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Linguistic Heterogeneity and Non-Traditional Pathways to Postsecondary Education in Ontario

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Executive Summary

The University of Ottawa is North America's largest bilingual (English-French) postsecondary institution. Undergraduate students from a wide variety of academic pathways, from every province and territory, and indeed from across the world, are registered in the university's French, English and French immersion programs, creating a linguistically and culturally diverse campus. Although this diverse community fosters an extremely rich environment for learning, it can also pose some challenges. Two key areas in the University of Ottawa's mandate are to promote the French culture in Ontario and help Ontario's various francophone communities flourish. A central goal of this mandate is to ensure that francophone students, irrespective of their backgrounds or wherever they might come from, are in a position to thrive at the university in their chosen academic programs and, more broadly, integrate socially into the francophone community on campus and the general campus community. However, these goals and mandates are rendered more complicated by the sheer breadth of pathways and backgrounds from which students are recruited, thereby resulting in linguistic and cultural heterogeneity.

This report discusses the evolution of various efforts made by the institution to better understand the challenges faced by francophone students. In particular, we are concerned with those students coming from communities across Ontario where the French language is in a minority context and is often minoritized to various degrees. Francophone students from such backgrounds are frequently confronted with linguistic insecurities upon arriving on campus, which in turn can adversely affect their social and academic integration. More specifically, the report documents a two-pronged project aimed at helping these students better integrate into the francophone community on campus through 1) the implementation of a novel peer mentoring program and 2) understanding students' needs in core foundation language courses. This understanding is achieved through detailed quantitative analyses of historical results in core foundation language courses (whether French or English) so as to better understand whether these courses respond to the needs of all our students.

The first part of the report documents the findings of the mixed-method study which accompanied the implementation of the peer mentoring program for the fall 2011 cohort of students from minoritized regions. The peer mentoring program was founded with the goal of establishing links between incoming students from minoritized communities and upper-year students from the same community. In this section, it will be shown that the program had a positive impact on the mentees, but also on the mentors. Although areas for improvement have been identified, it can be affirmed that the regional peer mentoring program has helped the social and academic integration of incoming students. The mentoring program has also had a beneficial impact on the mentors in that the program provided them with leadership opportunities and helped them raise their awareness of the realities of different francophone communities.

The findings presented in the second part of the report outline the results of detailed quantitative analyses relating the students' performance in pre-university courses, especially language courses, to university-level foundation core language courses, as well as to overall academic performance. The results are of significant interest to three different social actors: universities, secondary schools and their respective boards, and first-entry students from Ontario and Canada. The first conclusion from the quantitative analyses is that the quality of the academic preparation in secondary school, especially in language courses, is a primary factor in the likelihood of success in university, both in language foundation courses and in overall grade point average. This conclusion emerges from the observation that the single most important independent variable among those tested was the result in Grade 12 language prerequisites (FRA 4U or ENG4U). It accounted for the most variance, almost as much as the complete admission average. This being said, we must also recognize, as an additional important conclusion, that there are many other uncontrolled factors influencing success in

university studies; the very best model accounted for no more than about 40% of the total variance. Much work remains to be done to better understand the factors likely to predict success.

Dedication

This report is dedicated to the mentors and students who participated in the regional peer mentoring pilot program. We thank you for your dedication, enthusiasm, candid nature and collaboration.

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Introduction

The University of Ottawa is North America's largest bilingual (English-French) postsecondary institution. It welcomes anglophone and francophone students from across Canada and internationally, although the majority of its undergraduate students come from Ontario. Analysis of registration data made available by the Ontario Universities Application Centre (OUAC) for graduates of Ontario's French first-language secondary schools (Labrie, Lamoureux & Wilson, 2009), indicates that, since 1998, the University of Ottawa welcomes annually an undergraduate cohort that includes 55% of the graduates of Ontario's French first-language schools who attend university in Ontario. These students come to Ottawa from across the province, from a variety of community contexts where the French language is quite often in a minority context and is quite often minoritized. That is, in some Ontario communities, the French language is not widely valued at large and may even be marginalized (Heller, 1999; Lamoureux, 2007).

Ontario's French-language communities have long been linguistically and culturally diverse with regards to varieties of French and francophone culture (Bélanger, 2007; Cotnam, 2012; Gérin-Lajoie, 2003; Heller, 1999; Labrie, 2010; Lamoureux, 2007; Mougeon, Rehner & Nadasi, 2010; Richards, 2012; Thomas, 1994; Turner, 2012). Francophones cannot be considered a homogeneous language group. With interprovincial migration and immigration, the linguistic heterogeneity within individual French-language communities in Ontario is increasing and is, as we shall see, reflected within the University of Ottawa's francophone cohort. Research into the student experience in university settings in Ontario reveals that when Francophones from regions where the French language is either more concentrated (eastern Ontario) or the dominant language (Quebec, France) meet Francophones from regions in Ontario where the French language is highly minoritized, they do not always perceive the accents or linguistic characteristics (e.g., preferred register, code switching, code mixing, cultural references) of those from highly minoritized areas as being associated with "legitimate" or "loyal" Francophones (Desabrais, 2010; Lamoureux, 2007; 2011).

Institutional analysis of student persistence data revealed that francophone students from regions outside Ottawa were 5 to 10% less likely to complete their degrees than their peers from the Ottawa region. This finding led to an informal needs assessment (focus groups) with francophone students at the University of Ottawa, specifically those coming from northeastern and central southwestern Ontario. The needs assessment revealed that this group of students experiences important challenges during their transition to university. Examples of findings include increased linguistic insecurity, academic challenges in some of the courses conducted in French (including both mandatory French foundation language courses and other courses offered in French), and social integration challenges as students integrate into the university and larger French-language communities in the Ottawa region.

These findings came as a call to action in light of Ontario's desire to increase the postsecondary attainment of its citizens (aged 25 to 64) from 63% to 70% by 2020 (Government of Ontario, 2010). It is by no means the only jurisdiction with ambitious growth targets for postsecondary education (PSE). For example, although its target is expressed in terms of participation rather than attainment rate, China announced in 2010 that it wished to increase its participation rate from 33% to 66% by 2020, whereas India aims to increase access to PSE from 12.5% to 30% by 2030 (Labrie & Lamoureux, 2010). However, in Ontario, reaching the stated goal implies that institutions will need to increase access from underrepresented populations as well as create opportunities that encourage and support non-traditional pathways to PSE.

