

I made it!

Future to Discover:
[Post-secondary Impacts Report]



CANADA MILLENNIUM SCHOLARSHIP FOUNDATION
FONDATION CANADIENNE DES BOURSES D'ÉTUDES DU MILLÉNAIRE

SRDC Board of Directors

Chair

Richard A. Wagner

Senior partner, Norton Rose LLP

Members

Jocelyne Bourgon

President, Public Governance International

Monica Boyd

Professor of Sociology, University of Toronto

Yvon Fortin

John Helliwell

Co-Director, program on Social Interactions, Identity and Well-Being, Canadian Institute for Advanced Research

Suzanne Herbert

Sharon Manson Singer

Former President, Canadian Policy Research Networks

Ian Stewart

Published in 2012 by
the Social Research and
Demonstration Corporation
55 Murray Street, Suite 400,
Ottawa, Ontario
K1N 5M3

Tel.: 613-237-4311
Fax: 613-237-5045
Web: www.srdc.org

National Library of Canada
Cataloguing in Publication

Social Research and Demonstration Corporation
Future to Discover: Post-secondary Impacts Report

Graphic Design: Accurate Design and
Communications Inc.

The opinions expressed in this research document
are those of the authors and do not represent
official policies of organizations that may have
provided support, financial or otherwise, for
this project.

Future to Discover: [Post-secondary Impacts Report]

Reuben Ford, Research Director

Marc Frenette

Claudia Nicholson

Isaac Kwakye

Taylor Shek-wai Hui

Judith Hutchison

Sabina Dobrer

Heather Smith Fowler

Sophie Hébert

Produced by:



CANADA MILLENNIUM SCHOLARSHIP FOUNDATION
FONDATION CANADIENNE DES BOURSES D'ÉTUDES DU MILLÉNAIRE

In Collaboration with:



October 2012

Table of Contents

1	Preface Acknowledgements	86	Chapter 6 Post-secondary Impacts of Combining <i>Future to Discover</i> Interventions for New Brunswick Lower-income Families
2	Executive Summary	88	Chapter Summary
14	Chapter 1 An Introduction to the <i>Future to Discover</i> Pilot Project	88	Impacts of Offering <i>Explore Your Horizons</i> and <i>Learning Accounts</i>
16	Chapter Summary	103	Summary of Post-secondary Impacts by Sector
16	The Research Problem: Rationale and Design of the <i>Future to Discover</i> Pilot Project	104	Chapter 7 Cost-benefit Analyses of <i>Explore Your Horizons</i> and <i>Learning Accounts</i>
18	Overview of Interventions and Logic Models	106	Chapter Summary
21	Overview of <i>Future to Discover</i> 's Research Samples and Data Sources	106	Methodology
26	Summary of Early and Interim Impacts	109	What were the Costs and Benefits of the Various Components of <i>Future to Discover</i> ?
27	Purpose and Structure of the Report	112	The Costs and Benefits of the Interventions
28	Chapter 2 Implementation of <i>Explore Your Horizons</i> and <i>Learning Accounts</i>	117	Interpreting the Findings
30	Chapter Summary	118	Chapter 8 Lessons Learned from the <i>Future to Discover</i> Pilot Project
30	Implementation of <i>Explore Your Horizons</i>	120	Implementation and Delivery
34	Implementation of <i>Learning Accounts</i>	120	Post-secondary Enrolment Impacts
40	Chapter 3 Data Sources and Estimation Methodology	120	Cost-benefit Analysis
42	Chapter Summary	121	Conclusion
42	The Data Sources Used in the Estimation of Impacts	122	Appendices
43	Methodology for Estimating Impacts	123	Appendix 1: Analysis of Non-response Bias in the <i>Future to Discover</i> 66-month Follow-up Survey
46	Chapter 4 Post-secondary Impacts of <i>Explore Your Horizons</i>	127	Appendix 2: Relative and Incremental Impacts of <i>Future to Discover</i> Pilot Project for New Brunswick Lower-income Families
48	Chapter Summary	140	Appendix 3: Impacts of <i>Explore Your Horizons</i> and <i>Learning Accounts</i> on PSE Enrolment by Month
48	Impacts of Offering <i>Explore Your Horizons</i>	143	Appendix 4: The Role of <i>Future to Discover</i> 's Interventions in Students' Decision-making — Lessons Learned from the National Longitudinal Panel Study
65	Summary of Post-secondary Impacts by Province and Sector	143	Appendix 5: Additional Cost-benefit Analyses
66	Chapter 5 Post-secondary Impacts of <i>Learning Accounts</i>	162	Appendix 6: Non-experimental Analyses of <i>Explore Your Horizons</i> Workshop Attendance and Post-secondary Enrolment
68	Chapter Summary	164	References
68	Impacts of Offering <i>Learning Accounts</i>		
84	Summary of Post-secondary Impacts by Sector		

List of Tables and Figures

3	Table ES.1: The Six Components of <i>Explore Your Horizons</i>	62	Table 4.14: <i>EYH</i> Impacts on Career Options Information
5	Table ES.2: The Experimental Contrasts in the <i>Future to Discover</i> Pilot Project	63	Table 4.15: <i>EYH</i> Impacts on Resilience
8	Figure ES.1: Attendance at <i>Explore Your Horizons</i> by Session — All Participants	63	Table 4.16: <i>EYH</i> Impacts on Hardship
9	Figure ES.2: Impacts of <i>EYH</i> on Post-secondary Enrolment	64	Table 4.17: <i>EYH</i> Impacts on Family Formation
10	Figure ES.3: Impacts of <i>LA</i> on Post-secondary Enrolment	69	Table 5.1: <i>Learning Accounts</i> Impacts on PSE Enrolment
10	Figure ES.4: Impacts of <i>EYH plus LA</i> on Post-secondary Enrolment	69	Table 5.2: <i>Learning Accounts</i> Impacts on PSE Enrolment by Type of Institution
19	Table 1.1: Logic Model for <i>Explore Your Horizons</i>	71	Table 5.3: <i>Learning Accounts</i> Impacts on PSE Applications
20	Table 1.2: Logic Model for <i>Learning Accounts</i>	72	Table 5.4: <i>Learning Accounts</i> Impacts on PSE Applications by Type of Institution
22	Table 1.3: The Experimental Contrasts in <i>Future to Discover</i>	74	Table 5.5: <i>Learning Accounts</i> Impacts on Financial Aid Knowledge and Application
25	Table 1.4: The Original Sample Assignment to Experimental Groups in <i>Future to Discover</i>	75	Table 5.6: <i>Learning Accounts</i> Impacts on Covering Education Costs — Loans
25	Table 1.5: Analytical Assignment to LILE and Non-LILE Groups	76	Table 5.7: <i>Learning Accounts</i> Impacts on Covering Education Costs — Non-repayable Sources
31	Table 2.1: The Six Components of <i>Explore Your Horizons (EYH)</i>	77	Table 5.8: <i>Learning Accounts</i> Impacts on Covering Education Costs — Own Sources
32	Figure 2.1: Attendance at <i>Explore Your Horizons</i> by Session — All Participants	78	Table 5.9: <i>Learning Accounts</i> Impacts on High School Graduation
33	Figure 2.2: Attendance at <i>Explore Your Horizons</i> Workshop Sessions (not including orientation sessions) by Sample Sub-group and Program Assignment	79	Table 5.10: <i>Learning Accounts</i> Impacts on High School Drop-out
35	Table 2.2: Pattern of Instalments and Payments for <i>Learning Accounts (LA)</i>	80	Table 5.11: <i>Learning Accounts</i> Impacts on the Link between Education and Future Earnings
37	Figure 2.3: Total Amount of <i>Learning Accounts</i> Payments Actually Received	80	Table 5.12: <i>Learning Accounts</i> Impacts on Valuation of Going into Debt to Pay for School
51	Table 4.1: <i>EYH</i> Impacts on PSE Enrolment	81	Table 5.13: <i>Learning Accounts</i> Impacts on Satisfaction with Education Choices
52	Table 4.2: <i>EYH</i> Impacts on PSE Enrolment by Type of Institution	81	Table 5.14: <i>Learning Accounts</i> Impacts on Career Options Information
53	Table 4.3: <i>EYH</i> Impacts on PSE Applications	82	Table 5.15: <i>Learning Accounts</i> Impacts on Resilience ¹
54	Table 4.4: <i>EYH</i> Impacts on PSE Applications by Type of Institution	82	Table 5.16: <i>Learning Accounts</i> Impacts on Hardship
56	Table 4.5: <i>EYH</i> Impacts on Financial Aid Knowledge and Application	83	Table 5.17: <i>Learning Accounts</i> Impacts on Family Formation
57	Table 4.6: <i>EYH</i> Impacts on Covering Education Costs — Loans	89	Table 6.1: <i>EYH plus Learning Accounts</i> Impacts on PSE Enrolment
58	Table 4.7: <i>EYH</i> Impacts on Covering Education Costs — Non-repayable Sources	89	Table 6.2: <i>EYH plus Learning Accounts</i> Impacts on PSE Enrolment by Type of Institution
59	Table 4.8: <i>EYH</i> Impacts on Covering Education Costs — Own Sources	91	Table 6.3: <i>EYH plus Learning Accounts</i> Impacts on PSE Applications
60	Table 4.9: <i>EYH</i> Impacts on High School Graduation	91	Table 6.4: <i>EYH plus Learning Accounts</i> Impacts on PSE Applications by Type of Institution
60	Table 4.10: <i>EYH</i> Impacts on High School Drop-out	93	Table 6.5: <i>EYH plus Learning Accounts</i> Impacts on Financial Aid Knowledge and Application
61	Table 4.11: <i>EYH</i> Impacts on the Link between Education and Future Earnings	94	Table 6.6: <i>EYH plus Learning Accounts</i> Impacts on Covering Education Costs — Loans
61	Table 4.12: <i>EYH</i> Impacts on Valuation of Going into Debt to Pay for School	95	Table 6.7: <i>EYH plus Learning Accounts</i> Impacts on Covering Education Costs — Non-repayable Sources
62	Table 4.13: <i>EYH</i> Impacts on Satisfaction with Education Choices	96	Table 6.8: <i>EYH plus Learning Accounts</i> Impacts on Covering Education Costs — Own Sources

List of Tables and Figures (Continued)

97	Table 6.9: <i>EYH plus Learning Accounts</i> Impacts on High School Graduation	134	Table A2.8: Incremental Impact of <i>LA</i> on PSE Applications by Type of Institution
98	Table 6.10: <i>EYH plus Learning Accounts</i> Impacts on High School Drop-out	136	Table A2.9: Impact of <i>EYH</i> versus <i>LA</i> on PSE Enrolment
98	Table 6.11: <i>EYH plus Learning Accounts</i> Impacts on the Link between Education and Future Earnings	136	Table A2.10: Impact of <i>EYH</i> versus <i>LA</i> on PSE Enrolment by Type of Institution
99	Table 6.12: <i>EYH plus Learning Accounts</i> Impacts on Valuation of Going into Debt to Pay for School	138	Table A2.11: Impact of <i>EYH</i> versus <i>LA</i> on PSE Applications
99	Table 6.13: <i>EYH plus Learning Accounts</i> Impacts on Satisfaction with Education Choices	138	Table A2.12: Impact of <i>EYH</i> versus <i>LA</i> on PSE Applications by Type of Institution
100	Table 6.14: <i>EYH plus Learning Accounts</i> Impacts on Career Options Information	140	Figure A3.1: Post-secondary Enrolment by Month: Manitoba Participants in <i>Explore Your Horizons</i> and Comparison Group
100	Table 6.15: <i>EYH plus Learning Accounts</i> Impacts on Resilience ¹	140	Figure A3.2: Post-secondary Enrolment by Month: New Brunswick Francophone Participants from Lower-income Families, in <i>Explore Your Horizons</i> and Comparison Group
101	Table 6.16: <i>EYH plus Learning Accounts</i> Impacts on Hardship	141	Figure A3.3: Post-secondary Enrolment by Month: New Brunswick Anglophone Participants from Lower-income Families, in <i>Explore Your Horizons</i> and Comparison Group
101	Table 6.17: <i>EYH plus Learning Accounts</i> Impacts on Family Formation	141	Figure A3.4: Post-secondary Enrolment by Month: New Brunswick Francophone Participants from Lower-income Families, in <i>Learning Accounts</i> and Comparison Group
108	Table 7.1: The <i>Future to Discover</i> Cost–benefit Analysis Framework	141	Figure A3.5: Post-secondary Enrolment by Month: New Brunswick Anglophone Participants from Lower-income Families, in <i>Learning Accounts</i> and Comparison Group
110	Table 7.2a: Present Value Program Costs of Future to Discover — <i>EYH</i>	141	Figure A3.6: Post-secondary Enrolment by Month: New Brunswick Francophone Participants from Lower-income Families, in <i>Explore Your Horizons plus Learning Accounts</i> and Comparison Group
110	Table 7.2b: Present Value Program Costs of Future to Discover — <i>LA</i>	142	Figure A3.7: Post-secondary Enrolment by Month: New Brunswick Anglophone Participants from Lower-income Families, in <i>Explore Your Horizons plus Learning Accounts</i> and Comparison Group
113	Table 7.3: Present Value Costs and Benefits of <i>EYH</i>	151	Table A5.1: Present Value Costs and Benefits of Various Outcomes
115	Table 7.4: Net Present Values of <i>EYH</i> , by Sub-groups	154	Table A5.2: Present Value Forgone Earnings and Earnings Increase Due to Post-secondary Education, by Gender
115	Table 7.5: Present Value Costs and Benefits of <i>LA</i>	155	Table A5.3: Present Value Costs and Benefits of Various Outcomes
116	Table 7.6: Present Value Costs and Benefits of <i>LA</i>	157	Table A5.4: Present Value Costs and Benefits of Various Outcomes
116	Table 7.7: Net Present Values of <i>EYH-LA</i> , by Sub-groups	159	Table A5.5: Net Present Values of <i>EYH</i> , by Discount Rates and Sub-groups
123	Table A1.1: Response Rates	160	Table A5.6: Net Present Values of <i>LA</i> , by Discount Rates and Sub-groups
124	Table A1.2: Comparison of Baseline Characteristics. <i>FTD</i> 66-month Survey Sample — <i>EYH</i> vs. Comparison Group	161	Table A5.7: Net Present Values of <i>EYH/LA</i> , by Discount Rates and Sub-groups
125	Table A1.3: Comparison of Baseline Characteristics. <i>FTD</i> 66-month Survey Sample — <i>LA</i> vs. Comparison Group	162	Table A6.1: Regression of Post-secondary Enrolment on Total Number of <i>EYH</i> Workshops Attended and Baseline Characteristics
126	Table A1.4: Comparison of Baseline Characteristics. <i>FTD</i> 66-month Survey Sample — <i>EYH/LA</i> vs. Comparison	163	Table A6.2: Regression of Total Number of <i>EYH</i> Workshops Attended on Baseline Characteristics
127	Table A2.1: Incremental Impact of <i>EYH</i> on PSE Enrolment		
128	Table A2.2: Incremental Impact of <i>EYH</i> on PSE Enrolment by Type of Institution		
130	Table A2.3: Incremental Impact of <i>EYH</i> on PSE Applications		
130	Table A2.4: Incremental impact of <i>EYH</i> on PSE Applications by Type of Institution		
132	Table A2.5: Incremental Impact of <i>LA</i> on PSE Enrolment		
132	Table A2.6: Incremental Impact of <i>LA</i> on PSE Enrolment by Type of Institution		
134	Table A2.7: Incremental Impact of <i>LA</i> on PSE Applications		

Preface


"Affordable access to post-secondary education." If there is one objective that brings consensus among proponents of policies that put a priority on growth, innovation and competitiveness and those who are primarily focused on addressing social inequalities, it is this one. Increasing the number of youth who participate in post-secondary studies is an economic imperative as much as it is an effective means to promote social inclusion and to reduce social and health inequalities.

The now-defunct Canada Millennium Scholarship Foundation had put the reduction of barriers to access to post-secondary education at the forefront of its research agenda. It noted repeatedly that Canada performed relatively well overall in facilitating participation in post-secondary studies, but that much more should be done as important human capital potential remained untapped. While participation rates for students from middle-income or high-income families are fairly high, students from lower socio-economic background still display low participation rates.

To increase access among underrepresented groups, attention needs to focus on the reduction of several barriers. Lack of financial resources, poor academic preparation, poor information, and lack of interest in further education are cited among the most important ones. Sometimes, a student can face two or three of these barriers at the same time.

The *Future to Discover* project was about field testing two interventions associated with the lack of financial resources and lack of information about the benefits of post-secondary education. This demonstration project has been conducted as a social experiment, enrolling over 5,400 student volunteers who were randomly assigned to groups receiving one of the interventions, or both at the same time, or to a comparison group. With such a rigorous design it is possible to report whether or not such interventions can make a difference and whether it would be financially viable for governments to adopt such programs at scale. The project was conducted in two Canadian provinces, Manitoba and New Brunswick, and the study presents separate results for both the Francophone and Anglophone education sectors in New Brunswick.

It is a rare event in Canada to have the opportunity to undertake such a large experimental project on such a timely issue. SRDC is delighted to have been a central part of this ambitious undertaking and is now very excited to share the results of this work with policymakers in Canada and in other OECD countries who share our interest in finding effective policies to improve participation in post-secondary education. We wish to express our profound gratitude to the leadership and staff of the Canada Millennium Scholarship Foundation who supported this project, as well as to the participating provinces and all project participants.



Jean-Pierre Voyer
President and CEO
Social Research and Demonstration Corporation

October 2012

Acknowledgements

The *Future to Discover* Pilot Project was designed to learn how to improve access to post-secondary education for young Canadians. In our progress toward that goal, we would like first and foremost to acknowledge the ongoing cooperation of project participants, who have shared their experiences with us while also preparing to make the transition to life after high school. We would also like to express our appreciation to the Canada Millennium Scholarship Foundation, for its vision in conceiving and funding the project, as well as for its support of the research.

This post-secondary impacts report represents the collaboration and commitment of many organizations and individuals over a considerable period of time. Key to this collaboration has been the dedication of the *Future to Discover* staff at the Ministry of Education and Literacy in Manitoba and at the Department of Education in New Brunswick, in both delivering the interventions and assisting with data collection.

We would also like to acknowledge the comments made on an early draft of the report by the following reviewers: Sid Frankel (University of Manitoba), Arthur Sweetman (McMaster University), Connie Korchak (formerly Manitoba Ministry of Education, Citizenship, and Youth), and Margie Layden-Oreto and Yves Pelletier (New Brunswick Department of Post-Secondary Education, Training and Labour).

Special mention must be made of the able assistance with data analysis and verification provided by Douwre Grekou. Finally, we would like to thank our other current and former colleagues at SRDC and at partner organizations such as Statistics Canada, POLLARA, Centretown Corporate Services, Maritime Provinces Higher Education Commission, New Brunswick Community College Collège communautaire du Nouveau-Brunswick, the post-secondary institutions of Manitoba, Eliza Bennett and Accurate for their assistance with data collection, transcription, translation, and analysis, and with report production.

The Authors



Executive Summary

Future to Discover

Future to Discover (FTD) is a pilot project testing the effectiveness of two interventions designed to help students overcome certain barriers to post-secondary education, namely lack of career clarity, misinformation about post-secondary education, and lack of financial resources. This report presents post-secondary impacts of the project, which has involved 5,429 students at 51 high schools in Manitoba and New Brunswick since 2004.

The project's two interventions are the following:

- *Explore Your Horizons (EYH)*, which offers students enhanced career planning and better information about post-secondary programs, and their costs and benefits, early in the high school years. It was implemented between 2004 and 2008 while project participants were still in high school; and
- *Learning Accounts (LA)*, which, during the early years of high school, promises up to \$8,000 of non-repayable financial aid to students from lower-income families should they go on to pursue post-secondary education. Deposits into the accounts accumulated during 2004–2008 while project participants were still in high school. Payments to participants who made the transition to post-secondary studies were made between 2007 and 2011.

The project set out to test whether these interventions, offered either separately or in combination, would increase high school students' chances of enrolling in post-secondary education. While various programs offer information and financial assistance relating to post-secondary education, *Future to Discover* is distinct in its design to help those youth traditionally least likely to attend post-secondary education, and in its very early promise of financial assistance.

Explore Your Horizons facilitates participants' development of their own post-secondary plans, based on their passions and interests. It engages parents as allies and existing post-secondary students as role models, providing enhanced career education beginning in Grade 10.

Learning Accounts promises students funding for post-secondary education as they enter Grade 10, long before they can apply for regular student financial assistance programs, and at a time when it may still be possible to influence their decision about whether or not to continue

their studies past high school. It makes up to \$8,000 available to lower-income students when they participate in full-time post-secondary education. Unlike other programs that make early commitments of aid, access to *Learning Accounts* is unconditional on students' educational achievement in high school, other than successful completion of each academic year.

Considered as a whole, the *Future to Discover* pilot project provides much needed evidence about the effectiveness of such early intervention policies. This report presents work done by the Social Research and Demonstration Corporation (SRDC) on the evaluation of its two components, *Explore Your Horizons* and *Learning Accounts*.¹ Evidence on the implementation of these two interventions and their impacts is derived from the analyses of a variety of quantitative and qualitative sources, including surveys, administrative data, focus groups, and observation of workshops.

The current report presents the primary impacts of interest to the study — students' participation in post-secondary education. It also presents results from a cost–benefit study, a summary of the implementation results, and includes results from the National Longitudinal Panel, or NLP (a qualitative study of a sub-sample of participants' decision-making, intended to gain insight on the mechanisms underlying the pattern of program impacts).

The Interventions

Participants in *Explore Your Horizons* were invited to take part in 40 hours of after-school project activities over a three-year period (Table ES.1).² These activities provided enhanced career education and focused information on post-secondary studies beyond what was otherwise available in Manitoba and New Brunswick high schools. The package of sequentially and developmentally appropriate material was designed by leading experts, both researchers and practitioners, in the field of career development. The information was delivered through workshops facilitated by project staff, including guidance counsellors or educators and post-secondary students serving as role models. A project magazine and a Web site were also available to students to provide different forums for the review of workshop content alongside focused information on post-secondary studies. The *Explore Your Horizons* curriculum as a whole was designed to permit other jurisdictions to integrate the materials within provincial curricula.

1 This is the third in a series of three *Future to Discover* reports. The first two are the *Future to Discover Early Implementation Report* (SRDC, 2007) and the *Future to Discover Interim Impacts Report* (Smith Fowler et al., 2009).

2 The decision to offer *Explore Your Horizons* only in after-school sessions was made early in the project design phase for multiple reasons, including curriculum overload, inclusivity, and the desire for parental involvement. Some provincial officials initially wished to avoid adding to existing school curricula. Others were reluctant to make interventions available to only a sample of research participants rather than to all students during compulsory school hours. Finally, after-school sessions were thought more conducive to parental attendance.

Explore Your Horizons activities aim to help students understand the range of occupational and post-secondary choices and to estimate their benefits and costs. The intent is to help overcome any informational or motivational barriers to higher education that under-informed or misinformed students might have so that they might make meaningful decisions about their futures. The intervention involves exploration of all post-secondary paths — apprenticeships and vocational training, as well as college and university. A full description of *Explore Your Horizons* Year 1 activities may be found in the *Future to Discover* Early Implementation Report (SRDC, 2007, Chapter 5).

Learning Accounts promised, at the beginning of Grade 10, a bursary of up to \$8,000 to students in New Brunswick high schools with a family income at or below the provincial median, should they participate in a post-secondary program. They were told that by attending a New Brunswick high school and successfully completing each consecutive school year until graduation, and by successfully enrolling in a post-secondary education program (recognized by the Canada Student Loan Program) they would receive up to \$4,000 in

each of two years of post-secondary study. At the end of both Grade 10 and Grade 11, participants in *Learning Accounts* still attending a New Brunswick high school received deposits in their accounts of \$2,000 for each year successfully completed. *Learning Accounts* participants had another instalment of \$4,000 deposited into their accounts upon graduation from a New Brunswick high school. The accumulation of funds over time in *Learning Accounts* was intended to recognize each participant's continued commitment to education and to encourage reflections on life after high school. Eligibility for the *Learning Accounts* intervention was determined using data from income tax returns provided by each of their parents.

Those lower-income students who receive the offer of a Learning Account may realize earlier than they otherwise would have that pursuing post-secondary education is an affordable and realistic option. In turn, this may lead them to undertake better planning for the future. Alternatively, or in addition, the accumulated funds may help students overcome financial barriers by reducing the costs associated with post-secondary education.

Table ES.1: The Six Components of *Explore Your Horizons*

Component	Rationale	Frequency in Grade 10	Frequency in Grade 11	Frequency in Grade 12
Career Focusing	To help high school students explore career and education options and develop suitable career education plans. Parents are invited to attend the orientation session and the final session.	6 workshops of 2 hours (12 hours) plus an orientation session		
Lasting Gifts	To help parents understand career development and how to support their children through the process. Parents and students are invited to attend all sessions together.		4 workshops of 2 hours (8 hours)	
Future in Focus	To help students manage transitions and build resilience to overcome challenges, such as through support networks. Parents are invited to attend the orientation session and the final session.			4 workshops of 2 hours (8 hours) plus an orientation session
Post-secondary Ambassadors	To promote career exploration and education planning by establishing connections between high school students and students currently enrolled in a range of post-secondary education and training programs.	2 workshops of 2 hours (4 hours)	2 workshops of 2 hours (4 hours)	2 workshops of 2 hours (4 hours)
<i>Future to Discover</i> Web site	To provide information about career- and education-planning to encourage education and training after high school. Profiles, articles, and quizzes are presented in a colourful format designed to be appealing to youth.	Accessible throughout <i>Explore Your Horizons</i> . Participants gain sequential access to more site information over the three-year period.		
<i>F2D</i> Magazine	Same as for the <i>Future to Discover</i> Web site above.	2 issues	2 issues	2 issues

Data Used to Estimate the Interventions' Impacts

Many outcomes were measured by the *FTD* 66-month student survey (such as post-secondary aspirations, use of own savings to finance post-secondary education, knowledge of government aid). The survey was conducted between October and May of what would normally be the third year of post-secondary studies, assuming continuous school attendance and progression.

For the primary outcomes in this report — those related to post-secondary attendance — the most reliable data sources are post-secondary administrative data files. In New Brunswick, this includes college enrolment data for New Brunswick Community College (NBCC), Collège communautaire du Nouveau-Brunswick (CCNB), and the New Brunswick College of Craft and Design provided by the Department of Post-secondary Education, Training, and Labour and university enrolment from the Maritime Provinces Higher Education Commission (MPHEC). In Manitoba, the data are provided separately by each of the public universities and colleges.³

Although administrative data contain accurate information on post-secondary enrolment, they are somewhat incomplete. First, students who attend private career colleges or vocational institutes or who are registered apprentices would not be covered by the available administrative data. Second, college students outside of New Brunswick or Manitoba, as well as university students outside of the Maritime Provinces or Manitoba would not be covered. In such cases, the study uses the *FTD* 66-month student survey. In some instances, students could not be contacted directly, in which case the study uses a proxy survey of parents or guardians (survey response rates are discussed in Appendix 1).

The enrolment outcomes in this report are based on two measures: enrolment in PSE and enrolment in specific types of PSE (university, community college, private college or vocational institute, and registered apprentice).

- **University** enrolment is defined as being enrolled at a university in a program leading to a degree, certificate or diploma at the bachelor's degree level or higher. This includes a teaching certificate, bachelor's degrees (e.g., B.A., B.Sc., B.Ed., B.Eng., LL.B., etc.), any certificate above a bachelor's, master's degrees (e.g., M.A., M.Sc., M.B.A.), degrees in medicine, dentistry, veterinary medicine, or optometry, doctorate or post-doctorate programs, professional association diploma, certificate or license (e.g., accounting, banking, insurance). University enrolment also includes being enrolled at a college in a program that leads to a bachelor's degree.

- **Community College** enrolment is defined as being enrolled in a community college or technical institute in a program leading to a degree, certificate, or diploma, below a bachelor's degree level, excluding any programs that would normally last five weeks or less and apprenticeship programs. College enrolment includes CEGEP, university transfer programs, certificate or diploma programs in cosmetology, business administration, radiology, certificate of bricklaying, and so on. College enrolment also includes being enrolled at a university in a program that leads to a diploma or certificate below a bachelor's degree, excluding any programs that would normally last five weeks or less.
- **Enrolment at a private college or vocational institute** involves programs leading to a diploma or certificate, excluding programs that would normally last five weeks or less. These institutions normally offer job-oriented training programs lasting no more than two years. Examples of these include certificate programs in cosmetology, hairdressing, automotive mechanics, computer technology, and so on.
- **Registered apprentices** include survey respondents who said they had registered with a provincial or territorial apprenticeship authority for training in a trade leading to a journey-person certificate. It also includes sample members enrolled in a New Brunswick or Manitoba community college in an apprenticeship program.

The Evaluation

Recruitment for *Future to Discover* took place in 2004 and 2005 when the participants were in Grade 9. Two cohorts were recruited in New Brunswick (in Spring 2004 and Spring 2005), as well as a single cohort in Manitoba (in Spring 2005). The 5,429 participants who consented to take part in Grade 9 were randomly assigned to one of three experimental groups or to a comparison group receiving no new intervention. The project thus involved four groups, as follows:

- *Explore Your Horizons* participants who were offered only access to the after-school guidance workshops.
- *Learning Accounts* participants who were promised only funding for post-secondary studies.
- Participants who were offered both *Explore Your Horizons* and *Learning Accounts*.
- A comparison group of participants who were offered neither intervention.

3 In New Brunswick, the administrative data had to be linked to the *Future to Discover* baseline survey data by the Social Insurance Number (SIN) when this was available. When it was not available, the date of birth, first and last name, and sex were used to match. In Manitoba, students are issued a Manitoba Education and Training (MET) Number, which is maintained throughout elementary, secondary and post-secondary school. Thus, matching the post-secondary administrative files to the *Future to Discover* baseline survey was based on the MET and, when necessary, the SIN, date of birth, first and last name, and sex.

By randomly assigning students into groups whose outcomes would be compared over time, it is likely that they were initially (at “baseline” when recruited at the end of Grade 9) very similar since it was only chance that determined who was offered the program. The influence of remaining chance differences that could be observed in baseline data were controlled for by a statistical procedure called a “regression adjustment.” As a result, differences in program and comparison group outcomes can be reliably attributed to the offer of the intervention, and termed “program impacts.”

The evaluation primarily concerns the effectiveness of the interventions in improving participation in post-secondary studies. The project’s experimental design has allowed for a comparison of impacts between those receiving *Explore Your Horizons* plus *Learning Accounts* and those receiving only *Explore Your Horizons* or *Learning Accounts*. In other words, the project is able to report on the effectiveness of both interventions, offered either individually or jointly.

Information about the early implementation of *Explore Your Horizons* and *Learning Accounts*, including design, selection of schools, and baseline characteristics of project participants, can be found in the Early Implementation Report (SRDC, 2007). Its analysis found recruitment and random assignment for the project to be successful. The demographic and socio-economic characteristics of the students recruited for the *Future to Discover* pilot project were statistically identical across the four groups to be compared in the analysis.

SRDC has concluded from its implementation research that *Explore Your Horizons* and *Learning Accounts* have been successfully delivered. Both received a “fair test.” The success of the random assignment and project implementation permits a detailed analysis in which 15 different experimental contrasts can be examined (see Table ES.2).

Table ES.2: The Experimental Contrasts in the *Future to Discover* Pilot Project

Sample	Experimental contrast(s) of randomly assigned groups	What do we learn from impact analysis?
New Brunswick LA-eligible sample (separately for Anglophone and Francophone linguistic sectors)	<i>EYH</i> versus comparison group	Impact of offering <i>EYH</i> to lower-income families
	<i>LA</i> versus comparison group	Impact of offering <i>LA</i> to lower-income families
	<i>EYH</i> <u>plus</u> <i>LA</i> versus comparison group	Impact of offering a combined intervention of <i>EYH</i> with <i>LA</i> to lower-income families
	<i>EYH</i> versus <i>LA</i>	The relative impact of offering one intervention to lower-income families compared to the other
	<i>EYH</i> <u>plus</u> <i>LA</i> versus <i>LA</i>	The incremental impact of offering <i>EYH</i> in addition to a Learning Account to lower-income families
	<i>EYH</i> <u>plus</u> <i>LA</i> versus <i>EYH</i>	The incremental impact of offering a Learning Account in addition to <i>EYH</i> to lower-income families
New Brunswick (separately for Anglophone and Francophone linguistic sectors) <i>LA</i> -ineligible sample combined with <i>LA</i> -eligible sample	<i>EYH</i> versus comparison group	Impact of offering <i>EYH</i> to all students
Manitoba	<i>EYH</i> versus comparison group	Impact of offering <i>EYH</i> to all students

Future to Discover's Target Population

The *Future to Discover* project is especially concerned with improving post-secondary participation outcomes for two sub-groups of students who are commonly identified as under-represented in post-secondary education, as discussed in detail in the *Future to Discover* Early Implementation Report (SRDC, 2007):

- Those whose parents have income at or below the provincial median and no credential from post-secondary study of two or more years in duration. This group — labeled lower-income, lower-education — is of particular interest because research has shown that the combination of family income and parental education to be strongly correlated with young people's academic achievement and participation in post-secondary education (Barr-Telford et al., 2003; Bowlby and McMullen, 2002; Frenette, 2007; Knighton and Mirza, 2002; Looker, 2001; and Tomkowicz and Bushnik, 2003).
- Those from "first generation families" (FGF), comprising participants whose parents have no post-secondary experience (that is, the highest education level of both parents was "high school or less" at the time of joining the study), who may be particularly disadvantaged in seeking information and advice on post-secondary transitions.

Youth whose parents have lower incomes and lower educational attainment are the main groups of interest to the *Future to Discover* pilot project. According to the literature, these youth are less likely to undertake studies at the post-secondary level. Several mechanisms were used to increase the proportion of these students within the research sample, including:

- Preference given to high schools with a greater share of lower-income families in their catchment areas.
- Only those students whose parents' income fell at or below the provincial median were eligible to receive *Learning Accounts*, either on its own or in combination with *Explore Your Horizons*.

In Manitoba, the only intervention offered to students was *Explore Your Horizons*. Students from lower-income and lower-education families were included primarily through site selection. At the end of project recruitment, roughly 30 per cent of the Manitoba participants belonged to the targeted groups.

In New Brunswick, both *Explore Your Horizons* and *Learning Accounts* were offered (whether separately or combined). All students recruited for the project, regardless of family income or their parents' educational attainment, were eligible to be offered *Explore Your Horizons*. On the other hand, only students whose family income was at or below a given threshold were eligible to be offered *Learning Accounts* (either on its own or in tandem with *Explore Your Horizons*). The income threshold used was the provincial median (the exact threshold depended on family size). At the end of project recruitment, roughly 50 per cent of the New Brunswick participants belonged to the targeted lower-income, lower-education group.

The outcomes for the project's two main target groups will be presented in this report: students from "first generation families," and students from families with both lower income and lower education.

Another group of interest in recent years is boys. Frenette and Zeman (2007) document that boys are far less likely than girls to attend university, largely due to academic reasons. This is the first *Future to Discover* report to include boys and girls sub-groups.⁴ In a limited number of cases, sample sizes also allowed for the analysis of Aboriginal youth, which is another group that is less likely to attend university (Frenette, 2011). Again, this is the first *Future to Discover* report to include separate results for this group.

Despite the focus on these groups, the evaluation was designed also to determine the effectiveness of *Explore Your Horizons* on all participants, regardless of the income or educational attainment of their parents.

4 The interventions' interim impacts on boys and girls were reported in supplementary tables available from SRDC's Web site (SRDC, 2009).

Participation in *Explore Your Horizons* and Learning Accounts

Explore Your Horizons

Future to Discover staff in both provinces used a variety of methods to encourage participation in *Explore Your Horizons* components. Most participants attended at least one *Explore Your Horizons* workshop, and many attended multiple workshops. Attendance declined over time, typically reaching its lowest level in Grade 11, when the Lasting Gifts component, offered jointly to participants and parents/guardians or a significant adult, was offered during evening sessions (see Figure ES.1). Given the design of *Explore Your Horizons* as an after-school intervention, it is unlikely that more could have been done to increase participation.

In Manitoba:

- 76 per cent of all participants attended at least one workshop;
- 48 per cent attended six or more workshops; and
- attendance reached its peak at 66 per cent of participants.

In New Brunswick:

- 84 per cent of both Anglophone and Francophone participants attended at least one workshop;
- 60 and 61 per cent, respectively, attended six or more workshops; and
- attendance reached its peak at 73 and 71 per cent of participants, respectively.

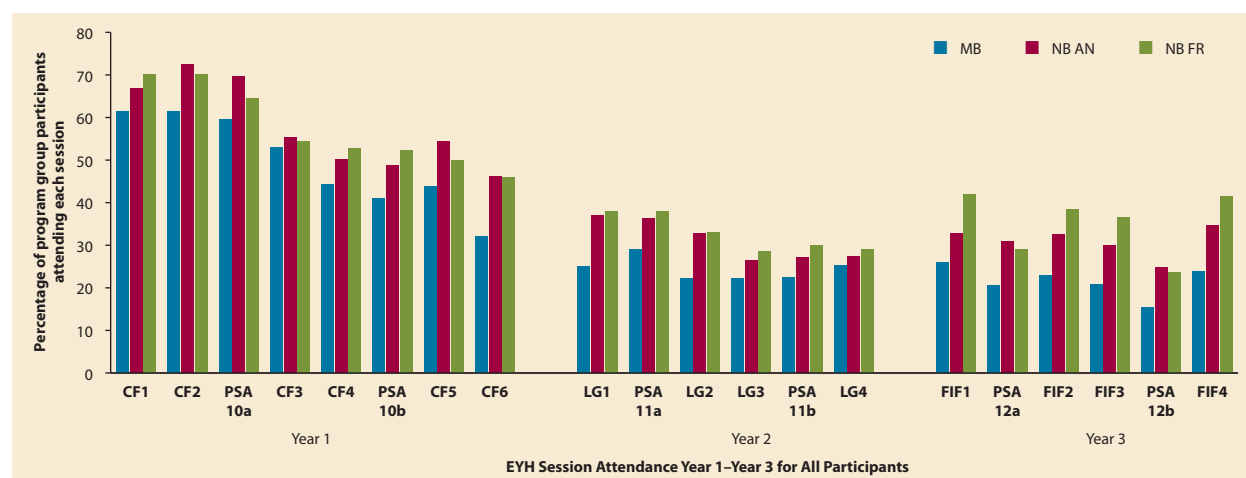
Explore Your Horizons was tested as an after-school intervention. Many students have other commitments after the school day is over. When asked in the Grade 12 survey why they had not attended *Explore Your Horizons* sessions more often, the reasons given reflected the fact that sessions were outside of school time:

- 27 per cent of respondents cited scheduling conflicts with work;
- 14 per cent cited conflicts with sports; and
- 13 per cent indicated more generally that the timing of the sessions was not good.

The survey also asked the students about the reasons their parents had not attended Lasting Gifts sessions, which were offered as evening sessions in the hope that parents might be more available. Again, among the reasons given, timing was the most frequently cited barrier:

- 37 per cent cited a conflict with work;
- 10 per cent cited other family responsibilities; and
- 10 per cent said the timing of sessions didn't suit their needs.

Given the anticipated difficulty of sustaining participation in all of the intervention activities, the *F2D* magazine and dedicated Web site were used to offer information on career education and post-secondary planning as complements to the workshops. When readership of the *F2D* magazine and usage of the *Future to Discover* Web site are taken into account alongside workshop attendance, virtually every student assigned to the *Explore Your Horizons* intervention received some exposure to components of the program. A majority of participants said they had read at least one article in the *F2D* magazine. However, the *Future to Discover* Web site was not used by the majority of participants and usage declined considerably over time. Rates of use — while low overall — were highest among New Brunswick Anglophone students, followed by Manitoba participants.

Figure ES.1: Attendance at *Explore Your Horizons* by Session — All Participants

Source: Program Management Information System (PMIS) data.

Notes: CF = Career Focusing; PSA = Post-secondary Ambassadors; LG = Lasting Gifts; FIF = Future in Focus; numbers following acronyms refer to number in the workshop sequence (in the case of CF, LG, and FIF) or the grade a workshop is offered (in the case of PSA).

Learning Accounts

In total, 1,097 students were randomly assigned to receive *Learning Accounts*, either by itself or in combination with *Explore Your Horizons*. By the end of Grade 10, 93 per cent of participants had signed their participant declaration (which made clear the program requirements) and were meeting the high school attendance requirements necessary to receive their first \$2,000 instalment. More than nine out of ten participants were meeting these requirements after their Grade 12 year. After completing high school, *Learning Accounts* participants could draw from the accumulated funds in their account if they successfully enrolled in a post-secondary education program. *Learning Accounts* participants could request a \$2,000 payment twice per academic year once their enrolment status had been confirmed, up to a maximum of \$8,000 over a two-year period. The check on active enrolment was performed by New Brunswick Student Financial Services or the New Brunswick Apprenticeship Bureau (for registered apprentices), and all funds were to be claimed within six years of the account being offered at the end of Grade 9. Participants were eligible to request withdrawals from their Learning Account until May 2011.

Following their notification of assignment and declaration, each student subsequently received annual statements informing them of the amount accumulated in their Learning Account. Thus, the amount of contact between *Learning Accounts* participants and the *Future to Discover* Office was limited. During the fall of their Grade 12 year, when they responded to the Grade 12 survey, *Learning Accounts* participants reported low awareness of actually having a Learning

Account. Awareness was lower for the Anglophone sector (38.6 per cent) than for the Francophone sector (58.4 per cent). Among those *Learning Accounts* participants who reported that they had a Learning Account, most were aware of the salient features of the program. In particular, the total amount of \$8,000 was recalled by the majority both of Francophone (83.8 per cent) and Anglophone participants (77.3 per cent) who reported having an account. Calls from the *Future to Discover* Office reminding Learning Account holders of their status, which took place after the survey was completed, may have altered account holders' levels of awareness of their accounts.

Both *Explore Your Horizons* and *Learning Accounts*

Participants randomly assigned to both *Explore Your Horizons* and *Learning Accounts* had a markedly higher participation rate in *Explore Your Horizons* workshops than those assigned to *Explore Your Horizons* alone. (It should be noted that participants in *Explore Your Horizons* plus *Learning Accounts* were not obliged to participate in *Explore Your Horizons* to access their Learning Account).

- In the Anglophone sector, the offer of a Learning Account increased the proportion of lower-income *Explore Your Horizons* participants attending more than half the sessions (11 or more) from 30 to 48 per cent.
- In the Francophone sector, the impact on attendance was even more dramatic, from 28 to 58 per cent.

This combined intervention was only available in New Brunswick. As such, this impact helps to explain why attendance at *Explore Your Horizons* workshops in both linguistic sectors in New Brunswick was higher than that in Manitoba, both initially and over time.

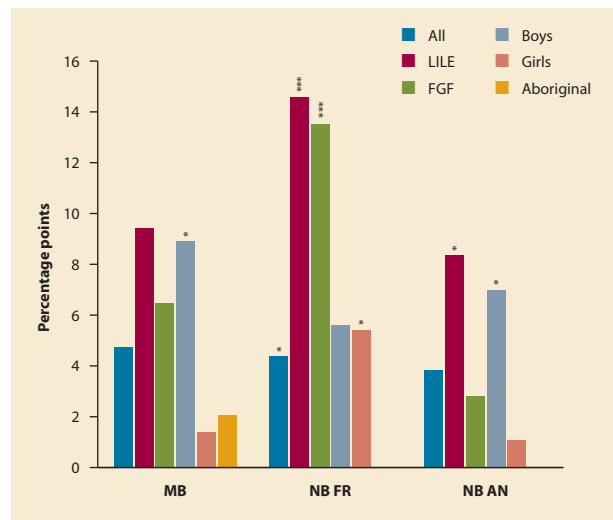
Participants from the lower-income, lower-education and first-generation families were typically less likely to attend *Explore Your Horizons* workshops than other students, in both provinces and in both linguistic sectors. However, attendance among these target groups was highest when participants were offered the combination of *Explore Your Horizons* plus *Learning Accounts*. These participants attended more sessions and in greater proportions than equivalent students offered *Explore Your Horizons* alone. As such, the offer of *Learning Accounts* encouraged more students in this group to attend sessions providing career education and more information about post-secondary options.

Similarly, participants offered *Explore Your Horizons* plus *Learning Accounts* were more likely to recall holding a Learning Account and its precise amount than *Learning Accounts*-only participants.

Impacts of *Explore Your Horizons*

Figure ES.2 shows the main impacts of *Explore Your Horizons* on post-secondary enrolment by jurisdiction and group.

Figure ES.2: Impacts of EYH on Post-secondary Enrolment



Source: FTD 66-month survey, FTD 66-month proxy survey, FTD administrative data.

Statistical significance levels are indicated as

* = 10 per cent; ** = 5 per cent; *** = 1 per cent.

LILE: Youth from lower-income, lower-education families.

FGF: Youth from first-generation families.



When the cross-section of all students offered the program is considered, the offer of *Explore Your Horizons* raised post-secondary enrolment in the Francophone sector in New Brunswick by 4.4 percentage points. This increase was concentrated at the university level. Although there was no significant impact overall in the Anglophone sector of New Brunswick or in Manitoba, *EYH* increased post-secondary enrolment rates for boys and among students from lower-income, lower-education families in New Brunswick.

Why was there such a difference in impacts in post-secondary enrolment between the Francophone and Anglophone sectors?

Post-secondary enrolment can be viewed in economic terms as the market outcome of supply and demand. Realistically, *EYH* can only be expected to have an influence on demand for post-secondary education, not supply. Data in this report show how post-secondary applications increased in both linguistic sectors in New Brunswick as a result of *EYH*. However, data provided by the New Brunswick government suggest that at the time when *FTD* participants normally began their post-secondary studies, several programs in New Brunswick Anglophone community colleges were more likely to be oversubscribed than in the Francophone sector. Those in the Francophone sector were more likely to be undersubscribed than on the Anglophone side. This may explain why increased applications translated into increased enrolment in the Francophone sector, but not in the Anglophone sector.

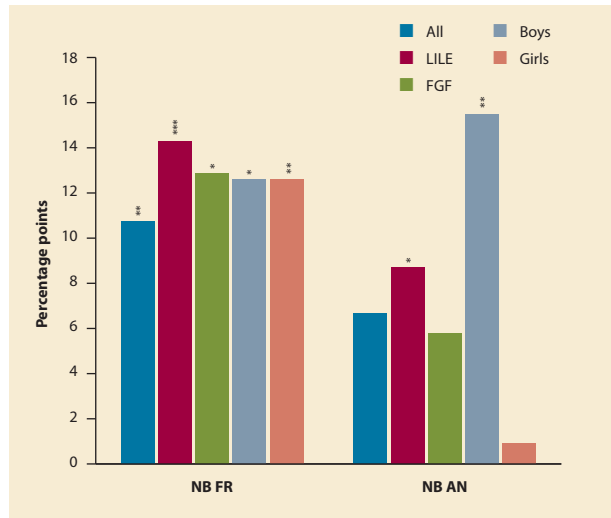
Nonetheless, educational attainment rose overall in all jurisdictions as a result of *EYH* when high-school achievement is taken into account alongside post-secondary enrolment. Thus — in addition to increasing post-secondary enrolment in New Brunswick's Francophone sector — *Explore Your Horizons* raised high-school graduation rates in Manitoba and in New Brunswick's Anglophone sector.

Explore Your Horizons was also successful in disseminating career information in New Brunswick. As a result of *EYH*, students in the Francophone and Anglophone sectors of New Brunswick were less likely to claim that they did not have enough information about their career options to make good decisions about their education while in high school.

Impacts of Learning Accounts

Figure ES.3 shows the main impacts of *Learning Accounts* on post-secondary enrolment by linguistic sector and group.

Figure ES.3: Impacts of LA on Post-secondary Enrolment



Source: FTD 66-month survey, FTD 66-month proxy survey, FTD administrative data.

Statistical significance levels are indicated as

* = 10 per cent; ** = 5 per cent; *** = 1 per cent.

LILE: Youth from lower-income, lower-education families.

FGF: Youth from first-generation families.

The offer of *Learning Accounts* raised post-secondary enrolment in the Francophone sector in New Brunswick by over 10 percentage points. The increase was highly concentrated in college enrolment.

The impact of *Learning Accounts* on post-secondary enrolment occurred across all sub-groups in the Francophone sector. In the Anglophone sector, youth from lower-income, lower-education families and boys saw improvements in enrolment.

In addition to these effects on enrolment, post-secondary application rates were much higher among participants in both sectors offered *Learning Accounts*. This suggests that *Learning Accounts* raised demand for post-secondary education in both sectors. Once again, constraints in the supply of college places in some Anglophone programs may have limited the program's effectiveness in the Anglophone sector.

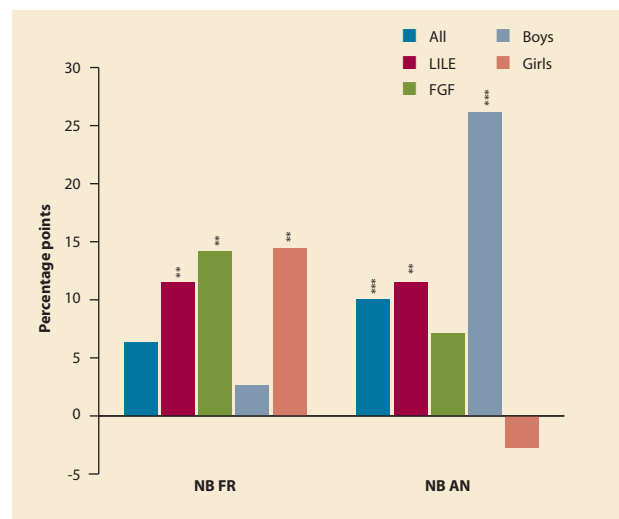
Learning Accounts may have displaced other non-repayable sources of post-secondary funds. Despite increased enrolment rates in the Francophone sector and no decline in the Anglophone sector, those offered *Learning Accounts* experienced a decrease in other non-repayable aid.

Learning Accounts significantly raised high-school graduation rates among all groups in the Anglophone sector, except for girls. In the Francophone sector, youth from lower-income, lower-education families and first-generation families registered an improvement in high-school graduation as a result of *Learning Accounts*. Tables detailing these findings on applications, financing, and high-school graduation appear in this report.

Impacts of Explore Your Horizons Plus Learning Accounts

Figure ES.4 shows the main impacts of *Explore Your Horizons plus Learning Accounts* on post-secondary enrolment by jurisdiction and group. Some of the discussion to follow cites impacts that appear in tables or figures only available in the *Future to Discover Post-secondary Impacts Report*.

Figure ES.4: Impacts of EYH plus LA on Post-secondary Enrolment



Source: FTD 66-month survey, FTD 66-month proxy survey, FTD administrative data.

Statistical significance levels are indicated as

* = 10 per cent; ** = 5 per cent; *** = 1 per cent.

LILE: Youth from lower-income, lower-education families.

FGF: Youth from first-generation families.

The combination of *Explore Your Horizons* and *Learning Accounts* helped raise post-secondary enrolment among students in the Anglophone linguistic sector of New Brunswick by 10 percentage points. Surprisingly, there was no impact in the Francophone linguistic sector overall. Nevertheless, university enrolment increased as a result of offering the combined interventions in both linguistic sectors.

Explore Your Horizons plus *Learning Accounts* improved post-secondary and university application rates in both the Francophone and Anglophone linguistic sectors in New Brunswick. Application rates rose among youth from lower-income, lower-education families and first-generation families in both sectors.

Students in the Francophone linguistic sector in New Brunswick were more likely to report that they knew how to get information about student financial aid as a result of the combined interventions. No impacts were registered in the Anglophone sector.

The combination of *Explore Your Horizons* and *Learning Accounts* increased high school graduation rates and lowered drop-out rates in the Anglophone linguistic sector in New Brunswick. High school outcomes in the Francophone sector were unaffected by the combined interventions.

The combination of *Explore Your Horizons* and *Learning Accounts* was successful in disseminating career information. As a result of the combined offer, students in both linguistic sectors of New Brunswick were less likely to claim that they did not have enough information about their career options to make good decisions about their education while in high school.

Cost–benefit Analyses of *Explore Your Horizons* and *Learning Accounts*

Future to Discover was evaluated for economic viability through cost–benefit analysis. Text box ES.1 describes the approach used in detail.

Text Box ES.1: Analytical Approach, Accounting Methods and Data Sources

Analytical Approach

The approach to cost–benefit analysis in this report involves assigning dollar value to *Future to Discover*'s interventions' effects and resource costs, wherever possible, either through direct measurement or estimation. Costs and benefits are estimated from the perspective of the average participant (from the program group) and the perspective of all levels of governments. The sum of the net costs or benefits attributable to participants and governments is considered the net cost or benefit to society as a whole.

Positive and negative estimates of costs or benefits are derived by comparing program group to control group experiences in the analysis. All estimates are used, regardless of statistical significance, although the results of the analysis are qualitatively similar if only statistically significant estimates of costs or benefits are used. What the analysis does not include are estimates of the indirect benefits or intangibles, such as health improvement among participants or crime reduction resulting from increased high-school completion or enrolment in post-secondary education. It is very difficult to assign a credible dollar value to these benefits. Without including these intangible benefits in the calculation, the net present value of the program and the cost–benefit ratios presented in this analysis are bound to underestimate the true social value of the program.

Accounting Methods

The cost–benefit estimates consider a period, starting when each participant was 15 years of age (in Grade 9) up to the year when the participant would be 59 years old. This 45-year period includes the year of project preparation and the five and a half year observation period that covers the program operation and some post-program period.

All cost–benefit amounts are expressed in constant 2009 dollars, using an 8 per cent annual discount rate as recommended in the 2007 Canadian Cost–Benefit Analysis Guide: Regulatory Proposals (Treasury Board of Canada, 2007). The adopted discount rate appears high but reflects the accepted assumptions for dollars invested during the period of program implementation. The analysis is therefore very conservative in attributing a dollar value over the longer term to the programs' impacts on education. Following the principles in the 1998 Benefit–Cost Analysis Guide (Treasury Board of Canada, 1998), a sensitivity analysis using 5 per cent and 10 per cent annual discount rates is presented in Appendix Tables A5.3, A5.4 and A5.5.

Data Sources

Administration and operational costs of *Future to Discover* were measured using accounting records and administrative data from *Future to Discover* Offices and the Canada Millennium Scholarship Foundation. *Future to Discover*'s impacts on high-school graduation, post-secondary education enrolment, grants, and student loans were estimated by using data collected from the participant baseline survey, the two follow-up surveys, and administrative data records from the ministries of education. Tuition and other fees, educational expenditures, non-educational expenditures, tax rates, and inflation rates were obtained or calculated from various publications, including Statistics Canada's CANSIM tables and analytic reports, the Canada Millennium Scholarship Foundation's *The Price of Knowledge* 4th edition (Berger et al., 2009), and a publication from the Canadian Council of Learning (Hankivsky, 2008). Forgone earnings and increases in life-time earnings were estimated using Statistics Canada's 2006 Census Public Use Micro-data File. *Future to Discover*'s interventions' effects on tax payments and Employment Insurance premiums were imputed from the estimated earnings.



Explore Your Horizons was found economically viable for sub-groups of participants in New Brunswick, particularly those from a lower-income, lower-education family. The program's variation in net benefits (or costs) reflects the heterogeneous impacts it had on various sub-groups. Delivering the program only to those sub-groups most likely to benefit from it could maximize the social benefits of the intervention.

Explore Your Horizons was not found economically viable in Manitoba. The combination of a higher program costs due to a smaller-scale operation and the lower impacts of the program in Manitoba resulted into a net loss in social benefit.

With a relatively low administrative cost, *Learning Accounts* was very effective. It generated \$2.00 to \$3.40 benefit for each dollar cost to government. Although *Learning Accounts* and *Explore Your Horizons* cost governments roughly the same to operate, *Learning Accounts* used less resources in society since most of the expenditures in the *Learning Accounts* program were transfers from the government to the participants. The program's cost-effectiveness was also driven by the large post-secondary participation impact achieved by the group of students from lower-income families.

Combining *Explore Your Horizons* with *Learning Accounts* did not increase the net social benefit. However, the combined *Explore Your Horizons* plus *Learning Accounts* program was still economically viable. It generated \$1.51 to \$1.75 benefit for each dollar cost to government.

The Role of *Future to Discover's* Interventions in Students' Decision-making

The project's implementation research included a special additional study of decision-making among high school students that SRDC undertook to help explain the pattern of impacts seen from the interventions. This study analyzed qualitative interviews conducted with a small number of students in the *Explore Your Horizons* program and comparison groups to better understand how students discover and assess their post-secondary options during their time in high school. The focus of the study was on students within the lower-income, lower parental education group.

The sub-study readily found students in need of additional support of the type *Future to Discover's* interventions offered. In line with some of the impact findings, the study found several instances of students previously not thinking of pursuing a credential early on in high school who felt *Explore Your Horizons* had made considering post-secondary education a potential reality for them. Students talked about how *Explore Your Horizons* had broadened the information available to them about their career options and helped them to select programs.

Conversely, the sub-study also found students for whom consideration of taking up post-secondary education within the project timeframe was not a realistic proposition. These students were navigating unexpected and important life circumstances such as their own or family ill health, which

influenced the career education decisions they were making in high school. While virtually all the students interviewed for the sub-study saw post-secondary education somewhere in their future, specific preferences they expressed early on (for example, in Grade 10) were rarely realized within the period observed during the study. Students' accounts revealed a diverse set of influences on their decisions, ranging from high school to post-secondary education. No intervention could be expected to make a difference across all influences affecting students in *Future to Discover's* target groups.

Policy Implications

Both *Explore Your Horizons* and *Learning Accounts* increased demand for post-secondary education. Depending on the sub-group and provincial/population setting, the programs increased high-school graduation or post-secondary enrolment or both. These results were seen for many sub-groups with lower access rates, such as boys and those from lower-income and first-generation families, making the programs of interest to policy-makers seeking increased access for these groups.

The programs' impacts on post-secondary applications may not always have resulted in impacts on enrolment due to insufficient supply of places in some programs. A clear policy implication for increasing access is to enable greater flexibility in the availability of popular programs so that demand can translate into actual enrolment.

At the same time, many of those offered *Explore Your Horizons* missed out by not attending workshops. Nearly one in ten offered *Learning Accounts* did not sign up and more failed to recall that they had an account, despite reminders. Future programming may be more effective if participation relied less on volunteering and more on automation. *Explore Your Horizons* workshops might form part of compulsory curriculum, and *Learning Accounts* might be initiated automatically for all participants (similar to Canada's Child Tax Benefit).

Nonetheless, the differences between provinces and linguistic sectors point to caution in generalizing from the findings. Even findings that were fairly robust across many groups in New Brunswick — for example, the finding that both interventions increased demand for post-secondary education among traditionally disadvantaged groups — did not hold for Manitoba. Program impact may vary by population and with existing policy environments and so should be tested carefully. Caution is also necessary in interpreting the impacts due to the relatively short period of outcomes observed.



Longer-term follow-up of students who participated in the main project may prove fruitful. Some students have put post-secondary education on hold and may revisit the idea at a later date. Such a follow-up could be feasible with administrative data.

In conclusion, the *Future to Discover* pilot project has demonstrated that interventions such as *Explore Your Horizons* and *Learning Accounts* can meet their objectives of raising post-secondary enrolment, especially among key groups who normally have lower rates of enrolment. This is despite the fact that attendance at *Explore Your Horizons* workshops and awareness of *Learning Accounts* were not as high as they could have been, and that supply constraints in the New Brunswick Anglophone college sector may have constrained some of the benefits of the programs. With more focused targeting, increased efforts to raise student engagement in the interventions, and perhaps in an environment with fewer supply constraints in the higher education system, the positive impact of such interventions and their economic viability would have been reinforced.

An Introduction to the *Future to Discover* Pilot Project

Introduction

Future to Discover (FTD) is a pilot project established by the Canada Millennium Scholarship Foundation, in collaboration with the provincial governments of Manitoba and New Brunswick. The goal of *Future to Discover* is to develop evidence about what works to increase access to post-secondary education (PSE) in Canada, particularly for young people from families with lower incomes or with little or no experience in post-secondary education, or both. *Future to Discover* does this by testing the effectiveness of two interventions: *Explore Your Horizons* (EYH), which is designed to provide high school students with enhanced career development education; and *Learning Accounts* (LA), which provides an early promise of non-repayable financial aid to students from lower-income families.

