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Experiential Learning Outcomes of High School Graduates and Their Transition to Post-Secondary Education in New Brunswick

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Executive Summary

With the growing prevalence of experiential learning opportunities available in high school, it is important to understand the impact experiential learning can have on high school students and their decisions about pursuing post-secondary education.

In the province of New Brunswick (NB), the Department of Education and Early Childhood Development (EECD) has set goals for experiential learning in the province. These include providing opportunities for students to have experiences that enable them to acquire the knowledge, skills, competencies, and attitudes necessary to make informed decisions about their transition to post-secondary education or the labour market, and which empower them to have the confidence to carry through with their careers and life goals (Government of New Brunswick [GNB], 2021). To understand whether experiential learning initiatives in NB are meeting these goals, it is crucial to assess the impact of the existing programs and procedures on high school graduates and their educational outcomes.

This study examines the associations between participation in experiential learning (EL) in high school and subsequent post-secondary education choices. Because EL can take many forms and is difficult to capture consistently, this study focuses only on high school courses that include a formal curricular EL requirement. Doing so, it categorizes high school students who graduated from NB public schools between 2017 and 2022 into two groups:

- **Confirmed EL course participants ("El participants")** – Students confirmed to have participated in at least one high school course with a curricular EL requirement.

- **EL non-participants** – Students **not** confirmed to have taken a high school course with a curricular EL requirement. These students are assumed, for the purposes of this study, not to have participated in select EL.

Using report card data from EECD linked with post-secondary enrollment data from the Maritime Provinces Higher Education Commission (MPHEC), this study compares the characteristics of the two student groups across various profile categories and also compares their post-secondary education outcomes – examining whether they transitioned into one of the seven public post-secondary institutions (universities and community colleges) in NB[1] within two years of high school graduation.

[1] The seven public post-secondary institutions in NB include Collège communautaire du Nouveau-Brunswick (CCNB), Mount Allison University (MTA), New Brunswick Community College (NBCC), the New Brunswick College of Craft and Design (NBCCD), St. Thomas University (STU), Université de Moncton (UdeM), and the University of New Brunswick (UNB).

Summary of Findings

Experiential Learning Participation Rates

- About 38% of high school graduates from the 2017-2022 graduating cohorts participated in at least one course with a curricular EL requirement during their high school education.

The Impact of Experiential Learning Among 'PSE-Bound' High School Graduates

Note: This study categorizes high school students as 'PSE-bound' (i.e., relatively likely to pursue post-secondary education [PSE]) if they were enrolled in at least one course considered to be PSE-preparatory. Students who were not enrolled in any PSE-preparatory courses are categorized as 'not PSE-bound.'

- 88% of all high school graduates were considered PSE-bound.
- Among these PSE-bound graduates, we see little difference in PSE transitions between EL participants and non-participants: 55% of EL participants and 56% of EL non-participants transitioned to a public post-secondary institution in NB.
    - When we break these results down according to type of post-secondary institution, we see that university transition rates were higher for EL non-participants:
        - 31% of high school graduates with EL experience and 39% without EL experience transitioned into public universities in NB.
    - In contrast, college transition rates were higher among EL participants:
        - NB college transition rates for high school graduates with EL experience were 24% compared to 17% for their counterparts without EL experience.
- Among PSE-bound males, 34% of those with EL experience enrolled in colleges, compared to 21% who enrolled in universities, suggesting that EL is slightly associated with college enrollment for males.
- In contrast, across all other groups – including females, Anglophone and Francophone education districts, and all income quintiles – enrollment in PSE-bound courses was associated with a higher likelihood of university enrollment over college enrollment for both EL participants and non-participants.

The Impact of Experiential Learning Among 'Not PSE-Bound' High School Graduates

- Descriptive statistics reveal that, for students not pursuing a PSE trajectory, EL participation had no effect on decisions to transition to higher education. Both EL participants and non-participants were similarly likely to enroll in PSE – with this trend mostly driven by college enrollments, as only about 1% transitioned to university.

The Impact of Experiential Learning on Timing of Post-Secondary Enrollment

- High school graduates with EL experience who transition to college appear more likely than their counterparts without EL experience to enroll shortly after graduation (i.e., within six months), rather than experience a gap in their education (i.e., six months - two years).

Logistic Regression

Note: In this study, the logistic regression model uses "not enrolling in any post-secondary program in NB" as the base outcome. All results should be interpreted in comparison to this outcome.

- Among students identified as **PSE-bound**, participating in EL increases the likelihood of enrolling in college relative to not enrolling in PSE. However, EL non-participants are more likely than EL participants to enroll in university – again, compared to not enrolling in PSE.

- Among students who are **not PSE-bound**, EL participation has no observed effect on the likelihood of enrolling in either college or university, relative to not enrolling in PSE.

Key Takeaways

Post-secondary education is shown to produce large returns on investment, and governments are eagerly identifying ways to encourage greater post-secondary enrolment among students. Research by Statistics Canada suggests that achieving a higher education is one of the most important factors in earning a higher salary, with the income disparity in NB between individuals with a high school diploma and those with a university degree being among the widest in Canada (2019). Transitioning to PSE is an important pathway for graduates to realize equal employment opportunities, receive higher wages, and foster social mobility and economic growth within NB (Gofen, 2009; Holtz-Eakin & Lee, 2019), and EL is one avenue intended to support students on this pathway.

By focusing in particular on the PSE transitions of high school graduates who were deemed 'not PSE-bound,' this study considers whether participating in curricular EL opportunities in high school may encourage students to pursue education pathways they had not previously considered.

The results show that post-secondary transitions of **'not PSE-bound'** students are largely driven by college enrollments, especially among male students. Notably, we find that participating in EL has no influence on this trend. Participating in EL during high school does not appear to impact the post-secondary decisions of students who are not already on a post-secondary trajectory.

For students who *are* on this trajectory (i.e., **PSE-bound** students), a larger share transition to university than college, regardless of whether they participated in EL. The only exception is among male EL participants; these students are more likely to go to college than university. It is interesting to note that EL non-participants have higher university enrollment rates than EL participants, while the opposite is true for college enrollments.

Overall, participating in EL has no observable effect on college or university enrollments among 'not PSE-bound' students; but it *is* associated with college enrollments among PSE-bound students (those enrolled in a PSE-preparatory course). For students who go on to enroll in college, participating in EL may also be associated with a faster transition to PSE after high school graduation, whereas students without EL experience are more likely to have a gap between finishing high school and enrolling in college.

These results are, of course, preliminary observations. Much more work can be done in this area to dig deeper into the impacts of EL – including future work that focuses specifically on university-bound students (rather than broadly PSE-bound students), as well as research that explores the number and types of EL courses students participated in – and the extent to which these differences impacted their post-secondary outcomes.

Introduction

Research Objective

Experiential learning (EL) opportunities are becoming more prevalent in high schools, making it increasingly important to understand how these opportunities impact high school students and their decisions regarding whether to pursue post-secondary education (PSE) following high school graduation.

In the province of New Brunswick (NB), the Department of Education and Early Childhood Development (EECD) has set goals for EL in the province. EECD believes it is important to provide opportunities for students to have experiences that enable them to:

- Identify their strengths, passions, and interests to engage in their learning.
- Explore career options in a variety of fields.
- Acquire the knowledge, skills, competencies, and attitudes necessary to make informed decisions about their transition to PSE or the labour market and have the confidence to carry through with their career and life goals.
- Contribute as active citizens in their communities. (GNB, 2021)

To understand whether EL initiatives in NB are meeting these goals and empowering high school graduates to make informed decisions about PSE, it is crucial to assess the impact of the existing programs and procedures on their educational outcomes.

The goal of this study is to identify cohorts of NB high school graduates who graduated between the years 2017 and 2022 and participated in courses with a curricular EL requirement during high school, and to observe (1) how their characteristics differ from graduates who did not participate in EL, and (2) how their subsequent PSE choices differ.

Background

Engagement is seen as one of the main causal factors in students' general achievements (Xerri et al., 2018), and EL is often prescribed as one of the avenues through which students can take a more active role and enhance interest in their studies. Put briefly, EL is focused on learning through experience – or "learning by doing" – and critically reflecting on EL activities as well as the subject being studied (Bradberry & de Maio, 2019).

Understanding the tangible impacts of participating in EL is a key area of interest and leads to important questions about the outcomes: Do high school students enjoy the expected benefits of their EL experience? Does participating in EL encourage students to pursue educational

pathways they may not have previously considered? Does EL have an influence on high school graduates' decisions to transition into public PSE in NB?

The Government of New Brunswick (GNB) continues to support and expand EL opportunities within the province – both at the high school and post-secondary levels of education. At the post-secondary level, initiatives such as Future NB have been established to encourage students to participate in EL, with the aim of making it easier for students to obtain employment upon completing PSE and to encourage the retention of post-secondary graduates in NB.

At the high school level, EL is more targeted at helping students become aware of their interests and the variety of career options available to them as they complete high school and move on to either PSE or the labour market (GNB, 2021). Recently, there has been an increase in the establishment of high school-level EL programs, such as the introduction of the Essential Skills Achievement Pathways (ESAP) program and related initiatives.

With GNB increasing its investment in EL at all education levels, it is important to study the impact that EL is having on NB students. To our knowledge, this research is the first of its kind to identify EL course participants in NB high schools and examine how EL influenced their transition to public post-secondary institutions in the province, particularly in comparison to their counterparts who did not participate in courses with curricular EL requirements. EL in high school may provide students with opportunities to pursue careers they had not previously considered; and for students interested in continuing their education, it may introduce them to a wider array of options than they might have originally known about.

Literature Review

The bulk of the literature on this subject is largely focused on two aspects: (1) examining the impact of EL on student motivation (i.e., its impact on students' abilities to develop soft skills and on their learning outcomes) and (2) examining how EL affects employability. Most of this work tends to be qualitative in nature or uses a quasi-experimental methodology that focuses on EL in a controlled environment.

For instance, a paper by Weinberg et al. (2011) examined the impact of EL on student motivation – specifically, it used a mixed method design to analyze the impact of EL on 336 middle school students' motivation towards mathematics and science. The students were tested before and after participating in a uniquely designed EL program to observe any changes. The study also included self-reported measures used for analysis. Results showed that although students were more interested in mathematics and were more confident in their ability to succeed after the summer science and mathematics program, they did not report that success in mathematics helped them define their sense of self. The majority of students reported that the program had significantly increased their interest in mathematics and science, and there were no key differences in results across gender. Students who participated also indicated that the program expanded their view of the usefulness of these subjects in different career options and made them aware of alternative career opportunities.

Tsalyuk (2018) similarly studied the empirical impact of EL on socio-economically disadvantaged students attending alternative high schools in California. The study used student surveys and standardized reading test scores issued at the start and end of the course for its analysis. The results from the study showed that a statistically significant proportion of students who enrolled in the EL course demonstrated noteworthy literacy improvement over a 12-week period, as indicated by enhancements in reading scores on a standardized normative assessment.

Jackson et al. (2023) investigated the impact of EL on employability through a case study of Master of Business Administration (MBA) students from the Indian subcontinent enrolled in a UK university. The students participated in a compulsory 3-day leadership development residential program integrated into the MBA curriculum. The program aimed to enhance various skills, such as negotiation and communication, while promoting self-reflection to help students better understand their abilities. Using binary logistic regression, the study predicted the likelihood of students securing employment based on several independent variables. Results showed that 53% and 56% of students reported using the residential experience in job applications and interviews, respectively, and 63% felt the experience contributed to their employment success. The study concluded that the inclusive nature of the residential program fostered emotional intelligence and key employability skills among international students, aiding their job search and securing employment. However, limitations included the inability to generalize findings beyond the observed school, self-reporting bias, and potential power asymmetry, as the researchers were also part of the teaching team.

Bradberry and De Maio (2019) carried out a study on the benefits of simulation and EL on students enrolled in Model United Nations (MUN) and Judicial Internship Programs (JIP) at California State University. The study surveyed 66 former MUN students and 56 JIP students to compare their outcomes with national statistics and graduation rates. A total of 74 responses were received (62% from MUN and 59% from JIP). The survey assessed factors such as graduate school attendance, time to graduation, employment after graduation, skills gained, and the perceived value of the programs. Although there was no control group for comparison, the results indicated a strong correlation between participation in these experiential programs and improved student success. Specifically, MUN and JIP students showed significantly higher 4-year and 6-year graduation rates than university and national averages, with most graduates reporting employment or enrollment in graduate or law school. Among MUN respondents not attending graduate or law school, 77% were employed, while 73% of JIP respondents were employed. When combining those employed and those pursuing further education, researchers found that 81% of MUN and 82% of JIP participants were either working or enrolled in graduate/law school, comparable to national employment outcomes for bachelor's degree recipients. Notably, 67% of MUN and JIP respondents found employment within three months of graduation, demonstrating strong job placement rates. The findings highlighted the programs' role in providing external motivation, peer support, and mentorship from professionals, which likely contributed to their success and which students were far less likely to receive in a traditional classroom setting.

Previous work by DataNB (formerly the New Brunswick Institute for Research, Data and Training [NB-IRDT]) has focused on the transition of high school students into PSE, though without a specific focus on EL. For instance, Gorman-Asal et al. (2022) conducted a study on the PSE

transitions of NB high school graduates from 2014 to 2019. Utilizing data provided by EECD and the seven public post-secondary institutions in NB that are also utilized in this report, Gorman-Asal et al. (2022) examined students' educational outcomes, focusing on students who did not complete high school, those who transitioned to PSE within two years of graduation, and those who opted not to pursue PSE. The study computed the proportions of students in these categories across various profile categories for analysis. Their findings revealed that 72% of NB high school graduates pursued PSE within two years of graduating: 32% attended a university in NB, 19% attended a college in NB, and 21% left NB to pursue PSE in another province.

While the above results show that the majority of NB high school students transition to PSE, approximately 28% do not – at least, not in the short-term. This study builds on the earlier work of Gorman-Asal et al. (2022) by incorporating the dimension of EL. It aims to provide unique insights, offering a new angle to understand the dynamics of students' transition decisions following high school and seeking to identify avenues that may encourage higher rates of PSE enrollment.

Data and Methodology

Data

The analysis in this report utilizes individual-level linked data from the sources described below.

High School Data

Report card data sets for the Anglophone and Francophone school districts were provided by EECD for the school years 2016/2017 through 2022/2023. The data include academic information such as grade level, school name, school year, and report card subjects for students currently or previously enrolled in public high schools in NB.

The Graduate Identifiers data set was also provided by EECD and contains information on high school graduates from NB public schools from 2010/2011 to 2021/2022. This data set does not include individuals who obtained a General Educational Development Diploma (GED) or an Adult High School Diploma.

Table 1: High school data ranges

Data Set	Available Data*
Report Card Data (Anglophone Sector)	2016/17 - 2022/23
Report Card Data (Francophone Sector)	2016/17 - 2022/23
Graduate Identifiers	2010/11 - 2021/22

** In the 2016/17 academic year, for example, 2017 would be the graduation year.*

Post-Secondary Education Data

Data on student enrollment in the four public post-secondary universities in NB[2] were provided by the Maritime Provinces Higher Education Commission (MPHEC), while data on student enrollment in the three public colleges in NB[3] were provided by each college registrar.

