French | 470.4 | 4.97 |
| 0-1 sibling - rest of Canada | 542.5 | 1.88 |
| 2+ siblings - rest of Canada | 530.3 | 2.24 |

Table 7
Average PISA score, by index of socio-economic status quartiles

|  | 1st quartile | Std. Error | 2nd quartile | Std. Error | 3rd quartile | Std. Error | 4th quartile | Std. Error |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 457.2 | 4.11 | 481.3 | 5.17 | 510.8 | 3.31 | 542.1 | 4.20 |
| New Brunswick - English | 467.2 | 5.62 | 507.9 | 5.08 | 524.3 | 4.87 | 548.1 | 5.58 |
| New Brunswick - French | 440.1 | 6.39 | 467.0 | 6.29 | 486.0 | 5.74 | 522.6 | 4.73 |
| Rest of Canada | 491.6 | 3.18 | 525.1 | 2.19 | 545.6 | 1.93 | 571.3 | 1.98 |

Table 8
Average PISA score, by index of activities related to culture quartiles

|  | 1st quartile | Std. Error | 2nd quartile | Std. Error | 3rd quartile | Std. Error | 4th quartile | Std. Error |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 427.1 | 4.74 | 489.1 | 4.14 | 512.4 | 6.26 | 532.3 | 4.90 |
| New Brunswick - English | 477.4 | 5.80 | 499.4 | 5.29 | 527.7 | 7.77 | 548.2 | 6.09 |
| New Brunswick - French | 456.6 | 7.37 | 468.4 | 6.22 | 495.0 | 4.87 | 498.5 | 7.38 |
| Rest of Canada | 499.3 | 3.03 | 521.5 | 2.32 | 541.0 | 2.77 | 566.5 | 2.39 |

Table 9
Average PISA score, by index of family educational
support quartiles

|  | 1st quartile | Std. Error | 2nd quartile | Std. Error | 3rd quartile | Std. Error | 4th quartile | Std. Error |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 505.8 | 4.52 | 505.7 | 5.82 | 503.8 | 3.65 | 492.6 | 3.91 |
| New Brunswick - English | 512.6 | 5.27 | 510.8 | 7.19 | 516.0 | 5.03 | 508.5 | 5.45 |
| New Brunswick - French | 484.2 | 7.00 | 484.2 | 6.49 | 484.7 | 6.68 | 462.0 | 6.55 |
| Rest of Canada | 540.4 | 2.53 | 548.0 | 2.41 | 537.8 | 2.15 | 523.7 | 2.47 |

## Table 10

Average PISA score, by index of social communication with parents quartiles

|  | 1st quartile | Std. Error | 2nd quartile | Std. Error | 3rd quartile | Std. Error | 4th quartile | Std. Error |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 480.6 | 4.92 | 500.0 | 5.30 | 508.6 | 4.82 | 517.2 | 4.65 |
| New Brunswick - English | 488.4 | 6.06 | 511.5 | 7.01 | 523.5 | 5.51 | 524.0 | 5.80 |
| New Brunswick - French | 463.3 | 7.55 | 483.2 | 8.66 | 489.2 | 6.78 | 483.4 | 6.67 |
| Rest of Canada | 508.4 | 3.25 | 533.8 | 2.89 | 543.8 | 2.54 | 549.0 | 2.12 |

## Table 11

Average PISA score, by index of the quality of schools’
educational resources quartiles

|  | 1st <br> quartile | Std. Error | 2nd <br> quartile | Std. Error | 3rd <br> quartile | Std. Error | 4th <br> quartile | Std. Error |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |

Table 12
Average PISA score, by index of the quality of schools'
physical resources quartiles

|  | 1st quartile | Std. Error | 2nd quartile | Std. Error | 3rd quartile | Std. Error | 4th quartile | Std. Error |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 509.3 | 3.56 | 501.7 | 3.39 | 499.6 | 4.25 | 495.4 | 4.87 |
| New Brunswick - English | 520.6 | 4.68 | 513.9 | 4.39 | 512.5 | 5.39 | 498.1 | 6.20 |
| New Brunswick - French | 487.0 | 4.30 | 479.0 | 5.23 | 458.2 | 6.66 | 479.2 | 7.60 |
| Rest of Canada | 534.2 | 3.03 | 536.4 | 2.98 | 538.6 | 4.55 | 538.4 | 3.45 |