This is the third in a series of reports on *Future to Discover*. The first — the Early Implementation Report — described the design, planning, and early implementation of the project. The second — the Interim Impacts Report — presented the evaluation of the implementation of *Explore Your Horizons* and *Learning Accounts* up until the point that the participants left high school, along with early program impacts. This report presents the primary impacts of interest to the study — students' participation and activities in post-secondary education. It also presents results from a cost-benefit study, a summary of the implementation results, and includes results from the National Longitudinal Panel (NLP — a qualitative study of a sub-sample of participants' decision-making, intended to gain insight on the mechanisms underlying the pattern of program impacts).

The purpose of this chapter is fivefold:

- to describe the need and rationale for the *Future to Discover* Pilot Project;
- to describe the research and sample design and the two interventions under study;
- to explain the original program logic model for understanding the mechanisms by which the interventions might operate to increase access;
- to summarize the early and interim results reported earlier; and
- to provide an overview of the structure of the report.



CHAPTER SUMMARY

- ***Future to Discover* is a pilot project established by the Canada Millennium Scholarship Foundation, with the provincial governments of Manitoba and New Brunswick.** It aims to develop evidence about what works to increase access to post-secondary education, particularly for lower-income students and those whose parents have little or no post-secondary experience. Research indicates that such students are under-represented in post-secondary education.
- ***Future to Discover* is designed to find out whether either or both of the following interventions will increase access to post-secondary education:**
 - *Explore Your Horizons* (commonly termed “*Future to Discover*” during implementation in both provinces), which encompasses a number of components designed to help high school students improve their knowledge of the role of post-secondary education and how they might access it, to help them explore their future options through career education, and to provide guidance to their parents on how to support their children through this process; and
 - *Learning Accounts*, a financial incentive designed for high school students in New Brunswick with family incomes below the provincial median. It provides an early guarantee of a grant worth up to \$8,000, conditional upon high school completion and subsequent participation in post-secondary education.
- **These two practical interventions have the potential to increase access to post-secondary education, and could be used by provincial or federal governments.** Both *Explore Your Horizons* and *Learning Accounts* were developed by experts in career education on the basis of the latest research in the field, and were designed to be practical and feasible to implement. However, in the absence of solid evidence, it is impossible to determine whether interventions like these will be successful. *Future to Discover* has created such evidence.
- **There are three aspects to *Future to Discover*’s analyses: (1) an impact study, (2) implementation research, and (3) benefit-cost analysis.** The evaluation of *Future to Discover* uses a rigorous random-assignment design, in which students who are offered either or both of the interventions are compared to similar students who do not receive the interventions. The complex research design also takes into account linguistic and other designated groups that are of interest to the project’s provincial government partners. Data have been collected from numerous sources. Analyses to date show that recruitment and random assignment were successful. Moreover, both interventions have had early

and intermediate impacts on participants’ orientation toward the future. However, these impacts differed considerably between groups (including provinces, linguistic sectors, and key sub-groups).

- **This is the third in a series of *Future to Discover* research reports, the focus of which is on the post-secondary impacts.** More specifically, the report deals with the impact of the interventions on program participants’ post-secondary participation and activities. From these impacts, the long-term benefits of programs are also evaluated and compared to program costs. The report also presents the remaining implementation results, and includes results from the National Longitudinal Panel study.

THE RESEARCH PROBLEM: RATIONALE AND DESIGN OF THE *FUTURE TO DISCOVER* PILOT PROJECT

While Canada’s rates of participation in post-secondary education are relatively high when measured against international, normative standards, specific groups are under-represented, such as lower-income students and those whose parents have little or no post-secondary experience. This may be due to a number of barriers, including low parental expectations, limited financial resources, and perceptions that overestimate the costs and underestimate the feasibility and benefits of pursuing post-secondary education. Another barrier may also be a lack of knowledge about the four streams of post-secondary education: university, community college, private college or vocational institute, and apprenticeship.⁵

After reviewing a number of career education programs used in Canada and the United States and consulting with key stakeholders and the two provincial project partners (Manitoba and New Brunswick), two interventions were developed for the Canada Millennium Scholarship Foundation for pilot testing through *Future to Discover*:

- enhanced career education including readily accessible and developmentally appropriate information and advice about post-secondary education; and/or
- an early commitment of non-repayable financial aid.

The first of these interventions is labelled “*Explore Your Horizons*” and encompasses a number of components providing career education and advice. It is designed to help high school students learn about various types of post-secondary education programs and how they might access these, and to explore their future options through career education. It also aims to teach parents how to better support and respond to their children’s career education exploration and decision-making.

5 For a review of the relevant literature, readers are referred to Chapter 1, *Future to Discover* Pilot Project Early Implementation Report, SRDC (2007), pp. 4–10.

Explore Your Horizons is a timely intervention as there is increasing evidence that high school students have poor information about careers and education. For example, Frenette (2010) finds that about one in four high school students who desire a career requiring a university degree are not aware of the requirements. The same study finds that students who know about the requirements are more likely to go on to university, *especially* if they find out earlier. There is also considerable evidence that both students and parents generally overstate the costs and understate the benefits of attending post-secondary education (see the literature review in Frenette and Robson, 2011). *Explore Your Horizons* offers both students and parents the opportunity to learn (from early on in high school) about the benefits and educational requirements of various careers, how much it will cost to complete the required education, and the sources of financial aid that are available.

The second intervention, "*Learning Accounts*," is a financial incentive designed for students with family incomes below the provincial median. It provides an early guarantee of a grant worth up to \$8,000, conditional upon high school completion and subsequent participation in post-secondary education.

Learning Accounts is intended to address several financial barriers faced by some lower-income students, albeit in more complex and subtle ways than most forms of aid. Students who benefit from the program receive a grant, which is then clawed back from government loans (since government aid forms require students to declare all forms of resources, including aid from non-governmental sources). Thus, the grant reduces prospective student debt. While it is questionable whether this may raise post-secondary access on its own (Frenette, 2011a), there is evidence that reduced student debt at graduation helps students find higher quality jobs from a "public interest" point of view (Rothstein and Rouse, 2011) and that lowering students' levels of borrowing to fund their education places them in a better financial position following graduation (Luong, 2010).

In addition, *Learning Accounts* may address several existing issues with the current system of aid. First, students are informed of their eligibility for the grant directly by the program. With government student aid, students (or parents, teachers, guidance counsellors) must take an active approach to learn about how much aid they are eligible to receive.

Second, *Learning Accounts* represents an *early* promise of aid. With government aid, students apply in their senior year of high school, and generally only find out how much aid they will receive once they start their post-secondary studies. However, some important work in the field of psychology

suggests that this may be too late. Specifically, it has been found that individuals tend to overly rely on the initial information that is available to them. This is referred to as the "anchoring bias" (Tversky and Kahneman, 1974). Once the information is embedded in people's minds (i.e., the "anchor" is set), they will persistently use it to make decisions, whether the information is correct or not. New information may be used to "adjust" their estimate, but the adjustments are usually too small, resulting in a biased final estimate. The implication is that the decisions of youth who are at risk will largely depend on early information (their "anchor"). Studies find parents generally no more financially literate than their children when it comes to post-secondary decisions (Frenette and Robson, 2011). Knowledge may be particularly poor in lower-income households, especially if the parents have not completed post-secondary education themselves. In other words, the anchor parents provide to their children may be incorrect. Simply put, if students suddenly become aware in Grade 12 that a post-secondary education is a worthwhile investment, they cannot turn back the clock to try to take appropriate courses and raise their marks in order to qualify for admission. *Learning Accounts* can help students become aware of at least one form of aid from an early point in high school. In turn, students may factor post-secondary education into their education decisions before it is too late.

Third, *Learning Accounts* does not require participants to apply for a student loan in order to receive the grant. To receive government grants, students must typically apply and qualify for loans first (although they may repay the loan in full immediately). This has two important implications.

- The first is that *Learning Accounts* may deliver aid to students who wouldn't apply for grants because they are averse to receiving loans. Palameta and Voyer (2010) demonstrated via a laboratory experiment that between 5 and 20 per cent of high school students are loan averse. Specifically, these students rejected grant offers when coupled with a loan, but accepted the same grant when offered alone. This was the case even though the loans could be repaid in full immediately. Psychologists have referred to this as the "framing effect" (Tversky and Kahneman, 1981). In short, the same offer (the grant) was valued differently by participants in the two contexts. One possible explanation is that these students did not trust themselves with the loan since it could have helped them finance consumption that they otherwise would not have considered.
- The second implication of not having to apply for loans is that *Learning Accounts* actually represent additional aid (liquidity) in situations when there are no loans to claw back.

Future to Discover aims to find out whether either or both of the interventions will increase access to post-secondary education, especially among those with lower family incomes and/or low levels of parental education.

There is little existing evidence to determine whether interventions like *Explore Your Horizons* and *Learning Accounts* will be successful. *Future to Discover* has created such evidence using a true experimental design, in which students were randomly assigned to receive either or both of the interventions, or to a “control” or “comparison” group of similar students who did not receive the interventions. Comparisons are then made between the groups for anticipated outcomes to determine the impact of the interventions. This randomized design or “social experiment” is the most rigorous type of impact evaluation. It will provide the most valid estimates of how the two interventions affect the principal outcomes of interest.

In addition to the impact evaluation, *Future to Discover* also encompasses implementation research and a cost–benefit analysis. As a demonstration project, *Future to Discover* will determine the feasibility of implementing *Explore Your Horizons* and *Learning Accounts* in the field from both a logistic and financial perspective. This will be of interest to policy-makers in various levels of government, as well as to practitioners and educators.

OVERVIEW OF INTERVENTIONS AND LOGIC MODELS

Explore Your Horizons

Explore Your Horizons was the career education intervention implemented in both Manitoba and New Brunswick. There are six integrated components to *Explore Your Horizons*: (1) Career Focusing, (2) Lasting Gifts, (3) Future in Focus, (4) Post-secondary Ambassadors, (5) the *Future to Discover* Web site, and (6) the *F2D* magazine. All participants in the intervention are offered all six components over three years of programming, through Grades 10, 11, and 12 of high school.

Explore Your Horizons facilitates participants’ development of their own post-secondary plans, based on their passions and interests. It engages parents as allies and existing post-secondary students as role models, providing enhanced career education beginning in Grade 10.

Each component of *Explore Your Horizons* is designed to teach and reinforce key concepts of career exploration and development, whether these are personal (e.g., the concepts of resilience and adaptability), technical (e.g., how to network), or tactical (e.g., “manoeuvring” as a deliberate strategy to explore different career options). When feasible, the developers of the various components and the delivery personnel met to ensure that *Explore Your Horizons* components were cohesive and well integrated.

Text Box 1.1: Project Names

This box lists the various project names that are used throughout this report. Full descriptions of these programs are provided in SRDC (2007).

- ***Future to Discover Pilot Project*** – The name given to the overall pilot project being run in New Brunswick and Manitoba to test two interventions: *Explore Your Horizons* and *Learning Accounts*. The project title is shortened to “*Future to Discover*” in situations where this will not be confused with the name of the career education intervention (see below).
- ***Explore Your Horizons*** – The career education intervention being tested in the project.
- ***Future to Discover*** – The name frequently used to refer to the career education intervention when it was being delivered (in research reports, the name *Explore Your Horizons* is used to denote this intervention).
- ***Career Focusing*** – A series of six after-school workshops delivered during Grade 10, one of the six components of *Explore Your Horizons*.
- ***F2D*** – A magazine, one of the six components of *Explore Your Horizons*.
- ***Future in Focus*** – A series of four after-school workshops delivered during Grade 12, one of the six components of *Explore Your Horizons*.
- ***Future to Discover Web site*** – A website, one of the six components of *Explore Your Horizons*.
- ***Lasting Gifts*** – A series of four evening workshops for parents delivered during Grade 11, one of the six components of *Explore Your Horizons*.
- ***Post-secondary Ambassadors*** – A series of six after-school workshops delivered by post-secondary students during Grades 10, 11 and 12, one of the six components of *Explore Your Horizons*.
- ***Learning Accounts*** – The name given to the financial incentive intervention being tested in New Brunswick.

The involvement of parents/guardians is a fundamental feature of the *Explore Your Horizons* intervention, in terms of both their participation and support of their child in the career exploration process. Parents/guardians were invited to attend sessions with their children at the start of the intervention, midway, and at the end.

All *Explore Your Horizons* workshops took place in classrooms at participating schools, after the last class of the day. The main exceptions were those to which parents were invited, which took place in the evenings to accommodate parents' schedules. Facilitators with a career counselling or education background were hired to animate the sessions, except for the Post-secondary Ambassador workshops, which were animated by students already enrolled in post-secondary education.⁶

Table 1.1 below presents a basic logic model for *Explore Your Horizons* to illustrate what the intervention was expected to achieve and how. More specifically, the logic model lists what resources were expected to be needed to accomplish the

intervention's objectives, what initial and intermediate changes in behaviour would permit the intervention to meet its objectives, and what short-, intermediate-, and long-term impacts were anticipated as a result of the intervention.

The logic models for both *Explore Your Horizons* and *Learning Accounts* were developed by SRDC researchers in collaboration with provincial partners and other project stakeholders, in order to make explicit the assumptions about what was needed to make the interventions work, and the causal links between activities and outcomes. While these assumptions were based on extensive collective knowledge and experience, alongside expectations derived from different academic theories, *Future to Discover* is nevertheless a *pilot project*; as such, the logic models are also being tested. It is important to keep in mind, however, that success or failure of the logic model does not necessarily imply success or failure of the interventions. Ultimately, the success or failure of the interventions will be measured by their impacts on key student outcomes.

Table 1.1: Logic Model for *Explore Your Horizons*

Resources/ Inputs	Activities/ Participant Responses	Short-term & Intermediate Impacts	Long-term Impacts
<ul style="list-style-type: none"> All activities and services provided according to design protocols (i.e., the Operations Manual)⁷ Grade 9 students who have agreed to participate in the research study Parents who have agreed to participate with their children Post-secondary education system with sufficient places to accommodate any possible increases in student numbers that might be generated by the experiment 	<ul style="list-style-type: none"> Students and parents must be notified and understand what participation in <i>Explore Your Horizons</i> involves Students and parents participate in the intervention: they attend and engage in sessions, read mail and Web-based material, and learn to use the material and other relevant resources 	<ul style="list-style-type: none"> Increased orientation toward future activities Increased awareness of post-secondary and career options Change in intentions and rates of application to pursue post-secondary education Altered expectations about post-secondary education Increased interest in high school and increased attendance Decreased rates of early high school leaving/drop-out Changes in chosen high school courses Increased rates of high school graduation Improved course grades, test scores, and overall GPA Change in peer groups (i.e., composition, future orientation, and future expectations) Change in perceived worth of post-secondary education Increased knowledge of the different costs of post-secondary education and financing options Increased saving to meet the costs of post-secondary education 	<ul style="list-style-type: none"> Successful enrolment in a PSE program recognized by Canada Student Loans Successful completion of the first year of a chosen post-secondary education program

⁶ Facilitators were also present at Post-secondary Ambassador workshops to provide assistance when required.

⁷ As *Future to Discover's* procedures, curricula, and scripts were developed, they were captured in an operations manual and provided to the deliverers of the interventions in each province, such as facilitators and post-secondary ambassadors, to assist in intervention delivery. While most of the particular components of *Explore Your Horizons* and *Learning Accounts* were decided by the beginning of 2004, some details of the later components were finalized in 2006.

Learning Accounts

Learning Accounts was implemented only in New Brunswick. Stakeholders in the project agreed on an eligibility criterion for the *Learning Accounts* intervention based on annual household income below the New Brunswick median.⁸ A major assumption was that lower-income students anticipate having inadequate financial resources to pay for their post-secondary education, particularly university and college. *Learning Accounts* participants who attend a New Brunswick high school until graduation and who successfully enrol in a post-secondary education program (recognized by Canada Student Loans) would receive up to a maximum of \$8,000 over two years to subsidize their post-secondary education expenses. Table 1.2 below presents the basic logic model for *Learning Accounts*.

The accumulation of funds over time in *Learning Accounts* was intended to recognize each participant's continued commitment to education. Thus, participants in *Learning*

Accounts had to still be attending a New Brunswick high school at the end of Grade 10 to receive an instalment of \$2,000 in their account, and they had to still be attending a New Brunswick high school at the end of Grade 11 to receive another \$2,000. Thereafter, *Learning Accounts* participants who successfully graduated from a New Brunswick high school would have another instalment of \$4,000 added to the account.⁹ If they successfully enrolled in a post-secondary education program, they could draw from the accumulated funds in their account. Once their enrolment status had been confirmed, *Learning Accounts* participants could request a \$2,000 payment twice per academic year, for a total maximum of \$8,000 in a two-year period. The check on enrolment was performed by New Brunswick Student Financial Services or the New Brunswick Apprenticeship Bureau (for registered apprentices), and all funds had to be claimed within six years of the account being offered at the start of Grade 10.¹⁰

Table 1.2: Logic Model for *Learning Accounts*

Resources/ Inputs	Activities/ Participant Responses	Short-term & Intermediate Impacts	Long-term Impacts
<ul style="list-style-type: none"> All activities and services provided according to design protocols (i.e., the Operations Manual), including a payment system Grade 9 students who have agreed to participate in the research study Parents who have agreed to participate with their children Post-secondary education system with sufficient places to accommodate any possible increases in student numbers that might be generated by the experiment 	<ul style="list-style-type: none"> Students and parents must be notified and understand what participation in <i>Learning Accounts</i> involves Students and parents participate in the intervention: provide required information at the required time to open the account and to request payments; remain contactable for mail-based account administration 	<ul style="list-style-type: none"> Increased orientation toward future activities Increased awareness of post-secondary and career options Change in intentions and rates of application to pursue post-secondary education Altered expectations about post-secondary education Increased interest in high school and increased attendance Decreased rates of early high school leaving/drop-out Changes in chosen high school courses Increased rates of high school graduation Improved course grades, test scores, and overall GPA Increased knowledge of the different costs of post-secondary education and financing options Increased certainty about the ability to cover PSE costs Increased saving to meet the costs of post-secondary education 	<ul style="list-style-type: none"> Successful enrolment in a PSE program recognized by Canada Student Loans Successful completion of the first year of a chosen post-secondary education program

8 Family income was determined from amounts reported for income tax purposes, and the median cut-off was derived from Census 2001 estimates for households with children aged 6–17 years and rounded up to the nearest \$5,000 level.

9 Access to the maximum amount is conditional on completion of secondary studies within four years of opening the account. Upon successful completion of secondary studies in New Brunswick through a high school diploma, Adult Education Diploma, or a general Education Development diploma, participants are entitled to the full bursary of \$8,000 in their accounts. Students not completing secondary studies within the timeframe remain entitled to past instalments in their accounts.

10 It is important to note that, unlike *Explore Your Horizons*, there was no fixed year for *Learning Accounts* delivery; rather, instalments and payments could be made over several years. A student who took three years to complete grades 10 through 12 at a New Brunswick school was entitled to receive a payment in any two of the three years following his or her graduation, and the payment amount would depend on the number of instalments in the student's account. For example, a student who had accumulated \$4,000 in his or her account by the end of Grade 11 but who graduated from a Quebec school (rather than a New Brunswick school) before enrolling in a post-secondary education program would receive \$4,000, made available during the delivery period for *Learning Accounts*.

The logic model for *Learning Accounts* is similar to the model for *Explore Your Horizons* in that both are early interventions assumed to influence participants' future orientation and preparations for post-secondary education during their high school careers. *Explore Your Horizons* is expected to do so because the intervention takes active steps to engage students in activities to aid such planning and decision making. For *Learning Accounts*, it is the offer of \$8,000 conditional on post-secondary enrolment that is hypothesized to provide an incentive for participants to alter their behaviour to make enrolment more likely. The *Learning Accounts* offer would thus be expected to stimulate participants to make their own independent efforts to seek out information on post-secondary education and career guidance. *Explore Your Horizons* participants may be stimulated to take similar steps, supplementary to and perhaps encouraged by their enhanced career education intervention. Some participants in New Brunswick were offered both interventions simultaneously. For these students, responses and impact patterns consistent with both logic models are anticipated.

The logic model for *Learning Accounts* differs subtly from that for *Explore Your Horizons* in four ways:

- As mentioned above, unlike *Explore Your Horizons*, *Learning Accounts* is not a career education intervention and so any changes in participants' personal career awareness and post-secondary planning will arise out of their own efforts to seek out support for such activities.
- The \$8,000 grant may increase certainty among *Learning Accounts* participants that they can afford to pursue post-secondary education. If this makes post-secondary education a more realistic proposition, those offered *Learning Accounts* may be more likely than those in the comparison group to have considered how they might fund their post-secondary education. This could involve identifying means such as student financial aid to supplement their *Learning Accounts* funds. Nonetheless, they may be less likely than *Explore Your Horizons* participants to explore the full range of alternative sources of post-secondary funding.
- *Learning Accounts* is not expected directly to change participants' peer groups in the same manner as *Explore Your Horizons*. *Learning Accounts* does not bring students together in new groups to participate in out-of-school workshops. Any changes in peer groups under *Learning Accounts* would thus be due to students choosing to engage in different activities of their own volition in order to increase their chances of accessing post-secondary education. Such activities might include enrolling in more rigorous courses or identifying with new peer groups (such as those planning to attend post-secondary education).

- *Learning Accounts* does not include a parental component. Therefore, there is a much higher expectation that *Explore Your Horizons*, which does involve parents, will alter the intensity and quality of interactions between parents and project participants with respect to post-secondary planning.

OVERVIEW OF FUTURE TO DISCOVER'S RESEARCH SAMPLES AND DATA SOURCES

The design of *Future to Discover* reflects the interests and needs of the two partnering provinces. In New Brunswick, there are two separate education systems for Francophone and Anglophone students, the former smaller than the latter. Recruitment in New Brunswick took place over two years in order to secure a sufficiently large sample of participants to detect policy-relevant impacts. As a result, students in two successive Grade 9 years were recruited in 2004 and 2005 and became part of either Cohort 1 or Cohort 2, respectively.

The recruitment process for *Future to Discover* had multiple stages, all aimed at obtaining the informed consent of sufficient numbers of students in the various research groups in order to detect significant differences in the impacts of interest to policy-makers. All school districts in New Brunswick were invited to take part, but in Manitoba, invitations had to be targeted to larger schools that were not already participating in another Foundation research project. Within school districts, schools were selected according to the number of Grade 9 students and, particularly, the expected numbers in the designated group from lower-income, lower-education (LILE) families — that is, belonging to families with lower incomes and with little or no post-secondary education. In New Brunswick, effort was made to recruit equal numbers of Anglophone and Francophone students.

Recruitment began in New Brunswick in the spring of 2004. Students who were in Grade 9 that year at the selected 30 schools were informed of the *Future to Discover* project by mail and given an opportunity to "opt out" of the project. The same process was followed a year later with students in Cohort 2 at the same schools in New Brunswick and at 23 schools in Manitoba (although only 21 Manitoba schools were sites for *Explore Your Horizons* delivery).¹¹ In all, only 72 out of 15,578 students opted not to participate in the *Future to Discover* project at this stage.

The next stage of recruitment involved Statistics Canada contacting a random sample of the 15,506 students who did not opt out to arrange a home visit, in which the student and his or her parent or guardian received additional information about the *Future to Discover* pilot project. If both parent and child provided consent to participate, baseline information was collected by means of a survey (completed by the student)

11 Students were recruited in Grade 9, mostly from schools with all four grades 9 through 12. However, students were recruited from four schools acting as feeder schools for two Grade 10–12 schools. Thus students were recruited at 23 schools for *Explore Your Horizons* delivery at 21 sites.

and a short interview with the parent or guardian. Eligibility for the *Learning Accounts* intervention was determined from income information provided by the parent. A somewhat greater numbers of families participated at this stage of the project in New Brunswick than in Manitoba: an average of 78 per cent of those contacted agreed to participate in New Brunswick as project participants (76 per cent for Cohort 1 and 80 per cent for Cohort 2), versus 60 per cent of those contacted who agreed to participate in Manitoba. In all, there were 5,429 students recruited as project participants.¹²

Random Assignment to Multiple Groups

The decision to test both *Learning Accounts* and *Explore Your Horizons* in New Brunswick provided an opportunity to test the impact of offering both interventions simultaneously among equivalent groups of students. Comparisons of impacts between groups receiving *Explore Your Horizons* plus *Learning Accounts* and those receiving only *Learning Accounts* reveal the incremental impact of adding enhanced career education to *Learning Accounts*. Moreover, comparisons of impacts between those receiving *Explore Your Horizons* plus *Learning Accounts* and those receiving only *Explore Your Horizons* reveal the incremental impact of adding *Learning Accounts* to the career education intervention. Three program groups were thus created for New Brunswick: those students who received only *Explore Your Horizons*, those who received only *Learning Accounts*, and those who received both interventions combined.

In Manitoba, there were insufficient numbers of Francophone students to be able to adequately test differential impacts by linguistic sector, so the sample of Francophone students in that province was pooled with the Anglophone student sample. It was determined that sufficient numbers of students could be recruited in Manitoba in a single year or cohort. The

resulting research design takes these provincial requirements into account, but is necessarily complex. In all, there are 15 different experimental contrasts or comparisons to be examined (see Table 1.3).

The random assignment of participants was undertaken by SRDC using a computer program, following recruitment. Given the number of research groups in New Brunswick, the assignment of students was one of the most complex ever used in a Canadian demonstration project. The process had to satisfy a number of requirements simultaneously, including creating an analytically useful sample, respecting the initial targets for participation in each group, maintaining feasible and comparable class sizes for *Explore Your Horizons* within each school, and staying within the budget allotted for follow-up surveys with participants.

The proportions assigned to different groups reflected the need to make the interventions feasible for implementation and to ensure that the various research groups had comparison groups of equivalent size and characteristics. In New Brunswick, eligible students were randomly assigned to one of the following groups:

- a comparison group,
- a group that would receive *Learning Accounts* only,
- a group that would receive *Explore Your Horizons* only, or
- a group that would receive both *Explore Your Horizons* and *Learning Accounts* combined.

Separate groups were created for Anglophone and Francophone participants.

Table 1.3: The Experimental Contrasts in *Future to Discover*

Sample	Experimental contrast(s)	Contribution to impact analysis
NB LA-eligible sample (separately for Anglophone and Francophone linguistic sectors)	EYH versus comparison group	Impact of offering EYH to lower-income families (see Chapter 4)
	LA versus comparison group	Impact of offering <i>Learning Accounts</i> to lower-income families (see Chapter 5)
	EYH plus LA versus comparison group	Impact of offering a combined intervention of EYH with LA to lower-income families (see Chapter 6)
	EYH versus LA	The relative impact of offering one intervention to lower-income families compared to the other (see Appendix 2)
	EYH plus LA versus LA	The incremental impact of offering EYH in addition to a Learning Account to lower-income families (see Appendix 2)
	EYH plus LA versus EYH	The incremental impact of offering <i>Learning Accounts</i> in addition to EYH to lower-income families (see Appendix 2)
NB LA-ineligible sample (separately for Anglophone and Francophone linguistic sectors) combined with LA-eligible sample	EYH versus comparison group	Impact of offering EYH to all students (see Chapter 4)
MB	EYH versus comparison group	Impact of offering EYH to all students (see Chapter 4)

12 Descriptive information on those who completed the baseline survey is presented in Chapter 4 of the *FTD* Early Implementation Report (SRDC, 2007).

In Manitoba, students were randomly assigned either to a comparison group or to a group that would receive *Explore Your Horizons* only.

After assignment, students were notified of the results by letter and reminded of the importance of their continued research participation, regardless of the group to which they had been assigned. They were also provided with information on how to contact their provincial *Future to Discover* Office and SRDC for any questions about their participation in the project.

Random Assignment Produced Comparable Groups for Analysis

Analysis of the results of the baseline survey indicates that despite the complexity associated with random assignment for *Future to Discover*, the process was successful in a variety of ways. First of all, the demographic and socio-economic characteristics of the students recruited for the *Future to Discover* pilot project are the same as those that would be expected for a sample of Grade 9 students from both provinces.¹³ Roughly equal numbers of students (around 1,000) were recruited from each of the program populations of interest: New Brunswick Francophone students eligible to receive *Learning Accounts* (i.e., lower-income); New Brunswick Francophone students ineligible for *Learning Accounts* (i.e., higher-income); New Brunswick Anglophone students eligible to receive *Learning Accounts*; New Brunswick Anglophone students ineligible for *Learning Accounts*; and Manitoba students. Second, sufficient numbers of students in the LILE group — those whose families had lower incomes and low levels of parental education — were recruited to support analyses of the impacts of the interventions on this important sub-group. Finally, random assignment succeeded in creating groups that were statistically equivalent. In other words, the differences between the experimental and comparison groups on nearly all observed characteristics were statistically insignificant or close to zero. As would be expected with a sample of this size, some chance differences did arise. While such differences do not introduce error, SRDC researchers nevertheless have adopted a technique called “regression adjustment,” which is the usual procedure for taking into account (“adjusting”) the chance differences arising in the random assignment.

Sample Divisions

The *Future to Discover* pilot project maximizes the use of its sample analytically by contrasting outcomes in different permutations across groups receiving one, both, or neither of the two interventions under examination and by assessing

the effects on sub-groups. The analyses thus reflect the original experimental assignments of the sample into the different groups eligible for each intervention and later analytical divisions for sub-group analysis. Unfortunately, this efficiency in analytical design complicates the presentation of findings.

The impact analysis presented in this report is always experimental: it compares outcomes across statistically equivalent program and comparison groups to determine the effects of the interventions. Random assignment of students to the groups ensures that the only systematic difference between the groups is the program offer that each group received. Which students were subject to assignment to different groups did vary depending on eligibility for the interventions. Therefore, the composition of the groups compared does shift between sets of analyses. For example, in Chapter 4, the difference on any given outcome between the group offered *Explore Your Horizons* and the comparison group receiving no program offer provides the estimate of the impact of *Explore Your Horizons* on the outcome. The same is true for the impact estimates of *Learning Accounts* in Chapter 5, except that the statistically equivalent comparison group used in the analysis is not precisely the same as the group used in the *Explore Your Horizons* comparison. The reason for these differences stems largely from the treatment of income in decisions about eligibility and analysis, as explained below.

Treatment of Income in Eligibility and Analysis

The sample allocation in *Future to Discover* is complicated by the fact that *Learning Accounts* can be offered only in New Brunswick to participants with a family income below the specified cut-off level for a given family size.¹⁴ During in-home baseline interviews, Statistics Canada interviewers requested each parent’s total income as recorded on Line 150 of their previous year’s tax return(s). Parents in families providing this information and who were verified as below the required cut-off by Statistics Canada, signed the *Learning Accounts*-eligible (“LA-eligible”) consent form. This form explained that they were eligible for assignment to one of four groups: *Learning Accounts* only, *Explore Your Horizons* only, *Explore Your Horizons plus Learning Accounts*, or the comparison group.¹⁵ Families who were verified as having income above the required cut-off or who were unwilling to provide information from Line 150 were deemed ineligible for *Learning Accounts* (“LA-ineligible”) and received a different consent form. This form establishes the possibility of assignment to either *Explore Your Horizons* or to the comparison group, but not *Learning Accounts*.

13 More information about characteristics of the program and comparison groups in each province can be found in the *FTD Early Implementation Report* (SRDC, 2007), and in Chapter 4 and the Appendices of the *FTD Interim Impacts Report* (SRDC, 2009).

14 The cut-offs correspond to the median family income in New Brunswick from published 2001 Census data. Separate cut-offs were used for families of different sizes.

15 In the form they acknowledged that, should their child be assigned to a *Learning Accounts* group, SRDC would ask them to permit release of their Canada Revenue Agency data for further confirmation.

The consequence of adopting the above approach to determine eligibility for the project interventions was that it may have placed some lower-income families — those unwilling to provide income information from their tax returns — in the otherwise higher-income “LA-ineligible” group. Survey data suggests that this was the case. The families who were unwilling to provide income information from Line 150 of their tax returns were asked to report income via a standard set of survey income questions, and virtually all did so. The proportion of families deemed “LA-ineligible” who nonetheless reported survey income levels that fell below the “LA-eligible” threshold was around one in seven. Among Francophone LA-ineligible participants, 14.3 per cent fell below the lower income threshold on the survey measure. Among Anglophone LA-ineligible participants, 12.9 per cent fell below the lower income threshold on the survey measure. A more complete explanation is provided in SRDC (2007).

Given the above anomaly, some analyses use survey-defined income groups to present impacts for lower-income sub-groups, as explained below.

Sub-group Definitions

The project seeks to determine the impacts of the interventions on students most likely to need additional support to access post-secondary education. These were identified at the outset as those whose families have lower incomes and whose parents have little or no experience of post-secondary education. As explained at the start of the chapter, a “designated” group — also known as the LILE (lower-income and lower parental education) sub-group — is of particular interest because research has shown family income and parental education to be strongly correlated with young people’s academic achievement and participation in post-secondary education.¹⁶ Impacts will also be analyzed in this report also for a second sub-group from “first generation” families (FGF), comprising students whose parents have no post-secondary experience (that is, the highest education level of both parents was “high school or less” at baseline). Such students may be particularly disadvantaged in seeking and receiving information and advice on post-secondary transitions. Another group of interest in recent years is boys. Frenette and Zeman (2007) document that boys are far less likely than girls to attend university, largely due to academic reasons. This is the first *Future to Discover* report to include boys and girls sub-groups.¹⁷ In Manitoba, sample sizes also allowed for the analysis of Aboriginal youth, which is another group that is less likely to attend university (Frenette, 2011b).

It should also be noted that Aboriginal students represent only 15.5 per cent of the Manitoba sample, so the ability to detect impacts is limited. Again, this is the first *Future to Discover* report to include this group.

Given the eligibility restrictions and analytical intentions described in the previous section, the original sample of 5,429 project participants is divided in several different ways in this report. The following tables illustrate some of the divisions. Table 1.4 shows how the sample is allocated to different experimental groups by province, by linguistic sector in New Brunswick, and by verified income (“LA-eligible” or “LA-ineligible”). The table shades in colour all groups followed up with surveys. In order to reduce programming and survey costs, about a third of the original LA-ineligible participants were randomly allocated to a no-follow-up comparison group, tracked only with administrative data. Impact comparisons in this report are based only on the sample members who were in the post-secondary survey sample.

The table shows how “full sample” comparisons are possible between the *Explore Your Horizons* group and the comparison group for both provinces and sectors, but that only the lower-income portion of these groups is used for comparisons with the *EYH+LA* and *LA* only groups. Thus all impact analyses that include the offer of *Learning Accounts* involve comparisons with statistically equivalent LA-eligible sample below the lower-income cut off.

While the divisions in Table 1.4 are used analytically for the principal impact analyses in this report, results are also presented for two education sub-groups: students whose parents have lower-income and lower-education status (LILE), and those whose parents hold no post-secondary experience (FGF). The analytical division for LILE purposes is illustrated in Table 1.5. Participants without income based on information from Line 150 of their parents’ tax returns are classified as LILE based on survey measures of income on which somewhat more participants are identified as lower-income than meet the program definition of “LA-eligible.” Thus, *Explore Your Horizons* impacts for the LILE sample are derived by comparing those meeting the survey’s lower-education and lower-income criteria. Impacts for LILE comparisons that include groups offered *LA* and *EYH+LA* are derived for those potentially eligible for *LA*, which is the more restrictively defined LA-eligible group.

16 For example, Looker (2002); Bowlby and McMullen (2002); Knighton and Mirza (2002); Barr-Telford, Cartwright, Prasil, and Shimmons (2003); Tomkowicz and Bushnik (2003); and Frenette (2007).

17 The interventions’ interim impacts on boys and girls were reported in supplementary tables available from SRDC’s Web site (SRDC, 2009).

Table 1.4: The Original Sample Assignment to Experimental Groups in *Future to Discover*

Family Income	MB		NB Francophone				NB Anglophone			
Higher income or not verified [Learning Accounts ineligible]	EYH	Comp	EYH	Comparison (no survey follow-up)		Comp	EYH	Comparison (no survey follow-up)		Comp
Below median [Learning Accounts eligible]	EYH	Comp	EYH	EYH+LA	LA	Comp	EYH	EYH+LA	LA	Comp
Sample Size	1,042		2,234				2,142			

EYH = Explore Your Horizons program group

LA = Learning Accounts program group

EYH+LA = Explore Your Horizons plus Learning Accounts program group

Comp = Comparison group

Table 1.5: Analytical Assignment to LILE and Non-LILE Groups

Family income		Lower-income, lower-education families (LILE)							
		LILE Neither parent has a post-secondary credential from 2 or more years' study AND survey-recorded income was below the median				Non-LILE 1+ parents has(ve) a post-secondary credential from 2 or more years study OR survey-recorded income was above the median			
Higher income or not verified [Learning Accounts ineligible]	Above survey recorded median income	EYH	Comparison (no survey follow-up) (NB only)		Comp	EYH	Comparison (no survey follow-up) (NB only)		Comp
Below median [Learning Accounts eligible]	Below survey recorded median income	EYH	EYH+LA (NB only)	LA (NB only)	Comp	EYH	EYH+LA (NB only)	LA (NB only)	Comp

EYH = Explore Your Horizons program group

LA = Learning Accounts program group

EYH+LA = Explore Your Horizons plus Learning Accounts program group

Comp = Comparison group

SUMMARY OF EARLY AND INTERIM IMPACTS

This section summarizes results previously reported in the Interim Impacts Report (Smith Fowler et al., 2009). More details are available in that report.

Implementation research confirmed that the offer of *Explore Your Horizons* was given a fair test (i.e. the delivery was consistent with the design, over time and between sites). Although participants were informed about the workshops and many reported finding the material useful, attendance was often low. Offering *Explore Your Horizons* in combination with *Learning Accounts* increased attendance at *Explore Your Horizons* sessions.

Explore Your Horizons increased thinking and planning for the future — mostly for New Brunswick Francophone sector participants and, to a lesser degree, for LILE and FGF participants from Manitoba. *Explore Your Horizons* increased the proportions aspiring for a post-secondary credential among Francophone first-generation participants and Anglophone LILE and first-generation (FGF) participants. In the Francophone sector, the intervention induced switching of post-secondary program preferences.

There were very few impacts of *Explore Your Horizons* on participants' directions in high school. In the Francophone sector, LILE and first-generation participants were more likely to still be in school at the time of the Grade 12 survey. *Explore Your Horizons* improved knowledge of post-secondary education costs and financing, mostly for New Brunswick Anglophone sector participants. For Manitoba participants, *Explore Your Horizons* reduced the proportion perceiving financial barriers to an expressed desire to seek post-secondary education.

The offer of *Learning Accounts* was delivered effectively during the period observed for the Interim Impacts Report. More than 90 per cent of eligible program participants took up the offer and qualified for each of the three instalments into their account, totaling \$8,000. However, there was low recall of holding the account during the fall of Grade 12, prior to reminder calls from the *FTD* Office.

Learning Accounts increased the proportions of New Brunswick Francophone sector first-generation participants thinking about the future. While it increased the proportion of Anglophone first-generation participants aspiring to obtain any post-secondary credential, it mainly increased the proportions of Francophone sector participants planning to apply to trade and apprenticeship programs.

Learning Accounts improved knowledge of post-secondary education costs and financing, mostly for New Brunswick Anglophone sector participants. *Learning Accounts* reduced the likelihood of Francophone sector students being aware that parents or relatives were saving for the participant's future education in a Registered Education Savings Plan (RESP).

The combination of *Explore Your Horizons* plus *Learning Accounts* seems to have had an impact on thinking and planning for the future among program group members relative to the comparison group. These impacts were positive for LILE participants and those whose parents have post-secondary education experience relative to the equivalent members of the comparison group. There were some additional positive impacts on reports of parents' orientation to post-secondary education in the Anglophone linguistic sector.

The effects of *Explore Your Horizons* and *Learning Accounts* on participants' activities while in high school are difficult to interpret or inconsistent. *Explore Your Horizons* plus *Learning Accounts* resulted in no impacts on educational activities at school relative to the comparison group. However, there were small positive impacts on peer group changes.

Receiving both *Explore Your Horizons* and *Learning Accounts* did not in general change the reported intention to borrow to pay for post-secondary education. There were some small impacts of the interventions on intentions to borrow to pay for post-secondary education among Francophone students, with *Learning Accounts* tending to reduce the reported intention to borrow by LILE and first generation participant sub-groups.

PURPOSE AND STRUCTURE OF THE REPORT

The purpose of this report is to present the primary impacts of interest to the *Future to Discover* pilot project — students' participation and activities in post-secondary education. It also presents results from a benefit-cost study, the remaining implementation results, and results from the National Longitudinal Panel.

The remaining implementation results will be presented alongside a summary of findings to date in Chapter 2. The new results are derived from the post-secondary survey responses of program group members, program management data and qualitative interviews with *Learning Accounts* program staff, which were conducted to document and gauge the success of the program delivery. The focus for the remainder of the report will be on the post-secondary impacts beginning with the evaluation methodology, described in Chapter 3. Chapters 4 through 6 will present the impacts for the *Explore Your Horizons* (Chapter 4), *Learning Accounts* (Chapter 5), and combined interventions (Chapter 6). Results from the cost-benefit study appear in Chapter 7.

The final chapter of the report summarizes the major findings of this phase of the *Future to Discover* Pilot Project (Chapter 8). More importantly, it also describes what has been learned from the project since its inception. It draws in relevant results from the National Longitudinal Panel, which also appear in more detail in Appendix 4. Chapter 8 also addresses how the *Future to Discover* project can be extended in order to answer several important questions that cannot be addressed with the existing data.¹⁸



¹⁸ Three additional topics are investigated in other appendices: a response-bias analysis (Appendix 1), an incremental impacts analysis (Appendix 2), and an enrolment over time analysis (Appendix 3).

Implementation of *Explore Your Horizons* and *Learning Accounts*

Introduction

This chapter reports on the implementation of the two interventions in *Future to Discover* — *Explore Your Horizons*¹⁹ and *Learning Accounts* — and the extent to which participants took part in them. Sources of evidence for this assessment include primary data from site observations, interview and focus group transcripts, surveys of student participants, and secondary data such as meeting minutes, the project operations manuals, and Web site usage tracking data. Workshop attendance data are taken from the Project Management Information System (PMIS). Participation rates are presented for all participants in Manitoba and New Brunswick and for subgroups. The chapter also contrasts the participation of those in New Brunswick who were assigned to receive *Explore Your Horizons* with those assigned to receive both *Explore Your Horizons* and *Learning Accounts* together. Feedback from participants, parents, and delivery staff is included to help explain differences in participation.²⁰

19 The enhanced career education intervention was referred to frequently as *Future to Discover* during delivery, and this was always the case in Manitoba. For consistency and clarity, this chapter will refer to both the Manitoba and New Brunswick programs as *Explore Your Horizons*.

20 It is important to note that all project communications with *Learning Accounts* participants were designed in ways that avoided the identification of program group members to others. The aim was to preserve the confidentiality of baseline survey responses by not revealing the lower-income status of participants that qualified them for *Learning Accounts*. Thus, focus groups were not held specifically with *Learning Accounts* participants or their parents, and any mention of *Learning Accounts* at focus groups was incidental.



CHAPTER SUMMARY

- ***Explore Your Horizons* was implemented as intended, according to its original design.** All components — the workshops, the *Future to Discover* Web site, and the *F2D* magazine — were delivered in all sites in both provinces and to both cohorts in New Brunswick. Facilitators, provincial coordinators, and *Future to Discover* Office staff ensured the intervention was made available to all participants. They used a variety of means to invite participants to workshops and keep them informed of workshop schedules and they ensured participants were aware of the Web site and the *F2D* magazine.
- **Most participants attended at least one of the twenty *Explore Your Horizons* workshops on offer, and many attended multiple workshops.** In Manitoba, three-quarters (76 per cent) of all participants attended at least one workshop, and nearly half (48 per cent) attended six or more. In New Brunswick, 84 per cent of both Anglophone and Francophone participants attended at least one workshop. In both sectors, over half of all participants (60 and 61 per cent, respectively) attended six or more workshops. However, attendance was not nearly as high as intended. In the last two years of the program (Grades 11 and 12), and in both sectors, attendance rates were below 50 per cent of those invited to every workshop held.
- **Those who were in the combined *Explore Your Horizons plus Learning Accounts* group in New Brunswick attended more sessions and in greater proportions than those in the group receiving *Explore Your Horizons* alone.** This was particularly true for Francophone participants.
- **The *Future to Discover* Web site was not used by the majority of participants and usage declined considerably over time.** Rates of use — while low overall — were highest among New Brunswick Anglophone participants, followed by Manitoba participants.
- ***Future to Discover* staff in both provinces used a variety of methods to encourage participation.** It is unlikely that more could have been done to increase participation, given the design of the intervention.
- **1,097 students were randomly assigned to receive *Learning Accounts* either by itself, or in combination with *Explore Your Horizons*.** Of these students, 93.4 per cent were still eligible after Grade 10 (meaning they met the requirements necessary up to that point to receive payment), and 90.2 per cent remained eligible after their Grade 12 year.

- ***Learning Accounts* participants responding to the Grade 12 survey reported low awareness of having a “Learning Account.”** This was more pronounced for the Anglophone sector (38.6 per cent) than the Francophone (58.4 per cent). Earlier results suggest that offering *Explore Your Horizons plus Learning Accounts* improved awareness considerably in both sectors compared to offering *Learning Accounts* alone.
- ***Learning Accounts* was implemented as planned, but required a high level of staff effort and delivered a level of service that extended somewhat beyond facilitating payments.** This was true for activities throughout the *Learning Accounts* implementation, from encouraging participants to enrol and open their accounts, to determining their ongoing eligibility for instalments, to contacting them to promote applications for payments when eligible, providing information to support post-secondary decisions and managing inter-agency flows of information. It included following up in cases where students had not cashed their cheques.

IMPLEMENTATION OF *EXPLORE YOUR HORIZONS*

Explore Your Horizons provided enhanced career education in different components after school to students in Grades 10, 11 and 12 and to their parents. The program was designed specifically for the *Future to Discover* project in consultation with stakeholders from the Canada Millennium Scholarship Foundation, Manitoba Education, and New Brunswick Department of Education, with assistance from the Canadian Career Development Foundation and with experts in the field of career education. Its components were selected based on the cumulative education, policy and programming knowledge of those involved, plus experience and opinions of experts, as well as program and research evidence. The design also took into account practical considerations, provincial preferences, and research and program design requirements. Only a summary is presented here. The establishment of the program is described in detail in the Early Implementation Report (SRDC, 2007) and its implementation discussed in detail in the Interim Impacts Report (Smith Fowler et al., 2009).

The six integrated components to *Explore Your Horizons* are: (1) Career Focusing, (2) Lasting Gifts, (3) Future in Focus, (4) Post-secondary Ambassadors, (5) the *Future to Discover* Web site, and (6) the *F2D* magazine. Program group members in the *Explore Your Horizons* group and the *Explore Your Horizons plus Learning Accounts* group were all offered the six components, as described in Table 2.1, through Grades 10, 11, and 12 of high school. The provinces were responsible for organizing the delivery of these components and each appointed a Provincial Coordinator and established *Future to Discover* offices to manage the delivery.

Table 2.1: The Six Components of *Explore Your Horizons* (EYH)

Component	Rationale	Frequency in Grade 10	Frequency in Grade 11	Frequency in Grade 12
Career Focusing	To help high school students explore career options and develop suitable educational and career plans. Parents are invited to attend the last Career Focusing session so that their children have the opportunity to share their educational and career development plans with them.	6 workshops of 2 hours (12 hours)		
Lasting Gifts	To help parents and their children understand the process of career education development.		4 workshops of 2 hours (8 hours)	
Future in Focus	To help students manage transitions, create and/or access support groups and build resilience to overcome challenges.			4 workshops of 2 hours (8 hours) plus orientation session
Post-secondary Ambassadors	To promote career exploration and education planning by establishing connections in a classroom setting between groups of high school students and a small team of students currently enrolled in a range of post-secondary education and training programs.	2 workshops of 2 hours (4 hours)	2 workshops of 2 hours (4 hours)	2 workshops of 2 hours (4 hours)
<i>Future to Discover</i> Web site	To provide career information and education planning information to encourage student enrolment in community colleges, apprenticeships, universities and private vocational institutions.	Accessible throughout <i>Explore Your Horizons</i> . The Web site is comprised of six layers of information that directly tie to other components of <i>Explore Your Horizons</i> . Participants gain graduated access to these layers as they progress through the workshops.		
<i>F2D</i> Magazine	To provide career information and education planning information to encourage student enrolment in community colleges, apprenticeships, universities and private vocational institutions.	2 issues	2 issues	2 issues

The design of *Explore Your Horizons* placed a strong emphasis on the participation of parents/guardians. A key objective was to support and equip parents (or other significant adults in participants' lives) to provide in turn support to participants for their career exploration process. Parents/guardians were thus invited to attend sessions with their children at the start of the intervention (an orientation and the last session of Career Focusing), midway (Lasting Gifts), and at the end (the last session of Future in Focus).

Explore Your Horizons workshops mainly took place in classrooms at participating schools, after the last class of the day. However, sessions to which parents were invited, were typically scheduled in the evenings. Facilitators with a career counselling or education background were hired to deliver the sessions, except for the Post-secondary Ambassador workshops, which were delivered by students already enrolled in post-secondary education (based on a recruitment strategy involving all four streams of post-secondary education).

Explore Your Horizons Delivery

SRDC's implementation research (Smith Fowler et al., 2009) concluded that *Explore Your Horizons* was implemented in both provinces and for both cohorts as intended, according

to its original design. The offer of *Explore Your Horizons* was given a fair test, and implementation was consistent across sites and time. Facilitators, Provincial Coordinators, and *Future to Discover* office staff ensured the intervention was made available to all participants. They used a variety of means to invite participants to workshops and keep them informed of workshop schedules; they ensured participants were aware of the Web site and the *F2D* magazine; and they used a variety of incentives to encourage attendance and use of the different components.

There was a high level of awareness among delivery staff of the implementation objectives, especially the need for consistency. Staff used a variety of procedures to promote consistency, including extensive training and follow-up, the use of scripts, and regular communication among and between the staff of both provinces. Facilitators and Post-secondary Ambassadors demonstrated close adherence to the scripts for delivery of the workshops. Agendas and activities were consistent among observed workshops, and the same materials were made available to participants in all workshops, such as workbooks, overheads, and posters. Moreover, all workshops were held at designated locations and times.

Participants in the *Explore Your Horizons* program group who responded to the *Future to Discover* Grade 12 survey were generally positive or neutral in their assessments of *Explore Your Horizons*. For example, 60 per cent of survey respondents agreed or strongly agreed with the statement, “*Explore Your Horizons/Future to Discover* helped me decide what to do after high school,” although 33 per cent disagreed or strongly disagreed with this statement. Four-fifths of participants agreed or strongly agreed that they would recommend *Explore Your Horizons/Future to Discover* to their friends. Reporting in Grade 12, participants tended to favour most the Post-secondary Ambassador workshops, and to favour least the *Future to Discover* Web site. Although the magazine was delivered twice annually to participants’ homes, less than 30 per cent of participants ever accessed the Web site.

By the time of the *FTD* 66-month survey, opinions had diverged somewhat. Respondents were asked which “aspect of the program was most useful to you in making choices about your future education or career?” Career Focusing sessions (offered in Grade 10) were cited most often by New Brunswick Francophone participants (by 22 per cent of them, equivalent to 35 per cent of those expressing a preference) and Manitoba participants (28 per cent valuing this component). This was roughly twice the proportion from these groups who most valued Post-secondary Ambassador workshops. Yet the latter were somewhat more valued among Anglophone participants, cited as most useful by 27 per cent (again 35 per cent of those expressing a preference) compared to 21 per cent saying Career Focusing was the most valuable. The Web site and magazine were the components most frequently found least useful.

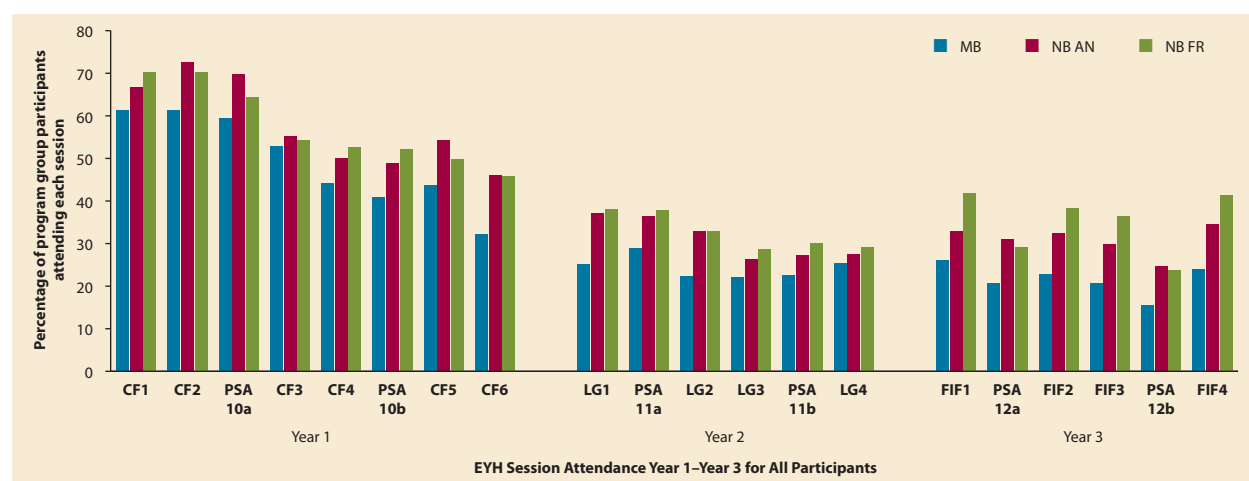
In New Brunswick, 60 per cent of Francophone and 63 per cent of Anglophone participants agreed or strongly agreed with the statement that the program “helped me to prepare for life after high school” but the proportion was slightly lower, at 54 per cent, in Manitoba. Roughly equivalent proportions (78, 82 and 76 per cent, respectively) from the three education systems felt that the program should be offered to all students.

Explore Your Horizons Participation

The offer of *Explore Your Horizons* was often not taken up by participants. Overall levels of participation in workshops typically declined during the project period, for a variety of reasons. However, most participants attended at least one *Explore Your Horizons* workshop, and many attended multiple workshops. In Manitoba, three-quarters (76 per cent) of all participants attended at least one workshop, and nearly half (48 per cent) attended six or more. In New Brunswick, 84 per cent of both Anglophone and Francophone participants attended at least one workshop. In both sectors, over half of all participants (60 and 61 per cent, respectively) attended six or more workshops.

Attendance at workshops — presented in Figure 2.1 — steadily declined until mid-way through the second year of the intervention, after which attendance typically stabilized. Even though final year attendance actually increased quite markedly among New Brunswick Francophone participants, fewer than half those originally invited were attending each session.

Figure 2.1: Attendance at *Explore Your Horizons* by Session — All Participants



Source: Program Management Information System data.

Notes: CF = Career Focusing; PSA = Post-secondary Ambassadors; LG = Lasting Gifts; FIF = Future in Focus; numbers following acronyms refer to number in the workshop sequence (in the case of CF, LG, and FIF) or the grade a workshop is offered (in the case of PSA).

Attendance at *Explore Your Horizons* workshops was higher in both linguistic sectors in New Brunswick than in Manitoba, both initially and over time. In Manitoba, attendance reached its peak at 66 per cent of participants, and just 16 per cent attended all of the last four sessions. Among New Brunswick Anglophone participants, the highest attendance was 73 per cent of participants, with 16 per cent attending all of the last four sessions. The equivalent proportions for Francophone participants in New Brunswick were 71 and 19 per cent.

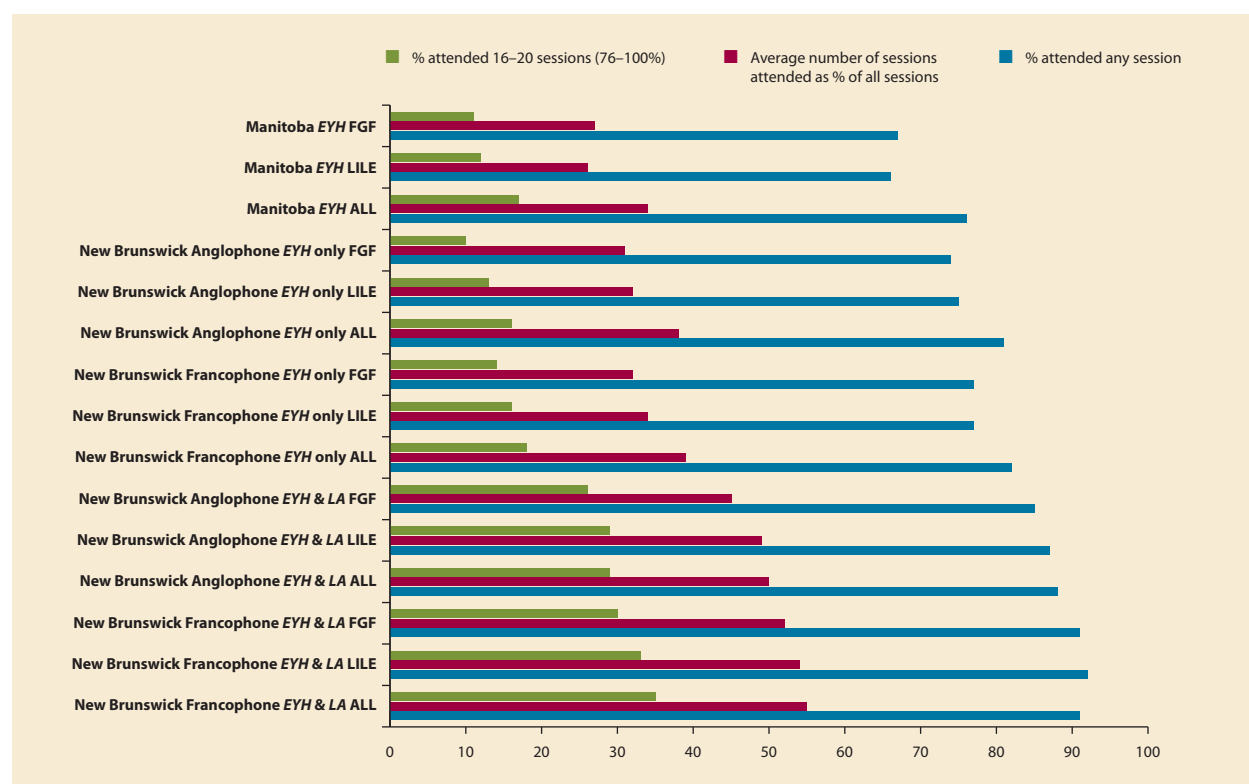
Participants from LILE families (with lower income and lower parental education) and whose parents had no education above high school (FGF) were typically less likely to attend than other participants, in both provinces and in both linguistic sectors. This is an important consideration in reviewing impact results in Chapters 4 onwards for these sub-groups. Those whom the intervention was specifically designed to assist, and among whom the program was most hoped to change post-secondary outcomes, were somewhat less likely to attend than those among whom the intervention was less likely to be needed.

A proportion of those invited to sessions in New Brunswick also had a Learning Account, and this may explain some of the provincial differences in attendance. Those who were in the combined *Explore Your Horizons* plus *Learning Accounts* groups in New Brunswick (the six sub-groups whose attendance rates are shown in the lower section of Figure 2.2)

attended more sessions and in greater proportions than those in the groups receiving *Explore Your Horizons* alone (the nine sub-groups in the upper section of Figure 2.2). When those offered *Explore Your Horizons* as their only program option are compared, Manitoba students exhibited very similar patterns of attendance to New Brunswick groups. Offering *Learning Accounts* to LILE participants raised levels of workshop attendance to levels seen for students from higher-education and higher-income families.