Enrollment data include demographic information such as gender, immigration status, and permanent province of residence at the commencement of studies. This study only includes the first instance of PSE enrollment following graduation from high school.

Table 2: Post-secondary education data ranges

Data Set	Available Data*
Student Enrollment (Non-Graduate)	2000/01 - 2022/23
CCNB Student Data	2013/14 - 2021/22
NBCC Student Data	2013/14 - 2021/22
NBCCD Student Information	2015/16 - 2021/22

** In the 2021/22 academic year, for example, 2021 would be the year of enrollment.*

Citizen Data

The Citizen Data is a longitudinal administrative database that contains basic demographic and geographic information on all NB residents who have been issued a provincial Medicare card (i.e., Medicare registry), with data available from 1971 to 2024 (as of the present date). The Citizen Data was used to provide demographic and geographic details about the sample of interest, such as sex, age, place of residence, household composition, and median neighbourhood income quintile. The income quintile measures presented in the Citizen Data were generated from Statistics Canada Census data. In the current report, measures of student income quintiles are based on neighbourhood of residence as of high school graduation.

This study only considers matched high school graduates (i.e., graduates whose educational data can be linked to the Citizen Data), as this gives us access to their demographic information and geographic choices and allows us to link high school graduation data to report card data. This approach facilitates the identification of graduates who engaged in a program likely to include EL during high school and those who did not, and to distinguish between both cohorts. From previous DataNB work using the same administrative data sets, we know that 98% of high school graduates are matched to their Medicare information (Gorman-Asal et al., 2022), and as such, this analysis is expected to capture most high school graduates.

[2] The four public universities are Mount Allison University (MTA), St. Thomas University (STU), Université de Moncton (UdeM) and the University of New Brunswick (UNB).
[3] The three public colleges are Collège communautaire du Nouveau-Brunswick (CCNB), New Brunswick Community College (NBCC) and the New Brunswick College of Craft and Design (NBCCD).

Methodology

When discussing EL, this report employs the definition used by EECD:

> *Experiential Learning means an activity that allows students to engage in concrete learning through the direct experience of observing, learning or performing work and learning tasks in the workplace, during or outside of school hours, online, or in the community. This type of learning allows students to reflect personally, expand their areas of interest and explore various career options to increase their knowledge and develop the skills and attitudes that will enable them to contribute positively to their community.* (GNB, 2021)

High School Students and Experiential Learning

To undertake this study, we first divided high school graduates into two categories: confirmed EL course participants (or "EL participants") and EL non-participants.

- **Confirmed EL course participants** are individuals who are confirmed to have participated in at least one course with a curricular EL requirement during high school.
    - For the sake of brevity, we refer to these individuals as **EL participants**.
- **EL non-participants** are individuals with no record of having taken a high school course that had a curricular EL requirement.

To implement this categorization, we first defined a set of school subjects with a required curricular EL component, based on information provided by EECD and encompassing both Anglophone and Francophone sectors. From the Report Card Data and subject list, EL participants were defined as graduates who were flagged in the data as having taken any subject with a curricular EL requirement at any point during their time in high school. Non-participants were defined as high school graduates identified in the Report Card Data who did not have a record of enrolling in any of the pre-defined subjects at any point in high school.

EL at the high school level differs between the Anglophone and Francophone school districts. In the Anglophone districts, the majority of enrollments in identified EL subjects involved co-operative education, whereas in the Francophone districts, enrollments were primarily in entrepreneurship and ESAP programs.

Co-operative education in the Anglophone districts focuses on preparing students for professional work, offering practical, hands-on experience within organizations where students take on responsibilities aligned with their career and educational goals. Meanwhile, EL experiences in the Francophone districts emphasize equipping students with skills that can be applied across various career paths and life in general, through entrepreneurship training and the implementation of the ESAP program. The ESAP program provides personalized learning

opportunities that help students explore their skills, talents, and interests while intentionally developing the nine federally identified Essential Skills (Government of Canada, 2025). Overall, these programs are designed to prepare students for both future work and life.

The goal of EL in high school is to improve students' awareness of their passions and strengths, as well as different types of career trajectories available to them after high school. In an attempt to identify those students for whom EL might increase the likelihood of attending PSE rather than directly entering the workforce, students were further categorized as 'PSE-bound' and 'not PSE-bound' based on high school subject choice.

- **PSE-bound** students are those who enrolled in at least one course considered to be PSE-preparatory.

- **Not PSE-bound** students are those who did not enroll in any courses considered to be PSE-preparatory.

EECD provided a list of courses and identifiers from the course codes, which we used to identify courses likely to indicate the intent to proceed to PSE. These include university preparatory courses, advanced placement (AP) courses, enriched courses, international baccalaureate (IB) courses, and dual credit courses. The categorization of PSE-preparatory courses is broad and includes a large majority of high school students. Students who are not categorized as PSE-bound by this definition include those who may not have perceived that other learning opportunities were available to them after high school graduation. A key consideration in this report is whether EL encourages 'not PSE-bound' students to pursue PSE.[4]

After identifying EL participants and non-participants, we then matched students to the Graduate Identifiers data set to focus on students who graduated from high school. Cohorts for this analysis are defined by their high school graduation year. Although the Graduate Identifiers data set is available from 2006 onward, due to linkage with the Report Card Data, the analysis is restricted to the available years of the Report Card Data (i.e., those who graduated from the 2016/2017 to 2021/2022 academic years).

Transition to Post-Secondary Education

Using MPHEC's Student Enrollment data and college registrar data, we examined cohorts of high school graduates who transitioned into PSE in NB within two years of high school graduation. The Student Enrollment data were used to capture enrollment in any of the public universities in NB, and the college registrar data were used to capture enrollment in any of the public colleges in NB. The first PSE of choice after high school graduation is considered.[5] Additionally, high school graduates who transitioned to PSE in NB were categorized as either continuers or gappers.

[4] Future research could focus on the influence of EL on a more select group of students seen as very likely to transition into university, such as students taking AP or IB courses specifically.
[5] Even for students who switched institutions or left the province after their first enrollment in PSE in NB, their first instance of PSE enrolment in NB is considered.

- **Continuers** are individuals who enrolled in PSE in the same year they graduated high school (i.e., within six months of high school graduation).

- **Gappers** are individuals who enrolled in PSE between six months and two years after high school graduation.

The cohorts for this analysis were defined by the year of high school graduation. Since the study considers transition decisions of high school graduates within two years of high school graduation, the full range of gappers could be captured up to the 2019 cohort of high school graduates because data for all post-secondary institutions can be observed until 2021 (with NBCC data ending in June 2021).

It should be noted that the analysis only captures individuals who transitioned to public PSE in NB. Since most students who attend PSE institutions in other provinces remain covered by NB Medicare, it is unfortunately not possible to identify whether they leave NB to pursue PSE elsewhere or simply remain in NB but do not undertake studies at an NB public post-secondary institution. Because data on private universities are currently not available, students attending these institutions in NB also would not be categorized as enrolled in PSE.

Based on data availability, three broad PSE transition categories are included in this report:

- **Leavers**: These refer to high school graduates who did not attend public institutions in NB. These individuals are primarily those who did not obtain further education, but because of data limitations, they also include those attending private post-secondary institutions in NB or those attending PSE outside the province. Students who transitioned into apprenticeships are also not observed, though this can be the subject of future work.

- **College transitions**: These refer to high school graduates who proceeded to public college education in NB within two years of high school graduation.

- **University transitions**: These refer to high school graduates who proceeded to public university education in NB within two years of high school graduation.

To protect privacy, random rounding was used for all the figures.

Logistic Regression

To isolate the relationship between EL and PSE choices, a logistic regression was used to analyze the impact of EL and 'PSE-bound' status on PSE transition decisions of high school graduates after accounting for differences in other observable factors.[6]

[6] A full model description is available in Appendix B.

Limitations

One limitation of this study is its reliance on a list of courses that have a formal curricular EL requirement. EL can be offered in other courses at the discretion of the teacher, but it may not be included every time a course is offered, or in every school where the course is offered. There may also be varying degrees of EL within a subject, which may not always be fully captured. High school education often incorporates diverse elements that enhance the learning experience, and while some elements may be perceived as EL, they may not be explicitly categorized as such. For example, activities like inviting an expert in the field to talk to the students about the day-to-day activities involved in a particular career, or peer learning, may be considered a form of EL by some even if the subject itself is not designated as an EL subject.

Another limitation of this research is that not all post-secondary trajectories of high school graduates are accounted for. Some students may have opted to study in other provinces, signed up for apprenticeships, attended private post-secondary institutions in NB, or pursued other PSE opportunities. These education decisions are not captured in our data, which are limited to enrollment in public post-secondary institutions in NB. The implication of this data limitation is that students enrolling in other educational opportunities will be classified as high school leavers. An earlier DataNB study conducted by McDonald & Miah (2024) estimates that among NB high school graduates who transition to PSE, approximately 25% pursue PSE outside NB. Of these students, a higher proportion of students leave the province to attend university compared to college. For example, around 75% of NB university students attend university in NB, while 25% attend university out-of-province. In comparison, around 90% of NB college students attend college in NB, and only 10% attend college out-of-province (McDonald & Miah, 2024).

A further limitation relates to the observability of students' underlying intentions to pursue PSE. Ideally, we would like to measure the effect of EL on students' decisions compared with what would have occurred in the absence of EL, holding other factors constant. However, this is not directly observable in our data. It is possible, for example, that students already inclined to pursue college are more likely to enroll in EL courses. While regression analyses can account for some observable characteristics, unobserved factors may still influence both participation in EL and PSE choices. Future research could address this limitation using approaches that better approximate the counterfactual scenario. Propensity score matching based on prior academic performance, report card scores, or other pre-EL characteristics could help isolate the effect of EL participation. Natural experiments, such as sudden changes in the availability of EL courses, could also allow for before-and-after comparisons to more robustly estimate causal effects.

Results

Descriptive Statistics

The pre-defined EL courses selected most frequently by students are presented in Tables 3 and 4 below, with results categorized by enrollment frequency for each sector. The selection criteria highlight the top courses in terms of student participation. Note that a student is counted in each course in which they enrolled so that totals are greater than the number of enrolled students.

Table 3: Frequency of EL enrollment in the Anglophone school districts (2016/2017 - 2021/2022 academic years)

Course name	Frequency
Coop Education (2 cr) 120	4265
Coop Education (3 cr) 120	2705
Coop Education (1 cr) 120	2350
Career Exploration (2cr) 110	910
ESAP Program	665
Marketing 120	520
Coop Education (1 cr-II) 120	460
Coop Education (2 cr-II) 120	250
Coop Education (3 cr-II) 120	215
Career Exploration (3cr-II) 110	160
Career Exploration (1cr) 110	160
Career Exploration (1cr-II) 110[7]	95

***ESAP courses are treated as a single program; that is, enrollment in any individual ESAP course is considered enrollment in the overall program. A detailed breakdown of enrollment by specific ESAP course is provided in the Appendix.*

[7] More information on the Coop Education and Career Exploration courses is available in the guidelines and course descriptions released by the Department of Education (GNB, 2005; 2006).

Table 4: Frequency of EL enrollment in the Francophone school districts (2016/2017 - 2021/2022 academic years)

Course name	Frequency
Entrepreneuriat (Entrepreneurship)	1790
ESAP Program	1350
Introduction aux soins de santé (Introduction to Health Care)	1060
Éducation coopérative (Coop Education) **411- 2cr**	965
Éducation coopérative (Coop Education) **3 cr**	730
Intro éduc enfance (Introduction to Childhood Education) **411A**	565
Vie saine et active (Healthy and Active Lifestyle)	200
Init au travail (Introduction to Work) **413A**	115
Init au travail (Introduction to Work) **423A**	95
Ent touristique (Tourism Business) **411**	65
Init au travail (Introduction to Work) **323A**	65
Init au travail (Introduction to Work) **313A**	40

** ESAP courses are treated as a single program; that is, enrollment in any individual ESAP course is considered enrollment in the overall program. A detailed breakdown of enrollment by specific ESAP course is provided in the Appendix.*

The tables presented above highlight that EL opportunities at the high school level predominantly focus on Co-operative Education in the Anglophone districts and Entrepreneurship in the Francophone districts.

Cooperative Education 120 is a course in which selected high school students integrate classroom learning with actual workplace experience. This experiential course offers youth in grades 11/12 the opportunity to engage in a work placement in a chosen area of career interest. This typically involves student placement at worksites in the community where they participate in the day-to-day operation of an organization and learn by doing. It consists of in-school and out-of-school components. The in-school component consists of pre-placement instruction and reflective learning sessions while the out-of-school component occurs at the worksite. Students are typically not paid for the training that occurs but are eligible for worker's compensation coverage (GNB, 2006).

The Entrepreneurship course is focused on developing entrepreneurship skills. In it, students use the necessary resources to establish and maintain an innovative entrepreneurial project that meets a societal need and involves taking calculated risks. The student is the main architect, and teachers are meant primarily to serve as guides or supervisors and less as knowledge providers. It should be noted that the overall goal of the Entrepreneurship course is to cultivate an "entrepreneurial spirit" within the student, which is expected to have a positive impact regardless of the student's chosen life direction and career, and not to prepare students to start a business at the end of their high school studies (GNB, 1995).

Table 5: Number of matched high school graduates

Graduation year	PSE-bound				Not PSE-bound			
	EL		Non-EL		EL		Non-EL	
	Counts	%	Counts	%	Counts	%	Counts	%
2017	1805	33%	3745	67%	545	48%	590	52%
2018	2280	39%	3640	61%	435	59%	300	41%
2019	2245	38%	3705	62%	440	65%	240	35%
2020	2330	38%	3745	62%	460	63%	275	37%
2021	1785	30%	4100	70%	400	56%	315	44%
2022	2140	38%	3485	62%	490	65%	260	35%
Total	**12 585**	**36%**	**22 420**	**64%**	**2770**	**58%**	**1980**	**42%**

Table 5 shows the breakdown of high school graduates in each year by EL participation and PSE-bound status (i.e., having taken at least one course considered to be PSE-preparatory). It is evident in each annual PSE-bound cohort that a substantially larger proportion of total matched high school graduates did not engage in any EL subject before their graduation, compared to those who did. In contrast, EL participation is higher in the 'not PSE-bound' group than in the PSE-bound group: 58% of 'not PSE-bound' graduates were EL participants compared to 42% of 'not PSE-bound' graduates that were non-participants.

The table shows a noticeable change in student composition between 2017 and 2018, with an increase in the number and proportion of students participating in both EL and PSE-bound courses.[8] This increase is primarily due to the years of available data. Since the Report Card Data starts in 2016/2017, we only captured EL and PSE-bound course participation in grade 12 for the 2016/2017 graduates. Our analysis indicates that a majority of enrollments in EL and PSE-bound courses occurred in grades 11 and 12. Thus, the lack of grade 11 data for the 2016/2017 graduates led to incomplete capture of some students' participation in EL and PSE-preparatory courses.

