Educational Trajectories of Youth in New Brunswick: Factors Impacting Educational Pathways

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

Report #8

May 21, 2010

Undertaken by

Alix Duhaime-Ross, Tomasz Gluszynski, and Shunji Wang, Learning Policy Directorate, Strategic Policy and Research, Human Resources and Skills Development Canada

In collaboration with the New Brunswick Department of Education

Human Resources and Skills Development Canada   Ressources humaines et Développement des compétences Canada

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

Department of Education

Table of Contents

1.0 Introduction

Obtaining a post-secondary education is a crucial requirement for Canadian youth. There are many benefits to obtaining a post-secondary education, among which are lower rates of unemployment, greater job stability, and higher earnings.

The decision to pursue a post-secondary education is influenced by a number of factors, including parental involvement, career counselling, parental income and education levels, and student location.

2.0 Objective of this report

This report follows a previous analysis of factors related to educational choices made by young New Brunswickers*: Educational Trajectories of Youth in New Brunswick: The Impact of Exposure to Career Planning Services and Parental Involvement in Learning*. Student, household and external factors are examined to determine their impact on post-secondary pathways of New Brunswick youth of both linguistic sectors. Comparisons between New Brunswick and the rest of Canada are explored.

Findings from the research suggest:

- New Brunswick youth enrol in university at higher rates than youth nationally;
- parental education is an important factor in the likelihood of students pursuing PSE;
- while parental income is commonly associated with attendance at PSE, two-thirds of New Brunswick youth with parental income in the lowest quartile attempted some form of PSE;
- students who participated in French Immersion programmes, students with higher high school marks and students who have taken college preparatory courses are more likely to attend university; and
- student involvement in extra-curricular and volunteer activities is a predictor of PSE attendance.

3.0 Data and Methodology

The information contained in this report was obtained from the *Youth in Transition Study* (YITS). YITS is a longitudinal survey which was first administered in 2000. Students who wrote an international assessment, called the *Programme for International Student Assessment* (PISA) designed by the Organization for Economic Co-Operation and Development (OECD), were asked a range of questions related to their current family backgrounds, schooling, interests and aspirations.

PISA is administered in three-year cycles, measuring the skill and knowledge levels of 15-year old students in the areas of reading, mathematics and science. Thirty-two nations including Canada were represented in the first PISA assessment in 2000. By 2006, 57 nations participated, and in the spring of 2009, nearly 70 nations joined in the fourth cycle of PISA assessments.

During each of the cycles of PISA assessments, New Brunswick has been oversampled to achieve representative estimates for both the French and English school systems. Given the large sample, nearly every high school in both linguistic sectors participated.

At two year intervals, the same students who, at the age of 15, completed the PISA 2000 assessment and the original YITS written survey in 2000 are contacted by Statistics Canada telephone interviewers to complete follow-up surveys about their educational and labour market pathways. While there has been some attrition in both the New Brunswick and the national sample as each cycle in the YITS longitudinal survey has been completed, the sample size remains large enough for provincial analysis of the resulting data. The report that follows is based primarily on the results of Cycle 4 of the YITS longitudinal analysis.

The young New Brunswickers comprising the longitudinal PISA/YITS survey sample, and who graduated from high school, subsequently pursued three different post-secondary pathways:

those with a high school credential who did not attempt to pursue any sort of post-secondary education before the last time they were surveyed at 21 years of age;

those who attempted to pursue a university degree between the time they graduated from high school and 21 years of age; and

those who attempted to pursue other types of post-secondary education besides university – primarily community college, but also private training, apprenticeship, etc. – by 21 years of age.

This study of the YITS data sets out to determine which factors emerge as dominant influences on the post-secondary pathways of this cohort of New Brunswick youth.

The following report is intended to help inform the Government of New Brunswick's Self-Sufficiency Agenda. In *When Kids Come First* (2007), the Department of Education recognized the growing number of jobs requiring post-secondary education, and committed to find ways to encourage more young New Brunswickers to pursue post-secondary education and training in order to gain the skills they will need to build a sustainable future for New Brunswick.

4.0 Post-Secondary Pathways

The PISA/YITS Cycle 4 cohort of students, who were aged 15 when they were originally assessed and surveyed in 2000, had begun to graduate from high school by the time the first YITS follow-up survey was conducted in 2002. A small percentage of students were able to complete high school by the age of 16 (in 2001, one year after the initial survey), and throughout the following years, more and more students graduated from high school. The largest number graduated in 2002, when the majority were aged 17 years.

Five years after the initial survey was administered, virtually all New Brunswick students who had participated in the original PISA/YITS survey had successfully completed high school. When viewed nationally, New Brunswick had a higher proportion of students who graduated by age 21, at 95.5%, compared to the national average of 93%.

Multivariate analysis showed that a number of factors were related to the decision to enrol in post-secondary education.

5.0 Education Systems

New Brunswick is the only officially bilingual province in Canada. As such, it also possesses a unique structure with parallel education systems in French and English. The ratio of students in the English education system (anglophones) compared to the French education system (francophones) is roughly two-to-one.

By the age of 21, ninety-six percent of anglophone students had graduated, compared to ninety-four percent of francophone students.

As shown below in Table 1, a slightly higher percentage of francophone students chose to pursue post-secondary education as compared to anglophone students (81% and 78% respectively), and a slightly higher proportion of francophone students pursued non-university PSE.