When asked in the *Future to Discover* survey during Grade 12 why they had not attended the *Explore Your Horizons* sessions offered up to that point more often, 27 per cent of respondents cited scheduling conflicts with work, 14 per cent cited conflicts with sports, and 13 per cent indicated more generally that the timing of the sessions was not good. Students were also asked in the survey about the reasons their parents had not attended Lasting Gifts sessions. Again, timing was the greatest barrier: the primary reasons cited were "conflict with work" (37 per cent), "other family responsibilities" (10 per cent), or that the "timing of sessions" didn't suit their needs (10 per cent). The *FTD* 66-month survey asked respondents about their reasons for not attending the final (Future in Focus) workshops in Grade 12 and conflicts with work remained the most common reason, although New Brunswick Anglophone participants were almost as likely to cite conflicts with sports.

Figure 2.2: Attendance at *Explore Your Horizons* Workshop Sessions (not including orientation sessions) by Sample Sub-group and Program Assignment



Source: Program Management Information System data.

When readership of the *F2D* magazine and usage of the *Future to Discover* Web site are taken into account alongside workshop attendance, nearly every program group member received some exposure to *Explore Your Horizons'* components. A majority of participants said they had read at least one article in the *F2D* magazine.

The *Future to Discover* Web site was not used by the majority of participants and usage declined considerably over time. Rates of use — while low overall — were highest among New Brunswick Anglophone participants, followed by Manitoba participants.

Future to Discover staff in both provinces used a variety of methods to encourage participation. It is unlikely that more could have been done to increase participation, given the design of the intervention.

Since *Explore Your Horizons* was designed to be offered as after-school programming, it is likely that attendance would have been markedly increased at workshops offered during school time. Most of the reasons participants provided for not attending would not apply at that time. The consequences of adopting an in-school model for delivery can only be speculated on. Several options could be pursued such as mandatory attendance for all students, making the program available as an elective class or targeted on selected students. Some components, especially those involving parents, would still require evening activities.

IMPLEMENTATION OF LEARNING ACCOUNTS

The design and intent of *Learning Accounts* are described in detail in the Early Implementation Report (SRDC, 2007) and its implementation to the end of participants' Grade 12 year is documented in the Interim Impacts Report (Smith Fowler et al., 2009). These earlier reports described activities surrounding the offer and accumulation of instalments. This section builds on that previous work, with new analysis of the implementation of payments which took place from 2007 through to the end of the program in June 2011.

The design of *Learning Accounts* was based on the assumption that many lower-income students anticipate having inadequate financial resources to pay for their post-secondary education and this discourages them early in high school from planning to participate in post-secondary education. By providing an early commitment of non-repayable financial aid to such students,

Learning Accounts aimed to increase their chances of accessing post-secondary education. Thus, *Learning Accounts* provides a "promise" or guarantee of financial aid offered early in Grade 10 to students from lower-income families in New Brunswick. Specifically, the offer comprises up to \$8,000 for PSE accumulated upon reaching milestones in secondary school completion and, upon graduation and enrolment in an eligible post-secondary program, paid in instalments over two years.

Learning Accounts participants were recruited in Grade 9 and notified of their assignment just prior to the start of Grade 10. To open the account they needed to sign (along with their parents) participant declarations, which made clear the program requirements. Participants offered a Learning Account who attend a New Brunswick high school until graduation and who successfully enrol in a post-secondary education program (recognized by Canada Student Loans) receive up to a maximum of \$8,000 over two years to subsidize their post-secondary education expenses.

The accumulation of funds over time in *Learning Accounts* was intended to recognize each participant's continued commitment to education. Thus, participants in *Learning Accounts* had to still be attending a New Brunswick high school at the end of Grade 10 to receive an instalment of \$2,000 in their account, and had to still be attending a New Brunswick high school at the end of Grade 11 to receive another \$2,000. Thereafter, *Learning Accounts* participants who successfully graduated from a New Brunswick high school would have another instalment of \$4,000 added to the account.²¹ This pattern is shown in Table 2.2. If they successfully enrolled in a post-secondary education program, they could draw from the accumulated funds in their account. *Learning Accounts* participants could request a \$2,000 payment twice per academic year once their enrolment status had been confirmed, for a total maximum of \$8,000 in a two-year period. The check on enrolment was performed by New Brunswick Student Financial Services or the New Brunswick Apprenticeship Bureau (for registered apprentices), and all funds had to be claimed within six years of the account being offered at the start of Grade 10.

The sources of evidence for *Learning Accounts* findings include secondary data from the PMIS and primary data from the Grade 12 and *FTD* 66-month surveys along with high school graduation data and SRDC interviews with *FTD* Office staff.

21 For both cohorts and for all participants, access to the maximum amount was conditional on completion of secondary studies within four years of opening the account. Upon successful completion of secondary studies in New Brunswick through a high school diploma, Adult Education Diploma, or a General Education Development diploma, participants would have been entitled to the full bursary of \$8,000 in their accounts. Students not completing secondary studies within the timeframe remained entitled to past instalments in their accounts.

Table 2.2: Pattern of Instalments and Payments for *Learning Accounts* (LA)

Grade/Year	LA instalments	LA statements	LA payments for post-secondary education program lasting 2+ years	LA payments for post-secondary education program of < 1 year
10	\$2,000 at end of Grade 10	Mailed upon completion of Grade 10		
11	\$2,000 at end of Grade 11	Mailed upon completion of Grade 11		
12	\$4,000 at end of Grade 12	Mailed upon completion of Grade 12/ Graduation along with "Request for Payment" package		
Post-secondary year 1			\$2,000 with confirmation of post-secondary education enrolment; \$2,000 at start of winter term	\$2,000 with confirmation of post-secondary education enrolment; \$2,000 at start of winter term ^a
Post-secondary year 2			\$2,000 at start of fall term; \$2,000 at start of winter term	

^aParticipants enrolled in programs four months or less in length can request a disbursement of \$2,000 at the start of their program and another \$2,000 upon successful completion. To receive the second payment, they need to submit proof of program completion at one of the three withdrawal deadlines each year.

Learning Accounts Delivery

In the *Future to Discover* pilot project, *Learning Accounts* was offered to 1,097 students: 528 in Francophone sector schools and 569 in Anglophone sector schools. Half were assigned to receive *Learning Accounts* alone and half to receive it in conjunction with *Explore Your Horizons*. Unlike *Explore Your Horizons*, following research sample recruitment, there was no routine in-person contact between *Learning Accounts* participants and program staff. Communications took place by mail and telephone, solely to clarify the terms and conditions of *Learning Accounts* and later to verify details of participation (when applications for payments were submitted) and to forward payments.

During the first year of the program (Grade 10), communications comprised of notifications to participants of eligibility rules, provision of a participant declaration package, and then follow-up to ensure the declarations were signed by parents and student participants and then returned. Thereafter, staff contacted participants to verify contact information, to notify them of the "virtual" account balance of their *Learning Account*, and to administer applications for payment (i.e., withdrawal of funds).

The implementation of *Learning Accounts* required FTD Office staff to engage in some activities that did not involve contact with participants. During participants' secondary school years, these tasks involved verification of ongoing eligibility for *Learning Accounts* instalments. To receive instalments of \$2,000 at the end of Grade 10 and at the end of Grade 11, participants had to be confirmed as "active students" attending a New Brunswick high school. For the final instalment (of \$4,000), the program required evidence of successful completion of high school in New Brunswick. Payments required confirmation of enrolment and attendance at a

Canada Student Loans-recognized post-secondary program. This latter task involved liaison with New Brunswick Student Financial Services.

Each participant's *Learning Account* expired six years from his or her assignment to the *Learning Accounts* or *Explore Your Horizons plus Learning Accounts* group (just prior to the start of Grade 10). Thus the last payments were made in June 2010 for Cohort 1 participants and June 2011 for Cohort 2. This allowed participants graduating high school "on time" a total of three years in which to participate in post-secondary education before their *Learning Accounts* expired.

Participants could apply for up to \$4,000 in any one year in which they were enrolled in post-secondary education. There were two payment periods in each year and those applying and engaged in eligible post-secondary study received a payment of \$2,000 per payment period. Thus, to receive the full \$8,000 participants had to make four eligible claims, and they had to start applying and receiving payments no later than in the first half of the fifth year following assignment. This allowed participants graduating high school up to one year "late" to still have the option of receiving the full \$8,000 amount in their accounts.

The project's implementation analysis undertaken on data up to the point of completion of Grade 12, and reported in Smith Fowler et al (2009), concluded that *Learning Accounts* was implemented as planned, but that efforts to reach participants took much more staff time than originally planned. Analysis of the final three years of delivery found this conclusion remained applicable: *Learning Accounts* was delivered as planned but required considerable staff support at its key stages from opening accounts to completion of applications for withdrawal of funds.

Text Box 2.1: *Learning Accounts* Payment Procedures

- Request for Payment packages containing an application form, declaration and consent form, checklist, instructions for completion, and FAQs were mailed by the New Brunswick *Future to Discover* Office (FTDO) to *Learning Accounts* participants in June 2007 (cohort 1) and June 2008 (cohort 2).
- Participants who register as a full-time student (i.e., at least a 60 per cent course load) at an institution recognized by the Canada Students Loans Program (CSLP) submit applications to the *FTD* Office before the September deadline.
- FTDO staff submit appropriate data to New Brunswick Student Financial Services for verification of program eligibility, enrolment, and attendance.
- Students whose registration is not confirmed, or who have enrolled in a program not recognized by CSLP, are informed by the FTDO.
- FTDO transmits a list of students eligible for payment to the Canada Millennium Scholarship Foundation to issue cheques.
- Applications are received in three *Learning Accounts* payment cycles per year: September, January, and May.
- Participants are allowed to request payments for a maximum of two out of the three payment cycles in an academic year.
- T4A slips are issued annually for the *Learning Accounts* grants.
- New application packages are to be sent by the FTDO to all participants six weeks prior to the next withdrawal period.
- All eligible participants who have not applied for a particular withdrawal to be phoned before the deadline.

FTD Office duties included calling participants to verify their status and address before sending out withdrawal packages, sending these withdrawal packages three times each year, making follow-up phone calls before application deadlines, answering questions on the project toll-free line, sending letters to participants about closing accounts and following up on cheques that had not been cashed. Staff used different strategies, including letters, repeated mailings, telephone calls, and extending deadlines for applications. *Explore Your Horizons* facilitators also assisted the *FTD* Office by calling participants to remind them of the funds they had available and to encourage them to submit applications for withdrawal payments. The payment procedures are presented in Text Box 2.1.

***Learning Accounts* Participation**

Overall, 93.4 per cent of program group members who were offered *Learning Accounts* opened accounts. Among participants in Francophone schools, the take-up was slightly higher (95.4 per cent) compared to participants at Anglophone schools (91.3 per cent). The declarations set out the conditions and timelines for the program. If declarations were not returned to the *FTD* Office with parent and student signatures by the set deadline, *Learning Accounts* eligibility was terminated. Eligibility was also affected when participants stopped attending or failed to graduate from a New Brunswick high school within four years of entering Grade 10. Of all program group members offered an account, 93.3 per cent were still eligible after Grade 10, and 91.9 per cent after their Grade 12 year. In other words, the combined effects of the eligibility rules meant that just over nine in ten program group members maintained eligibility to receive a payment during their post-secondary years.

For eligible program group members to actually receive payments they needed to be enrolled in a Canada Student Loans eligible post-secondary program and to provide details using the *Learning Accounts* payment withdrawal form to the *FTD* Office.

Just under two-thirds of all program group members actually received at least one *Learning Accounts* payment. There was little difference between the *Learning Accounts* only group (63.6 per cent) and the *Explore Your Horizons plus Learning Accounts* group (63.3 per cent). Those taking up an account payment were a slightly higher proportion of those eligible: 67.9 per cent of those who signed the declaration in Grade 10 received at least one payment before their entitlement expired.

Sample characteristics associated with receipt of payments included the following:

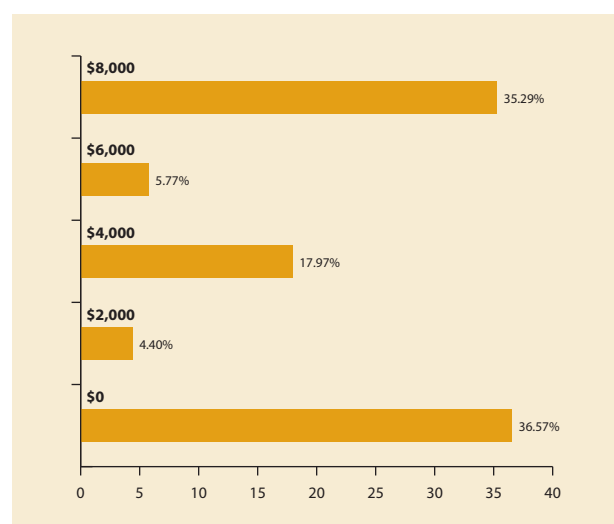
- **Cohort:** receipt was higher for Cohort 2 (67 per cent) than Cohort 1 (61 per cent);
- **Linguistic sector:** receipt was higher for Francophone sector participants (68 per cent) than those in the Anglophone sector (59 per cent);
- **Gender:** girls were much more likely (70 per cent) than boys (56 per cent) to receive a payment.

Anecdotally, *FTD* Office staff noted a higher proportion of calls from Francophone parents than from Anglophone parents about how to access their account, about how much money they were eligible for and asking when the account was closing. The higher volume of enquiries would be consistent with a higher level of account use by Francophone participants.

Figure 2.3 indicates the amounts of *Learning Accounts* payments received by program group members. Payments are integer multiples of the \$2,000 available for each payment period (roughly corresponding to each semester or each half-year). As discussed earlier, 63.4 per cent of program group members actually received payments. The remaining 36.6 per cent are thus shown in Figure 2.3 to receive zero payments, either due to non-eligibility or to not applying. Among program group members who received a payment, there was a strong tendency to receive all four payments totaling the maximum amount of \$8,000. More than 35 per cent of program group members did so (which represents 55.6 per cent of those who received any payments). The average total payment received was \$6,269, which is a substantial amount. In comparison, University of New Brunswick annual tuition for most degree programs was \$5,482 over this period and New Brunswick Community College annual tuition was \$2,800.²² This means that *Learning Accounts* program group members who were able to make use of their Learning Account were receiving a considerable contribution towards their expenses.

The patterns of payments were relatively similar for both cohorts. Roughly 40 per cent of all payments to each cohort were paid out in the year that would immediately follow "on time" graduation (2007–08 for Cohort 1 and 2008–09 for Cohort 2), and 40 per cent of payments were in the year following. Thus, only 20 per cent of payments were made to participants in what typically would be their third and final eligible year before their account expired.

Figure 2.3: Total Amount of Learning Accounts Payments Actually Received



Participant Responses to Learning Accounts

During Grade 12, program group members exhibited relatively low awareness of holding a Learning Account. The survey conducted during the fall of Grade 12 asked "Do you have a Learning Account?" Only 58.4 per cent of Francophone participants and only 38.6 per cent of Anglophone participants in receipt of the Learning Account offer said "Yes." When asked a more general question "Has anyone, such as an organization promised you money, if you choose to participate in post-secondary education?" during the same survey, the proportions responding "Yes" were little different: 50 and 43 per cent.²³ Among those *Learning Accounts* participants who reported that they had a Learning Account, most were aware of the salient features of the program. In particular, the total amount of \$8,000 was recalled by the majority both of Francophone (82.9 per cent) and Anglophone participants (77.3 per cent).

As described in Text Box 2.1, by the end of Grade 12, participants were notified by FTD Office regarding their eligibility and received Request for Payment packages. Calls were made to all non-applicants prior to each application deadline. Nearly two-thirds received at least one payment. The proportion in receipt is higher than the proportion reporting awareness in the Grade 12 survey. It could be presumed that program activities from late in Grade 12 onwards thus raised awareness among *Learning Accounts* holders. Unfortunately, the question about awareness was phrased differently in the FTD 66-month survey (roughly three years after the Grade 12 survey asked respondents "Do you have a Learning Account," the later survey asked "Do you recall being offered a Learning Account?"), and almost all participants recalled the Learning Account offer: 99 per cent of program group members in the Francophone sector and 95 per cent of those in the Anglophone sector recalled the Learning Account offer. Survey respondents recalling the offer were asked if they had ever used any of the money therein. In response, 78 per cent (Francophone) and 66 per cent (Anglophone) said they had done so. (These proportions are higher than the proportions actually receiving because survey non-response was higher among non-recipients. No survey respondent recalled receiving a Learning Account payment when they had not.)

Those who acknowledged not receiving a payment were asked why they had not used the money. The most common reasons were not pursuing post-secondary education and not graduating from a New Brunswick high school. Very few (less than one per cent of those offered a Learning Account) cited reasons connected with ignorance of the program or the process for obtaining it being too complicated.

²² http://www.unb.ca/financialservices/students/tuitionandfees/fred_undergrad_cdn_ft.html and <http://www.nbcc.ca/en/home/admissions/tuitionandfees/default.aspx> both accessed March 21, 2012.

²³ Interviews with FTD Office staff suggest that a few students who weren't aware they had a Learning Account might not have had up-to-date contact information lodged with the FTD Office (they may have moved away, or started living with a different parent since first recruited).

Between 78 and 82 per cent of survey respondents (the proportions varied little by linguistic sector or program group) aware of their accounts agreed or strongly agree with the statement that “*Learning Accounts* made my plans for the future possible.” As one FTD Office staff member put it:

For some of these students we’re giving them an amazing opportunity. And some of the students recognize that and their parents are so thankful and they just wish that more New Brunswickers could have the program.

When FTD Office staff was asked the features of *Learning Accounts* that participants particularly seemed to like, they cited the fact that it represented \$8,000; that they could go to any post-secondary school recognized by Canada Student Loans; that the cheque went directly to the participant; that there were three years in which to receive the two years of account payments, thus providing an extra year to finish high school if necessary; that it was not a competitive process; and that it was a short and relatively straightforward application.

When FTD Office staff was asked the features of *Learning Accounts* that participants particularly seemed to dislike,

A lot of students expressed concern about the cheque not arriving until late in the semester... That was scary for students, knowing they wouldn’t have the money the first day of class.

Participants did not like that they could not receive all \$8,000 at once — that *Learning Accounts* was paid out in instalments of \$2,000. Related to this, some participants in programs of less than two years’ duration were frustrated that they were not entitled to all \$8,000 regardless of the tuition cost, which often could exceed the available payments. As FTD staff put it:

If the money falls short of the cost of the program, that may not be enough to help that family get over the hump.

Some participants also felt that the maximum three-year window was insufficient and that withdrawals should be possible over a longer period.

Learning Accounts Delivery: Research Findings

Although the design of *Learning Accounts* does not at first sight appear to present comparable logistical demands to scheduling and running *Explore Your Horizons* sessions, there were still several steps for the FTD Office to coordinate before each participant could obtain a payment. Some of these would be inevitable in any financial transaction between government and individuals, and some were specifically required by the eligibility rules for the program under test.

As with many programs focused on post-secondary access, new types of interaction were required between different departments and even levels of government. Even in the simplest cases, some four or five different sources of information needed to be connected for payments to take place. Information from New Brunswick’s secondary and post-secondary education system’s student records had to be verified against information provided by the student. New Brunswick Student Financial Services had to verify the student’s attendance at post-secondary education. The Canada Millennium Scholarship Foundation needed to release funds and dispatch cheques.

The process ran smoothly, in part due to a firm set of procedures. However, some challenges arose in running the account system. These included:

- Obtaining timely and sufficient verification of participants’ course information and graduation data. If high school graduation status could not be confirmed it could delay confirmation of the account status and delay a cheque being sent out. Obtaining confirmation involved several contacts (with the participant in some cases) and was thus time consuming in a number of instances.
- There was frequently a need to verify information on applications for withdrawal such as updating contact information, mistakes in SINs, birthdates, postal codes, and school information, clarifying address, filling in missing information and obtaining missing signatures. Institutions had to be confirmed as recognized by Canada Student Loans. This was not straightforward, and required more staff time for phone calls to post-secondary schools than anticipated, especially for private vocational programs, to make sure the program on the application was recognized and that the student was attending full-time.
- Participants in Cohort 1 didn’t receive their withdrawal packages to apply for the first payment until late May 2007 which was just before their graduation (if on time). This led to calls and requests for information from participants in June which required the FTD Office to follow up on occasion with secondary school administration. Because secondary schools close over the summer, sometimes these calls had to be deferred until September, delaying responses considerably.
- The timelines involved in processing *Learning Accounts* payments may have led some participants to miss tuition payment deadlines. The FTD Office would send letters on request to post-secondary institutions to defer the tuition deadline, but not all institutions would accept these letters as sufficient to justify deferral. The FTD Office reported that only five to six participants per cohort were actually found ineligible. Over the four years of delivery, only one request was ever denied because of too long a delay. Office staff also confirmed that mistakes made on applications did not lead to any denial of payments.

Procedures aside, participants would often contact the *FTD* Office with a range of ad hoc enquiries that could demand a range of different kinds of responses or activities. Participants were sometimes not aware of how *Learning Accounts* worked. For example, some participants didn't realize they had to apply again to withdraw their second payment for the second semester and experienced confusion over the meaning of technical terms with a bearing on eligibility, such as "registered apprentice." Participants sometimes struggled simply to get their applications completed and needed the *FTD* Office's support and reminding to do so.

The *FTD* Office experienced uneven loading of activity through the year. It was especially busy in the following periods: near the end of the Grade 12 year; once participants started filling out the applications in July and August; and soon after the deadlines in September, in January and in May (when many would be asking about when they could expect their cheques). Despite augmentation of the team with facilitators and temporary assistance, it was common for staff to work overtime with the backlog of activities (especially phone calls) at busy times.

When the Canada Millennium Scholarship Foundation closed down at the end of 2009, the *FTD* Office took on more of the work associated with managing accounts. These additional tasks included distribution of payments to participants (writing cover letters, verifying, putting cheques into envelopes), coordinating cheque production with the system of centralized financial services New Brunswick adopted in 2010, plus preparing information for T4As for participants to include with their tax returns. Despite the transition of these activities, the vast majority of participants continued to receive their cheques on time.

Some minor changes to the program design were made as the program progressed:

- Originally, students in programs of less than a year's duration had to wait until the end of the program to receive their second payment, but the *FTD* Office "*realized this wasn't a fair thing to do*" and changed it to apply only to programs of less than four months' duration, whereupon participants had to provide proof of completion,
- The *Learning Accounts* withdrawal package was revised in November 2007 to add information about the program change, and to include more information about when cheques would arrive, as well as establishing the possibility of a tuition deferral letter. These were efforts to reduce the number of calls to the toll-free line. The *FTD* Office put a signature page on the front of the application which generated a higher proportion of signature pages signed on first attempt than when the signature was required later in the documentation.
- Some institutions, especially in Québec did not respond to New Brunswick Financial Services, so the *FTD* Office asked participants themselves to request their institution to send confirmation of their program and their attendance to the *FTD* Office.

- The *FTD* Office changed the appearance of the envelope used to send letters concerning account closure (making these resemble other government correspondence), with the intent that participants would be more likely to open them.

From the evidence compiled during SRDC's implementation research, there is little doubt that sufficient resources were allocated to the delivery of the program. When Chapter 7 considers the costs and benefits of *Learning Accounts*, it will be important to bear in mind the range of services *Learning Accounts* recipients received. These extended beyond participants sending in four applications and receiving four cheques. For example, the *FTD* Office would, as required, support someone over the phone to complete the entire withdrawal application. The office would also provide participants with means to connect to further information (a phone number or a Web site or the suggestion of a type of professional resource), especially if they were trying to decide how to access (or what to do with) their account. The discussions in calls could on occasion lead to participants being encouraged to resume their studies and obtain their General Education Development diploma (GED).

The office was resourced to send extra withdrawal packages in several situations of apparent need:

- if there was any doubt about participants having received their package, such as when they had moved or they didn't remember receiving it;
- when they didn't seem to have the correct information; or
- if they said they weren't going to study that year.

In conclusion, *Learning Accounts* had a successful implementation from start to finish, over a period of seven years. Procedures were followed and instalments and payments made as planned, and almost always on time. Nearly two-thirds of those offered (and closer to 70 per cent of those eligible) received at least one payment.

In considering the impacts and cost-effectiveness of *Learning Accounts* in later chapters, it will be important to recall the relatively low awareness participants had of the offer during their high school years and that, as with other "financial aid" (but perhaps more so), the services provided by *Learning Accounts* inevitably included availability of other support. Given the range of questions and information needs that participants identified, it would be difficult to deliver a program of the complexity of *Learning Accounts* without some level of personal contact, such as a toll-free line. Furthermore, some contact was also needed with parents and with several agencies to ensure the steps were understood and followed. As an intervention, *Learning Accounts* was primarily financial, but the resources delivered included some elements of support and some considerable work "behind the scenes" to ensure payments were delivered accurately and on time.

Data Sources and Estimation Methodology

Introduction

The primary objective of this report is to present post-secondary impact estimates, which will then be used to inform the cost–benefit study. In order to properly interpret the impact estimates in Chapters 4, 5, and 6, some prior understanding of the sources of the estimates is required. This includes an understanding of the various data sets used for the impact estimation. Many sources of data were sought because researchers anticipated that no single source would be perfect. Although many students could be contacted through the *FTD* 66-month survey (carried out over what is normally the third year of post-secondary studies for those who attend and progress in school continuously), it was necessary to obtain proxy responses from their parents in some cases. Since this was not always possible, administrative data were also obtained from post-secondary institutions or organizations. Although administrative data is generally regarded as more reliable, it is not always complete. In the case of *Future to Discover*, the post-secondary activities of some students who left their home province could not be traced with administrative data alone. Thus, all available data sources are used to create as complete a profile as possible.

To interpret the results appropriately, some prior understanding of the methodology for estimating impacts is also beneficial. The core of the approach consists of randomly assigning students to program groups that receive one or both *Future to Discover* interventions (either *Explore Your Horizons*, *Learning Accounts*, or both) or to a comparison group. Since chance determines who is offered the program, differences in outcomes can be attributed causally to the offer of the intervention (or treatment), eliminating any competing explanations that might normally arise due to pre-existing differences between groups that receive different programs. Although random assignment is generally regarded as the gold standard in evaluation of program impacts, it is not without its limitations.

The purpose of this chapter is thus twofold:

- To describe the administrative and data sources used in the estimation of impacts; and
- To describe the methodology for estimating impacts and its limitations.



CHAPTER SUMMARY

- **The *Future to Discover* Post-secondary Impacts Report used a variety of data files in its analyses.** Although many outcomes could only be measured through surveys, a combination of survey and administrative data were used to derive information for the main outcome of this report (post-secondary attendance).
- **A rigorous random assignment approach was adopted to evaluate program impacts.** Random assignment ensures that program and comparison groups are equivalent prior to the intervention since chance determines assignment. As a result, any differences in outcomes can be ascribed to differences in assignment, and not to differences in the characteristics of program and comparison groups.

THE DATA SOURCES USED IN THE ESTIMATION OF IMPACTS

Many outcomes can only be measured through the *FTD* 66-month student survey (e.g., post-secondary aspirations, use of own savings to finance post-secondary education, knowledge of government aid, etc.) The survey was conducted between October and May of what would normally be the third year of post-secondary studies, assuming school attendance and progression are continuous (roughly 66 months following random assignment).

For the primary outcomes in this report — those related to post-secondary attendance — the most reliable data sources are post-secondary administrative data files. In New Brunswick, this includes college enrolment data for New Brunswick Community College (NBCC), Collège communautaire du Nouveau-Brunswick (CCNB), and the New Brunswick College of Craft and Design provided by the Department of Post-secondary Education, Training, and Labour and university enrolment from the Maritime Provinces Higher Education Commission (MPHEC). In Manitoba, the data are provided separately by the public universities and colleges. In New Brunswick, the administrative data had to be linked to the *Future to Discover* baseline survey data by the Social Insurance Number (SIN) when this was available. When it was not available, the date of birth, first and last name, and sex were used to match. In Manitoba, students are issued a Manitoba Education and Training (MET) Number, which is maintained throughout elementary, secondary and post-secondary school. Thus, matching the post-secondary administrative files to the *Future to Discover* baseline survey was based on the MET and, when necessary, the SIN, date of birth, first and last name, and sex.

Although administrative data contain accurate information on post-secondary enrolment, they are somewhat incomplete. First, students who attend private career colleges or vocational

institutes or who are registered apprentices would not be covered by the available administrative data. Second, college students outside of New Brunswick or Manitoba, as well as university students outside of the Maritime Provinces or Manitoba would not be covered. In such cases, we rely on the *FTD* 66-month student survey. In some instances, students could not be contacted directly, in which case we rely on a proxy survey of parents or guardians (survey response rates are discussed in Appendix 1).

The enrolment outcomes in this report are based on two measures: enrolment in PSE and enrolment in specific types of PSE (university, community college, private college or vocational institute, and registered apprentice).

- **University enrolment** is defined as being enrolled at a university in a program leading to a degree, certificate or diploma at the bachelor's degree level or higher. This includes a teaching certificate, bachelor's degrees (e.g., B.A., B.Sc., B.Ed., B.Eng., LL.B., etc.) any certificate above a bachelor's, master's degrees (e.g., M.A., M.Sc., M.B.A), degrees in medicine, dentistry, veterinary medicine, or optometry, doctorate or post-doctorate programs, professional association diploma, certificate or license (e.g., accounting, banking, insurance). University enrolment also includes being enrolled at a college in a program that leads to a bachelor's degree.
- **Community College enrolment** is defined as being enrolled in a community college or technical institute in a program leading to a degree certificate or diploma below a bachelor's degree level, excluding any programs that would normally last five weeks or less and apprenticeship programs. College enrolment includes CEGEP, university transfer programs, certificate or diploma programs in cosmetology, business administration, radiology, certificate of bricklaying, and so on. College enrolment also includes being enrolled at a university in a program that leads to a diploma or certificate below a bachelor's degree, excluding any programs that would normally last five weeks or less.
- **Enrolment at a private college or vocational institute** involves programs leading to a diploma or certificate, excluding programs that would normally last five weeks or less. These institutions normally offer job-oriented training programs lasting no more than two years. Examples of these include certificate programs in cosmetology, hairdressing, automotive mechanics, computer technology, and so on.
- **Registered apprentices** include survey respondents who said they had registered with a provincial or territorial apprenticeship authority for training in a trade leading to a journey-person certificate. It also includes sample members enrolled in a New Brunswick or Manitoba community college in an apprenticeship program.

METHODOLOGY FOR ESTIMATING IMPACTS

At the heart of the estimation methodology is random assignment. Perhaps the simplest way to appreciate the usefulness of random assignment in evaluation is to imagine the more usual scenario where the intervention is offered to all eligible program participants. In that scenario, some would choose to take up the program, while others would not. It may be the case that those who choose to take up the program are particularly interested in attending post-secondary education. Those less interested in post-secondary education may not participate in the intervention. This creates a major problem for evaluation since those with a lot of interest in attending post-secondary are also those who choose to take up the intervention. We may find that those who took up the intervention are more likely to pursue higher education in the end, but is this because of the intervention, or because they had more interest in going in the first place? The answer is not clear.

One approach in dealing with this issue is to create two equivalent groups: a program group (that is offered the treatment) and a comparison group (that is not offered the treatment). When this is done and both groups are followed up over time, differences in outcomes can be attributed to the different offers they receive (the intervention or no intervention). How can equivalent groups be created? One way is to mechanically assign students so that each group has similar characteristics overall (including the same composition by sex, family background, and perhaps other demographic and socio-economic characteristics). The problem with this approach is that students may differ according to important characteristics that may not be readily observed in survey (or any other) data (such as their aptitude for planning, or ability to correctly fill out post-secondary application forms).

An analytically superior solution is to assign eligible students in a random manner. Chance does not systematically discriminate who receives the intervention by characteristics of the students, whether observed or unobserved. Thus, we can fully expect that random assignment will create equivalent groups. The only systematic difference between them will be the offer of the intervention.

In New Brunswick, students were recruited and assessed for *Learning Accounts* eligibility. Those who were eligible and agreed to participate were then randomly assigned into one of four groups: *Learning Accounts*, *Explore Your horizons plus Learning Accounts*, *Explore Your Horizons*, or a comparison receiving no intervention. Those not eligible for *Learning Accounts* were randomly assigned into one of two groups: *Explore Your Horizons* or a comparison group. In Manitoba, students were not assessed for learning Accounts since this intervention was not offered in that province. Students who

were recruited and agreed to participate were randomly assigned into one of two groups: *Explore Your Horizons* or a comparison group. See SRDC (2007) for more details on the random assignment process.

Even with random assignment, some small differences in characteristics are possible (due to random sampling variability). The degree of certainty researchers can have that any detected difference in outcomes is due to the intervention (rather than chance variation) can be affected by this. Specifically, in this study in 2004 and 2005, SRDC randomly assigned participants to multiple groups, reflecting the range of program impact estimates intended to be derived from comparisons (or "experimental contrasts") of different population groups, as shown in Chapter 1, Table 1.3. The baseline characteristics of the statistically equivalent groups resulting from the assignment to be used in each of the planned contrasts were compared in 15 tables in the Early Implementation Report (SRDC, 2007: Table 4.23 and Tables A4.1 through A4.14). These are not reproduced here for brevity. Typically in the comparison of experimental groups, their baseline characteristics differed significantly on a handful of the many characteristics considered. SRDC followed a standard procedure (described below) to minimize the influence of such chance differences on the precision of impact estimates in this report.

To increase the level of certainty, or precision, researchers adjust the estimated impacts derived from a comparison of program group and comparison group outcomes (or between experimental groups) using a regression approach. SRDC estimated ordinary least squares models, where the outcome is regressed on a treatment variable (a variable indicating whether the student was offered the intervention or not), and several other "covariates" collected in the baseline survey (prior to random assignment): number of children/adults in home, work status of the 'signing' parent (the parent who signs the consent form), family income, gender of signing parent, age of student and signing parent, student gender, student disability indicators (difficulty seeing, hearing, learning; physical/mental condition or health problem), ethnicity indicators (white and Aboriginal indicators), average mark in Grade 9 (indicator for 80 per cent or more), parents' highest level of education, parental importance attached to the child obtaining a post-secondary education (indicator for "very important"), parental aspirations of the child's educational attainment, an indicator of any barriers to the child reaching parents' expectation, an indicator of the student ever working, and high school "fixed effects."²⁴ From this regression model, predicted outcomes are generated for two groups: students in the program group and students in the control group.²⁵ In each case, predicted outcomes are calculated for the case of a student possessing all of the mean values of the covariates ("the average program group member" is compared to "the average comparison group member").

²⁴ These fixed effects allow for school-level influences on all students at the school to be taken into account. Since students were randomly assigned within schools, it is not surprising that the high school fixed effects had no real impact on the estimates.

²⁵ The outcomes are based on real observations. The term "predicted" here merely indicates that they are the product of the regression model.

In the tables shown in Chapters 4, 5, and 6, predicted outcomes are shown for each experimental group, as well as the difference in the predicted outcomes (the predicted impact). The appropriate way to read the tables is to compare predicted outcomes for the program and comparison groups among a given population, or simply look at the predicted impacts (each of these estimates appears in its own column). However, readers should not compare predicted outcomes across sample groups. The reason is that predicted outcomes are calculated based on mean characteristics for the group in question. Comparing predicted outcomes across groups risks confusing differences that are due at least in part to differences in group characteristics. To compare across groups, readers should look at predicted impacts.²⁶ This is because the influence of group characteristics on outcomes is removed in the predicted impacts. Note that although the outcomes and impacts to follow in Chapters 4, 5, and 6 are predicted values, they will simply be referred to as outcomes and impacts for convenience.

Along with outcomes and impacts, the tables will also show standard errors. These indicate the variability of the estimated impacts. The statistical significance of each result is determined from the ratio of the magnitude of the impact estimate to its standard error. Statistical significance improves (confidence in the result is higher) the smaller the standard errors relative to the size of the impact. By default, statistical software packages calculate standard errors based on the assumption that the observations represent a simple random sample drawn from the population. In *Future to Discover*, schools are selected (not randomly²⁷), and within each school, all Grade 9 students were invited to participate. This creates a certain degree of “clustering” in the data (students tend to be more similar within schools than between schools and being in the same school produces commonly shared experiences among those who attend). To appropriately allow for this clustering, all of the standard errors are calculated adopting a standard non-parametric bootstrap approach (with 100 iterations). However, it turns out that in the case of *Future to Discover* the resulting estimates are very similar to results that would have been obtained assuming a simple random sample. Furthermore, results from the *Future to Discover* Interim Impacts Report (Smith Fowler et al., 2009) are also very similar when the new approach is used.

The impact estimation methodology adopted in this report is certainly the best available approach. Random assignment has often been described as the “gold standard” of program evaluation. Complementing this approach with regression adjustment as well as paying close attention to the standard errors leaves little room for biased impact estimates. Nonetheless, even the best approaches have their potential limitations, and some of these are described below.

First, it is important to keep in mind that it is the offer of the intervention that is randomly assigned, not the treatment itself. For example, it was not possible to force participation in *Explore Your Horizons* workshops on students in the program group.²⁸ Students who attended the workshops may have been more motivated to begin with. Because there is a strong possibility of selection bias determining who chooses whether to take up the treatment, and how often, it is only possible to evaluate the impact of *offering* the treatment.^{29,30} Researchers use the term “intention-to-treat effect” to describe the estimated impact of the *offer* of the intervention. The “treatment on the treated effect” is the impact of the treatment for those who take up the treatment, and is generally quite difficult to estimate in a credible manner.

From a policy perspective, evaluating the offer of the treatment may not be so limiting. In general, policy-makers want to know whether making a treatment available to a target group will improve outcomes for that target group. If in a randomized controlled trial many members of the random sample of the target group offered the treatment choose not to take it, it likely replicates what would happen when the treatment was made available to all in the target group. Policy-makers rarely can force a treatment upon citizens. Thus, evaluating the impact of the offer of the treatment is akin to evaluating the best mechanism that will be available to the government (i.e., *offering* the treatment). In the case of *Explore Your Horizons*, workshops are offered after school hours. It is very unlikely that students can be required to attend such workshops after school hours if the program were fully implemented. They could be required to attend workshops during school hours provided the program was mandatory, but that would represent a different treatment from the one under test.

26 In a small number of instances, the overall impact may lie above or below the impacts for all subgroups. This may be caused by missing values for the variables used to define sub-groups, or by the regression adjustment.

27 All districts were invited to take part, but within each district, only certain schools qualified. Specifically, schools needed a large enough Grade 9 cohort for the project to be run. In New Brunswick, efforts were made to recruit equal numbers of Francophone and Anglophone students; in Manitoba, certain schools already participating in a separate Canadian Millennium Scholarship Foundation project were excluded.

28 In *Learning Accounts*, the treatment (interpreted as receipt of the grant) is confounded with the outcome. Mechanically, all students had to go to post-secondary education to take the treatment. Thus, it is impossible to evaluate the impact of receiving the *Learning Accounts* treatment on the outcome.

29 Under certain conditions and assumptions, it is possible to estimate the impact of a treatment even if it is only the offer of the treatment that is randomly assigned. The approach is called the Bloom adjustment (Bloom, 1984). However, this approach will only yield a different impact than the “intention-to-treat” impact when a substantial proportion of the program group comprises “no-shows” (who never take up the treatment). As discussed in Chapter 2, most participants assigned to *EYH* attended at least one workshop. Also, and as discussed in the previous footnote, the *Learning Accounts* treatment is confounded with the outcome, which precludes the use of the Bloom adjustment.

30 It is also possible for students to take up the program, but to later drop out. This has been described as the “drop-out bias” in the literature.

It may still be useful to know the impact of the treatment itself (treatment on the treated) since it provides a sense of the potential impact (if everyone took the treatment). These results may inform the general public or practitioners about the potential for the program. It may also be useful if it is possible to make the program mandatory. However, to do so would require testing a mandatory version of the program.

A second limitation of random assignment is called "substitution bias." In short, participants may find alternative treatments and take those up. The comparison group may spend more time looking for a treatment than otherwise (since they feel left out following random assignment). Conversely, the program group may stop taking certain treatments as a result of taking up the program treatment. Substitution among the program group may not be very limiting as this is likely what they would do if the program were fully implemented; thus, producing an intention-to-treat effect. However, the comparison group may only have sought alternative treatments because they resented the outcome of random assignment. This is obviously not a concern if the program were made available to all. With *Learning Accounts*, program group members may receive less non-repayable aid from other sources. Comparison group members may do the opposite to make up for the perceived "loss". In the interim impacts report (Smith Fowler et al., 2009), the impact of the offer of *Explore Your Horizons* on the use of alternative sources of advice and information has been documented, revealing little substitution. In the current report, the impact of *Learning Accounts* on the use of other non-repayable aid to pay for post-secondary studies is documented.

Third, there is a real possibility that students in the comparison group benefit from the program via the participation of the program group. The "knowledge" acquired in the *Explore Your Horizons* intervention can be transmitted (spill-over) to students in the school who were in the comparison group or *Learning Accounts* group. Other group members would not have attended the sessions, but could have learned information or been otherwise influenced by the program group members who did attend the sessions. Comparison group members did not report direct contact with *FTD* facilitators or other program resources. Given that the treatment was only received by a relatively small proportion of students within most schools, most of their peers would not have

been in the comparison group. Any influences of the program on peers in the comparison groups would tend to bias the estimated impact downwards. This is not a major issue for *Learning Accounts* since the treatment is the offer of the grant. This offer cannot spill over to the comparison group (although peer influences from *Learning Accounts* holders expressed intentions to go to post-secondary education might spill over). Typically such indirect spill-overs of treatment are minor. If spill-overs had a large influence, program investments would rarely be needed (as it would only take a few informed, incentivized students to change the behaviour of entire high schools).

The fourth limitation of random assignment is attrition, which is a potential issue in any study that requires follow-up. It can be particularly problematic in a social experiment since the comparison group has very little motivation to grant an interview. *FTD* sought to ameliorate this through various features such as a cash incentive for completed interviews and extensive sample tracing and tracking contacts between surveys. For the main outcomes of the study (post-secondary attendance and related activities), the analysis only relies partly on survey data (administrative data has been sought for all students whether survey respondents or not). However, some outcomes rely solely on survey data, so it is important to document attrition rates for the analytical samples and to study how these are related to baseline characteristics (see Appendix 1).

Fifth, *Future to Discover* was designed to detect large impacts (often over 10 percentage points, depending on the group in question; see SRDC, 2007). In many cases, larger sample sizes would be required to detect smaller impacts. Still, some impacts may be statistically significant for spurious reasons. In this report, thresholds for statistical significance follow standard convention: 1 per cent, 5 per cent, and 10 per cent. A 5 per cent level of statistical significance means that there is only a 5 per cent chance that an impact is estimated to be different than zero due to chance variation from sampling. This means that our conclusions about a genuine impact are incorrect on average on one in every twenty occasions. Since many results are shown in this report, inevitably, some (about one out of every twenty at the 5 per cent level) will be statistically significant simply due to chance. For this reason, the report will focus on results that appear to be robust (such as those observed consistently or for many groups).

Post-secondary Impacts of *Explore Your Horizons*

Introduction

As described in Chapters 1 and 2, the *Explore Your Horizons* intervention comprised multiple components designed with several objectives:

- to provide information and support to help participants identify possible career choices;
- to provide enhanced and more accessible information about possible post-secondary program options and prerequisites at the high school level, as well as financial aid and support services available;
- to provide youth with the tools to facilitate their transition to post-secondary education;
- to inform parents about the role post-secondary education could play for their children;
- to assist parents to become more able supporters of their children in choosing among post-secondary options.

The intervention's goal is to increase participants' access to post-secondary education. More specifically, *Explore Your Horizons* is expected to do this by increasing access among youth who traditionally are under-represented in post-secondary programs.

This chapter presents post-secondary impacts of the offer of *Explore Your Horizons*. Although the main outcome of interest is post-secondary enrolment, several other outcomes that are potentially influenced by the intervention could help explain or cast light upon the post-secondary enrolment results. These include post-secondary applications, knowledge of financial aid, use of various sources to pay for post-secondary, high school graduation and drop-out, attitudes towards school, resilience, hardship, and family formation.



CHAPTER SUMMARY

- **When the cross-section of all students offered the program is considered, the offer of *Explore Your Horizons* (EYH) raised post-secondary enrolment in the Francophone sector in New Brunswick, as intended.** However, there was no significant impact across the Anglophone sector as a whole in New Brunswick or in Manitoba. The increase in enrolment in the Francophone sector was concentrated at the university level. Among students in the LILE group, EYH increased post-secondary enrolment rates in both sectors in New Brunswick.
- **Post-secondary applications rose in both sectors in New Brunswick as a result of EYH.** In Manitoba, college applications were increased for some groups.
- **When high school graduation is taken into account, in Manitoba and both linguistic sectors of New Brunswick, educational attainment rose as a result of EYH.** Educational attainment increased because *Explore Your Horizons* raised high school graduation rates in Manitoba and in New Brunswick's Anglophone sector.
- ***Explore Your Horizons* was successful in disseminating career information in New Brunswick.** As a result of EYH, students in the Francophone and Anglophone sectors of New Brunswick were less likely to claim that they did not have enough information about their career options to make good decisions about their education while in high school.

IMPACTS OF OFFERING *EXPLORE YOUR HORIZONS*

In this chapter, results are shown for the two jurisdictions (Manitoba and New Brunswick) and the two sectors of New Brunswick (Francophone and Anglophone) where *Explore Your Horizons* was offered. The main results pertain to post-secondary enrolment, but other results are shown as well. As described in Chapter 3, the tables in this chapter present regression-adjusted outcomes for the experimental (EYH) group and the comparison group. The difference is the impact, which appears with its standard error in parentheses. Due to the regression adjustment, it is not appropriate to compare outcome levels across groups; however, impacts may be compared across groups. These caveats apply to this chapter and the two that follow (Chapters 4, 5, and 6). Note also for this chapter, impacts of EYH for Aboriginal youth in Manitoba are presented. Impacts are, however, not presented for non-Aboriginal youth. For comparative purposes, impacts on Aboriginal youth in Manitoba can be contrasted with impacts on all youth.

Impacts on Post-secondary Enrolment

The principal outcome of interest for *Explore Your Horizons* is post-secondary enrolment. Table 4.1 shows impacts on post-secondary enrolment as observed approximately 62 months following each student's random assignment (assuming a traditional schooling progression, this is just at the beginning of the third post-secondary year). Overall, EYH raised post-secondary enrolment by 4.4 percentage points in the Francophone sector of New Brunswick. This masks the very different impacts observed across sub-groups.

For example, EYH raised post-secondary enrolment by 14.6 and 13.5 percentage points among the LILE and FGF groups, respectively. Among those not in the LILE and FGF groups, no positive impacts were found. In fact, a small negative impact of 4.8 percentage points was found for the Non-LILE group. A statistically significant impact is also found for girls (5.4 percentage points), albeit only at the 10 per cent significance level. While the impact is not small for boys (at 5.6 percentage points), it is not quite statistically significant.

The program showed modest success in the Anglophone sector of New Brunswick. Positive impacts are registered among those in the LILE group and among boys. In Manitoba, EYH had no impact overall or on any group except for boys (8.9 percentage points).

In the New Brunswick Francophone sector, EYH had most of its impacts on university enrolment (Table 4.2). Overall, EYH raised university attendance by 5.2 percentage points among this group. Among the LILE group, EYH increased university enrolment by 14.7 percentage points. Among girls, the impact was 7.7 percentage points. In Manitoba, positive impacts on college enrolment were registered for the LILE, FGF, and boys sub-groups. There were virtually no impacts found for vocational institute and apprenticeship enrolment across the three jurisdictions.

In interpreting the size of these impacts and those that follow, it is important to keep in mind the EYH implementation results described in Chapter 2. Since workshop attendance was not nearly as high as it could have been (especially in the last two years of the program), the "dose" received by participants may have been too low to generate large impacts. It is possible that with a higher dose (more attendance), larger impacts would be achieved. However, it is not possible to determine this in the present analysis. The issue is examined by using a non-experimental approach in Appendix 6.

Impacts on Post-secondary Applications

Post-secondary enrolment can be viewed in economic terms as the market outcome of supply and demand. Realistically, EYH can only be expected to have an influence on demand for post-secondary education, not supply. In fact, data provided by the New Brunswick government suggest that at the time when FTD participants normally began their post-secondary studies, programs in New Brunswick Anglophone community colleges were more likely to be oversubscribed than in the Francophone sector, while those in the Francophone sector were more likely to be undersubscribed than on the Anglophone side. For this reason, it is useful to gauge the impact of the program on demand alone, which is proxied here by reported post-secondary applications. The results in Table 4.3 largely mirror those in Table 4.1 for the Francophone sector of New Brunswick. Importantly, we see larger impacts on applications than on enrolments in the Anglophone sector of New Brunswick. Overall, EYH raised the post-secondary application rate by 4.5 percentage points in that sector. The impacts among the LILE group and for boys were more pronounced (9.2 and 7.8 percentage points, respectively).

The impacts of EYH on applications by type in the Francophone sector (Table 4.4) are similar to those on enrolments (Table 4.2). Specifically, EYH raised university applications by 5.7 percentage points overall. Large impacts

were registered in the LILE group (16.1 percentage points) and among girls (7.5 percentage points). No impacts were registered in the Anglophone sector in New Brunswick. In Manitoba, *EYH* increased college applications in most groups. Generally, *EYH* had no impact on applications to vocational institutes and apprenticeships.

Impacts on Knowledge and Use of Post-secondary Funding Sources

Explore Your Horizons also sought to reduce informational barriers regarding the cost of post-secondary education (PSE) and available sources (e.g., student financial aid). However, there is little evidence to suggest that the program helped students find information about student financial aid. The exception is in the Anglophone sector in New Brunswick (All), which saw a 5.4 percentage point increase in the proportion of students reporting that they knew how to get information about student financial aid (Table 4.5). This is consistent with results from the interim impacts report, suggesting that *Explore Your Horizons* improved self-reported familiarity with student financial aid in the Anglophone sector of New Brunswick by 9.2 percentage points (Smith Fowler et al., 2009). It appears that these students may also have been able to apply their knowledge of aid when it came time to do so.

However, the same table shows that, with only a few exceptions, students were no more likely to apply for government-sponsored student financial aid as a result of *EYH*. This is despite the fact that PSE applications rose in both sectors of New Brunswick (Table 4.3). In other words, more students were applying for PSE, but not for government-sponsored aid as a result of *EYH*.

To pay the “sticker price” of PSE, students have three options. They could take out loans (which must be repaid), they could seek non-repayable aid (such as government grants or money from their parents), or they could use their own funds. The actual price paid for PSE comprises loans and one’s own sources since these involve an actual cost. In the case of loans, students may carry debt with them following graduation, which may inhibit their ability to participate in other aspects of life (such as purchase a home, marry or have children). When students use their own funds to finance PSE, they must forego other expenses or they must spend more time working during high school. Non-repayable aid, on the other hand, is simply free money from the student’s perspective, and is used to reduce the actual price paid for PSE.

Given that *EYH* had little to no impact on knowledge of student financial aid and on applications to government-sponsored financial aid, it is perhaps not surprising that it also had very little impact in general on sources of funding for PSE (Tables 4.6, 4.7, and 4.8). A notable exception is in Manitoba, where the proportion of students who used non-repayable funds increased by 9.0 percentage points as a result of *EYH* (Table 4.7). Earlier results (Smith Fowler et al., 2009) suggested that, as a result of *Explore Your Horizons*, Manitoba students were less likely to report wanting to pursue PSE while being constrained from doing so due to financial reasons. Perhaps *Explore Your Horizons* succeeded in informing Manitoba students of non-repayable aid opportunities.³¹

In the New Brunswick Francophone sector, *EYH* increased the average amount of loans used overall and among some sub-groups, and increased the proportion who received loans among some sub-groups (Table 4.6).

Impacts on High School Graduation and Drop-out

Although the intention of *EYH* was to raise PSE enrolment, it is possible that the program may have also helped students in many other ways. For example, some students may have strived for PSE as a result of the program, but perhaps fell short of their post-secondary goal within the period observed. The analysis might “only” register completion of high school for such students. In the absence of *EYH*, however, some of these students may not even have progressed that far. In other words, their efforts to achieve PSE entry may have manifested themselves in achievement of a high school diploma. To investigate this possibility, this section examines two related outcomes: high school graduation and high school drop-out.

Table 4.9 demonstrates that *EYH* had a modest positive impact on high school graduation in Manitoba (3.9 percentage points) and in the Anglophone sector of New Brunswick (3.1 percentage points). As Table 4.1 showed, *EYH* had no impact overall on PSE enrolment in those two sectors, but did have a positive impact in the Francophone sector of New Brunswick. Given this result, *EYH* had an unambiguous positive impact on educational attainment (broadly defined) in all three sectors.

An earlier analysis reported that *EYH* had no impact on “on-time” high school graduation in the three sectors (Smith Fowler et al., 2009). The measure of high school graduation used in this report allows for graduation up to almost three years following the usual date of graduation. Thus, *EYH* had a delayed impact on high school graduation in Manitoba and in the Anglophone sector of New Brunswick.

The program also raised high school graduation rates among some sub-groups. Of note are impacts for the LILE group in the Anglophone New Brunswick sector (9.4 percentage points) and the FGF group in the Francophone New Brunswick sector (8.7 percentage points).

EYH was also expected to improve persistence in education among students. Staying in high school (even with delayed graduation) is one measure of persistence. The results to date suggest that *EYH* reduced the drop-out rate by 4.6 percentage points in the Anglophone sector of New Brunswick (Table 4.10). We also see substantial reductions in drop-out rates among several groups in that sector (LILE, non-FGF, and girls).

Impacts on Attitudes towards Education, Resilience, and Hardship

This section presents the impact of *EYH* on various attitudinal outcomes and hardship. By informing students about careers and post-secondary education, *EYH* may also affect their attitudes towards them. One goal of *EYH* — especially the Future in Focus component delivered during Grade 12 — was to improve resilience among participants, defined as

³¹ In considering impacts of the intervention, it is always worth recalling that the estimate of impact is derived relative to the experience of the control group. If most students would normally receive information within the existing system about financial aid, *EYH* has to raise awareness specifically among students who would miss out on information under the existing system to register an impact on such an outcome.

students' ability to cope with stress and adversity. The survey included questions with the intent to detect any changes in resilience.

Hardship is defined as not being able to afford groceries, using food banks, or having utilities or phone cut off in the last three months. Many students become indebted to attend post-secondary, and may have to carefully monitor their spending as a result.

For the most part, *EYH* had very little impact on attitudinal outcomes. However, there are exceptions. For example, participants in the Francophone sector of New Brunswick were 3.5 percentage points less likely to believe that no matter how much education they got, they would most likely end up in a low-paying job (Table 4.11). Similar impacts were registered among many sub-groups in that sector. *Explore Your Horizons* raised the proportion of Manitoba participants who believed it would be worth going into debt to pay for school by 9.4 percentage points (Table 4.12). In New Brunswick's Anglophone sector, *EYH* raised the proportion of participants who stated they were satisfied with their education decisions by 7.8 percentage points (Table 4.13). Similar impacts were registered among most sub-groups in that sector.

Explore Your Horizons had more success in disseminating career information in New Brunswick. Francophone and Anglophone sector students in New Brunswick were less likely to report that they did not have enough information about their career options to make good decisions about education while in high school (Table 4.14). As a result of

the program, the proportion of students in this category declined by 6.9 percentage points in the Francophone sector and by 11.4 percentage points in the Anglophone sector. Many sub-groups in both sectors registered similar impacts. We also see a -6.1 percentage point impact in Manitoba, but this is not quite statistically significant.

Explore Your Horizons had unintended negative impacts on resilience in Manitoba (Tables 4.15). *EYH* had negative impacts on scores on the resilience scale for all Manitoba students, and among several sub-groups (non-LILE, non-FGF, boys, and girls). Virtually no impacts on the resilience scale were registered in New Brunswick.

Possibly, then, the program had a true negative effect on participants' resilience in Manitoba. However, unanticipated impacts can arise from survey-derived measures like those on resilience for at least three additional reasons. First, as explained in Chapter 3, there is a chance of significant impacts being detected by chance. Second, as explained in Text Box 4.1, the resilience scale is constructed from survey responses, which may not perfectly capture respondents' resilience. Therefore, differences may be due to survey error. Third, receiving the program may have led to genuine changes in some respondents' resilience relative to the comparison group. Many unexpected yet plausible explanations could be hypothesized for this. As just one example, those in the program might miss out on some alternate after-school activity (that was therefore experienced more often by members of the comparison group) that increased resilience more than the program.

Text Box 4.1: Detecting Changes in Resilience

In psychological terms, "resilience" generally means the ability to "bounce back" from stress or adverse events (Garmezy and Streitman, 1974). Interest in resilience has grown considerably over the past two decades, as dissatisfaction has increased with "deficit" models that focus on illness and psychopathology (Windle et al., 2011), rather than more positive aspects such as coping, adaptation, resistance, and recovery. Resilience has become an important element in understanding coping strategies used by children and youth, and the Future in Focus component of *Explore Your Horizons* sought to foster students' resilience, to better prepare them for upsets on their journey into post-secondary education.

For these reasons, SRDC chose to include a brief measure of resilience in its survey of students, along with other measures of coping and well-being. Although a number of scales exist, they are not yet widely adopted and no one preferred tool exists (Windle et al., 2011). While not specifically developed for use with adolescents, the Brief Resilience Scale, or BRS (Smith et al., 2008) has the advantage of being short (six items), and focused specifically on resilience as a single construct, rather than

on personal resources or characteristics (e.g., optimism) that may promote positive outcomes, as is done with some other resiliency measures.³²

The BRS has demonstrated good internal consistency (Cronbach's alpha for four samples ranging from .80-.91) and test-retest reliability (one month = .69 and three months = .62). Moreover, it was positively correlated with other measures of resilience and coping, and negatively correlated with health outcomes such as stress, depression, fatigue and pain. Lastly, the BRS was shown to have good discriminant predictive validity in terms of these negative health outcomes (Smith et al., 2008). A methodological, systematic review of resilience scales by the UK's Resilience and Healthy Aging Network found that the BRS achieved the highest ratings — along with two other measures — but mentioned as limitations its sole focus on personal agency (at the expense of family and community level resources) and conceptual simplicity, noting lack of consideration that adapting to change is a dynamic, complex process that takes place in multiple domains (Windle et al., 2011).

³² The six questions seek participants' level of agreement or disagreement with the following statements: I tend to bounce back quickly after hard times; I have a hard time making it through stressful events; it does not take me long to recover from stressful events; it is hard for me to snap back when something bad happens; I usually come through difficult times with little trouble; I tend to take a long time to get over set-backs in my life.

For the most part, no impacts were registered on hardship (Table 4.16). There are two exceptions, but one is positive (the non-FGF group in Manitoba) and the other is negative (the LILE group in the New Brunswick francophone sector).

Impacts on Family Formation

By keeping youth in school and encouraging them to think about their future careers, *Explore Your Horizons* may also affect family formation decisions (such as living with one's parents, having children of one's own, and marrying). For example, marriage and children may be delayed by the pursuit of higher education. Also, living with one's parents may be prolonged to save on costs. It may conversely be necessary to move out of the parental home if the post-secondary institution of choice is too far to allow for a reasonable commute.

In general, *EYH* had little to no impact on family formation decisions (Table 4.17). No impacts were registered regarding the decision to live with one's parents. *EYH* had a negative impact on having children for some groups in the Francophone sector in New Brunswick (LILE and boys), but a positive impact for some groups in the Anglophone sector (All and Non-LILE). The same is true for the number of dependent children, although fewer groups were affected (boys in the Francophone sector; non-LILE in the Anglophone sector). One impact was registered for the marriage outcome: the FGF group in the New Brunswick Anglophone sector was more likely to report ever being married as a result of *EYH*.

