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2004, Vol. 9, no. 4

- Minority language school systems:
A profile of students, schools
and communities
- Reading achievement of students in
French immersion programs



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Culture, Tourism and the Centre for Education Statistics

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From the

Editor-in-Chief

LAST ISSUE

After 10 years of publication encompassing nine volumes, 36 issues and 122 analytical articles covering all aspects of education, learning and training, *Education Quarterly Review* is being discontinued.

To get a complete picture of the research topics covered in its 10 years of publication, check out the **Cumulative index** at the back of this issue. All articles published in *EQR* since 1994 are listed by title. These articles are grouped under 12 categories, including 'Enrolment,' 'Flows and transition' and 'Training', reflecting education policy issues identified in the Centre for Education Statistics' *Strategic Plan*, available free of charge on the Internet at www.statcan.ca/cgi-bin/downpub/freepub.cgi.

NOTE TO CURRENT EQR SUBSCRIBERS

We thank you for interest in *EQR* over the years. We will be in touch with you shortly concerning reimbursement of subscription balances.

COMING SOON!

In April 2004, the Centre for Education Statistics will launch a new, bi-monthly, free, on-line publication series called *Education Matters: Insights on Education, Learning and Training in Canada*. By presenting an array of information, statistics, and analysis in a non-technical, highly readable format, *Education Matters* will be of interest to a broad public – teachers, students, parents, academics, and policy makers.

Education Matters will provide links to a wide range of analytical studies on education and education-related issues, including to the Centre for Education Statistics' growing Research Paper Series on Education, Skills and Learning, Catalogue No. 81-595-MIE.

Education Matters will also be a major point of access to education data and education indicators, through links to *Education Indicators in Canada: Report of the Pan-Canadian Indicators Program* and to regular indicator updates.

We encourage you to visit the *Education Matters* website when it is launched in April for a look at what it has to offer!

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Education Quarterly Review and other Statistics Canada publications, including the statistical compendium *Education in Canada* (Catalogue no. 81-229-XIB), can be accessed electronically at www.statcan.ca/cgi-bin/downpub/feepub.cgi

The Centre for Education Statistics is accessible toll-free from anywhere in Canada at 1 800 307-3382.

High school research project uses Statistics Canada data

The link below contains a condensed version of a research paper completed by Hazel Nicholls, a high school student enrolled in a Grade 12 Mathematics of Data Management course at Sir Robert Borden High School in the Ottawa-Carleton District School Board in April 2003. The paper was written as an example of how students might use data from Statistics Canada surveys to develop analysis on topics related to education. The E-STAT database served as the prime data source. Ms. Nicholls is currently pursuing a Bachelor in Mathematics at Carleton University's School of Mathematics and Statistics. Copies of the original project (available in English only) may be obtained at the school website at http://www.ocdsb.edu.on.ca/SRBHweb/math/Data%20Management/Data_Management_Page.html or by contacting the author at her e-mail address (hnicholl@connect.carleton.ca).

To obtain the condensed version only of this article on Statistics Canada's Learning Resources, Mathematics website, click here: www.statcan.ca/english/edu/feature/nicholls/



Highlights

Minority language school systems: A profile of students, schools and communities

- Although Canadian students performed well overall, second only to Finnish students in reading performance, students from French minority language school systems in Nova Scotia, New Brunswick, Ontario and Manitoba performed at significantly lower levels than their counterparts in English school systems, and performed below the international average (OECD average=500)
- In Quebec, students in English schools appeared to have higher average reading scores than students in French schools, but the difference was not statistically significant.
- The student populations in minority language schools in the five provinces in this profile each have their own distinctive features resulting from differences in the history not only of minority language populations, but also in the history of minority language schooling in those provinces.

Reading achievement of students in French immersion programs

- In every province, except Manitoba, students enrolled in French immersion programs performed significantly better in the PISA reading assessment than their counterparts in non-immersion programs.
- When gender, socio-economic background and parents' education are each taken into account (individually), French immersion students still outperform their counterparts in non-immersion programs. EQR

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Minority language school systems: A profile of students, schools and communities

Introduction

In the spring of 2000, about 30,000 Canadian 15-year-olds participated in the Programme for International Student Assessment (PISA). Although Canadian students performed well overall, second only to Finnish students in reading performance, students from French minority language school systems in Nova Scotia, New Brunswick, Ontario and Manitoba performed at significantly lower levels than their counterparts in English school systems, and performed below the international average (OECD average=500). In Quebec, students in English schools appeared to have higher average reading scores than students in French schools, but the difference was not statistically significant.

Reading skills as measured by PISA have been shown to be socially and economically important, conferring significant advantages on those with higher skill levels throughout life (Riddell and Green (2003), OECD (2000)). Thus, the differences between the reading achievement of students in French and English schools raise important questions: Are there other ways that students in French and English school systems differ? Are there differences in the characteristics and resources of French and English schools? Are there other important differences in the families and communities of these students?

This report examines other differences that may lie behind the lower reading performance of students from French minority language schools in Nova Scotia, New Brunswick, Ontario and Manitoba. It looks at a number of individual, family and community characteristics of students in French and English school systems.

Authors for the first two sections of the article (Minority language school systems: A profile of students, schools and communities; Profiles of minority language schools in five Canadian provinces) are Mary Allen and Fernando Cartwright.

The section on immersion was authored by Mary Allen.

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Table 1
Student reading performance in French and English school systems

	English school systems		French school systems		Provincial average	
	Average	Standard error	Average	Standard error	Average	Standard error
Nova Scotia	522	2.5	474	5.5	521	2.4
New Brunswick	512	2.6	478	2.9	501	2.0
Quebec	543	4.7	535	3.9	536	3.5
Ontario	535	3.5	474	6.6	533	3.4
Manitoba	530	3.4	486	5.4	529	3.3

Note: Items in bold indicate statistically significant differences in reading achievement of students in French and English schools ($p < .05$).

The paper profiles students in French and English school systems in Nova Scotia, New Brunswick, Quebec, Ontario, and Manitoba. It uses data from the Programme for International Student Assessment (PISA), and also from the Youth in Transition Survey (YITS), which was carried out in Canada in conjunction with PISA. Community characteristics are taken from the 1996 Census.¹

This work represents the first stage in the analysis of student achievement in minority language school systems using PISA/YITS data. A study looking at the relative impact on student achievement of the differences identified in this report will be carried out in 2004.

Important Definitions and Concepts

Minority language schools: Schools were identified as French or English according to the administrative school district. References to French and English schools refer to schools in French and English-language school systems and do not therefore include schools where the primary language is different from the language of the school system. Thus, “French schools” do not include French-immersion schools within English-language school systems.

The **language of the test** was determined by the school test administrators, and, with a few exceptions, students were tested in the language of the school system. PISA used a number of quality assurance procedures to ensure that the tests in different languages were

equivalent. For more information on the test itself, see the PISA 2000 Technical Report (OECD, 2002).

Community and school characteristics: Information about schools was collected from students as well as school principals. Information on communities was taken from the 1996 Census. It should be noted that this report is restricted to the schools that participated in the PISA study and the communities where these schools were located.

This analysis describes, therefore, the schools attended by the students in the study, and the school characteristics are included primarily as possible factors influencing student performance, not as characteristics of French and English school systems overall. For example, the data presented here should be interpreted as follows: the average student attends a large school, NOT the average school is large.

Significant differences and effect size: In this report, differences are identified as statistically significant (in bold) where the difference is significant at the 0.05 level ($p < .05$) and where the Effect Size (ES) exceeds 0.20. This means that the differences are considered statistically reliable and large enough to warrant interpretation.

Detailed information on these and other definitions, concepts and survey design can be found in Survey description, definitions and analytical methodology.


Who goes to minority language schools?

Under Section 23 of the Canadian Charter of Rights and Freedoms, minority language parents (determined either by a parent’s mother tongue or the language of their schooling) may have their children schooled in that language, where numbers warrant. In many cases, however, the children of minority language parents do not attend minority language schools (see *Schooling of minority language students*). Moreover, many of these children do not speak the minority language at home, although the situation differs by province.

The estimated number of students attending schools in the minority language school systems varies by province. While students in minority language schools represent less than 5% of 15-year-olds in Nova Scotia, Ontario and Manitoba, they attend minority language schools in more substantial numbers in Quebec and New Brunswick. In Quebec, one in ten 15-year-olds attended a school in the

English language school system, while almost one-third of the students in New Brunswick were attending French schools.

While the vast majority of students in French minority language school systems in New Brunswick reported French as their own mother tongue (92%), in the other provinces, there was a high proportion of students whose mother tongue was not French. In Nova Scotia, one third of students in the French schools reported English as their mother tongue. In Ontario, Anglophones and Allophones (whose mother tongue was neither French nor English) made up over a quarter of French school populations. In Manitoba, about one in six students in French schools was Anglophone. The linguistic profile of students in English minority language schools in Quebec was quite mixed: 14% were Francophone and 16% Allophone.

 Table 2
Distribution of students in French and English school systems by mother tongue of student

Province	Language of school system	Mother tongue of student			Total
		Franco-phone	Anglo-phone	Allo-phone	
Nova Scotia	English	<1%	96.9	2.3	100%
	French	66.5	33.5	<1%	100%
New Brunswick	English	1.8	97.3	<1%	100%
	French	92.4	7.5	<1%	100%
Quebec	English	14.3	69.7	15.9	100%
	French	90.8	3.1	6.1	100%
Ontario	English	<1%	82.4	16.7	100%
	French	72.2	22.9	5.0	100%
Manitoba	English	1.2	89.4	9.4	100%
	French	83.6	15.8	<1%	100%

In terms of language most often spoken at home, school populations in minority language schools were even more mixed. The difference was most noticeable in Ontario, Manitoba and Nova Scotia. While 72% of students in French schools in Ontario reported French as their mother tongue, only 58% of students in these schools spoke French most often at home. In Manitoba the situation was similar - 84% of students in French schools were Francophones, but only 59% spoke French most often at home. In Nova Scotia, where 67% of the students in French schools were Francophones, a similar number (62%) spoke French most often at home.



Table 3
Percentage of students by language spoken most often at home

	English schools	French schools
Nova Scotia	97.6	61.5
New Brunswick	97.4	92.2
Quebec	81.1	89.4
Ontario	86.7	58.4
Manitoba	93.1	59.3

Do students in minority language schools differ from those in majority language school systems?

Individual and family characteristics

Differences in the characteristics of the student populations in English and French schools were not consistent from province to province. In each province, a different set of individual and family characteristics distinguished students in minority language schools from those in the majority language schools. Within provinces there were a variety of differences in characteristics related to students' family background and home environment. It was only in Nova Scotia and Quebec, however, that there were a large number of different individual characteristics which distinguished students in French and English schools. (For a summary of these differences, see Table 4 at the end of this article. For a detailed discussion of the differences in each province see *Profiles of minority language schools in five Canadian provinces*).

The only consistent difference in the family background of students in French and English schools in all five provinces was in home cultural possessions (classical literature, poetry, art) where students in English schools reported higher values. Notable differences (although small) in family socio-economic status (as measured by parents' occupations) arose in New Brunswick, Quebec, and Manitoba. Students in French schools in Manitoba came from families with significantly higher socio-economic status, whereas in New Brunswick and Quebec, students in English schools were socio-economically better off.

School characteristics

There were many more differences in the environments and resources of the French and English schools attended by the average student. In

all five provinces, there were significant differences related to school resources and staffing. For other school factors such as student behaviour and teacher behaviour and morale, the differences in the school systems tended to be unique to each province.

In all five provinces, students in majority language schools (French in Quebec, English elsewhere) were more likely to be in schools with higher student-teacher ratios.² This reflects the fact that, except in New Brunswick, they were more likely to be in larger schools.

In terms of school resources, students in minority language schools tended to be at a disadvantage. In all five provinces, the average student in a minority language system was enrolled in a school where principals were more likely to report that inadequate material resources and teacher shortages hindered student learning. They were also more likely to be hindered by inadequate instructional resources, except in Manitoba.

Important differences in measures related to the quality of the school environment appeared in some provinces, but not all. In Nova Scotia and Manitoba, students in French minority school systems reported significantly lower levels of teacher support and a less favourable disciplinary climate than students in English schools.

Principals in English schools in Nova Scotia, New Brunswick and Manitoba were significantly less likely to report that negative teacher behaviours such as absenteeism, low expectations, or poor student-teacher relations hindered student learning. In New Brunswick, Ontario, and Manitoba, negative student behaviours were seen as less of a hindrance to student learning in English schools, but in Nova Scotia, it was in the French schools that negative student behaviours were less of an issue.

Community characteristics

In addition to examining the characteristics of the French and English schools attended by the students in the study, it is also important to consider the nature of the communities where students go to school. Previous analysis of differences in the reading performance of rural and urban students showed that the differences were most strongly related to factors at the community level such as the education levels and labour market activity of adults in the community (Allen and Cartwright, 2002).

A variety of community characteristics available from the 1996 Census information were included in the analysis. This information describes the community conditions where the average student went to school, including unemployment rates, the percentage of white-collar workers, education levels, individual and family income, and the proportion of young adults currently enrolled in postsecondary education. It is important to note in interpreting these characteristics that many of the English and French schools in this study were located in the same community. For example, a large number of both the French and English students in Nova Scotia went to school in Halifax. Therefore, these data are intended to describe the average community conditions of the students. They do not describe the average French and English community.

An overview of the socio-economic conditions of the communities where students attended French and English schools shows that there were no consistent differences across all five provinces. In Nova Scotia and New Brunswick, English students tended to go to school in communities where the socio-economic conditions were more favourable in terms of unemployment rates, levels of education for adults, and individual and family income. There were fewer differences in Quebec (where English students were generally at an advantage), and even less in Ontario and Manitoba.

Conclusions

This profile of students from minority language school systems does not attempt to explain why students in French schools in some provinces did not perform as well in the PISA assessment as their counterparts in English schools. What the profile does show is that the answer cannot be a simple one. While some differences exist with respect to a number of important variables (family background, school resources and community characteristics), they are not all consistent between French and English schools systems across the four provinces where students' performance in minority language schools was significantly lower than in majority language school systems.

At the school level, minority language schools consistently reported less adequate resources than the majority language schools in all provinces. In addition, minority language students across the five

provinces come from a wide range of family and community backgrounds, and have varying exposure to their minority language at home and in their communities. Family and community characteristics are important factors in student achievement and may affect the performance of the students in minority language schools to various degrees in the five provinces. Overall, it is likely that a combination of these school, family and community factors lies behind the difference in reading performance and that there is no single explanation for the difference.

What stands out is that each of the five provinces in this report presents a picture of minority language students, their schools and their communities that is particular to that province. That is, in each province, students appear to be influenced by different combinations of factors that may affect their reading achievement.

For example, while there are notable differences in the communities where students attend French and English schools in New Brunswick, most of these students are Francophones and speak French at home. In contrast, there are few community differences in Manitoba, where a substantial proportion of students live in the same communities,

and the students in French schools have higher family socio-economic status. But, minority language students live in predominantly English communities and are less likely to speak French at home.

In Quebec, where the difference in the performance of students in French and English schools was not significant, the students in English schools go to school in predominantly French communities, and one third did not report English as their mother tongue. However, the students in English schools reported high levels of socio-economic status, more books in the home and higher educational and career aspirations than the students in the majority language schools.