Table 1: NB Participants in YITS (Cycle 4, 21 Years), Linguistic System and PSE

School System	Total Number	%	H.S. only Number	%	Other PSE Number	%	University Number	%
English	5,226	100	1,181	23	1,240	24	2,805	54
French	2,351	100	440	19	681	29	1,230	52

6.0 Gender

Figure 1 High school graduation rates by age and gender

Young women in New Brunswick graduated earlier than young men. YITS data indicate that 3670 young women from the original PISA/YITS sample had graduated from high school by 2002, compared to 2645 young men, suggesting that males took longer than females to complete their studies.

In a general Canadian context, women have outnumbered men in university enrolment for the last decade. In New Brunswick, women not only outnumbered men in PSE, but they were also more likely to have attempted PSE after statistically controlling for important factors such as parental education, income, grades, and reading proficiency.

7.0 Parental Education

Parental education has been shown in numerous previous studies to be an important indicator of the likelihood of students pursuing post-secondary education (PSE). Children of highly educated parents appear to be more likely to follow in the same footsteps and complete their own post-secondary education (if attempted) than children of parents with lower levels of PSE. Table 2 presents the data for New Brunswick YITS participants who completed high school, in light of parental education. Among those who did not pursue any further education after high school, 59% came from families where the parents had a

high school diploma or less, while 22% of those who chose to pursue a university credential originated from that background.

Table 2: NB Participants in YITS (Cycle 4, 21 Years) Parental Education and PSE

Parental Education	Total		H.S. only		Other PSE		University	
	Number	%	Number	%	Number	%	Number	%
High school or less	2,732	36	947	59	888	46	897	22
Non-University PSE	2,946	39	572	35	784	41	1,590	39
University	1,324	17	94	6	201	11	1,029	26
Graduate/Professional	575	8	8	n/a	48	2	519	13
Total	7,577	100	1,613	100	1,921	100	4,035	100

While 35% of students from families with a high school education or less chose not to pursue any PSE by the age of 21, the remaining 65% did pursue further education. They represent the "first generation" post-secondary students that are currently the focus of many provincial and federal incentives and initiatives. Nearly all children of parents with university degrees pursued some form of PSE. Among children of parents with Bachelor's degrees, only 7% did not attempt PSE, and among those whose parents had graduate degrees, only 1.4% did not attempt PSE.

8.0 Parental Income

Education levels are often associated with income. As a general observation, the higher the parental education the higher one can expect their individual and family incomes to be. Higher parental and family incomes, in turn, can translate into better supports for educational options, increased savings and funding for PSE, and enhanced learning environments.

**Table 3: NB Participants in YITS
(Cycle 4, 21 Years)
Parental Income and PSE**

Income Quartiles	Total		H.S. only		Other PSE		University	
	Number	%	Number	%	Number	%	Number	%
First (lowest)	2,676	100	917	34	809	30	950	36
Second	2,151	100	333	15	599	28	1,219	57
Third	1,634	100	277	17	336	21	1,021	62
Fourth (highest)	1,116	100	94	8	177	16	845	76

Note: The quartile cut-offs are based on national estimates

As shown in Table 3 above, YITS data indicate that New Brunswick students from higher income families tended to achieve higher levels of post-secondary educational outcomes. The differences in educational outcomes of students were most pronounced in the highest income quartiles. Seventy-six percent of the students who had parental income in the highest income quartile attempted university level education, while only eight percent had not attempted any post-secondary education by the age of 21. At the lowest income quartiles, the distribution was even, with roughly a third of students in each of the three educational outcome categories. Meanwhile, in the second and third income quartiles 85% and 83% had attempted to pursue at least some PSE by the age of 21.

9.0 Geographic Region

As shown in the two graphs below (Figures 2 and 3), participation rates in PSE (university and non-university) differed not only by parental income and education, but also by geographic region. Regardless of parental income and education, a greater proportion of New Brunswick students attended university compared to students in the rest of Canada. Figures for linguistic groups did not show significant differences.

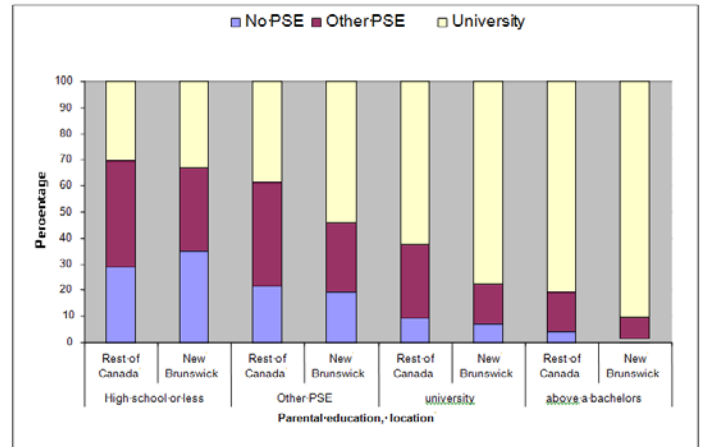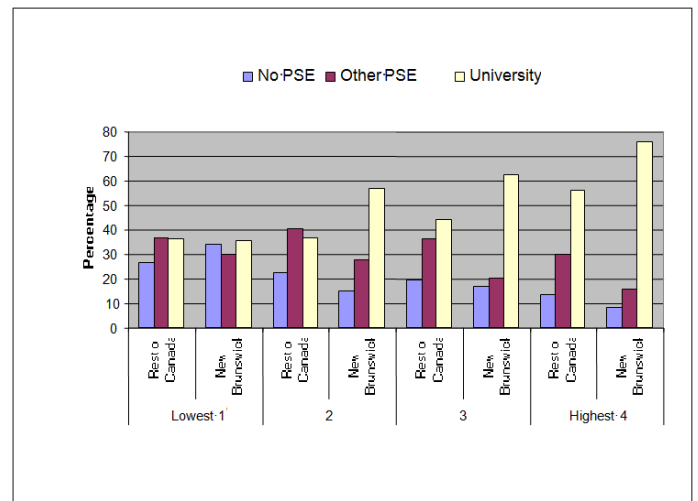**Figure 2 PSE participation rates by parental education and location**