In his 2005 report, *Ontario: A Leader in Learning*, Rae identified Francophones as one of five underrepresented populations in Ontario PSE institutions, a fact first brought to light by Churchill, Frenette and Quazi (1985) and later re-confirmed by Frenette and Quazi (1996). Although overall Francophone PSE

participation rates are now similar to those of Anglophones, Lennon, Zhao, Wang and Gluszynski (2011) report that:

> … a significantly higher proportion of Francophones pursued non-university postsecondary education (45% compared to 37%). Anglophone students were more likely to attend university: 50 per cent of them, as opposed to 40 per cent of francophone students, chose this path. (p. 9)

In this context, action was deemed essential. Conscious of the importance of diminishing the impact of linguistic insecurity that could be experienced by first-year francophone students coming to Ottawa from regions where the French language is highly minoritized, the university decided to implement a peer mentoring program dedicated to this particular student group. This program would link francophone students from regions where French is in a minority context and/or highly minoritized with socially and academically integrated upper-year students from their home area, who would in turn provide incoming students from outlying regions with an insider view to the university. They would help students identify and access resources to bridge the transition gap between secondary school and university, especially during the summer months and the arrival on campus.

A research project was developed to shadow the implementation of the peer-to-peer mentoring program and evaluate its effectiveness with regards to the social and academic integration of francophone students from northeastern and central southwestern Ontario, including their sense of linguistic (in)security.

Furthermore, it became evident that there was a need to perform an exhaustive analysis of institutional data on students registered in our French-as-medium-of-instruction undergraduate programs. It was also evident that the university needed to identify the demographic and sociolinguistic profiles of francophone undergraduate students at the University of Ottawa. Finally, the university wanted to identify predictors of success in mandatory French foundation language courses in particular and of academic success in general during the first year of study.

The findings of these two studies exploring the impact of linguistic heterogeneity on student success are presented in this report, following a brief contextualization of the student population at the university. We begin with the mixed-method case study of the implementation of the peer-to-peer mentoring program to better understand the experiences of students who meet the established language requirement for admission to the University of Ottawa's first-entry undergraduate programs, but require specific skill development, for example, in foundation language courses. Then, through the analysis of institutional data, we investigate the relationship between performance in secondary school, especially in the university preparation language course, and performance in university, both in foundational language courses and in overall cumulative grade point average (CGPA). This analysis allowed for empirical verification of the anecdotal data collected during the 2010-2011 focus groups with regards to the relationship between admission Grade 12 language requirements and the mandatory first-year foundation language courses.

Context – The University of Ottawa

The University of Ottawa, North America's largest bilingual (English-French) university, has a specific mandate to meet the needs of Ontario's French first-language minority community. The university has developed a broad range of academic French-as-medium-of-instruction programs for its francophone students and students wishing to study in French.

In the fall of 2012, total undergraduate and graduate program enrolment at the university surpassed 42,000 students, including about 13,000 Francophones. At the undergraduate level, about 10,600 students are pursuing a program with French as medium of instruction and close to 1,500 are pursuing a French immersion

program. It should be noted that the university draws francophone and anglophone students from all regions of Ontario and Canada, as well as internationally. The fall 2012 francophone undergraduate entering cohort had approximately 50% of its students entering directly from an Ontario secondary school, 21% were students entering university from CÉGEPs, 6% were foreign students and the remainder came from different pathways (e.g., Ontario colleges, Canadian universities, other).

For Ontario students in particular, the regional origin in the fall of 2012 was as follows: 12% of students came from northern Ontario, 13% from central and southwestern Ontario and 75% from eastern Ontario. Thus, the University of Ottawa constitutes a quasi-laboratory for studying the impacts of various geographical origins and academic pathways in a uniform postsecondary environment. The variety of origins and pathways overlap one another to some degree but they all point to different levels of social and academic preparation.

Recent demographic data show that enrolment in Ontario's K-12 French first-language system grew at a rate of 4% from 2004 to 2010, with important regional fluctuations (Ministry of Education, 2010). This regional growth can be ascribed in part to a growing number of francophone students of international origin, especially in urban areas such as Ottawa and the Greater Toronto Area (GTA), as well interprovincial migration to central southwestern Ontario, where one-third of Ontario's francophone population now lives.

Somebody Like Me: Peer Mentoring Program for Francophone Undergraduate Students

Setting the Stage

During the spring and summer of 2010, we met with some of our partners at French first-language school boards in northeastern and central southwestern Ontario to discuss their perceptions of their former students' experiences at the University of Ottawa. They indicated to us that many students had reported experiencing a difficult transition socially, academically or both, and that many had experienced a heightened sense of insecurity with regards to their linguistic competencies in French when encountering students and faculty from areas where the French language was less minoritized or in a majority context. These findings led us to conduct three focus groups with francophone students who came to Ottawa from regions in Ontario where the French language is largely in the minority and/or is highly minoritized.

The focus group data, collected from more than 250 francophone undergraduate students (study years 1 to 4) from areas in Ontario where French is highly minoritized, confirmed that a great majority of them experienced difficulty with the university's French foundation language courses for Arts and Social Sciences programs and felt that these two courses did not meet their literacy needs for university. Participants also mentioned having to face major challenges integrating socially and academically into the university's francophone community.

They indicated that the transition from secondary school to the University of Ottawa posed particular challenges, as many of them came to Ottawa from small secondary schools with few or none of their peers. Those from larger schools often had peers attend the university but these peers where often not in their program or not part of their social circle in secondary school. Most of these students travelled more than 500 km to attend the University of Ottawa. They found it difficult to navigate the university, in person or online, and to find information about the various resources available to them or how to access them.

They envied their colleagues from Ottawa who were able to maintain peer groups established in secondary school and seemed to have an insider's view of the institution and its services. Finally, the focus group

participants revealed the immense sense of linguistic insecurity brought on following the shock that they experienced when confronted with significant differences between their linguistic repertoires of French and that of their Ottawa region and Quebecois colleagues, who use a variety of French which seemed to approximate more closely the linguistic register valued at the University of Ottawa.