Further analysis is required to disentangle the relationships between factors such as mother tongue, language use at home, family socio-economic status, school resources, community linguistic and socio-economic conditions and the reading performance of students. For a more detailed look at the differences in the individual, family, school and community characteristics of students in French and English schools in each of the five provinces examined here, see *Profiles of minority language schools in five Canadian provinces*. EQR


**Table 4
Summary of significant differences between French (f) and English (e) school populations**

	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
Individual characteristics					
Reading achievement	e	e		e	e
Student cultural activities					
Reading enjoyment	e				
Homework time	e		e		
Career expectations			e		
Percentage of students who expect to get a postsecondary education					
Percentage of students who expect to get university rather than college			e		
Percentage of students with 30 minutes or more transportation time	f		e	f	f
Students participating in school extracurricular activities (%)			e		
Students participating in non-school extracurricular activities (%)					
Using computer at school at least several times per month (%)	f				
Using internet at school at least several times per month (%)	f				
Family characteristics					
Family socio-economic status		e	e		f
One or more parents with postsecondary education (%)	f				f
Students with 100 or more books at home (%)		e	e	e	
Parental academic interest	e				
Parental social interest	e			e	
Home cultural possessions	e	e	e	e	e
Home educational resources				e	
Computer at home (%)		e	e		
Internet at home (%)		e	e		
Student's school experience					
Disciplinary climate	e		f		e
Teacher-student relations	e		f		
Teacher support	e	f			e
School characteristics					
Schools offering extracurricular activities (%)		e			
Average number of 15-year-olds in the school	e		f	e	e
Negative teacher behaviours	e	e			e
Negative student behaviours	e	f		f	f
Teacher morale and commitment	e	e			f
Student-teacher ratio	f	f	e	f	f
Inadequacy of Instructional resources	e	e	f	e	
Shortage of teachers	e	e	f	e	e
Teacher with recent professional development (%)	e	e	e		
Inadequacy of material resources	e	e	f	e	e
Computer availability	f				
Teacher specialization (%)	e	f		e	e
School autonomy	e	e		e	
Teacher participation to decision making	e	e			



Table 4 (concluded)

Summary of significant differences between French (f) and English (e) school populations

	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
Community characteristics					
Adult unemployment (%)	e	e		e	
White collar employment (%)	e	e	e		e
Post-secondary enrolment (%)	e	e			f
Adults 25 and over with post-secondary education (%)	e	e	e		
Adults 25 and over with university education (%)	e	e	e		
Average income of adults 25 and over (\$)	e	e	e		
Average family income	e	e			
Anglophones population (%)	e	e	e	e	e
Anglophones who speak English at home (%)	e	e	e	e	e
Francophones who speak French at home (%)	f	f	f	f	f
Anglophones who know French (%)	f	f	f	f	f
Francophones who know only French (%)	f	f	f	f	f

Note: *e* (English) and *f* (French) generally indicate the population for which the value of the variable is higher. In the case of student-teacher ratios, disciplinary climate, inadequacy of instructional and material resources, teacher shortage and negative teacher or student behaviour, and unemployment rates, the letter indicates the population with the more favourable value. Differences are identified as significant where $p < .05$ and the effect size (Cohen's *d*) is 0.20 or greater.

Notes

1. Although information from the 1996 Census does not reflect the conditions of the community at the time of the PISA assessment, it does provide an indication of the community that these students have likely been exposed to during their schooling. The analysis assumes that the community has not changed significantly in the four years between the 1996 Census and PISA 2000, and that the students have been exposed to that community in the interim.
2. It should be noted that the student-teacher ratios presented here are at the school level and do not indicate the actual class size of the individual students in the study.

References

- Green, D. A. and Riddell, W. C. (2003), *Literacy, numeracy and labour market outcomes in Canada*. Ottawa: Statistics Canada.
- OECD (2001). *Knowledge and Skills for Life. First Results from PISA 2000*. Paris: OECD.
- Allen, M. and Cartwright, F. (2002). *Understanding the rural-urban reading gap*. Ottawa: Statistics Canada.

Profiles of minority language schools in five Canadian provinces

Data from the Programme for International Student Assessment (PISA 2000) show that the characteristics of minority language schools, their students and their communities vary notably by province. In fact, there were few clear differences between French and English schools and their student populations that were consistent for all five provinces in this report.

For the most part, what differentiated the French and English schools appears to be very province specific - there is a different story for each province. This is not surprising since the histories of French and English populations differ considerably from province to province. The consequences of these histories are still evident in the varying nature of French communities across these five provinces.

This study looks at the individual, family, school and community characteristics of students in French and English schools for each of the five provinces in turn, in order to draw out individual provincial profiles. Tables 1A to 5B (see Appendix at the end of the last article) contain information on individual, family, school and community characteristics. References to information provided elsewhere in this report are referenced individually.

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The **language of the test** was determined by the school test administrators, and, with a few exceptions, students were tested in the language of the school system. PISA used a number of quality assurance procedures to ensure that the tests in different languages were equivalent. For more information on the test itself, see the PISA 2000 Technical Report (OECD, 2002).

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Detailed information on these and other definitions, concepts and survey design can be found in Survey description, definitions and analytical methodology.

Nova Scotia

In Nova Scotia, students in English-language school systems performed significantly better on PISA 2000 reading assessments than their counterparts in French school systems. Only 2% of 15-year-olds in Nova Scotia attended schools in the French language school system.

Individual and family characteristics

There were notable differences between students from English and French schools in the number of students who typically spoke the language of the test at home. While 98% of students in English school systems spoke English most often at home, only 62% of students in French school systems spoke French most often at home (Table 3).

Students in English-language school systems reported significantly higher levels of reading enjoyment, an important factor related to reading achievement. In addition, students in English schools spent more time on homework and less time getting to and from school. On the other hand, students in French schools were more likely to use a computer and the internet at school at least several times per month.

Students in French and English school systems reported almost no difference in family socio-economic status as measured by the occupational status of their parents. However, students in French schools were more likely to have at least one parent with a postsecondary education. Students in English-language school systems reported significantly higher levels of parental interaction (academic and social interest), and home cultural possessions.

School characteristics

There were significant differences in the characteristics of the French and English schools attended by students in the PISA study in Nova Scotia. Students in English-language school systems reported significantly more favourable school disciplinary climate, teacher-student relations, and teacher support. French schools were significantly smaller than English schools, and had a significantly smaller proportion of teachers who had attended professional development in the previous three months. They also had a smaller proportion of teachers working in their area of specialization.

Principals in French schools reported that teacher shortages and inadequate instructional and material resources hindered student learning to a greater degree than principals in English schools. They also reported lower levels of school autonomy, in terms of having responsibility over a variety of administrative matters such as appointing teachers, determining course content and establishing student assessment policies.

Teacher morale was also higher in English schools and principals in French schools reported that both teacher and student behaviour hindered student learning to a greater degree. Overall, French schools were at a disadvantage for most of the school characteristics measured. They did, however, have lower student-teacher ratios and fewer students per computer.

Community characteristics

Many of the French students in Nova Scotia attended school in communities where English schools were also located. In fact, only 38% of French students attended school in communities where the students attending French schools were the majority of 15-year-olds in the community (Table 5).



Table 5
Percentage of students by province and school system, according to the proportion of students attending English schools in the community

	Percentage of students in community who attend English schools				
	0%	1 – 49%	50 – 99.9%	100%	
Nova Scotia – English	0	0	12	88	100%
Nova Scotia – French	8	30	62	0	100%
New Brunswick – English	0	3	13	84	100%
New Brunswick – French	89	8	3	0	100%
Quebec – English	0	37	8	56	100%
Quebec – French	75	24	1	0	100%
Ontario – English	0	0	22	78	100%
Ontario – French	54	0	46	0	100%
Manitoba – English	0	0	54	46	100%
Manitoba – French	51	0	49	0	100%

Generally, there was a greater presence of the French language in the communities where French students went to school. Almost two-thirds of the French population in those communities spoke French at home. Anglophones in those communities were more likely to know French (10%).

At the community level, there were significant differences in the average socio-economic conditions of the communities where French and English schools were located. Students going to English schools tended to be exposed to lower unemployment rates, more adults with postsecondary (and university) education, more jobs requiring university education (white collar), and higher incomes than the students going to French schools.

New Brunswick

In New Brunswick, students in English-language school systems performed significantly better on PISA 2000 reading assessments than their counterparts in French schools. Almost one-third of 15-year-olds in New Brunswick attended a school in the French-language school system.

Individual and family characteristics

Unlike the other French minority language populations in this study, most of the students in the French school system also spoke French most often at home. Fully 97% of students in English school systems spoke English at home and 92% of students in French school systems spoke French at home (Table 3).

There were no significant differences in the characteristics of the students themselves. In terms of the various individual characteristics and behaviours examined in this report, the students in English and French schools in New Brunswick were quite similar overall.

There were some differences in their family background and home environment. Students in English-language school systems reported significantly higher levels of family socio-economic status (as measured by parental occupation). Students in English-language school systems also reported significantly higher levels of home cultural possessions, and a greater number of books in the home. They were also more likely to report having a computer and access to the internet at home than students from French schools.

School characteristics

For most school variables, English schools in New Brunswick reported more favourably. Principals in French schools reported that teacher shortages and inadequacy of instructional and material resources hindered student learning to a greater degree. Principals in English schools reported greater school autonomy, better teacher behaviour and morale, and greater teacher participation in decision making. Finally, a greater proportion of teachers in English schools had had recent professional development.

But students in French schools reported significantly higher levels of teacher support. There were also a greater number of teachers working in their area of specialization, and principals in French schools reported lower levels of negative student behaviours. In addition, French schools had lower student-teacher ratios.

Community characteristics

In New Brunswick, there was very little overlap in the communities where French and English schools were located. In fact, 89% of French students attended school in communities where there were no English schools (Table 5).

In New Brunswick, as in Nova Scotia, there were notable differences in the socio-economic conditions of the communities where English and French students tended to go to school. Students going to French schools were exposed to significantly higher adult unemployment rates and lower average

incomes in these communities. There were also fewer adults in the community with postsecondary education.

The presence of French in these communities, however, was very high. A full 91% of Francophones spoke French at home. In fact, 32% of the Francophones in those communities knew only French, and 38% of the Anglophones in the community knew French.

Quebec

In Quebec, there was no significant difference in the reading performance of students in English and French language school systems. One in ten 15-year-olds in Quebec attended a school in the English language school system.

Individual and family characteristics

For the most part, students in the schools in Quebec spoke the language of the test most often at home: 81% of students in English school systems spoke English at home and 89% of students in French school systems spoke French at home (Table 3).

There were a number of differences between the school populations in Quebec, but it was generally the minority language students (English) who reported the higher values. Students in English schools spent more time on homework and they were more likely to participate in extracurricular activities at school. They also reported significantly higher career expectations.

Students in English schools came from higher socio-economic backgrounds, they reported significantly more home cultural possessions and books in the home, and they were more likely to have a computer and internet access at home.

School characteristics

At the same time, however, students in French schools reported a significantly more favourable school environment. They reported a more positive disciplinary climate and teacher-student relations.

Principals in French schools were less likely to report that student learning was hindered by teacher shortages, or inadequate instructional and material resources. Yet the English schools reported lower student-teacher ratios, and a greater proportion of teachers had recent professional development.

Community characteristics

In Quebec, as in New Brunswick, students attended minority language schools in different communities than their majority language counterparts. That is, they did not, for the most part, go to school in the same communities. In fact, in Quebec, 75% of English students attended school in communities where there were no French schools, and another 24% attended school in communities where they made up the majority of 15-year-old students (Table 5).

In Quebec the communities where English schools were located tended to have more favourable socio-economic conditions than the French school communities. There were more jobs requiring a university education (white collar) in the English school communities, more adults in these communities had a postsecondary education, and average individual incomes were higher.

The English school communities were also somewhat more English speaking; with Anglophones comprising 17% of the population compared to only 8% in the French school communities. Furthermore, 87% of Anglophones spoke English at home in the English school communities compared to only 65% in the communities where French schools were located).

Ontario

In Ontario, students in English-language school systems performed significantly better on PISA 2000 reading assessments than their counterparts in French-language school systems. Fewer than 4% of 15-year-olds in Ontario attended a school in the French-language school system.

Individual and family characteristics

An important characteristic of French school populations in Ontario is language use outside of school. In the English schools in the study, 87% of students spoke English most often at home and 13% spoke a language other than English or French. In the French schools, a much smaller proportion (58%) of students spoke French at home, while 38% spoke English most often at home (Table 3).

For the most part, there were no differences in the individual characteristics and behaviours of students in English and French schools in Ontario,

with one exception. Students in French schools were more likely to spend over 30 minutes getting to school. However, they had similar levels of reading enjoyment, time spent on homework, educational and career expectations, and computer and internet use at school.

There were, however, some significant differences in their home environments. While there was no difference in socio-economic background, the students in English-language school systems reported significantly higher levels of parental social interest, home cultural possessions, home educational resources, and number of books in the home.

School characteristics

There were no differences in school environment as reported by the students in French and English schools, but there were some notable differences in the school characteristics reported by principals. In particular, as in other provinces, student learning in the French schools was more likely to be hindered by teacher shortages and inadequate instructional and material resources. Principals in French schools also reported lower levels of school autonomy. Teachers in English schools were more likely to be working in their area of specialization. At the same time, however, principals in English schools reported that negative student behaviours hindered student learning to a greater degree.

Community characteristics

Just over half (54%) of the French students went to school in communities where there were no English schools. The rest attended schools in communities where the majority of students attended English schools (Table 5).

While there were a number of differences in the characteristics of French and English schools in Ontario, there were almost no significant differences in the socio-economic characteristics of the communities where students attended these schools. That is, French and English students were, on average, exposed to very similar community conditions with respect to adult education levels, postsecondary participation and average income. The communities where French schools were located did have significantly higher unemployment rates.

The linguistic profiles of those communities differed in a variety of ways. English was significantly less dominant in the communities where French schools were located. Only 59% of the population in the French school communities was Anglophone compared to 75% in the English school communities. In addition, two-thirds of the Francophones in the average French school community spoke French at home (compared to only a third in the typical English school community).

Manitoba

In Manitoba, students in English-language school systems performed significantly better on PISA 2000 reading assessments than their counterparts in French-language school systems. Just 2% of 15-year-olds in Manitoba attended a school in the French-language school system.

Individual and family characteristics

While 93% of students in English-language school systems spoke English most often at home, only 59% of students in French-language school systems spoke French at home (Table 3).

As in Ontario, there were no significant differences in the individual characteristics and behaviours of students in French and English schools other than in transportation time. However, Manitoba stands apart from the other provinces in that it was the students in French schools who generally reported higher levels of family background. The students in the French schools reported higher levels of family socio-economic status, and a higher proportion of these students had at least one parent with a postsecondary education.

Otherwise, the home environments of students in the two school systems were very similar. Only in the case of home cultural possessions did students in English schools report significantly higher values.

School characteristics

As in other provinces, English schools reported more favourable levels for a variety of school characteristics. Students in English-language school systems reported significantly more positive school disciplinary climate and teacher support. Principals in English schools were less likely to report that teacher shortages or inadequate material resources

hindered student learning. There were however, no differences in the perception of how levels of instructional resources affected learning.

English schools also reported that teacher behaviours such as absenteeism, low expectations or poor teacher-student relations hindered student learning to a lesser degree. In addition, a greater proportion of teachers in the English schools had received professional development in the previous three months.

As with individual and family characteristics, the differences in school characteristics did not always favour the English schools. Students in French schools in Manitoba were more likely to benefit from less disruptive student behaviour and teacher morale.