Table 4.1: *EYH* Impacts on PSE Enrolment

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Enrolled in PSE institution (%)									
All	73.05	68.31	4.74 (3.02)	82.22	77.85	4.37* (2.32)	74.10	70.26	3.85 (2.63)
LILE	63.09	53.66	9.43 (7.08)	75.18	60.60	14.57*** (4.84)	63.87	55.52	8.35* (4.66)
Non-LILE	76.37	74.07	2.30 (3.52)	83.81	88.56	-4.75* (2.64)	80.42	79.69	0.74 (3.20)
Parents with High School or Less (FGF)	62.97	56.48	6.49 (6.34)	73.04	59.50	13.54*** (4.99)	58.98	56.15	2.83 (5.54)
Parents with any PSE (Non-FGF)	77.42	72.83	4.59 (3.40)	85.27	87.39	-2.12 (2.47)	80.87	76.76	4.11 (2.73)
Boys	67.04	58.12	8.92* (4.89)	77.54	71.92	5.62 (3.96)	67.69	60.70	6.99* (4.06)
Girls	79.24	77.84	1.39 (3.69)	87.56	82.13	5.43* (2.81)	80.29	79.20	1.08 (3.21)
Aboriginal	63.72	61.67	2.06 (11.13)	—	—	— —	—	—	— —
Sample size	478	395		484	677		471	646	

Source: *FTD* 66-month survey, *FTD* 66-month proxy survey, and *FTD* administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.2: *EYH* Impacts on PSE Enrolment by Type of Institution

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Enrolled in university									
All	51.33	47.40	3.93 (3.20)	49.01	43.75	5.26* (2.73)	43.13	41.04	2.08 (2.51)
LILE	34.55	33.78	0.77 (6.81)	33.70	19.04	14.66*** (4.27)	29.76	22.01	7.74* (4.43)
Non-LILE	57.41	53.48	3.93 (3.79)	55.92	58.23	-2.31 (3.46)	49.51	53.05	-3.54 (3.62)
Parents with High School or Less (FGF)	34.69	32.81	1.87 (5.85)	29.86	22.87	7.00 (4.61)	17.54	20.92	-3.38 (4.20)
Parents with any PSE (Non-FGF)	57.94	53.42	4.52 (3.94)	57.67	54.06	3.61 (3.49)	53.81	50.25	3.56 (3.25)
Boys	42.31	35.45	6.86 (4.63)	38.14	34.81	3.33 (4.16)	34.02	29.95	4.07 (3.93)
Girls	60.40	58.87	1.53 (4.25)	59.13	51.41	7.73** (3.74)	51.54	51.49	0.04 (3.82)
Aboriginal	35.87	36.41	-0.54 (12.24)	–	–	– –	–	–	– –
Enrolled in college									
All	27.68	22.67	5.01 (3.09)	39.03	37.63	1.41 (2.98)	27.57	24.58	2.99 (2.63)
LILE	28.79	17.36	11.44* (6.39)	41.78	35.09	6.69 (5.39)	25.50	24.89	0.61 (4.47)
Non-LILE	26.92	24.35	2.57 (3.74)	36.77	39.58	-2.81 (3.38)	29.95	24.73	5.23 (3.35)
Parents with High School or Less (FGF)	30.01	18.93	11.08* (5.96)	40.41	30.71	9.70* (5.31)	29.75	26.80	2.94 (5.78)
Parents with any PSE (Non-FGF)	26.86	23.85	3.01 (3.46)	37.54	41.25	-3.70 (3.46)	26.92	23.68	3.24 (3.14)
Boys	27.99	20.01	7.98* (4.28)	46.54	38.80	7.74* (4.63)	28.77	27.41	1.35 (4.12)
Girls	27.86	24.62	3.24 (4.63)	33.57	35.23	-1.67 (3.76)	26.43	22.01	4.42 (3.76)
Aboriginal	30.45	27.01	3.44 (12.29)	–	–	– –	–	–	– –
Enrolled in private college or vocational institute									
All	4.77	6.73	-1.96 (1.56)	9.35	8.81	0.54 (1.89)	12.35	12.32	0.03 (2.00)
LILE	6.02	8.99	-2.97 (3.84)	9.54	11.65	-2.11 (3.09)	13.70	14.32	-0.62 (3.54)
Non-LILE	3.72	6.40	-2.68 (1.82)	9.08	7.41	1.67 (2.00)	12.57	11.19	1.39 (2.59)
Parents with High School or Less (FGF)	5.63	9.30	-3.67 (3.18)	10.72	9.73	0.99 (3.51)	17.65	15.74	1.91 (4.45)
Parents with any PSE (Non-FGF)	4.56	5.56	-1.00 (1.76)	8.53	8.54	-0.02 (1.98)	10.61	10.49	0.12 (2.39)
Boys	4.03	3.06	0.97 (1.81)	6.78	4.24	2.53 (2.11)	9.48	7.36	2.12 (2.61)
Girls	4.96	11.00	-6.03** (2.84)	11.61	13.16	-1.55 (2.93)	14.80	17.26	-2.46 (3.16)
Aboriginal	7.01	9.05	-2.04 (7.00)	–	–	– –	–	–	– –

Continued on next page

Table 4.2: *EYH* Impacts on PSE Enrolment by Type of Institution (Continued)

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Enrolled to be apprentice									
All	4.48	5.67	-1.18 (1.36)	2.73	2.51	0.22 (1.02)	3.64	3.89	-0.25 (1.14)
LILE	4.45	2.70	1.76 (2.90)	1.75	3.30	-1.55 (1.61)	3.30	3.46	-0.16 (2.04)
Non-LILE	4.44	6.94	-2.50 (1.66)	3.54	1.64	1.90 (1.27)	4.26	3.74	0.52 (1.44)
Parents with High School or Less (FGF)	2.61	3.45	-0.83 (2.40)	1.53	4.26	-2.73 (1.73)	2.44	3.54	-1.10 (1.88)
Parents with any PSE (Non-FGF)	5.26	6.54	-1.28 (1.81)	3.15	1.67	1.48 (1.16)	3.91	4.30	-0.40 (1.44)
Boys	8.42	9.89	-1.47 (2.66)	6.21	5.10	1.11 (2.17)	6.95	7.58	-0.63 (2.28)
Girls	0.44	1.10	-0.65 (0.88)	0.00	0.00	0.00 (0.00)	0.48	0.42	0.05 (0.58)
Aboriginal	4.28	8.01	-3.73 (8.28)	–	–	– –	–	–	– –
Sample size	464	390		480	672		461	641	

Source: *FTD* 66-month survey, *FTD* 66-month proxy survey, and *FTD* administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.3: *EYH* Impacts on PSE Applications

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
PSE applications (%)									
All	72.44	69.23	3.20 (3.24)	84.56	80.48	4.08* (2.29)	78.69	74.18	4.52* (2.45)
LILE	61.92	55.17	6.75 (7.06)	77.58	63.02	14.56*** (4.77)	70.46	61.23	9.24** (4.48)
Non-LILE	76.26	74.08	2.18 (3.61)	87.08	90.79	-3.71 (2.50)	83.18	82.74	0.45 (3.08)
Parents with High School or Less (FGF)	58.28	53.47	4.81 (6.82)	77.37	62.45	14.92*** (5.27)	66.37	61.74	4.63 (5.39)
Parents with any PSE (Non-FGF)	78.54	75.21	3.32 (3.40)	86.85	89.67	-2.82 (2.47)	84.24	79.88	4.36 (2.70)
Boys	66.78	61.06	5.72 (4.84)	77.92	74.54	3.37 (3.99)	73.86	66.12	7.75** (3.83)
Girls	78.76	77.23	1.52 (4.09)	91.23	85.09	6.14** (2.59)	82.62	82.39	0.23 (3.11)
Aboriginal	52.05	66.33	-14.28 (13.19)	–	–	– –	–	–	– –
Sample size	441	372		469	666		444	632	

Source: *FTD* 66-month survey and *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.4: *EYH* Impacts on PSE Applications by Type of Institution

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Applied to university									
All	46.88	45.50	1.38 (3.37)	49.18	43.45	5.73** (2.77)	44.48	41.78	2.69 (2.72)
LILE	31.88	32.07	-0.19 (6.73)	35.69	19.61	16.07*** (4.27)	30.61	24.98	5.63 (4.51)
Non-LILE	52.41	51.26	1.15 (3.92)	54.80	57.71	-2.92 (3.52)	50.95	52.27	-1.32 (3.71)
Parents with High School or Less (FGF)	29.41	32.21	-2.80 (6.13)	32.05	23.43	8.62* (4.77)	17.04	20.48	-3.44 (4.53)
Parents with any PSE (Non-FGF)	53.99	50.99	3.00 (3.97)	56.80	53.54	3.26 (3.61)	56.57	50.93	5.63 (3.43)
Boys	39.01	36.46	2.55 (4.72)	38.72	34.31	4.40 (4.31)	34.59	30.60	3.99 (4.16)
Girls	55.03	55.07	-0.03 (4.62)	58.97	51.45	7.51** (3.58)	52.98	52.66	0.32 (3.96)
Aboriginal	26.92	28.72	-1.80 (12.64)	—	—	—	—	—	—
Applied to college									
All	26.96	21.60	5.36* (3.12)	33.10	32.49	0.61 (2.82)	30.79	29.17	1.62 (2.80)
LILE	25.63	16.31	9.32* (5.63)	41.16	33.63	7.53 (5.00)	31.11	30.23	0.88 (4.74)
Non-LILE	28.15	21.95	6.20* (3.58)	28.27	32.33	-4.06 (3.09)	30.60	29.54	1.07 (3.65)
Parents with High School or Less (FGF)	27.02	16.83	10.19* (6.00)	41.37	28.61	12.75** (5.12)	37.40	31.58	5.82 (5.40)
Parents with any PSE (Non-FGF)	27.12	23.21	3.91 (3.46)	28.59	34.41	-5.82* (3.28)	28.00	28.53	-0.53 (3.44)
Boys	26.02	18.09	7.93** (3.97)	38.88	34.50	4.39 (4.49)	32.29	31.79	0.50 (4.43)
Girls	29.16	23.75	5.41 (4.32)	28.79	29.69	-0.90 (3.69)	29.68	26.69	2.99 (3.96)
Aboriginal	23.15	28.97	-5.82 (12.28)	—	—	—	—	—	—

Continued on next page

Table 4.4: *EYH* Impacts on PSE Applications by Type of Institution (Continued)

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Applied to private college or vocational institute									
All	6.13	7.86	-1.73 (1.72)	10.23	10.60	-0.37 (2.08)	14.06	14.94	-0.88 (2.19)
LILE	7.52	9.09	-1.57 (4.09)	10.77	12.82	-2.05 (3.50)	15.35	18.09	-2.75 (3.79)
Non-LILE	5.09	7.85	-2.76 (2.07)	9.94	9.62	0.32 (2.25)	14.21	13.02	1.19 (2.91)
Parents with High School or Less (FGF)	6.40	9.27	-2.86 (3.27)	12.93	10.95	1.98 (3.82)	19.10	19.27	-0.17 (4.73)
Parents with any PSE (Non-FGF)	6.26	7.03	-0.77 (1.96)	8.89	10.54	-1.65 (2.10)	12.74	12.59	0.15 (2.59)
Boys	4.84	3.67	1.18 (2.05)	6.50	5.59	0.91 (2.33)	10.86	10.52	0.34 (2.90)
Girls	6.80	12.83	-6.02* (3.10)	13.46	15.41	-1.96 (3.11)	16.40	19.82	-3.42 (3.41)
Aboriginal	7.01	9.05	-2.04 (7.00)	–	–	– –	–	–	– –
Applied to be apprentice									
All	5.08	6.09	-1.01 (1.45)	2.59	2.37	0.22 (0.97)	5.40	4.88	0.52 (1.36)
LILE	6.01	3.80	2.22 (3.60)	2.84	2.67	0.17 (1.78)	4.82	4.08	0.74 (2.22)
Non-LILE	4.98	6.78	-1.80 (1.73)	2.60	1.84	0.76 (1.13)	6.60	5.14	1.46 (1.79)
Parents with High School or Less (FGF)	2.60	3.50	-0.89 (2.44)	1.62	3.95	-2.33 (1.62)	4.93	4.05	0.88 (2.47)
Parents with any PSE (Non-FGF)	6.23	6.97	-0.74 (1.91)	3.01	1.56	1.45 (1.11)	5.59	5.42	0.17 (1.64)
Boys	9.30	10.57	-1.27 (2.82)	5.98	4.74	1.24 (2.04)	10.35	9.48	0.87 (2.76)
Girls	0.40	1.67	-1.27 (1.09)	0.00	0.00	0.00 (0.00)	0.50	0.67	-0.17 (0.60)
Aboriginal	5.23	6.82	-1.58 (7.43)	–	–	– –	–	–	– –
Sample size	441	372		469	666		444	632	

Source: *FTD* 66-month survey and *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.5: *EYH* Impacts on Financial Aid Knowledge and Application

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Know how to get info about student financial aid (%)									
All	59.22	58.88	0.34 (4.11)	71.26	70.97	0.29 (3.24)	75.34	69.91	5.43* (3.23)
LILE	62.37	63.98	-1.61 (9.67)	69.71	65.51	4.20 (5.62)	72.75	67.00	5.76 (6.35)
Non-LILE	57.87	57.05	0.82 (5.07)	72.09	74.74	-2.65 (4.40)	76.09	71.53	4.56 (3.92)
Parents with High School or Less (FGF)	58.59	57.29	1.29 (8.88)	72.43	64.75	7.68 (5.70)	67.28	64.13	3.15 (7.31)
Parents with any PSE (Non-FGF)	59.29	59.59	-0.30 (4.50)	69.79	74.54	-4.76 (3.92)	78.54	72.43	6.11 (3.80)
Boys	53.01	57.67	-4.66 (5.89)	69.72	70.18	-0.46 (5.24)	72.53	64.35	8.18 (5.44)
Girls	63.16	62.98	0.18 (6.02)	72.45	71.23	1.22 (4.32)	78.44	74.30	4.14 (4.47)
Aboriginal	45.69	59.61	-13.92 (233.78)	–	–	– –	–	–	– –
Ever applied for gov't-sponsored student financial aid (%)									
All	22.22	27.92	-5.70 (3.69)	56.48	53.96	2.52 (3.31)	59.03	54.34	4.68 (3.30)
LILE	28.18	28.16	0.02 (9.24)	63.96	54.57	9.39 (6.24)	61.95	47.48	14.47** (5.93)
Non-LILE	20.70	27.43	-6.73 (4.21)	50.93	54.82	-3.89 (4.22)	57.01	58.18	-1.17 (4.31)
Parents with High School or Less (FGF)	25.00	28.26	-3.26 (8.45)	59.42	51.67	7.75 (6.36)	54.32	47.08	7.25 (7.14)
Parents with any PSE (Non-FGF)	22.45	26.47	-4.02 (4.28)	53.98	55.89	-1.91 (3.88)	61.02	57.28	3.74 (4.02)
Boys	13.95	24.56	-10.61** (4.34)	50.97	51.47	-0.51 (5.53)	51.38	41.88	9.49* (5.39)
Girls	30.61	31.85	-1.24 (6.02)	61.29	55.13	6.16 (4.33)	67.78	64.50	3.27 (4.61)
Aboriginal	-0.16	37.25	-37.41 (218.77)	–	–	– –	–	–	– –
Sample size	302	277		360	535		338	471	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.6: *EYH* Impacts on Covering Education Costs — Loans

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Received loans¹ (%)									
All	24.94	21.90	3.04 (3.58)	58.40	53.29	5.11 (3.44)	52.54	47.33	5.22 (3.61)
LILE	32.80	25.97	6.84 (9.82)	64.51	52.79	11.71** (5.94)	53.55	43.76	9.79 (6.27)
Non-LILE	22.69	20.27	2.42 (3.98)	52.28	55.18	-2.90 (4.37)	51.13	50.38	0.75 (4.61)
Parents with High School or Less (FGF)	26.32	32.48	-6.16 (8.26)	59.21	50.82	8.39 (6.33)	51.13	39.89	11.23 (7.60)
Parents with any PSE (Non-FGF)	24.51	18.28	6.23 (4.09)	57.00	55.35	1.65 (4.28)	53.02	50.62	2.40 (4.05)
Boys	17.76	13.49	4.27 (4.62)	53.27	48.61	4.66 (5.46)	47.71	35.37	12.34** (5.51)
Girls	32.26	30.06	2.19 (5.55)	63.84	55.72	8.12* (4.66)	59.30	56.84	2.46 (4.82)
Aboriginal	3.95	35.33	-31.38 (143.82)	–	–	– –	–	–	– –
Total amount of loans received (\$)									
All	1,741.68	1,566.28	175.40 (391.12)	8,522.30	6,828.90	1,693.40** (757.34)	7,284.30	7,173.48	110.82 (759.79)
LILE	2,304.87	2,133.36	171.51 (1,067.79)	10,533.54	7,473.08	3,060.46** (1,287.16)	8,212.08	7,323.53	888.55 (1,372.72)
Non-LILE	1,477.78	1,409.29	68.49 (449.63)	7,128.10	6,634.89	493.21 (915.04)	6,865.45	7,093.70	-228.25 (962.92)
Parents with High School or Less (FGF)	1,728.86	1,988.16	-259.30 (781.24)	9,460.68	7,152.48	2,308.20* (1,336.84)	7,704.20	6,093.95	1,610.25 (1,556.22)
Parents with any PSE (Non-FGF)	1,709.26	1,465.34	243.92 (481.18)	8,173.25	6,728.75	1,444.50 (967.08)	7,048.74	7,661.79	-613.05 (945.98)
Boys	1,266.01	752.89	513.12 (407.86)	7,069.20	6,068.28	1,000.92 (1,182.99)	6,284.25	4,678.08	1,606.17 (1,020.56)
Girls	2,167.18	2,390.03	-222.85 (653.73)	9,724.95	7,274.77	2,450.17** (987.49)	8,716.02	9,064.01	-347.99 (1,157.80)
Aboriginal	-109.77	1,917.10	-2,026.87 (2,479.46)	–	–	– –	–	–	– –
Sample size	303	276		362	534		337	473	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Student financial aid, bank credit, family and other loans

Table 4.7: *EYH* Impacts on Covering Education Costs — Non-repayable Sources

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Received non-repayable funds¹ (%)									
All	66.91	57.91	9.01** (3.89)	71.61	68.03	3.58 (2.90)	67.97	65.08	2.90 (3.14)
LILE	57.29	39.44	17.84* (9.18)	54.36	48.47	5.90 (5.41)	55.90	47.52	8.38 (5.98)
Non-LILE	69.97	65.00	4.97 (4.09)	79.13	79.08	0.05 (3.23)	75.93	74.51	1.42 (3.79)
Parents with High School or Less (FGF)	55.25	47.39	7.86 (8.49)	50.49	49.14	1.35 (6.09)	49.53	46.20	3.33 (6.49)
Parents with any PSE (Non-FGF)	72.23	60.38	11.85*** (4.34)	80.44	77.49	2.95 (3.22)	74.69	73.82	0.87 (3.70)
Boys	61.31	53.36	7.95 (6.17)	69.00	62.67	6.33 (5.02)	62.18	56.16	6.02 (4.88)
Girls	73.12	62.02	11.10** (5.28)	75.02	71.10	3.92 (3.83)	73.79	72.77	1.02 (4.48)
Aboriginal	51.41	59.18	-7.78 (69.34)	–	–	– –	–	–	– –
Total amount of non-repayable funds (\$)									
All	4,521.43	3,972.77	548.66 (640.46)	4,773.23	4,913.69	-140.46 (508.77)	5,779.29	4,839.06	940.23 (648.65)
LILE	2,630.14	2,108.63	521.51 (1263.72)	2,604.78	1,757.56	847.22* (504.08)	3,290.87	1,829.99	1460.88* (752.55)
Non-LILE	5,240.89	4,550.12	690.77 (842.09)	5,879.28	6,446.68	-567.40 (733.72)	6,977.19	6,415.67	561.53 (940.23)
Parents with High School or Less (FGF)	2,720.72	1,572.19	1148.53 (1033.18)	2,063.37	2,344.08	-280.71 (848.17)	2,052.29	2,083.93	-31.64 (856.49)
Parents with any PSE (Non-FGF)	5,393.91	4,557.63	836.28 (823.61)	5,879.17	6,203.56	-324.39 (647.64)	7,285.12	6,028.07	1257.05 (864.10)
Boys	3,736.28	2,691.63	1044.64* (611.46)	3,683.76	3,659.55	24.20 (654.85)	4,364.91	4,419.13	-54.22 (975.83)
Girls	5,318.33	5,178.45	139.88 (1266.67)	5,753.73	5,742.24	11.49 (768.56)	6,741.93	5,432.77	1309.15 (912.50)
Aboriginal	1,780.30	4,105.14	-2324.85 (14,722.30)	–	–	– –	–	–	– –
Sample size	303	275		362	535		338	473	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Funds from family & friends, academic and non-academic scholarships, grants and other non-repayable sources

Table 4.8: *EYH* Impacts on Covering Education Costs — Own Sources

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Used own sources to pay for education ¹ (%)									
All	59.87	58.40	1.47 (3.81)	61.34	60.45	0.89 (3.15)	59.71	58.19	1.52 (3.28)
LILE	54.21	45.98	8.23 (10.00)	46.66	40.91	5.74 (6.20)	40.17	40.92	-0.75 (5.34)
Non-LILE	62.02	62.06	-0.04 (4.42)	68.70	70.51	-1.82 (3.80)	71.63	68.40	3.22 (4.29)
Parents with High School or Less (FGF)	46.33	50.73	-4.40 (7.91)	44.20	41.59	2.61 (6.37)	37.07	35.29	1.79 (6.54)
Parents with any PSE (Non-FGF)	64.69	61.18	3.51 (4.49)	68.99	69.52	-0.52 (3.33)	69.19	67.77	1.42 (3.84)
Boys	58.80	56.50	2.30 (6.21)	57.46	61.83	-4.37 (5.06)	54.23	53.58	0.66 (5.42)
Girls	61.91	59.24	2.66 (5.28)	64.32	59.05	5.27 (4.29)	64.10	62.61	1.48 (4.55)
Aboriginal	39.74	56.65	-16.91 (95.90)	–	–	– –	–	–	– –
Total amount of own sources used to pay for education (\$)									
All	3,436.68	3,480.21	-43.53 (522.48)	3,098.94	2,619.94	479.00 (291.23)	3,245.67	3,139.89	105.78 (354.05)
LILE	2,160.79	1,748.36	412.43 (852.04)	2,118.39	1,071.44	1,046.95*** (380.37)	1,838.86	1,781.72	57.13 (457.90)
Non-LILE	3,750.37	4,111.37	-361.00 (648.04)	3,548.18	3,367.22	180.96 (423.46)	3,885.90	4,072.77	-186.87 (531.58)
Parents with High School or Less (FGF)	2,134.21	2,525.00	-390.80 (894.48)	1,794.23	1,145.36	648.88 (433.46)	1,779.20	1,450.86	328.34 (467.16)
Parents with any PSE (Non-FGF)	3,892.14	3,819.42	72.72 (639.50)	3,805.64	3,280.58	525.07 (429.12)	3,932.58	3,868.21	64.36 (497.06)
Boys	3,585.20	2,942.17	643.03 (734.29)	3,128.12	2,536.34	591.78 (437.45)	3,183.12	3,395.68	-212.56 (577.98)
Girls	3,298.23	3,912.57	-614.34 (747.56)	3,139.82	2,659.71	480.11 (454.36)	3,187.55	2,980.29	207.26 (468.29)
Aboriginal	1,658.33	2,886.23	-1,227.90 (3,212.78)	–	–	– –	–	–	– –
Sample size	303	275		361	533		337	473	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Money earned while studying and own savings

Table 4.9: *EYH* Impacts on High School Graduation

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Completed requirements for high school diploma (%)									
All	94.45	90.58	3.87** (1.68)	92.69	91.56	1.12 (1.58)	92.55	89.42	3.13* (1.73)
LILE	86.71	84.62	2.09 (4.62)	89.06	84.16	4.90 (3.25)	89.17	79.81	9.36** (3.58)
Non-LILE	96.63	93.47	3.16* (1.76)	93.62	96.36	-2.74 (1.81)	93.52	95.96	-2.44 (1.74)
Parents with High School or Less (FGF)	84.21	81.11	3.10 (4.48)	90.94	82.26	8.68** (3.41)	86.70	81.64	5.06 (4.37)
Parents with any PSE (Non-FGF)	98.54	94.74	3.80** (1.50)	92.88	96.43	-3.55** (1.74)	95.51	92.82	2.69 (1.66)
Boys	92.32	87.13	5.19* (2.88)	91.44	87.96	3.48 (2.72)	90.88	87.77	3.12 (2.79)
Girls	96.48	94.19	2.29 (2.17)	94.41	94.34	0.07 (1.95)	94.05	91.02	3.03 (2.21)
Aboriginal	85.88	84.55	1.33 (9.87)	—	—	— —	—	—	— —
Sample size	453	381		476	674		453	642	

Source: *FTD* 66-month survey and *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.10: *EYH* Impacts on High School Drop-out

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Dropped out at some point, may or may not have diploma (%)									
All	8.12	7.75	0.37 (2.14)	7.02	7.74	-0.71 (1.68)	7.25	11.85	-4.60** (2.16)
LILE	14.87	16.19	-1.32 (6.73)	10.09	13.77	-3.68 (3.45)	10.78	24.07	-13.29** (4.21)
Non-LILE	7.30	3.66	3.63 (2.29)	6.13	4.24	1.89 (2.02)	5.07	4.10	0.97 (2.04)
Parents with High School or Less (FGF)	18.03	17.71	0.32 (5.83)	9.76	14.59	-4.83 (3.66)	15.87	19.82	-3.95 (5.24)
Parents with any PSE (Non-FGF)	5.07	3.76	1.31 (2.15)	6.69	3.89	2.81 (1.83)	3.57	8.19	-4.62** (2.24)
Boys	10.27	8.11	2.16 (3.48)	6.65	10.39	-3.75 (2.85)	7.76	12.15	-4.39 (3.26)
Girls	6.97	6.20	0.77 (2.82)	6.06	6.38	-0.33 (2.17)	5.57	12.41	-6.84** (2.58)
Aboriginal	18.36	22.99	-4.63 (233.11)	—	—	— —	—	—	— —
Sample size	303	276		362	535		339	473	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.11: *EYH* Impacts on the Link between Education and Future Earnings

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "No matter how much education I get, I will most likely end up with a low-paying job" (%)									
All	6.84	5.54	1.30 (2.01)	7.59	11.07	-3.48* (1.91)	8.69	7.23	1.46 (2.15)
LILE	10.82	7.29	3.53 (4.93)	10.93	9.31	1.62 (3.63)	12.52	6.99	5.53 (4.50)
Non-LILE	5.38	5.27	0.11 (2.24)	5.55	12.29	-6.74*** (2.22)	6.73	7.05	-0.33 (2.22)
Parents with High School or Less (FGF)	6.79	6.43	0.36 (3.80)	8.05	11.66	-3.61 (3.89)	12.68	9.40	3.29 (5.31)
Parents with any PSE (Non-FGF)	6.68	5.43	1.25 (2.48)	6.95	10.94	-3.99* (2.28)	7.60	5.47	2.13 (2.14)
Boys	4.90	4.74	0.16 (2.67)	9.12	11.40	-2.28 (3.66)	8.67	4.97	3.71 (2.80)
Girls	8.76	6.52	2.24 (2.97)	6.68	10.68	-3.99* (2.36)	8.12	9.71	-1.59 (3.32)
Aboriginal	11.78	9.79	1.99 (113.94)	–	–	– –	–	–	– –
Sample size	302	277		358	531		334	468	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.12: *EYH* Impacts on Valuation of Going into Debt to Pay for School

	Manitoba			New Brunswick					
				Francophone			Anglophone		
	EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "For me, it would be worth going into debt to pay for school" (%)									
All	70.62	61.24	9.37** (4.03)	75.58	76.69	-1.11 (2.69)	69.00	70.51	-1.51 (3.47)
LILE	63.65	59.15	4.50 (10.26)	74.84	79.47	-4.63 (4.66)	67.15	67.62	-0.47 (5.59)
Non-LILE	72.12	62.34	9.78** (4.46)	77.08	73.94	3.13 (3.60)	69.28	71.21	-1.93 (4.38)
Parents with High School or Less (FGF)	65.81	56.36	9.45 (9.61)	73.90	79.59	-5.69 (5.37)	65.94	66.48	-0.54 (6.66)
Parents with any PSE (Non-FGF)	70.88	64.42	6.45 (4.38)	76.46	75.52	0.94 (3.54)	69.90	71.99	-2.10 (4.20)
Boys	67.49	57.24	10.25 (6.27)	71.51	79.91	-8.39* (4.50)	59.51	65.67	-6.17 (5.41)
Girls	72.29	66.64	5.65 (5.45)	78.60	73.92	4.68 (3.74)	78.27	73.50	4.76 (4.63)
Aboriginal	54.40	57.67	-3.27 (260.86)	–	–	– –	–	–	– –
Sample size	296	271		355	526		332	468	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.13: *EYH* Impacts on Satisfaction with Education Choices

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "I am satisfied with the decisions that I have made about my education" (%)									
All	86.75	88.82	-2.07 (2.59)	89.50	86.34	3.16 (2.19)	89.10	81.29	7.80** (2.55)
LILE	83.55	87.07	-3.51 (7.54)	87.31	83.94	3.36 (4.36)	81.08	74.77	6.31 (4.99)
Non-LILE	87.89	89.01	-1.12 (2.77)	90.26	87.44	2.82 (2.85)	91.80	85.85	5.95** (2.75)
Parents with High School or Less (FGF)	81.01	88.96	-7.94 (6.23)	86.52	84.76	1.76 (4.56)	85.25	75.83	9.41 (5.94)
Parents with any PSE (Non-FGF)	89.10	88.51	0.59 (2.94)	91.09	87.03	4.05 (2.49)	90.05	84.37	5.67* (3.01)
Boys	85.93	88.77	-2.84 (4.02)	85.77	82.46	3.31 (4.14)	87.83	79.85	7.98** (3.92)
Girls	86.96	89.54	-2.58 (3.52)	92.85	88.86	3.98 (2.68)	89.60	83.07	6.52* (3.55)
Aboriginal	90.50	72.28	18.21 (229.44)	—	—	— —	—	—	— —
Sample size	302	277		361	533		338	469	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.14: *EYH* Impacts on Career Options Information

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Somewhat Agree or Agree with the Statement "I did not have enough information about my career options to make good decisions about my education when I was in high school" (%)									
All	30.07	36.17	-6.10 (4.03)	42.42	49.33	-6.91* (3.72)	26.57	37.94	-11.37** (3.35)
LILE	38.65	25.97	12.68 (9.91)	44.37	45.05	-0.68 (6.14)	29.25	40.94	-11.70* (6.07)
Non-LILE	30.01	36.77	-6.76 (4.62)	40.56	53.69	-13.13*** (4.28)	25.71	35.64	-9.93** (4.31)
Parents with High School or Less (FGF)	27.54	40.14	-12.60 (8.94)	39.80	43.87	-4.07 (6.41)	37.23	37.04	0.19 (7.41)
Parents with any PSE (Non-FGF)	31.70	34.09	-2.39 (4.91)	42.55	53.15	-10.60** (4.63)	23.21	37.43	-14.22** (3.94)
Boys	31.30	30.89	0.41 (5.91)	37.81	48.16	-10.35* (5.40)	27.86	36.19	-8.33 (5.54)
Girls	32.32	37.24	-4.92 (6.05)	46.33	49.55	-3.23 (4.86)	26.70	39.23	-12.53** (5.52)
Aboriginal	40.23	41.16	-0.93 (431.95)	—	—	— —	—	—	— —
Sample size	299	274		354	527		337	468	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.15: *EYH* Impacts on Resilience¹

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Resilience score – average using all 6 items, excludes individuals with at least one scale item missing ²									
All	3.65	3.80	-0.15*** (0.04)	3.67	3.70	-0.03 (0.04)	3.71	3.74	-0.03 (0.04)
LILE	3.57	3.71	-0.14 (0.10)	3.70	3.70	0.00 (0.06)	3.72	3.71	0.00 (0.08)
Non-LILE	3.69	3.83	-0.14*** (0.06)	3.65	3.69	-0.04 (0.05)	3.68	3.76	-0.08 (0.05)
Parents with High School or Less (FGF)	3.61	3.75	-0.15 (0.11)	3.62	3.68	-0.07 (0.06)	3.64	3.74	-0.11 (0.09)
Parents with any PSE (Non-FGF)	3.68	3.81	-0.13** (0.05)	3.70	3.71	0.00 (0.05)	3.74	3.73	0.01 (0.05)
Boys	3.76	3.89	-0.13** (0.06)	3.85	3.75	0.10* (0.06)	3.81	3.83	-0.02 (0.06)
Girls	3.54	3.72	-0.18** (0.08)	3.56	3.66	-0.10** (0.05)	3.63	3.64	0.00 (0.07)
Aboriginal	3.64	3.29	0.35 (4.11)	–	–	– –	–	–	– –
Sample size	297	276		361	532		336	471	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. *The Brief Resilience Scale: Assessing the Ability to Bounce Back* Bruce W. Smith, Jeanne Dalen, Kathryn Wiggins, Erin Tooley, Paulette Christopher, and Jennifer Bernard. *International Journal of Behavioral Medicine*, 15: 194–200, 2008

2. Survey's questions included in resilience score calculation are: I tend to bounce back quickly after hard times, I have a hard time making it through stressful events, It does not take me long to recover from stressful events, It is hard for me to snap back when something bad happens, I usually come through difficult times with little trouble, I tend to take a long time to get over set-backs in my life

Table 4.16: *EYH* Impacts on Hardship

	Manitoba			New Brunswick					
				Francophone			Anglophone		
	EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
In past 3 months, can't afford groceries/used food bank/utilities or phone off (%)									
All	12.86	10.48	2.38 (2.58)	12.68	14.29	-1.61 (2.24)	17.38	20.19	-2.81 (2.90)
LILE	18.51	16.59	1.91 (6.97)	14.98	21.58	-6.60* (3.92)	23.87	29.62	-5.74 (5.56)
Non-LILE	11.17	8.11	3.06 (2.80)	11.16	11.17	-0.01 (2.62)	13.09	14.85	-1.77 (3.33)
Parents with High School or Less (FGF)	10.86	18.98	-8.12 (6.62)	14.01	17.79	-3.78 (4.63)	31.15	24.02	7.13 (7.11)
Parents with any PSE (Non-FGF)	13.60	7.67	5.93** (2.88)	10.73	13.52	-2.79 (2.79)	13.46	17.16	-3.70 (3.12)
Boys	11.51	6.56	4.95 (3.63)	9.99	15.04	-5.05 (3.94)	12.24	18.78	-6.55 (4.08)
Girls	14.16	14.12	0.04 (4.30)	14.65	13.74	0.91 (3.16)	22.46	21.04	1.42 (4.39)
Aboriginal	26.62	22.78	3.84 (169.84)	–	–	– –	–	–	– –
Sample size	303	277		362	535		339	473	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 4.17: *EYH* Impacts on Family Formation

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Live with parents or guardians ¹ (%)									
All	71.52	71.28	0.24 (3.31)	55.03	53.98	1.05 (3.32)	52.78	50.08	2.70 (3.67)
LILE	65.67	72.34	-6.67 (10.33)	57.23	49.81	7.43 (5.76)	52.85	45.89	6.96 (6.11)
Non-LILE	73.40	70.80	2.61 (3.97)	53.94	56.31	-2.37 (4.39)	53.19	52.45	0.74 (4.47)
Parents with High School or Less (FGF)	72.54	80.18	-7.64 (7.91)	58.82	54.08	4.74 (6.44)	55.99	50.99	5.00 (7.50)
Parents with any PSE (Non-FGF)	71.34	68.12	3.22 (3.91)	54.01	53.16	0.85 (4.27)	49.29	50.52	-1.22 (4.23)
Boys	70.82	74.01	-3.19 (5.02)	57.37	58.96	-1.59 (5.41)	60.47	59.39	1.08 (5.23)
Girls	72.66	68.58	4.08 (5.31)	51.37	51.18	0.18 (4.77)	45.64	41.96	3.67 (5.26)
Aboriginal	74.18	79.83	-5.66 (185.28)	–	–	– –	–	–	– –
The participant has dependent children (%)									
All	5.00	5.32	-0.32 (1.53)	2.87	4.23	-1.36 (1.07)	10.63	7.00	3.63** (1.71)
LILE	12.23	7.41	4.82 (4.70)	3.41	7.30	-3.89* (2.20)	17.78	12.57	5.21 (3.87)
Non-LILE	2.49	3.95	-1.46 (1.53)	3.31	2.35	0.96 (1.21)	6.85	3.37	3.48** (1.71)
Parents with High School or Less (FGF)	10.42	9.82	0.60 (3.82)	5.01	5.42	-0.41 (2.36)	17.05	10.96	6.10 (4.42)
Parents with any PSE (Non-FGF)	2.86	3.27	-0.42 (1.39)	2.08	3.48	-1.40 (1.15)	7.86	5.01	2.85 (1.75)
Boys	3.06	3.62	-0.57 (1.83)	0.00	1.96	-1.95** (0.99)	8.83	5.75	3.08 (2.46)
Girls	6.94	7.15	-0.20 (2.55)	4.80	6.78	-1.98 (2.01)	12.32	8.12	4.20 (2.66)
Aboriginal	7.24	6.38	0.86 (5.85)	–	–	– –	–	–	– –
Number of dependent children									
All	0.06	0.06	-0.01 (0.02)	0.03	0.05	-0.02 (0.01)	0.13	0.09	0.03 (0.02)
LILE	0.14	0.10	0.04 (0.06)	0.04	0.08	-0.04 (0.03)	0.21	0.18	0.03 (0.05)
Non-LILE	0.03	0.04	-0.02 (0.02)	0.03	0.03	0.01 (0.01)	0.08	0.04	0.05** (0.02)
Parents with High School or Less (FGF)	0.12	0.13	-0.01 (0.05)	0.06	0.06	0.00 (0.03)	0.21	0.15	0.06 (0.06)
Parents with any PSE (Non-FGF)	0.03	0.04	0.00 (0.02)	0.02	0.04	-0.02 (0.01)	0.09	0.06	0.02 (0.02)
Boys	0.03	0.04	-0.01 (0.02)	0.00	0.02	-0.02** (0.01)	0.10	0.07	0.03 (0.03)
Girls	0.08	0.09	-0.01 (0.03)	0.05	0.08	-0.03 (0.02)	0.15	0.11	0.04 (0.04)
Aboriginal	0.09	0.09	0.00 (0.08)	–	–	– –	–	–	– –

Continued on next page

Table 4.17: *EYH* Impacts on Family Formation (Continued)

	Manitoba			New Brunswick					
	EYH Group	Comparison Group	Impact (s.e.)	Francophone			Anglophone		
				EYH Group	Comparison Group	Impact (s.e.)	EYH Group	Comparison Group	Impact (s.e.)
Ever married (%)									
All	10.36	10.28	0.08 (2.25)	13.94	12.27	1.68 (2.09)	15.66	13.76	1.90 (2.26)
LILE	15.44	12.36	3.09 (4.88)	18.22	17.82	0.40 (3.62)	22.93	18.63	4.30 (4.16)
Non-LILE	8.67	9.08	-0.41 (2.47)	12.84	8.67	4.17 (2.60)	12.25	10.51	1.74 (2.30)
Parents with High School or Less (FGF)	13.62	13.96	-0.33 (4.84)	18.90	15.34	3.56 (3.96)	28.33	16.66	11.67** (5.01)
Parents with any PSE (Non-FGF)	9.10	8.61	0.49 (2.54)	11.67	10.68	0.98 (2.52)	11.27	11.66	-0.39 (2.39)
Boys	5.70	10.10	-4.40 (2.86)	8.79	8.05	0.74 (2.52)	12.62	11.47	1.15 (2.97)
Girls	15.12	10.89	4.23 (3.51)	18.95	15.77	3.18 (3.32)	19.45	15.40	4.05 (3.24)
Aboriginal	13.14	8.28	4.86 (9.65)	—	—	— —	—	—	— —
Sample size	456	380		476	675		454	643	

Source: *FTD* 66-month survey and *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Results from *FTD* 66-month survey only

SUMMARY OF POST-SECONDARY IMPACTS BY PROVINCE AND SECTOR

New Brunswick Francophone sector

Explore Your Horizons had a modest impact on post-secondary enrolment rates in the New Brunswick Francophone sector. This impact was concentrated at the university level. *EYH* had large impacts on two groups in particular: the LILE and FGF sub-groups. Post-secondary applications (a better gauge of the influence of *EYH* on post-secondary demand) also rose in a similar manner. The average amount of loans used for PSE rose in this sector as a result of *EYH* (overall and among LILE, FGF, and girls). The high school graduation rate among the FGF group rose as a result of *EYH*. As a result of being offered the program, fewer believed that no matter how much education they got, they would most likely end up in a low-paying job. Moreover, those offered the program were less likely to report that they did not have enough information about their career options to make good decisions about life after high school.

New Brunswick Anglophone Sector

Among New Brunswick Anglophone participants, *Explore Your Horizons* raised post-secondary enrolment in the LILE group and among boys. The impact in the LILE group was concentrated at the university level. Post-secondary applications increased overall as a result of *EYH* — especially in the LILE group and among boys. Participants who were offered *EYH* were more likely to report knowing how to obtain information about student financial aid. The *EYH* program had a positive impact on the high school graduation rate, particularly in the

LILE group. Also as a result of *EYH*, fewer participants report ever dropping out of high school, overall and for several sub-groups (LILE, non-FGF, and girls). *EYH* also raised the proportion of participants who stated they were satisfied with their education decisions. Those offered the program were less likely to report that they did not have enough information about their career options to make good decisions about high school.

Manitoba

Explore Your Horizons increased Manitoba participants' enrolment in post-secondary education among boys only. Although applications to post-secondary education in general did not change as a result of *EYH*, college applications rose overall and among most groups. The proportion of Manitoba students who reported using non-repayable aid to pay for post-secondary education rose as a result of *EYH*. The *EYH* program had a positive impact on the high school graduation rate. *EYH* raised the proportion of Manitoba participants who believed it would be worth going into debt to pay for school. *EYH* had unintended negative impacts on resilience in Manitoba.

All jurisdictions

In conclusion, across all jurisdictions, *Explore Your Horizons* raised educational attainment among participants. In some instances, this meant increased post-secondary enrolment, while in others it meant increased high school graduation rates. In general, *EYH* had little to no impact on hardship and family formation.

Post-secondary Impacts of *Learning Accounts*

Introduction

Chapter 5 presents the post-secondary impacts of the *Learning Accounts* intervention. As mentioned in Chapters 1 and 2, the *Learning Accounts* intervention was implemented only in New Brunswick and offered only to participants with family income below the provincial median. It provided participants an early (Grade 10) guarantee of a grant worth up to \$8,000 (up to \$4,000 per year), conditional on high school completion and subsequent participation in post-secondary education. The funds had to be used within a period equivalent to the three years following “on time” graduation from high school.

The intervention theorized that those who received the chance to open a Learning Account would be less uncertain about the affordability of post-secondary education. It was also assumed that the activities around creating an account — the creation of the account and the receipt of an account statement showing deposits made — would increase the extent to which participants thought about post-secondary education, and this increased early reflection would lead to behavioural changes including an increased rate of graduation from high school, altered attitudes with respect to post-secondary education, different choices of post-secondary programs and financing, and increases in application to and enrolment in post-secondary education. This chapter examines whether these changes actually occurred.



CHAPTER SUMMARY

- **The offer of *Learning Accounts* raised post-secondary enrolment in the Francophone sector in New Brunswick, as intended.** The increase was highly concentrated in college enrolment.
- **The impact of *Learning Accounts* on post-secondary enrolment was felt across all sub-groups in the Francophone sector.** In the Anglophone sector, the LILE sub-group and boys saw improvements in enrolment.
- **Post-secondary application rates were much higher among participants in both sectors offered *Learning Accounts*.** This suggests that *Learning Accounts* raised demand for post-secondary education in both sectors.
- ***Learning Accounts* may have displaced other non-repayable sources of post-secondary funds.** Despite increased enrolment rates in the Francophone sector and no decline in the Anglophone sector, those offered *Learning Accounts* experienced a decrease in other non-repayable aid.
- ***Learning Accounts* significantly raised high school graduation rates among all groups in the Anglophone sector, except for girls.** In the Francophone sector, only the LILE and FGF sub-groups registered an improvement in high school graduation as a result of *Learning Accounts*.

IMPACTS OF OFFERING *LEARNING ACCOUNTS*

An assumption underlying the development of the *Learning Accounts* intervention was that those who received the chance to open an account would have less uncertainty about the affordability of post-secondary education and more early reflection on their post-secondary plans, in turn leading to behavioural changes geared towards post-secondary education attainment. The major long-term impact of interest at this point of observation for *Learning Accounts* is successful enrolment in a post-secondary education program.

Impacts on Post-secondary Enrolment

Survey and administrative data reveal that *Learning Accounts* did indeed increase enrolment in post-secondary education in the Francophone sector in New Brunswick. As shown in Table 5.1, Francophone participants who were offered *Learning Accounts* were more likely to enrol in a post-secondary education program than those in the comparison group. The impact is 10.7 percentage points, which is quite large in relative terms (16.2 per cent greater than the comparison group). *LA* increased enrolment among all sub-groups in the Francophone sector that were examined for this report: LILE, FGF, those whose parents had post-secondary education experience, boys, and girls. In the Anglophone sector, increased enrolment at a statistically significant level was only evident in the LILE sub-group (8.7 percentage points) and boys (15.5 percentage points).

Table 5.2 provides information on enrolment by type of program — university, community college, private college or vocational institute, and apprenticeship. As shown in the second panel of Table 5.2, the impacts on post-secondary enrolment seen in Table 5.1 are largely the result of increased enrolment in community college programs. Impacts on enrolment in university, private college and vocational institution, and apprenticeship are only discernable for a couple of sub-groups (LILE and those with parents with post-secondary experience) and primarily in the Francophone sector, while college enrolment impacts are evident among all those who received an offer of a *Learning Accounts* and in several sub-groups.

The increased college enrolment caused by *Learning Accounts* is quite substantial in the Francophone sector. Among all those who received the offer of an account, 13.1 percentage points more enrolled in college than would have without the intervention. Increased enrolment among Francophone boys was 21.2 percentage points higher, the largest impact of any group. The targeted sub-groups of LILE and FGF also enrolled at much higher rates than they would have without the intervention: 17.0 and 19.2 percentage points, respectively.

In the Anglophone sector, those who received the offer of a *Learning Account* were more likely to enrol in college programs compared to the comparison group (a 6.9 percentage point difference). The Anglophone sub-groups of LILE and those whose parents had post-secondary experience also enrolled in college at increased levels, compared to the comparison group.

Although it is impossible to know for sure why *Learning Accounts* impacts were concentrated in college enrolment, one possibility is that the aid provided by the program totalled \$8,000 and was only available for up to four semesters. This corresponds more closely to the costs and duration of a college education than a university education (the latter usually being eight semesters). In other words, *Learning Accounts* provided aid in what is usually considered the full length of college, but only about half the duration of university.

It is important to keep in mind the *Learning Accounts* implementation results described in Chapter 2 when interpreting these impacts and those that follow. Many students who had been assigned to the program group did not recall that they had a *Learning Account* well into their high school years. The large impacts in the Francophone sector and for some groups in the Anglophone sector are *despite* low awareness of the program. Perhaps if students had maintained awareness of their *Learning Account* throughout high school, even larger impacts might have resulted; however, there is no guarantee of this happening.

Table 5.1: Learning Accounts Impacts on PSE Enrolment

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Enrolled in PSE institution (%)						
All	76.77	66.05	10.72** (4.28)	67.69	61.00	6.68 (4.21)
LILE	75.69	61.42	14.27*** (4.89)	65.70	56.98	8.71* (4.69)
Parents with High School or Less (FGF)	68.14	55.27	12.88* (6.76)	60.87	55.11	5.76 (6.54)
Parents with any PSE (Non-FGF)	88.25	75.68	12.57** (5.25)	74.12	65.82	8.30 (6.06)
Boys	71.20	58.60	12.60* (6.85)	60.98	45.48	15.50** (7.84)
Girls	83.45	70.84	12.60** (5.33)	73.18	72.25	0.93 (5.24)
Sample Size	247	262		240	255	

Source: FTD 66-month survey, FTD 66-month proxy survey, and FTD administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 5.2: Learning Accounts Impacts on PSE Enrolment by Type of Institution

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Enrolled in university						
All	29.42	25.75	3.68 (4.08)	25.55	26.28	-0.73 (3.96)
LILE	25.35	17.74	7.61* (4.36)	22.45	23.04	-0.59 (4.41)
Parents with High School or Less (FGF)	22.52	16.52	6.01 (5.16)	24.51	18.11	6.40 (5.48)
Parents with any PSE (Non-FGF)	37.99	34.42	3.56 (6.54)	25.75	35.21	-9.46 (5.92)
Boys	16.81	18.03	-1.22 (5.36)	12.21	13.71	-1.50 (4.95)
Girls	39.59	33.35	6.24 (5.37)	36.97	34.37	2.60 (5.77)

Continued on next page

Table 5.2: *Learning Accounts* Impacts on PSE Enrolment by Type of Institution (Continued)

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Enrolled in college						
All	50.01	36.96	13.05*** (4.98)	32.71	25.85	6.86* (3.97)
LILE	52.47	35.44	17.02*** (5.26)	31.96	24.50	7.46* (4.16)
Parents with High School or Less (FGF)	47.90	28.70	19.21*** (6.39)	28.34	26.61	1.73 (6.52)
Parents with any PSE (Non-FGF)	54.43	44.20	10.23 (7.90)	35.80	25.42	10.38* (5.95)
Boys	57.18	35.97	21.21*** (7.59)	34.25	25.43	8.82 (6.71)
Girls	46.04	35.84	10.21 (6.51)	29.63	27.97	1.66 (5.83)
Enrolled in private college or vocational institute						
All	6.95	10.73	-3.78 (2.69)	17.20	16.83	0.37 (3.68)
LILE	7.38	12.85	-5.47* (3.14)	17.56	16.61	0.95 (3.95)
Parents with High School or Less (FGF)	8.23	11.17	-2.94 (3.96)	13.14	17.42	-4.29 (5.72)
Parents with any PSE (Non-FGF)	5.67	10.24	-4.57 (4.00)	22.53	13.99	8.53* (5.03)
Boys	1.85	3.19	-1.34 (2.05)	15.32	8.90	6.42 (4.78)
Girls	12.08	17.10	-5.02 (4.87)	19.25	22.25	-3.00 (5.48)
Enrolled to be apprentice						
All	4.68	2.63	2.05 (1.84)	4.31	3.58	0.74 (1.69)
LILE	4.67	3.61	1.06 (2.07)	4.52	3.29	1.23 (1.87)
Parents with High School or Less (FGF)	3.73	4.82	-1.09 (3.05)	3.47	3.57	-0.09 (2.68)
Parents with any PSE (Non-FGF)	6.15	-0.37	6.52*** (2.50)	4.54	4.04	0.50 (2.63)
Boys	9.28	5.45	3.83 (4.19)	9.07	7.25	1.82 (4.08)
Girls	0.69	0.07	0.62 (0.69)	0.67	0.78	-0.11 (1.19)
Sample Size	246	258		238	252	

Source: FTD 66-month survey, FTD 66-month proxy survey, and FTD administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Impacts on Post-secondary Applications

As discussed in Chapter 4, any student-based intervention can only be expected to influence demand for post-secondary education, not supply. Since enrolment is the result of supply and demand, and since there are more oversubscribed programs in Anglophone community college in New Brunswick (see Chapter 4), it is perhaps more instructive to look at impacts on a measure of demand, such as application rates. Based on such a measure of demand for post-secondary education, *Learning Accounts* was very successful (and equally so) in both sectors (Table 5.3). Large impacts were also registered for all sub-groups in the Francophone sector. In the Anglophone sector, large impacts were registered among the LILE, FGF, and boys sub-groups.

Table 5.4 further examines the impacts of *Learning Accounts* on post-secondary education applications by each type of program — university, community college, private college or vocational institute, and registered apprentice. The results indicate that among Francophone and Anglophone participants, applications to some types of program were substantially higher than they would have been in the absence of the intervention. Among Francophone participants, application to university increased by 6.8 percentage points for the entire *Learning Accounts* group, by 11.4 percentage points for the LILE sub-group, and 9.3 percentage points for girls. While university applications also increased for the remaining sub-groups, they did not lead to statistically significant differences.

Applications to community colleges increased substantially in the Francophone sector, especially among the sub-groups of LILE, FGF and boys. Overall, the impact was 13.6 percentage

points. Among the three sub-groups, the impacts were quite large: 23.1 percentage points among those in the LILE group, 22.0 percentage points among boys, and 18.7 percentage points among the FGF group.

Among Francophone participants, the offer of *Learning Accounts* had no impact on applications to private colleges and vocational institutions.

The offer of *Learning Accounts* caused more students in the Francophone sector to apply to become an apprentice than they would have without the intervention. Although the difference is only 3.7 percentage points, this is large in relative terms since a small proportion of all students apply to become an apprentice.

In the Anglophone sector, *LA* significantly increased rates of application to university only for the FGF sub-group. FGF participants with an offer of *Learning Accounts* were more likely to apply to university than the comparison group (an impact of 11.9 percentage points). *LA* increased applications to college for Anglophone students (13.7 percentage points). *Learning Accounts* also produced a marked increase in college applications for the targeted LILE sub-group (14.2 percentage points), those whose parents had post-secondary education experience (14.5 percentage points), and boys (19.0 percentage points). The sub-group comprising those whose parents had post-secondary experience also increased their applications to private college and vocational programs.

Table 5.3: *Learning Accounts* Impacts on PSE Applications

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
PSE applications (%)						
All	80.83	68.61	12.23*** (3.80)	76.77	64.43	12.34*** (4.12)
LILE	80.65	62.36	18.30*** (4.58)	75.30	61.32	13.98*** (4.80)
Parents with High School or Less (FGF)	74.40	55.54	18.86*** (6.38)	74.45	56.29	18.16*** (6.85)
Parents with any PSE (Non-FGF)	89.95	80.73	9.21* (4.75)	79.88	71.18	8.70 (5.52)
Boys	77.78	60.39	17.39*** (6.46)	73.48	48.85	24.63*** (7.67)
Girls	84.73	75.20	9.53* (5.26)	80.01	75.45	4.56 (5.08)
Sample Size	243	254		233	247	

Source: FTD 66-month survey, FTD 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 5.4: *Learning Accounts* Impacts on PSE Applications by Type of Institution

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Applied to university						
All	32.08	25.31	6.77* (4.08)	30.22	28.18	2.04 (3.98)
LILE	28.91	17.51	11.40** (4.44)	26.69	24.72	1.97 (4.58)
Parents with High School or Less (FGF)	23.78	15.72	8.06 (5.17)	28.32	16.45	11.87** (5.33)
Parents with any PSE (Non-FGF)	41.80	34.75	7.05 (6.61)	32.45	39.16	-6.71 (5.94)
Boys	19.68	17.71	1.98 (5.43)	16.66	15.26	1.40 (6.08)
Girls	42.29	33.02	9.26* (5.50)	40.26	38.20	2.06 (6.12)
Applied to college						
All	48.89	35.26	13.63*** (4.64)	41.64	27.93	13.71*** (4.21)
LILE	51.92	33.21	18.71*** (5.16)	42.80	28.55	14.26*** (4.71)
Parents with High School or Less (FGF)	48.87	25.82	23.05*** (6.25)	40.51	29.10	11.40 (7.35)
Parents with any PSE (Non-FGF)	50.04	44.88	5.16 (7.54)	41.88	27.42	14.46** (6.27)
Boys	56.89	34.90	21.99*** (7.74)	43.04	24.08	18.96*** (6.88)
Girls	43.25	34.38	8.87 (6.31)	40.67	30.72	9.95 (6.52)
Applied to private college or vocational institute						
All	8.47	12.81	-4.34 (2.91)	21.71	19.20	2.51 (3.83)
LILE	8.50	13.76	-5.26 (3.31)	22.06	19.06	3.01 (4.02)
Parents with High School or Less (FGF)	9.24	11.71	-2.47 (4.22)	18.73	20.23	-1.50 (5.98)
Parents with any PSE (Non-FGF)	8.97	12.76	-3.78 (4.33)	25.73	16.29	9.44* (5.59)
Boys	3.01	5.34	-2.33 (2.56)	19.61	12.44	7.17 (5.55)
Girls	13.44	19.69	-6.25 (4.92)	23.19	24.39	-1.21 (5.64)

Continued on next page

Table 5.4: *Learning Accounts* Impacts on PSE Applications by Type of Institution (Continued)

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Applied to be apprentice						
All	6.30	2.65	3.65* (2.02)	5.26	5.18	0.07 (1.97)
LILE	6.80	3.51	3.29 (2.32)	4.53	4.31	0.22 (2.13)
Parents with High School or Less (FGF)	4.59	4.77	-0.18 (3.09)	3.19	4.68	-1.49 (3.03)
Parents with any PSE (Non-FGF)	8.57	-0.38	8.95*** (2.97)	6.50	6.03	0.47 (3.15)
Boys	12.49	5.65	6.84 (4.53)	13.76	8.58	5.18 (4.71)
Girls	0.68	0.09	0.59 (0.69)	0.67	0.80	-0.13 (1.21)
Sample Size	243	254		233	247	

Source: FTD 66-month survey, FTD 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Impacts on Knowledge and Use of Post-secondary Funding Sources

It was posited that students offered a Learning Account may have less uncertainty about the affordability of post-secondary education. It may also be the case that the activities around creating an account — the receipt of an account statement and annual deposits into the account — would increase the extent to which participants think about post-secondary education and lead to an early evaluation of post-secondary programs and financing. Given this, *Learning Accounts* was expected to increase financial aid knowledge as well as application for aid to supplement the *Learning Accounts* grant. Alternatively, the offer of *Learning Accounts* could displace other sources of non-repayable aid, especially if students feel that their Learning Account is sufficient to cover the costs of post-secondary education or if they believe that they will not qualify for additional aid because of their Learning Account. Moreover, *Learning Accounts* could also encourage recipients to choose lower-cost shorter programs, because they get to keep the balance of funds, if one exists. If this should occur, there could be lower rates of aid applications, or no change at all.

The results in the first panel of Table 5.5 show that the offer of *Learning Accounts* had very little impact on participants' knowledge of financial aid or on application for government-sponsored student financial aid in the Francophone sector and absolutely no impact in the Anglophone sector. The proportion of the Francophone FGF sub-group reporting knowledge about how to get information on student financial aid increased (by 11.4 percentage points), compared to the comparison group. The proportion of girls from the Francophone sector

reporting student financial aid knowledge also increased (by 10.1 percentage points). This slight increase in financial aid knowledge among these two sub-groups did not, however, translate into increased applications for student financial aid. The offer of *Learning Accounts* had no impacts on applications for government-sponsored student financial aid in the Francophone or Anglophone sectors.

Tables 5.6, 5.7 and 5.8 present the various sources used to cover education costs, the impact of the offer of *Learning Accounts* on the use of these sources and the average amounts that were used by participants. There is evidence of increased take-up of loans to cover education costs by those in the Francophone sector (by 11.0 percentage points), but not in the amount of the loan. The LILE, FGF, and non-FGF sub-groups in the Francophone sector also made increased use of loans. In the Anglophone sector, *Learning Accounts* led to a very large increase in take-up of loans by boys (24.5 percentage points), but not for any other group. The increase among boys represents a near doubling of the loan take-up rate expected for this group (as observed for members of the comparison group).

Despite the fact that *Learning Accounts* increased the proportion of students who took out loans, it did not lead to an increase in the amount of loans received. The average loan amount remained unchanged in the Francophone sector. In the Anglophone sector, *Learning Accounts* led to a decrease in the average loan amount by \$2,174. A decrease is also noticeable among the sub-group whose parents have post-secondary education experience (\$3,501) and among girls (\$4,488). It is possible that *Learning Accounts* caused some individuals to become more aware of aid opportunities, but the actual

amount of loan eligibility may have been reduced because of the Learning Account, which students are expected to declare on their aid applications. *Learning Accounts* is treated by New Brunswick Financial Services like any other declared resource. *Learning Accounts* funding, if declared, is interpreted in the same way as savings. The general implication of this to students' assessments is that the higher the level of resources the lower the level of calculated need and therefore, the lower the level of financial assistance they will be eligible to receive.

Learning Accounts generally had no impact on the use of non-repayable funds, such as scholarships, grants and gifts in both sectors (Table 5.7). The only exception is the Anglophone sub-group whose parents has at least some post-secondary education; this sub-group became less likely to use such funds as a result of the intervention (a decline of 14.2 percentage points).