However, this data limitation likely only affects the 2016/2017 graduates. We expect EL and PSE-bound enrollment capture to be more complete in subsequent years, as we have data for both grades 11 and 12. The dip in numbers in 2021 is likely due to the COVID-19 pandemic as not all students were able to go to workplaces for their coop courses.

[8] It also reflects decreases in the number of students participating in PSE-bound courses only, EL courses only, and neither PSE-bound nor EL courses.

By Sex

Figure 1: High school graduates by sex

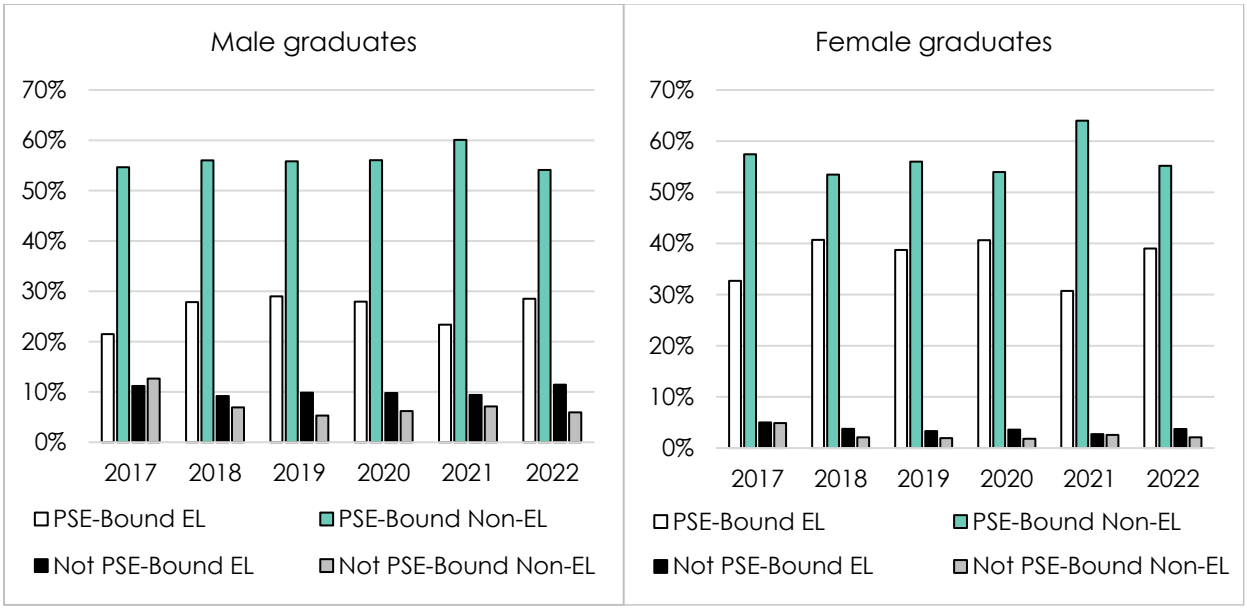


Figure 1 above shows the proportion of male and female high school graduates in each course category. It is evident that male and female graduates follow the same pattern, with the largest proportion being PSE-bound students without EL course experience, followed by PSE-bound students with EL experience. 'Not PSE-bound' students without EL experience had the lowest proportion of both male and female graduates.

While the analysis for this study demonstrates an overall absence of a sex difference in high school graduation rates, we do note a higher proportion of female graduates being PSE-bound EL participants compared to their male counterparts.

By School District

Figure 2: High School graduates by school district

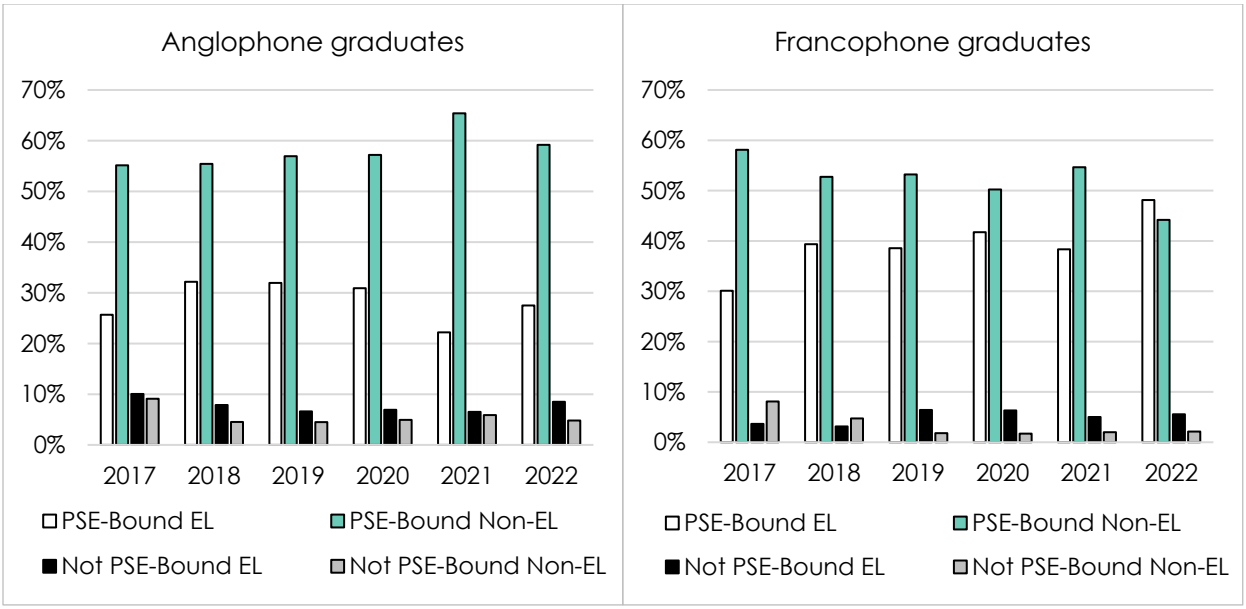


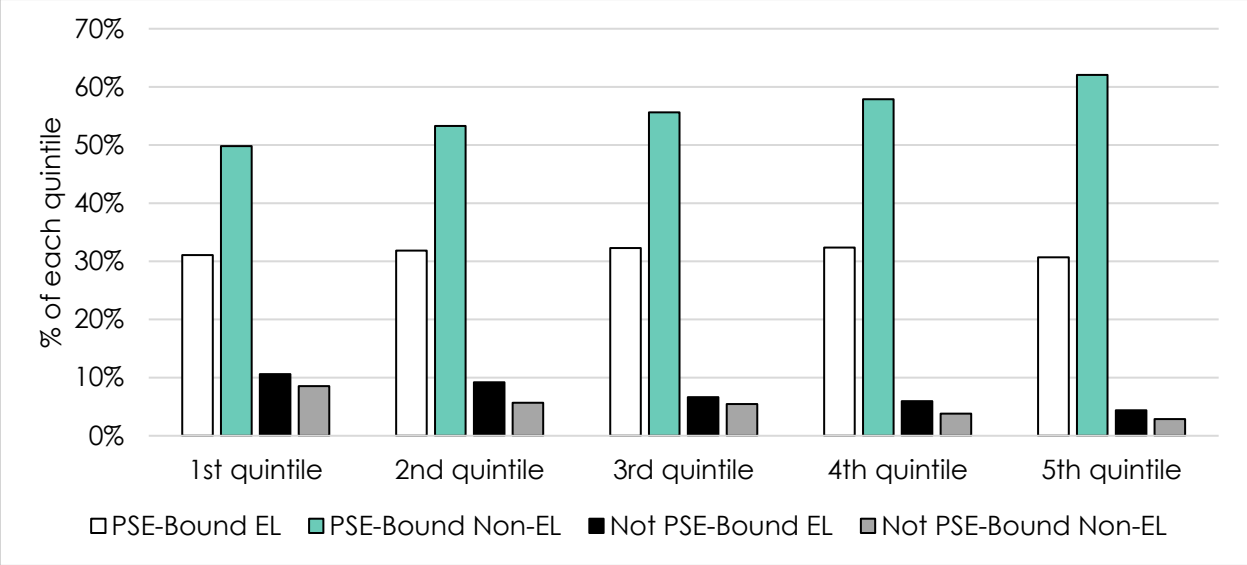
Figure 2 shows the proportion of each category of high school graduates in each course combination by school district.

The figure above shows a trend similar to the sex distribution. Within each district, the largest proportion of graduates were PSE-bound EL non-participants, followed by PSE-bound EL participants, while the smallest proportion were 'not PSE-bound' EL non-participants.

Proportionally, Figure 2 shows a higher representation of EL participants among PSE-bound students from the Francophone districts. There are wider gaps between the proportions of PSE-bound EL participants and non-participants in the Anglophone districts. However, among Francophone graduates, there are smaller gaps between the counts of PSE-bound EL participants and non-participants, which suggests higher representation of EL participants. In fact, by 2022, the highest proportion of students in the Francophone districts were PSE-bound EL participants.

By Income Quintile

Figure 3: Distribution of total graduates in each quintile by PSE-bound and EL enrollment status



1st quintile = lowest quintile; 2nd quintile = medium-low quintile; 3rd quintile = middle quintile; 4th quintile = medium high quintile; 5th quintile = highest quintile.

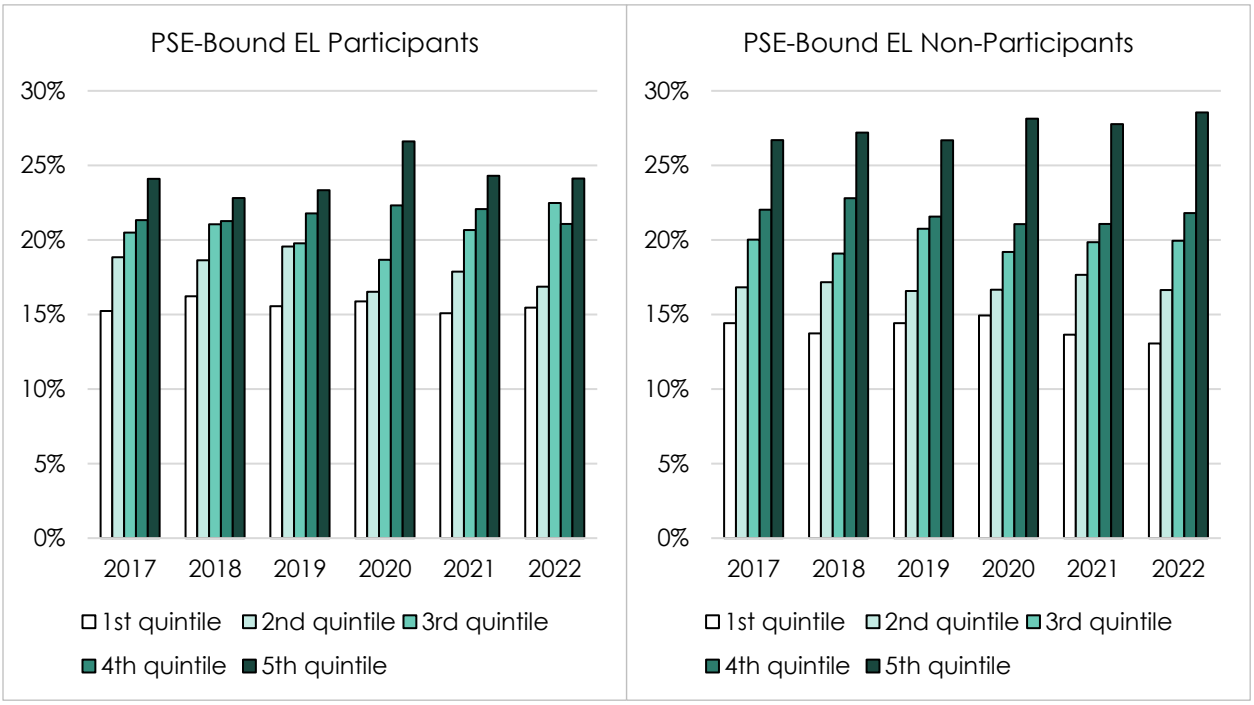
Figure 3 examines the distribution of total graduates in each neighbourhood-level income quintile by their participation in PSE-preparatory and EL courses. The income quintile measure above is based on students' neighbourhood of residence as of high school graduation. Within each quintile, the largest proportion of high school graduates were PSE-bound EL non-participants, followed by PSE-bound EL participants, then 'not PSE-bound' EL participants. The smallest proportion of graduates in each quintile were 'not PSE-bound' EL non-participants.

The figure indicates that 'not PSE-bound' students are more prevalent in the lower income quintiles, regardless of EL participation. Specifically, 11% of students in the 1st income quintile were EL participants who had not enrolled in PSE-bound courses, while only 4% of students in the 5th income quintile fell into this category. Similarly, 9% of students in the 1st income quintile were EL non-participants who also did not enroll in PSE-bound courses, while only 3% of students in the 5th income quintile fell into this category.

In contrast, there is a higher representation of PSE-bound EL non-participants in the upper income quintiles, with 62% of students in the 5th quintile being PSE-bound without EL participation, compared to 50% of students in the 1st (lowest) quintile in the same category. Proportions of students in each quintile in the category of PSE-bound with EL participation were similar at around 31%.

In Figure 4, the numbers of high school graduates in each PSE-bound and EL category are disaggregated by their graduation years and income quintile.

Figure 4: Proportion of PSE-bound high school graduates in each income quintile (EL participants vs non-participants) by year of graduation



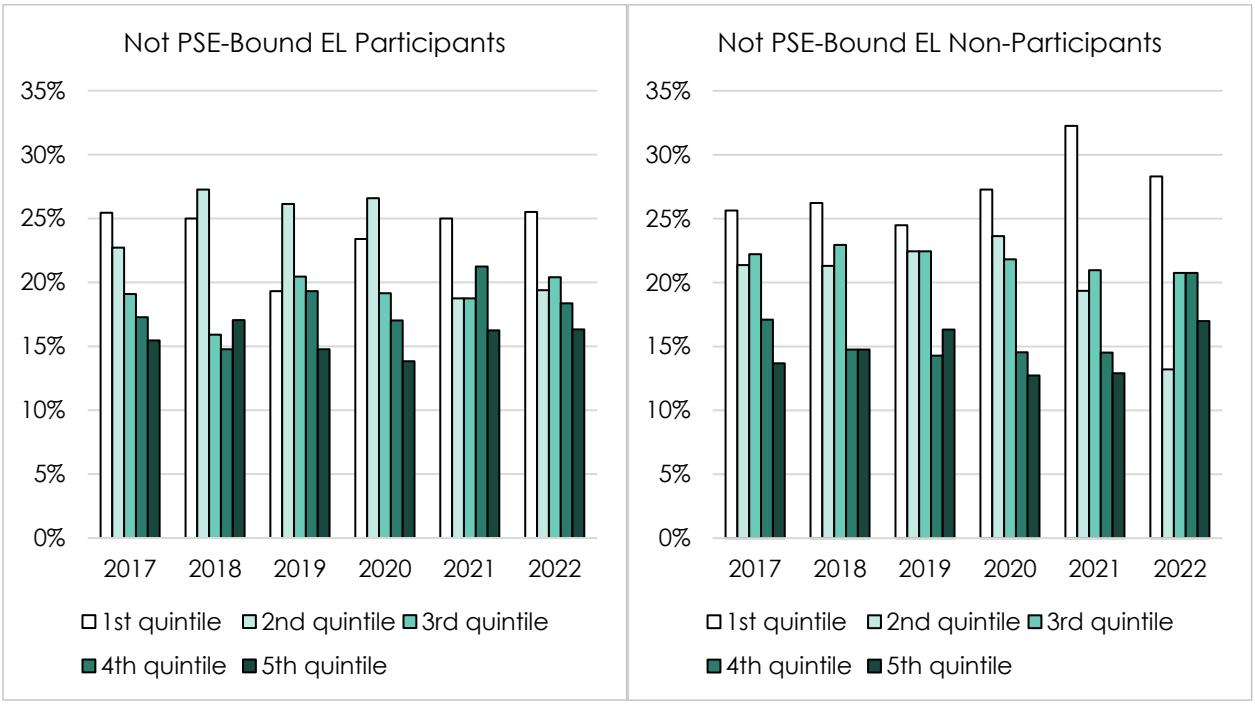
1st quintile = lowest quintile; 2nd quintile = medium-low quintile; 3rd quintile = middle quintile; 4th quintile = medium high quintile; 5th quintile = highest quintile.