The focus groups underscored the importance for the university: 1) to be better aware of the complexities and various characteristics of the students who form its annual francophone undergraduate cohort; 2) to identify the demographic and sociolinguistic profiles of these students; 3) to identify the various pathways that lead students to pursue undergraduate studies at the university; 4) to obtain quantitative empirical evidence of their academic performance; and 5) to research and explore initiatives at various postsecondary institutions that focused on supporting new students during the transition to university, and to better integrate them socially and academically during the first year.

Literature Review

An increasing number of American and European researchers are exploring questions of student access to PSE and student experience of PSE from the perspective of racial/ethnic minorities (Attanasi, 1989; Eimers & Pike, 1997; Hernandez & Lopez, 2004; LeSure-Lester & King, 2005; Watson, Terrell, Wright et al., 2002) or from the perspective of the international student (Montgomery, 2010). Canadian research has mostly concentrated on the dominant student group, the majority, whether the francophone majority in Quebec or the anglophone students in the other Canadian provinces and territories. However, in recent years there has been an increase in studies exploring access to and success in PSE for other underrepresented students, such as students who are the first generation to attend PSE, socioeconomically disadvantaged youth, certain immigrant groups, members of Canada's First Nations, Métis and Inuit communities, and persons with disabilities. However, most of these studies do not consider questions related to language, particularly in regard to the official languages of Canada, despite the fact that French-language students from communities where French is minoritized have been identified as an underrepresented group (Rae, 2005) and that they often study in English-language-of-instruction programs and at English institutions (Labrie et al., 2009). However, a few studies are looking at the experiences of English language learners (Kanno & Harklau, 2012).

Access and Transition to PSE and Student Experience en Ontario français

There is a pressing need in Ontario, and elsewhere, for comprehensive research that addresses the access to, transition to and student experience of PSE for minority Francophones who study in French or in English. Whether studies approach this field of research from the perspective of higher education, sociolinguistics or sociology of education, there has been a near-complete abstraction of questions related to the linguistic identity or origins of students attending Canada's colleges and universities, as well as the minority status of French, particularly in studies on the access to and student experience of graduate studies. There is a mounting tide of change, with a few studies coming to light in Ontario that build on the seminal quantitative analyses of PSE choices of Ontario Francophones of Churchill, Quazi and Frenette (1985), taken up again by Frenette (1992) and Frenette and Quazi (1996).[1] However, significant research gaps must still be filled before we can properly inform institutional policies and practice around PSE access and supporting students as they transition to PSE through various programs and initiatives.

[1] See Byrd Clark, 2008, 2009, 2010; Jones et al., 2008; Labrie, Lamoureux and Wilson, 2009; Lamoureux 2007, 2010a,b.

Facilitating the Transition: Student Mentoring

One topic that has generated a great deal of research in the past thirty years is that of student mentoring programs (Ehrich, Hansford & Tennent, 2004; Ferrari, 2004; Grant-Valollone & Ensher, 2000; Jacobi, 1991; Schmidt, 2008; Terrion & Leonard, 2007). Researchers from such diverse fields as economics, education and medicine have studied the impact of student mentoring programs. A shared conclusion is the positive impact that a mentor can have on the postsecondary student. We have explored studies that looked at professor-mentors (Campbell & Campbell, 1997) as well as peer mentors (Colvin & Ashman, 2010; Smith, 2008); however, the peer mentoring programs seem to have the most profound impact on students. Students seem to build stronger relationships with a mentor who has a similar background and experiences.

Program delivery and target populations greatly vary. Although some studies have explored the need to provide mentors for students from specific ethnic minority groups (Sanchez, Esparza, Berardi & Pryce, 2010), or students at risk (Quinn, Muldoon & Hollingworth, 2002), there is a lack of peer mentoring programs for linguistic minorities.

Regional Mentors

The regional peer mentoring program was launched in April 2011 for the 2011-2012 academic year, based on the analysis of the focus groups led in 2010-2011. This "for students by students" initiative was purposefully aimed at our incoming francophone undergraduate students from regions in Ontario where the French language is highly minoritized.[2] Based on the premise of "somebody like me*",* the mentoring program was structured on the geo-linguistic origins of our incoming undergraduate students.

We begin this section with a brief rationale and description of the mentoring program, followed by the methodological highlights of the mixed-methods research project that documented its implementation. Discussion of the key findings will address the impact of the peer mentoring program on 1) participants' social and academic integration, and 2) their sense of linguistic security, or lack thereof. Results of this study lead to a greater understanding of the impact of linguistic heterogeneity within our university's francophone community on our participants' transition to the University of Ottawa. Documenting the social and academic challenges they faced from application to registration, through to the experience in their first year of undergraduate study, specific needs are revealed that can be addressed either at the university, in the boards of origin or collaboratively.

Ultimately, our goal at the end of the research project was threefold:

1) To evaluate the effectiveness of the peer mentoring program and students' use of university services;
2) To propose modifications as needed; and
3) To explore the capacity for knowledge mobilization to other student groups who come to the University of Ottawa from various pathways, traditional or not.

We hope that these findings may be of use to other PSE institutions.

[2] We also extended this program to incoming francophone students from New Brunswick, as focus groups with these students revealed significant similarities to students from northeastern Ontario.

Context

The University of Ottawa decided to implement a peer mentoring program as a pilot initiative for the 2011-2012 cohort of first-year students from the same regions as the participants who had contributed in the 2010-2011 focus groups. The program aimed to foster relationships between incoming students and current University of Ottawa students from the same geo-linguistic area. These relationships were established once students had applied to the university, as mentors helped prospective students with questions about next steps and to access information helpful to making an informed decision. This relationship was further developed during the registration process and course selection, continuing during the transition to university over the summer months, and included aiding students with their integration to first-year in French-as-a-medium-of-instruction postsecondary programs.

Student mentors would report to the registrarial team and their work would be closely tied to that of the university's French-language recruitment team. This initiative, funded by the registrar's office, was to be documented by a research project to ensure that future practice and policy decisions would be research-informed. Initially, five mentors were recruited in February 2011: one for northern Ontario, one for southcentral Ontario, two for southwestern Ontario and one for New Brunswick. Four mentors, one from each of the four regions identified above, worked in Ottawa from May to August 2011; three additional mentors joined the team in September 2011 and one, for Western Canada, joined the team in January 2012 to start building relationships with students from that region seeking admission for 2012-2013.