Community characteristics

In spite of the notable difference in the family background of students in French and English schools in Manitoba, there were no consistent differences between the communities where students attended English and French schools. This was partly due to the fact that almost half (49%) of French students attended schools in the same communities as English students, and where English students were the majority (Table 5).

The students attending French and English schools were, on average, exposed to very similar socio-economic conditions, as measured by unemployment rates, average income, and adult educational attainment. The average English community did, however, report higher proportions of white collar jobs, but the average French community reported higher rates of postsecondary enrolment.

While there were some important differences in the language profile of the communities, the French school communities were not particularly “French” compared to the English school communities. In the communities where the French schools were located, almost 70% of the population was Anglophone, and only 8% of the Anglophones could speak French. By comparison, in the French communities in Ontario, 23% of the Anglophones knew French. Moreover, in Manitoba, only 52% of the Francophones in the French communities in the study spoke French most often at home (compared to 65% in the same population in Ontario).

Conclusion

The student populations in minority language schools in the five provinces in this profile each have their own distinctive features resulting from differences in the history not only of minority language populations, but also in the history of minority language schooling in those provinces. The Youth in Transition Survey will continue to collect information on these students as they make their transitions into further education and the labour market. Understanding the skills and experiences of these students as they make those transitions will require an approach which takes these provincial differences into account. EOR

Note

1. Although information from the 1996 Census does not reflect the conditions of the community at the time of the PISA assessment, it does provide an indication of the community that these students have likely been exposed to during their schooling. The analysis assumes that the community has not changed significantly in the four years between the 1996 Census and PISA 2000, and that the students have been exposed to that community in the interim.

Schooling of minority language students

Section 23 of the Canadian Charter of Rights and Freedoms sets out the rights of Canadians to have their children schooled in their own official language (determined either by a parent's mother tongue or the language of their schooling), where numbers warrant. In many cases, however, the children of minority language parents do not attend minority language schools.

Results from the Programme for International Student Assessment (PISA) reveal notable provincial differences in the schooling and language use of 15-year-olds from minority language families (where at least one parent reported the minority language of the province as mother tongue) (Table 6).

In Nova Scotia, Ontario and Manitoba, less than half of the students with at least one Francophone parent are enrolled in French-language schools, while a large majority of these students attend French-language schools in New Brunswick

In New Brunswick, over a third of 15-year-olds have at least one Francophone parent, and 83% of these students were enrolled in French schools¹. In Nova Scotia, Ontario and Manitoba, students with Francophone parents made up a much smaller proportion of the 15-year-old population, and less than half of these students attended French schools. In Ontario, only 49% of students with at least one Francophone parent were in French schools, and the proportion in Nova Scotia and Manitoba was less than 30%.

But over half of the students who report French as their own mother tongue are enrolled in French schools

Participation in French schooling is higher, however, when the mother tongue of the students themselves is taken into account. Over 60% of students whose

own mother tongue is French were attending French schools in these four provinces (96% in New Brunswick).

In Nova Scotia and Manitoba less than 40% of students with one or more Francophone parents reported French as their own mother tongue. In Ontario, about half of the students with a Francophone parent reported French as their own mother tongue. And among those who did report French as mother tongue in these three provinces, two-thirds or less said that they used French most often at home.

In New Brunswick, the situation was quite different. Over one-third of 15-year-olds had at least one Francophone parent (compared to less than 10% in Nova Scotia, Ontario, and Manitoba), and over 80% of those students reported French as their mother tongue. Moreover, of those Francophone students, 96% were attending French schools, and 92% used French most often at home.

In Quebec, just over half of students with at least one Anglophone parent are enrolled in English schools

In Quebec, one in ten students had at least one Anglophone parent. Of these, 57% were in English schools, and 68% spoke English most often at home. Of the students with one or more Anglophone parents, about three-quarters reported English as a mother tongue. Among students who stated that their own mother tongue was English, 73% were in English schools, and 89% spoke English most often at home.

More information on the relationship between the mother tongue of parents and children is available from the 2001 Census: Topic-based tabulations: Language composition of Canada (Statistics Canada Cat. No. 97F0007XCB01011).



Table 6
Profile of Francophone students and families in Nova Scotia, New Brunswick, Ontario and Manitoba

	Nova Scotia	New Brunswick	Ontario	Manitoba
Total 15-year-olds	11,157	9,167	130,145	12,887
Students with at least one Francophone parent	617	3,304	8,303	1,023
% of all students with at least one Francophone parent	6%	36%	6%	8%
... % of all students with Francophone parent(s), who are in French school system	29%	83%	49%	26%
... % of all students with Francophone parent(s), whose home language is French	28%	78%	34%	32%
...% of all students with Francophone parent(s), who report French mother tongue	38%	81%	52%	37%
...% of Francophone students with Francophone parent(s), who are in French school system	61%	96%	81%	62%
...% of Francophone students with Francophone parent(s), whose home language is French	68%	92%	61%	56%
Profile of Anglophone students and families in Quebec				
	Quebec			
Total 15-year-olds	80,538			
Students with at least one Anglophone parent	8,256			
% of all students with at least one Anglophone parent	10%			
... % of all students with Anglophone parent(s), who are in English school system	57%			
... % of all students with Anglophone parent(s), whose home language is English	68%			
...% of all students with Anglophone parent(s), who report English mother tongue	73%			
...% of Anglophone students with Anglophone parent(s), who are in English school system	73%			
...% of Anglophone students with Anglophone parent(s), whose home language is English	89%			

EQR

Note

1. French schools do not include French-immersion schools within English-language school systems.

Reading Achievement of Students in French Immersion Programs

French immersion programs were introduced into Canadian schools in the 1970s in order to encourage bilingualism across the country. Thirty years later, immersion programs exist to various degrees in every province, providing an alternative education stream for many students. This report uses data from the Program for International Student Assessment (PISA) to profile the reading achievement of Canadian 15-year-olds currently enrolled in immersion programs.

This report presents the results of the PISA assessment for immersion and non-immersion students in English-language school systems in the ten provinces. It also provides some information on the family background of students in these programs. It does not measure the relative influence of all these factors on the reading performance of students in immersion programs. Further analysis is required to disentangle the factors that lie behind the high performance of these students.

instruction time was in French, such as French immersion. They were then asked in which grades their child was enrolled in a language immersion program. For the purposes of this article, a student was considered currently enrolled in a French immersion program when parents reported that the student was enrolled in an immersion program for their current grade. The results do not, therefore, reflect the performance of students who have ever been enrolled in French immersion.

Language of test: While the language of the test was determined by school test administrators, students were generally assessed in the language of their school system. In the case of French immersion students, 98% were tested in English. While the percentage of immersion students tested in French was generally very small, most of these cases were in Manitoba, where about one-quarter of French immersion students were tested in French.

Detailed information on these and other definitions, concepts and survey design can be found in Survey description, definitions and analytical methodology.

Important Definitions and Concepts

French immersion: Information on French immersion in YITS/PISA was provided by parents. Parents were asked if their child was ever enrolled in an English school in a program where 25% or more of the

Enrolment in French Immersion differs widely by province

While French immersion programs exist in English-language school systems in all ten provinces, the percentage of 15-year-olds enrolled in these programs according to YITS/PISA ranges widely, from only 2% in British Columbia to 32% in New Brunswick (Table 7).



Table 7
Percentage of students in English-language school systems who are currently enrolled in French immersion programs

	% currently enrolled in French immersion	% currently enrolled in Immersion who started before grade 4 (early immersion)	% of students who are girls	
			Immersion	Non-immersion
Newfoundland and Labrador	7	57	64	50
Prince Edward Island	20	59	58	51
Nova Scotia	12	21	58	49
New Brunswick	32	39	61	46
Quebec	22	74	52	48
Ontario	6	57	64	51
Manitoba	6	90	60	48
Saskatchewan	3	87	65	48
Alberta	4	80	59	47
British Columbia	2	55	61	49

In most provinces, students may enter French immersion programs at different times and many children begin immersion programs when they enter school (Kindergarten or Grade 1 – Early immersion). Others start midway through elementary school (Middle immersion) and still others start at later grades. As the availability of programs differs by province, so does the percentage of students who start in “early immersion”. While only 21% of the students currently enrolled in French immersion in Nova Scotia had been enrolled in immersion before Grade 4, at least 80% of the 15-year-olds enrolled in French immersion programs in Manitoba, Saskatchewan and Alberta had started in early immersion programs.

One of the most noticeable characteristics of French immersion programs is the over-representation of girls. While the proportion of girls and of boys in non-immersion programs is roughly equal in all provinces, girls substantially outnumber boys in immersion programs, comprising about 60% of the immersion students in all provinces except Quebec.

Students in French immersion programs outperform students in non-immersion programs in the PISA reading assessment

In almost every province, students in French immersion programs performed significantly better in reading than students who were not enrolled in these programs. The only exception was Manitoba, where the results for both immersion and non-immersion students were the same (Table 8).

Note on interpretation of Manitoba results

While most students in French immersion programs wrote the PISA assessment in English, a significant number of immersion students in Manitoba were tested in French.

While French immersion students who wrote the test in French did not perform as well as those who were tested in English, this did not account for the Manitoba results. Even when this difference in test language was taken into account, there was still no significant difference in the reading achievement of non-immersion and immersion students who only wrote the test in English. Further analysis is required to identify whether the difference in test language has an impact on other factors related to Immersion programs in Manitoba.



Table 8
Reading achievement

	Immersion	Non-immersion	Effect size
Newfoundland and Labrador	608	510	1.21
Prince Edward Island	558	509	0.57
Nova Scotia	567	517	0.60
New Brunswick	550	495	0.63
Quebec	566	537	0.32
Ontario	570	533	0.42
Manitoba	533	533	0.00
Saskatchewan	570	529	0.54
Alberta	601	548	0.64
British Columbia	610	537	0.88

Note: Items in bold indicate significant differences between immersion and non-immersion students with $p < .05$ and Effect size (Cohen’s d) > 0.20 .

One factor which might contribute to the high performance of French immersion students is the over-representation of girls in these programs given that PISA results overall show that girls outperform boys in reading. While this female over-representation in the French immersion population may account for some of the difference, it explains only a small part of the high performance of French Immersion students. The average reading performance of French immersion students is still significantly higher than for non-immersion students when both boys and girls are considered independently (with the exception of Manitoba) (Table 9).

Students in French immersion programs tend to have higher socio-economic backgrounds

In general, students in French immersion programs come from higher socio-economic backgrounds than non-immersion students. One way to determine the socio-economic status of students is in terms of the socio-economic status of parental occupations (See “Survey description, definitions and analytical methodology”). In most provinces, the average family socio-economic status of French immersion students was significantly higher than that of their counterparts in non-immersion programs. However, in Quebec, Manitoba, Saskatchewan and B.C the difference in the average socio-economic background of immersion and non-immersion students was not statistically significant.

Another way of comparing the socio-economic background of the students is to consider what proportion of the students in French immersion



Table 9
Reading achievement by gender

	Girls			Boys		
	Immersion	Non-immersion	Effect size	Immersion	Non-immersion	Effect size
Newfoundland and Labrador	619	530	1.19	588	491	1.17
Prince Edward Island	570	526	0.54	541	491	0.57
Nova Scotia	572	535	0.46	561	499	0.72
New Brunswick	561	518	0.54	533	476	0.63
Quebec	591	557	0.41	539	519	0.22
Ontario	582	548	0.42	549	519	0.33
Manitoba	538	553	0.18	525	514	0.13
Saskatchewan	572	548	0.34	566	511	0.70
Alberta	606	568	0.49	594	530	0.75
British Columbia	604	554	0.64	620	521	1.15

Note: Items in bold indicate significant differences between immersion and non-immersion students with $p < .05$ and Effect size (Cohen's d) > 0.20 . For more information on the interpretation of Effect sizes, see Survey description, definitions and analytical methodology.

programs are from families with high socio-economic status (SES). To determine this, students were classified as having high SES if they were in the top quartile of Canadian students on the parental occupation scale. Using this measure indicates whether the high average socio-economic background of French immersion students was the result of a clustering of very well-off students into those programs.

The results of this socio-economic quartile analysis are similar to those above. A greater proportion of students in French immersion programs come from families in the top socio-

economic quartile in all provinces, but this advantage is not statistically significant in Quebec, Ontario, Manitoba, Saskatchewan and British Columbia (Table 10)¹.

Socio-economic background has been shown in other studies to have a strong relationship with student achievement. Therefore, one might expect that differences in family socio-economic status contribute to the high reading achievement of students in French immersion programs. However, the advantage held by French immersion students is not so straightforward.



Table 10
Family background of French immersion populations by province

	International Socio-economic Index of Occupational Status (highest parent) (Canada average = 53)			% of students in top Canadian quartile of family socio-economic status		
	Immersion	Non-immersion	Effect size	Immersion	Non-immersion	Effect size
Newfoundland and Labrador	59	46	0.82	41	13	0.67
Prince Edward Island	55	48	0.37	26	17	0.23
Nova Scotia	58	51	0.44	34	18	0.37
New Brunswick	56	49	0.44	31	16	0.36
Quebec	57	55	0.12	36	27	0.18
Ontario	58	54	0.26	35	27	0.19
Manitoba	53	50	0.18	21	18	0.07
Saskatchewan	55	51	0.25	26	19	0.18
Alberta	60	54	0.45	43	25	0.39
British Columbia	55	53	0.11	27	24	0.07

Note: Items in bold indicate significant differences between immersion and non-immersion students with $p < .05$ and Effect size (Cohen's d) > 0.20 .

After controlling for socio-economic background, by looking only at students from families in the top quartile of socio-economic status, there is still a substantial difference in the achievement of students in immersion and non-immersion programs in many provinces. These differences are statistically significant in Newfoundland and Labrador, Prince Edward Island, New Brunswick, Alberta and British Columbia (Table 11)².

Parents of French immersion students are more likely to have postsecondary education

French immersion students were significantly more likely to have a parent with a postsecondary education in all provinces except Quebec, Ontario, Manitoba and British Columbia (Table 12). As with family socio-economic background, these differences do not by themselves explain the high reading achievement of students in French immersion programs. Among students who have a parent with a postsecondary education, French immersion students had significantly higher reading results than non-immersion students in all provinces except Quebec and Manitoba.

 **Table 11**
Reading achievement of French immersion students with Family socio-economic status in the top 25%

	Immersion	Non-immersion	P values for difference	Effect size
Newfoundland and Labrador	629	559	0.0001	0.87
Prince Edward Island	584	546	0.0029	0.44
Nova Scotia	583	561	0.0510	0.29
New Brunswick	566	543	0.0272	0.28
Quebec	594	574	0.0868	0.22
Ontario	591	570	0.0610	0.27
Manitoba	542	565	0.1715	0.33
Saskatchewan	578	554	0.2082	0.37
Alberta	617	583	0.0023	0.45
British Columbia	635	567	0.0004	0.91

Note: Items in bold indicate significant differences between immersion and non-immersion students with $p < .05$ and Effect size (Cohen's d) > 0.20 . Small sample sizes for these populations affect the ability to state if differences are significant. However, many of the p -values are close to 0.05 and are included in the table for this reason.