Figure 3 PSE participation rates by parental income quartiles and location

10.0 Geographic Proximity to Post-Secondary Institutions

Previous studies have shown that geographic proximity to post-secondary education institutions is an important factor in encouraging increased participation rates, and that rural students tend to pursue college rather than university education. This is often attributed to proximity issues, with colleges more likely to be present within commutable distance for rural students, and universities more likely to be located in larger urban environments. While the community college network in New Brunswick has eleven campuses distributed throughout the province, the province's four universities also have regional campuses in Edmundston, Shippagan and Saint John. Table 4, below, shows the distribution of YITS participants from urban and rural environments in New Brunswick.

Table 4: NB Participants in YITS (Cycle 4, 21 Years), Community Origin and PSE

Community	Total Number	%	H.S. only Number	%	Other PSE Number	%	University Number	%
Urban	3,889	100	817	21	815	21	2,257	58
Rural	3,694	100	804	22	1,106	30	1,784	48

The proportion of students from urban and rural communities who attempted some form of post-secondary education is nearly identical 78.9% and 78.2% respectively), as is the proportion of urban and rural students who did not pursue any post-secondary education (21% and 22% respectively). Urban students were slightly more likely to choose university (58% vs. 48%) while rural students were more likely to attend other types of post-secondary institutions (30% vs. 21%).

Differences among rural and urban students were greater in the francophone sector. University attendance for students in urban areas surpassed those in rural areas by 18 percentage points for francophone students, while there was a difference of only 6 percentage points for anglophone students. Rural francophone students also had the highest rate of non-university PSE, surpassing urban francophone students by over 16 percentage points, while the difference for anglophone students was less than 5 percentage points.

11.0 Educational Programs

Students in French Immersion programs were more likely to choose post-secondary education than non-immersion students. This is true for both early and late Immersion. Participation in university was nearly 30 percentage points greater for immersion students. The effects of enrolment in the French Immersion program are difficult to ascertain given the variation in characteristics of immersion vs. non-immersion classes and the geographic distribution of immersion classes since the program is not available in all schools.

Figure 4 PSE participation rates by type of French second language program attended

12.0 Educational Outcomes

Reading proficiency and academic grades in high school are potentially important determinants of PSE attendance. High academic grades are often required by PSE institutions for admission, and reading proficiency indicates a certain basic level of knowledge.

Achievement on PISA

The academic skills of students graduating from high school are another important factor related to pursuing further education. A study using the the YITS database undertaken by Bussière et al. has shown that students with higher reading skills, as measured by PISA, have a much higher probability of pursuing post-secondary education that those with lower reading skills. Figure 5 shows the reading skills distribution among the different types of educational outcomes. University participants tended to have higher reading skills when measured previously at age 15. The student distribution tended to shift towards lower reading levels for those attempting other post-secondary education and those not pursuing any further education after high school.

### Figure 5 PSE participation rates by reading skill levels
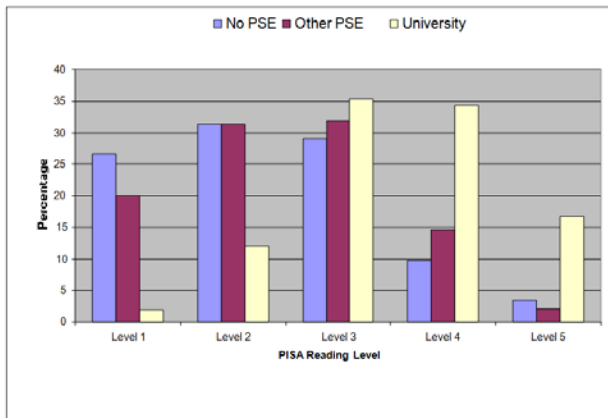
High School Marks

High school marks are generally considered to be a reflection of one's knowledge and skills, and are often the most important measures used in determining eligibility for admission to a post-secondary program. Figure 6, below, shows the

distribution of marks by students within different educational outcomes. As in the case of reading skills, students attempting university were more likely to have obtained higher high school marks as compared to those attempting non-university education or no PSE.

Figure 6 PSE participation rates by overall mark in final year of high school
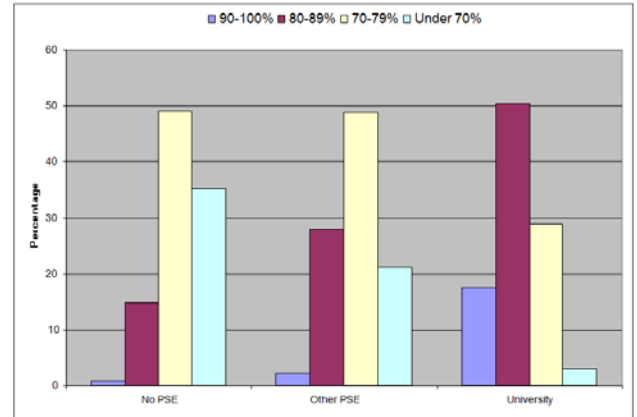
In the analysis of the rest of Canada, there was a clear pattern in the relationship between the two measures of knowledge and PSE attendance: higher reading proficiency and higher grades were associated with higher chances of PSE enrolment.