Following ethics approval, mentors agreed to play a dual role in the research, as participant and co-researcher. Their responsibility as co-researchers was to keep a journal where they would reflect on their work as mentors, including their interactions with mentees, the university administration and researchers, as well as their perception of the impact of the project on both the mentees and themselves. As with all existing faculty- or program-based mentoring programs at the University of Ottawa, mentors would be asked to document all of their interactions with their mentees.

Defining the Regional Mentor's Role

The mentors' first task would be to begin building relationships with applicants from their respective former French first-language district school boards. These relationships would not be based on recruitment but on the principle of sharing information to help prospective students make informed decisions about PSE. Once applicants had registered, mentors would follow-up to inform them about online course registration processes. Mentors were provided with the 2010-2011 focus group analyses and instructed to find the best-fit solutions to help students from their area to have a successful transition to the University of Ottawa, as well as a successful social and academic integration. They could work together as a team, adapting resources and strategies to meet the needs of each of their home regions. They were responsible for designing how the mentoring program would be delivered and deciding what types of information were required for entering students from their individual regions. This is why the project was said to use a "by students for students" approach.

The mentors were instructed to be proactive with students and provide a singular information point. More significantly, they were to inform and direct students to existing university services and resources. They were to play the role of matchmaker between the new student and the institution. This proactive role is an important part of what differentiates the peer regional mentoring program from the university's other mentoring initiatives, as mentors in those programs wait for contact to be initiated by the student, usually for academic support related to specific content areas.

Mentees at a Glance

The pilot project of the program initially targeted a total of 304 students from the population of 2,810 direct-entry first-year francophone Canadian students at the University of Ottawa who were from regions of interest. For the purposes of the pilot peer mentoring program, three regions were identified where French is highly minoritized: northeastern Ontario (39% of targeted students), central and southwestern Ontario (45% of targeted students), and New Brunswick (16% of targeted students), though we later separated central and southwestern Ontario into two regions, southcentral Ontario and southwestern Ontario. Through our initial pre-registration email contacts, student mentors reached 211 of the 304 students. These 211 students formed the target group of the initiatives proposed from May 2011 to June 2012.

Methodological Considerations

Ethics approval was obtained to collect data for the mixed-method study. Two graduate assistants carried out most of the data collection in order to alleviate concerns regarding power relationships and possible coercion. The principal investigator (PI) participated in focus groups only when it was confirmed that none of the participants were registered in her classes.

Three data collection tools (focus groups, surveys and journals) were developed for the two participant populations: the mentors and the first-year students. Each population was invited to participate using two of the three data collection tools. Mentors participated in focus groups and kept reflexive journals, whereas first-year students (mentees) were invited to complete surveys and participate in focus groups. Table 1 provides details for each data collection by type.

The manager of the university's Academic Support Unit sent out the emails inviting students to complete the surveys, as per the protocol approved by the ethics committee.[3] This ensured the privacy of student email accounts and removed any possible coercion to participate by mentors or the research team. The survey asked students to provide an email address if they were interested in participating in focus groups during the year. Recruitment for the focus groups was done by email by the research assistants. The research assistants also posted an invitation on each of the mentor groups' university Facebook page, where they were members. Students confirmed their attendance with the research assistants.

[3] The ethics committee also required us to send the email invitation to all the first-year francophone students from provinces and territories where the French language is in a minority context, even though the survey was targeted only at the 211 students participating in the regional peer mentoring initiative.

Table 1: Overview of Mixed-Method Study

Data Collection Tool	Mentees	Mentors
Surveys[4]	August 2011: 142[5] participants	
	January 2012: 71[6] participants	
Focus Groups	January 2012: 27 participants	September 2011: 4 participants
		December 2011: 6 participants
	May 2012: 19 participants (all from Ontario)	April 2012: 6 participants
Journals		Summer 2011: 4 journals
		Fall 2011: 5 journals
		Winter 2012: 5 journals

The graduate assistants, who were members of the four institutional regional Facebook pages, created in April 2011 by each of the mentors, also undertook aggregate and thematic discourse analysis of postings by students and mentors, and of the recorded interaction information.

Study Participants

Table 2 shows the regional origin of students participating in each of the surveys.

Table 2: Comparison of Participants, Surveys 1 and 2

	Survey 1		Survey 2	
Regions	**Number of Participants**	**Percentage**	**Number of Participants**	**Percentage**
Eastern Canada	18	13%	15	21%
Central and Southwestern Ontario	58	41%	22	31%
Northeast and Northwestern Ontario	61	43%	31	44%

[4] For the August 2011 survey, students could choose to answer either the French or the English version of the survey. The vast majority of respondents completed the survey in French. Some questions were not mandatory and students could choose not to answer. The second survey (January 2012) was distributed only in French, based on the recommendations of the mentors.
[5] 137 respondents were part of the 211 students targeted by the peer mentoring program. Five respondents were not. Only answers from respondents targeted by the peer mentoring program are analyzed in this report.
[6] 68 students were part of the 211 students targeted by the peer mentoring program. Three respondents were not. Only answers from respondents targeted by the peer mentoring program are analyzed in this report.

	Survey 1		Survey 2	
Regions	**Number of Participants**	**Percentage**	**Number of Participants**	**Percentage**
Eastern Ontario	2	1.4%	2	3%
Western Canada	1	0.7%	0	0
No Answer	2	1.4%	1	1.5%
Total	142	100%	71	100%

There are several similarities between the respondents of both surveys, although the second survey had a 50% lower participation rate than the first.

As with the first survey, the great majority of respondents were from the regions participating in the pilot program. Within these regions, there was increased proportional representation of students from New Brunswick in the second survey as opposed to the first, as the number of student responders from the other participating regions decreased.