Although the proportion receiving such funds generally did not change, the offer of *Learning Accounts* led to a small decrease in the amount of non-repayable funds received in both linguistic sectors (\$745 in the Francophone sector; \$777 in the Anglophone sector). In both sectors, a large decline was seen among those whose parents have a post-secondary education (\$1,227 and \$1,688, respectively). While government grants and scholarships are not the only source of non-repayable funds, it must be noted (as with the case of loans) that the receipt of a Learning Account does affect eligibility for such student financial aid.

Learning Accounts had no impact on the proportion of participants using their own funds to finance their post-secondary education or in the average amount of such funds being used (Table 5.8).

Table 5.5: *Learning Accounts* Impacts on Financial Aid Knowledge and Application

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Know how to get info about student financial aid (%)						
All	74.25	67.82	6.43 (4.49)	68.90	69.01	-0.10 (4.94)
LILE	73.19	64.59	8.60 (5.63)	66.32	69.67	-3.34 (5.75)
Parents with High School or Less (FGF)	73.00	61.61	11.38* (6.91)	62.92	66.01	-3.09 (7.51)
Parents with any PSE (Non-FGF)	76.62	73.64	2.98 (6.47)	72.92	72.91	0.01 (7.14)
Boys	67.37	64.16	3.22 (9.02)	65.95	60.97	4.97 (9.68)
Girls	79.96	69.86	10.09* (6.07)	68.48	77.02	-8.54 (7.23)
Ever applied for gov't-sponsored student financial aid (%)						
All	61.38	55.60	5.78 (5.16)	48.21	54.64	-6.43 (5.73)
LILE	61.42	55.13	6.29 (5.80)	49.57	51.74	-2.17 (6.04)
Parents with High School or Less (FGF)	59.66	51.44	8.22 (8.18)	43.25	47.79	-4.53 (7.96)
Parents with any PSE (Non-FGF)	65.12	57.92	7.20 (7.88)	52.97	60.49	-7.52 (7.54)
Boys	48.06	51.85	-3.79 (8.06)	41.21	31.18	10.03 (11.25)
Girls	70.76	58.79	11.97 (7.30)	56.56	67.33	-10.78 (7.35)
Sample Size	212	204		185	179	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 5.6: Learning Accounts Impacts on Covering Education Costs — Loans

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Received loans¹ (%)						
All	63.06	52.06	11.00** (4.87)	51.48	49.58	1.90 (5.46)
LILE	62.68	53.26	9.42* (5.54)	52.10	46.66	5.44 (6.18)
Parents with High School or Less (FGF)	60.68	46.75	13.93* (7.72)	44.03	42.73	1.30 (8.12)
Parents with any PSE (Non-FGF)	68.76	54.07	14.68* (7.52)	58.15	55.67	2.48 (7.67)
Boys	52.91	44.47	8.44 (7.94)	49.91	25.44	24.46** (10.50)
Girls	70.42	58.27	12.16 (7.40)	53.89	64.80	-10.91 (7.24)
Total amount of loans received (\$)						
All	7,540.51	7,154.72	385.79 (1,025.71)	6,614.10	8,788.21	-2,174.12* (1196.25)
LILE	7,243.42	7,019.00	224.43 1,088.15	6,685.05	7,973.30	-1,288.25 (1312.13)
Parents with High School or Less (FGF)	7,213.94	6,974.98	238.96 (1554.20)	5,367.58	6,733.23	-1,365.66 (1695.66)
Parents with any PSE (Non-FGF)	8,086.27	7,081.21	1,005.06 (1784.09)	7,489.45	10,990.96	-3,501.50* (1822.31)
Boys	5,259.22	5,638.76	-379.54 (1489.31)	5,825.21	3,365.87	2,459.34 (1882.63)
Girls	9,428.07	8,131.71	1,296.36 (1547.42)	7,598.25	12,085.86	-4,487.61*** (1561.68)
Sample Size	213	204		186	180	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Student financial aid, bank credit, family and other loans

Table 5.7: *Learning Accounts* Impacts on Covering Education Costs — Non-repayable Sources

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Received non-repayable funds¹ (%)						
All	54.82	52.82	2.00 (4.73)	49.06	53.74	-4.68 (5.31)
LILE	53.01	46.18	6.83 (5.60)	48.30	48.98	-0.69 (6.17)
Parents with High School or Less (FGF)	47.39	38.13	9.26 (7.34)	44.53	41.16	3.37 (9.18)
Parents with any PSE (Non-FGF)	65.08	65.70	-0.63 (6.91)	52.43	66.66	-14.23* (7.80)
Boys	48.67	48.57	0.09 (8.70)	47.18	35.24	11.94 (10.67)
Girls	58.88	56.74	2.14 (6.59)	52.73	64.10	-11.37 (7.70)
Total amount of non-repayable funds (\$)						
All	1,436.70	2,181.27	-744.57** (379.75)	1,787.72	2,564.36	-776.64* (457.18)
LILE	1,304.12	1,483.53	-179.41 (385.95)	1,615.92	2,090.21	-474.28 (447.89)
Parents with High School or Less (FGF)	915.13	1,414.42	-499.29 (469.62)	1,466.62	1,684.73	-218.12 (616.47)
Parents with any PSE (Non-FGF)	1,879.36	3,106.01	-1,226.65** (579.41)	1,910.96	3,599.07	-1,688.11* (976.84)
Boys	1,212.61	1,541.06	-328.45 (568.88)	1,186.16	2,552.72	-1,366.56 (1,139.87)
Girls	1,845.36	2,435.06	-589.70 (571.33)	1,939.93	2,864.23	-924.29 (630.09)
Sample Size	213	204		186	180	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Funds from family & friends, academic and non-academic scholarships, grants and other non-repayable sources

Table 5.8: Learning Accounts Impacts on Covering Education Costs — Own Sources

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Used own sources to pay for education¹ (%)						
All	53.46	47.61	5.85 (4.78)	51.26	47.31	3.95 (5.04)
LILE	50.43	42.75	7.68 (5.89)	49.46	40.91	8.55 (5.56)
Parents with High School or Less (FGF)	39.81	38.32	1.49 (7.75)	45.29	32.07	13.23 (8.48)
Parents with any PSE (Non-FGF)	66.05	58.25	7.80 (6.54)	57.25	61.15	-3.89 (7.80)
Boys	47.50	49.13	-1.63 (7.89)	49.86	38.51	11.35 (10.16)
Girls	57.03	47.11	9.92 (6.69)	50.21	55.40	-5.19 (7.41)
Total amount of own sources used to pay for education (\$)						
All	1,707.62	1,455.42	252.20 (312.29)	1,523.39	1,742.76	-219.38 (347.08)
LILE	1,529.63	1,045.14	484.49 (298.19)	1,378.96	1,506.50	-127.54 (382.01)
Parents with High School or Less (FGF)	991.42	863.67	127.74 (385.79)	1,261.79	1,076.43	185.36 (565.69)
Parents with any PSE (Non-FGF)	2,412.06	2,100.06	312.00 (582.98)	1,800.01	2,343.80	-543.79 (640.74)
Boys	1,307.49	1,744.87	-437.37 (542.10)	1,594.40	1,843.60	-249.20 (767.41)
Girls	1,830.98	1,381.44	449.54 (391.60)	1,454.36	1,688.65	-234.29 (553.09)
Sample Size	212	204		185	180	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Money earned while studying and own savings

Impacts on High School Graduation and Drop-out

While prior analysis indicated that *Learning Accounts* had no impacts on on-time graduation (Smith Fowler et al., 2009; Nicholson, 2012), results from the *FTD* 66-month survey showed that eventually, higher proportions of those who received an offer of *Learning Accounts* did complete the requirements for a high school diploma or its equivalent. In the Francophone sector, *Learning Accounts* participants in the targeted LILE and FGF sub-groups were more likely to have completed the requirements for a high school diploma or its equivalent at the time of the interview (Table 5.9). In the Anglophone sector, there were increased completion rates for the full group of participants (an increase of 8.8 percentage points), as well as for several sub-groups. All sub-groups in the Anglophone sector, except girls, graduated at rates higher than would have occurred in the absence of the intervention.

Table 5.10 shows that the offer of a Learning Account had no discernable impact on high school drop-out rates in the Francophone sector. In the Anglophone sector, fewer students dropped out from high school at some point than would have done in the absence of the program (a difference of 7.1 percentage points). A similar decrease was also observed for those in the LILE sub-group (8.3 percentage points).

Impacts on Attitudes towards Education, Resilience, and Hardship

Attitudes towards education and life are captured in the *FTD* 66-month survey. Respondents were asked their opinion regarding the relationship between education and earnings, the value of debt to pay for school, their satisfaction with education choices, knowledge of career options, and resilience. The theorized relationship between *Learning Accounts* and most of these measures is positive.³³ Compared to the *EYH* intervention, *Learning Accounts* provided very little support to post-secondary decision-making. There were no workshops, magazine, or Web site promoting post-secondary education. It was the process of establishing a Learning Account while still in Grade 10 that was expected to influence students' attitudes towards post-secondary education. It is hypothesized that the mere process of establishing an account (and the activities this entailed) would provide the incentive for those offered a Learning Account to seek out further information on their own about post-secondary education and learn more about the costs and benefits of a post-secondary education, more so than those in the comparison group. The results do not fully support this. In some instances, unintended negative impacts occurred.

Table 5.9: *Learning Accounts* Impacts on High School Graduation

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Completed requirements for high school diploma (%)						
All	89.11	84.92	4.19 (2.91)	89.15	80.33	8.82*** (3.14)
LILE	90.06	82.71	7.35** (3.21)	88.76	77.74	11.02*** (3.76)
Parents with High School or Less (FGF)	86.46	79.04	7.41* (4.27)	86.48	75.15	11.34** (5.26)
Parents with any PSE (Non-FGF)	92.48	91.05	1.43 (3.86)	91.94	84.82	7.12* (4.01)
Boys	81.48	81.34	0.14 (4.75)	89.71	75.50	14.21** (5.76)
Girls	93.69	90.40	3.29 (3.37)	89.42	83.42	6.00 (4.28)
Sample Size	246	261		240	254	

Source: *FTD* 66-month survey and *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

33 There was no originating hypothesis regarding the relationship between *Learning Accounts* and resilience. The survey included measures of resilience because an increase in resilience was a hypothesized outcome of "Future in Focus," a component of *Explore Your Horizons*.

Table 5.10: *Learning Accounts* Impacts on High School Drop-out

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Dropped out at some point, may or may not have diploma (%)						
All	10.09	13.06	-2.98 (2.85)	15.10	22.17	-7.07 (4.22)
LILE	9.79	15.04	-5.25 (3.30)	16.74	24.99	-8.25 (4.96)
Parents with High School or Less (FGF)	15.50	18.55	-3.05 (4.77)	18.65	28.36	-9.71 (7.60)
Parents with any PSE (Non-FGF)	4.55	7.36	-2.82 (3.46)	11.40	16.96	-5.56 (5.07)
Boys	16.44	14.53	1.90 (5.10)	12.41	24.93	-12.52 (7.83)
Girls	7.12	10.06	-2.94 (3.76)	16.47	20.91	-4.43 (6.00)
Sample Size	213	204		186	180	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

In the Francophone sector (except for FGF sub-group) there was no change in the proportion of participants agreeing with the statement that, "no matter how much education I get, I will most likely end up with a low-paying job" (Table 5.11). Moreover, the change observed among those in the FGF group was not in the expected direction. In contrast to the comparison group, a higher proportion of FGF participants in the *Learning Accounts* group agreed with the statement (10.5 percentage points).

In the Anglophone sector, the offer of *Learning Accounts* led to an increase in the proportion of students who thought they would most likely end up with a low-paying job regardless of the amount of education they got. This was true for the full group (6.3 percentage points), as well as the sub-groups of LILE (6.7 percentage points), FGF (10.3 percentage points), and boys (9.7 percentage points).

When asked about the value of going into debt to pay for school (Table 5.12), fewer in the Francophone LILE, FGF and boys sub-groups said it was worth going into debt to pay for school, compared to the comparison group. There were no changes in the Anglophone sector on opinions reported.

When asked about satisfaction with education decisions so far, the overwhelming majority of students from both *Learning Accounts* and comparison groups in both linguistic sectors were satisfied with the decisions they had made about

their education (Table 5.13). While there are no discernable impacts of the offer of *Learning Accounts* on the entire Francophone sector, there was an increase in satisfaction among boys (16.8 percentage points). In the Anglophone sector there was increased satisfaction among the entire group (8.8 percentage points) and for the sub-groups of LILE (9.0 percentage points), FGF (14.3 percentage points) and boys (14.2 percentage points).

Despite high proportions expressing satisfaction with the decisions made about their education, sizable but equivalent proportions of Anglophone and Francophone LA and comparison group participants agreed that they had insufficient information while in high school to make good decisions about their education (Table 5.14).

The measure of resilience in Table 5.15 shows that the offer of *Learning Accounts* had no net impact on this aspect of participants' lives. Hardship may be caused by a variety of reasons and students pursuing post-secondary education sometimes experience hardship. The survey attempted to capture hardship by asking students about their ability to buy groceries, to pay utility and phone bills, and their use of food banks. The results suggest that *Learning Accounts* did not lead to any additional hardship (Table 5.16). In both linguistic sectors, *Learning Accounts* and comparison groups experienced difficulties in purchasing groceries and paying utility or phone bills in sizeable but equivalent proportions.

Table 5.11: *Learning Accounts* Impacts on the Link between Education and Future Earnings

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "No matter how much education I get, I will most likely end up with a low-paying job" (%)						
All	13.64	11.75	1.89 (3.44)	12.94	6.66	6.28* (3.40)
LILE	13.11	7.66	5.45 (3.75)	13.57	6.89	6.68* (3.69)
Parents with High School or Less (FGF)	18.90	8.41	10.49* (5.51)	18.72	8.38	10.34* (5.88)
Parents with any PSE (Non-FGF)	11.55	12.26	-0.71 (4.64)	9.81	3.22	6.59 (4.19)
Boys	12.97	11.90	1.07 (5.95)	12.53	2.88	9.65* (5.54)
Girls	12.39	13.53	-1.13 (5.10)	13.39	9.13	4.26 (5.06)
Sample Size	209	201		186	179	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 5.12: *Learning Accounts* Impacts on Valuation of Going into Debt to Pay for School

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "For me, it would be worth going into debt to pay for school" (%)						
All	72.07	78.59	-6.52 (4.25)	68.27	71.45	-3.18 (5.03)
LILE	69.36	80.09	-10.73** (4.84)	66.97	69.77	-2.79 (5.44)
Parents with High School or Less (FGF)	64.90	79.62	-14.71** (6.27)	61.57	65.05	-3.47 (9.13)
Parents with any PSE (Non-FGF)	78.54	77.63	0.91 (6.30)	77.00	74.45	2.55 (7.44)
Boys	68.00	82.48	-14.48* (8.51)	64.49	65.77	-1.28 (8.94)
Girls	74.65	75.62	-0.97 (5.91)	70.05	76.34	-6.29 (7.58)
Sample Size	204	202		182	176	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 5.13: Learning Accounts Impacts on Satisfaction with Education Choices

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "I am satisfied with the decisions that I have made about my education" (%)						
All	86.47	80.96	5.52 (3.63)	83.22	74.45	8.77** (3.93)
LILE	86.02	82.74	3.28 (4.37)	82.89	73.90	8.99** (4.54)
Parents with High School or Less (FGF)	85.94	83.36	2.58 (5.87)	83.39	69.07	14.32** (6.98)
Parents with any PSE (Non-FGF)	86.65	78.62	8.03 (5.55)	83.75	79.07	4.68 (6.06)
Boys	89.53	72.77	16.76*** (6.45)	88.66	74.43	14.22* (8.28)
Girls	85.54	86.29	-0.75 (5.20)	75.66	78.13	-2.47 (6.77)
Sample Size	211	203		185	176	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 5.14: Learning Accounts Impacts on Career Options Information

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "I did not have enough information about my career options to make good decisions about my education when I was in high school" (%)						
All	56.19	50.60	5.59 (5.43)	40.76	41.57	-0.81 (5.66)
LILE	53.45	46.02	7.42 (6.26)	44.79	40.91	3.87 (6.26)
Parents with High School or Less (FGF)	57.52	45.77	11.75 (8.13)	41.36	38.73	2.63 (9.10)
Parents with any PSE (Non-FGF)	54.46	56.58	-2.12 (7.54)	43.79	40.37	3.43 (8.42)
Boys	51.96	53.69	-1.73 (8.81)	36.47	36.88	-0.40 (10.88)
Girls	56.81	50.70	6.11 (7.20)	46.07	42.61	3.46 (7.79)
Sample Size	207	200		184	178	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 5.15: *Learning Accounts* Impacts on Resilience¹

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Resilience score – average using all 6 items, excludes individuals with at least one scale item missing ²						
All	3.64	3.67	-0.03 (0.05)	3.73	3.73	-0.01 (0.07)
LILE	3.64	3.70	-0.06 (0.05)	3.72	3.75	-0.03 (0.08)
Parents with High School or Less (FGF)	3.63	3.69	-0.06 (0.07)	3.81	3.76	0.05 (0.11)
Parents with any PSE (Non-FGF)	3.68	3.62	0.06 (0.10)	3.68	3.68	0.00 (0.11)
Boys	3.73	3.76	-0.03 (0.08)	3.92	3.85	0.07 (0.12)
Girls	3.55	3.64	-0.08 (0.08)	3.60	3.64	-0.04 (0.11)
Sample Size	213	203		186	180	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. *The Brief Resilience Scale: Assessing the Ability to Bounce Back* Bruce W. Smith, Jeanne Dalen, Kathryn Wiggins, Erin Tooley, Paulette Christopher, and Jennifer Bernard. *International Journal of Behavioral Medicine*, 15: 194–200, 2008

2. Survey's questions included in resilience score calculation are: I tend to bounce back quickly after hard times, I have a hard time making it through stressful events, It does not take me long to recover from stressful events, It is hard for me to snap back when something bad happens, I usually come through difficult times with little trouble, I tend to take a long time to get over set-backs in my life

Table 5.16: *Learning Accounts* Impacts on Hardship

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
In past 3 months, can't afford groceries/used food bank/utilities or phone off (%)						
All	20.03	19.87	0.17 (3.93)	27.92	30.19	-2.28 (4.78)
LILE	19.72	20.46	-0.74 (4.66)	25.65	31.16	-5.51 (5.48)
Parents with High School or Less (FGF)	25.12	17.71	7.41 (6.76)	25.50	32.32	-6.82 (8.12)
Parents with any PSE (Non-FGF)	16.65	20.72	-4.07 (6.22)	32.05	25.54	6.51 (6.99)
Boys	15.16	20.12	-4.97 (6.96)	20.53	28.47	-7.93 (9.99)
Girls	23.44	19.76	3.68 (5.87)	32.09	32.70	-0.61 (7.14)
Sample Size	213	204		185	180	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 5.17: Learning Accounts Impacts on Family Formation

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Live with parents or guardians¹ (%)						
All	57.00	51.52	5.48 (4.90)	49.62	45.39	4.23 (5.25)
LILE	55.10	49.85	5.25 (5.58)	48.88	45.11	3.77 (5.73)
Parents with High School or Less (FGF)	51.71	54.39	-2.68 (7.04)	45.42	41.45	3.97 (8.08)
Parents with any PSE (Non-FGF)	59.26	51.38	7.87 (6.94)	54.42	47.72	6.70 (7.64)
Boys	63.30	57.24	6.05 (8.95)	55.19	60.82	-5.63 (9.56)
Girls	53.27	45.90	7.37 (7.12)	41.83	38.54	3.29 (7.77)
The participant has dependent children (%)						
All	5.40	7.96	-2.56 (2.10)	14.89	13.05	1.84 (3.18)
LILE	5.84	8.78	-2.93 (2.51)	17.02	14.24	2.78 (3.72)
Parents with High School or Less (FGF)	6.34	7.99	-1.64 (3.16)	17.13	15.50	1.64 (5.56)
Parents with any PSE (Non-FGF)	3.19	9.23	-6.04* (3.29)	12.78	10.92	1.86 (4.17)
Boys	6.06	4.81	1.25 (3.14)	9.82	9.54	0.28 (4.69)
Girls	5.84	9.99	-4.15 (3.24)	18.29	16.31	1.98 (4.65)
Number of dependent children						
All	0.06	0.09	-0.03 (0.02)	0.19	0.17	0.02 (0.05)
LILE	0.06	0.10	-0.03 (0.03)	0.22	0.19	0.03 (0.06)
Parents with High School or Less (FGF)	0.07	0.09	-0.01 (0.04)	0.25	0.21	0.04 (0.08)
Parents with any PSE (Non-FGF)	0.03	0.10	-0.07** (0.04)	0.13	0.14	-0.01 (0.05)
Boys	0.06	0.05	0.01 (0.03)	0.13	0.12	0.00 (0.06)
Girls	0.07	0.11	-0.04 (0.04)	0.22	0.22	0.00 (0.07)

Continued on next page

Table 5.17: *Learning Accounts* Impacts on Family Formation (Continued)

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Ever married (%)						
All	15.21	16.43	-1.22 (3.17)	19.24	17.25	1.99 (3.66)
LILE	16.20	19.12	-2.92 (3.73)	18.61	19.05	-0.44 (4.20)
Parents with High School or Less (FGF)	17.72	20.00	-2.27 (5.46)	20.20	23.12	-2.92 (6.25)
Parents with any PSE (Non-FGF)	11.91	12.99	-1.08 (4.63)	18.31	11.48	6.84 (5.12)
Boys	13.45	11.56	1.89 (4.63)	18.68	12.00	6.69 (5.38)
Girls	16.55	21.29	-4.74 (5.13)	20.86	20.17	0.69 (5.31)
Sample Size	245	262		240	255	

Source: *FTD* 66-month survey and *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Results from *FTD* 66-month survey only

Impacts on Family Formation

It is possible that students who alter their decisions about post-secondary education as a result of *Learning Accounts* may also alter family formation as a result of, or to facilitate, their new education path. For example, marriage and children may be delayed by the pursuit of higher education. Also, living with one's parents may be required to save on costs. Conversely, it may also be necessary to move out of the parental home if the post-secondary institution of choice is too far to allow for a reasonable commute.

Table 5.17 presents findings on several aspects of family formation: still living with parents, having dependent children and marital status. *Learning Accounts* had no impacts on family formation as measured by the survey, except for the sub-group of participants from the Francophone sector whose parents had a post-secondary education. In this sub-group, there was a decrease in the proportion of participants with dependent children (6.0 percentage points) and in the average number of children they had (0.07).

SUMMARY OF POST-SECONDARY IMPACTS BY SECTOR

New Brunswick Francophone sector

The offer of *Learning Accounts* had a large positive impact on post-secondary enrolment in the Francophone sector for all participants as a whole, as well as for all sub-groups. In general, the impact was particularly concentrated in college enrolment. Post-secondary applications also rose substantially as a result of *Learning Accounts*. This was true for the sector as a whole and for all sub-groups. The take-up of loans increased as a result of *Learning Accounts*, although no increase in loan amounts was detected. Also, the amount of non-repayable funds used for post-secondary decreased as a result of *Learning Accounts*. *Learning Accounts* increased high school graduation rates for some groups. Some groups were less likely to believe that it was worth going into debt to pay for school as a result of the program.

New Brunswick Anglophone Sector

In the Anglophone sector, the offer of *Learning Accounts* had a positive impact on post-secondary enrolment for some groups. However, *Learning Accounts* had a positive impact overall for college enrolment. Post-secondary applications rose for the sector as a whole as a result of *Learning Accounts*, and for some sub-groups. The amount of non-repayable funds used for post-secondary decreased as a result of *Learning Accounts*. *Learning Accounts* raised high school graduation rates for the sector as a whole and for several sub-groups. *Learning Accounts* also reduced the proportion of students dropped out of high school. The offer of *Learning Accounts* led to an increase in the proportion of students who thought

they will most likely end up with a low-paying job regardless of the amount of education they obtained. This was true for the sector as a whole and for some sub-groups. The program also raised participants' levels of satisfaction with their educational choices, overall and for some sub-groups.

Both Sectors

Across both sectors, the offer of *Learning Accounts* had a positive impact on college enrolment and on post-secondary applications. The amount of non-repayable funds used for post-secondary education decreased as a result of *Learning Accounts*.



Post-secondary Impacts of Combining *Future to Discover* Interventions for New Brunswick Lower-income Families

Introduction

This chapter presents impacts for the combined *Explore Your Horizons* and *Learning Accounts* interventions. Chapters 1 and 2 describe both interventions in detail. Since *Learning Accounts* was only available to New Brunswick students from lower-income families, the combined interventions were only offered to a sub-set of this population. This chapter therefore concerns only New Brunswick students from lower-income families. In all cases, the combined offer of both interventions will be compared to no offer of any intervention. Appendix 2 presents the incremental impacts of offering both interventions relative to offering *Learning Accounts* and *Explore Your Horizons* individually, as well as the impacts of offering *Learning Accounts* versus *Explore Your Horizons*.

Establishing prior expectations for a combined intervention is not a simple exercise. Chapters 4 and 5 provided impacts estimates for each program on its own. Regarding post-secondary enrolment, we saw that both *Learning Accounts* and *Explore Your Horizons* had positive impacts in the Francophone sector.³⁴ However, the combined impact may not be equal to the sum of the individual impacts. First, the programs may interact in a positive way. Chapter 2 reported that having a Learning Account raised attendance at *EYH* workshops. Similarly, being part of *EYH* raised awareness of one's Learning Account. Second, the interaction effect may be negative. For example, attending *EYH* workshops may promote increase the interest of some students in university, where education costs exceed the amount of their Learning Account. The combined intervention may thus create some conflict or pressure on some students, and some may respond negatively to the increased stress.³⁵

³⁴ Results not reported in this report suggest that *Explore Your Horizons* also had a positive impact among students who, based on their family income, were eligible for *Learning Accounts* in the New Brunswick sector, but only received the offer of *EYH*.

³⁵ The program theory assumed that the combined interventions' impacts would be complementary and additive, but it is possible to hypothesize several scenarios like this one where the pattern of impacts would be different. Furthermore, and as discussed in Chapter 3, tests of statistical significance are not always correct. Thus, we may find that *LA* and *EYH* each had a positive impact, but *EYH* plus *LA* had no impact (in a statistical sense) simply due to chance. This is especially likely if the impact is near the significance threshold.



CHAPTER SUMMARY

- The combination of *Explore Your Horizons* and *Learning Accounts* helped increase post-secondary enrolment among students in the Anglophone linguistic sector of New Brunswick, but not in the Francophone linguistic sector. However, university enrolment increased as a result of offering the combined interventions in both linguistic sectors.
- *Explore Your Horizons plus Learning Accounts* improved PSE and university application rates in both the Francophone and Anglophone linguistic sectors in New Brunswick. Application rates rose among the LILE and FGF sub-groups in both sectors.
- Students in the Francophone linguistic sector in New Brunswick were more likely to report that they knew how to get information about student financial aid as a result of the combined interventions. No impacts were registered in the Anglophone sector.
- The combination of *Explore Your Horizons* and *Learning Accounts* increased high school graduation rates and lowered drop-out rates in the Anglophone linguistic sector in New Brunswick. High school outcomes in the Francophone sector were generally unaffected by the combined interventions.
- The combination of *Explore Your Horizons* and *Learning Accounts* was successful in disseminating career information. As a result of the combined offer, students in both linguistic sectors of New Brunswick were less likely to claim that they did not have enough information about their career options to make good decisions about their education while in high school.

IMPACTS OF OFFERING *EXPLORE YOUR HORIZONS* AND *LEARNING ACCOUNTS*

Impacts on Post-secondary Enrolment

In the Francophone sector, for all students, there was no impact of *Explore Your Horizons plus Learning Accounts* on the proportion that enrolled in PSE (Table 6.1). However, LILE participants receiving the combined interventions were significantly more likely to enrol in PSE than their comparison group counterparts (an increase of 11.5 percentage points). Also, *Explore Your Horizons plus Learning Accounts* caused many more FGF participants to enrol in a PSE institution (an increase of 14.2 percentage points). Girls offered the combined interventions were more likely to enrol in PSE (an increase of 14.4 percentage points).

In the Anglophone sector, Table 6.1 shows that all students offered *Explore Your Horizons plus Learning Accounts* were significantly more likely than comparison group counterparts

to enrol in PSE (a difference of 10.0 percentage points). The LILE group and boys also benefited from the combined interventions (by 11.5 and 26.1 percentage points, respectively).

In both sectors, most of the impacts on enrolment were in university programs (Table 6.2). As a result of *Explore Your Horizons plus Learning Accounts*, university enrolment increased by 7.6 and 6.8 percentage points in the Francophone and Anglophone sectors, respectively. The LILE group also saw an increase in university enrolment in both sectors as a result of the combined intervention (9.6 and 7.3 percentage points in the Francophone and Anglophone sectors, respectively).

Despite the fact that *EYH* and *LA* alone had positive impacts on PSE enrolment in the Francophone sector, the combination of the two interventions had no impact. That being said, the estimated impact in Table 6.1 is still positive, and almost significant at the 10 per cent level. In the Anglophone sector, there appears to have been a positive interaction effect. Indeed, *EYH* and *LA* alone did not produce any impacts on PSE enrolment, but the combined offers did increase enrolment.

Impacts on Post-secondary Applications

As mentioned in Chapters 4 and 5, PSE enrolment is the result of PSE supply and demand. While *Explore Your Horizons plus Learning Accounts* can be expected to affect demand for PSE, it is not likely to affect supply. A cleaner measure of the combined intervention's impact on demand for post-secondary education is PSE applications.

As shown in Table 6.3, offering *Explore Your Horizons plus Learning Accounts* raised PSE applications by 7.5 percentage points overall in the Francophone sector. The combined interventions produced large impacts among two key sub-groups: LILE (15.7 percentage points) and FGF (20.1 percentage points).

There were large impacts also in the Anglophone sector, mainly the result of a very substantial impact on boys that was not seen in the Francophone sector. Overall, the combined interventions raised PSE applications by 15.3 percentage points. Similar impacts were registered in the LILE and FGF sub-groups (16.9 and 18.0 percentage points, respectively), which were about as large as in the Francophone sector. Among boys, however, the combination of *EYH* and *LA* raised PSE applications by 28.2 percentage points.

As was the case for PSE enrolment, most of the impacts on applications were for university programs in both sectors (Table 6.4). As a result of *Explore Your Horizons plus Learning Accounts*, university applications increased by 8.2 and 7.8 percentage points in the Francophone and Anglophone sectors, respectively. The LILE group also saw an increase in university applications in both sectors as a result of combining the interventions (10.0 and 8.5 percentage points in the Francophone and Anglophone sectors, respectively). Some impacts were registered in college and apprenticeship applications.

Table 6.1: *EYH plus Learning Accounts* Impacts on PSE Enrolment

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Enrolled in PSE institution (%)						
All	72.60	66.23	6.37 (4.42)	69.41	59.41	10.00*** (3.80)
LILE	72.14	60.62	11.52** (4.97)	66.52	55.01	11.50** (4.51)
Parents with High School or Less (FGF)	70.86	56.72	14.15** (6.81)	60.89	53.77	7.11 (6.54)
Parents with any PSE (Non-FGF)	75.29	76.14	-0.85 (6.06)	75.67	67.01	8.66 (5.27)
Boys	62.42	59.78	2.64 (7.35)	67.88	41.75	26.13*** (6.39)
Girls	84.52	70.11	14.41** (5.63)	70.41	73.10	-2.69 (5.44)
Sample Size	244	262		237	255	

Source: FTD 66-month survey, FTD 66-month proxy survey, and FTD administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.2: *EYH plus Learning Accounts* Impacts on PSE Enrolment by Type of Institution

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Enrolled in university						
All	31.89	24.30	7.59* (4.03)	32.32	25.54	6.78* (3.76)
LILE	26.32	16.69	9.63** (3.98)	28.97	21.63	7.34* (4.09)
Parents with High School or Less (FGF)	24.66	16.79	7.88* (4.49)	23.35	16.23	7.12 (4.85)
Parents with any PSE (Non-FGF)	38.22	33.68	4.54 (6.30)	41.14	34.58	6.56 (5.92)
Boys	22.48	17.28	5.20 (5.63)	26.79	13.64	13.15** (5.43)
Girls	40.04	31.54	8.49 (5.67)	39.25	33.55	5.71 (5.40)
Enrolled in college						
All	42.53	38.55	3.98 (5.14)	24.81	25.37	-0.56 (3.77)
LILE	43.30	36.58	6.72 (5.61)	26.30	24.62	1.68 (4.15)
Parents with High School or Less (FGF)	42.38	31.37	11.01 (7.33)	24.94	27.83	-2.88 (5.93)
Parents with any PSE (Non-FGF)	45.65	43.88	1.77 (7.12)	22.36	25.09	-2.73 (6.04)
Boys	40.29	37.64	2.64 (7.76)	30.29	22.06	8.23 (6.38)
Girls	46.32	37.90	8.41 (6.74)	17.77	28.74	-10.97* (6.30)

Continued on next page

Table 6.2: *EYH plus Learning Accounts* Impacts on PSE Enrolment by Type of Institution (Continued)

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Enrolled in private college or vocational institute						
All	10.77	9.94	0.83 (2.84)	20.16	15.44	4.72 (3.53)
LILE	13.16	10.95	2.20 (3.47)	18.80	15.39	3.41 (3.78)
Parents with High School or Less (FGF)	12.20	9.88	2.32 (4.09)	20.55	17.56	2.99 (5.18)
Parents with any PSE (Non-FGF)	9.39	9.94	-0.54 (4.37)	18.14	14.88	3.26 (5.18)
Boys	8.04	2.79	5.26* (2.84)	14.06	8.53	5.53 (4.46)
Girls	14.56	15.69	-1.14 (4.78)	25.32	21.76	3.57 (5.99)
Enrolled to be apprentice						
All	3.43	2.67	0.76 (1.54)	1.60	3.73	-2.13 (1.42)
LILE	2.98	3.42	-0.44 (1.88)	1.36	3.58	-2.23 (1.58)
Parents with High School or Less (FGF)	2.57	5.14	-2.58 (2.52)	0.77	3.33	-2.56 (1.72)
Parents with any PSE (Non-FGF)	3.47	0.70	2.77 (1.73)	2.44	4.10	-1.66 (2.48)
Boys	7.50	4.94	2.56 (3.18)	3.60	7.18	-3.58 (3.12)
Girls	0.00	0.00	0.00 (0.00)	0.02	0.69	-0.67 (0.83)
Sample Size	244	258		234	252	

Source: *FTD* 66-month survey, *FTD* 66-month proxy survey, and *FTD* administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.3: *EYH plus Learning Accounts* Impacts on PSE Applications

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
PSE applications (%)						
All	75.92	68.39	7.53* (3.99)	78.02	62.75	15.27*** (3.85)
LILE	77.34	61.70	15.65*** (4.79)	76.33	59.47	16.85*** (4.44)
Parents with High School or Less (FGF)	77.00	56.91	20.08*** (6.47)	73.14	55.12	18.02*** (6.56)
Parents with any PSE (Non-FGF)	74.76	81.60	-6.84 (5.58)	80.44	72.58	7.86 (5.65)
Boys	70.03	61.02	9.02 (6.80)	75.74	47.50	28.24*** (6.41)
Girls	83.02	74.19	8.83 (5.46)	79.84	74.73	5.11 (5.56)
Sample Size	241	254		232	247	

Source: FTD 66-month survey, FTD 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.4: *EYH plus Learning Accounts* Impacts on PSE Applications by Type of Institution

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Applied to university						
All	31.95	23.71	8.24** (3.99)	35.32	27.56	7.76** (3.74)
LILE	26.18	16.19	9.99** (4.00)	31.45	23.41	8.05* (4.14)
Parents with High School or Less (FGF)	24.03	15.50	8.53* (4.61)	22.19	16.07	6.12 (5.03)
Parents with any PSE (Non-FGF)	38.70	34.38	4.32 (6.54)	46.17	40.70	5.47 (6.10)
Boys	22.69	16.94	5.75 (5.56)	30.73	13.97	16.76*** (5.42)
Girls	39.71	31.43	8.28 (5.61)	40.88	37.32	3.55 (6.16)

Continued on next page

Table 6.4: *EYH plus Learning Accounts* Impacts on PSE Applications by Type of Institution (Continued)

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Applied to college						
All	40.99	37.23	3.76 (4.97)	33.30	27.43	5.87 (3.89)
LILE	46.94	34.94	12.00** (5.58)	34.24	28.57	5.68 (4.41)
Parents with High School or Less (FGF)	46.70	27.77	18.93*** (6.90)	33.52	29.13	4.40 (6.36)
Parents with any PSE (Non-FGF)	37.66	45.60	-7.93 (6.97)	31.12	27.61	3.51 (6.78)
Boys	40.71	36.74	3.96 (7.39)	37.21	23.56	13.65** (6.76)
Girls	42.30	36.74	5.56 (6.94)	27.18	31.80	-4.62 (6.71)
Applied to private college or vocational institute						
All	10.62	12.02	-1.41 (2.96)	22.93	18.14	4.80 (3.63)
LILE	12.96	12.12	0.84 (3.57)	22.13	18.08	4.05 (3.93)
Parents with High School or Less (FGF)	12.70	10.84	1.87 (4.30)	25.23	20.55	4.68 (5.51)
Parents with any PSE (Non-FGF)	8.99	12.89	-3.91 (4.66)	18.49	17.88	0.60 (5.52)
Boys	7.47	4.92	2.55 (3.13)	16.67	12.10	4.57 (4.79)
Girls	14.68	17.90	-3.22 (4.78)	28.59	23.59	4.99 (6.05)
Applied to be apprentice						
All	5.15	2.61	2.54 (1.77)	3.59	5.53	-1.94 (2.00)
LILE	5.13	3.45	1.68 (2.24)	3.70	4.79	-1.09 (2.12)
Parents with High School or Less (FGF)	4.19	5.14	-0.95 (2.84)	3.38	4.18	-0.80 (2.49)
Parents with any PSE (Non-FGF)	5.58	0.25	5.33** (2.11)	3.83	6.87	-3.04 (3.09)
Boys	11.01	4.75	6.26* (3.75)	9.07	9.46	-0.40 (4.20)
Girls	0.00	0.00	0.00 (0.00)	-0.04	0.74	-0.78 (0.86)
Sample Size	241	254		232	247	

Source: *FTD* 66-month survey, *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Impacts on Knowledge and Use of Post-secondary Funding Sources

In the Francophone sector, *Explore Your Horizons plus Learning Accounts* participants were more likely to report that they knew how to get information about student financial aid (an increase of 10.2 percentage points, Table 6.5). The LILE and girls sub-groups offered the combination of *Explore Your Horizons plus Learning Accounts* were also more likely to report that they knew how to get information about student financial aid (11.8 and 15.3 percentage points). The combined interventions did not produce impacts in the Anglophone sector.

There were few impacts on the proportion of participants reporting that they ever applied for government sponsored student financial aid (Table 6.5). There were significant increases applying among girls in the Francophone sector (14.6 percentage points), and boys in the Anglophone sector (16.4 percentage points). There was a significant decrease applying among girls in the Anglophone sector (-18.4 percentage points).

Explore Your Horizons plus Learning Accounts had little to no impacts on the sources (loans, non-repayable, and own) and amounts of student financial aid received by the participants (Tables 6.6, 6.7 and 6.8). One notable exception is boys, who were more likely to obtain all three sources of aid as a result of *EYH plus LA*.

Table 6.5: *EYH plus Learning Accounts* Impacts on Financial Aid Knowledge and Application

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	<i>EYHLA</i> Group	Comparison Group	Impact (s.e.)	<i>EYHLA</i> Group	Comparison Group	Impact (s.e.)
Know how to get info about student financial aid (%)						
All	76.64	66.41	10.22** (4.44)	73.53	67.40	6.13 (4.66)
LILE	75.76	63.95	11.81** (5.47)	71.43	68.57	2.86 (5.99)
Parents with High School or Less (FGF)	72.79	62.31	10.48 (6.89)	67.77	68.29	-0.52 (8.67)
Parents with any PSE (Non-FGF)	78.17	73.91	4.26 (6.31)	73.06	72.15	0.90 (7.96)
Boys	69.79	62.08	7.72 (7.64)	69.95	60.48	9.47 (8.13)
Girls	83.87	68.56	15.31** (6.56)	73.85	74.98	-1.12 (8.61)
Ever applied for gov't-sponsored student financial aid (%)						
All	60.48	55.49	4.99 (4.95)	53.68	52.12	1.56 (5.37)
LILE	59.94	54.39	5.54 (5.81)	53.64	50.82	2.82 (6.48)
Parents with High School or Less (FGF)	56.46	53.04	3.42 (7.22)	53.04	48.35	4.69 (8.89)
Parents with any PSE (Non-FGF)	62.59	60.57	2.02 (7.53)	51.32	59.07	-7.75 (7.80)
Boys	51.53	50.11	1.42 (7.72)	49.88	33.49	16.39* (9.46)
Girls	71.31	56.75	14.56* (7.58)	51.44	69.87	-18.43** (7.70)
Sample Size	199	204		182	179	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.6: *EYH plus Learning Accounts* Impacts on Covering Education Costs — Loans

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Received loans¹ (%)						
All	56.94	52.27	4.67 (5.18)	53.71	46.25	7.47 (4.97)
LILE	55.48	52.86	2.62 (5.77)	52.86	44.60	8.26 (6.05)
Parents with High School or Less (FGF)	52.27	48.74	3.54 (7.00)	49.57	43.17	6.40 (8.55)
Parents with any PSE (Non-FGF)	61.62	56.68	4.94 (8.05)	53.18	53.65	-0.47 (7.81)
Boys	49.02	43.37	5.65 (7.37)	49.66	25.10	24.56*** (7.95)
Girls	65.77	57.63	8.15 (8.09)	52.33	65.42	-13.09* (7.52)
Total amount of loans received (\$)						
All	6,796.94	6,938.51	-141.57 (999.78)	6,612.10	8,280.69	-1,668.59 (1126.26)
LILE	6,181.56	6,601.28	-419.72 1,011.87	7,076.96	7,420.98	-344.03 (1304.48)
Parents with High School or Less (FGF)	5,895.49	6,986.76	-1,091.27 (1269.20)	6,130.83	6,343.18	-212.35 (1677.55)
Parents with any PSE (Non-FGF)	7,236.93	7,425.88	-188.95 (1728.98)	7,068.20	10,139.51	-3,071.30* (1818.97)
Boys	4,069.22	5,453.66	-1,384.44 (1286.44)	5,467.36	4,025.40	1,441.97 (1729.97)
Girls	9,193.31	8,098.40	1,094.90 (1574.55)	7,185.21	11,750.26	-4,565.05*** (1704.28)
Sample Size	200	204		182	180	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Student financial aid, bank credit, family and other loans

Table 6.7: *EYH plus Learning Accounts* Impacts on Covering Educations Costs — Non-repayable Sources

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Received non-repayable funds¹ (%)						
All	55.92	52.30	3.62 (4.77)	55.38	51.22	4.16 (5.04)
LILE	53.30	44.94	8.36 (5.37)	50.26	47.76	2.50 (5.93)
Parents with High School or Less (FGF)	49.50	41.22	8.28 (7.03)	44.79	38.57	6.22 (8.70)
Parents with any PSE (Non-FGF)	61.85	65.91	-4.06 (7.02)	61.61	66.42	-4.82 (6.85)
Boys	46.75	48.90	-2.15 (7.67)	50.62	34.81	15.81* (8.21)
Girls	63.74	55.10	8.63 (7.22)	58.47	64.22	-5.74 (7.86)
Total amount of non-repayable funds (\$)						
All	1,986.06	2,045.09	-59.03 (397.53)	2,103.58	2,665.50	-561.92 (548.89)
LILE	1,598.59	1,391.75	206.83 (391.90)	2,036.08	1,872.83	163.25 (412.39)
Parents with High School or Less (FGF)	1,186.88	1,265.56	-78.69 (464.89)	1,568.29	1,623.04	-54.75 (580.27)
Parents with any PSE (Non-FGF)	2,645.06	3,140.25	-495.19 (779.94)	2,891.46	3,305.52	-414.06 (1,064.40)
Boys	1,556.34	1,645.84	-89.50 (541.54)	1,645.39	2,661.27	-1,015.89 (1,304.45)
Girls	2,396.24	2,333.08	63.17 (592.47)	2,442.28	2,807.23	-364.96 (615.00)
Sample Size	200	204		182	180	

Source: *FTD* 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Funds from family & friends, academic and non-academic scholarships, grants and other non-repayable sources

Table 6.8: *EYH plus Learning Accounts* Impacts on Covering Education Costs — Own Sources

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Used own sources to pay for education¹ (%)						
All	48.22	46.58	1.64 (4.97)	49.54	44.91	4.64 (5.09)
LILE	46.04	42.22	3.82 (5.88)	45.63	38.96	6.67 (5.49)
Parents with High School or Less (FGF)	45.77	36.48	9.29 (6.79)	35.83	32.20	3.63 (7.49)
Parents with any PSE (Non-FGF)	50.09	58.86	-8.77 (7.23)	58.41	60.01	-1.60 (8.33)
Boys	49.93	50.07	-0.14 (7.51)	49.20	33.93	15.26* (8.04)
Girls	46.17	44.26	1.91 (7.34)	47.70	54.19	-6.49 (7.37)
Total amount of own sources used to pay for education (\$)						
All	1,625.79	1,403.75	222.03 (342.41)	1,908.86	1,783.22	125.64 (412.10)
LILE	1,285.01	1,007.17	277.84 (326.20)	1,681.43	1,452.41	229.02 (459.16)
Parents with High School or Less (FGF)	928.24	929.59	-1.35 (399.09)	906.92	1,109.22	-202.30 (434.94)
Parents with any PSE (Non-FGF)	2,045.04	2,272.02	-226.99 (614.04)	2,890.60	2,259.67	630.92 (864.32)
Boys	1,365.59	1,745.81	-380.22 (478.22)	2,466.31	1,719.91	746.40 (905.95)
Girls	1,678.39	1,278.00	400.39 (518.57)	1,426.50	1,714.20	-287.70 (565.66)
Sample Size	200	204		182	180	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Money earned while studying and own savings

Impacts on High School Graduation and Drop-out

Overall, the combination of *EYH* and *LA* raised high school graduation rates and lowered drop-out rates in the Anglophone sector, but had no impact in the Francophone sector. Graduation rates rose by 9.1 percentage points and drop-out rates declined by 7.8 percentage points as a result of *EYH* plus *LA* in the Anglophone sector (Tables 6.9 and 6.10). The combined interventions had a large impact among the LILE (11.6 percentage points) and FGF (12.0 percentage points) sub-groups and among boys (11.5 percentage points) (Table 6.9). The LILE group also saw a large decline (11.5 percentage points) in their drop-out rate as a result of the combined interventions (Table 6.10).

The only significant impact registered in the Francophone sector was among participants whose parents had post-secondary experience. This group saw a decline of 7.8 percentage points (significant at the 10 per cent level) in their high school graduation rate as a result of *EYH* plus *LA*.

Impacts on Attitudes towards Education, Resilience, and Hardship

The combination of *EYH* and *LA* had little to no impact on participants' opinion on the relationship between earnings and education (Table 6.11). The one exception is among the LILE group in the Anglophone sector, where the proportion who agreed with the statement, "No matter how much education I get, I will most likely end up with a low-paying job," declined by 5.0 percentage points as a result of the combined interventions.

The survey asked students for the extent to which they agreed with the statement, "For me, it would be worth going into debt to pay for school." *EYH* plus *LA* had no impacts overall nor for any sub-group on responses to this question (Table 6.12).

EYH plus *LA* did increase participants' satisfaction with their education decisions among the Anglophone sector (Table 6.13). As a result of the combined intervention, the proportion who reported being satisfied with their education decisions rose by 7.6 percentage points. However, no impacts were found in any of the sub-groups in the Anglophone sector. The only other impact was among boys in the Francophone sector (15.1 percentage points).

The combined intervention of *EYH* and *LA* combined produced some of its strongest impacts on attitudes in the area of participants' assessments of their ability to make good decisions about education (Table 6.14). As a result of *EYH* plus *LA*, fewer Francophone and Anglophone participants reported that they did not have enough information about career options to make good decisions about their education while in high school (-11.2 and -12.1 percentage points, respectively). There were large impacts among the non-FGF group and boys in the Francophone sector (-23.4 and -16.5 percentage points, respectively), as well as among the LILE group and girls in the Anglophone sector (-9.7 and -17.7 percentage points, respectively).

The combination of *EYH* and *LA* had impacts on resilience for some sub-groups in the Anglophone sector (Table 6.15). The impacts were often negative, which was an unintended effect of the interventions. Some possible reasons for this negative impact are discussed in Chapter 4. Hardship is defined as having difficulties in buying groceries, paying utility or phone bills, and using a food bank in the last three months. *Explore Your Horizons plus Learning Accounts* reduced the proportion of participants claiming to have faced a hardship in the Anglophone sector (-6.8 percentage points, Table 6.16). No other impacts on hardship were detected in either sector for any group.

Impacts on Family Formation

Family formation was generally not affected by the offer of *Explore Your Horizons plus Learning Accounts*, although there were some exceptions (Table 6.17). The non-FGF sub-group in the Francophone sector was less likely to have dependent children (-6.6 percentage points) and had fewer dependent children (-0.07) by the time of the *FTD* 66-month survey, as a result of the combined interventions. In the Anglophone sector, the only detectable impact was also among the non-FGF group (a 10.4 percentage point increase in the proportion who had ever married). No impacts were registered on living with parents or guardians.

Table 6.9: *EYH* plus *Learning Accounts* Impacts on High School Graduation

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	<i>EYHLA</i> Group	Comparison Group	Impact (s.e.)	<i>EYHLA</i> Group	Comparison Group	Impact (s.e.)
Completed requirements for high school diploma (%)						
All	85.80	85.25	0.56 (2.99)	88.83	79.71	9.12*** (3.10)
LILE	87.86	82.70	5.17 (3.37)	88.64	77.07	11.57*** (3.69)
Parents with High School or Less (FGF)	86.38	79.82	6.56 (4.45)	87.42	75.46	11.95** (5.20)
Parents with any PSE (Non-FGF)	84.51	92.29	-7.78* (4.55)	88.80	85.36	3.44 (4.18)
Boys	86.03	80.39	5.64 (4.96)	87.12	75.65	11.48** (5.69)
Girls	85.89	89.67	-3.78 (4.08)	89.60	83.74	5.85 (4.12)
Sample Size	244	261		237	254	

Source: *FTD* 66-month survey and *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.10: *EYH plus Learning Accounts* Impacts on High School Drop-out

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Dropped out at some point, may or may not have diploma (%)						
All	15.59	12.72	2.87 (3.26)	14.64	22.42	-7.79 ** (3.85)
LILE	15.25	14.17	1.08 (3.84)	14.42	25.89	-11.47 ** (4.72)
Parents with High School or Less (FGF)	19.16	15.81	3.34 (5.05)	19.30	24.85	-5.56 (7.02)
Parents with any PSE (Non-FGF)	14.37	6.53	7.85 (4.98)	13.20	17.40	-4.20 (5.43)
Boys	16.41	14.02	2.39 (6.17)	14.59	26.02	-11.44 (7.93)
Girls	16.02	10.54	5.47 (4.53)	13.56	20.88	-7.32 (5.50)
Sample Size	200	204		182	180	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.11: *EYH plus Learning Accounts* Impacts on the Link between Education and Future Earnings

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "No matter how much education I get, I will most likely end up with a low-paying job" (%)						
All	12.34	12.34	0.00 (3.47)	4.94	7.30	-2.36 (2.73)
LILE	14.27	8.19	6.08 (3.85)	2.55	7.55	-5.00* (2.73)
Parents with High School or Less (FGF)	13.89	9.28	4.61 (4.98)	3.51	9.21	-5.70 (4.84)
Parents with any PSE (Non-FGF)	12.17	14.30	-2.13 (5.68)	7.52	3.79	3.73 (3.42)
Boys	17.08	11.62	5.47 (6.34)	3.46	5.04	-1.58 (3.59)
Girls	7.85	13.34	-5.49 (5.03)	4.94	10.19	-5.24 (5.10)
Sample Size	197	201		181	179	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.12: *EYH plus Learning Accounts* Impacts on Valuation of Going into Debt to Pay for School

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	LA Group	Comparison Group	Impact (s.e.)	LA Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "For me, it would be worth going into debt to pay for school" (%)						
All	74.74	77.62	-2.88 (4.62)	70.70	70.87	-0.17 (4.62)
LILE	76.38	78.57	-2.19 (4.75)	70.22	69.11	1.11 (5.44)
Parents with High School or Less (FGF)	77.19	80.44	-3.25 (6.46)	64.31	65.39	-1.07 (8.61)
Parents with any PSE (Non-FGF)	70.30	76.13	-5.83 (7.94)	73.07	79.54	-6.48 (7.10)
Boys	72.75	79.92	-7.17 (6.94)	72.35	67.59	4.77 (8.92)
Girls	76.55	75.59	0.96 (6.84)	65.34	76.01	-10.67 (7.51)
Sample Size	194	202		180	176	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.13: *EYH plus Learning Accounts* Impacts on Satisfaction with Education Choices

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "I am satisfied with the decisions that I have made about my education" (%)						
All	85.68	81.43	4.25 (3.53)	81.85	74.24	7.61* (4.00)
LILE	85.55	82.10	3.45 (4.34)	79.58	74.28	5.30 (5.06)
Parents with High School or Less (FGF)	84.11	82.59	1.52 (5.44)	81.25	71.60	9.65 (7.18)
Parents with any PSE (Non-FGF)	86.78	80.72	6.06 (5.61)	79.69	79.90	-0.21 (6.60)
Boys	91.08	75.95	15.13*** (5.82)	79.45	72.57	6.87 (7.50)
Girls	82.16	84.92	-2.76 (5.70)	81.42	77.90	3.53 (6.44)
Sample Size	199	203		180	176	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.14: *EYH plus Learning Accounts* Impacts on Career Options Information

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Somewhat agree or agree with the statement "I did not have enough information about my career options to make good decisions about my education when I was in high school" (%)						
All	39.99	51.17	-11.19** (5.51)	29.66	41.75	-12.09** (5.12)
LILE	41.99	46.83	-4.84 (6.34)	30.88	40.62	-9.74* (5.73)
Parents with High School or Less (FGF)	39.19	46.69	-7.51 (7.96)	29.35	40.37	-11.02 (8.54)
Parents with any PSE (Non-FGF)	36.86	60.23	-23.36*** (7.58)	30.91	41.98	-11.07 (9.00)
Boys	36.73	53.27	-16.53** (7.90)	32.24	40.80	-8.56 (9.74)
Girls	41.85	50.27	-8.42 (8.18)	25.64	43.35	-17.70** (7.67)
Sample Size	198	200		181	178	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.15: *EYH plus Learning Accounts* Impacts on Resilience¹

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Resilience score – average using all 6 items, excludes individuals with at least one scale item missing ²						
All	3.69	3.68	0.01 (0.05)	3.63	3.73	-0.09 (0.07)
LILE	3.65	3.70	-0.05 (0.05)	3.60	3.73	-0.13* (0.07)
Parents with High School or Less (FGF)	3.67	3.69	-0.02 (0.06)	3.55	3.79	-0.24** (0.11)
Parents with any PSE (Non-FGF)	3.74	3.64	0.10 (0.09)	3.67	3.69	-0.02 (0.09)
Boys	3.76	3.70	0.06 (0.08)	3.74	3.82	-0.08 (0.09)
Girls	3.63	3.65	-0.01 (0.08)	3.58	3.61	-0.03 (0.12)
Sample Size	200	203		182	180	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. *The Brief Resilience Scale: Assessing the Ability to Bounce Back* Bruce W. Smith, Jeanne Dalen, Kathryn Wiggins, Erin Tooley, Paulette Christopher, and Jennifer Bernard. International Journal of Behavioral Medicine, 15: 194–200, 2008

2. Survey's questions included in resilience score calculation are: I tend to bounce back quickly after hard times, I have a hard time making it through stressful events, It does not take me long to recover from stressful events, It is hard for me to snap back when something bad happens, I usually come through difficult times with little trouble, I tend to take a long time to get over set-backs in my life

Table 6.16: *EYH plus Learning Accounts* Impacts on Hardship

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
In past 3 months, can't afford groceries/used food bank/utilities or phone off (%)						
All	19.08	20.12	-1.05 (3.92)	23.70	30.49	-6.79* (4.07)
LILE	17.98	20.17	-2.20 (4.80)	27.03	30.33	-3.30 (4.82)
Parents with High School or Less (FGF)	24.22	17.42	6.80 (6.90)	26.43	30.65	-4.22 (8.38)
Parents with any PSE (Non-FGF)	15.67	21.01	-5.34 (5.84)	25.23	26.13	-0.90 (6.26)
Boys	16.55	18.24	-1.69 (6.17)	22.38	26.74	-4.36 (6.91)
Girls	22.93	20.03	2.90 (6.23)	25.00	33.18	-8.18 (7.82)
Sample Size	200	204		182	180	

Source: FTD 66-month survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table 6.17: *EYH plus Learning Accounts* Impacts on Family Formation

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Live with parents or guardians¹ (%)						
All	56.51	53.20	3.31 (4.79)	46.44	44.71	1.73 (5.31)
LILE	60.34	51.28	9.06 (5.91)	43.96	45.20	-1.24 (5.77)
Parents with High School or Less (FGF)	54.32	54.17	0.15 (7.62)	50.82	42.04	8.78 (8.72)
Parents with any PSE (Non-FGF)	56.12	54.87	1.24 (7.64)	40.20	50.44	-10.23 (7.81)
Boys	69.66	57.51	12.15 (7.92)	51.02	52.09	-1.07 (10.28)
Girls	47.87	47.12	0.74 (7.45)	45.42	36.39	9.02 (8.10)
The participant has dependent children (%)						
All	6.86	7.38	-0.51 (2.32)	16.35	12.65	3.69 (3.23)
LILE	7.58	8.45	-0.87 (2.84)	16.78	14.44	2.34 (3.58)
Parents with High School or Less (FGF)	10.01	7.58	2.43 (3.68)	18.57	15.20	3.37 (5.14)
Parents with any PSE (Non-FGF)	2.13	8.68	-6.55** (3.14)	14.76	9.56	5.21 (4.31)
Boys	1.80	3.76	-1.96 (2.18)	12.75	9.18	3.56 (4.40)
Girls	12.29	10.44	1.84 (4.03)	19.80	15.71	4.10 (4.97)

Continued on next page

Table 6.17: *EYH plus Learning Accounts* Impacts on Family Formation (Continued)

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	Comparison Group	Impact (s.e.)	EYHLA Group	Comparison Group	Impact (s.e.)
Number of dependent children						
All	0.08	0.08	0.00 (0.03)	0.20	0.17	0.03 (0.05)
LILE	0.09	0.10	-0.01 (0.04)	0.21	0.20	0.01 (0.05)
Parents with High School or Less (FGF)	0.13	0.08	0.04 (0.05)	0.21	0.20	0.00 (0.07)
Parents with any PSE (Non-FGF)	0.02	0.09	-0.07** (0.03)	0.21	0.13	0.07 (0.06)
Boys	0.02	0.04	-0.02 (0.02)	0.17	0.12	0.05 (0.06)
Girls	0.15	0.12	0.03 (0.05)	0.23	0.22	0.00 (0.07)
Ever married (%)						
All	13.64	16.75	-3.11 (3.12)	21.25	17.66	3.59 (3.81)
LILE	15.92	19.19	-3.27 (3.90)	22.23	19.43	2.80 (4.34)
Parents with High School or Less (FGF)	17.26	18.28	-1.02 (5.06)	22.30	22.76	-0.47 (5.55)
Parents with any PSE (Non-FGF)	11.10	13.81	-2.72 (4.60)	21.57	11.20	10.37** (5.20)
Boys	9.95	10.91	-0.95 (3.77)	17.22	13.47	3.75 (4.83)
Girls	16.58	23.01	-6.43 (5.58)	22.45	23.36	-0.91 (6.19)
Sample Size	244	262		237	255	

Source: *FTD* 66-month survey and *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

1. Results from *FTD* 66-month survey only

SUMMARY OF POST-SECONDARY IMPACTS BY SECTOR

New Brunswick Francophone Sector

Explore Your Horizons plus *Learning Accounts* substantially raised PSE enrolment among key target groups (LILE and FGF). Enrolment among girls also increased substantially as a result of the program. Most of the increased PSE enrolment was in university programs. In fact, the program group as a whole was more likely to enrol in university as a result of the combined interventions. A similar story emerges regarding applications to PSE and university, although there were also impacts on college and apprenticeship applications. Knowledge of how to obtain information about student financial aid improved overall, and for some sub-groups (LILE and girls), but the interventions increased applications to government-sponsored student financial aid only for girls. High school graduation and drop-out were generally not affected by the combined interventions. There were few impacts on attitudes towards education, although a notable exception was information on career options. Participants were less likely to state that they did not have enough information about their career options to make good decisions about their education while in high school. The proportion of participants with dependent children and the number of dependent children declined in the non-FGF group as a result of the combined interventions.