In the case of New Brunswick, though it appeared that reading proficiency was a significant predictor for overall PSE participation, this disappeared once information on overall grades was accounted for.

As for academic success, youth with overall grades in high school of 90-100% were over eight times more likely than a similar youth with grades in the 70-79% range to attend PSE. These results suggest that even at the broadest level of PSE (grouping both Other PSE and university participation together), grades play a prominent role in initial enrolment.

Enrolment in University Preparatory Courses

Pursuing post-secondary education is a choice most likely made during high school. Choosing a post-secondary education may require specific preparation activities. New Brunswick high school students are able to take university preparatory courses in English and mathematics (i.e., Level 1 courses). As shown in Table 5, a majority of those who participated in English and/or mathematics preparatory courses attempted university (59% for math and 58% for English). In general, most students who have attempted university have been exposed to these types of curricula. Results across linguistic and regional groups were similar.

Table 5: NB Participants in YITS (Cycle 4, 21 Years) H.S. Level 1 Courses and PSE

Preparation type	Total Number	%	H.S. only Number	%	Other PSE Number	%	University Number	%
Mathematics	5,790	76	993	17	1,368	24	3,429	59
English	5,837	77	1,007	17	1,422	24	3,408	58

13.0 Active Youth/Community Participation

Participation in volunteering and extracurricular activities has been shown to be a positive indicator in terms of pursuing further education. At age 15, two-thirds of New Brunswick students reported that they had participated in these activities.

New Brunswick youth who indicated that they participated in activities outside of the school curricula were more likely to have participated in PSE relative to youth that did not undertake such activities. Among those who participated in volunteering activities, 17% did not pursue further education after high school, and 58% attempted university (Table 6).

Table 6: NB Participants in YITS (Cycle 4, 21 Years) Other Activities and PSE[*]

Activity type	Total #	%	H.S. only #	%	Other PSE #	%	University #	%
Volunteering	5141	66	861	17(17)	1,235	25(32)	2,901	58(51)
Extracurricular	4997	66	867	17(17)	1,158	23(34)	3,116	61(50)

A very similar pattern was shown for those who participated in extracurricular activities. The percentage of people pursuing a university education was higher for those who participated in extracurricular activities or volunteered in New Brunswick compared to the rest of Canada. Non-university PSE was lower for extracurricular activity participants in New Brunswick compared to the rest of Canada.

Figure 7 PSE participation rates by exposure to volunteer and extracurricular activities, by location

---
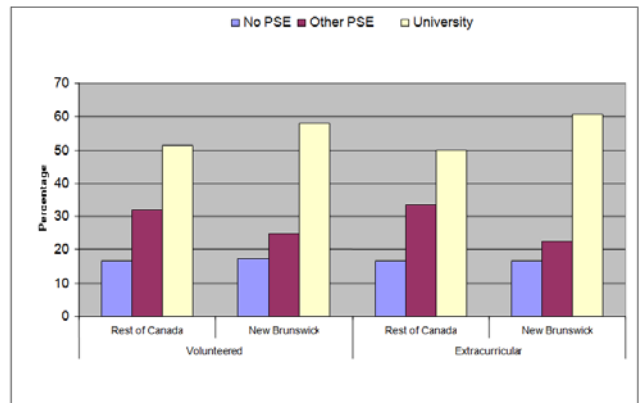
14.0 Immigrant Status/History

Most new immigrants to Canada settle in Ontario, Quebec and British Columbia, but some also decide to live in New Brunswick. Often these immigrants arrive with children who are put into very different educational environments than those they have experienced in their countries of origin and are required to adjust. Table 7 presents results based on different types of immigrant status. (Youth (Canadian born or not) from a family in which one of the parents (biological or not) was not Canadian born were over two and half times more likely to have tried university relative to youth who have Canadian born parents. There were no statistical differences at the Other PSE level). National comparisons are not possible due to sample size and differences in provincial school systems, i.e. CEGEP in Quebec.

Table 7: NB Participants in YITS (Cycle 4, 21 Years) Immigration Status and PSE

Immigration status	Total Number	%	H.S. only Number	%	Other PSE Number	%	University Number	%
Both parents Canadian	7,234	100	1,574	22	1,873	26	3,787	52
One parent not Canadian	238	100	47	20	39	16	152	64
Both parents not Canadian	86	100	.	.	.	.	.	.

15.0 Multivariate analysis

Thus far, the results presented in this report did not control for the effects of other variables. To gain a more meaningful understanding of effects of certain characteristics on participation in post-secondary education, it is important to analyze them in light of other characteristics. For example, bivariate analysis may identify a certain group of students whose participation in PSE is lower when compared to other groups. However, if one would analyze only the members of this group that have similar characteristics (for example income and level of education), the results might show that their probability of participating in post-secondary education is the same. Such results would suggest that it is not the membership in that particular group that is causing the lower rates of participation, but rather that the group on average possesses characteristics that are associated with lower participation rates. The implications of such findings would call for different types of policy intervention.

A logistic regression was performed for such analysis. A table showing all results can be found in appendix A. The results of this type of analysis illustrate the probability of attending PSE by an individual with a certain characteristic while holding other factors constant. One should note that while interpreting results of a logistics regression, one should be aware of the reference groups. The reference groups for all variables are listed in appendix B.