Figure 4 above shows the proportion of PSE-bound high school graduates in each income quintile by graduation year, with their income quintile status based on their neighbourhood as of high school graduation. The analysis of high school graduates by income quintile reveals a clear income quintile gradient among PSE-bound students, with the highest proportion of graduates coming from the highest income quintile, followed by a progressively lower representation in each subsequent quintile, and the lowest proportion observed in the lowest income quintile.

This result holds for both categories of PSE-bound graduates – those with and without EL course experience.

In examining income disparity, Figure 4 reveals that PSE-bound EL non-participants are disproportionately represented in the highest income quintile compared to PSE-bound EL participants.

Figure 5: Proportion of 'not PSE-bound' students in each income quintile (EL participants vs non-participants) by year of graduation



1st quintile = lowest quintile; 2nd quintile = medium-low quintile; 3rd quintile = middle quintile; 4th quintile = medium high quintile; 5th quintile = highest quintile.

The proportions for 'not PSE-bound' students in Figure 5 reveal a different situation. EL participants and non-participants have higher representation among the lower income quintiles (1st to 3rd quintiles) and less representation among the higher quintiles.

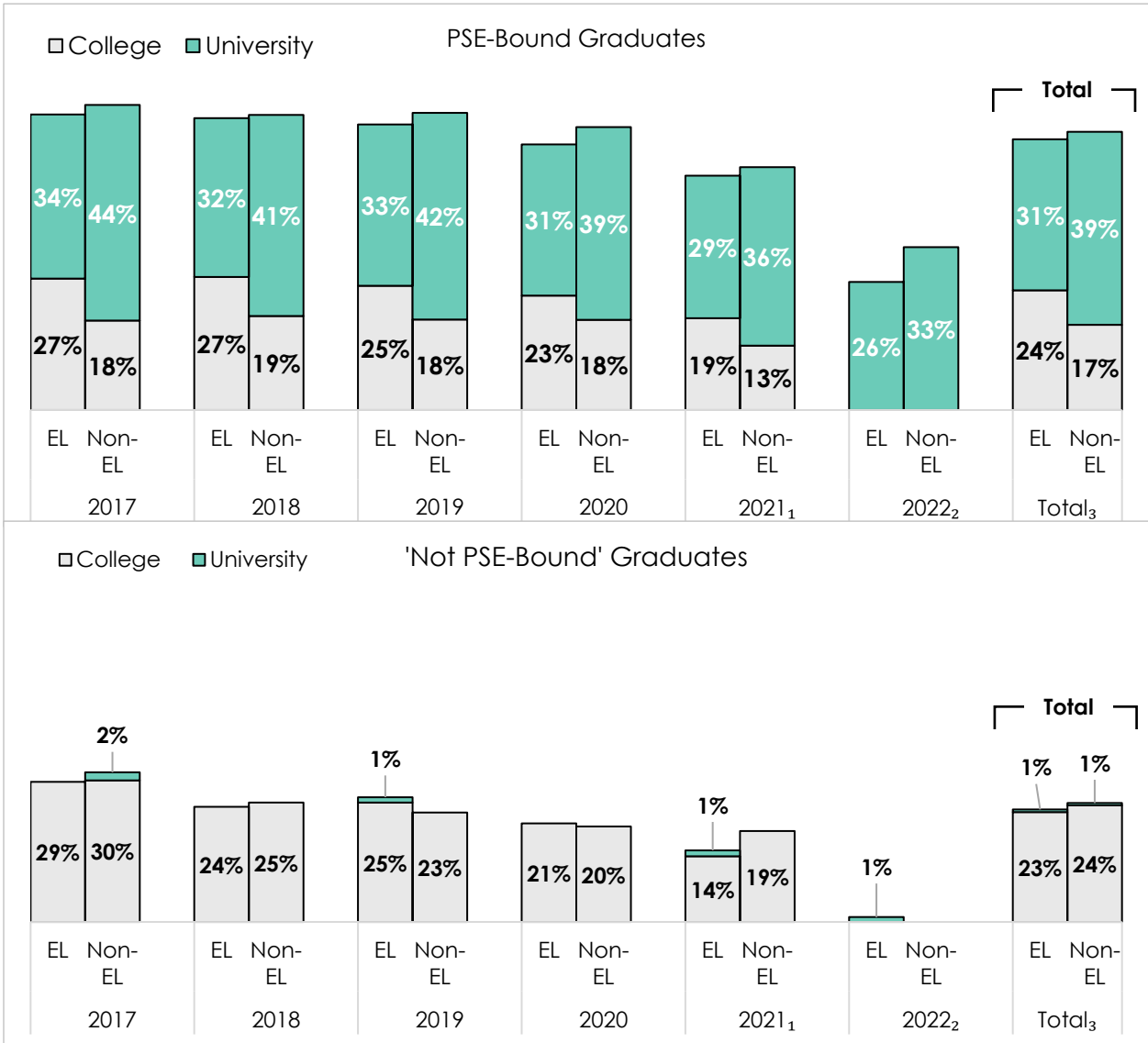
Transition Outcomes

Overall Transition to Post-Secondary Education in New Brunswick

As mentioned previously, the college registrar data (CCNB, NBCC, and NBCCD) used in this study end in 2021, which means we could only capture full college enrollment up to the 2019 graduation year. Since previous research by Gorman-Asal et al. (2022) shows that 28% of college students are gappers,[9] the overall NB college transition rates presented in our analysis are likely to be underestimated. In contrast, because only about 8% of university students are considered gappers (as estimated by Gorman-Asal et al., 2022), we expect that most NB university enrollments are included in the data available for this report.

[9] As defined in the Methodology, **continuers** are students who enrolled in PSE in the same year they graduated high school (i.e., within six months of high school graduation). **Gappers** are students who enrolled in PSE between six months and two years after high school graduation.

Figure 6: High school graduates' transitions to PSE by year of graduation



1 Because college data are only available until 2021, we can only observe college continuers (but not gappers) in 2021. Meanwhile, observations of university gappers in 2021 are partial. While we can observe gappers among students who graduated in 2021 and enrolled in university in 2022 (i.e., 1-year gappers), we cannot yet observe student university enrollments in 2023 (i.e., 2-year gappers).
2 College data are not available for 2022. Results for 2022 reflect university continuers only (with no gappers able to be observed until 2023 university enrollment data become available).
3 Overall rates are computed for years of available data (i.e. all years for university and up to 2021 for colleges).

Figure 6 shows the proportion of each category of high school graduates that proceeded to PSE, either in college or university.

As can be seen in the top panel of Figure 6, across all graduation cohorts, 55% of PSE-bound high school graduates who participated in EL proceeded to enroll in some form of PSE in NB (24%

in college and 31% in university). Meanwhile, 56% of their counterparts who did not engage in EL courses enrolled in some form of PSE in NB. Within those totals, 39% of PSE-bound graduates without EL course experience opted for university, while 31% of PSE-bound graduates with EL chose university.

The finding that 24% of PSE-bound EL participants enrolled in college compared to 17% of their EL non-participant counterparts suggests that EL participation increases the likelihood of college enrollment (from 17% to 24%) but is also associated with lower enrollment in university.

For the 'not PSE-bound' students presented in the bottom panel of Figure 6, 24% of those with EL participation enrolled in PSE in NB compared to 25% of those without EL participation. 'Not PSE-bound' students appear less likely than PSE-bound students to enroll in PSE, regardless of EL participation – but almost all enroll in college since only 1% of students in these categories enrolled in university. Thus, being 'not PSE-bound' is associated with increased college enrollments with no observed differences between EL participants and non-participants.

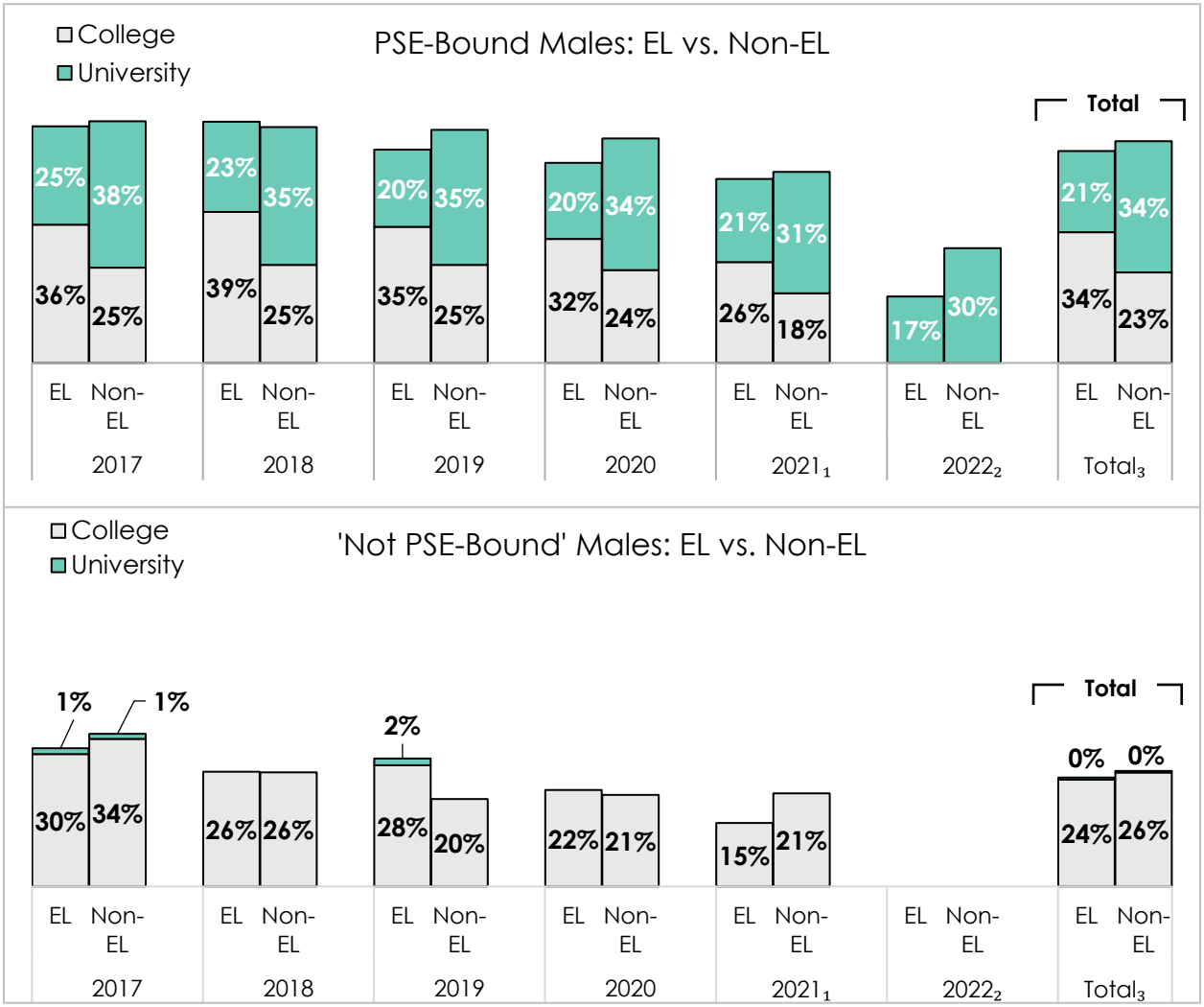
It is important to reiterate that because of data limitations, transitions to post-secondary institutions outside of NB cannot be observed. Transitions to apprenticeships are not considered but could be the subject of future work. Previous research by DataNB indicates that only about 10% of NB residents who graduate with college-level credentials attend college outside NB, while about 23% of NB residents with an undergraduate degree attend university outside the province (Boco et al., 2023; McDonald & Miah, 2024). While this does not directly provide information on the PSE transition rates of high school graduates outside the province, it suggests that the total college enrollment figures for high school graduates presented in this report are probably close to the true but unobserved figure, while total university enrollments may be underestimated.

The largest proportion of PSE-bound students who transitioned to a public PSE in NB were those without EL course experience who enrolled in one of the public universities.

Our analysis suggests that EL participation positively influences college enrollment, but only for those already on the path to PSE. In contrast, it appears to have little effect on those who are not on a PSE trajectory.