New Brunswick Anglophone Sector

Explore Your Horizons plus *Learning Accounts* substantially raised PSE enrolment overall, among the LILE group and among boys. Most of the increased PSE enrolment was in

university programs. A similar pattern of impacts was observed PSE and university applications, although there was also a large increase in PSE applications among the FGF group. *EYH* plus *LA* altered the sources used to cover the costs of PSE by some sub-groups (although not the key LILE and FGF sub-groups). *EYH* plus *LA* resulted in large increases in high school graduation rates overall, among the key LILE and FGF sub-groups, and among boys. High school drop-out rates also declined substantially overall and among the LILE sub-group. Satisfaction with education decisions increased overall as a result of the combined offer. Participants were also less likely to report not having enough career information to make good decisions about their education while in high school. This is true overall, among the LILE sub-group, and among girls. Both the LILE and FGF sub-groups reported lower levels of resilience as a result of *EYH* plus *LA*. The combined interventions reduced hardship overall, and they increased the proportion of non-FGF participants reporting to have ever been married.

Both Sectors

Across both sectors, *EYH* plus *LA* resulted in an increase in PSE enrolment among the LILE group. University enrolment rates also increased overall and among the LILE group. Post-secondary application rates increased overall and among the key LILE and FGF sub-groups, as did university application rates overall and among the LILE group. Overall, participants were less likely to report not having enough career information to make good decisions about their education while in high school.

Cost-benefit Analyses of *Explore Your Horizons* and *Learning Accounts*

Introduction

The preceding chapters describe how *Explore Your Horizons*' enhanced career development education and *Learning Accounts*' provision of an early promise of non-repayable financial aid affected participating students' educational choices. Most notably, *Future to Discover*'s interventions led to an increase in high school graduation and enrolment in post-secondary education.

This chapter evaluates the costs and benefits of *Future to Discover*'s interventions to participants and society over the project period as well as the projected working life of participants (up to 59 years of age). It will answer the following questions:

1. What were the costs of the various components of *Future to Discover*?
2. What is the net cost or benefit of *Future to Discover*'s interventions from the perspective of participants, governments, and society as a whole?
3. What is the cost-benefit ratio of *Future to Discover*'s interventions? Is each program economically viable?

The third is the most important question for future policy. A government program is termed "economically viable" if its benefits to society outweigh its costs over a relevant period.³⁶ In other words, a program is economically viable if the net present value (the sum of the program's net benefits after discounting for the opportunity cost of the investment) is positive or, equivalently, that the cost-benefit ratio is over one.

The methodology and framework applied to these cost-benefit analyses is outlined in the first section. Readers who are not interested in the technical aspect of the cost-benefit analysis may skip the first section.

The second section presents the various components of the cost-benefit analyses, including a detailed summary of the most significant and readily monetized benefits and costs. It starts with a discussion on the direct costs of the program operations and provides an answer to question 1, above. Then it presents the estimates of the indirect benefits and costs to the government (such as funding to educational institutions, grants, bursaries and student loans), including those of the future (taxes and premium) because of the program's impacts on education. Finally, it discusses the benefits and costs of the program to participants, such as forgone earnings and increased future earnings due to the impacts on education. These costs and benefits are estimated from the perspective of the average participant (program group member) and from the perspective of governments. The societal perspective combines the perspectives of the average participant and the federal and provincial governments. These cost and benefit estimates answer the question 2, above.

The project's economic viability is examined using a "conservative" analysis in the third section of the chapter. First, this section presents the economic viability of *Explore Your Horizons* in Manitoba and New Brunswick Francophone and Anglophone sectors separately. Then it analyses the economic viability of *Learning Accounts* in each of the New Brunswick Francophone and Anglophone sectors. The last part of the third section compares the net present value of the combined *Explore Your Horizons* and *Learning Accounts* programs to that of *Explore Your Horizons* and *Learning Accounts* separately to see whether the combined program provides a better return to investment. The chapter is concluded with a short discussion of the findings, which provides an answer to question 3. These findings are summarized in the Chapter Summary.

36 In this chapter, the terms "viable" and "viability" refer to economic viability from the perspective of society.



CHAPTER SUMMARY

- ***Explore Your Horizons* is economically viable among some participants in New Brunswick, particularly those from a lower-income, lower-education family.** The program's variation in net benefits (or costs) reflects the heterogeneous impacts it has on various sub-groups. Delivering the program only to those who need it could maximize the social benefits of the intervention.
- ***Explore Your Horizons* is not economically viable in Manitoba.** The combination of a higher program costs due to a smaller scale operation and the lower impacts of the program in Manitoba results into a net loss in social benefit.
- **With a relatively low administrative cost, *Learning Accounts* is very effective. It generates \$2.00 to \$3.40 benefit for each dollar cost to the governments.** Although *Learning Accounts* and *Explore Your Horizons* cost the governments roughly the same to operate, *Learning Accounts* uses fewer resources in society since most of the expenditures on *Learning Accounts* are transfers from the governments to the participants. Its cost effectiveness is also driven by the large post-secondary participation impact from targeting the group of students from lower-income families.
- **Combining *Explore Your Horizons* with *Learning Accounts* does not increase the net social benefit.** However, the combined *Explore Your Horizons* – *Learning Accounts* program is still economically viable. It generates \$1.51 to \$1.75 benefit for each dollar cost to the governments.

METHODOLOGY

Although *Explore Your Horizons* is a career education intervention, various aspects of its design are different from traditional in-school career intervention programs, which will have implications for a cost–benefit analysis. First and foremost, *Explore Your Horizons* was conducted after school hours. It asked participants to volunteer about 40 hours of their leisure time (and 12 hours from their parents) to participate in various workshops. Second, activities were facilitated by *Future to Discover* facilitators and post-secondary ambassadors who were not employed by the participating schools. Third, program activities were very structured with a fixed schedule in Grades 10, 11, and 12. Last but not the least, since the materials and content used in workshops require annual revisions, the corresponding “development cost” cannot be assumed to be a one-time expense to be amortized over time. Some cost–benefit analyses consider programs to be continuous (self-perpetuating) and ignore development or start-up cost.³⁷ However, it is more appropriate to include development or start-up cost in the cost–benefit analysis of *Explore Your Horizons* because of its unique characteristics. Besides, the operations and the costs of *Explore Your Horizons*

would not be substantially different even if it were implemented as a continuous individual-based program, without schools' involvement.

Learning Accounts does not require ongoing program development. As a bursary, the main component of the program cost is the actual money provided to students. The fixed cost and the administration cost are relatively small (as shown in the following subsection). Therefore, the costs would not be substantially different if the intervention were ever to be offered to future students as a continuous program in New Brunswick.

The cost analysis portion of this chapter seeks to present cost figures that would be representative if *Future to Discover's* interventions were implemented as permanent programs. The chapter presents the net average benefits and costs of *Future to Discover's* interventions per program group member.

All program group members — not just those who participated in *Future to Discover* activities — were included in the calculations.³⁸ All implementation costs and — because they were difficult to separate — some costs related to the research or evaluation from the *Future to Discover* Offices are included in the program costs. Text Box 7.1 reviews in more detail the analytical approach, accounting methods, and key data sources used.

Analytical Perspectives

In determining a program's economic viability, it is important to identify who bears the costs or benefits of the program since each program's impacts may represent gains from one perspective and losses from another. Furthermore, a program may have desirable distributional effects even if it is not viable, which needs to be taken into account when considering its effectiveness. *Future to Discover's* net costs and benefits will be shown from four perspectives: program group participants, provincial governments, the federal government, and society as a whole. Table 7.1 illustrates the expected impacts of *Future to Discover's* interventions on each of the four accounting perspectives. The expected effects are shown as a gain (+), loss (-), or neither a gain nor a loss (0).

The individual's perspective identifies net gains or losses for program group members, indicating how they fared because of the program. It is expected that the program group gains mainly in the labour market through increased future earnings because of higher educational attainment.

The government budget perspective identifies gains and losses incurred by the federal and provincial governments. Since *Future to Discover* was funded by Canada Millennium Scholarship Foundation, which was established by the federal government, the program's operating and administrative cost were mainly attributed to the federal government, while the provincial governments contributed some in-kind resources to the project. Although this analysis does not account for transfers from the federal government to the provincial

37 Cost and benefit analyses that treat the demonstration project under evaluation as a continuous program ignore any one-time “development” or “start-up” cost because the amortized one-time cost over an infinite time period approaches zero.

38 Control group members contribute to the analysis also, because their experiences represent the counterfactual program environment that program group members would have experienced without the interventions. Thus, costs and benefits are those program costs and benefits attributable to the program group less those attributable to the control group.

government, it will consider benefits and costs for the federal and provincial governments separately. Due to the expected increase in participants' income, the federal government budget gains from increases in federal taxes and premiums. Similarly, the provincial government also gains from increases in provincial income tax and premiums.³⁹

The societal perspective combines the perspectives of all three groups: the program group, and those outside the program, with the government budget representing alternative uses of tax funds. A net benefit to society arises when the benefits of all groups outweigh the costs of the program. For a given component, if a gain to one group equals the loss to another, there is no net cost or benefit to society and it is

simply considered a transfer. For example, *Future to Discover* participants' increased tax payments because of higher future earnings are transfers from the program group members to the government. If the loss to participants is lower than the revenue to government, it represents a net gain to society. Similarly, *Future to Discover* program costs imply a net cost to society.

A simple criterion for the viability of a government program is whether it produces a net benefit to society. This criterion assumes that a loss by one group can be compensated by gains to another, which may or may not be true in reality.⁴⁰ Nonetheless, the analysis treats every dollar the same, no matter who receives it.⁴¹

Text Box 7.1: Analytical Approach, Accounting Methods and Data Sources

Analytical Approach

The approach to cost–benefit analysis involves assigning dollar value to *Future to Discover's* interventions' effects and resource costs, wherever possible, either through direct measurement or estimation. Costs and benefits are estimated from the perspective of the average participant (from the program group) and the perspective of all levels of governments. The sum of the net costs or benefits attributable to participants and governments is considered the net cost or benefit to society as a whole. Positive and negative estimates of costs or benefits are derived by comparing program group to control group experiences in the analysis. All estimates are used, regardless of statistical significance, although the results of the analysis are qualitatively similar if only statistically significant estimates of costs or benefits are used. What the analysis does not include are estimates of the indirect benefits or intangibles, such as health improvement among participants or crime reduction resulting from increased high-school completion or enrolment in post-secondary education. It is very difficult to assign a credible dollar value to these benefits. Without including these intangible benefits in the calculation, the net present value of the program and the cost–benefit ratios presented in this analysis are bound to underestimate the true social value of the program.

Accounting Methods

The cost–benefit estimates consider a period, starting when each participant was 15 years of age (in Grade 9) up to the year when the participant would be 59 years old. This 45-year period includes the year of project preparation and the five and a half year observation period that covers the program operation and some post-program period.

All cost–benefit amounts in this chapter are expressed in constant 2009 dollars, using an 8 per cent annual discount rate as recommended in the 2007 *Canadian Cost–Benefit Analysis Guide: Regulatory Proposals* (Treasury Board of Canada, 2007). The adopted discount rate appears high but reflects the accepted assumptions for dollars invested during the period of program implementation. The analysis is therefore very conservative in attributing a dollar value over the longer term to the programs' impacts on education. Following the principles in the 1998 *Benefit–Cost Analysis Guide* (Treasury Board of Canada, 1998), a sensitivity analysis using 5 per cent and 10 per cent annual discount rates is presented in Appendix Tables A5.3, A5.4 and A5.5.

Data Sources

Administration and operational costs of *Future to Discover* were measured using accounting records and administrative data from *Future to Discover* Offices and the Canada Millennium Scholarship Foundation. *Future to Discover's* impacts on high-school graduation, post-secondary education enrolment, grants, and student loans were estimated by using data collected from the participant baseline survey, the two follow-up surveys, and administrative data records from the ministries of education. Tuition and other fees, educational expenditures, noneducational expenditures, tax rates, and inflation rates were obtained or calculated from various publications, including Statistics Canada's CANSIM tables and analytic reports, the Canada Millennium Scholarship Foundation's *The Price of Knowledge 4th edition* (Berger et al., 2009), and a publication from the Canadian Council of Learning (Hankivsky, 2008). Forgone earnings and increases in life-time earnings were estimated using Statistics Canada's 2006 Census Public Use Micro-data File. *Future to Discover's* interventions' effects on tax payments and Employment Insurance premiums were imputed from the estimated earnings.

39 For simplicity, it is assumed that out-migration attributable to the program is zero.

40 In theory, the government may aim to facilitate inter-group compensation through taxes. A more restrictive alternative assumption to maintain the net benefit criterion is to assume that the value placed on a dollar gained or lost is equivalent for each of the groups.

41 The alternative is to establish a social welfare function that takes into account issues of distribution. However, a social welfare function requires a subjective judgment of fairness that is outside the scope of this study.

Table 7.1: The *Future to Discover* Cost–benefit Analysis Framework

	Accounting Perspective			
	Participants	Provincial Government	Federal Government	Society
Tangible Costs and Benefits				
<i>EYH</i> Program Costs per Participant	0	0	–	–
<i>LA</i> Program Costs per Participant	+	0	–	–
High School Graduation				
Public Education Expenditure	0	–	0	–
Earnings Increases	+	0	0	+
Tax	–	+	+	0
EI Premium	–	+	+	0
Post-secondary Enrolment				
Tuitions	–	0	0	–
Educational Expenditures	–	0	0	–
Non-educational Expenditures	–	0	0	–
Government Direct Funding to Institutions	0	–	–	–
Forgone Earnings	–	0	0	–
Future Earnings Increase	+	0	0	+
Tax	–	+	+	0
EI Premium	–	0	+	0
Government Grants to Students	+	0	–	0
Administration Costs of Students Loans	0	0	–	–
Total	+/-	+/-	+/-	+/-
Intangible Benefits (difficult to quantify or monetize and not included in the present analysis)				
Health	+	+	+	+
Crime Reduction	0	+	+	+
Total	+/-	+/-	+/-	+/-

Limitations

While this analysis accounts for the major effects of *Future to Discover*, it does have some limitations, some of which are inherent in any cost–benefit analysis and some of which are unique to *Future to Discover*. First, *Future to Discover* was designed and run as an independent research demonstration project, completely separate from other government programs. A separate office for *Future to Discover* in each province was established and staffed to serve only *Future to Discover* participants, representing start-up costs that would not be incurred to the same extent if *Future to Discover* were run within the existing school system. In this case, *Future to Discover*'s operating costs would also likely be lower due to economies of scale.

Second, this analysis includes the benefits and costs arising from the major impacts of *Future to Discover*, but some non-financial impacts of the program are not included due to the lack of established methodology to estimate their monetary value.

Third, mean benefits and costs are presented that do not account for variation at the individual level. Although the marginal costs and marginal benefits — the costs and benefits of the “incentivized” students who change their decisions and behaviours because of the program — are more informative in accessing the economic viability of large-scale deployment, the methodologies used can only estimate the average costs and average benefits.

Fourth, since the main benefit of the program comes in the form of increased lifetime earnings because of the increase in post-secondary education participation while all the costs of the program occur early, the net present value could be sensitive to the adopted annual discount rate. This cost and benefit analysis uses an 8 per cent annual discount rate (as recommended in the 2007 Canadian Cost–Benefit Analysis Guide: Regulatory Proposals from the Treasury Board of Canada). A sensitivity analysis of using 5 per cent and 10 per cent annual discount rates is presented in Appendix 5, Tables A5.3, A5.4, A5.5, A5.6 and A5.7. These analyses find results are quite sensitive to the discount rate, with lower discount rates increasing viability. *Explore Your Horizons* is economically viable for nearly all subgroups if a 5 per cent discount rate is used.

Finally, the results discussed in the chapter were derived using data from *Future to Discover* in Manitoba and New Brunswick that covers the 2003–2010 period. As is the case when interpreting any experimental results, the specific characteristics of the local population, education system, economy, and policy environment should be considered before attempting to generalize the findings to other populations, regions, or periods.

The next section of the chapter describes the major components of the cost–benefit analysis.

WHAT WERE THE COSTS AND BENEFITS OF THE VARIOUS COMPONENTS OF FUTURE TO DISCOVER?

Future to Discover's Impacts on Government Revenues and Expenditures

This perspective includes four categories: the administration and operation costs of *Explore Your Horizons* and *Learning Accounts*, tax and premiums received, and subsidies to further education. The latter two categories are indirect effects on the governments' revenues and expenditures based on the programs impacts (differences between the program and control groups). The administration and operation costs of *Explore Your Horizons* and *Learning Accounts* are estimates from the project's accounting records and they are representative of direct costs to the government if the interventions (or specific activities in *Explore Your Horizons*) are re-implemented.

Explore Your Horizons Program Costs

The costs of *Explore Your Horizon's* administration are all related to the major activities in *Explore Your Horizon's* operations. Table 7.2a presents the total and per-participant costs of all *Explore Your Horizons* activities and operations in Manitoba and New Brunswick. The total cost to the federal government includes the overhead cost of the *FTD* Office, the salary of staff in the *FTD* Office, the cost of establishing and using the management information system, the general development cost, and the development and operation costs of the *FTD* Web site, *F2D* Magazine, Post-secondary Ambassadors, Career Focusing, Lasting Gifts and Future in Focus sessions. The largest cost component is the *Future to Discover* payroll to office staff and facilitators. The ministries of education of Manitoba and New Brunswick also contributed staff time in establishing the *FTD* offices, legal services, as well as office space and furniture.

Per participant *EYH* program costs between Manitoba and New Brunswick are not directly comparable. Since the operation in New Brunswick was at a larger scale with two overlapping cohorts, there could be some economy of scale. However, because of the complexity of New Brunswick's operation, the cost figures presented are just an approximation of the cost of each activity. It is believed that the calculated cost of each *EYH* activity from Manitoba is a reliable estimate of the upper bound if the program is re-implemented at the same or larger scale. On average, it cost the Manitoba Government \$601 and the federal government \$4,356 for each of students in the *EYH* program group.⁴² The program cost the provincial government on average \$132 per participant and the federal government \$2,876 when it was implemented in New Brunswick.⁴³

Learning Accounts Program Costs

Learning Accounts was only tested in New Brunswick and the program costs are presented in Table 7.2b. The largest component of the program costs of *Learning Accounts* was the amount of bursary dispensed to students. On average, each *Learning Accounts* participant received \$2,737 for their post-secondary education,⁴⁴ and cost the federal government \$3,094 and the provincial government \$117 to run the whole program.⁴⁵

42 Of the \$4,957 program cost per participant, \$601 was provided by the provincial government as various in-kind transfer/contribution while the remaining \$4,356 was funded by the Canada Millennium Scholarship Foundation (the federal government).

43 Of the \$3,007 program cost per participant, \$132 was provided by the provincial government as various in-kind transfer/contribution while the remaining \$2,876 was funded by the Canada Millennium Scholarship Foundation (the federal government).

44 This amount differs from the amount presented in Chapter 2 due to presentation here in constant 2009 dollars.

45 Of the \$3,211 program cost per participant, \$117 was provided by the provincial government as various in-kind transfer/contribution while the remaining \$3,094 was funded by the Canada Millennium Scholarship Foundation (the federal government).

Table 7.2a: Present Value Program Costs of *Future to Discover* — EYH
(Constant 2009 Dollars Discounted to the Beginning of the Program)

	Manitoba		New Brunswick	
	Total (\$)	Per Program Participant (\$)	Total (\$)	Per Program Participant (\$)
Development and PMIS Expenses				
Development Expenses	41,710.19	72.54		
PMIS	142,250.44	247.39		
Total Development and PMIS Expenses	183,960.63	319.93	180,085.12	102.61
Misc Operation Expenses				
FTD Office Salary, Benefit and Expenses	722,217.79	1,256.03	1,084,546.63	617.98
In-kind Transfer	345,841.18	601.46	230,855.22	131.54
Total Misc Operation Expenses	1,068,058.97	1,857.49	1,315,401.85	749.52
Activities				
FTD Web site	46,741.85	81.29	148,151.34	84.42
F2D Magazine	37,899.31	65.91	120,124.33	68.45
PSA				
PSA Development	77,002.32	133.92	244,063.88	139.07
PSA Salary, Benefit and Expenses	162,667.99	282.90	330,835.59	188.51
Total PSA Expenses	239,670.31	416.82	574,899.47	327.58
Career Focusing				
Career Focusing Development	20,878.21	36.31	66,174.85	37.71
Career Focusing Salary, Benefit and Expenses	476,071.27	827.95	1,229,574.67	700.61
Total Career Focusing Expenses	496,949.48	864.26	1,295,749.52	738.32
Lasting Gifts				
Lasting Gifts Development	25,033.22	43.54	79,344.42	45.21
Lasting Gifts Salary, Benefit and Expenses	371,275.58	645.70	758,996.71	432.48
Total Lasting Gifts Expenses	396,308.80	689.23	838,341.13	477.69
Future in Focus				
Future in Focus Development	32,147.61	55.91	101,893.95	58.06
Future in Focus Salary, Benefit and Expenses	348,732.48	606.49	702,774.73	400.44
Total Future in Focus Expenses	380,880.09	662.40	804,668.68	458.50
Total Program Activity Cost	1,598,449.84	2,779.91	3,781,934.47	2,154.95
Total Future to Discover – EYH Program Cost	2,850,469.44	4,957.34	5,277,421.44	3,007.08

Table 7.2b: Present Value Program Costs of *Future to Discover* — LA
(Constant 2009 Dollars Discounted to the Beginning of the Program)

New Brunswick Learning Account	Total (\$)	Per Program Participant (\$)
Development and PMIS Expenses		
Development Expenses	6,924.53	6.33
PMIS	97,021.27	88.68
Total Development and PMIS Expenses	103,945.80	95.01
Misc Operation Expenses		
FTD Office Salary, Benefit and Expenses	286,492.28	261.88
In-kind Transfer (Imputed)	128,287.54	117.26
Total Misc Operation Expenses	414,779.82	379.14
Payments to Participants	2,994,548.15	2,737.25
Total Future to Discover – EYH Program Cost	3,513,273.77	3,211.40

Government's Funding to Educational Institutions

Since *Explore Your Horizons* and *Learning Accounts* were expected to increase high school completion and post secondary enrolment, the increase in education participation would increase usage of resources by educational institutions. High schools, colleges, and universities received funding to subsidise their operations, and the funding is usually related to the enrolment. Using Statistics Canada's financial figures, it cost the Manitoba government \$7,347 and the New Brunswick government \$6,439 to provide a student a year of high school education.⁴⁶ Some students dropped out of high school, which creates an issue of how to treat the costs of their further education at the secondary level. For simplicity, it is assumed that it took one year (on average) of high school education for those who dropped out of high school to complete their studies.

The provincial government and the federal government also provided funding to colleges. On average, the provincial government provided \$12,283 and the federal government \$3,985 to colleges for the completion of each diploma or certificate in Manitoba. In comparison, the respective figures are \$7,660 and \$2,061 for the completion of each diploma or certificate in New Brunswick.

Funding to universities is higher, particularly in New Brunswick. On average, the provincial and the federal governments spend \$23,370 and \$8,379, respectively, on each graduate in a Manitoba university. In New Brunswick, the cost to the provincial and the federal governments are \$21,923 and \$7,409 per university graduate respectively.

Taxes and Premium Revenue

Since *Future to Discover's* interventions increased the educational attainment of program group members, which in turn increased future employment and earnings, the program increased federal and provincial taxes as well as the Employment Insurance (EI) premiums participants would be required to pay.⁴⁷ At the same time, those who took more education because of *Future to Discover's* interventions received lower earnings (and paid less income tax and EI premiums) while they were attending education. Since the present value of the forgone earnings is likely to be lower than the future increase in earnings because of the further education, the net effect of the interventions on income tax and EI premium is expected to be positive. The amount of induced transfer taxes and EI premiums are estimated using

average income tax rates (11.8 per cent of federal income tax and 3.8 per cent provincial income tax) and the EI premium rate (1.78 per cent). Detailed estimates can be found in Appendix 5, Table A5.1.

Grants, Bursaries, and Student Loans

Since *Future to Discover's* interventions increased the educational attainment of program group members, it might also change their demand for grants, bursaries, and student loans. Grants and bursaries are direct transfers from the government to the student. The average impact on the total amount of grants received from the survey is used to capture the cost to the government.

The interest costs of private student loans have already been accounted for through discounting calculations in the cost and benefit analysis. However, federal government's student loans program included administrative costs such as interest relief, debt reduction, and student loans for which payment is not obtained for various reasons. By Human Resources and Skills Development Canada's internal estimation, the administrative cost of each dollar of student loan dispensed is about \$0.30. This figure is used to estimate the change in the administration cost of student loans.⁴⁸

Benefits and Costs of *Future to Discover's* Interventions to Participants

From the perspective of the participants (and their parents), the main benefits and costs of the program are due to direct participation (among those in *Explore Your Horizons*) and the program's impacts on education participation. The time cost of program participation among those in *Explore Your Horizons* is the only direct cost to the participants. Indirect costs from increased education participation include forgone earnings during their study, tuition paid, educational expenditures, non-educational expenditures due to their study and increased taxes and premiums paid for future earnings. Indirect benefits to participants include increase in future employment earnings, and the grants and bursaries received for their study. With the exception of grants and bursaries, none of these are directly available from the survey or administrative data of *Future to Discover*. Information on these cost and benefit items must be obtained from various sources.⁴⁹ The following is a description on how the figures used in the cost-benefit analysis are derived. The detailed estimates are presented in Appendix 5, Tables A5.1 and A5.2.

⁴⁶ Detailed present value costs and benefits of various outcomes are presented in Appendix Tables A5.1 and A5.2.

⁴⁷ For simplicity, the tax and premiums on forgone earnings from participating in post-secondary education are assumed to be zero. Teenagers are likely to be among the group with lowest earnings who are likely to pay minimum amount of income tax because of the basic exemption. They may be working more in irregular and casual jobs, which pay no premiums. It is very difficult to estimate accurate figures, though the tax and premiums on the forgone earnings are likely to be small. However, tax and premiums on increased future earnings are not insignificant.

⁴⁸ It is assumed that the federal and the provincial governments split the administration cost of student loans by the ratio of 60:40, which is proportional to the funding source allocation.

⁴⁹ The last *Future to Discover* survey was done before many finished their post-secondary education. As a result, it is unknown how many can finish their study and realize the benefits of the education completely. It is assumed that the proportion of participants who eventually dropped out from their study is similar to that of the Canadian population, as reported in Shaiens et al. (2008). Assuming those who drop out receive earnings similar to those with only a high school diploma, the net benefit of enrolment in a post-secondary education program is the product of the proportion who will not drop out and the net benefit of completing the post-secondary education.

College and university tuition and other fees, as well as educational expenditures, are calculated from the average tuition and other fees published in Berger, Motte and Parkin (2009). Non-educational expenditures are calculated using information published by Barr-Telford, Cartwright, Prasil and Shimmons (2003). For simplicity, it is assumed that tuition and other fees for private colleges and vocational institutes are similar to the total of tuition and other fees and government funding to the colleges. The costs of apprenticeship programs were extracted from Canadian Apprenticeship Forum (2006). The calculations assume that the average length of a program is two years for community college, four years for university, five years for an apprenticeship, and two years for private college or vocational institute. Provincial specific information is used whenever it is available. Otherwise, the national figures are used.

Forgone earnings and expected future increases in earnings due to post-secondary education are estimated using the average earnings by age, sex, and educational attainment from the 2006 Census micro-data. It is assumed that all entered the labour market at the age of 19 and continue until the age of 59, and the earnings received by participants in the future for a given education level are those received by older cohorts in 2006 adjusted to constant 2009 dollars. The average earnings of high school graduates between 19 to 24 years of age who were studying at the time of the 2006 Census are used to represent the part-time employment earnings of those going to school. The average earnings of graduates between 19 to 24 years of age who were not studying at the time of the 2006 Census are used to represent their earnings after they graduate. Among high school graduates, the difference between the earnings of those who went to post-secondary education and the earnings of those who were working during the same period represents forgone earnings due to post-secondary education.

The earnings gain due to post-secondary education is the difference between average earnings of post-secondary graduates and that of high school graduates. Average earnings by educational attainment, regardless of school status, were used to project earnings for the years between ages 25 to 59.

It is assumed that forgone earnings from time spent completing high school are negligible. Expected annual earnings increases associated with graduating from high school are calculated using the information provided in Hankivsky (2008).⁵⁰

Transfers from the governments to the participants, or vice versa, do not affect the net present value of the program. Changes in income tax and EI premiums attributable to changes in levels of earnings are transfers. These are calculated by using the average income tax rate and EI premium rate as discussed in the previous sub-section. The program's impact on

the average amount of grants and bursary is estimated from the *FTD* 66-month survey. The average amount of *Learning Accounts* bursary received is estimated from the program's administrative data. All of these transfers affect the total cost to the governments, even though they do not affect the viability of the program.

It is difficult to estimate time cost of participants and their parents in various *Future to Discover* activities. For simplicity, it is assumed that the average value of an hour of participant's leisure time is the average hourly wage of youth 15 to 24 years of age in 2009 (\$12.83), while an hour of a parent's leisure time is valued at \$23.98 (the average hourly wage of adults 25 to 54 years of age). Although *Explore Your Horizons* provided about 40 hours of activities to each participating student and 12 hours to the parent, participation is voluntary. Based on the actual attendance figures, the expected time cost varies from \$224 to \$416, depending on the province, language and program group.

Intangible Benefits and Costs of *Future to Discover*

Future to Discover's impact analysis revealed that the interventions increased the proportions of program group members finishing high school and enrolling in post-secondary education. Since post-secondary education is often considered as a determining factor of health and crime reduction, the program may have some indirect beneficial effects to participants, government and society (see Hankivsky, 2008). However, these benefits are intangible and it is very difficult to estimate them accurately. Without including these intangible benefits in the calculation, the net present values of the program and the cost–benefit ratios presented in this cost and benefit analysis may underestimate the true value of the program.

THE COSTS AND BENEFITS OF THE INTERVENTIONS

This section presents and discusses the net benefits of the three programs of the project: *Explore Your Horizons*, *Learning Accounts*, and the combined *Explore Your Horizons plus Learning Accounts*. Within each program, the overall net present value for each province-language sector as well as the sub-group results are estimated.

To calculate the net present value of a program, the program costs, time cost of participation, grants, bursaries, and student loan administrative cost are added to the expected value of the additional education brought about by the program. Each of the impacts on high school completion and post-secondary education enrolment can be considered as an increase in the likelihood of realizing the net benefit (or cost) of the education. Therefore, the expected value of the program's "induced" education is simply a product of the program's impact on the proportion receiving each type of education and the net benefit of the education.⁵¹ Table 7.3 presents the costs and benefits of *Explore Your Horizons* using this calculation.

50 The 2006 Census data does not contain information on the highest grade level completed by the respondents. Therefore, the group without a high school diploma is composed of people with a range of grade levels and it is not comparable to *FTD* participants who had completed Grade 9 and who were close to graduation. Hankivsky's (2008) estimated return to high school completion is more applicable to *FTD* participants.

51 The calculated net present value is less precise if it is driven by statistically insignificant impacts. The economic viability of the program should be interpreted with caution if the net present value is driven by statistically insignificant impacts. Positive net present values driven by statistically significant impacts are highlighted in the tables.

Table 7.3: Present Value Costs and Benefits of EYH (Constant 2009 Dollars Discounted to the Beginning of the Program)

	Manitoba				New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
Annual Discount Rate: 8%												
Program Costs per Participant — EYH		-601	-4,356	-4,957		-132	-2,876	-3,007		-132	-2,876	-3,007
Participation Time Cost — EYH	-224			-224	-299			-299	-292			-292
Induced Cost — Education												
Loan Administration	0	12	19	31	0	-157	-236	-393	0	-127	-190	-317
High School Graduation	0	-284	0	-284	0	-72	0	-72	0	-202	0	-202
Trade School Enrolment	434	0	0	434	-107	0	0	-107	-6	0	0	-6
Apprenticeship Enrolment	225	0	0	225	-40	0	0	-40	41	0	0	41
College Enrolment	-492	-468	-152	-1,111	-161	-82	-22	-265	-309	-174	-47	-530
University Enrolment	-894	-698	-250	-1,842	-1,526	-911	-308	-2,745	-565	-360	-122	-1,047
Total Induced Cost of Education	-727	-1,438	-383	-2,548	-1,834	-1,222	-566	-3,622	-838	-863	-359	-2,059
Induced Benefit — Education												
Grants and Bursary	6	-2	-3	0	233	-93	-140	0	85	-34	-51	0
High School Graduation	1,013	89	141	1,243	294	24	41	360	822	68	115	1,006
Trade School Enrolment	-95	-8	-13	-116	97	8	14	118	6	1	1	8
Apprenticeship Enrolment	-380	-33	-53	-467	45	4	6	55	-90	-7	-13	-110
College Enrolment	1,573	139	219	1,931	518	43	73	634	821	68	115	1,005
University Enrolment	3,083	272	429	3,784	6,427	533	903	7,863	2,076	172	292	2,540
Total Induced Benefit of Education	5,200	455	720	6,376	7,613	519	897	9,030	3,720	268	460	4,448
Net Education Benefit	4,473	-982	337	3,827	5,779	-703	331	5,407	2,882	-595	101	2,388
Net Benefit	4,249	-1,584	-4,019	-1,354	5,480	-835	-2,544	2,101	2,591	-726	-2,775	-910

Explore Your Horizons

The only statistically significant educational impact of *Explore Your Horizons* on the overall Manitoba sample is on high school completion (3.87 percentage points). The increase in high school completion creates a benefit of \$959.⁵² The small and statistically insignificant increases in enrolments in colleges and universities also add some benefits. However, the educational benefit is not enough to cover the program cost. Without substantial increase in colleges and universities, the program is unlikely to generate many benefits in Manitoba from the intangible impacts on health improvement and crime reduction. As a result, *Explore Your Horizons* is not economically viable in Manitoba (a net loss of \$1,354 per participant) based on the original program eligibility rules.

A similar conclusion can be drawn for *Explore Your Horizons*' economic viability with the New Brunswick Anglophone sector. The 3.13 percentage point increase in high school completion cannot generate sufficient social benefit to cover the program costs. The program generated a net social loss of \$910 per participant.

The program's impact on university enrolment among New Brunswick's Francophone sector generated some substantial benefits. The net present value of the program to society is \$2,101 and the program generated \$1.70 benefit for each dollar the government spent on the program.⁵³ The cost–benefit ratio may also be slightly higher if health improvement and crime reduction induced by higher post-secondary participation can be included in the calculation. Although the net present value is a positive value, the gain is small and the result is sensitive to the analysis' assumptions (such as the discount rate, see Appendix 5, Table A5.5).

Since the impacts of the program vary by sub-groups, the results suggest that the program is likely to be economically viable if it is delivered to selected group of participants. Table 7.4 presents the net present values by different sub-groups.

The sub-group results show that *Explore Your Horizons* is economically viable among participants from lower-income, lower-education households in New Brunswick, regardless of language group: the program's impacts generate \$13,071 and \$4,212 benefits per participant to society within the Francophone and Anglophone sectors, respectively. The program's positive impact on Francophone students' enrolment in university is also economically viable by generating \$7,743 benefit per participant among those whose parents have no post-secondary education. *Explore Your Horizons* is also marginally viable among Francophone girls in New Brunswick, generating \$3,773 benefit per participant. *Explore Your Horizons* may also generate positive net benefits among boys. However, these positive results are not driven by statistically significant impacts on post-secondary enrolment and they should be interpreted with caution.

Learning Accounts

The impact analysis shows that the *Learning Accounts* has a statistically significant impact on college enrolment in both language groups, and on high school completion in the Anglophone sector. Because of the much lower social cost of *Learning Accounts* (compared to that of the *Explore Your Horizons*), the program's educational impacts can easily cover the costs and generate a positive net present value. Table 7.5 presents the calculations of costs and benefits of the *Learning Accounts* per participant and it shows that *Learning Accounts* is economically viable. It generated a net benefit of \$7,696 per participant (or \$3.40 per dollar cost to the governments)⁵⁴ among Francophone participants. Among Anglophone participants, the program resulted into a net benefit of \$3,200 per participant (or \$2.00 per dollar cost to the governments).⁵⁵ The substantially larger net benefit among Francophone participants is driven in part by the modest (but not statistically significant) increase in university enrolments. Regardless of the linguistic sector, the net present values or the cost–benefit ratios may be even higher if the value of health improvement and crime reduction induced by higher post-secondary participation had been included in the calculations.

The costs and benefits of *Learning Accounts* by sub-group parallel the findings in Chapter 5's impact analysis. Among Francophone participants, the program was economically viable in all subgroups and it generated the largest net benefits among those from lower-income lower-education households, parents with high school or less education, and female participants (Table 7.6). The net benefit among the lower-income, lower-education group is particularly substantial at \$13,187 per participant.

Among Anglophone participants, the program is economically viable in the sub-groups of participants from lower-income, lower-education families and those whose parents had no post-secondary education. The program's negative net present value among Anglophone participants whose parents have post secondary education is driven by the statistically insignificant decrease in university enrolments, even though *Learning Accounts* had a statistically significant impact on college enrolments. The net present values for boys and girls among Anglophone participants are both positive, which is consistent with the positive net present values for the combined sample. However, the lack of statistically significant impacts on education participation for each sex suggests that the estimated net present values of boys and girls may not be very precise.

52 The benefit of increased high school graduation to the society is \$1,243, while the cost is \$284. The net benefit is \$959 (\$1,243–\$284).

53 The total program cost to the provincial and federal governments is \$3,007 (\$132 + \$2,876) while the total benefit to the participant and the government is \$5,108 (\$2,101 + \$3,007). Therefore, the benefit to cost ratio is 1.70 (\$5,108/\$3,007).

54 The total program cost to the provincial and federal governments is \$3,211 (\$117 + \$3,094) while the total benefit to the participant and the government is \$10,908 (\$7,696 + \$3,211). Therefore, the benefit to cost ratio is 3.40 (\$10,908/\$3,211).

55 The total program cost to the provincial and federal governments is \$3,211 (\$117 + \$3,094) while the total benefit to the participant and the government is \$6,411 (\$3,200 + \$3,211). Therefore, the benefit to cost ratio is 2.00 (\$6,411/\$3,211).

Table 7.4: Net Present Values of EYH, by Sub-groups (Constant 2009 Dollars Discounted to the Beginning of the Program)

	Manitoba				New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
Annual Discount Rate: 8%												
Net Benefit — Overall	4,249	-1,584	-4,019	-1,354	5,480	-835	-2,544	2,101	2,591	-726	-2,775	-910
Net Benefit — LILE	4,003	-1,509	-4,038	-1,545	16,596	-2,034	-1,491	13,071	8,023	-1,521	-2,291	4,212
Net Benefit — not LILE	3,470	-1,418	-4,126	-2,074	-3,698	217	-3,346	-6,827	-2,440	47	-3,217	-5,610
Net Benefit — Parents with High School or Less (FGF)	4,575	-1,719	-4,057	-1,200	11,041	-1,514	-1,783	7,743	-1,091	-158	-2,916	-4,165
Net Benefit — Parents with PSE	3,917	-1,502	-4,006	-1,591	1,510	-370	-3,076	-1,936	3,623	-924	-2,775	-77
Net Benefit — Boys	6,979	-2,127	-3,736	1,116	6,490	-679	-1,984	3,827	4,154	-868	-2,669	617
Net Benefit — Girls	3,421	-1,022	-4,047	-1,648	7,495	-1,052	-2,670	3,773	2,157	-496	-2,767	-1,105

Table 7.5: Present Value Costs and Benefits of LA (Constant 2009 Dollars Discounted to the Beginning of the Program)

	New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
Annual Discount Rate: 8%								
Program Costs per Participant — LA	2,737	-117	-3,094	-474	2,737	-117	-3,094	-474
Induced Cost — Education								
Loan Administration	0	17	26	44	0	245	367	611
High School Graduation	0	-270	0	-270	0	-568	0	-568
Trade School Enrolment	747	0	0	747	-68	0	0	-68
Apprenticeship Enrolment	-373	0	0	-373	-122	0	0	-122
College Enrolment	-1,490	-760	-204	-2,454	-708	-399	-107	-1,215
University Enrolment	-1,068	-637	-215	-1,921	198	126	43	367
Total Induced Cost of Education	-2,184	-1,649	-394	-4,227	-700	-596	302	-995
Induced Benefit — Education								
Grants and Bursary	-99	39	59	0	-433	173	260	0
High School Graduation	1,100	91	155	1,346	2,316	192	325	2,834
Trade School Enrolment	-677	-56	-95	-829	77	6	11	94
Apprenticeship Enrolment	416	35	58	510	267	22	38	327
College Enrolment	4,798	398	674	5,870	1,884	156	265	2,305
University Enrolment	4,496	373	632	5,501	-729	-60	-102	-891
Total Induced Benefit of Education	10,035	880	1,482	12,398	3,383	490	796	4,669
Net Education Benefit	7,851	-769	1,089	8,171	2,683	-107	1,098	3,674
Net Benefit	10,588	-886	-2,005	7,696	5,420	-224	-1,996	3,200

Table 7.6: Present Value Costs and Benefits of LA (Constant 2009 Dollars Discounted to the Beginning of the Program)

Annual Discount Rate: 8%	New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
Net Benefit — Overall	10,588	-886	-2,005	7,696	5,420	-224	-1,996	3,200
Net Benefit — LILE	16,119	-1,497	-1,435	13,187	6,382	-423	-1,992	3,967
Net Benefit — Parents with High School or Less (FGF)	15,108	-1,376	-1,431	12,302	10,123	-1,027	-1,808	7,288
Net Benefit — Parents with PSE	9,192	-754	-2,318	6,120	-704	778	-2,268	-2,194
Net Benefit — Boys	7,076	-297	-1,957	4,822	8,079	-863	-2,392	4,824
Net Benefit — Girls	13,715	-949	-1,834	10,932	6,386	234	-1,269	5,351

Table 7.7: Net Present Values of EYH-LA, by Sub-groups (Constant 2009 Dollars Discounted to the Beginning of the Program)

Annual Discount Rate: 8%	New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
Net Benefit — Overall	10,498	-913	-4,920	4,666	9,217	-1,132	-4,942	3,143
Net Benefit — LILE	14,262	-1,339	-4,431	8,492	10,720	-1,532	-5,007	4,181
Net Benefit — Parents with High School or Less (FGF)	13,862	-1,189	-4,127	8,546	9,710	-1,312	-5,037	3,362
Net Benefit — Parents with PSE	5,129	-421	-5,864	-1,155	7,209	-690	-5,066	1,453
Net Benefit — Boys	9,988	-416	-4,255	5,317	17,713	-2,660	-4,923	10,129
Net Benefit — Girls	12,586	-1,234	-5,299	6,053	4,465	-144	-4,829	-508

Explore Your Horizons plus Learning Accounts

Is it more effective to combine *Explore Your Horizons* with *Learning Accounts*? The *Explore Your Horizons* intervention shifts the impacts of *Learning Accounts* somewhat away from college enrolment towards university enrolment, as shown in the impact analysis (Chapter 6). Since university education provides a higher lifetime economic return, the combined program generates more benefits. However, since *Explore Your Horizons*' program cost is much higher than that of the *Learning Accounts*, the comparative effectiveness of the combined intervention depends on whether the increase in costs is more than the increase in benefits. Table 7.7 presents the estimated benefits and costs of the combined intervention.

The increase in benefits in the overall sample, regardless of the language group, by combining *Explore Your Horizons* with *Learning Accounts* is smaller than the increase in costs, leading to a lower net benefit to society. The net benefit of the combined intervention is \$4,666 per Francophone participant,⁵⁶ compared to \$7,696 for *Learning Accounts*. The net benefit of the combined program among Anglophone participants is \$3,143⁵⁷, almost the same as the net benefit of *Learning Accounts* for this same group.

⁵⁶ The total program cost to the provincial and federal governments is \$6,218 (\$3,211 + \$3,007) while the total benefit to the participant and the government is \$10,884 (\$4,666 + \$6,218). Therefore, the benefit to cost ratio is 1.75 (\$10,884/\$6,218).

⁵⁷ The total program cost to the provincial and federal governments is \$6,218 (\$3,211 + \$3,007) while the total benefit to the participant and the government is \$9,362 (\$3,143 + \$6,218). Therefore, the benefit to cost ratio is 1.51 (\$9,362/\$6,218).

INTERPRETING THE FINDINGS

Explore Your Horizons was not economically viable in Manitoba because of the relatively lower returns to increased high school diploma attainment and college education and the lack of impact on university enrolments, as well as the higher program cost. There are potential measures to lower the program cost that may help the economic viability of *Explore Your Horizons*. For example, it may save operating cost of sessions if some concurrent sessions are merged since not all participants attend each session. The program cost could also be lowered by leveraging schools' capabilities and economies of scale by integrating the program into existing school curriculum with existing staff delivering it instead of separate facilitators. If schools implement the program directly, it may save resources required by the FTD Office for coordination as well as the travelling expenses of facilitators. With the advancement in Internet and videoconferencing technologies, online training provided to school teachers may also reduce costs. Of course, these potential measures are merely suggestions and they may not be feasible in the existing school system.

The results from New Brunswick suggest that the net present value of *Explore Your Horizons* can be substantially increased by targeting students from lower-income, lower-education families, regardless of language group. The same can also be said for *Learning Accounts*.

Learning Accounts generated a much higher benefit per dollar cost to the government than *Explore Your Horizons*. However, *Learning Accounts* mainly increased enrolments in colleges rather than universities. The bursary's structure may possibly bias choices towards shorter programs: it subsidized post-secondary education up to two years. Since many college programs last two years while most university bachelor's degree programs take four years to complete, the payment structure of *Learning Accounts* may not encourage students to embark on longer programs. *Learning Accounts* might increase university enrolment, and generate more benefits to society, if it also provided a bursary in the third and fourth year of post-secondary study.

Combining *Explore Your Horizons* and *Learning Accounts*, however, did not generate any additional benefit on top of the benefits generated by the individual program. It seems that *Learning Accounts'* impacts on post-secondary education compete with *Explore Your Horizons'* impacts: *Learning Accounts'* impact on the increase in college enrolments diminishes when the program is combined with *Explore Your Horizons*. Indeed, the effectiveness of the combined program is less than the individual program. Inevitably, operating two interventions produces higher program costs than one intervention. Again, however, extending *Learning Accounts* to the third and fourth year of post-secondary study may improve the combined intervention's cost effectiveness.

Lessons Learned from the *Future to Discover* Pilot Project

Introduction

The *Future to Discover* (FTD) pilot project was designed to test the effectiveness of innovative interventions aimed at raising post-secondary enrolment among youth. The project was established by the Canada Millennium Scholarship Foundation, in collaboration with the provincial governments of Manitoba and New Brunswick. Prior to *Future to Discover*, very little was known about the effectiveness of early high school interventions designed to raise post-secondary enrolment.

Future to Discover tested two interventions. The first, *Explore Your Horizons* (EYH), was designed to provide high school students with enhanced career development education through a series of workshops and access to a Web site and a magazine. The intervention was delivered through Grades 10, 11 and 12 and was tested on a cross-section of students from Manitoba and Brunswick high schools for specific cohorts. The second intervention focused more directly on the financial aspects of post-secondary enrolment. *Learning Accounts* (LA) consisted of an early promise of non-repayable financial aid to low-income students in New Brunswick.

The interventions were tested with an experimental design. Students were recruited to participate in the project, and were subsequently randomly assigned to a program group (receiving the offer of the program) or to a comparison group (receiving no offer). Some students were offered *Explore Your Horizons*, *Learning Accounts*, or both. By randomly assigning students into groups whose outcomes would be compared over time, it is likely that they were initially (at "baseline" when recruited at the end of Grade 9) very similar since it was only chance that determined who was offered the program. Remaining chance differences that could be observed in baseline data were taken into account by a statistical adjustment. As a result, differences in program and comparison group outcomes could then be reliably attributed to the offer of the intervention, and termed "program impacts."

This chapter discusses what has been learned from the *Future to Discover* pilot project. This includes the implementation and delivery of the interventions, the main program impacts, and a cost-benefit analysis of the project.



IMPLEMENTATION AND DELIVERY

Attendance at *Explore Your Horizons* workshops was not as high as it could have been and declined substantially following Grade 10. It is difficult to pinpoint the exact cause; however, it is possible that students would have attended workshops more if they had occurred during school hours. After school, workshops competed with other interests of students. It may also be the case that students simply tired of attending workshops after the first year.

Making an early promise to youth that they would receive financial aid was no guarantee that every potential recipient would remember. By Grade 12, only about half of students recalled having a Learning Account. More reminders might help in this regard. Plausibly, if *Learning Accounts* had been a permanent program available to all low-income students, there would have been more widespread awareness of its availability.

Combining interventions encouraged students to become more engaged in the interventions. Students who were offered *Learning Accounts* in addition to *Explore Your Horizons* were more likely to attend workshops than those offered *EYH* alone, and were also more aware of their Learning Account than those offered *LA* alone.

POST-SECONDARY ENROLMENT IMPACTS

When considering a cross-section of all students, the offer of *Explore Your Horizons* had little to no impact on post-secondary enrolment. In fact, only in the Francophone sector of New Brunswick is a small overall impact observed. There are two possible reasons limiting the impact of *EYH*. The first is its universality. *Explore Your Horizons* was tested on students across the socio-economic spectrum, many of whom would attend post-secondary education without any additional intervention. What the study has shown is that *EYH* appeared to work best on target groups with traditionally lower rates of post-secondary attendance: LILE (students from lower-income and lower-educated families) and FGF (students from first generation families) in the Francophone sector of New Brunswick, and boys and those from LILE families in the Anglophone sector of New Brunswick. The effectiveness of *EYH* may have been further limited by the fact that workshops were held after school. Attendance began to decline significantly after the first year, and this may have prevented the full benefits of the workshops from materializing.

Learning Accounts was only offered in New Brunswick and to lower-income families. It was generally more successful in raising post-secondary enrolment. Large impacts were registered in the Francophone sector of New Brunswick, including in all groups (LILE, FGF, non-FGF, boys, and girls). These impacts were concentrated in college enrolment. In the Anglophone sector of New Brunswick, large impacts were only found among boys and the LILE group (again, mainly in college). One factor that may have prevented *Learning Accounts* from having broader impacts in the Anglophone sector was a constraint on the supply of places in some of its college programs. The supply side of the post-secondary education participation equation is an important consideration for those who develop or implement any program designed to raise demand for post-secondary education.

The study presented an interesting conundrum in that the impact of a combined intervention was not found necessarily equal to the sum of its parts.⁵⁸ The combination of *Explore Your Horizons* and *Learning Accounts* (offered only in New Brunswick) raised post-secondary enrolment in the Anglophone sector, but not in the Francophone sector. However, it raised university enrolment in both linguistic sectors.

COST-BENEFIT ANALYSIS

Learning Accounts generated large benefits to society. For every government dollar spent on the program, society would benefit by \$2.00 to \$3.40. This is largely because most of the costs of the expenditures are transfers from government to participants, and the program has large impacts on post-secondary enrolment for many groups. Workers with a post-secondary education generally earn more over their lifetime than those without.

Explore Your Horizons was found economically viable among some participants in New Brunswick, particularly those from lower-income, lower-education families. This result reflects the variation in impacts across groups. The program is not viable in Manitoba due to minimal program impacts combined with higher program costs related to the smaller scale operation that was in place in that province for a single cohort of students.

Finally, combining *Explore Your Horizons* and *Learning Accounts* did not increase the net social benefit, although it still produced an economically viable program. It generated \$1.51 to \$1.75 in benefits for every dollar spent by the government.

⁵⁸ This may be because interventions interact in positive or negative ways, or it may simply be due to chance (i.e., tests of statistical significance are only correct a majority of the time).

CONCLUSION

Both *Explore Your Horizons* and *Learning Accounts* increased demand for post-secondary education. Depending on the sub-group and provincial/population setting, the programs increased high-school graduation or post-secondary enrolment or both. These results were seen for many sub-groups with lower access rates, such as boys and those from lower-income and first-generation families, making the programs of interest to policy-makers seeking increased access for these groups.

The programs' impacts on post-secondary applications may not always have resulted in impacts on enrolment due to insufficient supply of places in some programs. A clear policy implication for increasing access is to enable greater flexibility in the availability of popular programs so that demand can translate into actual enrolment. At the same time, many of those offered *Explore Your Horizons* missed out by not attending workshops. Nearly one in ten offered *Learning Accounts* did not sign up and more failed to recall that they had an account, despite reminders. Future programming may be more effective if participation relied less on volunteering and more on automation. *Explore Your Horizons* workshops might form part of compulsory curriculum, and *Learning Accounts* might be initiated automatically for all participants (similar to Canada's Child Tax Benefit). Nonetheless, the differences between provinces and linguistic sectors point to caution in generalizing from the findings. Even findings that were fairly robust across many groups in New Brunswick — for example, the finding that both interventions increased

demand for post-secondary education among traditionally disadvantaged groups — did not hold for Manitoba. Program impact may vary by population and with existing policy environments and so should be tested carefully. Caution is also necessary in interpreting the impacts due to the relatively short period of outcomes observed.

Longer-term follow-up of students who participated in the main project may prove fruitful. Some students have put post-secondary education on hold and may revisit the idea at a later date. Such a follow-up could be feasible with administrative data.

In conclusion, the *Future to Discover* pilot project has demonstrated that interventions such as *Explore Your Horizons* and *Learning Accounts* can meet their objectives of raising post-secondary enrolment, especially among key groups who normally have lower rates of enrolment. This is despite the fact that attendance at *Explore Your Horizons* workshops and awareness of *Learning Accounts* were not as high as they could have been, and that supply constraints in the New Brunswick Anglophone college sector may have constrained some of the benefits of the programs. With more focused targeting, increased efforts to raise student engagement in the interventions, and perhaps in an environment with fewer supply constraints in the higher education system, the positive impact of such interventions and their economic viability would have been reinforced.



APPENDICES

- Appendix 1:** Analysis of Non-response Bias in the *Future to Discover* 66-month Follow-up Survey
- Appendix 2:** Relative and Incremental Impacts of *Future to Discover* Pilot Project for New Brunswick Lower-income Families
- Appendix 3:** Impacts of *Explore Your Horizons* and *Learning Accounts* on PSE Enrolment by Month Proportion Enrolled In Post-secondary Education up to 62 Months After Random Assignment
- Appendix 4:** The Role of *Future to Discover*'s Interventions in Students' Decision-making — Lessons Learned from the National Longitudinal Panel Study
- Appendix 5:** Additional Cost–benefit Analyses
- Appendix 6:** Non-experimental Analyses of *Explore Your Horizons* Workshop Attendance and Post-secondary Enrolment



APPENDIX 1: Analysis of Non-response Bias in the *Future to Discover* 66-month Follow-up Survey

Most of the impacts in Chapters 4 to 6 are estimated from the experience of *FTD* 66-month survey sample respondents. The reliability of these estimates may be affected by selective non-response to this survey (i.e., attrition).

Many circumstances contribute to survey respondents dropping out of a longitudinal study. Individuals may have moved, they may be difficult to contact for other reasons (e.g., a new job), life events may take precedence over completing a survey (e.g., a new child), or they may simply suffer from "survey fatigue." The *Future to Discover* surveys are not exempt. An added complication in experiments like *Future to Discover* is that attrition may depend on the result of random assignment. The usual concerns are that comparison group members may respond to the perceived "inequity" caused by randomization by refusing to co-operate with the interviewers, or they may simply perceive less incentive than program group members to respond to a project that is not providing them with additional services. If follow-up survey non-response varies by experimental group, and non-response is correlated with important determinants of the outcomes of interest, then it may introduce some degree of bias in results (although the exact magnitude of bias will never be known).

For simplicity, only the main 66-month survey is considered here. In the report's tables, those who did not respond to the survey have outcome data in some tables based on the responses of their parents (or other person close to them) to a proxy survey fielded immediately after the main survey fieldwork, and by administrative data not subject to survey non-response.

This appendix begins by presenting the 66-month follow-up survey response rates. It then shows the extent of the bias that may be introduced by survey non-response by looking at how survey attrition is correlated with baseline characteristics through a regression analysis.

SURVEY RESPONSE RATE

The results from Table A1.1 confirm that the *FTD* 66-month survey faced a non-negligible amount of survey non-response (attrition). The response rates are shown in the table, and these vary by jurisdiction and experimental group.

Response rates to the *FTD* 66-month survey were considerably lower in Manitoba than in New Brunswick. Within New Brunswick, response rates were higher in the Francophone sector than in the Anglophone sector.

In Manitoba, the response rate was higher in the comparison group (59.6 per cent) than in the *Explore Your Horizons* group (53.2 per cent). The same is true in both linguistic sectors in New Brunswick, although the gap is much smaller in the Anglophone sector.

Among the *LA*-eligible sample in New Brunswick, a similar pattern emerges in both sectors. Specifically, response rates are highest for those who received the offer of *Learning Accounts*, whether by itself or in combination with *Explore Your Horizons*. Those who received the offer of *EYH* on its own, or no offer, had lower response rates (by at least 5 or 6 percentage points compared to others).

It appears then that participants may have reduced response rates if they did not receive an offer of *Learning Accounts*. In contrast, failure to receive an offer of *Explore Your Horizons* did not appear to negatively affect response rates. In fact, response rates are higher among the comparison groups than the *EYH* groups in all three jurisdictions. Given that attendance rates in *EYH* workshops were not nearly as high as they could have been (see Chapter 2), and participants would have been called and encouraged to attend workshops, it is possible that some members of the *EYH* groups suffered from overall "contact fatigue."

Table A1.1: Response Rates

Category	Response Rate (%)	Number of students in <i>FTD</i> Grade 66-month sample
Manitoba		
<i>EYH</i>	53.16	570
Comparison	59.57	465
New Brunswick — Francophone		
NB — <i>LA</i> -Eligible — <i>LA</i>	81.61	261
NB — <i>LA</i> -Eligible — <i>EYHLA</i>	76.05	263
NB — <i>LA</i> -Eligible — <i>EYH</i>	70.67	208
NB — <i>LA</i> -Eligible — Comparison	70.35	290
NB — <i>EYH</i>	70.57	513
NB — Comparison	74.41	719
New Brunswick — Anglophone		
NB — <i>LA</i> -Eligible — <i>LA</i>	66.67	279
NB — <i>LA</i> -Eligible — <i>EYHLA</i>	64.09	284
NB — <i>LA</i> -Eligible — <i>EYH</i>	58.37	221
NB — <i>LA</i> -Eligible — Comparison	58.07	310
NB — <i>EYH</i>	64.70	524
NB — Comparison	65.06	727

Source: *FTD* 66-month survey.

Notes: Rounding may cause slight discrepancies in sums.

There were 5,429 students recruited for *Future to Discover*. The analysis in this table excludes 11 students who were children in care of the province at the time of selection, and for whom full baseline survey data was not collected.

THE CORRELATION BETWEEN SURVEY RESPONSE AND BASELINE CHARACTERISTICS

While the response rates were generally quite good for a survey with such a long-term follow-up period, it is still possible that non-response introduced bias in the impact analyses. In this section, the statistical relationship between response to the 66-month survey and baseline characteristics are analyzed through a regression approach. Specifically, a binary “survey response” indicator is regressed on the baseline characteristics for program and comparison groups. What matters for the impact analyses is whether survey response is related to these characteristics more so for the program or comparison group.

For the most part, survey response is not related to baseline characteristics in a differential manner for program and comparison groups. There are some exceptions, however, as can be seen in Tables A1.2 to A1.4. While the regression adjustments that are applied in Chapters 4 to 6 correct for such differences, there is a concern that differences in important unobserved characteristics also exist. Fortunately, the list of characteristics that are taken into account is extensive and includes many factors that are not available in surveys (e.g., high school marks, presence of a disability, etc.). In addition, administrative data (not subject to survey response bias) have also been used for some of the principal outcomes of interest. Survey response bias is thus unlikely to have yielded systematic bias in the project’s impact estimates.