Adding to the bivariate analysis, females not only outnumbered males in PSE, but they were more likely to have attempted PSE after controlling for important factors such as parental education, income, high school grades and reading proficiency. New Brunswick females were 1.64 times more likely to have been in PSE relative to New Brunswick males. In a separate analysis for the rest of Canada, this probability ratio was slightly lower as females were 1.60 times more likely to have attempted PSE relative to males.

New Brunswick youth from families with higher parental education levels were substantially more likely to participate in PSE. Youth from a family in which the highest educational attainment of at least one parent was above a bachelor's degree (such as a first professional degree or a Master's) were almost 18 times more likely to have tried a PSE program relative to similar youth with parents having a high school diploma or less. Similarly, youth originating in a family with a parent with a bachelor's degree or equivalent were over 4 times more likely to have attempted PSE relative to youth with lower parental education).

Youth whose parents indicated that they put money aside for higher education were 1.4 times more likely to have tried PSE than remain a high school graduate, however, it's not statistically significant. In the case of rest of Canada, it was statistically significant (1.3 times more likely).

New Brunswick students who discussed their future education or career moves with their school councilor(s) were 1.5 times more likely to participate in PSE than those who did not. It was also true for the rest of Canada but the impact was smaller (1.2 times more likely).

Although a number of factors included in the model were not significant, having friends or family that dropped out of high school was a strong predictor of not attempting PSE. New Brunswick youth who had friends that had dropped out of high school were half as likely to have tried PSE. Similarly, those youth with family members – such

as a sibling, who had not completed high school were half as likely to attend PSE as youth without a family member who had dropped out of high school. In the case of rest of Canada, it was statistically significant that all three factors (family dropout, friend dropout and student dropout) were strong predictors of not attempting PSE.

Participation in extra-curricular activities is positively associated with PSE attendance. New Brunswick youth who reported participation in organized activities outside of school were 1.5 times more likely to have participated in PSE than those who did not report such activities. For the rest of Canada, it was statistically significant that students who reported participation in activities outside of school were 1.4 times more likely to have participated in PSE than those who did not participate.

16.0 Conclusion

Multivariate analyses on PSE participation revealed that New Brunswick youth with parents having PSE type education, higher overall grades, and with a social network that did not have any high school drop-out episodes or that included individuals who participated in activities outside of the school were more likely to have attempted education beyond high school.

Understanding the various factors that are involved as New Brunswick youth make the transition from public school to post-secondary education may help decision makers in planning for effective and efficient transitions.

Data from the Youth in Transition Survey (YITS) and results from the Programme for International Student Assessment (PISA) suggest a number of areas of focus for educational planners to consider, some of which may require partnerships between and among governmental agencies.

The objective of this report has been to determine trends among various data sets suggesting factors involved in the likelihood of New Brunswick youth pursuing post-secondary education. Among those trends we find:

Parental education is one important indicator of the likelihood of students pursuing post-secondary education. Children of highly educated parents appear to be more likely to follow in the same footsteps as their parents and complete their own post-secondary education.

Parental income is associated with youth attending a post-secondary institution, the higher the income the greater the likelihood of youth attempting university. New Brunswick youth appear to contradict this association. Roughly two-thirds of youth in New Brunswick with parental income in the lowest quartile attempted some form of post-secondary education.

There are higher participation rates in university for New Brunswick students compared to participation rates for the rest of Canada.

In New Brunswick the number of students from urban and rural communities who have attempted some form of post-secondary education is nearly identical. This suggests overall that geographic location and the proximity of institutions offering post-secondary education may be a smaller factor in preventing students from attending post-secondary institutions in New Brunswick than it is in the rest of Canada. However in New Brunswick, location appears to play a larger role for students of the French school system where university attendance for students in urban areas surpassed those in rural areas. Rural francophone students also had the highest rate of non-university PSE.

Learning activities prior to entering a post-secondary education can also be important in the decision to attend. Students from French Immersion programmes, students with higher level reading skills and high school outcomes, and students who have taken college preparatory courses are all more likely to attend university and other post-secondary education than students who did not have similar educational programming.

Student involvement in extra-curricular activities and volunteerism both appear to be predictors of New Brunswick Youth attending a post-secondary institution.

Francophone students tended to choose some form of post-secondary education at a greater rate than anglophone students; however, more than 75% of New Brunswick youth chose to pursue some form of post-secondary education by age 21.

The information contained in this report helps to enhance the information contained in a previous report, *Educational Trajectories of Youth in New Brunswick: The Impact of Exposure to Career Planning Services and Parental Involvement in Learning*, by determining which factors have had the greatest impact on the different post-secondary pathways of New Brunswick youth. As in that report, it is clear that learning programmes,

student reading skill levels and academic achievement, and family socio-economic status play a large role in determining the likelihood of youth attending a post-secondary institution. It is worth noting that, although these factors are influential, large proportions of New Brunswick youth do attend some form of post-secondary institution.