From "Help! I Need Somebody" to "Lean On Me"

As explained in the introduction, during the spring of 2011 students were invited to join the dedicated regional Facebook page for incoming first-year students to the University of Ottawa, created by the mentors. Through this page, the students could contact their mentors before arriving at the University of Ottawa. Many students also met their mentors during regional visits. The first visits took place in secondary schools in May 2011, where mentors provided assistance with the registration process, whereas the second set of visits, targeting students in 11 communities, occurred in August 2011 and provided mentors and university personnel an opportunity to meet with parents and students to answer any last-minute questions before the upcoming school year. Upon their arrival in Ottawa, students were also made aware of the office hours of the student mentors, where they could meet with them in person. Some students also contacted the mentors by email and text messages. Mentors worked an average of ten hours per week with some formal office hours, but tended to answer emails, Facebook queries and text messages as they came in, 24/7, and met with students as the need arose.

For the purpose of this research project, we also collected information in regards to student questions, which enabled us to a gain a better understanding of their concerns, and more specifically the different types of questions that they asked throughout their first year. An analysis of the various regional Facebook pages helped us identify five main categories of interests throughout the year: 1) finances; 2) courses and programs; 3) residences, residence life and off-campus housing; 4) technical problems and questions; and 5) student life. During the first focus group with the mentors (September 2011), mentors noted that the types of questions and concerns shared over the spring and summer of 2011 often concerned registration, residence, tuitions fees, bursaries, meal plans and access to electronic resources, such as email. During the university's orientation week and the student federation's "101 week", students asked questions relating to orientation (location of courses and different services), assistance with the University of Ottawa's virtual tools (virtual campus, email, etc.) and finding out about the different orientation activities.

We noted a spike in questions after orientation week, where students' queries spanned a wide range of topics such as changing schedules, tutoring, intramural activities, course notes and studying methods, among others. After the first few weeks, students were contacting their mentors more in regards to academic success: how to prepare for exams, locations of the various help centres, dealing with stress, and questions

about specific courses, most notably FRA1710. As the end of the first semester neared, students asked about program changes and adding a minor or major to their program, as well as questions relating to final exams and final grades. Many times, mentors did not know the answer to the questions that students were asking. However, their position as mentors enabled them to access the necessary resources to find those answers, a point that all mentors noted as a very positive aspect of their job. They became better informed for themselves as well. At the end of the second semester, students enquired about off-campus housing, jobs, declaring majors and programs, emergency last-minute clarification questions for exams and possible roommates. It is important to note a considerable decrease in postings on the regional Facebook groups as the second semester winded down.

Challenges Faced by Francophone First-Year Students

Throughout this year, we collected data regarding challenges faced by students participating in the peer mentoring program. Social integration, academic and linguistic challenges were identified as the issues at hand.

Social Integration Challenges

We have noted differences regarding the experience of transitioning from secondary school to university both between the various regions and within them. During the first series of focus groups, some students stated that they adapted quickly to their new living environment, as they had frequent contact with family members or friends who already lived in Ottawa. On the other hand, many students found it difficult to live far away from home. In light of this, student participants found that their transition to PSE was more difficult than that of their peers from Ottawa and its surrounding areas. In some cases, students were moving from small towns to an urban environment, making the transition somewhat more challenging. For most students, many qualms surfaced: difficulty making friends, getting lost (on campus or around the city) and dealing with the added responsibility of living on their own. While some, particularly students from northeastern Ontario, chose to live off campus, the majority of students participating in the first survey indicated that they lived in residence (72%). Those students met the majority of their friends in residence. For those students coming to the University of Ottawa with one or more friends from their graduating class, many admit spending most of their spare time with them. Students who chose not to live in residence were able to make some new acquaintances in their courses, while very few indicated making new friends. They perceived making friends in residence to be an easier task.

Although the first few weeks presented the most challenges in terms of social integration, the students adjusted relatively quickly. Indeed, over 92% of students participating in the second survey (January 2012) were in agreement with the following statement: *I feel at ease at the University of Ottawa*. Moreover, during the student focus groups, many deemed that they had developed a sense of belonging to the University of Ottawa, be it through sports (intramural sports or participation in sporting events, such as basketball games) or other activities rather than through their respective faculties. More than 65% of students responding to the second survey participated in the orientation week activities, while 55% took part in social activities on campus after orientation. However, only 27% of the respondents participated in francophone social activities on campus during their first semester. In addition, during the January focus groups, some students admitted to having limited knowledge of what goes on in terms of these activities and complained that some 101-week activities conflicted with their course schedules.

During the May 2012 focus groups, students from all regions raised concerns about the lack of francophone or bilingual activities during orientation activities.

Academic Challenges

The second survey (January 2012) and the initial focus group gave us information about student opinions in regards to academic success. In terms of academic achievements, the majority of students disagreed with the following statement: *During the first semester, I succeeded better than expected* (35% disagree, 30% strongly disagree). It is therefore not surprising to see that 87% of students do not agree with the statement *University is a lot easier than I expected*. Over 70% of students felt that they would not be able to renew their entrance scholarships and 20% said that they had failed at least one course during their first semester. It deserves to be noted that three-quarters of participating students chose not to make any modifications to their course selection during their first or second semester. Furthermore, the vast majority were content with selecting the University of Ottawa for their postsecondary studies (91%), although a smaller majority indicated being content with their chosen program (77%). The survey did not ask students to explain their answers.

Overall, language notwithstanding, time management and adjusting to university courses arose as the main challenges faced by students academically. During the focus groups, many students admitted having difficulty organizing their time. One student said, “The first month […] I didn’t go out, I just tried to sleep and do homework. I didn’t think I was going to pass my courses.” Lack of time was mentioned, along with words such as “stress” and “pressure.”

Yet most students appreciated their newfound independence and the possibility to arrange their schedule according to their preferences. During the first survey, in August 2011, students were asked to identify anticipated challenges. Interestingly, time management was the one mentioned most often.

All students admitted to facing challenges in their courses. Many were surprised by their professors’ expectations with respect to their assignments, and they felt that there was a knowledge gap between them and other students at the university. One student insists on the following: “There is a big difference between us and students from CÉGEP [students coming from Quebec with one or two years of PSE]: they use philosophical words and are much more advanced.” Students had to adjust to different teaching styles and change the way they prepared for exams and organized their course notes. Some said that they enjoyed the courses they took during their first semester, although it was not the case for all students participating in the focus groups: “I did not like my courses, so it was hard to stay motivated, but now, things are better.” It is important also to note that class size was a significant shock to the majority of survey participants. This is not surprising when one considers that 50% of Ontario’s French first-language secondary schools have fewer than 300 students. To find oneself in an auditorium of more than 300 students for a first-year biology class can be quite daunting.