 **Table 12**
Parents' education and reading achievement of French immersion students

	Percentage of students with at least one parent with a postsecondary education			Reading achievement of students with at least one parent with postsecondary education		
	Immersion	Non-immersion	Effect size	Immersion	Non-immersion	Effect size
Newfoundland and Labrador	83	57	0.60	607	529	0.97
Prince Edward Island	74	60	0.29	567	524	0.51
Nova Scotia	77	59	0.39	575	532	0.52
New Brunswick	70	53	0.35	560	512	0.56
Quebec	73	65	0.17	571	555	0.18
Ontario	77	68	0.20	577	546	0.36
Manitoba	61	56	0.11	541	545	0.05
Saskatchewan	71	58	0.27	571	540	0.42
Alberta	86	63	0.54	606	561	0.54
British Columbia	63	64	0.02	610	550	0.74

Note: Items in bold indicate significant differences between immersion and non-immersion students with $p < .05$ and Effect size (Cohen's d) > 0.20 . Small sample sizes for these populations affect the ability to state if differences are significant. However, many of the p -values are close to 0.05 and are included in the table for this reason.

Conclusion

In every province, except Manitoba, students enrolled in French immersion programs performed significantly better in the PISA reading assessment than their counterparts in non-immersion programs. In fact, in all ten provinces, students in French immersion programs performed at levels equal to or better than the Canadian national reading average (534).

There are a number of factors examined in this analysis that may contribute to the high achievement of 15-year-olds in French immersion. Parents of immersion students are generally from higher socio-economic backgrounds and are more likely to have a postsecondary education (factors related to high student performance). There is also a higher proportion of girls in immersion programs.

However, when gender, socio-economic background and parents' education are each taken into account (individually), French immersion students still outperform their counterparts in non-immersion programs. No one of these factors alone explains the high performance of these students.

Instead, there are also a number of other factors which may contribute to the high reading performance of French immersion students. Firstly, more information is needed to understand the environment in which these students live and learn. French immersion programs may be more readily available in more affluent communities (ex. Urban).

Moreover, it is important to try to measure the effect of student selection and attrition on French immersion results. Schools (and parents) tend to screen students to ensure their readiness for immersion programs. This may mean that students who have less developed language skills are not

encouraged to enter immersion programs (particularly early immersion). This may be one reason for the unequal gender distribution in these programs, as girls tend to develop language skills earlier than boys and may therefore demonstrate a greater aptitude for language learning when they are considered for entry into early immersion programs.

In addition to a selection bias in terms of entry into French immersion programs, there may also be a tendency for less-skilled students to transfer out of immersion programs if there is a concern about their ability to learn in the second language. By the time students are 15-years old (in the PISA assessment) this academic attrition may be significant.

It is also possible that French immersion programs assist student learning in other ways. It is possible these programs provide an enriched environment for learning. There may be a positive peer effect when students with high potential for achievement are grouped together. Other research has investigated the possibility that bilingualism itself contributes to the learning of students (see Cummins (2000) for a discussion of this research).

The PISA/YITS data provide many variables for the analysis of achievement for French immersion students. Data are available to examine to what degree socio-economic background, home environment and gender of students in immersion populations may account for their high performance. Information is also available to track in which grades students were enrolled in French immersion programs. These variables when considered together will help provide a better understanding of the achievement of French Immersion students. EOR

Notes

1. The test for statistical significance for French immersion students is very sensitive to the small sample sizes of French immersion students in this study. The effect of small sample sizes is further amplified when only the top quartile of students are considered. Therefore, although there are still large substantial differences between French immersion and non-immersion students among the top quartile, these differences are not considered statistically reliable because of the small sample of students available.
2. In fact, effect sizes indicate substantial differences (above 0.20) in all provinces, although small sample sizes mean that these differences are not statistically reliable in all provinces.

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Survey description, definitions and analytical methodology

The Programme for International Student Assessment

The Programme for International Student Assessment (PISA) is a collaborative effort among member countries of the Organisation for Economic Co-operation and Development (OECD) to regularly assess the achievement of 15-year-olds in three domains—reading literacy, mathematical literacy and scientific literacy—through a common international test. In 2000, the major focus was reading literacy, with mathematical and scientific literacy as minor domains.

Thirty-two countries participated in PISA 2000.¹ In Canada, approximately 30,000 15-year-old students from more than 1,000 schools took part. A large Canadian sample was drawn so that information could be provided at both national and provincial levels.

The PISA 2000 survey included a direct assessment of students' skills through reading, mathematics and science tests as well as questionnaires collecting background information from students and school principals. In Canada, a contextual questionnaire from the Youth in Transition Survey was administered simultaneously to students and an interview was also administered to their parents.

For further information on the technical background of PISA, including response rates, see Annex A of the international OECD report *Knowledge and Skills for Life - First results from the OECD Programme for International Student Assessment*, and the *PISA 2000 Technical Report*. These reports are available on the Internet at www.pisa.oecd.org.

The Youth in Transition Survey

The Youth in Transition Survey (YITS) is a Canadian longitudinal survey designed to examine the patterns of, and influences on, major transitions in young people's lives, particularly with respect to education, training and work. Survey results will help provide a deeper understanding of the nature and causes of challenges young people face as they manage their transitions. Information obtained from the survey will help to support policy planning and decision making that address these problems.

YITS will examine key transitions in the lives of youth, such as the transition from high school to postsecondary education, from schooling to the labour market, and from the labour market to schooling. The factors that affect leaving school without graduating will be a focus, as will the effects of school experiences on educational and occupational outcomes, and the contribution of work experience programs, part-time jobs and volunteer activities. To collect this information, current plans for YITS are to survey youth every two years, over a period of several years. Accordingly, the second survey cycle of YITS took place in 2002.

Two different age groups are participating in YITS, a 15-year-old cohort and an 18- to 20-year-old cohort. The youth aged 15 who participated in YITS also participated in PISA 2000. The youth aged 18 to 20, who were surveyed in 2000 as part of the YITS project, did not participate in PISA.

Survey concepts, methodology and data quality

The following information should be used to ensure a clear understanding of the basic concepts that define the data provided in this report, of the underlying methodology of the survey, and of key aspects of the data quality. This information will provide a better understanding of the strengths and limitations of the data, and of how they can be effectively used and analysed. The information may be of particular importance when making comparisons with data from other surveys or sources of information, and in drawing conclusions regarding change over time, differences between geographic areas and differences among sub-groups of the target population.

Survey objectives: The Youth in Transition Survey (YITS) is a new Canadian longitudinal survey designed to examine the major transitions in young people's lives, particularly with respect to education, training and work. Information on the skills of the 15-year-olds who participated in YITS was also collected as part of the Programme for International Assessment (PISA).

Target population: The target population of the 15-year-old cohort of YITS/PISA are all youth who were 15-years-old as of December 31, 1999 who were enrolled in an educational institution in Canada.

Sample design:

The sample for PISA/YITS was selected in two-stages. In the first stage, the frame was a list of all provincially governed public and private schools where students born in 1983 were enrolled for the 1998/1999 school year. Strata of schools were created to ensure adequate coverage of all ten provinces, as well as of minority language school systems in Nova Scotia, New Brunswick, Quebec, Ontario, and Manitoba. The size of the school, measured by the enrolment of students born in 1983, was the final stratification variable. In strata containing the largest schools, all schools were selected, whereas in other strata representing schools of size 35 or more, schools were randomly sampled in proportion to the enrolment of students born in 1983. Within strata of schools smaller than size 35, schools were randomly sampled with equal probability. In the second stage, students were sampled randomly from a list of the 15-year-olds enrolled in the school. In most strata a maximum of 35 students were sampled, but school sample sizes greater than 35 were required in some province/language classes to meet data quality requirements. In schools with fewer than 35 eligible students, all were selected.

Stratification: In Canada, the selection of schools was carried out to ensure adequate coverage of all ten provinces, as well as of minority language school systems in Nova Scotia, New Brunswick, Quebec, Ontario, and Manitoba.

Within the context of the sampling standards of PISA, some schools and some students were excluded from the study. Schools in the Yukon, Northwest Territories and Nunavut (0.43% of the target population), as well as schools on Indian reserves (0.73%) were not included in the sampling frame. In addition students who were mentally or physically disabled in such a way that they could not perform in the PISA assessment and non-native speakers with less than one year of instruction in the language of assessment, as well as schools that teach only these students, could be excluded from the study. Schools with enrolment of fewer than 3 students in the target population were also excluded from the study.



Table 13
Populations, exclusions and participations

Total population 15-years old	403,803
Total enrolled population	396,423
Total in target population	391,788
School-level exclusions	2,035
Percentage of school-level exclusions	0.52%
Number of participating students	29,687
Weighted number of participating students	348,481
Number of excluded students	1,584
Weighted number of excluded students	16,197
Student (within-school) exclusion rate	4.44%
Overall exclusion rate	4.94%

Source: OECD, PISA 2000 Technical Report

Collection:

PISA Assessment:

The PISA 2000 survey included a direct assessment of students' skills through reading, mathematics and science tests. A total of about seven hours of test items were administered, with each student taking a two-hour-long assessment consisting of different combinations of test items. The assessment focused mainly on reading, with the reading test giving three sub-test scores labelled *retrieving information*, *interpreting* and *reflecting*. Mathematics and science each had only a single score. In addition, as minor domains, fewer mathematics and science items were included and these items were administered to a random sub-sample of PISA participants within each participating school.

In Canada, students were assessed in English or French according to their main language of instruction as determined by the school.

Student, school and parent questionnaires:

Students also completed a 20-minute questionnaire focussing on factors contributing to student performance and a three-minute questionnaire focussing on information technology. In addition, PISA 2000 included a questionnaire, which was administered to school principals, to collect information about the characteristics of participating schools.

A 30-minute self-completed contextual questionnaire from the Youth in Transition Survey was administered simultaneously to students in order to collect more information on their school experiences, their work activities and their relationships with others. A 30-minute interview was also conducted with a parent of each student.

For further information on the technical background of PISA (including response rates), see Annex A of the international OECD report *Knowledge and Skills for Life - First results from the OECD Programme for International Student Assessment*, and the *PISA 2000 Technical Report*. These reports are available on the Internet at www.pisa.oecd.org.

Analytical concepts and methodology

Understanding school and community characteristics in this study

Information about schools was collected from students as well as school principals. Information on communities was taken from the 1996 Census. It should be noted that this report is restricted to the schools that participated in the PISA study and the communities where these schools were located. Because the PISA sample was developed to be representative of the population of 15-year-olds, the school information cannot be interpreted as representative of all schools, or all high schools in French and English school systems.

Furthermore, because these characteristics are weighted by student, they describe the school that the average student attends, not the average school. For example, consider a population where 100 students go to a school with 20 teachers and 10 students go to a school with 2 teachers. While the average school in this system has 11 teachers (mean), the data in this study, weighted by student, are designed to show that the “average student” attends a large school with 18.4 teachers. Therefore, the data presented in this report (18.4) would show that the average student goes to a large school, even though the average (mean) school (with 11 teachers) is not large.

This analysis describes, rather, the schools attended by the students in the study, and the school characteristics are included primarily as possible

factors influencing student performance, not as characteristics of French and English school systems overall.

Similarly, community information cannot be interpreted as representative of French and English communities. This analysis describes, rather, the communities of the schools attended by the students in the study, and the community characteristics are included primarily as possible factors influencing student performance, not as characteristics of French and English communities overall.

This is particularly important to note as minority language schools often have quite large catchment areas. Particularly in the case of the French schools, it may often be the case that students do not actually live in the community where their school is located, and this likelihood may differ by province. Furthermore, the communities where French and English schools are located are not mutually exclusive as these schools are often located within the same community.

Data from the 1996 Census were used in this analysis as indicators of the characteristics of the community in which students had been going to school over the period preceding the survey. It was felt that any changes that might be reflected in the 2001 Census results may represent changes in the nature of the community which are too immediate to have had an impact on students.

PISA reading assessment

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. This definition goes beyond the notion that reading literacy means decoding written material and literal comprehension. Reading incorporates understanding and reflecting on texts. Literacy involves the ability of individuals to use written information to fulfil their goals, and the consequent ability of complex modern societies to use written information to function effectively.

A difference of 73 points between two average scores could be thought of as representing about one proficiency level in reading literacy. A difference of one proficiency level can be considered a comparatively large difference in student performance in substantive terms.

Language of school and language of test

Schools were identified as French or English according to the administrative school district. **Minority language schools** in this analysis do not include schools which teach predominantly in a minority language within a non-minority school system (immersion schools).

Students in **French immersion programs** are identified from data provided by parents. Parents were asked if their child was ever enrolled in a school, in a program where 25% or more of instruction time was in the second official language of the school, such as French Immersion or “bain linguistique”. They were then asked in what grades students were enrolled in these programs. This information was compared to information on the current grade of the student in order to determine if the student was “currently enrolled” in a French immersion program.

The **language of the test** was determined by the school test administrators, and, with a few exceptions, students were tested in the language of the school system. PISA used a number of quality assurance procedures to ensure that the tests in different languages were equivalent. For more information on the test itself, see the *PISA 2000 Technical Report* (OECD, 2002).

It should be noted that data on minority language students are complete in only five provinces. In Nova Scotia, New Brunswick, Quebec, Manitoba and Ontario, students in minority language school systems were sampled separately. Therefore data on students in these schools are representative of the population of students in French-language school systems in these provinces. In the rest of Canada, however, students in French schools were not sampled separately. Therefore, in Newfoundland, Prince Edward Island, Saskatchewan, Alberta, and British Columbia, data for minority language students may not be representative of students attending French schools or programs.

Mother tongue: In this report, the terms Anglophone, Francophone and Allophone refer only to the language the student first learned at home in childhood and still understands.

Language spoken at home : Students were asked if the language spoken most often at home was the language of the test, another official language,

another national dialect (or language), or another language. For this analysis, responses were grouped to identify whether or not the language spoken most often at home was the language of the school system (French or English).

Definitions of selected variables

Note: Several of the measures in this report reflect indices that summarise responses from students or school representatives (typically principals) to a series of related questions. It is important to note that negative values in an index do not necessarily imply that students responded negatively to the underlying questions. A negative value merely indicates that a group of students (or all students, collectively, in a single country) or principals responded less positively than all students or principals did on average across OECD countries. Likewise, a positive value on an index indicates that a group of students or principals responded more favourably, or more positively, than students or principals did, on average, in OECD countries.

Reading Enjoyment: This index was derived from students’ level of agreement with the following statements: I read only if I have to; reading is one of my favourite hobbies; I like talking about books with other people; I find it hard to finish books; I feel happy if I receive a book as a present; for me reading is a waste of time; I enjoy going to a bookstore or a library; I read only to get information that I need; and, I cannot sit still and read for more than a few minutes.

Students’ cultural activities: This index was derived from students’ reports on how often they had participated in the following activities during the preceding year: visited a museum or art gallery; attended an opera, ballet or classical symphony concert; and watched live theatre.

Homework time: This variable was collected as part of the Youth in Transition Survey (YITS). Students were asked about how many hours per week they usually spend on homework outside class (during free periods and at home).

Career expectations: Students were asked to report what kind of job they expect to have when they are about thirty years old. This information was then classified by occupational status according to the *International Socio-Economic Index of Occupational Status (ISEI)* (defined under *socio-economic status*).

Student's education expectations: This variable was collected as part of the Youth in Transition Survey (YITS). Students reported what is the highest level of education they would like to get.

Transportation time: This variable was collected as part of the Youth in Transition Survey (YITS). Students were asked how long it usually takes them to travel to school one way. This variable included use of all forms of transportation.

Participation in school extracurricular activities: This variable was collected as part of the Youth in Transition Survey (YITS). Students were asked how many total hours per week they usually spend participating in school clubs, teams or other school-based extracurricular activities.