By Sex

Figure 7: Transitions to PSE for male graduates by year of graduation

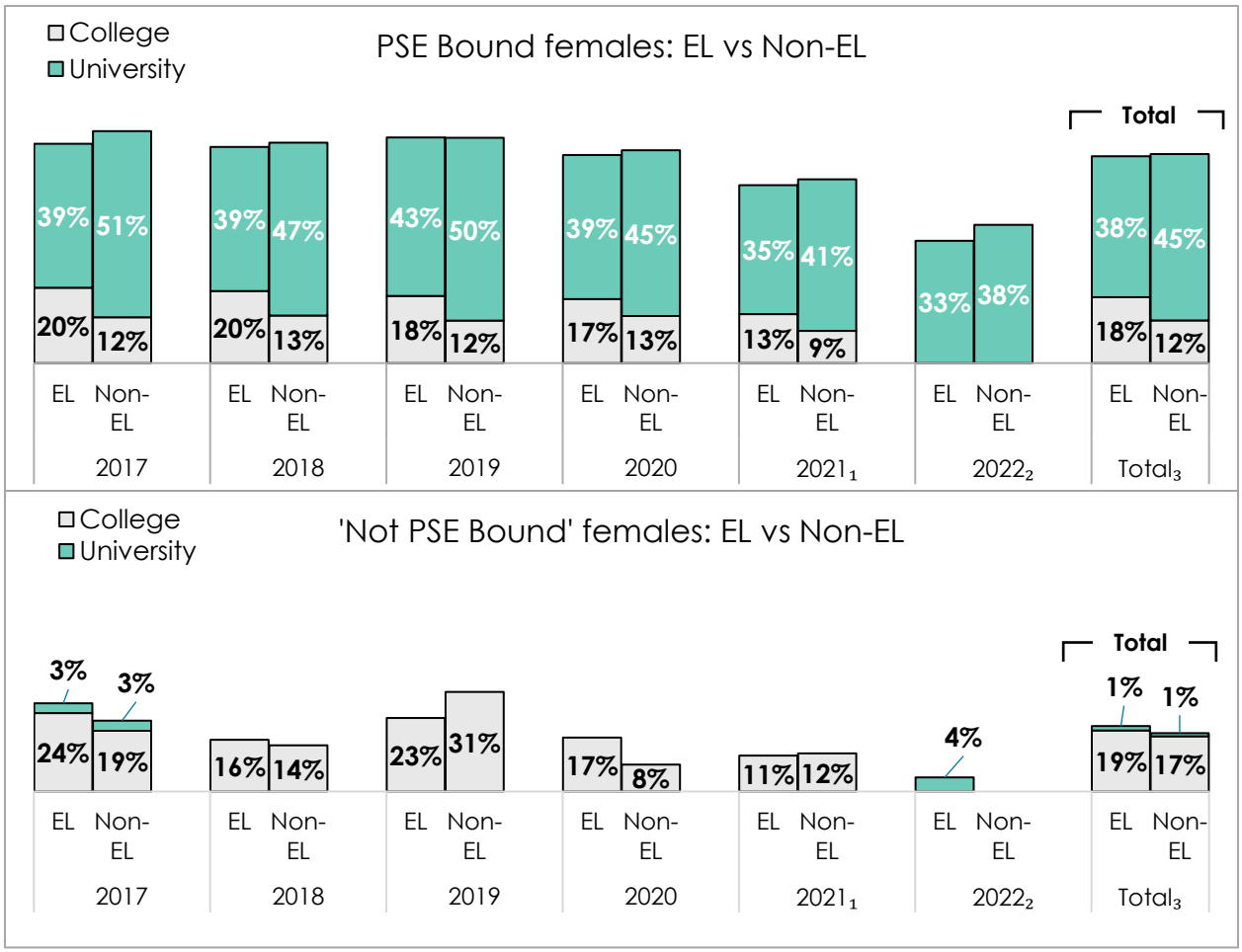


1 Because college data are only available until 2021, we can only observe college continuers (but not gappers) in 2021. Meanwhile, observations of university gappers in 2021 are partial. While we can observe gappers among students who graduated in 2021 and enrolled in university in 2022 (i.e., 1-year gappers), we cannot yet observe student university enrollments in 2023 (i.e., 2-year gappers).
2 College data are not available for 2022. Results for 2022 reflect university continuers only (with no gappers able to be observed until 2023 university enrollment data become available).
3 Total was computed for years with complete data (i.e. up to 2021 for colleges and 2022 for universities).

Figure 7 shows PSE transition patterns among male graduates by PSE-bound status and EL participation. A larger proportion of male PSE-bound students (EL participants and non-participants) transitioned to PSE in NB, compared to their 'not PSE-bound' counterparts. For PSE-bound males, a larger proportion without EL enrolled in public institutions (university or college) in NB compared to those with EL experience. PSE-bound EL non-participants' enrollments were mostly in university (34% on average) compared to 23% enrolling in college. However, male PSE-

bound EL participants appear more likely to enroll in college than university. On average, 34% of PSE-bound males with EL course experience enrolled in college, while 21% enrolled in university. For 'not PSE-bound' males, a larger proportion of those without EL experience enrolled in PSE compared to those with EL experience, although the overall difference is slight, at only 2 percentage points. The PSE enrollment rate of male 'not PSE-bound' EL participants and non-participants is primarily driven by college enrollments, with less than 1% enrolling in university.

Figure 8: Transitions to PSE for female graduates by year of graduation



1 Because college data are only available until 2021, we can only observe college continuers (but not gappers) in 2021. Meanwhile, observations of university gappers in 2021 are partial. While we can observe gappers among students who graduated in 2021 and enrolled in university in 2022 (i.e., 1-year gappers), we cannot yet observe student university enrollments in 2023 (i.e., 2-year gappers).
2 College data are not available for 2022. Results for 2022 reflect university continuers only (with no gappers able to be observed until 2023 university enrollment data become available).
3 Total was computed for years with complete data (i.e., 2021 for colleges and 2022 for universities).

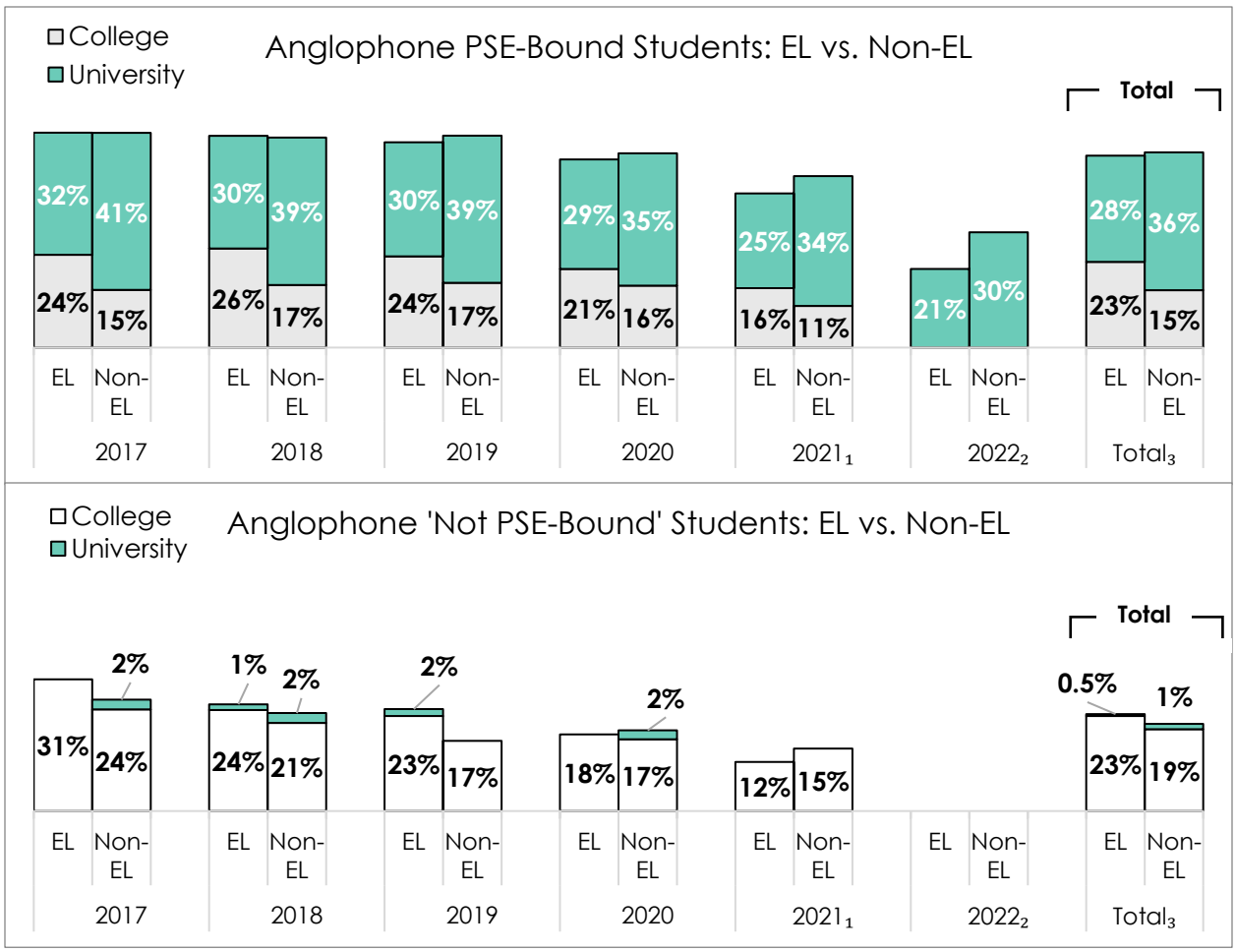
Figure 8 shows that, similar to males, a larger proportion of PSE-bound females enrolled in PSE than 'not PSE-bound' females – whether they had EL course experience or not.

Contrary to male trends, PSE-bound females appear more inclined towards university over college enrollments – regardless of EL experience. Overall, 38% of females with and 45% without EL experience enrolled in universities. In contrast, only 18% of female PSE-bound EL participants and 12% of non-participants enrolled in college. The proportion of PSE-bound females with EL experience enrolling in college is larger than the proportion without EL experience.

A higher proportion of female PSE-bound students enrolled in university than college, regardless of EL participation. Consistent with overall results, when split by sex, both EL categories of 'not PSE-bound' students appear more likely to enroll in college.

By School District

Figure 9: Transitions to PSE – Anglophone districts



1 Because college data are only available until 2021, we can only observe college continuers (but not gappers) in 2021. Meanwhile, observations of university gappers in 2021 are partial. While we can observe gappers among students who graduated in 2021 and enrolled in university in 2022 (i.e., 1-year gappers), we cannot yet observe student university enrollments in 2023 (i.e., 2-year gappers).
2 College data are not available for 2022. Results for 2022 reflect university continuers only (with no gappers able to be observed until 2023 university enrollment data become available).
3 Total was computed for years with complete data (i.e. 2021 for colleges and 2022 for universities).

Overall, as expected, it is evident that in the Anglophone districts, a larger proportion of PSE-bound students enrolled in PSE compared to 'not PSE-bound' students.

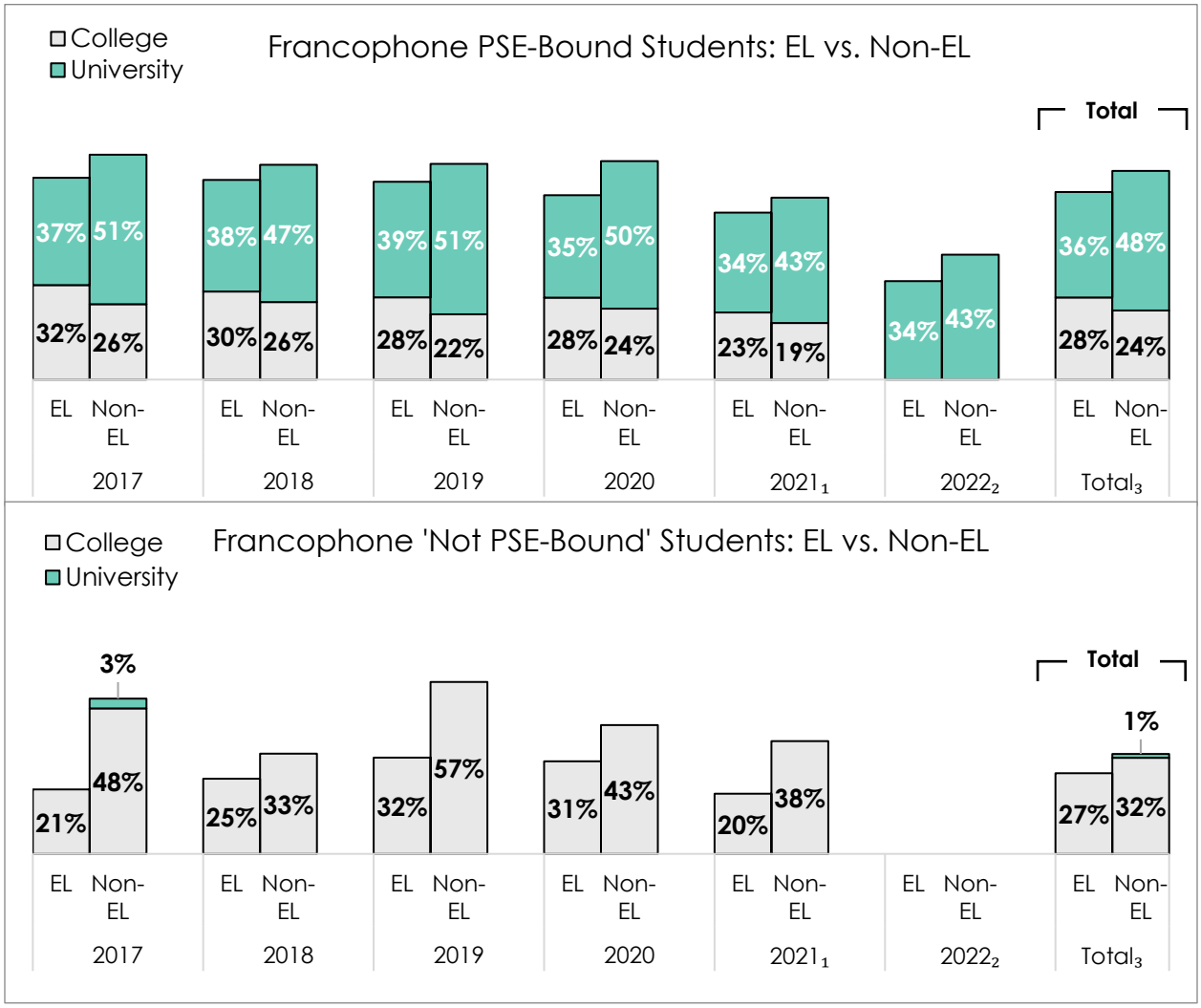
Figure 9 shows that for PSE-bound students from the Anglophone districts, a larger share enrolled in university over college, regardless of EL participation. In total, 28% of PSE-bound students from the Anglophone districts with EL course experience enrolled in university, compared to 23% who enrolled in college. Meanwhile, 36% of PSE-bound students from the Anglophone districts without EL experience enrolled in universities, compared to 15% who enrolled in college.

We observe that college transition rates for EL participants are higher than for non-participants. This indicates that although PSE-bound EL participants are still more likely to go to university than college, there is a smaller difference in college and university transition rates compared to EL non-participants.

In summary, for 'not PSE-bound' students, a larger share of EL participants (23%) and non-participants (19%) enrolled in college compared to the proportion enrolled in university (0.5% - 1%).

In general, for both EL categories, PSE-bound students from the Anglophone districts appear more likely to enroll in university, but EL participants had higher college transition rates than non-participants. 'Not PSE-bound' students have higher college enrollments than university enrollments for both EL groups, with EL participants having higher college transition rates than non-participants.

Figure 10: Transitions to PSE – Francophone districts



1 Because college data are only available until 2021, we can only observe college continuers (but not gappers) in 2021. Meanwhile, observations of university gappers in 2021 are partial. While we can observe gappers among students who graduated in 2021 and enrolled in university in 2022 (i.e., 1-year gappers), we cannot yet observe student university enrollments in 2023 (i.e., 2-year gappers).
2 College data are not available for 2022. Results for 2022 reflect university continuers only (with no gappers able to be observed until 2023 university enrollment data become available).
3 Total was computed for years with complete data i.e. 2021 for colleges and 2022 for universities.

In Figure 10, we see that trends for students from the Francophone school districts are mostly similar to trends of students from the Anglophone districts. Francophone PSE-bound students also appear more inclined than 'not PSE-bound' students to enroll in PSE.