Table 13
Average PISA score, by number of school computers per student quartiles

|  | 1st quartile | Std. Error | 2nd quartile | Std. Error | 3rd quartile | Std. Error | 4th quartile | Std. Error |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 513.7 | 4.46 | 502.7 | 4.56 | 504.2 | 4.93 | 498.8 | 4.48 |
| New Brunswick - English | 522.8 | 5.14 | 521.6 | 5.37 | 511.5 | 5.87 | 502.8 | 4.97 |
| New Brunswick - French | 471.9 | 9.65 | 452.9 | 9.29 | 492.5 | 6.79 | 472.5 | 7.41 |
| Rest of Canada | 540.1 | 3.72 | 539.0 | 2.97 | 533.0 | 2.33 | 531.3 | 5.50 |

## Table 14

Average PISA score, by school size quartiles

|  | 1st quartile | Std. Error | 2nd quartile | Std. Error | 3rd quartile | Std. Error | 4th quartile | Std. Error |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 489.5 | 4.90 | 496.9 | 4.37 | 504.6 | 4.64 | 514.4 | 4.30 |
| New Brunswick - English | 508.6 | 5.16 | 504.1 | 5.54 | 524.3 | 6.12 | 509.8 | 5.74 |
| New Brunswick - French | 463.3 | 9.28 | 455.5 | 8.63 | 494.8 | 6.52 | 481.2 | 8.28 |
| Rest of Canada | 522.7 | 5.56 | 533.0 | 2.50 | 537.1 | 3.53 | 553.6 | 3.34 |

## Table 15

Average PISA score, by index of teacher-student relations quartiles

|  | 1st quartile | Std. Error | 2nd quartile | Std. Error | 3rd quartile | Std. Error | 4th quartile | Std. Error |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 470.6 | 4.61 | 504.0 | 4.01 | 517.9 | 3.83 | 513.0 | 5.49 |
| New Brunswick - English | 478.3 | 5.85 | 510.8 | 4.92 | 532.3 | 3.88 | 528.7 | 3.74 |
| New Brunswick - French | 499.3 | 7.63 | 488.2 | 6.58 | 484.5 | 6.82 | 485.8 | 6.55 |
| Rest of Canada | 506.6 | 2.53 | 533.7 | 1.95 | 549.5 | 2.36 | 544.9 | 2.11 |

Table 16
Average PISA score, by index of teacher achievement
pressure quartiles

|  | 1st <br> quartile | Std. Error | 2nd <br> quartile | Std. Error | 3rd <br> quartile | Std. Error | 4th <br> quartile | Std. Error |
| :--- | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| New Brunswick | 504.8 | 3.96 | 505.1 | 4.46 | 506.0 | 5.24 | 501.5 | 4.19 |
| New Brunswick - English | 511.2 | 6.09 | 517.5 | 6.79 | 517.8 | 6.30 | 513.1 | 4.76 |
| New Brunswick - French | 493.9 | 8.05 | 480.9 | 7.86 | 475.2 | 4.73 | 437.9 | 5.62 |
| Rest of Canada | 545.1 | 2.98 | 543.4 | 2.31 | 541.9 | 2.59 | 526.0 | 2.17 |


[^0]:    ${ }^{1}$ Bussière, Patrick, Fernando Cartwright, Robert Crocker, Jillian Oderkirk, Yanhong Zhang. (2001) Measuring up: The Performance of Canada's Youth in Reading, Mathematics and Science. OECD PISA Study - First Results for Canadians aged 15. Ottawa.
    ${ }^{2}$ Organization for Economic Co-operation and Development. (2001) Knowledge and skills for life: First Results from the OECD Programme for International Student Assessment (PISA) 2000. Paris.