Table A1.2: Comparison of Baseline Characteristics.
FTD 66-month Survey Sample — EYH vs. Comparison Group

Baseline characteristics	Manitoba			New Brunswick — Francophone			New Brunswick — Anglophone		
	EYH	C	Diff	EYH	C	Diff	EYH	C	Diff
Gender of student — Female	-0.09	-0.01	-0.09	0.10	0.07	0.03	-0.05	0.03	-0.08
Age of student at baseline	-0.07	-0.03	-0.03	-0.06	0.01	-0.07	-0.06	0.02	-0.08
White (ever mentioned)	0.20	0.24	-0.04	-0.04	0.26	-0.30	0.02	0.13	-0.10
Aboriginal (ever mentioned)	0.04	-0.04	0.08	-0.28	-0.14	-0.14	-0.18	0.22	-0.41**
Student has difficulty seeing, hearing, learning, ect.	-0.01	-0.05	0.04	-0.10	0.04	-0.14*	-0.04	-0.05	0.01
Overall mark at baseline	-0.07	-0.08	0.01	-0.09	-0.06	-0.03	-0.07	-0.07	-0.01
Student has ever worked	-0.04	-0.14	0.11	-0.07	0.07	-0.14	0.01	0.03	-0.02
Gender of signing parent — female	0.00	0.03	-0.03	-0.08	0.06	-0.14*	0.09	0.06	0.02
Current age of signing parent	0.01	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
Signing parent is currently working	0.06	-0.06	0.12	0.06	0.03	0.04	-0.04	-0.04	0.01
Number of adults in the home	0.04	0.02	0.02	0.01	0.00	0.02	0.01	0.04	-0.03
Number of children at home	0.01	0.04	-0.03	-0.03	0.02	-0.05	0.05	0.03	0.02
Family income	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Parents’ highest education level — high school diploma	0.02	0.19	-0.17	0.06	0.03	0.03	0.02	0.08	-0.06
Parents’ highest education level — trade/college/apprenticeship	0.09	0.21	-0.12	-0.03	0.02	-0.05	-0.06	0.10	-0.17
Parents’ highest education level — university degree	0.11	0.29	-0.17	-0.03	0.05	-0.08	0.02	0.05	-0.04
Parental importance attached to child getting more education after high school — scale variable	-0.08	-0.09	0.01	-0.08	-0.05	-0.02	-0.12	0.02	-0.13
Financial situation is standing in the child’s way of getting more education	0.03	0.00	0.03	-0.08	-0.17	0.09	0.08	-0.13	0.21
Parent hopes child will get college diploma	-0.04	-0.05	0.01	-0.03	0.04	-0.07	0.13	-0.05	0.18*
Parent hopes child will get university degree	0.01	0.02	0.00	0.03	0.03	-0.01	0.11	-0.03	0.14**
Parent hopes child will get vocational/ apprentice qualifications	-0.18	-0.14	-0.04	0.05	-0.04	0.09	-0.09	-0.12	0.03
Anything standing in the child’s way of going as far as his/her parent hopes	0.04	-0.02	0.06	-0.04	-0.08	0.04	0.09	-0.06	0.15
Sample Size	570	465		513	719		524	727	

Source: FTD 66-month survey and FTD baseline survey.

Notes: Rounding may cause slight discrepancies in sums.

There were 5,429 students recruited for *Future to Discover*. The analysis in this table excludes 11 students who were children in care of the province at the time of selection, and for whom full baseline survey data was not collected.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Diff = EYH-C.

Table A1.3: Comparison of Baseline Characteristics.
FTD 66-month Survey Sample — LA vs. Comparison Group

Baseline characteristics	New Brunswick — Francophone			New Brunswick — Anglophone		
	LA	C	Diff	LA	C	Diff
Gender of student — Female	0.08	0.09	-0.01	0.07	0.10	-0.03
Age of student at baseline	0.04	-0.03	0.08	-0.03	0.03	-0.05
White (ever mentioned)	0.24	0.32	-0.09	-0.14	-0.03	-0.11
Aboriginal (ever mentioned)	0.23	0.14	0.08	-0.17	0.14	-0.31
Student has difficulty seeing, hearing, learning, ect.	0.08	0.09	0.00	0.10	-0.03	0.13
Overall mark at baseline	-0.05	-0.03	-0.02	-0.07	-0.06	-0.01
Student has ever worked	0.03	0.10	-0.07	0.27	0.03	0.23
Gender of signing parent — female	0.03	0.05	-0.02	0.02	0.02	0.00
Current age of signing parent	0.01	0.00	0.01	0.02	0.01	0.01
Signing parent is currently working	0.05	0.06	-0.01	-0.10	-0.03	-0.08
Number of adults in the home	-0.03	-0.01	-0.02	0.09	0.00	0.08
Number of children at home	0.02	-0.02	0.04	-0.01	0.04	-0.05
Family income	0.00	0.00	0.00	0.00	0.00	0.00
Parents' highest education level — high school diploma	0.04	0.05	-0.01	0.10	0.07	0.03
Parents' highest education level — trade/college/apprenticeship	0.12	0.04	0.07	0.11	0.08	0.03
Parents' highest education level — university degree	0.02	0.10	-0.07	-0.32	0.15	-0.46**
Parental importance attached to child getting more education after high school — scale variable	-0.04	-0.03	-0.01	-0.05	0.04	-0.09
Financial situation is standing in the child's way of getting more education	-0.03	-0.32	0.28*	-0.35	-0.24	-0.11
Parent hopes child will get college diploma	-0.01	0.03	-0.03	0.05	-0.07	0.13
Parent hopes child will get university degree	0.12	0.00	0.12	0.03	0.01	0.02
Parent hopes child will get vocational/ apprentice qualifications	0.09	0.03	0.06	0.19	-0.11	0.30*
Anything standing in the child's way of going as far as his/her parent hopes	-0.09	-0.14	0.05	-0.36	-0.13	-0.23
Sample Size	261	290		279	310	

Source: FTD 66-month survey and FTD baseline survey.

Notes: Rounding may cause slight discrepancies in sums.

There were 5,429 students recruited for *Future to Discover*. The analysis in this table excludes 11 students who were children in care of the province at the time of selection, and for whom full baseline survey data was not collected.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Diff = EYH-C.

Table A1.4: Comparison of Baseline Characteristics.
FTD 66-month Survey Sample — EYH/LA vs. Comparison

Baseline characteristics	New Brunswick — Francophone			New Brunswick — Anglophone		
	EYH/LA	C	Diff	EYH/LA	C	Diff
Gender of student — female	0.07	0.09	-0.01	-0.12	0.10	-0.22***
Age of student at baseline	-0.09	-0.03	-0.06	-0.04	0.03	-0.07
White (ever mentioned)	0.00	0.32	-0.32	0.38	-0.03	0.41
Aboriginal (ever mentioned)	-0.04	0.14	-0.19	0.14	0.14	0.00
Student has difficulty seeing, hearing, learning, ect.	-0.03	0.09	-0.11	0.08	-0.03	0.11
Overall mark at baseline	-0.04	-0.03	-0.01	-0.06	-0.06	0.00
Student has ever worked	0.02	0.10	-0.08	-0.11	0.03	-0.14
Gender of signing parent — female	-0.01	0.05	-0.06	-0.13	0.02	-0.16
Current age of signing parent	0.00	0.00	0.00	0.00	0.01	-0.01
Signing parent is currently working	0.01	0.06	-0.05	0.00	-0.03	0.03
Number of adults in the home	-0.03	-0.01	-0.03	0.05	0.00	0.05
Number of children at home	0.04	-0.02	0.05	-0.01	0.04	-0.05
Family income	0.00	0.00	0.00	0.00	0.00	0.00
Parents' highest education level — high school diploma	-0.03	0.05	-0.07	0.15	0.07	0.08
Parents' highest education level — trade/college/apprenticeship	-0.10	0.04	-0.14	0.24	0.08	0.16
Parents' highest education level — university degree	0.03	0.10	-0.06	0.52	0.15	0.38*
Parental importance attached to child getting more education after high school — scale variable	-0.04	-0.03	-0.01	0.04	0.04	0.01
Financial situation is standing in the child's way of getting more education	0.11	-0.32	0.43**	-0.28	-0.24	-0.04
Parent hopes child will get college diploma	0.08	0.03	0.05	0.07	-0.07	0.14
Parent hopes child will get university degree	0.01	0.00	0.01	0.00	0.01	-0.01
Parent hopes child will get vocational/ apprentice qualifications	0.16	0.03	0.14	-0.10	-0.11	0.00
Anything standing in the child's way of going as far as his/her parent hopes	0.08	-0.14	0.22	-0.28	-0.13	-0.14
Sample Size	263	290		284	310	

Source: FTD 66-month survey and FTD baseline survey.

Notes: Rounding may cause slight discrepancies in sums.

There were 5,429 students recruited for *Future to Discover*. The analysis in this table excludes 11 students who were children in care of the province at the time of selection, and for whom full baseline survey data was not collected.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Diff = EYH-C.

APPENDIX 2: Relative and Incremental Impacts of *Future to Discover* Pilot Project for New Brunswick Lower-income Families

The purpose of this Appendix is to assess relative and incremental impacts of the *EYH* and *LA* interventions on post-secondary applications and enrolment for New Brunswick lower-income families. Specifically, three types of comparisons are made:

- **EYH+LA vs. LA:** This comparison provides the incremental impact of adding *EYH* to a learning account
- **EYH+LA vs. EYH:** This comparison provides the incremental impact of adding *LA* to *EYH*
- **EYH vs. LA:** This comparison provides the relative differences in the impact of the two interventions

Since the *Learning Accounts* intervention is a part of each comparison, the analyses are focused exclusively on the sample of *LA*-eligible students in New Brunswick.

INCREMENTAL IMPACTS OF *EXPLORE YOUR HORIZONS* ON PSE APPLICATIONS AND ENROLMENT

In this part of the appendix, the combined *Explore your Horizons* and *Learning Accounts* intervention is compared to the *Learning Accounts* intervention alone to assess any additional (incremental) impact of *Explore Your Horizons* above the impact of *Learning Accounts*.

Tables A2.1 and A2.2 assess the incremental impact of *Explore Your Horizons* on PSE enrolment. As shown in Table A2.1, the addition of *Explore Your Horizons* to *Learning Accounts* did not change levels of PSE enrolment for students in either linguistic sectors. However, some impacts were registered by level of study (Table A2.2). The combined intervention had negative impacts on college attendance for some groups: LILE and boys in the Francophone sector, as well as all, non-FGF and girls in the Anglophone sector. In addition, many positive impacts on university enrolment were registered in the Anglophone sector. There were some impacts on other forms of PSE, but not in any systematic manner.

Table A2.1: Incremental Impact of *EYH* on PSE Enrolment

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	<i>EYH</i> + <i>LA</i> Group	<i>LA</i> Group	Impact (s.e.)	<i>EYH</i> + <i>LA</i> Group	<i>LA</i> Group	Impact (s.e.)
Enrolled in PSE institution (%)						
All	73.39	77.70	-4.31 (3.97)	70.10	68.28	1.82 (3.91)
LILE	72.79	76.19	-3.39 (4.55)	66.16	65.77	0.39 (4.45)
Parents with High School or Less (FGF)	72.16	68.99	3.17 (6.41)	61.98	60.10	1.87 (7.02)
Parents with any PSE (Non-FGF)	76.17	85.11	-8.94 (5.53)	77.12	75.32	1.80 (5.46)
Boys	63.57	69.96	-6.39 (6.73)	66.42	61.84	4.58 (6.25)
Girls	83.60	83.33	0.27 (4.69)	71.94	74.99	-3.06 (5.43)
Sample Size	244	247		237	240	

Source: *FTD* 66-month survey, *FTD* 66-month proxy survey, and *FTD* administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table A2.2: Incremental Impact of EYH on PSE Enrolment by Type of Institution

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	LA Group	Impact (s.e.)	EYHLA Group	LA Group	Impact (s.e.)
Enrolled in university						
All	34.42	30.21	4.21 (3.98)	33.88	25.09	8.79** (3.74)
LILE	28.04	25.81	2.22 (4.39)	29.48	21.55	7.94* (4.20)
Parents with High School or Less (FGF)	26.44	24.78	1.66 (5.42)	23.94	23.48	0.46 (5.49)
Parents with any PSE (Non-FGF)	41.98	36.24	5.74 (6.16)	41.94	27.47	14.47** (5.97)
Boys	25.23	16.94	8.29 (5.44)	27.27	10.89	16.38*** (5.47)
Girls	42.49	42.02	0.47 (5.89)	39.77	36.89	2.88 (5.93)
Enrolled in college						
All	42.39	49.35	-6.96 (4.91)	24.81	33.17	-8.36** (4.12)
LILE	43.64	52.37	-8.73* (5.28)	27.01	32.64	-5.63 (4.41)
Parents with High School or Less (FGF)	42.11	47.28	-5.16 (6.97)	26.25	29.38	-3.13 (6.57)
Parents with any PSE (Non-FGF)	42.53	51.61	-9.08 (7.16)	20.61	38.57	-17.96*** (6.01)
Boys	40.33	55.36	-15.03** (7.30)	28.22	36.48	-8.27 (6.56)
Girls	45.63	43.19	2.44 (6.70)	19.66	31.84	-12.18* (6.36)
Enrolled in private college or vocational institute						
All	10.27	7.48	2.79 (2.83)	19.86	17.65	2.21 (3.86)
LILE	12.85	7.39	5.47 (3.40)	18.38	17.97	0.42 (4.14)
Parents with High School or Less (FGF)	12.65	7.94	4.71 (4.63)	21.04	11.98	9.06* (5.27)
Parents with any PSE (Non-FGF)	8.92	5.98	2.94 (3.79)	21.39	19.66	1.73 (5.95)
Boys	8.35	0.95	7.40** (3.13)	14.86	15.02	-0.16 (5.26)
Girls	12.60	12.60	0.00 (4.57)	25.46	19.50	5.96 (5.89)

Continued on next page

Table A2.2: Incremental Impact of EYH on PSE Enrolment by Type of Institution (Continued)

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	LA Group	Impact (s.e.)	EYHLA Group	LA Group	Impact (s.e.)
Enrolled to be apprentice						
All	3.03	4.81	-1.78 (1.85)	1.68	4.33	-2.65 (1.63)
LILE	2.97	5.41	-2.44 (2.20)	1.36	4.61	-3.25* (1.69)
Parents with High School or Less (FGF)	3.02	4.38	-1.36 (2.82)	0.90	3.86	-2.96 (2.19)
Parents with any PSE (Non-FGF)	3.28	5.01	-1.72 (2.99)	2.87	4.28	-1.41 (2.27)
Boys	6.49	9.26	-2.77 (4.18)	3.63	8.47	-4.84 (3.67)
Girls	-0.05	0.80	-0.84 (0.78)	-0.10	0.84	-0.94 (0.81)
Sample Size	244	246		234	238	

Source: FTD 66-month survey, FTD 66-month proxy survey, and FTD administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Tables A2.3 and A2.4 look at PSE applications for students in lower-income families in New Brunswick. As shown in Table A2.3, the addition of *Explore Your Horizons* to *Learning Accounts* reduced the proportion of Francophone students who applied to PSE overall (a difference of 5.6 percentage points) and among students from non-FGF families (a difference of 11.5 percentage points). No impacts occurred in the Anglophone sector.

Table A2.4 suggests that the reductions in the Francophone sector are concentrated in college enrolment. We also see negative impacts on college enrolment in the Anglophone sector, but these are counterbalanced by positive impacts on university enrolment.

INCREMENTAL IMPACTS OF LEARNING ACCOUNTS ON PSE APPLICATIONS AND ENROLMENT

In this part of the appendix, the combined *Explore Your Horizons* plus *Learning Accounts* intervention is compared to *Explore Your Horizons* to assess the additional impact of making available *Learning Accounts* over and above the impact of *Explore Your Horizons*.

As shown in Tables A2.5, the addition of *Learning Accounts* to *Explore Your Horizons* did not change PSE enrolment among Francophone and Anglophone students in New Brunswick. Little to no impacts occurred by level of study (Table A2.6).

Tables A2.7 and A2.8 present the impacts on PSE applications. Table A2.7 suggests that the addition of *Learning Accounts* to the *Explore Your Horizons* intervention did not affect Francophone students in New Brunswick. An increase in overall application rates (6.7 percentage points) and for students from lower-income, lower-education families (7.6 percentage points) was found for Anglophone students in the province. In addition, Anglophone students who received the combined intervention were more likely to apply to private colleges or vocational institutes as a result (an increase of 7.8 percentage points, Table A2.8).

RELATIVE IMPACTS OF EXPLORE YOUR HORIZONS AND LEARNING ACCOUNTS

This part of the appendix compares *Explore Your Horizons* with the *Learning Accounts* intervention to assess which intervention contributed more to students' post-secondary applications and enrolment.

Participants who were offered *Explore Your Horizons* were no more likely to enrol in PSE than those offered *Learning Accounts* (Table A2.9). This is true overall, and in each sub-group in both sectors. However, some differential impacts were registered by level of study (Table A2.10). For example, college enrolment was higher among the *Learning Accounts* group overall in the Anglophone sector, as well as among the LILE and non-FGF groups in both sectors. In the Anglophone sector, those offered *Explore Your Horizons* were more likely to enrol in university than those offered *Learning Accounts*.

Table A2.3: Incremental Impact of EYH on PSE Applications

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	LA Group	Impact (s.e.)	EYHLA Group	LA Group	Impact (s.e.)
PSE applications (%)						
All	76.54	82.11	-5.57* (3.25)	78.81	76.04	2.77 (3.58)
LILE	77.88	81.27	-3.39 (3.87)	76.67	73.62	3.05 (4.38)
Parents with High School or Less (FGF)	78.44	76.10	2.34 (5.72)	74.16	71.48	2.69 (6.91)
Parents with any PSE (Non-FGF)	75.61	87.10	-11.49** (5.26)	82.09	80.54	1.54 (4.73)
Boys	72.80	75.33	-2.54 (5.67)	75.77	69.63	6.14 (6.27)
Girls	82.93	85.36	-2.43 (4.60)	82.12	80.95	1.17 (5.03)
Sample Size	241	243		232	233	

Source: FTD 66-month survey, FTD 66-month proxy survey, and FTD administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table A2.4: Incremental impact of EYH on PSE Applications by Type of Institution

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	LA Group	Impact (s.e.)	EYHLA Group	LA Group	Impact (s.e.)
Applied to university						
All	34.35	33.01	1.33 (4.05)	36.62	29.63	6.98* (3.92)
LILE	27.49	29.07	-1.58 (4.58)	31.70	25.70	6.00 (4.48)
Parents with High School or Less (FGF)	25.40	25.84	-0.44 (5.54)	22.75	28.01	-5.26 (5.82)
Parents with any PSE (Non-FGF)	42.58	40.90	1.68 (6.19)	48.32	32.19	16.13*** (5.86)
Boys	24.90	19.97	4.93 (5.67)	30.96	15.38	15.58** (6.14)
Girls	42.88	44.80	-1.92 (6.12)	42.83	40.50	2.33 (6.25)
Applied to college						
All	39.89	48.91	-9.02** (4.25)	32.96	40.58	-7.62* (4.23)
LILE	46.55	51.70	-5.15 (5.02)	34.71	41.80	-7.09 (4.52)
Parents with High School or Less (FGF)	45.15	49.07	-3.92 (6.55)	33.42	40.83	-7.41 (7.27)
Parents with any PSE (Non-FGF)	34.32	49.03	-14.71** (6.30)	29.80	42.83	-13.03** (6.53)
Boys	41.58	54.93	-13.35* (7.25)	37.04	39.79	-2.75 (7.35)
Girls	40.03	42.11	-2.08 (6.26)	28.34	41.32	-12.99* (6.67)

Continued on next page

Table A2.4: Incremental impact of EYH on PSE Applications by Type of Institution (Continued)

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	LA Group	Impact (s.e.)	EYHLA Group	LA Group	Impact (s.e.)
Applied to private college or vocational institute						
All	10.21	9.22	0.99 (2.78)	22.83	21.90 (3.99)	0.93
LILE	12.60	8.69 (3.36)	3.91	21.95	22.33 (4.36)	-0.39
Parents with High School or Less (FGF)	13.44	8.87	4.57 (4.81)	26.68	17.68	9.00 (5.95)
Parents with any PSE (Non-FGF)	8.34	8.19	0.15 (3.87)	21.68	22.88	-1.20 (6.27)
Boys	8.48	2.60	5.88* (3.07)	18.07	19.93	-1.86 (5.63)
Girls	12.42	14.38	-1.96 (4.63)	28.87	22.69	6.18 (5.82)
Applied to be apprentice						
All	4.54	6.61	-2.07 (2.12)	3.75	5.30	-1.55 (2.15)
LILE	4.95	7.66	-2.71 (2.59)	3.85	4.74	-0.90 (2.27)
Parents with High School or Less (FGF)	4.23	5.69	-1.46 (3.05)	3.63	3.90	-0.27 (2.83)
Parents with any PSE (Non-FGF)	4.83	7.54	-2.71 (3.48)	4.17	6.09	-1.91 (3.02)
Boys	9.52	13.10	-3.58 (4.58)	8.13	10.06	-1.93 (4.91)
Girls	-0.02	0.79	-0.81 (0.77)	-0.09	0.84	-0.93 (0.81)
Sample Size	241	243		232	233	

Source: FTD 66-month survey and FTD 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table A2.5: Incremental Impact of LA on PSE Enrolment

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	EYH Group	Impact (s.e.)	EYHLA Group	EYH Group	Impact (s.e.)
Enrolled in PSE institution (%)						
All	74.66	75.70	-1.03 (4.12)	69.47	65.79	3.68 (4.05)
LILE	73.92	73.54	0.37 (4.65)	65.96	62.66	3.31 (4.64)
Parents with High School or Less (FGF)	73.93	72.18	1.75 (6.44)	60.05	56.36	3.69 (7.68)
Parents with any PSE (Non-FGF)	77.14	77.51	-0.36 (6.20)	78.60	73.42	5.18 (5.24)
Boys	65.09	69.70	-4.61 (7.48)	64.50	56.44	8.06 (6.65)
Girls	82.50	81.95	0.55 (5.11)	73.37	75.88	-2.51 (5.76)
Sample Size	241	243		232	233	

Source: FTD 66-month survey, FTD 66-month proxy survey, and FTD administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table A2.6: Incremental Impact of LA on PSE Enrolment by Type of Institution

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	EYH Group	Impact (s.e.)	EYHLA Group	EYH Group	Impact (s.e.)
Enrolled to university						
All	34.85	34.74	0.12 (4.22)	33.65	33.29	0.36 (4.11)
LILE	28.71	31.53	-2.82 (4.34)	29.95	28.19	1.76 (4.56)
Parents with High School or Less (FGF)	28.37	26.57	1.80 (5.43)	24.47	14.00	10.47* (5.98)
Parents with any PSE (Non-FGF)	41.82	44.00	-2.19 (6.67)	42.92	48.07	-5.15 (6.32)
Boys	26.78	23.05	3.73 (6.68)	28.56	22.34	6.22 (6.13)
Girls	41.14	45.74	-4.60 (6.18)	38.90	43.67	-4.77 (7.37)
Enrolled to college						
All	42.79	41.82	0.97 (4.88)	24.35	24.32	0.04 (4.29)
LILE	43.86	42.03	1.83 (5.31)	26.68	24.79	1.89 (4.74)
Parents with High School or Less (FGF)	44.22	42.36	1.86 (7.14)	25.05	27.64	-2.59 (7.73)
Parents with any PSE (Non-FGF)	44.45	36.81	7.65 (7.24)	21.64	23.94	-2.30 (6.48)
Boys	40.07	46.81	-6.74 (8.18)	26.72	24.29	2.43 (6.28)
Girls	46.97	36.07	10.90 (7.09)	19.92	26.48	-6.56 (6.53)

Continued on next page

Table A2.6: Incremental Impact of LA on PSE Enrolment by Type of Institution (Continued)

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	EYH Group	Impact (s.e.)	EYHLA Group	EYH Group	Impact (s.e.)
Enrolled to private college or vocational institute						
All	10.72	10.25	0.47 (3.24)	19.11	14.20	4.92 (3.93)
LILE	12.58	8.59	3.99 (3.60)	18.02	14.65	3.37 (4.27)
Parents with High School or Less (FGF)	11.28	10.14	1.14 (4.34)	21.03	16.54	4.50 (5.96)
Parents with any PSE (Non-FGF)	10.39	10.03	0.36 (4.75)	18.00	11.33	6.67 (5.99)
Boys	9.27	8.39	0.88 (4.52)	13.07	11.22	1.85 (5.59)
Girls	11.86	12.05	-0.19 (4.93)	25.94	16.53	9.41 (7.07)
Enrolled to be apprentice						
All	3.02	2.52	0.50 (1.58)	1.65	2.96	-1.31 (1.70)
LILE	3.04	2.28	0.75 (1.69)	1.35	3.18	-1.83 (1.94)
Parents with High School or Less (FGF)	2.87	2.47	0.40 (2.32)	0.37	1.98	-1.62 (2.03)
Parents with any PSE (Non-FGF)	3.48	2.14	1.34 (3.04)	3.72	2.75	0.97 (2.93)
Boys	5.49	6.58	-1.09 (3.81)	3.14	5.10	-1.95 (3.70)
Girls	0.00	0.00	0.00 (0.00)	0.25	0.79	-0.55 (1.03)
Sample Size	244	234		234	181	

Source: FTD 66-month survey, FTD 66-month proxy survey, and FTD administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table A2.7: Incremental Impact of LA on PSE Applications

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	EYH Group	Impact (s.e.)	EYHLA Group	EYH Group	Impact (s.e.)
PSE applications (%)						
All	77.47	79.84	-2.37 (3.81)	77.98	71.31	6.67* (3.54)
LILE	78.52	77.69	0.82 (4.44)	76.27	68.65	7.62* (4.37)
Parents with High School or Less (FGF)	79.45	77.09	2.36 (6.17)	72.62	64.03	8.59 (7.38)
Parents with any PSE (Non-FGF)	76.41	81.75	-5.33 (6.21)	82.77	77.61	5.16 (5.45)
Boys	71.05	72.51	-1.46 (7.13)	72.44	63.84	8.59 (6.44)
Girls	82.19	87.36	-5.18 (4.87)	81.97	80.45	1.52 (5.70)
Sample Size	241	187		232	174	

Source: FTD 66-month survey and FTD 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table A2.8: Incremental Impact of LA on PSE Applications by Type of Institution

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	EYH Group	Impact (s.e.)	EYHLA Group	EYH Group	Impact (s.e.)
Applied to university						
All	35.03	36.67	-1.64 (4.02)	36.61	34.52	2.09 (4.01)
LILE	28.90	33.85	-4.94 (4.16)	31.80	29.42	2.37 (4.69)
Parents with High School or Less (FGF)	28.06	28.76	-0.71 (5.27)	24.13	15.04	9.08 (6.34)
Parents with any PSE (Non-FGF)	42.90	44.79	-1.89 (6.71)	47.99	50.92	-2.93 (6.74)
Boys	27.20	27.60	-0.40 (6.90)	31.84	22.53	9.31 (6.72)
Girls	41.92	44.63	-2.72 (5.82)	41.89	45.11	-3.22 (7.33)
Applied to college						
All	40.19	40.72	-0.52 (4.86)	31.92	30.43	1.48 (4.39)
LILE	45.96	42.31	3.66 (5.38)	34.26	30.32	3.94 (5.08)
Parents with High School or Less (FGF)	45.52	46.46	-0.94 (7.50)	31.64	36.21	-4.57 (7.72)
Parents with any PSE (Non-FGF)	35.34	33.25	2.09 (7.72)	30.62	27.67	2.95 (7.24)
Boys	40.06	40.65	-0.59 (7.72)	33.97	32.80	1.17 (7.44)
Girls	40.20	40.92	-0.72 (7.56)	27.20	31.31	-4.11 (7.01)

Continued on next page

Table A2.8: Incremental Impact of LA on PSE Applications by Type of Institution (Continued)

	New Brunswick					
	Fr-LA-Eligible			En-LA-Eligible		
	EYHLA Group	EYH Group	Impact (s.e.)	EYHLA Group	EYH Group	Impact (s.e.)
Applied to private college or vocational institute						
All	10.66	11.93	-1.28 (3.33)	22.54	14.78	7.76* (4.04)
LILE	12.42	10.11	2.32 (3.71)	22.20	15.27	6.93 (4.51)
Parents with High School or Less (FGF)	12.45	11.82	0.63 (4.76)	26.44	18.10	8.35 (6.39)
Parents with any PSE (Non-FGF)	9.77	10.78	-1.01 (4.68)	19.39	11.39	8.00 (6.06)
Boys	9.39	8.32	1.07 (4.40)	16.55	10.95	5.60 (5.59)
Girls	12.33	14.25	-1.92 (5.00)	28.74	18.58	10.16 (7.44)
Applied to be apprentice						
All	4.43	3.39	1.04 (1.77)	3.65	3.75	-0.10 (2.14)
LILE	4.85	3.39	1.47 (2.10)	3.74	4.19	-0.45 (2.55)
Parents with High School or Less (FGF)	3.95	3.19	0.76 (2.56)	2.90	3.50	-0.60 (2.76)
Parents with any PSE (Non-FGF)	5.11	3.33	1.78 (3.39)	5.52	2.53	3.00 (3.18)
Boys	7.71	9.55	-1.84 (4.11)	7.39	6.17	1.22 (4.77)
Girls	0.00	0.00	0.00 (0.00)	0.16	0.89	-0.73 (1.10)
Sample Size	241	232		232	174	

Source: FTD 66-month survey and FTD 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table A2.9: Impact of *EYH* versus *LA* on PSE Enrolment

	New Brunswick					
	Fr- <i>LA</i> -Eligible			En- <i>LA</i> -Eligible		
	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)
Enrolled in PSE institution (%)						
All	76.41	77.66	-1.24 (3.78)	67.20	68.34	-1.14 (4.53)
LILE	73.98	77.29	-3.30 (4.44)	63.37	66.78	-3.41 (5.17)
Parents with High School or Less (FGF)	70.99	69.74	1.26 (6.30)	58.87	59.57	-0.71 (7.06)
Parents with any PSE (Non-FGF)	80.23	87.71	-7.48 (5.46)	73.25	75.77	-2.52 (5.70)
Boys	72.90	70.33	2.57 (7.37)	61.56	56.56	5.00 (8.09)
Girls	79.97	83.13	-3.16 (5.02)	74.75	75.55	-0.80 (5.75)
Sample Size	190	247		186	240	

Source: *FTD* 66-month survey, *FTD* 66-month proxy survey, and *FTD* administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table A2.10: Impact of *EYH* versus *LA* on PSE Enrolment by Type of Institution

	New Brunswick					
	Fr- <i>LA</i> -Eligible			En- <i>LA</i> -Eligible		
	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)
Enrolled to university						
All	37.77	31.58	6.19 (4.25)	35.31	26.10	9.21** (4.11)
LILE	33.59	27.04	6.55 (4.88)	31.27	22.68	8.59* (4.83)
Parents with High School or Less (FGF)	29.00	23.92	5.07 (6.52)	19.12	24.03	-4.91 (6.53)
Parents with any PSE (Non-FGF)	46.39	40.63	5.76 (6.27)	48.66	27.53	21.14*** (6.07)
Boys	27.37	19.01	8.36 (6.17)	26.45	10.88	15.57*** (5.64)
Girls	46.95	41.48	5.47 (5.98)	40.67	39.68	0.99 (6.48)
Enrolled to college						
All	40.88	48.50	-7.62 (4.92)	23.80	33.16	-9.36** (4.23)
LILE	40.46	52.07	-11.61** (5.24)	23.64	33.13	-9.49** (4.68)
Parents with High School or Less (FGF)	40.75	46.46	-5.71 (6.78)	24.49	29.49	-5.00 (6.90)
Parents with any PSE (Non-FGF)	38.97	52.04	-13.06* (7.82)	22.60	36.46	-13.85** (6.52)
Boys	49.06	53.38	-4.32 (8.76)	23.94	33.87	-9.93 (6.78)
Girls	36.63	42.67	-6.04 (7.36)	24.67	31.90	-7.23 (7.01)

Continued on next page

Table A2.10: Impact of *EYH* versus *LA* on PSE Enrolment by Type of Institution (Continued)

	New Brunswick					
	Fr- <i>LA</i> -Eligible			En- <i>LA</i> -Eligible		
	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)
Enrolled to private college or vocational institute						
All	10.40	7.61	2.79 (2.77)	15.04	17.03	-1.98 (3.99)
LILE	9.67	7.86	1.82 (3.08)	14.68	18.09	-3.42 (4.40)
Parents with High School or Less (FGF)	9.98	8.87	1.11 (4.14)	20.49	10.40	10.09 (6.80)
Parents with any PSE (Non-FGF)	10.09	6.90	3.19 (4.11)	10.69	22.02	-11.32** (5.61)
Boys	9.67	2.66	7.01** (3.52)	12.58	13.43	-0.85 (5.91)
Girls	8.96	13.40	-4.43 (4.40)	20.82	17.31	3.52 (5.96)
Enrolled to be apprentice						
All	2.24	4.45	-2.21 (1.83)	3.31	3.94	-0.63 (1.90)
LILE	2.30	4.88	-2.58 (1.98)	3.34	4.06	-0.71 (2.05)
Parents with High School or Less (FGF)	2.13	3.96	-1.82 (2.61)	1.81	3.45	-1.64 (2.38)
Parents with any PSE (Non-FGF)	3.17	4.38	-1.21 (2.54)	4.05	4.70	-0.65 (3.05)
Boys	5.36	8.61	-3.25 (4.67)	6.78	7.23	-0.45 (5.05)
Girls	0.47	0.39	0.08 (0.65)	0.66	1.05	-0.39 (1.22)
Sample Size	190	246		181	238	

Source: *FTD* 66-month survey, *FTD* 66-month proxy survey, and *FTD* administrative data.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

The story is virtually identical for PSE applications. No differential impacts were registered in either sector when all levels of study are considered together (Table A2.11). However, college application rates were raised by *EYH* (overall, and among the LILE and non-FGF sub-groups in

both sectors, Table A2.12). Differential impacts also occurred for some groups at the university and private college/vocational institute level among Anglophone students, but they tended to vary in direction.

Table A2.11: Impact of *EYH* versus *LA* on PSE Applications

	New Brunswick					
	Fr- <i>LA</i> -Eligible			En- <i>LA</i> -Eligible		
	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)
PSE applications (%)						
All	80.29	82.24	-1.95 (3.58)	73.34	76.99	-3.64 (4.17)
LILE	77.61	82.47	-4.86 (4.26)	71.39	75.24	-3.85 (5.08)
Parents with High School or Less (FGF)	76.26	76.02	0.24 (6.13)	68.05	72.20	-4.15 (7.03)
Parents with any PSE (Non-FGF)	84.21	89.00	-4.79 (5.25)	76.97	81.14	-4.17 (5.63)
Boys	74.97	76.36	-1.39 (6.55)	68.86	66.87	1.99 (8.01)
Girls	84.72	87.05	-2.33 (4.61)	78.95	83.61	-4.66 (5.54)
Sample Size	187	243		174	233	

Source: *FTD* 66-month survey and *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

Table A2.12: Impact of *EYH* versus *LA* on PSE Applications by Type of Institution

	New Brunswick					
	Fr- <i>LA</i> -Eligible			En- <i>LA</i> -Eligible		
	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)
Applied to university						
All	39.70	34.47	5.23 (4.22)	35.68	31.30	4.38 (4.29)
LILE	36.38	30.80	5.58 (4.75)	31.44	27.03	4.41 (4.87)
Parents with High School or Less (FGF)	31.42	25.84	5.58 (6.31)	16.76	29.63	-12.87* (6.60)
Parents with any PSE (Non-FGF)	46.90	44.81	2.08 (6.75)	49.71	33.54	16.17** (6.49)
Boys	32.49	21.75	10.74* (6.26)	27.58	15.23	12.36* (6.90)
Girls	46.58	44.35	2.23 (5.99)	40.46	45.29	-4.83 (6.60)

Continued on next page

Table A2.12: Impact of *EYH* versus *LA* on PSE Applications by Type of Institution (Continued)

	New Brunswick					
	Fr- <i>LA</i> -Eligible			En- <i>LA</i> -Eligible		
	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)	<i>EYH</i> Group	<i>LA</i> Group	Impact (s.e.)
Applied to college						
All	38.53	47.72	-9.19** (4.60)	30.35	40.86	-10.51** (4.52)
LILE	39.55	51.43	-11.87** (5.03)	30.87	42.38	-11.50** (4.93)
Parents with High School or Less (FGF)	44.01	47.56	-3.55 (7.26)	34.34	39.82	-5.48 (7.17)
Parents with any PSE (Non-FGF)	32.39	47.66	-15.27** (7.61)	26.56	42.05	-15.49** (7.06)
Boys	43.23	52.28	-9.05 (7.66)	33.09	39.47	-6.37 (7.67)
Girls	36.78	42.27	-5.49 (7.12)	29.76	40.62	-10.87 (7.25)
Applied to private college or vocational institute						
All	12.08	9.22	2.86 (3.08)	15.46	21.93	-6.47 (4.24)
LILE	11.16	8.79	2.37 (3.47)	15.30	23.22	-7.92* (4.66)
Parents with High School or Less (FGF)	12.56	9.35	3.21 (4.70)	20.54	17.80	2.74 (7.02)
Parents with any PSE (Non-FGF)	11.13	9.37	1.75 (4.38)	10.28	25.86	-15.58*** (5.99)
Boys	9.66	4.53	5.13 (3.69)	12.22	18.79	-6.58 (6.21)
Girls	11.92	14.88	-2.96 (4.80)	22.11	21.71	0.41 (6.14)
Applied to be apprentice						
All	2.85	6.04	-3.18 (2.09)	4.12	4.67	-0.54 (2.12)
LILE	2.93	6.96	-4.03* (2.42)	4.32	3.93	0.39 (2.29)
Parents with High School or Less (FGF)	2.23	4.75	-2.53 (2.76)	3.46	3.30	0.16 (2.98)
Parents with any PSE (Non-FGF)	4.24	6.85	-2.61 (3.23)	3.70	6.40	-2.71 (3.19)
Boys	6.69	12.06	-5.37 (5.24)	7.14	10.05	-2.91 (5.63)
Girls	0.51	0.36	0.15 (0.67)	0.63	1.08	-0.45 (1.23)
Sample Size	187	243		174	233	

Source: *FTD* 66-month survey and *FTD* 66-month proxy survey.

Notes: Estimates regression adjusted.

Sample sizes vary for individual measures because of missing values.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

Rounding may cause slight discrepancies in sums and differences.

APPENDIX 3:

Impacts of *Explore Your Horizons* and *Learning Accounts* on PSE Enrolment by Month

This Appendix provides estimates of *Future to Discover's* interventions' principal impacts of interest — enrolment in a post-secondary program — by month since random assignment (just prior to the commencement of Grade 10). The data used are the same as for the cumulative outcomes reported in Chapters 4 through 6: survey and administrative data, and the methods used to derive each month impact are the same: regression-adjusted impact estimates of enrolment levels in each month.

The estimates are presented in graphical form to illustrate the pattern of enrolment over time. Typically there is zero or very low enrolment in post-secondary education during the three years of secondary education in Grade 10, 11, and 12. Then substantial proportions of the sample move into post-secondary education in month 36 or 37. Each chart shows this pattern for program group and equivalent control group members separately and provides the difference between the enrolment rates in each month as the impact on PSE enrolment in each month as a third line. The patterns of impacts vary by sample and intervention under test, over the remaining 26 months of observation period. The charts cannot continue beyond month 62 due to a lack of data collected beyond that point.

There are some common features in the charts, including the cyclical pattern of enrolment — with the departures of those ending their program in April/May producing drops in monthly enrolment over the summer months. Typically in these charts, the program group line is at or above the comparison group line, indicating either positive effect or no effect of the program on enrolment in most months following Grade 12. It is worth noting that statistical tests are not shown. Some of the largest monthly impacts are seen for New Brunswick francophone students. With the passage of time, the lines appear to converge for some samples indicating a declining impact, or "control group catch up," (e.g., Manitoba) and even to diverge for other samples.

The charts report a measure that conflates access to and persistence in post-secondary education, and so are not included in the main chapters. If the data collection continued, it could be possible to consider impacts on measures of post-secondary completion such as credentials obtained, but the observation period is curtailed too early for reliable measures of program completion to be compiled.

Proportion Enrolled In Post-secondary Education up to 62 Months After Random Assignment

Figure A3.1: Post-secondary Enrolment by Month: Manitoba Participants in *Explore Your Horizons* and Comparison Group

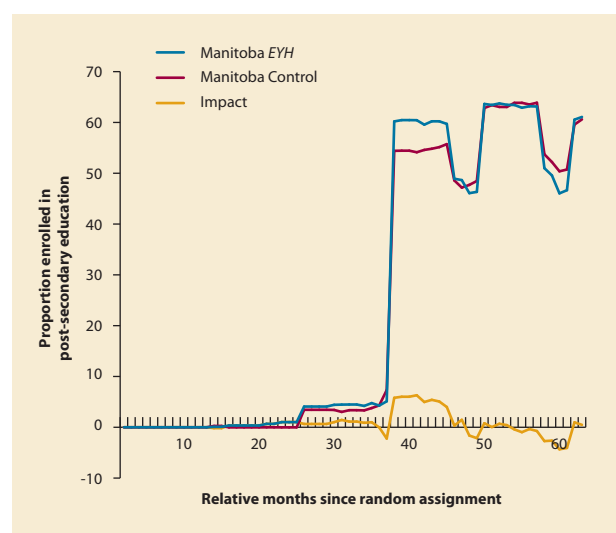


Figure A3.2: Post-secondary Enrolment by Month: New Brunswick Francophone Participants from Lower-income Families, in *Explore Your Horizons* and Comparison Group

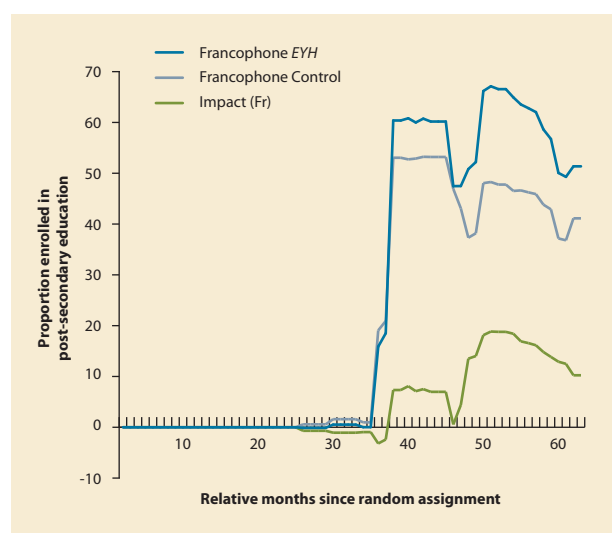


Figure A3.3: Post-secondary Enrolment by Month: New Brunswick Anglophone Participants from Lower-income Families, in *Explore Your Horizons* and Comparison Group

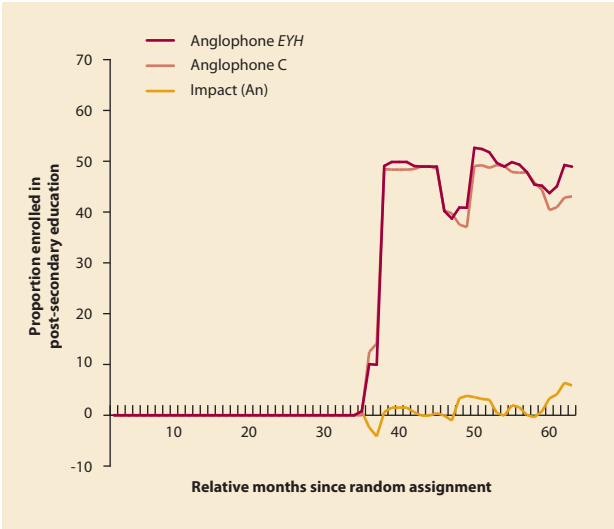


Figure A3.4: Post-secondary Enrolment by Month: New Brunswick Francophone Participants from Lower-income Families, in *Learning Accounts* and Comparison Group

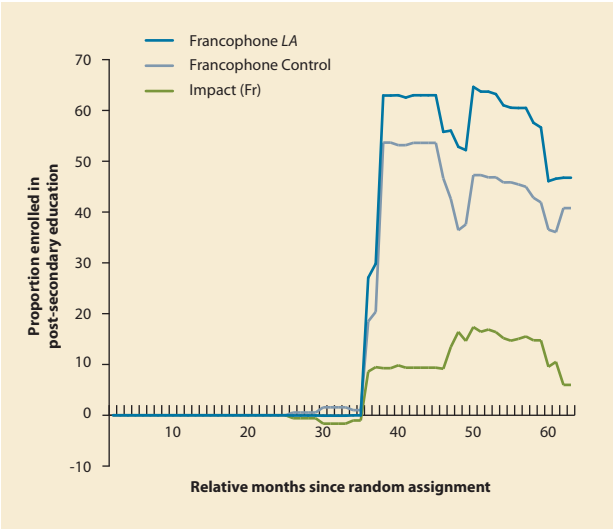


Figure A3.5: Post-secondary Enrolment by Month: New Brunswick Anglophone Participants from Lower-income Families, in *Learning Accounts* and Comparison Group

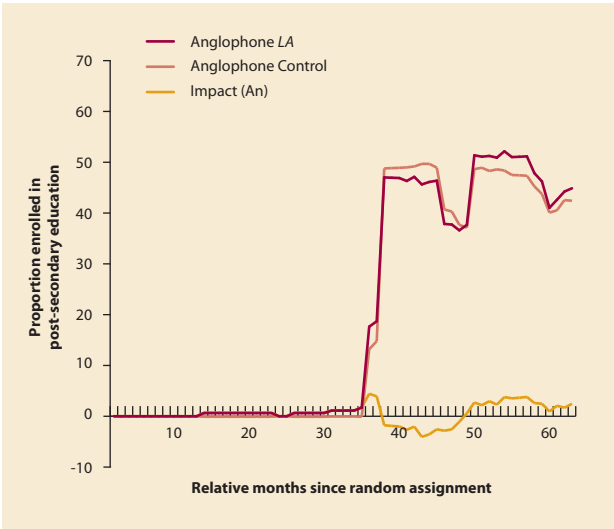
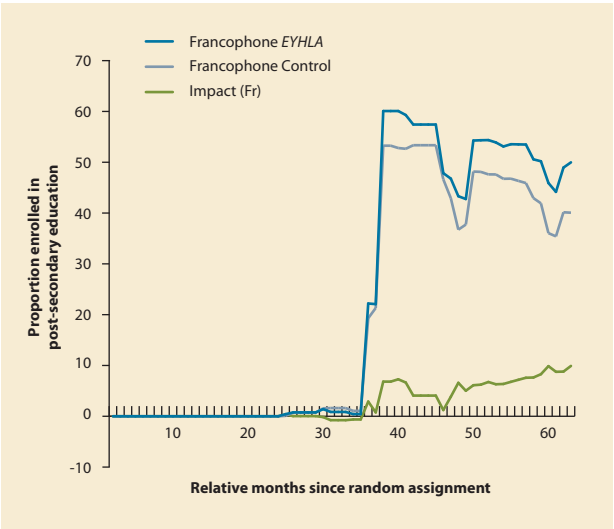
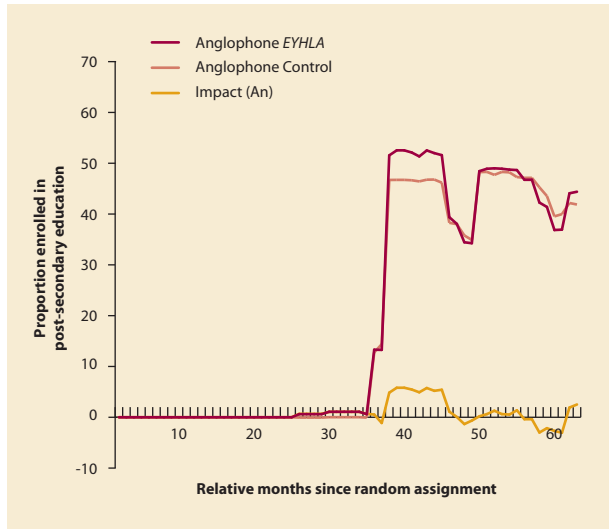


Figure A3.6: Post-secondary Enrolment by Month: New Brunswick Francophone Participants from Lower-income Families, in *Explore Your Horizons plus Learning Accounts* and Comparison Group





APPENDIX 4:

The Role of *Future To Discover's* Interventions in Students' Decision-making — Lessons Learned from the National Longitudinal Panel Study

INTRODUCTION

Future to Discover (FTD) tests interventions intended to alter students' decision-making through their high school years. This appendix draws on results from a special additional study among high school students to shed more light on their process of decision-making to help explain the pattern of impacts seen from different early high school interventions. This unique National Longitudinal Panel Study involves a subset of students taking part in the FTD and *British Columbia Advancement via Individual Determination* (BC AVID) Pilot Projects. The main objective of the National Longitudinal Panel (NLP) study was to collect qualitative data to explain how students across Canada discover and assess their post-secondary options during their time in high school and make their choices and plans for post-secondary education (PSE). The focus of the study is on students within the lower-income-lower-parental education (LILE) target group (the group whose behaviour was anticipated to be most often affected by FTD-type interventions) to help explain the pattern of post-secondary impacts observed in the FTD Pilot Project, and to identify possible program enhancements or alternatives for further investigation.

SUMMARY OF FINDINGS

- **High school students in the targeted groups tended to discuss their lives in terms of stark trade-offs between available options fulfilling quite different objectives.** Many were influenced by their current activities and most immediate needs. Nonetheless they recognized that the decisions they made now had an impact on their future available options.
- **Virtually all students saw post-secondary education somewhere in their future.** Preferences expressed early (for example, in Grade 10) were rarely realized within the period observed during the study, which followed students only to their first post-secondary year.
- **Students did often report decision-making with respect to post-secondary education to be in a sufficient state of flux to be open to influence by *Explore Your Horizons*.** The National Longitudinal Panel study included students who felt that *Explore Your Horizons* did make a difference to their future orientation and planning. But others faced current or imminent life barriers that they felt prevented them from immediate transition to post-secondary education or already held quite mature career plans involving post-secondary education.

- ***Explore Your Horizons* and *Learning Accounts* offer programming which appears to fill a "gap" in some of the interviewed students' decision-making needs.** Students were in many cases apprehensive about financing their post-secondary study, fearful of the post-secondary transition and felt they were under-informed in some key decisions, such as those regarding courses and what to do once they had completed high school.

METHOD

The National Longitudinal Panel was established to learn more about how students who may be the target for future programming of the type tested by FTD normally make decisions about whether or not to access post-secondary education. With this goal in mind, control group members and students in British Columbia (not exposed to the FTD interventions) were included in the study as well as EYH program group members. This meant that the programs themselves were not introduced directly, rather students were encouraged to focus on the needs they felt they had in making satisfactory decisions about their futures and to review the resources they had to draw upon and those they might wish for. In these discussions, program group members would be expected to position their experience of EYH alongside the range of alternative influences on their decisions. In this way the study designers hoped to understand the complexity of the decision-making environment in which the interventions were being introduced and their interactions with other influences on students' future planning.

Participants

FTD and BC AVID schools were selected based on language-sector, number of participants, available numbers within each subgroup of interest to the study, and geographical accessibility. An amply large group was initially sought to allow the selection of three suitable students with chiefly LILE characteristics from each school. Once schools were identified, 36 students (12 per province) were chosen for the first of three panel waves, identified from among the respondents to the FTD New Brunswick (NB) Cohort 2 (C2), Manitoba (MB) and BC AVID Cohort 1 (C1) baseline surveys.⁵⁹

When a student was unable to attend an interview, or wished to withdraw from the NLP, a replacement with similar characteristics was selected from a "top up" sample so at any time over the four years of the study there would be at least 36 students currently participating.⁶⁰ Maintaining the initial NLP study target sample over time was not fully achieved. In total, 49 *different* students participated, although only those who took part in at least two consecutive interviews were

59 Within each province students were assigned to four groups of three (called triads). The composition of each was homogenous with respect to sector (i.e., equal representation in NB of English and French students) and program membership (each triad comprised FTD program participants only, FTD comparison group-members only, BC AVID program group members only, or BC AVID comparison group members only). Within each "homogenous" triad, males and females, a mixture of demographics with emphasis on LILE, and a range of school-related behaviours and beliefs were sought.

60 There is no specific gain to the analysis arising from statistical representativeness over time. Such representativeness is impossible to achieve in a small group and not required for gaining an in-depth knowledge of how individuals decide what to do in their futures (e.g., Molloy, Woodfield & Bacon, 2002).

included in the final analysis sample: 14 from NB — 7 Anglophone; 7 Francophone — 11 from MB and 12 from BC, for an analytical sample size of 37.

Interview Protocols and Projective Techniques

Interview protocols were used to guide the interviews with *FTD* and *BCAVID* students. Each covered topics such as high school life, key influences, family and peer attitudes toward PSE, and participants' decision-making and planning with respect to life after high school. NLP study questions were tailored to grade and students' anticipated stage of career education development. Games, projective techniques and probes were used to enhance interest, promote a deeper understanding of sensitive issues that youth might find awkward to disclose or articulate and to encourage communication on rationales.

Study Implementation

Recruitment of *FTD* Wave 1 panel students began in January 2006. Each group of three students met in-person with an SRDC researcher for a 1.5 to 2 hour depth interview on school property. Careful planning allowed sessions to take place immediately after the students' last class.

NLP study interviews were conducted in the spring (April–June) of 2006, 2007 and 2008 for *FTD* and 2007, 2008, and 2009 for *BCAVID* (i.e., Grade 10, Grade 11 and Grade 12). Telephone follow-up interviews with *FTD* panel participants took place in the spring of 2009 and with *BCAVID* panel participants in the spring of 2010. Monetary incentives were offered to students throughout the NLP study to encourage attendance and maintain the sample size over time. A total of 36 recorded “triadic” interviews (i.e., four interviews per province with three students, over three waves) were transcribed and analyzed.⁶¹

STUDY FINDINGS ON STUDENT DECISION-MAKING

As expected, considerable information emerged from students' discussions in the NLP study.⁶² Here a very brief summary is presented drawing from the study findings on: the strategies that students reported using to make their decisions; factors that seemed to influence those decisions; and how well the students were able to put their decisions into action.

Students' Decision-making Strategies

NLP study participants used various strategies for making their decisions, such as: analysing the resources they would need to invest for a particular possible outcome; considering what would make the people they cared for the happiest; the “lesser of two evils” approach, and choosing the least risky of two or more career education alternatives. Participants reported regularly employing a decision-making tactic that involved a trade-off between potential future gains and instant rewards, for example,

[...I've decided to make] lots of money, get a full-time job [...] I'm not going to college [...] I've said marine diesel mechanic [...] but ... it takes quite a while to do [...] you got to go out west and do job trainings and then go back to school for a year and then do something and then go back to school again [...].

It was common for the interviewed students in Grades 10 and 11 to report putting off making firm PSE decisions until Grade 12, though some still felt undecided on what to pursue even then.

Factors that Influence Students' Decisions

Numerous factors influenced the decisions that students made over time. Most referred to “family” as a major influence on their decisions about PSE and career, including circumstances to avoid. Nearly all students were busy with social events, organized activities and employment, which for some had a direct bearing on the *day-to-day* decisions they were making in connection with academic life (e.g., choosing not to do their homework in order to catch up on sleep). LILE participants especially perceived fewer options for supporting themselves after high school and financing their PSE than non-LILE participants, and this had a direct effect on some of the decisions this group was making. Other students struggled with ongoing procrastination, disorganization, low motivation, confusion, and fear in connection with final decision-making about life after high school. A few students also muddled through unexpected and important life circumstances, sometimes referred to as “chance” events,⁶³ such as ill health, which in turn influenced some of the career education decisions they were making in high school.

Students' Abilities to Act on Their Decisions

NLP study participants commonly aspired to pursue some form of PSE at some point in the future. It was not common for participants to report enrolling in the PSE program they had aspired to enrol in during Grades 10 and 11, due to the evolving nature of their career education plans over time. When nearing the end of Grade 12, decisions made only recently in connection with post-secondary life seemed more pertinent. Regardless of Grade, participants had the capacity to make decisions about life after high school and by the time of the NLP study telephone follow-up survey (a year after graduation), a little over half of them had successfully enrolled in a PSE program either full or part-time (this was most common among students in BC, followed by NB Francophone students). There were cases of male NLP students with experience of the trades who had decided to pursue this type of occupation before and/or immediately after the completion of high school ended up in a corresponding line of work.

61 Data were entered into the QSR's NVivo 7 computer software program in simple text format, plus 33 individual telephone follow-up survey summaries. Data were reduced into manageable portions and compared with data on the same students from other sources, including baseline, and Grade 12 survey data.

62 This discussion presents the subset of NLP findings most pertinent to the purposes of the present report.

63 See Bright, Pryor & Harpham (2005), and Hirschi (2010).

DO NLP RESPONDENTS' EXPERIENCES SUGGEST EXPLORE YOUR HORIZONS IS NEEDED?

This section extracts the main findings on NLP study participants' experiences with *Explore Your Horizons*, including barriers that the program may help high school students overcome, such as those relating to cognitive perspective, misperceptions on various topics related to school and career and feelings of apprehension, confusion, and disorganization. It also offers some insight into why some program participants did not attend one or more EYH sessions.

During NLP study discussions, a number of participants revealed needs for career education of the kind that EYH delivers. For instance, EYH appeared to help some students map out personally suitable PSE and career scenarios by providing different resources and activities, an opportunity they said was not typically afforded to them by infrequent one-to-one meetings with school guidance counselors. In the following examples, a few students participating in the program spoke about the helpfulness of EYH features:

[...] it made you actually think instead of just saying, "Oh this would be better for me"...they'd give you examples [...] they gave you choices on resources...it was helpful;

[...] the school guidance counselor can orient you toward a course you might like, but they don't know your values, your qualities, what you like, while FTD helps you to find that [out].

There were cases of New Brunswick Francophone and MB students *not* participating in EYH who expressed specific interest in receiving a greater variety of career education information and guidance to facilitate their transition to life beyond high school (features offered through EYH programming):

[...] put more stands in the student centre; it's always the same [information], the [-name of university here-], the army, hairdressing...;

I had to do pretty much everything on my own and it was very difficult having no idea what to do in the first place and no one to help me. No one in my family has ever gone to university [...] so I couldn't really ask them and school was already over by the time I should have applied for the student loan. I couldn't get my guidance counsellor to help me [...] he was busy all the time [...] so it was very hard to get in to see him .

It is important to note that when some of these students touched upon these topics during NLP discussions they revealed a specific appreciation of the role of accurate and timely information and guidance on the appropriate selection of high school courses that would better prepare

them for a preferred PSE program/career. Here is an example of how one program student might have especially benefited from more accurate information regarding which high school credits to achieve:

I got rejected...I was going to go to [local college] but they said "no"... I have to come back [to high school] and upgrade 'cause [local college] said I need two arts courses...I have to apply again... ;

During the telephone follow-up survey, the student further explained:

I met with [...] the guidance counselor, and I just went over what I had and she said "yeah...if you get everything" – which I did – "then [you] should have enough" [to get into the PSE program...that] kind of screwed me over [...] I took a couple automotive classes I didn't really need [...] fillers 'cause I got all my academic courses in Grade 11 and alls I had to take was Biology in Grade 12, so I got all those and I could've dropped one [to] get something else ...if I knew I wasn't going to get in [to local college] .