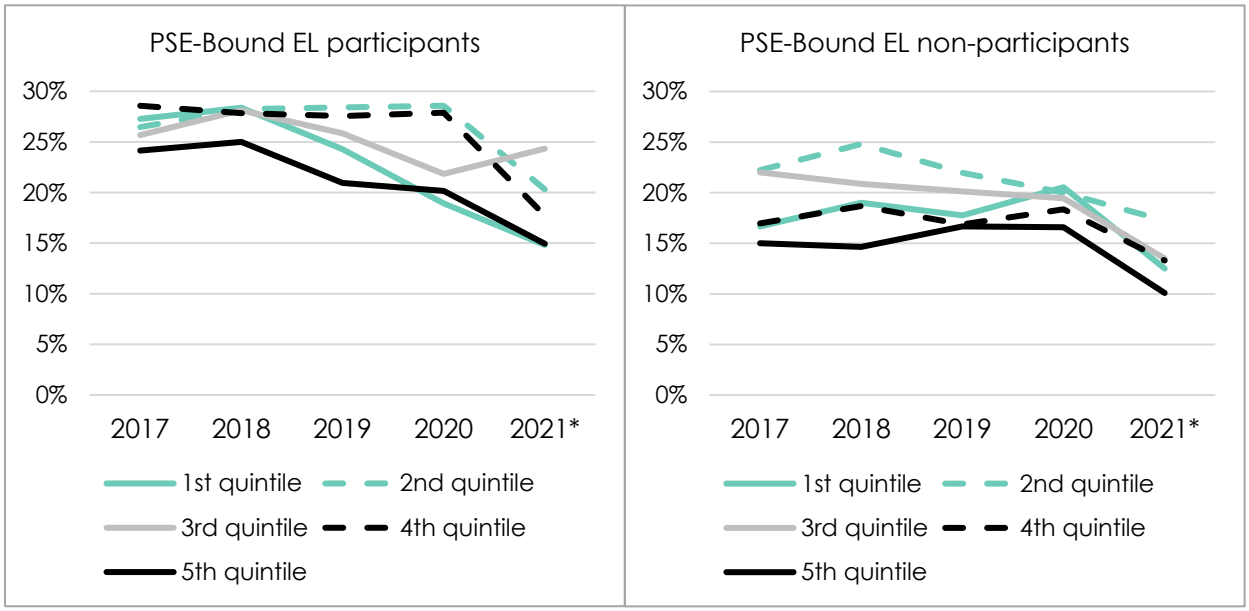
Regardless of enrollment in an EL program, PSE-bound students from the Francophone districts appear more likely to enroll in university over college. However, the distribution of EL participants transitioning to university compared to college is more even for EL participants compared to non-participants (see top panel of Figure 10). This indicates that EL participants may be

somewhat more likely to enroll in both university and college, while non-participants appear twice as likely to enroll in university over college.

Similar to what was observed for the Anglophone districts, 'not PSE-bound' students seem more likely to enroll in college compared to university, regardless of EL participation. However, unlike the Anglophone districts, 'not PSE-bound' EL non-participants from the Francophone districts appear more likely than those with EL experience to transition to college.

By Income Quintile

Figure 11: College transition rates of PSE-bound high school graduates (EL participants vs non-participants) by income quintile and year of graduation



1st quintile = lowest quintile; 2nd quintile = medium-low quintile; 3rd quintile = middle quintile; 4th quintile = medium high quintile; 5th quintile = highest quintile.
**2021 college data consist of only continuers.*

Figure 11 above focuses on the college transitions of PSE-bound high school graduates and examines what percentage of students in each income quintile transitioned to college. It presents the transition rates of PSE-bound EL participants and non-participants side-by-side.

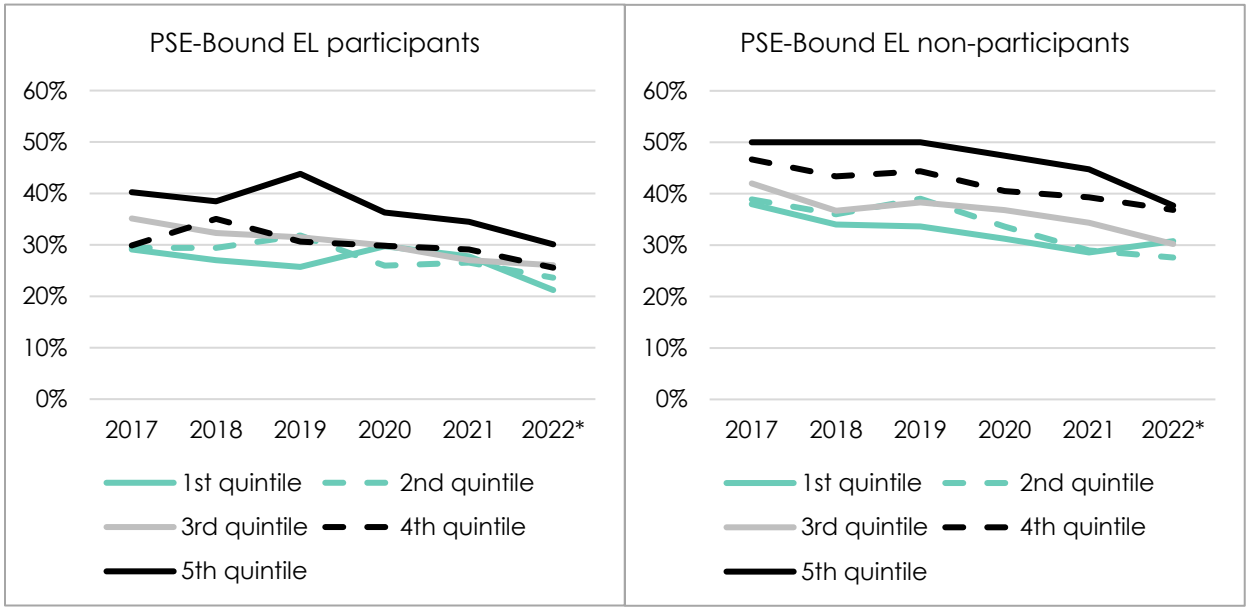
It is clear that, across all quintiles, a larger proportion of EL participants transitioned to college compared to EL non-participants. Overall, for both EL participants and non-participants, graduates from the 5th (highest) income quintile were the least likely to enroll in college. However, while 21% of PSE-bound EL participants from the 5th quintile enrolled in college, only 14% of EL non-participants did so.

In total, for both EL categories of graduates, those from the 2nd quintile were most likely to enroll in college. PSE-bound EL participants were more likely to transition to college compared to non-participants.

The slight drop in college transition rates in 2020 is partly because gappers who enrolled in 2022 are not captured by college data (which are available until 2021). Similarly, the steeper fall among the 2021 cohort is because only continuers are captured for that year.

While there are substantial differences overall in college transition rates across EL participation status, there are only slight differences within groups across income quintiles as the highest college transition rate (2nd quintile) is only 6-7 percentage points higher than the lowest college transition rate (5th quintile) for both groups. As such, Figure 11 suggests that similar proportions of EL participants and non-participants across income quintiles enroll in college.

Figure 12: University transition rates of PSE-bound high school graduates (EL participants vs non-participants) by income quintile and year of graduation

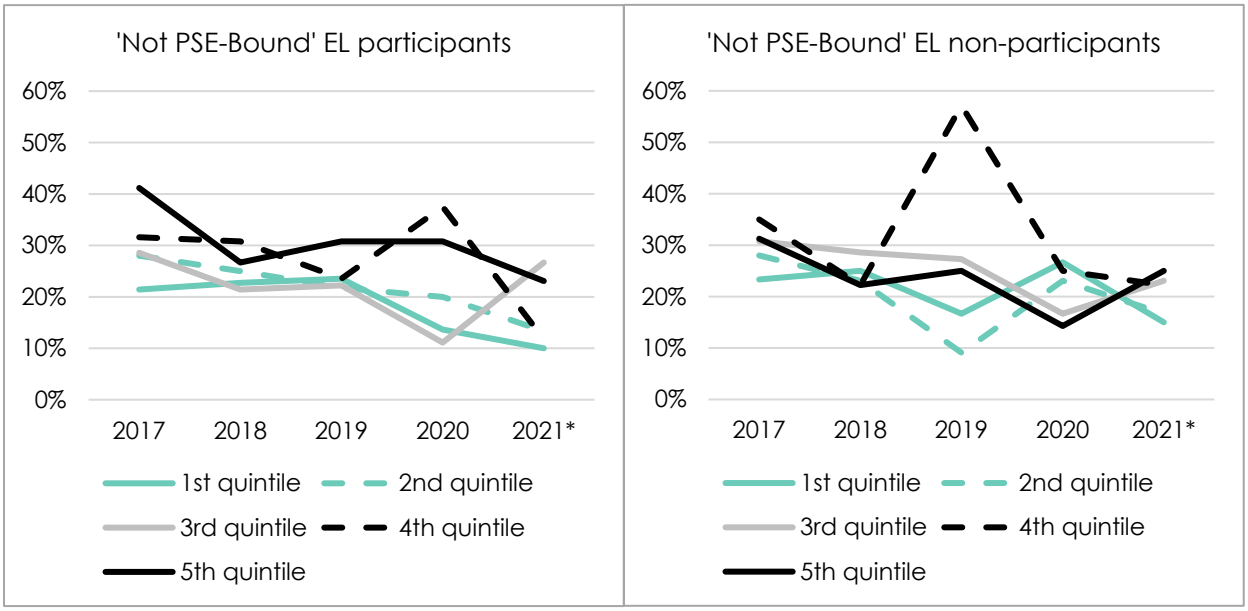


1st quintile = lowest quintile; 2nd quintile = medium-low quintile; 3rd quintile = middle quintile; 4th quintile = medium high quintile; 5th quintile = highest quintile.
**2022 university data consist of only continuers.*

It is evident from Figure 12 that a higher proportion of PSE-bound EL non-participants transitioned to university compared to the proportion of EL participants that did. Aggregate percentages show that 27% of PSE-bound EL participants from the 1st quintile enrolled in university compared to 33% of EL non-participants from the 1st quintile. The university transition rates for PSE-bound graduates without EL experience were the highest transition rates observed overall.

The figure also illustrates that both EL participants and non-participants exhibited some income gradients in all years for university transition rates, with the largest proportion transitioning from the 5th income quintile, and the lowest proportion transitioning from the 1st income quintile.

Figure 13: College transition rates of 'not PSE-bound' high school graduates (EL participants vs non-participants) by income quintile and year of graduation



1st quintile = lowest quintile; 2nd quintile = medium-low quintile; 3rd quintile = middle quintile; 4th quintile = medium high quintile; 5th quintile = highest quintile.
**2021 college data consist of only continuers.*

Figure 13 shows the proportion of 'not PSE-bound' EL participants and non-participants who transitioned to college after high school graduation.

'Not PSE-bound' EL participants show a clear difference in transition rates compared to PSE-bound EL participants. Whereas a larger proportion of PSE-bound EL participants in the lower income quintiles enrolled in college, 'not PSE-bound' EL participants showed significant variations in college transition rates across quintiles.

The highest transition rates were from the upper (4th and 5th) income quintiles, and the lowest proportion of graduates enrolling in college was from the 1st quintile. On average, 27% and 31% of 'not PSE-bound' EL participants from the 4th and 5th respective income quintiles, 22% from the 2nd and 3rd quintiles, and 18% from the 1st income quintile enrolled in college after high school graduation.

When analyzing 'not PSE-bound' EL non-participants, we observed wide fluctuations, with cases of seemingly high college transition rates due to the low counts of college transitions for this category of students. In total, 32% and 25% of 'not PSE-bound' EL non-participants from the 4th and 5th respective income quintiles, 26% from the 3rd quintile, and 22% from the 2nd and 1st income quintiles enrolled in college after high school graduation.

Note: University transitions for 'not PSE-bound' students by income quintile are not reported here due to low counts of students transitioning to university leading to wide variations in results, with significant instances of zero university transition rates.

Figure 14: PSE transitions of high school graduates by time to PSE enrollment (continuers vs gappers) and year of graduation

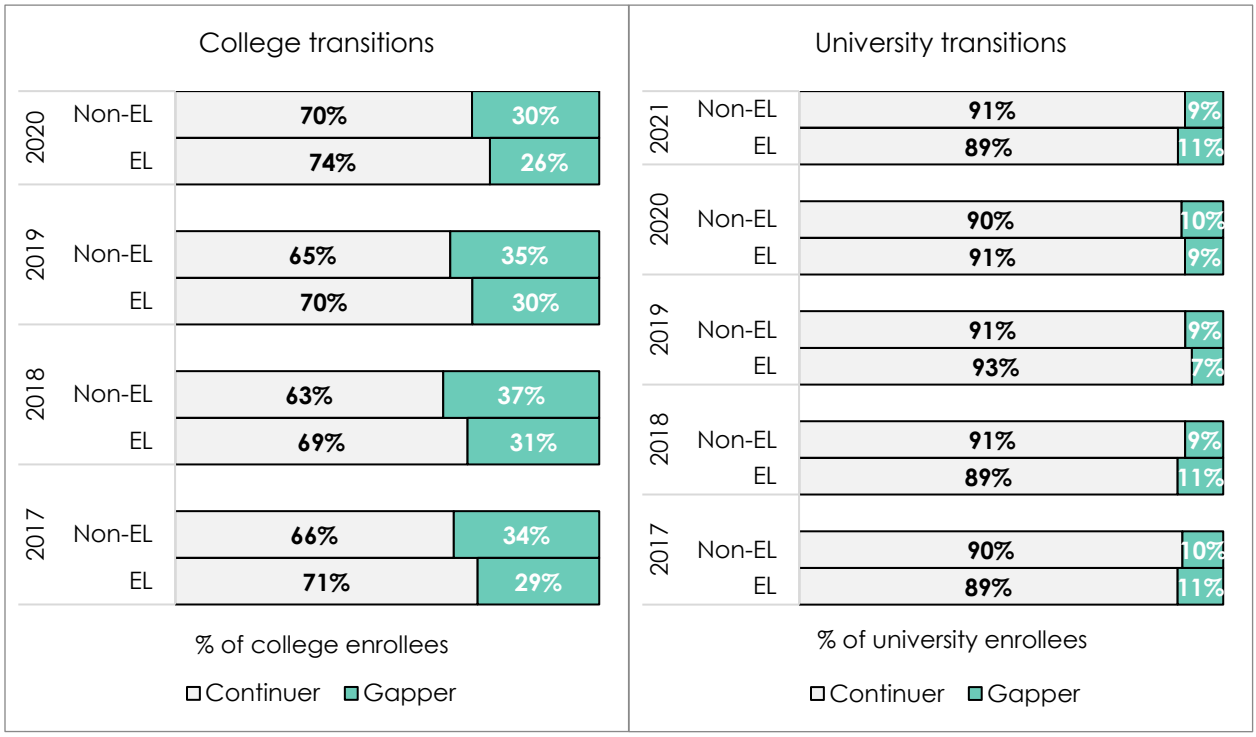


Figure 14 shows the proportion of high school graduates in each EL category (participants and non-participants) who transitioned to PSE in NB based on the time to PSE enrollment following their high school graduation (i.e., continuers vs. gappers).