Participation in non-school extracurricular activities: This variable was collected as part of the Youth in Transition Survey (YITS). Students were asked how many total hours per week they usually spend participating in non-school clubs, teams, lessons or other non-school organised activities.

Computer and Internet at home: Students were asked how many computers they had in their home and whether they had a link to the Internet in their home.

Computer and Internet use at school: Students were asked how often they use computers and the Internet at school.

Parents' occupational status: Students were asked to report their mothers' and fathers' occupation, and to state whether each parent was: in full-time paid work; part-time paid work; not working but looking for a paid job; or "other". The open-ended responses were then coded in accordance with the International Standard Classification of Occupations (ISCO 1988).

The PISA *International Socio-Economic Index of Occupational Status* (ISEI) was derived from student responses on parental occupation. The index captures the attributes of occupations that convert parents' education into income. The index was derived by the optimal scaling of occupation groups to maximise the indirect effect of education on income through occupation and to minimise the direct effect of education on income, net of occupation (both effects being net of age). For more information on the methodology, see *Ganzeboom, de Graaf and Treiman (1992)*. The PISA

International Socio-Economic Index of Occupational Status is based on either the father's or mother's occupations, whichever is the higher.

Parent's educational attainment: This variable was derived as the highest level of attainment achieved by either parent.

Number of books at home: Students reported an estimate of how many books there are in their home. They were given a calculation that there are approximately 40 books per metre of shelving and were asked not to include magazines.

Parental academic interest: The index of parental academic interest was derived from students' reports on the frequency with which their parents (or guardians) engaged with them in the following activities: discussing political or social issues; discussing books, films or television programmes; and listening to classical music.

Parental social interest: This index was derived from students' reports on the frequency with which their parents (or guardians) engaged with them in the following activities: discussing how well they are doing at school; eating the evening meal with them around a table; and spending time simply talking with them.

Home cultural possessions: This index was derived from students' reports on the availability of the following items in their home: classical literature (examples were given), books of poetry and works of art (examples were given).

Home educational resources: This index was derived from students' reports on the availability and number of the following items in their home: a dictionary, a quiet place to study, a desk for study, textbooks and calculators.

Disciplinary climate: This index summarises students' reports on the frequency with which, in their class of the language of assessment: the teacher has to wait a long time for students to quiet down; students cannot work well; students don't listen to what the teacher says; students don't start working for a long time after the lesson begins; there is noise and disorder; and, at the start of class, more than five minutes are spent doing nothing. High values indicate greater problems with disciplinary climate.

Teacher-student relations: This index was derived from students' reports on their level of agreement with the following statements: students get along well with most teachers; most teachers are interested in students' well-being; most of my teachers really listen to what I have to say; if I need extra help, I will receive it from my teachers; and most of my teachers treat me fairly.

Teacher support: This index was derived from students' reports on the frequency with which: the teacher shows an interest in every student's learning; the teacher gives students an opportunity to express opinions; the teacher helps students with their work; the teacher continues teaching until the students understand; the teacher does a lot to help students; and, the teacher helps students with their learning.

School size: Number of 15-year olds in school.

Schools offering extracurricular activities: This index is the proportion of students in a school reporting that their school offers extracurricular activities.

Negative teacher behaviour: This index was derived from principals' reports on the extent to which the learning by 15-year-olds was hindered by: the low expectations of teachers; poor student-teacher relations; teachers not meeting individual students' needs; teacher absenteeism; staff resisting change; teachers being too strict with students; and students not being encouraged to achieve their full potential. High values indicate higher levels of negative behaviour.

Student behaviour: This index summarises principals' perceptions of the school's disciplinary climate by reporting the extent to which learning by 15-year-olds in their school was hindered by: student absenteeism; disruption of classes by students; students skipping classes; students lacking respect for teachers; the use of alcohol or illegal drugs; and students intimidating or bullying other students. High values indicate problems with student behaviour.

Teacher morale and commitment: This index was derived from the extent to which school principals agreed with the following statements: the morale of the teachers in this school is high; teachers work with enthusiasm; teachers take pride in this school; and teachers value academic performance.

Student-teacher ratio: This index is the ratio between the school size and the total number of teachers. Part-time teachers contributed 0.5 and full-time teachers 1.0 to the total number of teachers.

Teacher shortage: This index was derived from the principals' views on how much learning by 15-year-old students was hindered by the shortage or inadequacy of teachers in the language of assessment, mathematics or science. High values indicate problems with teacher shortage.

Inadequacy of instructional resources: This index was derived based on the school principals' reports on the extent to which learning by 15-year-olds was hindered by: not enough computers for instruction; lack of instructional materials in the library; lack of multi-media resources for instruction; inadequate science laboratory equipment; and inadequate facilities for the fine arts. High values indicate a low quality of educational resources.

Inadequacy of material resources: This index was derived from principals' reports on the extent to which learning by 15-year-olds in their school was hindered by: poor condition of buildings; poor heating and cooling and/or lighting systems; and lack of instructional space (e.g., classrooms). High values indicate a low quality of physical infrastructure.

Computer availability for students: This index is the ratio of the principals' report on the number of computers in the school available to 15-year-olds and the number of 15-year-olds in the school represented by the sample.

Teacher specialisation: This index was computed from 3 variables describing the percentage of teachers in reading, mathematics, and science, respectively, teaching in their area of specialisation.

School autonomy: This index was derived from principals' reports on whether or not various aspects of school management (hiring and firing teachers, determining initial and incremental salaries, formulating school budget, determining student disciplinary and assessment policy, approving student admittance, choosing textbooks and course content, and deciding which course are offered) were a school responsibility.

Teacher participation in decision making: This index was derived from principals reports on whether or not teachers have the main responsibility, within their school, for the aspects of school management described above for school autonomy.

Interpretation of statistical significance

Statistical significance of a difference between characteristics of Francophone and Anglophone populations does not necessarily mean that the difference is substantive or meaningful. Statistical significance refers to the reliability or repeatability of the observed results – if the difference were to be estimated repeatedly using different samples of students, schools, or communities, statistical significance implies that a similar difference would be observed in most of these replications. However, a difference may be statistically significant even if it is actually quite small.

Consider the following example. The citizens of two communities with equal populations have similar average incomes as well as similar proportions of low income and high income earners. However, one community also has a small post-secondary institution, attended by students who have slightly lower-than-average incomes. As a result, this community's average income will be consistently lower than that of the other community, which has no post-secondary institution. The difference is reliable, so it is considered statistically significant. However, because the students are just slightly below average, the differences between the communities in average income will be very small. Furthermore, compared to the differences between high and low incomes *within each community*, the average difference between communities is probably negligible. In this example, the difference in average income is significant, but not substantive.

Typically, inferences about the reliability of results (i.e., significance tests) are based on the assumption that all the sample subjects are randomly equivalent to each other. However, for the YITS survey, students were sampled from within systematically different groups, or *clusters*, which were also sampled from a larger population. As a result of the sample's complexity, no simple assumptions could be made about the random equivalence of individual students and schools. In order to estimate the reliability of the results presented here, every analysis was replicated across 1,000 different subsamples of the data, constructed to be consistent with the YITS sampling methods. The variability of the results across these subsamples was used to estimate the reliability of the results in the Canadian population of 15-year-olds and their schools.

Effect Size

Effect sizes are one method for standardizing and comparing differences between groups. Simplified, an effect size compares the difference between groups to how different the people *within each group* are from each other. The effect size used in this paper, Cohen's *d*, is calculated by dividing the difference between the group means by the pooled standard deviation of the groups (Cohen, 1988, p.44). The pooled standard deviation is the square root of the average of the two group variances (also described as the *root mean squared deviation*).

$$\text{Effect Size (ES or Cohen's } d) = \frac{\hat{\mu}_i - \hat{\mu}_j}{\sqrt{\frac{\hat{\sigma}_i^2 + \hat{\sigma}_j^2}{2}}}$$

Where

$\hat{\mu}_i$ represents the estimated mean of group *i*;

$\hat{\sigma}_i$ represents the estimated standard deviation of group *i*; and equivalently for group *j*.

Previous research using data from PISA 2000 (see, e.g., Bussiere, et al, 2001; *Knowledge and Skills for Life*, 2001) has found significant effect sizes in the small to medium range defined by Cohen (1988, p.25). For example, group differences that are considered substantive in the context of expected reading performance, such as the difference in reading scores between students who never borrow books from a library to read for pleasure and students who do so at least once a month, or the difference between the average performance of the highest scoring province in Canada compared to the average performance of the lowest performing province in Canada, both have effect sizes of 0.5. Given the impact of these grouping variables, an effect size greater than 0.5 in the context of student characteristics or performance in PISA should be considered large.

When comparing community characteristics, effect sizes should be interpreted in the context of meaningful differences. For example, when comparing average incomes for two communities, as in the example above, an effect size of 0 indicates that the people in the two communities are identical in terms of their expected incomes. An effect size of 0.2 suggests that half of the people in one community are expected to earn as much as or more than the

top 42% of earners in the other community. In contrast, an effect size of 1.0 suggests that half the people in one community will earn as much as or more than the top 16% in the other community. Although there is no maximum for effect sizes, values greater than 3.0 imply that there is no real similarity between members of the two groups; the lowest earner in one community probably earns more than the highest earner in the other community. The effect size for comparing the average community income of the highest and lowest earning Canadian provinces is 2.13 (the average effect size for comparing any two provinces is 0.84). Another key indicator, proportion of minority language speakers, has a maximum effect size of 1.30 across provinces with an average of 0.59.

Effect sizes less than 0.2 are considered trivial, as they suggest that less than 1% of the variation in the variable being studied can be explained by group membership. Although still small, an effect size of 0.2 represents the minimum difference that is interpretable. An effect size of 0.5, which is large in the context of differences between students using PISA data and average in the context of comparing

groups of communities with census data, suggests that group membership accounts for around 6% of the variation in the variable being studied and can be understood as a difference that is “visible to the naked eye” (Cohen, 1988, p. 26). EQR

Note

1. While the Netherlands participated in PISA, their data are excluded from the analysis due to a low response rate.

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Appendix



Table 1A
Student characteristics by language of school system, Nova Scotia

	Nova Scotia				Effect size
	English language school system		French language school system		
	Average	(s.e.)	Average	(s.e.)	
Number of 15-year-olds	10,925		232		
Individual characteristics					
Reading achievement	522	2.5	474	5.5	0.54
Student cultural activities	0.13	0.02	0.09	0.06	0.04
Reading enjoyment	0.06	0.03	-0.16	0.07	0.20
Homework time	0.27	0.01	0.18	0.03	0.22
Career expectations	62.6	0.43	59.6	1.36	0.17
Percentage of students who expect to get a postsecondary education	92.2	0.7	90.0	2.3	0.08
Percentage of students who expect to go to university rather than college	84.5	0.9	84.2	3.0	0.01
Percentage of students with 30 minutes or more transportation time	16.7	0.9	31.5	3.2	0.35
Students participating in school extracurricular activities (%)	59.8	1.2	63.1	3.3	0.07
Students participating in non-school extracurricular activities (%)	66.7	1.1	67.4	3.2	0.01
Using computer at school at least several times per month (%)	46.3	1.4	56.7	3.2	0.21
Using internet at school at least several times per month (%)	44.0	1.5	54.3	3.3	0.21
Family characteristics					
Family socio-economic status	51.7	0.42	51.5	1.07	0.01
One or more parents with postsecondary education (%)	60.3	1.2	70.6	3.0	0.22
Students with 100 or more books at home (%)	61.4	1.1	51.8	3.3	0.19
Parental academic interest	0.11	0.02	-0.10	0.06	0.22
Parental social interest	-0.20	0.02	-0.58	0.06	0.41
Home cultural possessions	-0.08	0.02	-0.77	0.06	0.69
Home educational resources	0.00	0.02	-0.13	0.07	0.13
Computer at home (%)	83.8	0.9	87.7	2.1	0.11
Internet at home (%)	67.6	1.0	70.5	3.1	0.06
Student's school experience					
Disciplinary climate	0.20	0.03	0.40	0.06	0.22
Teacher-student relations	0.40	0.03	-0.01	0.06	0.41
Teacher support	0.39	0.02	-0.04	0.06	0.45

Note: (s.e.) is the standard error of the average. Items in bold indicate significant differences in average values of variables for French and English school systems where $p < .05$ AND effect size (ES) > 0.2 .



Table 1B
Characteristics of schools and communities, by language of school system, Nova Scotia

	Nova Scotia				Effect size
	English language school system		French language school system		
	Average	(s.e.)	Average	(s.e.)	
School characteristics					
Schools offering extracurricular activities (%)	95.0	0.01	95.4	0.01	0.02
Average Number of students in the school	732	7.7	355	5.0	1.4
Negative teacher behaviours	-0.11	0.04	0.32	0.01	0.57
Negative student behaviours	0.37	0.02	0.85	0.01	0.74
Teacher morale	-0.04	0.04	-1.07	0.01	0.95
Student-teacher ratio	16.7	0.11	13.3	0.03	1.34
Inadequacy of Instructional resources	0.53	0.02	0.92	0	0.61
Shortage of teachers	0.74	0.04	1.21	0	0.56
Teacher with recent professional development (%)	85.8	0.84	33.5	0.3	2.14
Inadequacy of material resources	0.19	0.03	0.51	0.01	0.36
Computer availability	6.3	0.15	4.8	0.01	0.65
Teacher specialization (%)	71.5	1.33	48.4	0.15	1.17
School autonomy	-0.18	0.02	-0.93	0.01	1.32
Teacher participation to decision making	-0.17	0.04	-0.35	0	0.3
Community characteristics					
Adult unemployment (%)	11.0	0.31	14.6	0.05	0.59
White collar employment (%)	42.9	0.41	34.6	0.11	1.00
Post-secondary enrollment (%)	63.9	0.24	58.9	0.07	0.87
Post-secondary education (%)	53.4	0.45	46.3	0.1	0.79
University education (%)	25.8	0.47	18.0	0.11	0.80
Average income of adults over 25 (\$)	22,103	239	20,478	23	0.54
Average family income	47,436	535	44,932	52	0.38
Anglophones population (%)	93.3	0.25	76.9	0.13	1.78
Anglophones who speak english at home (%)	99.9	0.02	99.0	0.01	1.56
Francophones who speak french at home (%)	29.3	0.65	63.8	0.27	1.78
Anglophones who know french (%)	6.0	0.1	9.6	0.02	1.41
Francophones who know only french (%)	3.1	0.07	4.1	0.03	0.38

Note: (s.e.) is the standard error of the average. Items in bold indicate significant differences in average values of variables for French and English school systems where $p < .05$ AND effect size (ES) > 0.2.