In terms of exams, many students reported having to adjust their study methods. University exams were more stressful than those they took in secondary school, and multiple choice type exams were a challenge for some, as they had never encountered this type of evaluation before. One student admitted to being very disappointed in dropping from an A to a B after the final exam in one of her courses. As mentioned earlier, grades were certainly a cause of stress, as many wished to renew their bursaries for the following year: “We’re always thinking about the scholarship. It’s so stressful. We depend on the scholarship”, said one student during the focus groups. Overall, most students believed that they got higher grades in their optional courses than in their mandatory courses. Many wished to improve their grades during the second semester, and believed it was something they could achieve because they knew what to expect. For the most part, this was confirmed during the second focus group. However, a new academic challenge was revealed: Introduction to Organic Chemistry. Students felt that their secondary school chemistry courses in Grades 11 and 12 did not adequately prepare them for this course. Four students in the focus groups feared that they would not receive a passing grade. Although they did seek out help at the drop-in centre run by the chemistry department to help them overcome this academic challenge, their experience at the drop-in centre raised

additional challenges of a linguistic nature, as they could not receive assistance in French for a course taught in French.

Linguistic Challenges

Over 95% of students who participated in the second survey took the majority of their courses in French; the same proportion indicated that they also wrote their assignments in French. Only 14% said that they would take more classes in English the following year. The majority of students (58%) felt that studying in French was easier than they expected, although 42% believed it was more challenging. Almost half the students (47%) admitted that their courses taught in French (French language arts courses included) at the University of Ottawa were more difficult than those offered by their secondary school. In January 2012, 39% of participants felt that the French language arts course presented them with challenges. In addition, approximately 38% of students agree with the following statement: *I lose many points on my assignments for grammar, spelling or syntax*. Overall, the data collected in this survey seems to indicate that many students do not feel they have any linguistic challenges, while others are faced with other obstacles. However, these data paint a very different picture than the data collected in the focus groups.

On one hand, excerpts taken from the open questions in the second survey reveal that some students:

- Anticipated challenges with regards to the mandatory French courses;
- Related a lack of confidence as to the quality of their oral French language skills; and
- Worried about obtaining respect from Quebecois students when they spoke French.

On the other hand, analysis of mentor journals, Facebook exchanges, open answer statements in the surveys and the focus groups reveal that although many students experienced linguistic difficulties in social situations and that the majority of incidents occurred in the classroom, both with peers and with professors, lecturers and teaching assistants. Although some of these challenges could be considered academic challenges, we chose to present them in a separate category, along with other linguistic challenges.

Perceiving that professors in anglophone courses were less demanding where writing skill and grammar was concerned, some francophone students chose to take some courses in English. In courses offered in French, some students indicated having trouble understanding their professor due to differing accents.

Moreover, students felt that their own accent or linguistic repertoire was not the one valued at the university: “one of my biggest challenges was [the] French [language at the University of Ottawa]. In Barrie, we all have the same slang and teachers understand. It’s very different here. It’s more of an academic French.” Students studying in the sciences, however, felt more linguistically secure as they did not lose many marks for grammar or language errors in their laboratory reports. However, students noted the difficulty they experienced receiving help in chemistry or mathematics in French at the bilingual drop-in help centres at the faculty of science. They indicated that the majority of student tutors they encountered were not bilingual and were not familiar with the French scientific vocabulary.

During the 2010-2011 focus groups, students had indicated several challenges with the mandatory foundation language course for the humanities and social sciences, FRA1710. These data had been shared with the *département de français*[7], which chose to include the *Épigrame* test in the FRA1710 Fall semester course, to help students with their mastery of written French. We included questions about student experiences in the French foundation language courses in the focus groups for the mentoring program. In all three focus groups for the regional mentoring participants, when students spoke of the mandatory language course for the

[7] The University of Ottawa also has a French department.

humanities and social sciences, FRA1710, the majority of comments were negative and students continued to feel that this course in particular did not help prepare them for academic writing realities at the university level.

The Épigrame Episode

The results presented in this section help to highlight the impact of linguistic heterogeneity and regional provenance on student success in French language courses. At the beginning of the semester, as part of their graded coursework, students taking FRA1710 were asked to take a French-language grammatical competency test, "le test Épigrame." The majority of students taking FRA1710 received what the *département de français* rated as a failing grade, that is, a result of less than 75%. The results by "pathway" and by French language district school board are presented in Tables 3 and 4.

Table 3: Épigrame Results by Pathway

Pathway	Average	Number of Students
Ontario College	53.8%	12
CÉGEP (1 year)	67.3%	16
Grade 12 ON	52.1%	551
Secondary V Quebec	68.6%	53
Grade 12, Other Provinces	54.9%	24
Foreign School	59.4%	36

The majority of students admitted directly to first-year from Secondary V are from private schools and, according to University of Ottawa admissions policy, must have an admission average of no less than 84%. The table above demonstrates important differences between the results of students from Franco-dominant regions (Quebec, former French colonies) and students living in provinces where French is in a minority context (Ontario colleges, Ontario Grade 12 and Grade 12 other provinces). The difference between the three pathways from minority provinces is not statistically important.

Furthermore, if we isolate Ontario Grade 12 students with a similar admission average to that of Secondary V Quebec students, there remains a difference with francophone students from Grade 12 in Ontario scoring 58.5% on the test compared to 68.6% for Quebec Secondary V school graduates.

Analysis of results by French language district school board for the Ontario Grade 12 cohort reveals similarly alarming discrepancies, as indicated in Table 4. District school boards that have communities located in areas where French is highly minoritized are indicated by an "*". Boards indicated with "**" have several schools located in communities that are highly minoritized.

Table 4: Épigrame Average Results by Ontario French First-Language District School Board

Board	Average (%)	Number of Students
A*	53.3	4
E**	52.9	31
F*	47.6	5
G	41.5	22
C*	50.0	27
H*	44.4	17
K*	43.9	14
D	51.7	111
J**	52.2	121
L	55.0	193

Boards A, E, F and G are located in northern Ontario; boards C, H and K in southcentral and southwestern Ontario; and boards D, J and L are located in eastern Ontario.