As mentioned in the Methodology, continuers are those who enrolled in PSE within six months of high school graduation, and gappers are those who enrolled in PSE between six months and two years after high school graduation.

For college transitions, there is a slight difference in the proportions of continuers and gappers. High school graduates with EL course experience who transition to college appear more likely than their counterparts without EL experience to be continuers. In all years observed, a larger proportion of enrolled EL participants were continuers compared to EL non-participants. In 2020, we see a slight decline in the proportion of students that were gappers. This decline is due at least in part to the lack of 2022 college data, implying that some 2020 graduates would not have been identified as gappers.

Figure 14 illustrates that on average, 10% of high school graduates with EL experience who transitioned to university did so as gappers, and the remaining 90% did so as continuers. Meanwhile, 9% of high school graduates without EL experience who transitioned to university did so as gappers, and the remaining 91% did so as continuers. This result shows that, for university transitions, there is very little difference between the proportions of gappers and continuers across both EL categories.

There is more representation of gappers among college enrollments compared to university enrollments, but both EL categories still have a larger proportion of continuers compared to gappers.

For college transitions, EL participants appear more likely than non-participants to be continuers. The years 2021 (college) and 2022 (university) are not presented in this figure as the data for those years consist of continuers only.

Logistic Regression

Table 6 below shows the results from a multinomial logistic regression analysis that estimates the impact of participating in EL and being PSE-bound (i.e., taking a PSE-preparatory course) on the PSE transition decisions of high school graduates while holding other factors constant. It displays the odds ratios and corresponding confidence intervals from the multinomial logistic regression.

The results presented in Table 6 compare the PSE decisions of attending public colleges and universities in NB to the reference category of being leavers (attending neither college nor university in the province). In other words, the transition decisions discussed below are in comparison to the alternative of not attending any public university or college in NB.

When viewing the table below, it is important to remember that an odds ratio greater than 1 (OR > 1) indicates a relatively greater likelihood of individuals with a select attribute (e.g., being an EL participant) entering into a described state (i.e., transitioning to PSE) than individuals without the attribute (e.g., being an EL non-participant) entering into the described state.

Referring to the first row of odds ratios presented in Table 6, an odds ratio of 0.984 means that individuals for whom EL = 1 (i.e., individuals who are EL participants and 'not PSE-bound') have almost equal odds as individuals for whom EL = 0 (i.e., individuals who are EL non-participants and 'not PSE-bound') of going to college versus not attending either university or college.

This outcome is complicated, however, when we interpret the interaction between participating in an EL course and in a PSE-preparatory course. For example, referring to the third row of odds ratios in Table 6, an odds ratio greater than 1 (i.e., 1.351) for both EL and PSE-preparatory participation means that the odds of enrolling in college for EL participants increase with enrollment in PSE-preparatory courses.

As expected, the results show that participation in 'PSE-bound' courses has a statistically significant positive effect on the PSE decisions of high school graduates in NB, while participation in EL courses does not, other factors constant. The effect of EL participation on college and university enrollments depends on whether the student is PSE-bound or 'not PSE-bound.'

Table 6: Odds ratio of logistic regression using full data

Variables	Odds ratio	Odds ratio
Outcome Comparison Category = High school graduates who are leavers		
	Outcome = Transition to college	**Outcome = Transition to university**
Comparison category: EL = 0 (non-participants) and PSE-bound = 0 ('Not PSE-bound')		
EL = 1 (participants) and PSE-bound = 0 ('Not PSE-bound')	0.984 (0.846-1.145)	0.606 (0.279-1.315)
Comparison category: PSE-bound = 0 ('Not PSE-bound') and EL = 0 (non-participants)		
PSE-bound = 1 ('PSE-bound') and EL = 0 (non-participants)	1.503*** (1.329-1.699)	84.358*** (49.763-143.003)
Interaction term		
EL = 1: PSE-bound = 1	1.351*** (1.146-1.592)	1.110 (0.511-2.412)
Comparison category: District = Anglophone		
District = Francophone	2.100*** (1.973-2.235)	1.895*** (1.799-1.997)
Comparison category: Sex = Male		
Sex = Female	0.541*** (0.509-0.575)	1.572*** (1.498-1.649)
Comparison category: QAATIPPE = 1 (lowest quintile)		
QAATIPPE = 2	1.267 *** (1.150-1.395)	1.145*** (1.051-1.247)
QAATIPPE = 3	1.183*** (1.075-1.303)	1.272*** (1.172-1.382)
QAATIPPE = 4	1.209*** (1.099-1.331)	1.463*** (1.349-1.586)
QAATIPPE = 5	1.108** (1.007-1.219)	1.830*** (1.693-1.978)
Comparison category: Graduation year = 2017		
Graduation Year = 2018	0.945 (0.863-1.034)	0.890*** (0.819-0.967)
Graduation Year = 2019	0.893** (0.815-0.978)	0.910** (0.838-0.989)
Graduation Year = 2020	0.772*** (0.705-0.845)	0.765*** (0.704-0.830)
Graduation Year = 2021_1	0.491*** (0.446-0.541)	0.597*** (0.550-0.649)
Graduation Year = 2022_2		0.405*** (0.372-0.440)
Constant	0.317*** (0.276-0.364)	0.007*** (0.004-0.012)
Note: *p<0.1; **p<0.05; ***p<0.01		

1 2021 college data consist of only continuers.
2 College data are not available for 2022. The 2022 university results consist of only continuers.

College Transitions

First, the effect of participating in EL on college enrollment (relative to no PSE enrollment in NB) was examined after accounting for factors such as income quintile, education district, high school graduation year, sex, and being PSE-bound. This looks at the effect of EL participation on college enrollment decisions when a student is 'not PSE-bound.'

The result is statistically insignificant with an odds ratio estimated at approximately 1. The lack of statistical significance indicates either that there is not enough statistical evidence supporting this outcome or that there is no statistical difference in outcomes for EL participants and non-participants. This result also shows that 'not PSE-bound' EL participants have about equal odds of attending college over being leavers[10] compared to EL non-participants who are 'not PSE-bound.'

This implies that for 'not PSE-bound' students, EL has no influence on the decision to transition to college. This outcome aligns with descriptives for 'not PSE-bound' students where EL participants and non-participants were most likely to go to college, with minimal differences between the proportions that did.

We also comment on how EL participation influences college enrollment among PSE-bound students. This is obtained by examining the odds ratio of EL participation and the interaction term. The result shows that among PSE bound students, EL participation increases the odds of college enrollment by about 33% (0.984 x 1.351). This is in line with descriptive outcomes where, for PSE-bound students, a larger proportion of EL participants than non-participants enroll in college.

Next, the effect of enrolling in a PSE-preparatory course without EL participation was examined. The odds ratio shows that EL non-participants who enroll in a PSE-preparatory course have approximately 50% greater odds of enrolling in college compared to EL non-participants who do not enroll in a PSE-preparatory course.

Finally, the interaction between EL and PSE-preparatory courses on college enrollment was examined to show the effect of participating in both types of courses on college enrollment. The resulting odds ratio of roughly 1.4, alongside the odds ratio for EL participants and PSE-bound students, shows that participating in EL and PSE-preparatory courses makes a student approximately 2 times (1.0 × 1.5 × 1.4) more likely to enroll in college compared to EL non-participants who also do not enroll in PSE-preparatory courses.

This result shows that while enrolling in a PSE-preparatory course without EL participation increases college enrollment by 50%, doing so with EL participation doubles the odds of college enrollment. Enrolling in EL alongside a PSE-preparatory course increases the odds of college

[10] As a reminder, leavers are high school graduates who do not attend public post-secondary institutions in NB. They could have pursued PSE outside the province or pursued other PSE trajectories such as apprenticeship or no further education.

enrollment compared to the odds of college enrollment with only EL participation or only PSE-preparatory course enrollment.

University Transitions

First, the influence that participating in EL has on university enrollment for 'not PSE-bound' high school graduates was examined, relative to not enrolling in any NB-based public PSE (leavers). The resulting odds ratio of about 0.6 indicates a negative association between EL participation and university enrollment for 'not PSE-bound' students. While this implies that EL participants are less likely to enroll in university compared to no PSE enrollment in NB, the outcome is statistically insignificant.

Second, the impact that enrolling in a PSE-preparatory course has on university enrollment for EL non-participants (compared to the alternative of being a leaver) was examined. Among EL non-participants, those who enroll in a PSE-preparatory course are much more likely to enroll in university than not attend PSE in NB compared to those who are classified as 'not PSE-bound.' This reflects the extremely low incidence of university transitions for this group.

Finally, the impact of the interaction between PSE-preparatory course enrollment and EL participation on university enrollment was examined.

The resulting odds ratio for this interaction term is around 1.1 and is statistically insignificant. The implication is that among PSE-bound students, EL participation reduces the odds of university enrollment – however, there is not enough statistical evidence with which to draw conclusions.

Summary of Regression Findings

Participating in EL has no effect on college and university enrollment among students who are not enrolled in a PSE-preparatory program (i.e., not PSE-bound). However, EL participation increases the odds of college enrollment among PSE-bound students.

Being enrolled in a PSE-preparatory program while not participating in EL encourages both college and university enrollments but has a much larger effect on university transitions compared to college transitions.

Enrollment in both PSE-preparatory courses and courses likely to include EL encourages college enrollments but shows no statistical evidence with which to draw conclusions regarding its impact on university enrollments. Participation in only PSE-preparatory courses has the strongest impact on university enrollment.

A sensitivity analysis was also carried out on restricted data (i.e., high school graduation data up to 2021, as some college enrollment was observed up to this year). The results are similar to those presented above and are included in Appendix A.

Discussion of Findings

Experiential Learning

Our analysis shows that approximately 39% of high school graduates from the 2017-2022 cohorts took at least one course with a curricular experiential learning (EL) requirement. Meanwhile, 88% of all high school graduates were considered PSE-bound as indicated by taking some form of post-secondary education (PSE) preparatory course, broadly defined. The large proportion of high school graduates being PSE-bound is due to the inclusive nature of the PSE-preparatory courses considered in this study, which allowed us to focus on the smaller group of students relatively unlikely to pursue PSE after high school graduation – perhaps the students who would benefit most from programs encouraging enrollment in PSE.

By identifying students previously enrolled in a narrower set of academically challenging courses – advanced placement, international baccalaureate, and enriched courses – we note that only about 18% of high school graduates would be classified as university-bound. These courses provide students with skills and knowledge highly valued by universities and define a more precise subset of students most likely on the university track. Differentiating graduates into university-bound and 'not university-bound' using this definition could be used for further analysis of the impact of EL in future research.

The largest proportion of PSE-bound students who transitioned to PSE in NB were EL non-participants who transitioned to university (39%), followed by EL participants who transitioned to university (31%) and college (24%). This indicates that PSE-preparatory courses may encourage university enrollment for both EL participants and non-participants.

However, this influence of PSE-preparatory courses on EL participants does not hold under all dimensions. For PSE-bound males, a larger proportion of EL participants enrolled in college (34%) compared to university (21%). This is the only group for which this is true. In contrast, PSE-bound students across all other dimensions – including female students, students from both school districts, and students from all median neighbourhood income quintiles – appeared more likely to enroll in university than college, regardless of whether they participated in EL or not. For instance, 38% of PSE-bound female EL participants enrolled in university compared to 18% who enrolled in college.

Among the 'not PSE-bound' graduates (12% of high school graduates), overall transitions to PSE were primarily driven by college enrollments. This trend holds across both sexes, both school districts, and all income quintiles. For example, 24% of 'not PSE-bound' male EL participants enrolled in college (while 0.5% enrolled in university), and 26% of 'not PSE-bound' male EL non-participants enrolled in college (while 0.3% enrolled in university).

PSE-bound EL participants have higher odds of college enrollments than non-participants. In contrast, PSE-bound EL non-participants show higher odds of university transition than EL

participants. For 'not PSE-bound' students, college transition rates were generally higher than university transition rates, and participation in EL did not influence this trend.

The findings show that for both university and college transitions, most high school graduates were likely to be continuers, enrolling in PSE within six months of high school graduation. However, college transitions exhibited a higher representation of gappers compared to university transitions. For college transitions, EL participants were more likely than non-participants to be continuers, and EL non-participants were more likely than EL participants to be gappers. On average, 29% of EL participants and 34% of non-participants who transitioned to college did so as gappers, while 10% of EL participants and 9% of non-participants for university transitions were gappers.

This shows that participating in EL might be associated with a shorter time to college enrollment after high school graduation. For university transitions, there was no clear difference in patterns across EL participation.

Looking Forward

- As mentioned above, future work on this topic can examine the dimension of being strictly university-bound, rather than broadly PSE-bound. Students can be categorized into two distinct groups: those clearly on the university path (as indicated by their participation in courses exclusively taken by university-bound students) and those not bound for university (they could be bound for other PSE or no further education after graduating from high school). This would show the effect of EL courses, if any, on those specifically on a university trajectory in high school.

- Similarly, a separate study might also consider students that are strictly college-bound or apprenticeship-bound in order to examine the impact of EL participation, if any, on this specific group of students.

- Future analyses can also introduce enrollment in apprenticeship programs as a possible transition outcome after high school graduation.

- Additionally, future research can examine a 'dose effect' of EL. Whereas the current study categorizes students as EL participants or non-participants, future work can measure the impact of EL on transition outcomes according to the number of EL courses students enrolled in.

- Future work can also examine variations in outcomes based on the specific type of EL a student enrolled in. This would explore the categorization of EL into distinct types and examine how participant features and transition outcomes change across the identified types. It would also allow us to look at how different types of EL may lead to decisions to enroll in different subjects/programs in PSE.

- We can also further examine specific EL initiatives of interest independently of other EL offerings. For example, we can examine participation in the ESAP program to measure the program's impact on students' post-secondary outcomes.

- Related research is currently underway to investigate the impact of EL in public post-secondary institutions in NB. This will expand our EL analysis to look at EL in both the high school and PSE environments in NB.

- Finally, future research could aim to more directly estimate the causal impact of EL on post-secondary decisions. This could include approaches such as propensity score matching using pre-EL characteristics (e.g., prior academic performance, report card scores) to better approximate the counterfactual scenario of what students' post-secondary choices would have been without taking an EL course. Natural experiments, such as sudden changes in EL course availability, could also allow for before-and-after comparisons to more robustly assess EL's effects.