Appendix A

Results from logistics regressions for New Brunswick and the rest of Canada (see appendix B for full description of variables)
Only results from model 11 are discussed in the text.
Dependent variable – participation in PSE for New Brunswick

	Model 1 coef/sd	Model 2 coef/sd	Model 3 coef/sd	Model 4 coef/sd	Model 5 coef/sd	Model 6 coef/sd	Model 7 coef/sd	Model 8 coef/sd	Model 9 coef/sd	Model 10 coef/sd	Model 11 coef/sd
Females	2.130***	2.247***	2.248***	1.814***	1.630***	1.598**	1.633***	1.590**	1.678***	1.699***	1.641**
	(0.339)	(0.366)	(0.376)	(0.320)	(0.293)	(0.292)	(0.302)	(0.295)	(0.320)	(0.324)	(0.319)
Income quartile 1		0.216***	0.465***	0.544**	0.693	0.697	0.749	0.773	0.765	0.771	0.789
		(0.053)	(0.120)	(0.144)	(0.185)	(0.193)	(0.209)	(0.217)	(0.212)	(0.214)	(0.220)
Income quartile 2		0.398***	0.764	0.814	0.995	0.974	1.062	1.086	1.126	1.118	1.082
		(0.097)	(0.200)	(0.218)	(0.263)	(0.264)	(0.289)	(0.296)	(0.302)	(0.299)	(0.290)
Income quartile 3		0.727	1.221	1.231	1.469	1.550	1.634*	1.668*	1.650*	1.683*	1.658*
		(0.197)	(0.340)	(0.352)	(0.418)	(0.449)	(0.478)	(0.490)	(0.475)	(0.485)	(0.484)
ParEd - non-university			1.939***	1.735***	1.686***	1.716***	1.688***	1.622**	1.699***	1.697***	1.647**
			(0.339)	(0.315)	(0.316)	(0.333)	(0.331)	(0.323)	(0.338)	(0.339)	(0.329)
ParEd - university			5.746***	4.391***	4.308***	4.082***	3.974***	3.996***	4.322***	4.350***	4.459***
			(1.869)	(1.469)	(1.403)	(1.362)	(1.331)	(1.340)	(1.435)	(1.435)	(1.465)
ParEd - post-university			27.085***	21.373***	18.262***	16.773***	17.017***	15.579***	17.915***	17.583***	17.651**
			(27.370)	(21.683)	(19.279)	(18.168)	(18.503)	(16.452)	(19.915)	(19.491)	(20.100)
PISA reading 1				0.363***	0.582*	0.522**	0.572*	0.617	0.770	0.766	0.745
				(0.095)	(0.165)	(0.150)	(0.171)	(0.185)	(0.246)	(0.248)	(0.243)
PISA reading 2				0.582**	0.734	0.698	0.702	0.718	0.787	0.788	0.793
				(0.124)	(0.165)	(0.157)	(0.159)	(0.164)	(0.183)	(0.185)	(0.184)
PISA reading 4				2.004***	1.493	1.566*	1.497	1.465	1.356	1.341	1.329
				(0.507)	(0.390)	(0.425)	(0.406)	(0.403)	(0.376)	(0.372)	(0.373)
PISA reading 5				1.989*	0.993	1.152	1.032	0.999	0.963	0.956	0.920
				(0.804)	(0.419)	(0.496)	(0.442)	(0.434)	(0.417)	(0.408)	(0.387)
Grades 90%-100%					9.248***	9.342***	9.115***	9.051***	9.535***	9.377***	8.998***
					(5.798)	(5.821)	(5.650)	(5.548)	(5.868)	(5.757)	(5.433)
Grades 80%-89%					2.709***	2.819***	2.747***	2.721***	2.715***	2.674***	2.609***
					(0.618)	(0.647)	(0.632)	(0.629)	(0.626)	(0.619)	(0.602)
Grades 69% or less					0.462***	0.408***	0.424***	0.423***	0.435***	0.455***	0.472***
					(0.107)	(0.096)	(0.102)	(0.103)	(0.109)	(0.114)	(0.120)
English school system						2.551***	2.528***	2.549***	2.559***	2.544***	2.593***
						(0.537)	(0.567)	(0.587)	(0.604)	(0.602)	(0.628)
Foreign born						1.140	1.122	1.167	1.294	1.241	1.364
						(0.460)	(0.455)	(0.472)	(0.540)	(0.515)	(0.538)
Rural community						1.013	1.049	1.038	1.061	1.048	1.095
						(0.188)	(0.196)	(0.194)	(0.203)	(0.202)	(0.214)
Parents $ for PSE						1.448*	1.431*	1.439*	1.408*	1.381	1.364
						(0.274)	(0.274)	(0.278)	(0.280)	(0.274)	(0.271)
Prep - Math							1.312	1.334	1.447	1.428	1.476
							(0.459)	(0.469)	(0.511)	(0.512)	(0.532)
Prep - language							1.078	1.060	1.073	1.093	1.091
							(0.379)	(0.375)	(0.383)	(0.395)	(0.396)
Pre-elemnt immersion							2.004	1.935	2.052	2.124	1.935
							(1.099)	(1.028)	(1.070)	(1.143)	(0.997)
Element. Immersion (1-6)							1.197	1.179	1.041	1.035	1.062
							(0.319)	(0.311)	(0.279)	(0.278)	(0.282)
Element. Immersion (7-10)							1.522	1.478	1.346	1.320	1.318
							(0.490)	(0.484)	(0.438)	(0.428)	(0.428)
Parent talk - experience								1.243	1.351	1.338	1.405
								(0.389)	(0.421)	(0.419)	(0.443)
Parent talk - future								0.911	0.873	0.874	0.870
								(0.166)	(0.163)	(0.164)	(0.165)
Future info - teacher								1.066	1.043	1.053	1.007
								(0.225)	(0.222)	(0.224)	(0.216)
Future info - councillor								1.560**	1.657**	1.619**	1.524*
								(0.352)	(0.382)	(0.375)	(0.348)
Friend dropout									0.490***	0.495***	0.491***
									(0.109)	(0.111)	(0.111)
Family dropout									0.473**	0.486**	0.482**
									(0.160)	(0.165)	(0.162)
Student dropout										0.560	0.573
										(0.262)	(0.272)
Activities out of school											1.523**
											(0.298)
Volunteer activities											1.297
											(0.261)
Number of observations	1,393	1,393	1,393	1,393	1,393	1,393	1,393	1,393	1,393	1,393	1,393
Adjusted R2	0.023	0.076	0.128	0.171	0.223	0.246	0.252	0.257	0.273	0.275	0.283

note: .01 - ***; .05 - **; .1 - *;