Table 2A
Student characteristics by language of school system, New Brunswick

	New Brunswick				Effect size
	English language school system		French language school system		
	Average	(s.e.)	Average	(s.e.)	
Number of 15-year-olds	6,277		2,890		
Individual characteristics					
Reading achievement	512	2.6	478	2.9	0.36
Student cultural activities	-0.06	0.02	0.03	0.03	0.11
Reading enjoyment	0.04	0.03	-0.02	0.04	0.05
Homework time	0.27	0.01	0.26	0.01	0.04
Career expectations	61.6	0.46	59.5	0.60	0.12
Percentage of students who expect to get a postsecondary education	88.7	0.8	89.6	1.0	0.03
Percentage of students who expect to go to university rather than college	83.2	1.0	76.6	1.4	0.16
Percentage of students with 30 minutes or more transportation time	22.0	1.0	22.7	1.3	0.02
Students participating in school extracurricular activities (%)	55.3	1.3	48.8	1.5	0.13
Students participating in non-school extracurricular activities (%)	63.2	1.2	57.0	1.5	0.13
Using computer at school at least several times per month (%)	36.3	1.3	36.8	1.5	0.01
Using internet at school at least several times per month (%)	34.4	1.3	30.9	1.3	0.08
Family characteristics					
Family socio-economic status	51.0	0.40	47.6	0.49	0.20
One or more parents with postsecondary education (%)	56.5	1.2	55.2	1.4	0.03
Students with 100 or more books at home (%)	59.3	1.2	39.0	1.4	0.41
Parental academic interest	-0.11	0.03	0.01	0.03	0.13
Parental social interest	-0.31	0.03	-0.31	0.03	0.01
Home cultural possessions	-0.15	0.02	-0.77	0.03	0.65
Home educational resources	-0.09	0.03	-0.26	0.03	0.16
Computer at home (%)	80.2	1.0	70.8	1.4	0.22
Internet at home (%)	67.6	1.1	49.2	1.5	0.38
Student's school experience					
Disciplinary climate	0.23	0.03	0.09	0.03	0.14
Teacher-student relations	0.12	0.03	0.32	0.03	0.19
Teacher support	0.13	0.03	0.38	0.03	0.24

Note: (s.e.) is the standard error of the average. Items in bold indicate significant differences in average values of variables for French and English school systems where $p < .05$ AND effect size (ES) > 0.2 .



Table 2B

Characteristics of schools and communities, by language of school system, New Brunswick

	New Brunswick				Effect size
	English language school system		French language school system		
	Average	(s.e.)	Average	(s.e.)	
School characteristics					
Schools offering extracurricular activities (%)	93.2	0.01	86.1	0.01	0.23
Average Number of students in the school	992	7.2	991	11.4	0.0
Negative teacher behaviours	0.01	0.01	0.73	0.01	1.07
Negative student behaviours	0.76	0.01	0.51	0.01	0.47
Teacher morale	-0.01	0.01	-0.22	0.01	0.2
Student-teacher ratio	17.9	0.03	17.2	0.06	0.49
Inadequacy of Instructional resources	-0.04	0.02	0.2	0.01	0.25
Shortage of teachers	0.52	0.01	0.72	0.02	0.22
Teacher with recent professional development (%)	76.3	0.46	50.1	0.69	0.78
Inadequacy of material resources	-0.33	0.02	-0.07	0.01	0.27
Computer availability	6.4	0.04	6.4	0.03	0.02
Teacher specialization (%)	65.7	0.38	78.8	0.89	0.56
School autonomy	-0.58	0.01	-0.86	0.02	0.36
Teacher participation to decision making	-0.37	0.01	-0.46	0.01	0.12
Community characteristics					
Adult unemployment (%)	10.4	0.15	14.3	0.07	0.64
White collar employment (%)	45.5	0.28	40.8	0.27	0.47
Post-secondary enrollment (%)	61.7	0.17	58.5	0.12	0.34
Post-secondary education (%)	51.6	0.22	42.7	0.19	0.98
University education (%)	25.8	0.18	20.2	0.14	0.57
Average income of adults over 25 (\$)	23,809	81	19,894	19	0.68
Average family income	50,638	154	43,862	53	0.62
Anglophones population (%)	81.1	0.23	32.5	0.53	2.21
Anglophones who speak english at home (%)	98.9	0.02	88.9	0.21	1.16
Francophones who speak french at home (%)	55.1	0.49	91.0	0.08	2.02
Anglophones who know french (%)	13.4	0.12	37.5	0.41	1.72
Francophones who know only french (%)	9.0	0.13	31.9	0.16	1.63

Note: (s.e.) is the standard error of the average. Items in bold indicate significant differences in average values of variables for French and English school systems where $p < .05$ AND effect size (ES) > 0.2 .



Table 3A
Student characteristics by language of school system, Quebec

	Quebec				Effect size
	English language school system		French language school system		
	Average	(s.e.)	Average	(s.e.)	
Number of 15-year-olds	8,103		72,435		
Individual characteristics					
Reading achievement	543	4.7	535	3.9	0.08
Student cultural activities	0.05	0.05	-0.03	0.03	0.09
Reading enjoyment	0.01	0.03	-0.08	0.03	0.08
Homework time	0.40	0.02	0.28	0.01	0.25
Career expectations	64.3	0.64	58.8	0.58	0.33
Percentage of students who expect to get a postsecondary education	95.7	0.6	93.6	0.7	0.10
Percentage of students who expect to go to university rather than college	80.8	1.6	58.8	1.6	0.49
Percentage of students with 30 minutes or more transportation time	30.1	2.1	19.8	1.6	0.24
Students participating in school extracurricular activities (%)	56.9	2.0	46.9	1.4	0.20
Students participating in non-school extracurricular activities (%)	60.1	1.5	52.9	1.2	0.14
Using computer at school at least several times per month (%)	38.7	2.5	37.9	1.5	0.02
Using internet at school at least several times per month (%)	36.6	2.5	34.1	1.4	0.05
Family characteristics					
Family socio-economic status	55.6	0.92	51.1	0.57	0.28
One or more parents with postsecondary education (%)	66.7	2.0	60.5	1.4	0.13
Students with 100 or more books at home (%)	62.6	1.8	39.0	1.4	0.49
Parental academic interest	0.13	0.04	0.11	0.02	0.01
Parental social interest	-0.07	0.03	-0.24	0.02	0.18
Home cultural possessions	0.13	0.04	-0.46	0.03	0.60
Home educational resources	0.09	0.03	-0.07	0.02	0.16
Computer at home (%)	89.1	1.3	78.6	1.2	0.29
Internet at home (%)	74.0	1.8	57.7	1.5	0.35
Student's school experience					
Disciplinary climate	0.25	0.05	0.06	0.03	0.20
Teacher-student relations	0.10	0.04	0.30	0.03	0.20
Teacher support	0.21	0.04	0.35	0.03	0.14

Note: (s.e.) is the standard error of the average. Items in bold indicate significant differences in average values of variables for French and English school systems where $p < .05$ AND effect size (ES) > 0.2 .


 Table 3B
Characteristics of schools and communities, by language of school system, Quebec

	Quebec				Effect size
	English language school system		French language school system		
	Average	(s.e.)	Average	(s.e.)	
School characteristics					
Schools offering extracurricular activities (%)	86.4	0.01	89.2	0.01	0.09
Average Number of students in the school	745	46.3	1,189	55.5	0.9
Negative teacher behaviours	0.05	0.11	0.29	0.08	0.28
Negative student behaviours	0.3	0.11	0.18	0.09	0.13
Teacher morale	-0.06	0.1	-0.05	0.08	0.01
Student-teacher ratio	15.9	0.35	17.4	0.36	0.51
Inadequacy of Instructional resources	-0.34	0.14	-0.68	0.08	0.32
Shortage of teachers	0.18	0.13	-0.15	0.09	0.3
Teacher with recent professional development (%)	57.6	4.54	41.6	3.57	0.44
Inadequacy of material resources	-0.39	0.08	-0.63	0.05	0.34
Computer availability	8.8	0.72	10.2	0.75	0.22
Teacher specialization (%)	81.5	2.76	85.6	2.05	0.19
School autonomy	-0.06	0.12	-0.23	0.07	0.22
Teacher participation to decision making	0.09	0.1	0.03	0.09	0.07
Community characteristics					
Adult unemployment (%)	10.3	0.52	10.2	0.31	0.02
White collar employment (%)	50.6	1.2	46.0	0.81	0.49
Post-secondary enrollment (%)	70.6	0.93	69.1	0.77	0.17
Post-secondary education (%)	52.0	1.31	46.7	0.91	0.49
University education (%)	27.1	1.45	19.5	0.92	0.68
Average income of adults over 25 (\$)	25,282	1,033	23,065	438	0.35
Average family income	54,673	2,742	49,212	1,102	0.33
Anglophones population (%)	16.8	0.92	8.2	0.74	1.12
Anglophones who speak english at home (%)	87.0	1.23	65.3	2.44	1.14
Francophones who speak french at home (%)	95.4	0.26	98.0	0.2	1.16
Anglophones who know french (%)	62.1	1.19	76.2	1.6	1.02
Francophones who know only french (%)	51.2	1.00	65.8	1.45	1.16

Note: (s.e.) is the standard error of the average. Items in bold indicate significant differences in average values of variables for French and English school systems where $p < .05$ AND effect size (ES) > 0.2.



Table 4A
Student characteristics by language of school system, Ontario

	Ontario				Effect size
	English language school system		French language school system		
	Average	(s.e.)	Average	(s.e.)	
Number of 15-year-olds	125,347		4,798		
Individual characteristics					
Reading achievement	536	3.5	474	6.6	0.66
Student cultural activities	0.20	0.03	0.17	0.06	0.03
Reading enjoyment	0.05	0.02	-0.12	0.06	0.16
Homework time	0.41	0.01	0.32	0.02	0.18
Career expectations	63.2	0.43	60.0	0.96	0.19
Percentage of students who expect to get a postsecondary education	94.1	0.5	93.6	1.0	0.02
Percentage of students who expect to go to university rather than college	78.7	1.2	71.0	2.5	0.18
Percentage of students with 30 minutes or more transportation time	15.9	1.0	31.2	2.3	0.37
Students participating in school extracurricular activities (%)	60.7	1.3	58.5	1.6	0.04
Students participating in non-school extracurricular activities (%)	65.1	1.1	60.9	1.9	0.09
Using computer at school at least several times per month (%)	52.9	1.5	58.2	1.9	0.11
Using internet at school at least several times per month (%)	45.8	1.6	55.3	2.2	0.19
Family characteristics					
Family socio-economic status	54.3	0.57	51.5	0.79	0.17
One or more parents with postsecondary education (%)	67.6	1.3	66.4	1.9	0.03
Students with 100 or more books at home (%)	60.4	1.2	46.6	2.4	0.28
Parental academic interest	0.09	0.02	0.07	0.06	0.01
Parental social interest	-0.18	0.02	-0.42	0.03	0.25
Home cultural possessions	0.05	0.03	-0.51	0.06	0.56
Home educational resources	0.05	0.03	-0.16	0.05	0.20
Computer at home (%)	93.1	0.7	91.3	1.0	0.07
Internet at home (%)	77.5	1.0	72.3	1.8	0.12
Student's school experience					
Disciplinary climate	0.16	0.03	0.26	0.03	0.12
Teacher-student relations	0.23	0.02	0.37	0.04	0.14
Teacher support	0.31	0.03	0.27	0.04	0.04

Note: (s.e.) is the standard error of the average. Items in bold indicate significant differences in average values of variables for French and English school systems where $p < .05$ AND effect size (ES) > 0.2.



Table 4B

Characteristics of schools and communities, by language of school system, Ontario

	Ontario				Effect size
	English language school system		French language school system		
	Average	(s.e.)	Average	(s.e.)	
School characteristics					
Schools offering extracurricular activities (%)	91.9	0.01	94.9	0.01	0.12
Average Number of students in the school	1,135	35.4	567	29.9	1.6
Negative teacher behaviours	-0.38	0.08	-0.14	0.1	0.27
Negative student behaviours	0.31	0.07	0.04	0.1	0.32
Teacher morale	-0.01	0.08	-0.06	0.08	0.05
Student-teacher ratio	16.1	0.25	14.3	0.2	0.73
Inadequacy of Instructional resources	-0.18	0.09	0.25	0.06	0.4
Shortage of teachers	-0.1	0.09	0.21	0.12	0.3
Teacher with recent professional development (%)	49.7	3.23	52.9	3.77	0.09
Inadequacy of material resources	-0.4	0.08	0.01	0.1	0.4
Computer availability	5.7	0.22	5.1	0.17	0.12
Teacher specialization (%)	84.8	1.39	68.6	2.51	0.78
School autonomy	0.58	0.08	-0.22	0.09	0.92
Teacher participation to decision making	-0.01	0.08	-0.24	0.11	0.24
Community characteristics					
Adult unemployment (%)	7.3	0.18	8.1	0.20	0.36
White collar employment (%)	46.9	0.72	47.5	0.85	0.07
Post-secondary enrollment (%)	68.0	0.55	68.5	0.4	0.08
Post-secondary education (%)	52.4	0.65	50.3	0.97	0.23
University education (%)	24.0	0.76	23.0	1.18	0.10
Average income of adults over 25 (\$)	27,602	365	27,264	338	0.07
Average family income	60,688	917	59,749	791	0.08
Anglophones population (%)	75.1	1.07	58.9	1.42	1.12
Anglophones who speak english at home (%)	98.3	0.11	97.7	0.13	0.43
Francophones who speak french at home (%)	32.6	1.2	64.8	1.64	1.95
Anglophones who know french (%)	8.5	0.55	22.7	0.86	1.74
Francophones who know only french (%)	3.5	0.19	10.9	0.57	1.38

Note: (s.e.) is the standard error of the average. Items in bold indicate significant differences in average values of variables for French and English school systems where $p < .05$ AND effect size (ES) > 0.2.



Table 5A
Student characteristics by language of school system, Manitoba

	Manitoba				Effect size
	English language school system		French language school system		
	Average	(s.e.)	Average	(s.e.)	
Number of 15-year-olds	12,613		274		
Individual characteristics					
Reading achievement	530	3.4	486	5.4	0.51
Student cultural activities	0.10	0.03	0.26	0.06	0.17
Reading enjoyment	-0.06	0.03	0.08	0.06	0.13
Homework time	0.24	0.01	0.32	0.03	0.16
Career expectations	59.4	0.54	60.6	1.15	0.07
Percentage of students who expect to get a postsecondary education	88.5	0.8	92.7	1.9	0.15
Percentage of students who expect to go to university rather than college	81.0	1.1	86.9	2.5	0.16
Percentage of students with 30 minutes or more transportation time	14.0	1.0	24.3	2.8	0.26
Students participating in school extracurricular activities (%)	62.6	1.2	68.2	2.9	0.12
Students participating in non-school extracurricular activities (%)	65.6	1.2	72.8	3.0	0.16
Using computer at school at least several times per month (%)	61.8	1.4	65.6	2.6	0.08
Using internet at school at least several times per month (%)	52.2	1.6	57.9	2.9	0.12
Family characteristics					
Family socio-economic status	50.3	0.52	54.8	0.99	0.28
One or more parents with postsecondary education (%)	55.3	1.4	72.7	2.8	0.37
Students with 100 or more books at home (%)	52.5	1.3	56.6	3.1	0.08
Parental academic interest	-0.06	0.03	0.03	0.07	0.09
Parental social interest	-0.33	0.02	-0.50	0.05	0.19
Home cultural possessions	-0.21	0.03	-0.44	0.07	0.23
Home educational resources	-0.17	0.03	-0.08	0.07	0.08
Computer at home (%)	84.9	0.9	90.2	2.0	0.16
Internet at home (%)	62.5	1.4	60.0	3.1	0.05
Student's school experience					
Disciplinary climate	0.22	0.03	0.53	0.05	0.33
Teacher-student relations	0.25	0.03	0.35	0.06	0.10
Teacher support	0.36	0.03	0.09	0.06	0.28

Note: (s.e.) is the standard error of the average. Items in bold indicate significant differences in average values of variables for French and English school systems where $p < .05$ AND effect size (ES) > 0.2.