It is of note that there was a 14-percentage point difference between the highest average, Board L in eastern Ontario and the lowest average, Board G in northern Ontario. In fact, students from the three district school boards located in eastern Ontario, the province's most highly concentrated francophone population, did quite well in comparison to their peers.

Based on the above results, it is perhaps possible to understand that this one occurrence in one course generated a significant number of artefacts and hundreds of text messages, sending the mentors into crisis management mode. The regional mentors expressed their dissatisfaction towards the fact they did not have sufficient time to explain this test to "their" students, nor to help them prepare properly to prevent increased linguistic insecurity. The following comments were sent by email to a southwestern Ontario mentor:

> The test was horrible. I only got 47% and from what I've heard that's the average. I am now very discouraged about having chosen to study in French and I am now considering pursuing my studies in English, if it keeps going like this.

Another student from the same region stated, "I got 61% which means that I failed. I'm very discouraged. I've always been the best in French in Windsor."

Some students taking FRA1710 said that they did not appreciate the fact that lectures and discussion groups were not sufficiently linked to each other and that there appeared to be significant differences in the material covered in the various discussion groups. Many students said that they would rather concentrate on other courses than FRA1710.

In the southwestern Ontario mentor's journal, FRA1710 came up on multiple occasions. In her notes she mentions that several of her mentees experienced heightened linguistic insecurity related to this course (cf.

next section). Her interventions were aimed at reassuring students that they are adapting to new literacy requirements, identifying resources available to students on campus, and helping them feel more secure about their linguistic repertoire and abilities.

Most students felt that it would be preferable to change the course's format. Focus group suggestions by students and mentors alike were: 1) offering a course geared towards each program of study; 2) taking FRA1720 (essay writing) before FRA1710, as students are asked to write essays during their first semester but have not yet learned the proper format, which is taught in FRA1720 (offered in second semester); 3) offering an "essay writing" or "technical report writing" course in place of FRA1710; 4) lowering the passing grade for "le test Épigrame"; 5) explicitly preparing the students for "Épigrame" so as to diminish anxiety; 6) making sure that the "test Épigrame" does not count toward their final grade, or present it only as a "placement test" as opposed to its current format.

Linguistic Insecurity

According to the mentors, the difficulties students faced regarding different aspects of language at the University of Ottawa have resulted in the development of linguistic insecurity. According to one mentor, his students began to question their own identities as Francophones, often as a result of negative comments received quite publicly from peers and others they met at the university. One mentor thought that many individuals at the university are not sufficiently versed on or open to the students' different accents and writing styles, that is to say to the linguistic heterogeneity within the francophone programs. Mentors felt that certain individuals expect all francophone students to have a wide and varied formal vocabulary typical of a unilingual Francophone from a Franco-dominant region, like Quebec.

Indeed, some student participants in the focus groups recounted times when they received negative comments about their accent and pointed out the fact that they lost many marks because of syntax and choice of expressions (language register). Notably, focus group discussions and the reflexive entries in the journals brought to light the fact that the mentors had also experienced and, in some cases, were still experiencing these same difficulties. During the first few weeks, one mentor related the experiences lived by students from Windsor, who admitted feeling that their French language skills were inadequate upon their arrival in Ottawa, when they were confronted with others "more francophone" than them. Students found it hard to feel truly francophone and questioned whether or not they should label themselves anglophone, which is a burdensome thought for those who attend French first-language secondary school, self-identify as francophone and speak French in an environment where little French was spoken in the community, according to mentors.

In contrast, some students, most notably those coming from towns where French is less minoritized such as Hearst or the Acadian Peninsula, did not seem to have any linguistic insecurity towards the French language. However, they did experience increased linguistic insecurity towards English. In one case, two students from Hearst admitted feeling uncomfortable when having to speak English. They felt uneasy and hesitant during orientation week, as they thought that they would have met more Francophones and participated in more French-language activities. Moreover, they reported increased uneasiness when experiencing difficulties related to university literacy in French-as-a-medium-of-instruction courses, as they felt that they did not have the necessary language competency to register in English-as-a-medium-of-instruction courses.

Despite some negative comments regarding language courses, the vast majority of students (80%) participating in the second survey agreed with this statement: *I am at ease being a Francophone at the University of Ottawa*. Indeed, during the January focus groups, one student explained that she had developed a sense of belonging as a Francophone at the University of Ottawa. Another student explained that she developed her sense of belonging towards the French language when she returned home and witnessed that most of her friends spoke English amongst themselves. In addition, students seem to be very attached to the

idea of “bilingualism” at the University of Ottawa. Over 92% of students participating in the second survey stated that the main reason they chose to pursue their postsecondary studies at the University of Ottawa was the fact that it is a bilingual institution, while 86% of students in the first survey indicated that this was also the case. Over three-quarters of students stated that it was because they wanted to study in French (76%), they wanted to live in Ottawa (77%) or they eventually wished to pursue a bilingual career (80%) that they chose to matriculate at the University of Ottawa.

Summary

In conclusion, although students were faced with many challenges at the university, most learned to cope with them as best they could. Only five participants in the second survey considered not returning to the university next year, while over 92% of students said that they felt at ease at the University of Ottawa. Further analysis of the surveys of the above-mentioned five participants did not reveal any reasons that could explain why they would consider not returning the following year.

As the surveys were anonymous, it was impossible to obtain additional information on non-responders. The loss in sample may have created a bias in favour of those students who had more time to complete the second survey. However, this survey, scheduled for the end of the first semester, was, at the students’ request, sent at the beginning of the second semester. They felt that the end of the first term was too stressful to devote time to completing a 15-minute survey. As the second survey circulated during the beginning of the second semester, students would have received their final grades for their first semester courses. This information may have impacted participation in the survey.

Impact of the Regional Mentoring Program: The Mentors’ Perspective

The mentors selected for the program were all students enrolled in undergraduate programs, having chosen the University of Ottawa to pursue postsecondary studies in French. They came from the same highly minoritized regions as their cohort group, identified for the purpose of the peer mentoring program. During the focus groups, the mentors mentioned being very involved in their respective secondary schools. However, upon their arrival at the University of Ottawa, they felt somewhat disoriented and found it hard to participate in activities taking place on campus or around Ottawa during their first year. Moreover, they were faced with many challenges, both academic and social, but also from a linguistic point of view. When they arrived, the peer mentoring program was not in place. The mentors all agreed that this program would have been very useful for them. Consequently, they wished to help the students in ways from which they could have benefited during their first year. It was therefore very important for the research project to take into account the mentors’ perceptions and opinions with respect to such a program.