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Appendix A: Supplementary Tables of Results

Table 7: Top 20 ESAP courses by student enrollment – Anglophone districts

ESAP Course Name	Frequency
ESAP-CE Foundational Learning	235
ESAP-PSE Foundational Learning	175
ESAP-PSE Capstone Project Placement	160
ESAP Foundational Learning	85
ESAP-WE Experimental Work Placement	55
ESAP-WE Workplace Readiness	45
ESAP-PSE Carpentry	30
ESAP-WE Foundational Learning	25
ESAP-PSE Truck and Transport Technician	20
ESAP-CE Capstone Project Placement	20
ESAP-PSE Automotive Service Technician	20
ESAP-PSE Welding	20
ESAP - Foundational Learning	20
ESAP-PSE Cook	15
ESAP-PSE Heavy Equip Serv Tech	15
ESAP-PSE Early Child Ed	10
ESAP-PSE Elec Construct	10
ESAP-PSE Human Services	10
ESAP-PSE PSW Acute Care	10
ESAP-CE Auto Serv Tech	10

Table 8: Top 20 ESAP courses by student enrollment – Francophone districts

ESAP Course Name	Frequency
PCE Tronc com. Mécanique et entretien 2 (Essential Skills program Mechanics and maintenance 2)	465
PCEMT1 (Workplace Essential Skills Program 1)	165
PCEMT Tronc commun (Workplace Essential Skills Program - Tronc commun)	155
PCE Métaux const ébén 1 (Essential Skills program – Metals, construction and cabinet making 1)	130
PCEMT2 (Workplace Essential Skills Program 2)	115
PCEMT Exploration (Workplace Essential Skills Program – Exploration)	105
PCE Mécanique 1 (Essential Skills program Mechanics 1)	100
PCEMT - Ventes, services & trav bureau 1 (Workplace Essential Skills Program - Sales, services and office work1)	90
PCEMT Stage Formation (Workplace Essential Skills Program - Training experience)	80
PCE Mécanique 2 (Essential Skills program - Mechanics 2)	80
PCEMT3 (Workplace Essential Skills Program 3)	75
PCE Métaux const ébén 2 (Essential Skills program – Metals, construction and cabinet making 2)	60
PCE Tech humaines 1 (Essential Skills program – Human technologies 1)	55
PCE Conduite opér ressource nat 1 (Essential Skills program – Conduct, operations and natural resources 1)	50
PCE Conduite opér ressource nat 2 (Essential Skills program - Conduct, operations and natural resources 2)	45
PCE Tech humaines 3 (Essential Skills program - Human technologies 3)	40
PCEMT Métiers transp & machinerie 1 (Workplace Essential Skills Program - Transport and machinery trade 1)	40
PCE Soins personnels 1 (Essential Skills program - Personal care 1)	35
PCE Tech humaines 4 (Essential Skills program - Human technologies 4)	35
PCE Soins de santé (Essential Skills program - Health care)	30

Table 9: High school graduates' transitions to PSE

Grad year	PSE-bound				Not PSE-bound			
	EL		Non-EL		EL		Non-EL	
	College	University	College	University	College	University	College	University
2017	485	605	685	1650	160	0	175	10
2018	620	740	700	1495	105	0	75	0
2019	570	740	685	1565	110	5	55	0
2020	545	720	690	1475	95	0	55	0
2021[1]	335	520	540	1495	55	5	60	0
2022[2]	0	560	0	1160	0	5	0	0
Total	**2555**	**3885**	**3300**	**8840**	**525**	**15**	**420**	**10**

1 2021 college data consists of only continuers.
2 College data is not available for 2022. 2022 consists of only continuers.

Table 10: Counts of high school graduates by sex

Grad year	Male				Female			
	PSE-bound		Not PSE-bound		PSE-bound		Not PSE-bound	
	EL	Non-EL	EL	Non-EL	EL	Non-EL	EL	Non-EL
2017	730	1855	380	430	1075	1890	165	160
2018	925	1860	305	230	1355	1780	125	70
2019	955	1840	325	175	1290	1865	110	65
2020	970	1945	340	215	1355	1800	120	60
2021	770	1980	310	235	1015	2115	90	85
2022	935	1775	375	195	1205	1705	115	65
Total	**5285**	**11255**	**2035**	**1480**	**7295**	**11155**	**725**	**505**

Table 11: Transitions to public PSE in NB by sex

Grad year	Male							
	PSE-bound				Not PSE-bound			
	EL		Non-EL		EL		Non-EL	
	College	University	College	University	College	University	College	University
2017	260	185	455	700	115	5	145	5
2018	360	215	470	660	80	0	60	0
2019	335	190	465	640	90	5	35	0
2020	310	190	465	660	75	0	45	0
2021[1]	200	165	355	620	45	0	50	0
2022[2]	0	160	0	525	0	0	0	0
Total	**1465**	**1105**	**2210**	**3805**	**405**	**10**	**335**	**5**

Grad year	Female							
	PSE-bound				Not PSE-bound			
	EL		Non-EL		EL		Non-EL	
	College	University	College	University	College	University	College	University
2017	220	420	235	955	40	5	30	5
2018	265	530	230	835	20	0	10	0
2019	235	555	215	925	25	0	20	0
2020	235	530	230	810	20	0	5	0
2021[1]	135	355	185	870	10	0	10	0
2022[2]	0	400	0	640	0	5	0	0
Total	**1090**	**2790**	**1095**	**5035**	**115**	**10**	**75**	**5**

1 2021 college data consists of only continuers.
2 College data is not available for 2022. 2022 consists of only continuers.

Table 12: Counts of high school graduates by school district

Grad year	Anglophone				Francophone			
	PSE-bound		Not PSE-bound		PSE-bound		Not PSE-bound	
	EL	Non-EL	EL	Non-EL	EL	Non-EL	EL	Non-EL
2017	1225	2630	480	435	575	1110	70	155
2018	1530	2635	375	215	750	1005	60	90
2019	1495	2665	310	210	750	1035	125	35
2020	1470	2720	330	235	860	1035	130	35
2021	1020	3005	300	270	765	1090	100	40
2022	1230	2645	380	215	910	835	105	40
Total	**7970**	**16300**	**2175**	**1580**	**4610**	**6110**	**590**	**395**

Table 13: Transitions to public PSE in NB by school district

Grad year	Anglophone							
	PSE-bound				Not PSE-bound			
	EL		Non-EL		EL		Non-EL	
	College	University	College	University	College	University	College	University
2017	300	395	400	1090	150	0	105	10
2018	400	455	435	1025	90	5	45	5
2019	360	450	455	1035	70	5	35	0
2020	305	425	445	950	60	0	40	5
2021[1]	160	255	330	1030	35	0	40	0
2022[2]	0	255	0	805	0	0	0	0
Total	**1525**	**2235**	**2065**	**5935**	**405**	**10**	**265**	**20**

Grad year	Francophone							
	PSE-bound				Not PSE-bound			
	EL		Non-EL		EL		Non-EL	
	College	University	College	University	College	University	College	University
2017	185	210	285	565	15	0	75	5
2018	225	285	265	470	15	0	30	0
2019	210	295	230	530	40	0	20	0
2020	240	300	250	520	40	0	15	0
2021[1]	175	260	210	465	20	0	15	0
2022[2]	0	305	0	355	0	0	0	0
Total	**1035**	**1655**	**1240**	**2905**	**130**	**0**	**155**	**5**

1 2021 college data consists of only continuers.
2 College data is not available for 2022. 2022 consists of only continuers.

Table 14: Counts of high school graduates by median neighbourhood income quintile

Grad year	1st quintile				2nd quintile			
	PSE-bound		Not PSE-bound		PSE-bound		Not PSE-bound	
	EL	Non-EL	EL	Non-EL	EL	Non-EL	EL	Non-EL
2017	275	540	140	150	340	630	125	125
2018	370	500	110	80	425	625	120	65
2019	350	535	85	60	440	615	115	55
2020	370	560	110	75	385	625	125	65
2021	270	560	100	100	320	725	75	60
2022	330	455	125	75	360	580	95	35
Total	**1965**	**3150**	**670**	**540**	**2270**	**3800**	**655**	**405**

Grad year	3rd quintile				4th quintile			
	PSE-bound		Not PSE-bound		PSE-bound		Not PSE-bound	
	EL	Non-EL	EL	Non-EL	EL	Non-EL	EL	Non-EL
2017	370	750	105	130	385	825	95	100
2018	480	695	70	70	485	830	65	45
2019	445	770	90	55	490	800	85	35
2020	435	720	90	60	520	790	80	40
2021	370	815	75	65	395	865	85	45
2022	480	695	100	55	450	760	90	55
Total	**2580**	**4445**	**530**	**435**	**2725**	**4870**	**500**	**320**

Grad year	5th quintile			
	PSE-bound		Not PSE-bound	
	EL	Non-EL	EL	Non-EL
2017	435	1000	85	80
2018	520	990	75	45
2019	525	990	65	40
2020	620	1055	65	35
2021	435	1140	65	40
2022	515	995	80	45
Total	**3050**	**6170**	**435**	**285**

Table 15: Transitions of high school graduates to public PSE by median neighbourhood income quintile

Grad year	PSE-bound college transitions									
	EL Participants					EL non-participants				
	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
2017	75	90	95	110	105	90	140	165	140	150
2018	105	120	135	135	130	95	155	145	155	145
2019	85	125	115	135	110	95	135	155	135	165
2020	70	110	95	145	125	115	125	140	145	175
2021$_1$	40	65	90	70	65	70	125	110	115	115
Total	**375**	**510**	**530**	**595**	**535**	**465**	**680**	**715**	**690**	**750**

Grad year	Not PSE-bound college transitions									
	EL Participants					EL non-participants				
	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
2017	30	35	30	30	35	35	35	40	35	25
2018	25	30	15	20	20	20	15	20	10	10
2019	20	25	20	20	20	10	5	15	20	10
2020	15	25	10	30	20	20	15	10	10	5
2021$_1$	10	10	20	10	15	15	10	15	10	10
Total	**100**	**125**	**95**	**110**	**110**	**100**	**80**	**100**	**85**	**60**

1: 2021 college data consist of only continuers.

Grad year	PSE-bound university transitions									
	EL Participants					EL non-participants				
	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
2017	80	100	130	115	175	205	245	315	385	500
2018	100	125	155	170	200	170	225	255	360	495
2019	90	140	140	150	230	180	240	295	355	495
2020	110	100	130	155	225	175	210	265	320	500
2021	75	85	100	115	150	160	210	280	340	510
2022$_2$	70	85	125	115	155	140	160	210	280	375
Total	**525**	**635**	**780**	**820**	**1135**	**1030**	**1290**	**1620**	**2040**	**2875**

Grad year	Not PSE-bound university transitions									
	EL Participants					EL non-participants				
	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile	1st quintile	2nd quintile	3rd quintile	4th quintile	5th quintile
2017	5	0	0	0	0	5	0	0	5	0
2018	0	0	0	0	5	0	0	0	0	5
2019	5	0	0	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0	0	0	0
2021	0	0	0	0	0	0	0	0	0	0
2022[2]	5	0	0	0	0	0	0	0	0	0
Total	**15**	**0**	**0**	**0**	**5**	**5**	**0**	**0**	**5**	**5**

2 2022 consists of only continuers.

Table 16: Transitions of high school graduates into public PSE by time to enrollment

Grad year	EL				Non-EL			
	College		University		College		University	
	Continuer	Gapper	Continuer	Gapper	Continuer	Gapper	Continuer	Gapper
2017	460	185	540	65	565	295	1505	160
2018	500	225	665	80	490	285	1365	135
2019	480	205	690	55	480	260	1425	140
2020	475	165	655	65	525	225	1330	145
2021[1]	385	0	460	55	600	0	1360	135
2022[2]	0	0	560	0	0	0	1165	0
Total	**2300**	**780**	**3570**	**320**	**2660**	**1065**	**8150**	**715**

1 2021 college data consists of only continuers.
2 College data is not available for 2022. 2022 consists of only continuers.

Table 17: Odds ratio of logistic regression using restricted data

Variables	Odds ratio	Odds ratio
Outcome Comparison Category = High school graduates who are leavers		
	Outcome = Transition to college	Outcome = Transition to university
Comparison category: EL = 0 (non-participants)		
EL = 1 (participants)	0.984 (0.845-1.145)	0.622 (0.277-1.393)
Comparison category: PSE-bound = 0 ('Not PSE-bound')		
PSE-bound = 1 ('PSE-bound')	1.502*** (1.328-1.699)	84.014*** (46.832-140.145)
Comparison category: No participation in EL and 'PSE-bound' course		
EL = 1: PSE-bound = 1	1.362*** (1.155-1.606)	1.100 (0.490-2.469)
Comparison category: District = Anglophone		
District = Francophone	2.117*** (1.987-2.256)	1.960*** (1.849-2.077)
Comparison category: Sex = Male		
Sex = Female	0.536*** (0.504-0.570)	1.542*** (1.462-1.627)
Comparison category: QAATIPPE = 1 (lowest quintile)		
QAATIPPE = 2	1.281*** (1.162-1.412)	1.188*** (1.082-1.305)
QAATIPPE = 3	1.192*** (1.082-1.314)	1.307*** (1.194-1.432)
QAATIPPE = 4	1.216*** (1.104-1.339)	1.496*** (1.368-1.635)
QAATIPPE = 5	1.130** (1.026-1.245)	1.942*** (1.783-2.116)
Comparison category: Graduation year = 2017		
Graduation Year = 2018	0.944 (0.862-1.033)	0.889*** (0.818-0.966)
Graduation Year = 2019	0.892** (0.814-0.978)	0.909** (0.837-0.988)
Graduation Year = 2020	0.771*** (0.704-0.844)	0.742*** (0.683-0.806)
Graduation Year = 2021_1	0.489*** (0.444-0.539)	0.535*** (0.492-0.582)
Constant	0.315*** (0.274-0.362)	0.007*** (0.004-0.012)
Note: *p<0.1; **p<0.05; ***p<0.01		

1 Includes only continuers for college enrollment.

Table 18: High school graduates by EL and PSE-bound status

Grad year	University-Bound		Not University-Bound	
	EL	Non-EL	EL	Non-EL
2017	170	695	2185	3640
2018	290	865	2425	3080
2019	355	920	2325	3020
2020	360	1025	2430	3000
2021	220	1180	1965	3230
2022	285	950	2345	2785
Total	**1680**	**5640**	**13675**	**18755**

Appendix B: Multinomial Logistic Regression Model

Multinomial logistic regression was used to model the PSE decisions of high school graduates in NB. In the analysis, the outcome categories are labeled as 1, 2 and 3. Category 1 denotes students who do not transition to either public university or college in NB (i.e., leavers). Category 2 represents students who transition to public colleges in NB, and category 3 represents students who transition to public universities in NB. All students who graduated from public high schools in NB between the 2016/2017 and 2021/2022 academic years are included in the sample.

The multinomial logistic regression equation includes as explanatory variables EL participation, district of high school education, sex, being PSE-bound, neighbourhood income quintile prior to PSE enrollment, and high school graduation year. An interaction term of EL and PSE-bound status allows for differential effects of EL for different groups of students based on whether they are classified as PSE-bound or not.

Let *y* represent the dependent variable (PSE transition) with three possible outcomes (*y* = category 1, category 2, category 3). Without loss of generality, we set *y* = category 1 as the reference category. The model is specified as follows:

$$\log\left(\frac{P(y=j)}{P(y=1)}\right) = \beta_{0j} + \beta_{1j}EL + \beta_{2j}district + \beta_{3j}gender + \beta_{4j}psebound + \beta_{5j}quintile + \beta_{6j}EL * psebound + \beta_{7j}gradyear \quad for\ j = 2,3$$

Where

- β_{0j} is the intercept for category j,
- $\beta_{1j}, \beta_{2j}, \ldots\ldots, \beta_{7j}$ are the coefficients for the independent variables as defined above for category j.