Different barriers to effective PSE decision-making were revealed during NLP study discussions, many of the kind that EYH might help high school students overcome. One specific barrier concerns students' cognitive perspective. NLP participants would readily admit that they were not thinking about their futures or making important decisions about post-secondary life during the early stages of high school. An observed benefit of EYH is that it appeared to kick-start program group students' thinking and planning for their futures, thereby elongating their future time perspectives.⁶⁴ It achieved this by supporting students' planning and decision-making efforts early on in high school, by providing ample opportunity for students to employ and hone such planning skills and thereby gain confidence in the decisions they were making over time. One participant who had successfully enrolled in a PSE program by the end of the NLP study reflected on this particular EYH feature:

[...EYH] helped 'cause it got me thinking about it more, 'cause otherwise I would have just been like "oh, I've got enough time, I don't have to think about this now"; [... EYH] actually got me more aware that you should be thinking about school and you should be deciding what you're doing at an earlier stage [...] I was like, "Uh, well, I don't know what I'm going to be doing, I don't know what interests me" ...a lot of people did know what they were doing so that made me think I should be thinking of it too, which did help [...] we did a lot of worksheets [...] planning out things [...] to get me thinking or get me prepared and on the right track of what I wanted to do...I think this was a really good program .

64 An elongated future time perspective is when individuals hold an orientation toward the future, resulting in enhanced drive and accomplishment, and longer-term goals (e.g., four years or more into the future) when compared to individuals who do not extend themselves as far into their futures (e.g., Lens & Moreas, 1994). For example, some students felt daunted by the need to simultaneously generate for the first time a career education plan and then apply for a particular PSE program in addition to maintaining their high school studies.

A different impediment to effective decision-making that *EYH* could help students overcome was posed by misperceptions on various topics related to school and career. In the following example, a student explains how *EYH*'s Post-secondary Ambassadors helped to correct a misperception about a specific high school course that was critical for this individual's preferred career pathway:

[If it wasn't for EYH, I wouldn't have taken] the family studies class [...] I always thought [of...] family studies as Sex Ed. or taking home one of those electronic babies and staying up all night because it would be crying, and that never really interested me [...]. Once I found out that it would probably be something good for me to take if I wanted to work with kids [...] it was more than what I thought it was [...] it was the Ambassadors [...] who helped me with it .

Other decision-making difficulties that *EYH* might help high school students overcome included: confusion about what to do after high school; feeling disorganized, and/or overwhelmed with taking on new tasks;⁶⁵ and not having a "Plan B" firmly in place.

Given potential interest in the assistance *EYH* might offer, the question arises why program participants did not attend more frequently. The NLP points to a few key reasons why *EYH* might not reach its intended participants. Firstly, NLP participants in the program were often simply not engaged because they were contending with larger issues, such as inadequate motivation and significant life events that made it difficult for them to focus on making sound decisions about PSE and career during *EYH* workshops. The following example illustrates how, despite the program's usefulness, loss of motivation and personal circumstances could quickly derail an individual's efforts to plan and achieve:

[EYH...] did [make a difference, but I] lost interest in a way after awhile. [...In the beginning, the program had] inspired me to try to go to school [...] I wanted to go to school...work hard [...] some personal...stuff that happened pretty much kind of stopped it...it was just my personal circumstances .

In addition, some participants admitted that they did not attend the *EYH* sessions as often as they might have for various other reasons. Below are two examples:

[...] when you talk 'education' and this 'FTD' thing [with your friends], they all think that you're retarded [...] they all say they're not going...there's only been one of my friends [...] that actually say that they're going to go [...] all the other ones just think that I'm stupid for coming to this ;

The first two years I regularly went but the last year I have no idea; I was very busy and involved in everything (e.g., student council).

Finally, *EYH* might not have been equally valuable to all potential participants. *FTD* NLP study results suggest that regardless of parental income and/or education status, NLP participants who were decided on a well-suited career in Grade 10 or 11 might not have benefitted from the program as much as NLP participants who were not thinking of, or who were less decisive about, what to pursue after high school. In other words, high school students who demonstrated career maturity were likely to follow their PSE and career aspirations with or without the help of *EYH*.⁶⁶

DO NLP RESPONDENTS' EXPERIENCES IMPLY LEARNING ACCOUNTS IS NEEDED?

This section extracts the main findings of *Learning Accounts*-eligible NLP study participants. It examines the degree to which students' high school experiences signify the extent to which a program like *LA* might be effective, and barriers this type of programming might help students overcome.

Four of 16 *LA*-eligible or lower-income *FTD* NLP participants had completed high school and were successfully enrolled in a PSE program by the time of the NLP telephone follow-up interview.⁶⁷ Several students seemed to perceive a narrower range of options for supporting themselves and financing their PSE after high school than the generally higher-income *BC AVID* NLP participants. Specifically, compared to *BC AVID* NLP participants, lower-income *FTD* NLP students were less likely to report: being able to rely on their parents/guardians to set aside money for their PSE and related expenses; having sufficient money saved for PSE through part-time employment for various reasons (unemployment; obligatory contribution of savings to household expenses; spending an entire pay cheque on social activities); wishing to take out a student loan (mostly to avoid debt and high interest rates); and achieving sufficient grades to warrant a grant/scholarship.

65 For example, some students felt daunted by the need to simultaneously generate for the first time a career education plan and then apply for a particular PSE program in addition to maintaining their high school studies.

66 Career maturity is the ability to make career choices, knowing what is required to make suitable decisions about a career and the extent to which choices are realistic and consistent over time (Crites, 1978).

67 Most *FTD* NLP participants met the targeted lower-income plus lower-education criteria (LILE) — 64 per cent. The remaining *FTD* NLP participants fell into a higher-income category while retaining their lower parental education status (i.e., all *FTD* NLP students came from lower-parental education households). It is important to note that some of those falling in this latter category reported lower-income; however, they did not provide income tax records at the time of the baseline survey to substantiate their income reports and thus were categorized as higher-income in line with specified project parameters.

During NLP study discussions, some NLP study participants reported circumstances unfavourable to PSE planning that could have been ameliorated by an early guarantee of grant aid of the kind that LA offers. For example, though aware of her/his financial situation early on in high school (and possibly uninformed about other financial aid options), one lower-income participant decided that pursuing PSE was not viable without monetary assistance from family members:

I realized that none of my family really ha [d] money {laughing}, I guess I already knew, but I mean...I felt they'd end up saving money, but...nobody did.

During the telephone follow-up survey, the participant was asked the question, "Thinking back over the past few years what do you think was the hardest decision you have ever made regarding what to do after high school?" Once s/he had realized there was no way to finance her/his PSE, making the decision to take a year off after high school to save money had been a tough one for this student who reported that "money" had been the biggest influence when it came to making decisions about what to do after her/his secondary studies. This particular student might possibly have planned for, and pursued PSE directly after high school had s/he received the early promise of grant aid of the sort that LA offers.

Another lower-income participant who was cognizant of her/his income status in high school (and the possible limitations it imposed) who nevertheless wished to pursue some form of PSE, felt that securing financial support from various non-family sources was the only option to fund her/his PSE studies:

I was thinking mainly about loans and bursaries...my family [doesn't] have the money; it's too much [and], so I have to help myself.

A specific barrier to decision-making reported by a few of lower-income students was their early perception that PSE may not be a practical option for them owing to their current income status. In these cases, LA might have helped students overcome this barrier by making the financing of their PSE appear more realistic.

Several participants voiced financial concerns that went beyond the presence or absence of sufficient funds to finance their PSE, to include consideration of time and effort they were willing to invest to ensure sufficient funds were available. For example, NLP participants who mentioned scholarships and bursaries valued them but found them difficult to find, use or understand, and very few had sent in applications for this type of aid by the end of Grade 12 even though they could well have qualified. LA can thus assist lower-income students in need of financial aid who find

searching and/or applying for scholarships and bursaries too onerous because LA are automatically offered to eligible students and do not have to be sought by them.

Many NLP participants who mentioned government loans did not appear to value them and reported difficulty accessing, using and/or understanding such aid. The following three quotes to some extent illustrate these students' reasoning:

[...] thinking about the money thing, student loans could be a big shortcut instead of a job but then again student loans will affect you later on...we went down to [name of local university] to see what they offer and one of the teachers was explaining how taking a student loan really isn't worth it in the end because you end up paying a lot more than [what] you started with [...] it's for kids that know that they can graduate, get a good job then make the money to pay them off easily later;

Student Loans, it's such a big process to go through [...]; and

On my grid [...] I've got Canada Student Loans. It's kind of in the 'poor quality' and right in between [...] 'easy to find' and 'hard to find'...because they're loans and you kind of have to pay back the government [...] with interest [...] it's an option but it's something that I would rather not have to do.

By and large NLP participants seemed reluctant to take out student loans and at the time of the telephone follow-up survey only a handful of those who had successfully enrolled in a PSE program had taken one out to finance their education. LA may very well assist those students in need of financial aid who are especially debt and/or risk averse, or who may find the application process too overwhelming to undertake or complete.

Again, the NLP provides a warning for how small variations in future delivery of such programs might prevent them from reaching all participants who could benefit. NLP participants reported uncertainty in connection with application processes in general (e.g., regarding how to apply to a PSE program and for scholarships, bursaries and a Canada Student Loan). So, to the extent that LA notification requires active application, some students might not understand the process or rules to access the program and due to this lack of comprehension, unintentionally forfeit their eligibility to receive one.

INSIGHTS FROM NLP ON THE MAIN EYH IMPACT RESULTS

This section and the next review some of the principal findings from the main report on the interventions' impacts changing students' behaviours and considers the extent to which students' in-depth reports of their decision-making in the NLP shed light on the processes underlying such changes.

While NLP study participants were not directly asked during triadic interviews about the extent to which they felt they had sufficient information about career options, a few LA-eligible students — male and female — from both sectors in New Brunswick provided positive feedback about EYH with specific reference to the number of PSE and career options the program had made them aware of. This NLP result to some extent agrees with the main EYH finding that both sectors in NB were more likely to feel they had enough information about career options (mostly LA-eligible Anglophone and female). Here are a few illustrations:

I didn't know there were so many other places you could go other than university and college [...]; and

[...] the first few years opened my eyes to the fact that there isn't just university. In my hometown, people just went to [local university]. But there are other universities, and colleges [out there], or you can take a course from someone. I didn't know you could take a course with someone in a profession. It opened my eyes to the number of careers out there; that you don't have to do what most people do.

In terms of raising high school graduation rates for LA-eligible students in Anglophone New Brunswick and Manitoba — a key EYH result — one of the features of EYH that may be especially important for students from LILE households is that it makes PSE a potential reality for many who are not thinking of pursuing a credential early on in high school (who in consequence may be less motivated to graduate in absence of any plans to pursue PSE). NLP findings provided evidence of this shift in students' thinking as illustrated by the following two quotes made by a New Brunswick Anglophone and Manitoban student respectively (the former graduated high school but did not apply to PSE):

[If I hadn't participated in FTD...] I probably wouldn't even have thought of going to college [...the program] helped a bit ; and

[FTD] made a big difference, actually. When I first went into it, I wasn't really planning on going to university, just because I'm the first one to actually go. I was really the first one to actually graduate also. So I wasn't really thinking a whole lot about university or what I would want to do or anything like that. And then when I went into the program I saw that there were so many jobs that I could do and it just really opened my eyes. I said to myself, "well, I should do this, why not? If I can get a better job, better pay and everything like that then why not? It's worth it."

An additional element that may have served to enhance high school completion rates for lower-income students in Anglophone New Brunswick and Manitoba is the fact that the EYH followed students all the way through high school

rather than being available only at one point in time. As suggested by the following example by an Anglophone student in New Brunswick, the continuity of the program may have helped to sustain students' planning momentum towards the realization of a career education pathway:

Because they follow you through, like from Grade 9 to Grade 12 [...] they'll help you on your path. They don't just put you on one that everyone else would choose [...] they help you choose your path .

Another of the features of EYH that a few study participants seemed to respond positively to was the way it helped them to navigate PSE program selection and application processes. This coincides with the main EYH finding of increased PSE applications in New Brunswick. For instance,

[FTD] made the application process easier...I figured it was just going to be short and very thorough...but...it just made it easier...a couple of exercises showed me what kind of thing I wanted to do [...].

The NLP revealed an added reason why participants may be especially likely to respond to EYH, which relates to the main EYH finding of increased PSE enrollment particularly in the Francophone sector in New Brunswick (mainly in university programs, and among LILE students). The program represented an established timeframe for focusing on conducting PSE- and career-related searches on the Internet, something a couple of NLP study participants seemed less inclined to do on their own time when at home. The following two examples regarding lower-income Francophone participants in New Brunswick exemplify this finding:

[...] that Future to Discover thing, that helped me a lot because you know if I were at home, you can go look for searches but I don't do it. That was the purpose of the meeting [...]; and

[...] it's Future to Discover, because we were talking about [PSE] amounts, years, things like that [...] at home, I'll never really look at that because I'll never think of that [... its] already helped us a lot .

However, the NLP shed little additional light on why EYH might have an impact especially for Francophone students, or those choosing to enrol in university programs in particular.

Results of the NLP showed that most New Brunswick Francophone study participants who ended up in a preferred PSE program had made the decision to enrol in one outside of their geographical area. Accordingly, this meant living on or near university/college campus. The students reported taking out a student loan to help cover a variety of PSE expenses associated with living away from home. The result may help to explain the main EYH finding of increased loan take-up in particular for LA-eligible Francophone students in

New Brunswick to pay for PSE (the same group that increased PSE enrolment). The following excerpts help to exemplify this finding:

I live alone, it's an apartment with one room and I live alone, yes [...] I received a loan so that definitely helped [...] I was able to save up enough to pay for a portion of my books, my summer job helped with that before I received my student loan. The money I saved helped me [...] my parents were not able to contribute... ever since I was 14 years old, I've always taken care of myself for my money [...] I also applied for and received two scholarships, one for approx \$2000 and another for \$500... I got 90's; you just have to have an average of 70 per cent to be eligible. That's how I got those two [scholarships...they covered] all of my books and everything;

I'm living in a university apartment [with a roommate...] when I entered first year; I got a scholarship for four years, \$4,000 per year. It's for my involvement in school and community. It was a Millennium Scholarship Bursary, and I needed a B+ average. I knew I had to maintain my grades to keep this money [...]; my parents hadn't saved any money [...] the scholarship is really what financed me, along with government loans. I don't need a job while studying, and I don't think I could [have maintained one] in reality anyways.

A few NLP study participants from the program group in Manitoba stated that though not ideal, they would be willing to take out a student loan to finance their PSE, a result that supports the main finding that EYH increased the proportion of Manitobans — especially LA-eligible — who believe in going into debt to pay for PSE. The following quotes were made by NLP Manitoban participants in the program who were enrolled in PSE at the time of the telephone follow-up survey:

I've just been pretty much working and paying my way through...I had a job in Grade 12... that paid for most of it, and I also got a Student Loan, but it hasn't really kicked in....It's just sitting in the university account [...] I think it was just something that I wanted to do and if I had a lot of money, or if I didn't, I don't think it would have mattered;

For this year, my grandma actually paid for it all [...]. For the years ahead, I plan on paying for it myself, so summers I'm going to be working full-time somewhere, hopefully at a better job than where I am now. I'll probably end up getting a student loan or something like that [...] I think it's doable, I know it's doable.

NLP INSIGHTS ON THE MAIN LA IMPACT RESULTS

This section presents one of the rare findings from the NLP that relates directly to LA programming. As previously reported, LA raised PSE applications rates considerably across both sectors and almost all sub-groups (with the possible exception of girls, who have mixed results). College application rates increased the most. Results were mixed for other levels of PSE.

The NLP showed that several program and comparison group students — mostly LA-eligible — in New Brunswick (all college-bound) and in Manitoba (all university bound), who were not in receipt of any LA-type aid did mention financial reasons for delaying sending in a PSE application during their final year of high school/one year after high school graduation (i.e., to save money). The following two quotes exemplify this finding:

Money [is the main reason I decided to take a year off after high school [...] I'd rather do that than take out a loan [...] there's nothing saying you got to rush as soon as you finish high school into university [...] mostly just money is a factor; and

I didn't want to rush into university right away 'cause I didn't know how I'd be able to handle it [...] I just wanted to take a year off from all that hassle [...] just work...and pay off the stuff for university with the money that I do earn [...].

This NLP result suggests that LA-type programming may in fact have had a positive impact on decisions these students were making about completing a PSE application.

IMPLICATIONS OF THE NLP FOR FUTURE EYH AND LA PROGRAMMING

This section provides some suggestions for program enhancements or alternatives to EYH and LA programming that emerge from NLP evidence. NLP study participants nearly always aspired to pursue some form of PSE such that EYH and LA programming appeared to act as catalysts for several students to act on these aspirations.

Nonetheless, the study found students who were more decided on PSE and career in high school appeared more likely to pursue their post-secondary aspirations regardless of the programming they were offered. For example,

No [FTD did not influence my career choice] I don't think so. I'm sure it did for others [...] it wasn't a big change because I already knew what I wanted to do. But others I saw that it provoked change.

As a way of enhancing the cost-effectiveness of *EYH*, it may be worth targeting students who do not have well-developed career plans following their first year of high school. Screening of this sort would allow the program to devote its resources more efficiently to target under-represented students in the PSE system who might also most benefit from direct PSE and career guidance and support as offered through *EYH* programming.

Likewise, there is some limited evidence from the NLP that high school students who exhibit resourcefulness in their plans to finance their education and who have determination and opportunities to enact these plans (e.g., such as being able to gain part-time employment during high school to save money for PSE) may be on track to pursue PSE regardless of any *LA*-type programming they are offered. So, *LA* programming could benefit those lower-income individuals with little information and misperceptions about different options for financing their PSE or those who are especially debt and risk averse. Practically, such targeting of financial incentives may prove difficult to implement on equity grounds.

Another result from the NLP study lends support to the emphasis on enhancing students' resilience during the Grade 12 "Future in Focus" component of *EYH*. Grade 12 participants sometimes reported feeling fearful about the prospect of making the transition to life after high school as exemplified by the following passages:

Nervous...I don't know. I've never entered the workforce before...nervous for graduating and then trying to go to college...I'm going to be in the real world on my own;

Nervous...we've all gone to school now for about 13 years and for it to just stop and, all of a sudden...I'm going to university...I'm nervous 'cause that's kind of a...whole new environment;

[...] it's a different city, a different life completely, Mom and Dad won't be behind me anymore...I'm going off all by myself...you have to work to get money, and you also have to have an idea of what you're going to do, more or less...it's more responsibility, and for that, you have to get organized... [It's] a little scary;

I'm really scared...I always do the same routine, with the same people, at the same places. I have a job... [It's] pretty tough, thinking I...won't be there anymore...

None of these students were enrolled in a PSE program by the time of the NLP telephone follow-up survey. In 2007, the Canada Millennium Scholarship Foundation commissioned a study on the construct of resilience with specific reference to career development (CCDF, 2007). It concluded: "*Students also felt unprepared for the realities awaiting them in post-secondary education. Students who couldn't wait to leave their small town found themselves isolated, homesick and unable to carry on studying once at their post-secondary institutions. Others pointed to a lack of preparation in dealing with the practicalities of living independently*" (p. 21).

The "Future in Focus" component of *EYH* delivered in Grade 12 to build and strengthen students' resilience in preparation for life after high school included workshops promoting specific strategies to help "*replace non-productive coping styles with active coping styles in response to challenging situations*" (CCDF, 2007, pp. 25-26). A possible *EYH* enhancement might be to further strengthen students' resilience in the face of pending change by incorporating some of the "Future in Focus" strategies earlier on in the program. This enhancement might then assist students who are facing life circumstances that challenged their plans and decision-making during earlier grades in high school.

Based on the findings of the NLP, another possible improvement to the *EYH* program is to build in a more detailed and targeted workshop on course selections in connection with preferred post-secondary pathways as a way of promoting more effective career education decisions and facilitating successful PSE planning and transitions. This might be best achieved by bringing the school guidance counselor into the dialogue on PSE eligibility so that the information being received by students is more cohesive, complete, and accurate.

Lastly, several NLP study participants appeared to be overwhelmed by application processes in general. Study participants — particularly control group members — appeared ill-informed about loans and grants, poorly equipped to assess earnings relative to specific careers (especially relative to student aid repayment scenarios and timelines), and lacking strategies to employ to navigate post-secondary transitions effectively and plan for them financially. Some form of additional assistance seems key — potentially available through *EYH* and *LA* programming — especially with regard to financial aid and PSE program applications, and on what to expect and do once applications have been reviewed, accepted, or rejected.

APPENDIX 5: Additional Cost-benefit Analyses

See Chapter 7 for an explanation of the following tables.

Table A5.1: Present Value Costs and Benefits of Various Outcomes (Constant 2009 Dollars Discounted to the Beginning of the Program Using 8% Annual Discount Rate)

	Manitoba				New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
Program Costs per Participant — EYH		-601	-4,356	-4,957		-132	-2,876	-3,007		-132	-2,876	-3,007
Program Costs per Participant — LA					2,737	-117	-3,094	-474	2,737	-117	-3,094	-474
Participation Time Cost — EYH	-224			-224	-299			-299	-292			-292
Participation Time Cost — EYH/LA					-416			-416	-369			-369
High School Graduation												
Public Education Expenditure		-7,347		-7,347		-6,439		-6,439		-6,439		-6,439
Earnings Increases	32,131			32,131	32,131			32,131	32,131			32,131
Tax	-5,380	2,306	3,074	0	-5,296	2,179	3,117	0	-5,296	2,179	3,117	0
EI Premium	-572		572	0	-572		572	0	-572		572	0
Cost — High School Graduation	0	-7,347	0	-7,347	0	-6,439	0	-6,439	0	-6,439	0	-6,439
Benefit — High School Graduation	26,180	2,306	3,646	32,131	26,263	2,179	3,689	32,131	26,263	2,179	3,689	32,131
Net Benefit — High School Graduation	26,180	-5,041	3,646	24,784	26,263	-4,260	3,689	25,692	26,263	-4,260	3,689	25,692
A Voc/Trade School Certificate or Diploma												
Tuitions	-18,057			-18,057	-13,313			-13,313	-13,313			-13,313
Educational Expenditures	-809			-809	-809			-809	-809			-809
Forgone Earnings	-7,782			-7,782	-8,092			-8,092	-6,649			-6,649
Future Earnings Increase	7,148			7,148	24,627			24,627	28,616			28,616
Tax	-1,197	513	684	0	-4,059	1,670	2,389	0	-4,717	1,941	2,776	0
EI Premium	-127		127	0	-438		438	0	-509		509	0
Cost — Trade School Dip/Cert	-26,648	0	0	-26,648	-22,214	0	0	-22,214	-20,770	0	0	-20,770
Benefit — Trade School Dip/Cert	5,824	513	811	7,148	20,130	1,670	2,827	24,627	23,390	1,941	3,285	28,616
Net Benefit — Trade School Dip/Cert	-20,824	513	811	-19,500	-2,084	1,670	2,827	2,414	2,620	1,941	3,285	7,846
Cost — Trade School Enrolment	-22,118	0	0	-22,118	-19,770	0	0	-19,770	-18,486	0	0	-18,486
Benefit — Trade School Enrolment	4,834	426	673	5,933	17,915	1,487	2,516	21,918	20,817	1,727	2,924	25,468

Continued on next page

Table A5.1: Present Value Costs and Benefits of Various Outcomes (Constant 2009 Dollars Discounted to the Beginning of the Program Using 8% Annual Discount Rate)
(Continued)

	Manitoba				New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
Net Benefit — Trade School Enrolment	-17,284	426	673	-16,185	-1,855	1,487	2,516	2,148	2,331	1,727	2,924	6,983
A Registered Apprenticeship Certificate												
Tuitions	-5,439			-5,439	-5,439			-5,439	-5,439			-5,439
Educational Expenditures	-1,727			-1,727	-1,727			-1,727	-1,727			-1,727
Forgone Earnings	-24,040			-24,040	-25,954			-25,954	-22,839			-22,839
Future Earnings Increase	64,841			64,841	45,191			45,191	80,286			80,286
Tax	-10,856	4,654	6,203	0	-7,449	3,065	4,384	0	-13,233	5,445	7,788	0
EI Premium	-1,154		1,154	0	-804		804	0	-1,429		1,429	0
Cost — Apprenticeship Dip/Cert	-31,207	0	0	-31,207	-33,120	0	0	-33,120	-30,005	0	0	-30,005
Benefit — Apprenticeship Dip/Cert	52,830	4,654	7,357	64,841	36,938	3,065	5,188	45,191	65,623	5,445	9,217	80,286
Net Benefit — Apprenticeship Dip/Cert	21,624	4,654	7,357	33,634	3,818	3,065	5,188	12,071	35,618	5,445	9,217	50,281
Cost — Apprenticeship Enrolment	-19,036	0	0	-19,036	-18,216	0	0	-18,216	-16,503	0	0	-16,503
Benefit — Apprenticeship Enrolment	32,227	2,839	4,488	39,553	20,316	1,686	2,854	24,855	36,093	2,995	5,069	44,157
Net Benefit — Apprenticeship Enrolment	13,190	2,839	4,488	20,517	2,100	1,686	2,854	6,639	19,590	2,995	5,069	27,654
A College Diploma/Certificate												
Tuitions	-1,785			-1,785	-3,591			-3,591	-3,591			-3,591
Educational Expenditures	-809			-809	-809			-809	-809			-809
Non-educational Expenditures	-2,532			-2,532	-2,532			-2,532	-2,532			-2,532
Government Funding	0	-12,287	-3,985	-16,272	0	-7,660	-2,061	-9,721	0	-7,660	-2,061	-9,721
Forgone Earnings	-7,782			-7,782	-8,092			-8,092	-6,649			-6,649
Future Earnings Increase	50,713			50,713	59,183			59,183	44,218			44,218
Tax	-8,491	3,640	4,851	0	-9,755	4,014	5,741	0	-7,288	2,999	4,289	0
EI Premium	-903		903	0	-1,053		1,053	0	-787		787	0
Cost — College Dip/Cert	-12,909	-12,287	-3,985	-29,180	-15,025	-7,660	-2,061	-24,746	-13,581	-7,660	-2,061	-23,303
Benefit — College Dip/Cert	41,319	3,640	5,754	50,713	48,374	4,014	6,794	59,183	36,142	2,999	5,076	44,218
Net Benefit — College Dip/Cert	28,411	-8,647	1,768	21,533	33,349	-3,647	4,734	34,436	22,561	-4,661	3,015	20,915
Cost — College Enrolment	-9,811	-9,338	-3,029	-22,177	-11,419	-5,822	-1,566	-18,807	-10,322	-5,822	-1,566	-17,710

Continued on next page

Table A5. 1: Present Value Costs and Benefits of Various Outcomes (Constant 2009 Dollars Discounted to the Beginning of the Program Using 8% Annual Discount Rate)
(Continued)

	Manitoba				New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
<i>Benefit — College Enrolment</i>	31,403	2,766	4,373	38,542	36,764	3,051	5,164	44,979	27,468	2,279	3,858	33,606
<i>Net Benefit — College Enrolment</i>	21,592	-6,571	1,344	16,365	25,346	-2,771	3,597	26,172	17,147	-3,543	2,292	15,896
A University Degree												
Tuitions	-7,975			-7,975	-13,609			-13,609	-13,609			-13,609
Educational Expenditures	-1,502			-1,502	-1,502			-1,502	-1,502			-1,502
Non-educational Expenditures	-3,912			-3,912	-3,912			-3,912	-3,912			-3,912
Government Funding	0	-23,370	-8,379	-31,749	0	-21,923	-7,409	-29,332	0	-21,923	-7,409	-29,332
Forgone Earnings	-16,536			-16,536	-17,709			-17,709	-15,365			-15,365
Future Earnings Increase	126,693			126,693	189,212			189,212	154,568			154,568
Tax	-21,212	9,093	12,119	0	-31,188	12,833	18,355	0	-25,477	10,483	14,994	0
EI Premium	-2,255		2,255	0	-3,368		3,368	0	-2,751		2,751	0
Cost — University Degree	-29,925	-23,370	-8,379	-61,674	-36,732	-21,923	-7,409	-66,065	-34,389	-21,923	-7,409	-63,721
Benefit — University Degree	103,226	9,093	14,374	126,693	154,657	12,833	21,723	189,212	126,340	10,483	17,745	154,568
Net Benefit — University Degree	73,300	-14,276	5,995	65,019	117,925	-9,090	14,313	123,148	91,951	-11,440	10,336	90,847
Cost — University Enrolment	-22,743	-17,761	-6,368	-46,873	-29,018	-17,319	-5,853	-52,191	-27,167	-17,319	-5,853	-50,340
Benefit — University Enrolment	78,452	6,911	10,925	96,287	122,179	10,138	17,161	149,478	99,808	8,282	14,019	122,109
<i>Net Benefit — University Enrolment</i>	55,708	-10,850	4,556	49,414	93,161	-7,181	11,307	97,287	72,641	-9,037	8,165	71,769
Cost of Student Loan Administration per Dollar Loan			-0.30				-0.30				-0.30	

**Table A5.2: Present Value Forgone Earnings and Earnings Increase Due to Post-secondary Education, by Gender
(Constant 2009 Dollars Discounted to the Beginning of the Program Using 8% Annual Discount Rate)**

	Manitoba	New Brunswick Francophone	New Brunswick Anglophone
A Voc/Trade School Certificate or Diploma			
Forgone Earnings — Boys and Girls	-7,782	-8,092	-6,649
<i>Forgone Earnings — Boys</i>	-10,159	-9,986	-7,311
<i>Forgone Earnings — Girls</i>	-4,376	-4,453	-5,748
Future Earnings Increase — Boys and Girls	7,148	24,627	28,616
<i>Future Earnings Increase — Boys</i>	10,317	43,857	39,709
<i>Future Earnings Increase — Girls</i>	-808	-7,244	-4,033
A Registered Apprenticeship Certificate			
Forgone Earnings — Boys and Girls	-24,040	-25,954	-22,839
<i>Forgone Earnings — Boys</i>	-33,106	-30,637	-25,770
<i>Forgone Earnings — Girls</i>	-11,636	-16,341	-20,011
Future Earnings Increase — Boys and Girls	64,841	45,191	80,286
<i>Future Earnings Increase — Boys</i>	60,636	46,517	69,274
<i>Future Earnings Increase — Girls</i>	5,753	-11,622	-5,987
A College Diploma / Certificate			
Forgone Earnings — Boys and Girls	-7,782	-8,092	-6,649
<i>Forgone Earnings — Boys</i>	-10,159	-9,986	-7,311
<i>Forgone Earnings — Girls</i>	-4,376	-4,453	-5,748
Future Earnings Increase — Boys and Girls	50,713	59,183	44,218
<i>Future Earnings Increase — Boys</i>	56,919	65,177	50,319
<i>Future Earnings Increase — Girls</i>	59,266	61,564	53,463
A University Degree			
Forgone Earnings — Boys and Girls	-16,536	-17,709	-15,365
<i>Forgone Earnings — Boys</i>	-22,514	-21,104	-17,249
<i>Forgone Earnings — Girls</i>	-8,285	-10,854	-13,428
Future Earnings Increase — Boys and Girls	126,693	189,212	154,568
<i>Future Earnings Increase — Boys</i>	141,475	202,705	162,592
<i>Future Earnings Increase — Girls</i>	119,035	189,546	153,410

Table A5.3: Present Value Costs and Benefits of Various Outcomes (Constant 2009 Dollars Discounted to the Beginning of the Program Using 5% Annual Discount Rate)

	Manitoba			New Brunswick Francophone			New Brunswick Anglophone		
	Participant	Provincial Government	Federal Government	Participant	Provincial Government	Federal Government	Participant	Provincial Government	Federal Government
Program Costs per Participant — <i>EYH</i>		636	4,687		-137	3,296		-137	-3,022
Program Costs per Participant — <i>LA</i>					-122	-3,517		-122	-3,517
Participation Time Cost — <i>EYH</i>	-234			-314			-305		
Participation Time Cost — <i>EYH/LA</i>				-437			-388		
High School Graduation									
Public Education Expenditure		-8,224			-7,207			-7,207	
Earnings Increases	51,973			51,973			51,973		
A Voc/Trade School Certificate or Diploma									
Tuitions	-21,074			-15,537			-15,537		
Educational Expenditures	-944			-944			-944		
Forgone Earnings — Boys and Girls	-8,868			-9,230			-7,598		
Forgone Earnings — Boys	-11,592			-11,376			-8,362		
Forgone Earnings — Girls	-4,969			-5,099			-6,572		
Future Earnings Increase — Boys and Girls	11,374			39,438			43,707		
Future Earnings Increase — Boys	10,293			67,067			51,099		
Future Earnings Increase — Girls	-1,873			-15,360			-6,448		
A Registered Apprenticeship Certificate									
Tuitions	-6,601			-6,601			-6,601		
Educational Expenditures	-2,096			-2,096			-2,096		
Forgone Earnings — Boys and Girls	-28,906			-31,245			-27,553		
Forgone Earnings — Boys	-39,876			-36,829			-31,112		
Forgone Earnings — Girls	-13,916			-19,751			-24,151		
Future Earnings Increase — Boys and Girls	110,410			77,032			150,262		
Future Earnings Increase — Boys	95,061			77,938			122,237		
Future Earnings Increase — Girls	1,400			-21,597			-3,521		

Continued on next page

Table A5.3: Present Value Costs and Benefits of Various Outcomes (Constant 2009 Dollars Discounted to the Beginning of the Program Using 5% Annual Discount Rate)
(Continued)

	Manitoba			New Brunswick Francophone			New Brunswick Anglophone		
	Participant	Provincial Government	Federal Government	Participant	Provincial Government	Federal Government	Participant	Provincial Government	Federal Government
A College Diploma/Certificate									
Tuitions	-2,084			-4,191			-4,191		
Educational Expenditures	-944			-944			-944		
Non-educational Expenditures	-2,955			-2,955			-2,955		
Government Funding	0	-14,339	-4,651	0	-8,940	-2,405	0	-8,940	-2,405
Forgone Earnings — Boys and Girls	-8,868			-9,230			-7,598		
<i>Forgone Earnings — Boys</i>	-11,592			-11,376			-8,362		
<i>Forgone Earnings — Girls</i>	-1,873			-15,360			-6,448		
Future Earnings Increase — Boys and Girls	87,118			104,066			85,062		
<i>Future Earnings Increase — Boys</i>	95,382			118,771			96,259		
<i>Future Earnings Increase — Girls</i>	103,207			103,941			97,819		
A University Degree									
Tuitions	-9,557			-16,307			-16,307		
Educational Expenditures	-1,800			-1,800			-1,800		
Non-educational Expenditures	-4,688			-4,688			-4,688		
Government Funding	0	-28,004	-10,041	0	-26,270	-8,879	0	-26,270	-8,879
Forgone Earnings — Boys and Girls	-19,375			-20,774			-18,062		
<i>Forgone Earnings — Boys</i>	-26,423			-24,723			-20,292		
<i>Forgone Earnings — Girls</i>	-9,660			-12,782			-15,790		
Future Earnings Increase — Boys and Girls	245,103			350,579			304,156		
<i>Future Earnings Increase — Boys</i>	282,848			394,165			330,294		
<i>Future Earnings Increase — Girls</i>	218,780			332,932			286,972		

Table A5.4: Present Value Costs and Benefits of Various Outcomes (Constant 2009 Dollars Discounted to the Beginning of the Program Using 10% Annual Discount Rate)

	Manitoba			New Brunswick Francophone			New Brunswick Anglophone		
	Participant	Provincial Government	Federal Government	Participant	Provincial Government	Federal Government	Participant	Provincial Government	Federal Government
Program Costs per Participant — EYH		-581	-4,155		-128	-2,785		-128	-2,785
Program Costs per Participant — LA					-114	-2,848		-114	-2,848
Participation Time Cost — EYH	-218			2,513			2,513		
Participation Time Cost — EYH/LA				-290			-283		
Participation Time Cost — EYH/ILA				-403			-358		
High School Graduation									
Public Education Expenditure		-6,827			-5,983			-5,983	
Earnings Increases	24,448			24,448			24,448		
A Voc/Trade School Certificate or Diploma									
Tuitions	-16,330			-12,040			-12,040		
Educational Expenditures	-731			-731			-731		
Forgone Earnings — Boys and Girls	-7,149			-7,429			-6,096		
Forgone Earnings — Boys	-9,323			-9,174			-6,700		
Forgone Earnings — Girls	-4,030			-4,077			-5,269		
Future Earnings Increase — Boys and Girls	5,302			19,331			22,181		
Future Earnings Increase — Boys	9,185			34,923			33,257		
Future Earnings Increase — Girls	-563			-7,944			-3,312		
A Registered Apprenticeship Certificate									
Tuitions	-4,798			-4,798			-4,798		
Educational Expenditures	-1,524			-1,524			-1,524		
Forgone Earnings — Boys and Girls	-21,344			-23,024			-20,232		
Forgone Earnings — Boys	-29,359			-27,205			-22,817		
Forgone Earnings — Girls	-10,368			-14,457			-17,722		
Future Earnings Increase — Boys and Girls	47,341			32,920			55,436		
Future Earnings Increase — Boys	46,144			34,210			49,418		
Future Earnings Increase — Girls	6,411			-7,944			-5,594		

Continued on next page

Table A5.4: Present Value Costs and Benefits of Various Outcomes (Constant 2009 Dollars Discounted to the Beginning of the Program Using 10% Annual Discount Rate)
(Continued)

	Manitoba			New Brunswick Francophone			New Brunswick Anglophone		
	Participant	Provincial Government	Federal Government	Participant	Provincial Government	Federal Government	Participant	Provincial Government	Federal Government
A College Diploma/Certificate									
Tuitions	-1,615			-3,248			-3,248		
Educational Expenditures	-731			-731			-731		
Non-educational Expenditures	-2,290			-2,290			-2,290		
Government Funding	0	-11,111	-3,604	0	-6,928	-1,864	0	-6,928	-1,864
Forgone Earnings — Boys and Girls	-7,149			-7,429			-6,096		
<i>Forgone Earnings — Boys</i>	-9,323			-9,174			-6,700		
<i>Forgone Earnings — Girls</i>	-4,030			-4,077			-5,269		
Future Earnings Increase — Boys and Girls	37,103			42,409			29,954		
<i>Future Earnings Increase — Boys</i>	42,135			45,680			34,156		
<i>Future Earnings Increase — Girls</i>	43,047			45,215			37,326		
A University Degree									
Tuitions	-7,093			-12,103			-12,103		
Educational Expenditures	-1,336			-1,336			-1,336		
Non-educational Expenditures	-3,479			-3,479			-3,479		
Government Funding	0	-20,783	-7,452	0	-19,497	-6,589	0	-19,497	-6,589
Forgone Earnings — Boys and Girls	-14,921			-15,967			-13,835		
<i>Forgone Earnings — Boys</i>	-20,293			-19,046			-15,524		
<i>Forgone Earnings — Girls</i>	-7,500			-9,760			-12,087		
Future Earnings Increase — Boys and Girls	85,414			130,444			102,734		
<i>Future Earnings Increase — Boys</i>	92,953			134,854			105,389		
<i>Future Earnings Increase — Girls</i>	83,086			135,165			105,508		

Table A5.5: Net Present Values of EYH, by Discount Rates and Sub-groups (Constant 2009 Dollars Discounted to the Beginning of the Program)

	Manitoba				New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
Annual Discount Rate: 5 per cent												
Overall	8,429	-217	5,549	13,761	11,277	-533	4,426	15,169	5,630	-591	-2,503	2,536
LILE	7,622	-161	5,465	12,926	33,283	-1,195	6,949	39,037	16,659	-1,120	-1,260	14,278
not LILE	6,778	-93	5,318	12,002	-6,845	75	2,413	-4,357	-4,587	-50	-3,641	-8,278
Parents with High school or less (FGF)	8,562	-388	5,474	13,648	21,672	-999	5,844	26,517	-2,832	-267	-3,288	-6,387
Parents with PSE	8,047	-127	5,562	13,483	3,674	-240	3,395	6,830	7,969	-724	-2,327	4,919
Boys	15,019	-553	6,363	20,828	13,842	-250	5,230	18,821	9,182	-609	-2,118	6,456
Girls	5,861	290	5,274	11,425	14,148	-741	4,374	17,780	3,935	-421	-2,674	840
Annual Discount Rate: 8 per cent												
Overall	4,249	-1,584	-4,019	-1,354	5,480	-835	-2,544	2,101	2,591	-726	-2,775	-910
LILE	4,003	-1,509	-4,038	-1,545	16,596	-2,034	-1,491	13,071	8,023	-1,521	-2,291	4,212
not LILE	3,470	-1,418	-4,126	-2,074	-3,698	217	-3,346	-6,827	-2,440	47	-3,217	-5,610
Parents with High school or less (FGF)	4,575	-1,719	-4,057	-1,200	11,041	-1,514	-1,783	7,743	-1,091	-158	-2,916	-4,165
Parents with PSE	3,917	-1,502	-4,006	-1,591	1,510	-370	-3,076	-1,936	3,623	-924	-2,775	-77
Boys	6,979	-2,127	-3,736	1,116	6,490	-679	-1,984	3,827	4,154	-868	-2,669	617
Girls	3,421	-1,022	-4,047	-1,648	7,495	-1,052	-2,670	3,773	2,157	-496	-2,767	-1,105
Annual Discount Rate: 10 per cent												
Overall	2,784	-1,557	-3,991	-2,764	3,431	-904	-2,733	-206	1,551	-746	-2,825	-2,020
LILE	2,695	-1,484	-3,995	-2,784	10,647	-2,221	-2,194	6,231	5,061	-1,587	-2,597	877
not LILE	2,314	-1,383	-4,053	-3,122	-2,546	245	-3,110	-5,411	-1,699	63	-3,037	-4,673
Parents with High school or less (FGF)	3,140	-1,677	-4,018	-2,554	7,222	-1,623	-2,209	3,389	-554	-131	-2,761	-3,446
Parents with PSE	2,484	-1,480	-3,976	-2,972	780	-404	-3,086	-2,710	2,149	-955	-2,883	-1,689
Boys	4,221	-2,139	-3,884	-1,801	3,929	-788	-2,260	881	2,445	-921	-2,814	-1,290
Girls	2,537	-1,002	-3,940	-2,405	5,121	-1,120	-2,890	1,112	1,507	-508	-2,762	-1,762

Table A5.6: Net Present Values of LA, by Discount Rates and Sub-groups (Constant 2009 Dollars Discounted to the Beginning of the Program)

	New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
Annual Discount Rate: 5 per cent								
Overall	18,626	-510	-1,376	16,740	8,435	-111	-2,044	6,280
LILE	29,355	-871	-105	28,380	10,208	-266	-1,922	8,020
Parents with High school or less (FGF)	27,313	-807	-239	26,267	18,243	-695	-1,192	16,356
Parents with PSE	16,338	-391	-1,793	14,154	-4,526	589	-3,206	-7,142
Boys	12,894	21	-1,594	11,321	12,295	-666	-2,236	9,393
Girls	22,267	-524	-1,055	20,689	10,434	386	-1,204	9,617
Annual Discount Rate: 8 per cent								
Overall	10,588	-886	-2,005	7,696	5,420	-224	-1,996	3,200
LILE	16,119	-1,497	-1,435	13,187	6,382	-423	-1,992	3,967
Parents with High school or less (FGF)	15,108	-1,376	-1,431	12,302	10,123	-1,027	-1,808	7,288
Parents with PSE	9,192	-754	-2,318	6,120	-704	778	-2,268	-2,194
Boys	7,076	-297	-1,957	4,822	8,079	-863	-2,392	4,824
Girls	13,715	-949	-1,834	10,932	6,386	234	-1,269	5,351
Annual Discount Rate: 10 per cent								
Overall	7,595	-969	-2,135	4,492	4,242	-241	-1,887	2,114
LILE	11,251	-1,632	-1,812	7,807	4,911	-450	-1,926	2,535
Parents with High school or less (FGF)	10,611	-1,496	-1,759	7,355	7,227	-1,071	-1,910	4,246
Parents with PSE	6,542	-842	-2,411	3,289	394	802	-1,878	-682
Boys	4,946	-378	-1,992	2,576	6,357	-915	-2,379	3,063
Girls	10,262	-1,036	-2,009	7,217	4,833	210	-1,195	3,848

Table A5.7: Net Present Values of *EYH/LA*, by Discount Rates and Sub-groups (Constant 2009 Dollars Discounted to the Beginning of the Program)

	New Brunswick Francophone				New Brunswick Anglophone			
	Participant	Provincial Government	Federal Government	Society	Participant	Provincial Government	Federal Government	Society
Annual Discount Rate: 5 per cent								
Overall	19,635	-455	2,038	21,218	16,914	-799	-4,502	11,614
LILE	26,856	-713	3,002	29,146	19,726	-1,147	-4,393	14,186
Parents with High school or less (FGF)	25,858	-614	3,218	28,462	17,367	-1,000	-4,613	11,754
Parents with PSE	9,430	-188	431	9,674	13,282	-425	-4,856	8,001
Boys	19,185	112	2,756	22,053	35,257	-1,792	-3,130	30,334
Girls	21,356	-799	1,667	22,224	7,410	-58	-5,045	2,307
Annual Discount Rate: 8 per cent								
Overall	10,498	-913	-4,920	4,666	9,217	-1,132	-4,942	3,143
LILE	14,262	-1,339	-4,431	8,492	10,720	-1,532	-5,007	4,181
Parents with High school or less (FGF)	13,862	-1,189	-4,127	8,546	9,710	-1,312	-5,037	3,362
Parents with PSE	5,129	-421	-5,864	-1,155	7,209	-690	-5,066	1,453
Boys	9,988	-416	-4,255	5,317	17,713	-2,660	-4,923	10,129
Girls	12,586	-1,234	-5,299	6,053	4,465	-144	-4,829	-508
Annual Discount Rate: 10 per cent								
Overall	7,185	-1,018	-5,006	1,160	6,458	-1,188	-4,952	318
LILE	9,702	-1,480	-4,688	3,534	7,506	-1,592	-5,076	839
Parents with High school or less (FGF)	9,494	-1,314	-4,355	3,825	6,945	-1,357	-5,042	546
Parents with PSE	3,571	-481	-5,713	-2,623	5,046	-734	-4,991	-679
Boys	6,704	-555	-4,364	1,785	11,655	-2,830	-5,380	3,445
Girls	9,046	-1,333	-5,399	2,314	3,343	-147	-4,615	-1,418

APPENDIX 6:
Non-experimental Analyses of *Explore Your Horizons* Workshop Attendance and Post-secondary Enrolment

The impacts estimated in Chapters 4 to 6 and in Appendix 2 are based on random assignment of an *offer* of a treatment. However, the impact of *taking* the treatment may also be of interest. Nonetheless, since it is only the offer of the treatment that is randomly assigned, and not everyone takes the treatment, it is impossible to know the true impact of taking the treatment.

In this Appendix, a second best approach is taken. Specifically, the focus is on those offered the treatment, and among that group, the “impact” of taking the treatment is estimated with regression analysis. Specifically, post-secondary enrolment is regressed on the total number of *EYH* workshops attended and baseline characteristics. The results of this exercise should not be interpreted as a true impact. The reason is that those who take (more of) the treatment may have different characteristics than those who do not take (or take less of) the treatment, and these differences in characteristics (rather than the difference in participation) may ultimately determine the outcome of interest. To partially address this issue, the total number of *EYH* workshops attended is regressed on the same baseline characteristics that have been used throughout this report. If there are little or no statistically significant coefficients in this regression, then it is suggestive that the two groups may not be different. Of course, the two

groups may differ in unobserved ways; and unfortunately, there is no way to rule this out, which is why the experimental analysis reported earlier in this report (albeit on the “offer” of treatment) is generally preferred.

Note that for *Learning Accounts*, it is only possible to take the treatment if one has attended PSE. Thus, the treatment and the outcome are confounded, so it is impossible to perform a similar analysis.

THE CORRELATION BETWEEN ATTENDING
EXPLORE YOUR HORIZONS WORKSHOPS
AND POST-SECONDARY ENROLMENT

The results in Table A6.1 suggest that among the group that was offered *EYH*, attending one additional workshop is associated with a 1.0 percentage point increase in post-secondary enrolment in Manitoba and in the Francophone sector of New Brunswick. However, in the Anglophone sector of New Brunswick, there was no association between workshop attendance and post-secondary enrolment.

Table A6.1: Regression of Post-secondary Enrolment on Total Number of *EYH* Workshops Attended and Baseline Characteristics

	Manitoba		New Brunswick Francophone		New Brunswick Anglophone	
	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error
Number of <i>EYH</i> workshops attended	0.01	(0.00)***	0.01	(0.00)***	0.00	(0.00)
Sample Size	448		460		450	

Source: *FTD* baseline survey and Project Management Information System (PMIS).
Notes: Results for baseline characteristics not shown.
Rounding may cause slight discrepancies in sums.
There were 5,429 students recruited for *Future to Discover*. The analysis in this table excludes those not offered *EYH*, 11 students who were children in care of the province at the time of selection, and for whom full baseline survey data was not collected.
Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

THE CORRELATION BETWEEN *EXPLORE YOUR HORIZONS* WORKSHOP ATTENDANCE AFTER GRADE 10 AND BASELINE CHARACTERISTICS

The positive correlation between *EYH* workshop attendance and post-secondary enrolment that was found in Manitoba and the New Brunswick Francophone sector may simply be the result of attendees having a greater propensity to attend post-secondary for reasons other than workshop attendance. Indeed, individuals who decided to attend more *EYH* workshops were not exactly the same as those who decided to attend fewer workshops (Table A6.2). However, in both jurisdictions, the direction of the bias is not clear. For example, in Manitoba, higher levels of parental education

(a positive determinant of PSE attendance) were associated with more frequent workshop attendance. However, students with lower overall marks at baseline (a negative determinant of post-secondary attendance) attended more workshops. In the New Brunswick Francophone sector, females (who are more likely to attend post-secondary education) attended more workshops, but once again, students with lower overall marks at baseline (a negative determinant of post-secondary attendance) attended more workshops. Thus, there is no strong evidence that students who attend more workshops generally have characteristics that are positively associated with post-secondary enrolment based on the characteristics that are observed.

Table A6.2: Regression of Total Number of *EYH* Workshops Attended on Baseline Characteristics

	Manitoba		New Brunswick Francophone		New Brunswick Anglophone	
	Estimate	Standard Error	Estimate	Standard Error	Estimate	Standard Error
Gender of student — female	-0.01	(0.56)	1.14	(0.55)**	-1.67	(0.57)***
Age of student at baseline	-0.53	(0.50)	-1.02	(0.49)**	-0.55	(0.48)
White (ever mentioned)	0.66	(1.00)	3.07	(3.00)	-0.40	(1.93)
Aboriginal (ever mentioned)	-0.98	(0.87)	-2.90	(1.96)	-0.15	(1.55)
Student has difficulty seeing, hearing, learning, ect.	-0.45	(0.62)	-0.18	(0.83)	-0.18	(0.59)
Overall mark at baseline	-0.67	(0.24)***	-1.16	(0.24)***	-1.25	(0.26)***
Student has ever worked	-0.38	(1.01)	-1.62	(1.07)	-0.27	(0.95)
Gender of signing parent — female	-0.01	(0.72)	-0.92	(0.78)	0.97	(0.73)
Current age of signing parent	0.05	(0.05)	0.05	(0.06)	0.23	(0.06)***
Signing parent is currently working	-0.02	(0.86)	-0.19	(0.70)	-0.31	(0.67)
Number of adults in the home	-0.10	(0.41)	0.45	(0.41)	-0.15	(0.38)
Number of children at home	-0.33	(0.30)	-0.49	(0.33)	0.77	(0.34)**
Family income	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Parents' highest education level — high school diploma	0.69	(1.02)	2.40	(0.90)***	1.15	(1.14)
Parents' highest education level — trade/college/apprenticeship	2.39	(0.94)**	1.63	(0.84)*	1.02	(1.10)
Parents' highest education level — university degree	2.74	(1.09)**	1.69	(1.12)	1.10	(1.29)
Parental importance attached to child getting more education after high school — scale variable	-0.11	(0.59)	-1.11	(0.85)	-0.50	(0.94)
Financial situation is standing in the child's way of getting more education	0.31	(1.29)	-3.48	(1.23)***	2.39	(1.44)*
Parent hopes child will get college diploma	0.72	(1.00)	-1.57	(0.92)*	-0.46	(1.10)
Parent hopes child will get university degree	0.97	(0.73)	0.89	(0.77)	0.44	(0.68)
Parent hopes child will get vocational/apprentice qualifications	-1.30	(1.13)	-2.18	(1.43)	-1.55	(1.32)
Anything standing in the child's way of going as far as his/her parent hopes	0.49	(1.13)	-3.33	(1.06)***	1.98	(1.38)
Sample Size	572		515		526	

Source: *FTD* baseline survey and Project Management Information System (PMIS).

Notes: Results for baseline characteristics not shown.

Rounding may cause slight discrepancies in sums.

There were 5,429 students recruited for *Future to Discover*. The analysis in this table excludes those not offered *EYH*, 11 students who were children in care of the province at the time of selection, and for whom full baseline survey data was not collected.

Statistical significance levels are indicated as * = 10 per cent; ** = 5 per cent; *** = 1 per cent.

REFERENCES

- Barr-Telford, L., Cartwright, F., Prasil, S. and Shimmons, K. (2003). *Access, Persistence and Financing: First Results from the Postsecondary Education Participation Survey (PEPS)*. Statistics Canada, Catalogue No. 81-595 MIE2003007.
- Berger, J., Motte, A., and Parkin, A. (2009). *The Price of Knowledge: Access and Student Finance in Canada*. Canada Millennium Scholarship Foundation. Montreal, Quebec.
- Bloom, H.S. (1984). Accounting for No-shows in Experimental Evaluation Designs. *Evaluation Review*, 8 (2) 225–246.
- Bowlby, J. and McMullen, K. (2002). *At a Crossroads: First Results of the 18-20-year-old Cohort of the Youth in Transition Survey*. Statistics Canada, Catalogue No. 81-591 MIE.
- Bright, J. E. H., Pryor, R. G. L., & Harpham, L. (2005). The role of chance events in career decision making. *Journal of Vocational Behavior*, 66, 561–576.
- Canadian Apprenticeship Forum. (2006). *Apprenticeship — Building a skilled workforce for a strong bottom line*. Canada.
- Canadian Career Development Foundation (CCDF). (2007). *Applying the construct of resilience to career development: Lessons in Curriculum Development*. Montreal, QC: The Canada Millennium Scholarship Foundation. Retrieved online March 9, 2012 at http://www.ccdf.ca/ccdf/wp-content/uploads/2011/01/Resilience_2007-EN.pdf.
- Crites, J. O. (1978) *Career Maturity Inventory*. Monterey, CA: McGraw-Hill (2nd version).
- Crites, J. O., & Savickas, M. L. (1996). Revision of the Career Maturity Inventory. *Journal of Career Assessment*, 4, 131.
- Frenette, M. (2007). *Why Are Youth from Lower-income Families Less Likely to Attend University? Evidence from Academic Abilities, Parental Influences, and Financial Constraints*. Statistics Canada, Catalogue No. 11F0019MIE — No. 295.
- Frenette, M. (2010). Career Goals in High School: Do Students Know How to Achieve Them and Does it Matter? *Canadian Journal of Higher Education*, 40 (3) 43–58.
- Frenette, M. (2011a). *Is Debt Relief as Good as Liquidity?* CLSRN Working Paper No. 76.
- Frenette, M. (2011b). *What Explains the Educational Attainment Gap between Aboriginal and Non-Aboriginal Youth?* Canadian Labour and Skills Researcher Network Working Paper No. 78.
- Frenette, M. and Robson, J. (2011). *Financial Literacy of Low-income Students: Literature Review and Environmental Scan*. Toronto: Higher Education Quality Council of Ontario.
- Frenette, M. and Zeman, K. (2007). *Why Are Most University Students Women? Evidence Based on Academic Performance, Study Habits and Parental Influences*. Statistics Canada, Catalogue No. 11F0019MIE — No. 303.
- Garnezy N. and Streitleman, S. (1974). Children at risk: the search for the antecedents of schizophrenia. Part I. Conceptual models and research methods. *Schizophrenia Bulletin*, Spring; (8): 14–90.
- Gyarmati, D., de Raaf, S., Palameta, B., Nicholson, C., and Hui, T. S.-W. (2008). *Encouraging Work and Supporting Communities: Final Results of the Community Employment Innovation Project*. Social Research and Demonstration Corporation. Ottawa, Ontario.
- Hankivsky, O. (2008). *Cost Estimates of Dropping Out of High School in Canada*. Canadian Council of Learning. Ottawa, Ontario.
- Hirschi, A. (2010). The role of chance events in the school-to-work transition: The influence of demographic, personality and career development variables. *Journal of Vocational Behavior*, 77, 39–49.
- Knighton, T. and Mirza, S. (2002). Postsecondary Participation: The Effects of Parents' Education and Household Income, *Education Quarterly Review*, 8 (3) 25–32. Statistics Canada, Catalogue No. 81-003.
- Lens, W. and Moreas, M. (1994). Future time perspective: An individual and a societal approach. In Z. Zaleski (Ed.), *Psychology of Future Orientation* (pp. 23–38). Lublin, Poland: Kul.
- Looker, E. D. (2002). *Why Don't They Go On? Factors Affecting the Decisions of Canadian Youth Not to Pursue Post-Secondary Education*. Canada Millennium Scholarship Foundation.
- Luong, M. (2010). The Financial Impact of Student Loans. *Perspectives on Labour and Income*. Statistics Canada, Catalogue 75-001-X.
- Molloy, D., Woodfield, K. & Bacon, J. (2002). Longitudinal qualitative research approaches in evaluation studies. Working Paper Number 7. National Centre for Social Research.
- Nicholson, C. (2012). *Future to Discover Pilot Project: High School Courses Impacts*. Ottawa: Social Research and Demonstration Corporation.
- Palameta, B. and Voyer, J.-P. (2010). *Willingness to Pay for Post-secondary Education among Under-represented Groups: Report*. Toronto: Higher Education Quality Council of Ontario.
- Policy Research Initiative. (2007). *Social Discount Rates for Canada*.

- Rothstein, J. and Rouse, C.E. (2011). Constrained After College: Student Loans and Early-Career Occupational Choices, *Journal of Public Economics*, 95 (1-2) 149–163.
- Shaienks, D., Gluszynski, T. and Bayard, J. (2008). Post-secondary Education — Participation and Dropping Out: Differences Across University, College and Other Types of Post-secondary Institutions. Statistics Canada, Catalogue No. 81-595-M No. 070.
- Smith Fowler, H., Currie, S., Hébert, S., Kwakye, I., Ford, R., Hutchison, J. and Dobrer, S. (2009). *Future to Discover Pilot Project: Interim Impacts Report*. Ottawa: Social Research and Demonstration Corporation.
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., and Bernard, J. (2008). The Brief Resilience Scale: Assessing the ability to bounce back. *International Journal of Behavioural Medicine*, 15, 194–200.
- Social Research and Demonstration Corporation. (2007). *Future to Discover Pilot Project: Early Implementation Report*. Montreal: Canada Millennium Scholarship Foundation.
- Social Research and Demonstration Corporation. (2009). *Future to Discover Pilot Project: Interim Impacts Report: Supplementary Tables*. Ottawa: SRDC.
- Tomkowicz, J. and Bushnik, T. (2003). *Who Goes to Post-secondary Education and When: Pathways Chosen by 20 year-olds*. Research Paper 81-595-MIE — No. 006, Statistics Canada.
- Treasury Board of Canada. (1998). Cost–Benefit Analysis Guide.
- Treasury Board of Canada. (2007). Canadian Cost–Benefit Analysis Guide: Regulatory Proposals.
- Tversky, A. and Kahneman, D. (1974). Judgment Under Uncertainty: Heuristics and Biases, *Science*, 185 (4157): 1124–1130.
- Tversky, A. and Kahneman, D. (1981). The Framing of Decisions and the Psychology of Choice, *Science*, 211 (4481): 453–458.
- Windle, G., Bennett, K., and Noyes, J. (2011). A methodological review of resilience measurement scale. *Health and Quality of Life Outcomes*, 9(8), 18.

I made it!



**Social Research and
Demonstration Corporation**

55 Murray Street, Suite 400
Ottawa, ON, Canada
K1N 5M3

Tel.: 613-237-4311
Fax: 613-237-5045
Web: www.srdc.org

Millennium
Scholarships



Les bourses
du millénaire

CANADA MILLENNIUM SCHOLARSHIP FOUNDATION
FONDATION CANADIENNE DES BOURSES D'ÉTUDES DU MILLÉNAIRE