Dependent variable – participation in PSE for rest of Canada

	Model 1 coef/sd	Model 2 coef/sd	Model 3 coef/sd	Model 4 coef/sd	Model 5 coef/sd	Model 6 coef/sd	Model 7 coef/sd	Model 8 coef/sd	Model 9 coef/sd	Model 10 coef/sd	Model 11 coef/sd
Females	1.814*** (0.118)	1.883*** (0.123)	1.950*** (0.129)	1.625*** (0.111)	1.494*** (0.106)	1.494*** (0.108)	1.567*** (0.114)	1.533*** (0.113)	1.606*** (0.118)	1.573*** (0.117)	1.590*** (0.119)
Income quartile 1		0.383*** (0.037)	0.629*** (0.064)	0.731*** (0.077)	0.680*** (0.074)	0.704*** (0.080)	0.702*** (0.080)	0.705*** (0.080)	0.737*** (0.085)	0.752** (0.089)	0.773** (0.091)
Income quartile 2		0.506*** (0.050)	0.759*** (0.080)	0.827* (0.091)	0.781** (0.088)	0.789** (0.091)	0.779** (0.091)	0.782** (0.091)	0.791** (0.093)	0.781** (0.093)	0.799* (0.096)
Income quartile 3		0.668*** (0.069)	0.857 (0.092)	0.878 (0.097)	0.847 (0.096)	0.829 (0.096)	0.819* (0.095)	0.818* (0.095)	0.819* (0.096)	0.820* (0.097)	0.829 (0.098)
ParEd - non-university			1.446*** (0.106)	1.341*** (0.102)	1.334*** (0.106)	1.320*** (0.106)	1.347*** (0.109)	1.344*** (0.109)	1.308*** (0.107)	1.317*** (0.108)	1.312*** (0.108)
ParEd - university			3.657*** (0.371)	2.930*** (0.307)	2.677*** (0.286)	2.395*** (0.259)	2.383*** (0.260)	2.390*** (0.261)	2.335*** (0.253)	2.329*** (0.260)	2.295*** (0.257)
ParEd - post-university			7.943*** (1.589)	5.368*** (1.092)	4.856*** (1.010)	3.998*** (0.860)	4.082*** (0.888)	4.050*** (0.879)	3.983*** (0.870)	3.784*** (0.830)	3.749*** (0.824)
PISA reading 1				0.321*** (0.044)	0.395*** (0.059)	0.361*** (0.054)	0.360*** (0.055)	0.368*** (0.056)	0.404*** (0.062)	0.405*** (0.062)	0.400*** (0.061)
PISA reading 2				0.614*** (0.058)	0.702*** (0.069)	0.688*** (0.069)	0.677*** (0.068)	0.686*** (0.069)	0.699*** (0.071)	0.684*** (0.070)	0.680*** (0.070)
PISA reading 4				1.887*** (0.161)	1.541*** (0.137)	1.578*** (0.141)	1.520*** (0.138)	1.515*** (0.137)	1.473*** (0.135)	1.458*** (0.134)	1.456*** (0.134)
PISA reading 5				3.883*** (0.510)	2.403*** (0.339)	2.420*** (0.343)	2.327*** (0.330)	2.316*** (0.328)	2.196*** (0.313)	2.147*** (0.309)	2.143*** (0.310)
Grades 90%-100%					2.865*** (0.617)	2.784*** (0.598)	2.705*** (0.582)	2.700*** (0.581)	2.645*** (0.553)	2.754*** (0.583)	2.670*** (0.565)
Grades 80%-89%					2.134*** (0.200)	2.113*** (0.198)	2.044*** (0.192)	2.036*** (0.191)	2.024*** (0.191)	2.071*** (0.197)	2.041*** (0.194)
Grades 69% or less					0.483*** (0.043)	0.473*** (0.043)	0.487*** (0.044)	0.493*** (0.045)	0.496*** (0.046)	0.530*** (0.049)	0.537*** (0.050)
English school system						0.982 (0.080)	0.787** (0.074)	0.802** (0.076)	0.839* (0.081)	0.897 (0.088)	0.931 (0.092)
One parent not Cda						1.568*** (0.206)	1.538*** (0.204)	1.536*** (0.202)	1.585*** (0.208)	1.619*** (0.216)	1.613*** (0.216)
Two parents not Cda						2.553*** (0.383)	2.470*** (0.375)	2.496*** (0.382)	2.373*** (0.360)	2.284*** (0.348)	2.346*** (0.360)
Rural community						0.862* (0.068)	0.869* (0.069)	0.865* (0.069)	0.871* (0.070)	0.834** (0.067)	0.839** (0.068)
Parents $ for PSE						1.359*** (0.105)	1.364*** (0.106)	1.366*** (0.105)	1.354*** (0.104)	1.326*** (0.105)	1.325*** (0.105)
Prep - Math							1.860*** (0.163)	1.870*** (0.164)	1.818*** (0.159)	1.713*** (0.154)	1.721*** (0.155)
Prep - language							0.460*** (0.046)	0.457*** (0.045)	0.471*** (0.047)	0.468*** (0.048)	0.460*** (0.047)
Pre-elemnt immersion							0.980 (0.146)	0.999 (0.148)	1.010 (0.153)	1.001 (0.155)	0.998 (0.156)
Element. Immersion (1-6)							1.027 (0.170)	1.035 (0.171)	1.029 (0.172)	1.081 (0.187)	1.080 (0.186)
Element. Immersion (7-10)							1.794** (0.493)	1.834** (0.503)	1.891** (0.525)	1.820** (0.488)	1.777** (0.479)
Parent talk - experience								0.982 (0.120)	0.966 (0.119)	0.972 (0.121)	0.963 (0.120)
Parent talk - future								0.995 (0.073)	1.007 (0.074)	1.043 (0.078)	1.043 (0.078)
Future info - teacher								1.111 (0.086)	1.094 (0.085)	1.113 (0.087)	1.091 (0.086)
Future info - councillor								1.153* (0.097)	1.154* (0.098)	1.175* (0.101)	1.164* (0.101)
Friend dropout									0.602*** (0.052)	0.638*** (0.056)	0.638*** (0.056)
Family dropout									0.590*** (0.072)	0.605*** (0.077)	0.616*** (0.079)
Student dropout										0.218*** (0.034)	0.222*** (0.034)
Activities out of school											1.356*** (0.109)
Volunteer activities											1.045 (0.086)
Number of observations	13,112	13,112	13,112	13,112	13,112	13,112	13,112	13,112	13,112	13,112	13,112
Adjusted R2	0.014	0.032	0.078	0.139	0.173	0.190	0.200	0.201	0.210	0.230	0.233