 Table 5B
Characteristics of schools and communities, by language of school system, Manitoba

	Manitoba				Effect size
	English language school system		French language school system		
	Average	(s.e.)	Average	(s.e.)	
School characteristics					
Schools offering extracurricular activities (%)	95.0	0	96.1	0.01	0.06
Average Number of students in the school	737	14.7	467	2.8	0.88
Negative teacher behaviours	0.01	0.05	0.33	0.01	0.41
Negative student behaviours	0.24	0.06	-0.14	0.01	0.54
Teacher morale	0.13	0.05	0.73	0.02	0.59
Student-teacher ratio	16.6	0.2	15.7	0.01	0.46
Inadequacy of Instructional resources	0.13	0.05	0.09	0.01	0.05
Shortage of teachers	0.27	0.05	0.44	0.01	0.21
Teacher with recent professional development (%)	86.0	1.78	84.4	0.25	0.07
Inadequacy of material resources	-0.2	0.04	0.19	0.01	0.51
Computer availability	4.5	0.08	4.5	0.01	0.02
Teacher specialization (%)	73.4	1.43	61.8	0.22	0.54
School autonomy	0.57	0.05	0.67	0.01	0.1
Teacher participation to decision making	0.37	0.06	0.41	0.01	0.05
Community characteristics					
Adult unemployment (%)	5.9	0.16	5.5	0.03	0.11
White collar employment (%)	42.6	0.49	41.0	0.08	0.22
Post-secondary enrollment (%)	56.9	0.66	59.7	0.04	0.36
Post-secondary education (%)	47.5	0.53	47.0	0.1	0.06
University education (%)	23.2	0.41	22.4	0.11	0.11
Average income of adults over 25 (\$)	22,710	184	22,680	25	0.01
Average family income	50,101	403	50,953	64	0.14
Anglophones population (%)	75.5	0.57	68.8	0.11	0.76
Anglophones who speak english at home (%)	99.1	0.04	98.9	0	0.23
Francophones who speak french at home (%)	38.0	1.05	52.3	0.18	0.96
Anglophones who know french (%)	6.7	0.14	7.8	0.02	0.49
Francophones who know only french (%)	2.8	0.08	3.0	0	0.26

Note: (s.e.) is the standard error of the average. Items in bold indicate significant differences in average values of variables for French and English school systems where $p < .05$ AND effect size (ES) > 0.2.

announcements

Data releases

In the section “Data releases” we provide the titles of data released by the Centre for Education Statistics since the publication of the previous issue of *Education Quarterly Review*. Details on each release can be accessed free-of-charge from Statistics Canada’s website www.statcan.ca. Click on “The Daily” and “Previous issues”.

- Access to college and university: Does distance matter? (released June 4, 2003)
- University finance (released June 11, 2003)
- Paths to post-secondary education among 20-year-olds (released July 4, 2003)
- University degrees, diplomas and certificates awarded (released July 8, 2003)
- University tuition fees 2003-2004 (released August 12, 2003)
- Education Price Index (released September 4, 2003)
- Postsecondary Education Participation Survey 2002 (released September 10, 2003)
- School enrolments and teaching staff 1999-2000 (released September 18, 2003)
- Adult education and training, 1998 (released October 15, 2003)
- Secondary school graduations 2000-2001 (released November 18, 2003)
- Registered apprenticeship training programs 2001 (released November 20, 2003)
- Education indicators in Canada 2003 (released November 25, 2003)



Current data

Data series	Most recent data	
	Final ¹	Preliminary or estimate ²
A. Elementary/secondary		
Enrolment in public schools	1999–2000	2000–2001 ^e 2001–2002 ^e
Enrolment in private schools	1999–2000	
Enrolment in minority and second language education programs	1999–2000	
Secondary school graduation	2000–2001	
Educators in public schools	1999–2000	2000–2001 ^e 2001–2002 ^e
Educators in private schools	1999–2000	
Elementary/secondary school characteristics	1999–2000	
Financial statistics of school boards	1999–2000	
Financial statistics of private academic schools	1997–1998	1998–1999 ^p 1999–2000 ^e 2000–2001 ^e
Federal government expenditures on elementary/secondary education	1999–2000	2000–2001 ^e 2001–2002 ^e
Consolidated expenditures on elementary/secondary education	1999–2000	1999–2000 ^p 2000–2001 ^e 2001–2002 ^e
Education Price Index	2001	
B. Postsecondary		
University enrolments	1999–2000	2000–2001 ^p
University degrees granted	2000	discontinued
University continuing education enrolment	1996–1997	discontinued
Educators in universities	2000–2001	
Salaries and salary scales of full-time teaching staff at Canadian universities	2000–2001	2001–2002 ^p 2002–2003 ^p
Tuition and living accommodation costs at Canadian universities	2003–2004	
University finance	2001–2002	
College finance	2000–2001	2001–2002 ^e
Federal government expenditures on postsecondary education	2000–2001	2001–2002 ^e
Consolidated expenditures on postsecondary education	2000–2001	2001–2002 ^e
Community colleges and related institutions: enrolment and graduates	1999–2000	2000–2001 ^e
Trade/vocational enrolment	1999–2000	
College/trade teaching staff	1997–1998	1998–1999 ^p 1999–2000 ^p
International student participation in Canadian universities	1998–1999	

See notes at end of this table.



Current data (concluded)

Data series

C. Publications³

- Education in Canada* (2000)
- South of the Border: Graduates from the class of '95 who moved to the United States* (1999)
- After High School, the First Years* (1996)
- Participation in postsecondary education and family income* (1998)
- A report on adult education and training in Canada: Learning a living* (1998)
- Education Price Index – methodological report*
- A Guide to Statistics Canada Information and Data Sources on Adult Education and Training* (1996)
- A Statistical Portrait of Elementary and Secondary Education in Canada – Third edition* (1996)
- A Statistical Portrait of Education at the University Level in Canada – First edition* (1996)
- The Class of '90: A compendium of findings* (1996)
- The Class of '90 Revisited* (1997)
- The Class of '95: Report of the 1997 National Survey of 1995 Graduates* (1999)
- Education indicators in Canada: Report of the Pan-Canadian Indicators Program* (1999)
- Education at a Glance: OECD Indicators* (2000)
- In Pursuit of Equity in Education: Using International Indicators to Compare Equity Policies* (2001)
- Literacy Skills for the Knowledge Society* (1997)
- Literacy in the Information Age* (2000)
- International Adult Literacy Survey Monograph Series*
- Benchmarking Adult Literacy in North America: An International Comparative Study* (2001)
- Measuring up: The performance of Canada's youth in reading, mathematics and science* (2000)
- Growing Up in Canada: National Longitudinal Survey of Children and Youth* (1996)
- Children and youth at risk: Symposium report*
- At a crossroads: First results for the 18- to 20-year-old cohort of the Youth in Transition Survey* (2000)
- Current trends in teacher education and training: A symposium report* (2001)
- Canadian education and training services abroad: the role of contracts funded by international financial institutions* (2003, no. 2)
- National Graduates Survey: A profile of young Canadian graduates* (2000)
- Education in Canada: Raising the standard* (2001 Census)

Notes:


1. Indicates the most recent calendar year (e.g., 2000) or academic/fiscal year (e.g., 2000–2001) for which final data are available for all provinces and territories.
2. Indicates the most recent calendar year (e.g., 2000) or academic/fiscal year (e.g., 2000–2001) for which any data are available. The data may be preliminary (e.g., 2000^p), estimated (e.g., 2000^e) or partial (e.g., data not available for all provinces and territories).
3. The year indicated in parentheses denotes the year of publication. Some of these publications are prepared in co-operation with other departments or organizations. For information on acquiring copies of these reports, please contact Client Services, Culture, Tourism and the Centre for Education Statistics. Telephone: (613) 951-7608, toll free 1 800 307-3382; Fax: (613) 951-9040 or E-mail: educationstats@statcan.ca.

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Education at a glance

This section provides a series of social, economic and education indicators for Canada and the provinces/territories. Included are key statistics on the characteristics of the student and staff populations, educational attainment, public expenditures on education, labour force employed in education, and educational outcomes.

 Table 1 Education indicators, Canada, 1986 to 2001												
Indicator ¹	1986	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
	thousands											
Social context												
Population aged 0–3	1,475.0	1,573.4	1,601.7	1,610.6	1,596.1	1,595.1	1,578.6	1,560.7	1,550.7	1,453.9	1,390.6	1,366.8
Population aged 4–17	5,204.7	5,395.4	5,437.7	5,484.7	5,536.4	5,620.7	5,691.4	5,754.0	5,795.7	5,725.6	5,723.7	5,723.2
Population aged 18–24	3,286.3	2,886.1	2,869.2	2,869.6	2,852.0	2,823.4	2,816.8	2,833.0	2,865.4	2,895.9	2,921.2	2,948.7
Total population	26,203.8	28,120.1	28,542.2	28,940.6	29,248.1	29,562.5	29,963.7	30,358.5	30,747.0	30,553.8	30,769.6	31,081.9
Youth immigration ^f	25.9	61.2	61.2	73.1	68.3	65.9	66.3	70.4	61.2	..	..	..
	%											
Lone-parent families	18.8	15.3	14.4	14.8	14.9	15.1	14.8	14.9	15.4	15.7	..	..
Economic context												
GDP: Real annual percentage change	3.1	-1.8	-0.6	2.2	4.1	2.3	1.5	..	..	..	..	..
CPI: Annual percentage change	4.2	5.6	1.5	1.8	0.2	2.2	1.7	1.7	1.0	1.9	..	..
Employment rate	59.6	59.7	58.4	58.0	58.4	58.8	58.5	59.0	59.7	60.6	..	..
Unemployment rate	9.7	10.3	11.2	11.4	10.4	9.4	9.7	9.1	8.3	7.6	6.8	7.2
Student employment rate	34.4	38.0	35.1	34.0	34.2	33.3	34.8	32.5 ²	..	..	..	..
Families below low income cut-offs:												
Two-parent families	10.9	10.8	10.6	12.2	11.5	12.8	11.8	12.0	..	..	..	..
Lone-parent families	52.5	55.4	52.3	55.0	53.0	53.0	56.8	51.1	..	..	..	..
Enrolments												
	thousands											
Elementary/secondary schools	4,938.0	5,218.2	5,284.1	5,327.8	5,362.8	5,430.8	5,414.6	5,386.3	5,369.7	5,397.1	5,389.3 ^e	5,385.2 ^e
	%											
Percentage in private schools	4.6	4.7	4.9	5.0	5.1	5.1	5.2	5.3	5.5	5.6	..	..
	thousands											
College/trade/vocational, full-time ³	238.1	275.9	266.7	306.5	298.8	269.1	261.4	250.0	240.3 ^f	234.3	..	..
College/postsecondary, full-time	321.5	349.1	364.6	369.2	380.0	391.3	397.3	398.6	403.5	407.0 ^e	..	..

See notes at end of this table.

Table 1
Education indicators, Canada, 1986 to 2001 (concluded)

Indicator ¹	1986	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
	thousands											
College/postsecondary, part-time ⁴	96.4 ^e	125.7 ^e	106.6 ^e	98.4	90.8	87.7	87.1	91.6	91.4	91.4 ^e	..	..
Full-time university	475.4	554.0	569.5	574.3	575.7	573.2	573.6	573.1	580.4	590.7 ^e	..	..
Part-time university	287.5	313.3	316.2	300.3	283.3	273.2	256.1	249.7	246.0	257.5 ^e	..	..
Adult education and training	..	5,504	..	5,842	..	..	..	6,069	..	..	..	..
	%											
Participation rate	..	27	..	28	..	..	..	26	..	..	..	..
Graduates	thousands											
Secondary schools ⁵	..	260.7	272.9	281.4	280.4	301.7	304.5	307.8	310.6	319.7	321.7	..
College/trade/vocational ⁶	145.0	159.7	158.8	163.9	151.1	144.2	141.5 ^e	138.7 ^e	..	..	..	..
College/postsecondary	82.4	83.8	85.9	92.5	95.3	97.2	101.0	105.0	113.1	..	..	..
University/Bachelor's	101.7	114.8	120.7	123.2	126.5	127.3	128.0	125.8	124.9	127.1 ^e	..	..
University/Master's	15.9	18.0	19.4	20.8	21.3	21.4	21.6	21.3	22.0	23.2 ^e	..	..
University/Doctorate	2.2	2.9	3.1	3.4 ^e	3.6	3.7	3.9	4.0	4.0	4.0 ^e	..	..
Full-time educators	ratio											
Elementary/secondary schools	269.9	302.6	301.8	295.4	295.7	298.7	294.4	296.9	300.3	303.0	304.2	305.7
College/postsecondary/trade/vocational	30.6 ⁷	31.7 ⁷	31.8 ⁷	32.2 ⁷	31.0 ⁷	30.9 ⁷	31.5	31.0	31.2	27.8	..	..
University	35.4	36.8	37.3	36.9	36.4	36.0	34.6	33.7	33.7	33.8	..	..
	ratio											
Elementary/secondary pupil-educator ratio	16.5	15.5	15.7 ^e	16.1 ^e	16.1 ^e	16.1 ^e	16.1 ^e	16.3 ^e	16.4 ^e	15.9 ^e	15.9	..
Education expenditures	\$ millions											
Elementary/secondary	22,968.0	33,444.9	34,774.5	35,582.3	35,936.0	36,425.3	36,804.8	37,163.6	38,709.4	39,321.7 ^p	39,738.9 ^e	..
Vocational	3,275.1	4,573.8	5,380.9	5,631.2	6,559.0	6,185.2	5,301.8	7,953.4	8,946.2	8,391.9 ^p	8,669.9 ^e	..
College	2,999.0	3,870.7	4,075.3	4,105.9	4,207.1	4,531.8	4,477.9	4,689.5	4,781.7	5,498.5 ^p	4,923.2 ^e	..
University	7,368.7	11,254.8	11,569.8	11,736.8	11,857.9	11,802.0	11,600.7	12,220.3	12,863.2	14,549.0 ^p	13,168.3 ^e	..
Total education expenditures	36,610.8	53,144.2	55,800.5	57,056.2	58,560.0	58,944.3	58,185.2	62,026.7	65,300.4	67,761.1 ^p	66,500.2 ^e	..
	%											
As a percentage of GDP	7.3	7.9	8.0 ^r	7.9 ^r	7.7 ^r	7.3 ^r	7.0 ^r	7.1 ^r	7.1 ^r	..	..	..

Notes:

.. Figures not available.

^r Revised figures.^e Estimated figures.

1. See 'Definitions' following Table 2.

2. The figure is for April 1997.

3. The enrolments have all been reported as full-time based on a 'full-day' program, even though the duration of the programs varies from 1 to 48 weeks.

4. Excludes enrolments in continuing education courses, which had previously been included.

5. Source: Canadian Education Statistics Council. (Excludes adults for Quebec, Ontario and Alberta equivalencies.)

6. The majority of trade and vocational programs, unlike graduate diploma programs which are generally two or three years' duration, are short programs or single courses that may require only several weeks. A person successfully completing these short-duration programs or courses is considered a completer, not a graduate. These completers do not include persons in part-time programs.