note: .01 - ***; .05 - **; .1 - *;

Appendix B

Variable description

Females – variable representing females (males are the reference group)

Income quartile 1 – variable representing those in the lowest parental income quartile (fourth quartile is the reference group)

Income quartile 2 – variable representing those in the second parental income quartile (fourth quartile is the reference group)

Income quartile 3 – variable representing those in the third parental income quartile (fourth quartile is the reference group)

ParEd – non-university – variable representing those whose parents attained non-university level education or less (those with less than PSE is the reference group)

ParEd – university – variable representing those whose parents attained bachelor level education (those with less than PSE is the reference group)

ParEd – post-university – variable representing those whose parents attained post-bachelor level of education (those with less than PSE is the reference group)

PISA reading 1 – variable representing those in the lowest level of reading proficiency as measured by PISA (those in the third level is the reference group)

PISA reading 2 – variable representing those in the second level of reading proficiency as measured by PISA (those in the third level is the reference group)

PISA reading 4 – variable representing those in the fourth level of reading proficiency as measured by PISA (those in the third level is the reference group)

PISA reading 5 – variable representing those in the highest level of reading proficiency as measured by PISA (those in the third level is the reference group)

Grades 90%-100% - variable representing those in the 90%-100% grade range in last year of high school (those in the 70%-79% is the reference group)

Grades 80%-89% - variable representing those in the 80%-89% grade range in last year of high school (those in the 70%-79% is the reference group)

Grades 60% or less - variable representing those in the 60% or less grade range in last year of high school (those in the 70%-79% is the reference group)

English school system – variable representing those in the English school system at age 15 (those in the French school system is the reference group)

One parent not Cda – variable representing those whose one parent was born outside of Canada (those whose both parents were born in Canada is the reference group)

Two parents not Cda – variable representing those whose both parents were born outside of Canada (those whose both parents were born in Canada is the reference group)

Rural community – variable representing those who were living in rural communities at are 15 (those living in urban communities is the reference group)

Parents $ for PSE – variable representing those whose parents had money saved for their PSE (those whose parents did not save money for PSE is the reference group)

Prep-math – variable representing those who were enrolled in PSE mathematics preparatory courses at age 15 (those not enrolled is the reference group)

Prep-language – variable representing those who were enrolled in PSE language preparatory courses at age 15 (those not enrolled is the reference group)

Pre-element. immersion – variable representing those who attended pre-elementary immersion (those not attending is the reference group)

Element. immersion (1-6) – variable representing those who attended elementary immersion in grades 1 to 6 (those not attending is the reference group)

Element. Immersion (7-10) – variable representing those who attended elementary immersion in grades 7 to 10 (those not attending is the reference group)

Parent talk-experience – variable representing those whose parents reported frequent (weekly or daily) conversations with their children about experiences at school (those with less frequent conversations or no conversations is the reference group)

Parent talk-future – variable representing those whose parents reported frequent (weekly or daily) conversations with their children about future educational and career moves (those with less frequent conversations or no conversations is the reference group)

Future info-teacher – variable representing those who discussed with their teacher(s) future education or career moves (those not discussing is the reference group)

Future info-councillor – variable representing those who discussed with their school councillor(s) future education or career moves (those not discussing is the reference group)

Friend dropout – variable representing those who reported to have friends who dropped out of high school (those not reporting is the reference group)

Family dropout – variable representing those who reported to family member(s) who dropped out of high school (those not reporting is the reference group)

Student dropout – variable representing those who reported to have experienced a high school dropout episode themselves (those with out a dropout episode is the reference group)

Activities out of school – variable representing those who reported participation in organized activities outside of school at age 15 (those not reporting such activities is the reference group)

Volunteering activities – variable representing those who reported participation in volunteering activities at age 15 (those not reporting such activities is the reference group)