7. Figures have been revised to include a complete count of staff in trade programs.



Table 2
Education indicators, provinces and territories

Indicator ¹	Canada	Newfound- land and Labrador	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	%						
Social and economic context							
Educational attainment², 2001							
Less than secondary diploma	24.4	35.7	30.9	27.4	30.6	31.4	21.5
Graduated from high school	19.6	15.0	15.3	13.6	19.4	15.7	21.7
Some postsecondary	7.0	4.8	6.4	7.1	5.2	5.6	6.8
Postsecondary certificate, diploma or university degree	48.9	44.6	47.4	51.9	44.8	47.2	50.0
Labour force participation rates by educational attainment, 2001							
Total	66.3	58.7	67.5	62.1	61.8	63.8	67.6
Less than secondary diploma	38.8	33.7	46.4	35.2	37.0	37.0	39.0
Graduated from high school	69.1	60.8	77.0	66.4	69.0	70.9	68.3
Some postsecondary	69.9	64.2	74.1	65.1	65.3	67.5	71.1
Postsecondary certificate, diploma or university degree	78.3	77.4	77.4	74.7	75.3	78.8	79.2
Unemployment rate, 2001	6.1	14.5	10.9	8.1	10.0	7.8	5.1
Costs							
Public and private expenditures on education as a percentage of GDP, 1994–1995	7.0	9.9	7.6	7.6	7.4	7.6	6.8
Public expenditures on education as a percentage of total public expenditures, 1994–1995	13.6	16.9	10.8	9.7	11.2	13.8	14.2
Elementary/secondary pupil–educator ratio, 1998–1999	15.9 ^a	14.5	16.6	16.5	16.9	14.4	16.4
Educational outcomes							
Secondary school graduation rates, 1999	76.7	79.5	81.3	80.4	84.8	84.2 ^{3,4}	77.3 ⁵
University graduation rate, 1998–1999	35.0	32.2	21.8	53.5	33.7	41.7	36.8
Unemployment rate by level of educational attainment, 2001							
Less than secondary diploma	10.1	27.6	20.0	11.7	19.6	13.0	6.9
Graduated from high school	5.8	14.3	13.1	8.1	9.6	7.5	5.2
Some postsecondary	6.7	14.4	11.6	8.7	9.2	9.5	5.6
Postsecondary certificate, diploma or university degree	5.1	10.0	6.6	7.1	7.0	6.1	4.7

See notes at end of this table.



Table 2
Education indicators, provinces and territories (concluded)

Indicator ¹	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon	Northwest Territories
	%					
Social and economic context						
Educational attainment², 2001						
Less than secondary diploma	27.8	28.6	19.3	18.5	..	..
Graduated from high school	21.0	20.6	19.2	22.5	..	..
Some postsecondary	6.6	7.0	9.1	9.8	..	..
Postsecondary certificate, diploma or university degree	44.6	43.9	52.3	49.2	..	..
Labour force participation rates by educational attainment, 2001						
Total	67.2	66.0	72.7	64.8	..	..
Less than secondary diploma	42.1	40.3	47.1	38.2	..	..
Graduated from high school	74.0	74.5	75.5	63.8	..	..
Some postsecondary	75.7	73.0	75.0	66.9	..	..
Postsecondary certificate, diploma or university degree	78.5	77.7	80.8	74.7	..	..
Unemployment rate, 2001	3.9	4.5	3.6	6.6	..	..
Costs						
Public and private expenditures on education as a percentage of GDP, 1994–1995	7.8	7.4	5.4	6.5	11.3	16.6
Public expenditures on education as a percentage of total public expenditures, 1994–1995	12.9	13.8	13.2	12.2	10.4	12.0
Elementary/secondary pupil–educator ratio, 1998–1999	15.6	16.2	16.8	16.9	12.7	13.5 ^e
Educational outcomes						
Secondary school graduation rates, 1999	74.3	75.0	63.3	73.4	60.4	40.1 ⁶
University graduation rate, 1998–1999	31.5	33.1	25.2	24.6	..	..
Unemployment rate by level of educational attainment, 2001						
Less than secondary diploma	6.3	7.7	5.2	11.5	..	..
Graduated from high school	3.2	3.9	3.4	6.5	..	..
Some postsecondary	4.2	6.4	4.1	7.3	..	..
Postsecondary certificate, diploma or university degree	3.4	3.5	3.2	5.5	..	..

Notes:

.. Figures not available.

^r Revised figures.^e Estimated figures.

1. See 'Definitions' following Table 2.

2. Parts may not add up to 100% due to rounding.

3. Starting in 1995, Quebec graduate data for regular day programs include individuals over the age of 20 who graduated from regular day programs.

4. Excludes "Formation professionnelle."

5. Excludes night school and correspondence courses for Ontario adults.

6. Includes graduates from Nunavut.

Definitions

Education indicators, Canada Table 1.

Year references are as follows: (1) *population* refers to July of the given year; (2) *enrolment* and *staff* refer to the academic year beginning in September of the given year; (3) *graduates* refers to number of persons graduating in the spring or summer of the given year; (4) *expenditures* refers to the fiscal year beginning in April of the given year.

1. Youth immigration

The number of persons aged 0 to 19 who are, or have been, landed immigrants in Canada. A landed immigrant is a person who is not a Canadian citizen by birth, but who has been granted the right to live in Canada permanently by Canadian immigration authorities.

2. Lone-parent families

The number of lone-parent families expressed as a percentage of the total number of families with children. A lone parent refers to a mother or a father, with no spouse or common-law partner present, living in a dwelling with one or more never-married sons and/or daughters. Sources: Statistics Canada, 1971 to 1986: *Lone-parent families in Canada*, Catalogue no. 89-522-XPE; 1991 to present: Small Area and Administrative Data Division.

3. Gross domestic product

The unduplicated value of production originating within the boundaries of Canada, regardless of the ownership of the factors of production. GDP can be calculated three ways: as total incomes earned in current production; as total final sales of current production; or as total net values added in current production. It can be valued either at factor cost or at market prices. Source: Statistics Canada, Industry, Measures and Analysis Division.

4. Consumer Price Index

An indicator of changes in consumer prices. It is defined as a measure of price change obtained by comparing, over time, the cost of a specific basket of commodities. Figures are annual averages.

5. Employment rate

The number of persons employed expressed as a percentage of the population 15 years of age and over, excluding institutional residents. Figures are annual averages.

6. Unemployment rate

The number of unemployed persons expressed as a percentage of the labour force.

7. Student employment rate

The number of persons aged 15 to 24 attending school on a full-time basis who were employed during the calendar year (excluding May through August), expressed as a percentage of the total number of full-time students 15 to 24 years of age.

8. Families below low income cut-offs

Low income cut-offs are a relative measure of the income adequacy of families. A family that earns less than one-half of the median adjusted family unit income is considered to be in difficult circumstances. The set of low income cut-offs is adjusted for the size of the area of residence and for family size. Source: Statistics Canada, *Low Income Persons, 1980 to 1995*, December 1996, Catalogue no. 13-569-XPB/XIB.

9. Adult education participation rate

The number of persons 17 years of age or over participating in adult education or training activities, expressed as a percentage of the total population 17 years of age or over. Excludes regular full-time students who are completing their initial schooling.

10. Elementary/secondary pupil-educator ratio

Full-time equivalent enrolment (enrolment in grades 1 to 12 [including Ontario Academic Credits] and ungraded programs, pre-elementary enrolment in provinces where attendance is full time, and half of the pre-elementary enrolment in other provinces) divided by the full-time equivalent number of educators.

11. Education expenditures

Includes expenditures of governments and of all institutions providing elementary/secondary and postsecondary education, and vocational training programs offered by public and private trade/vocational schools and community colleges.

Education indicators, provinces and territories Table 2.

The methodologies used to derive the indicators in Table 2 may differ from those used in other statistical tables of this section.

12. Educational attainment and labour force participation rates

Refers to the population aged 25 and over. Source: Statistics Canada, Labour Statistics Division.

13. Secondary school graduation rate

Source: Statistics Canada, 2001, Centre for Education Statistics, *Education in Canada 2000*, Catalogue no. 81-229-XPB.

14. University graduation rate

Number of degrees awarded at the undergraduate level, as a percentage of the population aged 22.

15. Unemployment rate by level of educational attainment

The number unemployed with a given level of education expressed as a percentage of the labour force with the same education for the population aged 25 and over. Upper secondary includes the final grade of secondary school.

EOR

Cumulative index

This index lists, by major subject area, the analytical articles published in *Education Quarterly Review*. Included are descriptions of education and education-related surveys conducted by Statistics Canada, provincial governments and institutions.

Enrolment

Increases in university enrolment: Increased access or increased retention?

Vol. 1, No. 1 (April 1994)

Enrolment changes in trade/vocational and preparatory programs, 1983–84 to 1990–91

Vol. 1, No. 1 (April 1994)

Two decades of change: College postsecondary enrolments, 1971 to 1991

Vol. 1, No. 2 (July 1994)

University enrolment trends

Vol. 2, No. 1 (March 1995)

International students in Canada

Vol. 3, No. 3 (October 1996)

Graduates

Predicting school leavers and graduates

Vol. 1, No. 2 (July 1994)

Attitudes of Bachelor's Graduates towards their Programs

Vol. 1, No. 2 (July 1994)

Male-female earnings gap among postsecondary graduates

Vol. 2, No. 1 (March 1995)

College and related institutions postsecondary enrolment and graduates survey

Vol. 2, No. 4 (January 1996)

Employment prospects for high school graduates

Vol. 3, No. 1 (May 1996)

Graduation rates and times to completion for doctoral programs in Canada

Vol. 3, No. 2 (July 1996)

Relationship between postsecondary graduates' education and employment

Vol. 3, No. 2 (July 1996)

Science and technology careers in Canada:

Analysis of recent university graduates

Vol. 4, No. 3 (February 1998)

The class of '90 revisited: 1995 follow-up of 1990 graduates

Vol. 4, No. 4 (May 1998)

Who are the disappearing youth? An analysis of non-respondents to the School Leavers Follow-up Survey, 1995

Vol. 6, No. 4 (August 2000)

Determinants of university and community college leaving

Vol. 6, No. 4 (August 2000)

Overqualified? Recent graduates and the needs of their employers

Vol. 7, No. 1 (November 2000)

Holding their own: Employment and earnings of postsecondary graduates

Vol. 7, No. 1 (November 2000)

Graduates' earnings and the job skills–education match

Vol. 7, No. 2 (February 2001)

Bachelor's graduates who pursue further postsecondary education

Vol. 7, No. 2 (February 2001)

School-to-work transition: A focus on arts and culture graduates

Vol. 7, No. 3 (May 2001)

Student loans: Borrowing and burden

Vol. 8, No. 4 (October 2002)

Relative earnings of British Columbia university graduates

Vol. 9, No. 1 (February 2003)

Good jobs, more debt: a profile of young graduates

Vol. 9, No. 2 (May 2003)

Teachers

Part-time university teachers: A growing group

Vol. 1, No. 3 (October 1994)

Teacher workload in elementary and secondary schools

Vol. 1, No. 3 (October 1994)

Employment income of elementary and secondary teachers and other selected occupations

Vol. 2, No. 2 (June 1995)

Renewal, costs and university faculty demographics

Vol. 2, No. 3 (September 1995)

Teacher workload and work life in Saskatchewan

Vol. 2, No. 4 (January 1996)

Are we headed toward a teacher surplus or a teacher shortage?

Vol. 4, No. 1 (May 1997)

Status of women faculty in Canadian universities

Vol. 5, No. 2 (December 1998)

Teacher workload and stress: A British Columbia perspective

Vol. 8, No. 3 (June 2002)

Hiring of part-time university faculty on the increase

Vol. 9, No. 3 (October 2003)

Finance

Education Price Index: Selected inputs, elementary and secondary level

Vol. 1, No. 3 (October 1994)

Does Canada invest enough in education? An insight into the cost structure of education in Canada

Vol. 1, No. 4 (April 1994)

School transportation costs

Vol. 2, No. 4 (January 1996)

Federal participation in Canadian education

Vol. 3, No. 1 (May 1996)

Funding public school systems: A 25-year review

Vol. 4, No. 2 (September 1997)

Changing patterns of university finance

Vol. 9, No. 2 (May 2003)

Flows and transition

Intergenerational change in the education of Canadians

Vol. 2, No. 2 (June 1995)

Educational outcome measures of knowledge, skills and values

Vol. 3, No. 1 (May 1996)

Interprovincial university student flow patterns

Vol. 3, No. 3 (October 1996)

Varied pathways: The undergraduate experience in Ontario

Vol. 4, No. 3 (February 1998)

Intergenerational education mobility: An international comparison

Vol. 5, No. 2 (December 1998)

Education: The treasure within

Vol. 6, No. 1 (October 1999)

Brain drain and brain gain: The migration of knowledge workers from and to Canada

Vol. 6, No. 3 (May 2000)

Pathways to the United States: Graduates from the class of '95

Vol. 6, No. 3 (May 2000)

100 years of education

Vol. 7, No. 3 (May 2001)

The school-to-work transition: What motivates graduates to change jobs?

Vol. 7, No. 4 (September 2001)

Accessibility

The increase in tuition fees: How to make ends meet?

Vol. 1, No. 1 (April 1994)

University enrolment and tuition fees

Vol. 1, No. 4 (December 1994)

Financial assistance to postsecondary students

Vol. 2, No. 1 (March 1995)

Student borrowing for postsecondary education

Vol. 3, No. 2 (July 1996)

Job-related education and training—who has access?

Vol. 4, No. 1 (May 1997)

Financing universities: Why are students paying more?

Vol. 4, No. 2 (September 1997)

Determinants of postsecondary participation

Vol. 5, No. 3 (March 1999)

Student debt from 1990–91 to 1995–96: An analysis of Canada Student Loans data

Vol. 5, No. 4 (July 1999)

University education: Recent trends in participation, accessibility and returns

Vol. 6, No. 4 (August 2000)

Women in engineering: The missing link in the Canadian knowledge economy

Vol. 7, No. 3 (May 2001)

Postsecondary participation: The effects of parents' education and household income

Vol. 8, No. 3 (June 2002)

Achievement and literacy

Computer literacy—a growing requirement

Vol. 3, No. 3 (October 1996)

Educational attainment—a key to autonomy and authority in the workplace

Vol. 4, No. 1 (May 1997)

Third International Mathematics and Science Study: Canada report, Grade 8

Vol. 4, No. 3 (February 1998)

Getting ahead in life: Does your parents' education count?

Vol. 5, No. 1 (August 1998)

A profile of NLSCY schools

Vol. 5, No. 4 (July 1999)

Parents and schools: The involvement, participation, and expectations of parents in the education of their children

Vol. 5, No. 4 (July 1999)

Academic achievement in early adolescence: Do school attitudes make a difference?

Vol. 6, No. 1 (October 1999)

How do families affect children's success in school?

Vol. 6, No. 1 (October 1999)

Neighbourhood affluence and school readiness

Vol. 6, No. 1 (October 1999)

Diversity in the classroom: Characteristics of elementary students receiving special education

Vol. 6, No. 2 (March 2000)

Children's school experiences in the NLSCY

Vol. 6, No. 2 (March 2000)

Parental involvement and children's academic achievement in the National Longitudinal Survey of Children and Youth, 1994–95

Vol. 6, No. 2 (March 2000)

From home to school: How Canadian children cope

Vol. 6, No. 2 (March 2000)

Third International Mathematics and Science Study: Canada report

Vol. 7, No. 4 (September 2001)

Factors affecting Grade 3 student performance in Ontario: A multilevel analysis

Vol. 7, No. 4 (September 2001)

Determinants of science and technology skills: Overview of the study

Vol. 8, No. 1 (December 2001)

Science and technology skills: Participation and performance in elementary and secondary school

Vol. 8, No. 1 (December 2001)

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