The mentors perceived the peer mentoring program to be a unique service that reached and guided students in Grade 12 throughout the ups and downs of applying to and fielding offers from universities. Furthermore, the program stood out because of the ease with which students could contact their mentors through traditional methods such as the phone, e-mail, text messaging and social networking. Of note, the regional element was essential, as mentors insisted that regional belonging played an integral role in program success. One mentor explained, “The minute you mention you’re from the same region, students immediately establish a link with you.” Therefore, the creation of regional Facebook pages reinforced their sense of belonging “as students from X region studying at the University of Ottawa.” Newly admitted students had the ability to establish a personal contact with the mentors, regardless of faculty or program.

According to the mentors, students did not perceive the peer mentoring program as being like the other mentoring programs at the University of Ottawa. Indeed, they stipulated that the regional mentors’ responsibility was not necessarily to offer specific services to students, but rather to refer them to the already existing services at the University of Ottawa. The peer mentoring program acted as an intermediary, a place

where students could feel at ease sharing their concerns and asking their questions to their regional mentor. The mentors also explained that the program truly catered to the needs of students coming from distant regions, all the while helping them with their academic, linguistic and social needs during their transition to PSE. One mentor explained, “When you come from far way, the university is like a giant cloud in the sky. You don’t really know where to find help. And I think that we [the mentors] are a good starting point.”

Impact of the Regional Mentoring Program: Mentees’ Perspective

The two surveys offered substantial feedback concerning the peer mentoring program, as the vast majority of respondents participated in this program. This information was further confirmed during the two focus groups. Most of the students (62%) who responded to the first survey in August 2011 were aware of the regional mentor program. Twenty-two per cent had not been contacted while 16% did not remember such a contact. In many cases, the initial contact with the mentors was associated with positive response on the part of the students. Eighty-three per cent of them were “happy to know someone could help answer my questions” while 51% indicated that they felt less like a number in a large institution. None of the respondents indicated that they did not obtain the answer to the questions they asked. Only three respondents thought that this initial contact was not pertinent for them as they already had personal ties at the university, while 5% did not know the purpose of the peer mentoring program.

In regards to the relevance of the program, students also offered short open answers in the first survey. Once again, the vast majority of the student responses were very positive. According to one student, the mentor program was “very useful because you're not quite sure what you’re getting yourself into and our mentor was of great help in understanding what we needed to do and how to get us ready for university.” Students noted the program’s potential in helping them make new friends from their region, find answers to their questions and concerns and adjust more quickly to living in Ottawa. They appreciated being in contact with someone from their region who had been through similar experiences, and recognized the importance of offering a service for students coming from distant regions. Students felt comfortable contacting their mentors, and this contact was made simple through Facebook.

Overall, the initial contact with the mentors made the students feel more confident about starting their postsecondary studies at the University of Ottawa. This removed the necessity of travelling to Ottawa before the start of the school year, a luxury that few could admittedly afford, either due to financial or time constraints. The few students who did not find the peer mentoring program useful explained that they already felt comfortable with the idea of living in Ottawa and on campus, while some added that they had friends and family help them with the process.

In the second survey (January 2012), students were asked to give feedback about their satisfaction levels regarding their contacts with the mentors from the spring of 2011 to the end of the first semester. The vast majority (96%) of respondents felt satisfied concerning their contact with the regional mentors (57% satisfied, 39% very satisfied). Only one person indicated that it was “Ok”; no one was indifferent and only one person noted that they found it somewhat useless. The most useful or very useful moments of contact with the mentors were 1) during their enrolment (77%); 2) over the summer – preparing their transition to Ottawa (66%); 3) at the beginning of the year (66%); and 4) in September, to remind them of the various services offered by the university (48%).

The most accessed resource by the students regarding “social and academic success” at the university was the regional Facebook pages; 78% of students participating in the second survey accessed this page. In addition, nearly 60% of students in this survey contacted their mentor during the first semester. In contrast, only a few students contacted their faculty mentors (18%), the writing centre (16%) or the reference counter at the library (31%). The writing help centre came up frequently during the focus groups with the mentors and

the students. One mentor explained that students often wrote their essays at the last minute and did not have sufficient time to access the services offered by the writing help centre. Moreover, this centre does not necessarily help the students correct their essays; they offer suggestions in regards to grammar, syntax and format. According to her, the students' perception of this service was somewhat negative, which led them to access it less frequently.

In the second survey, students were also asked to finish this sentence: *In my opinion, the peer mentoring program is…* Among the terms that came up most frequently, we identified the following: "useful", "excellent", "super", "essential", "useful" and "very useful". According to some students, this program is "indispensable for students living far away from home", "it's well organized" and "useful, even if it's just to talk to someone." Student mentors "can help answer my questions or direct me to services that can help." The vast majority of student responses were positive. However, some students remained sceptical, as they considered the program to be "more or less useful" or "somewhat useless."

In terms of satisfaction regarding their contact with the mentors, 91% of students agreed with the following statement: *It felt good to have someone I could ask my questions to*, while 88% stated that the answers they received from their mentors were very helpful. Students strongly agreed (57%) or agreed (30%) that the peer mentoring program was important. Over half of the students admitted that they would not have known where to turn to ask their questions had they not been part of this program, while 55% thought this program was indispensable. Overall, students seemed satisfied or very satisfied with the contact they had with their mentors.

During the second focus group in May 2012, students deemed the regional mentoring program to be essential, particularly during the gap to university and the first semester transition.

Best Practices

Regional visits, Facebook groups and mentor-organized social events led the field as best practices identified via the data. As mentioned previously, the mentors were invited to take part in regional visits, where they met students at their secondary schools. Mentors helped the students register for their courses, which many mentioned as a very positive experience. Further, these visits put parents at ease, as many of them could not make their way to Ottawa to obtain all of the information they received (due to financial or time constraints).

Many positive comments emanated from the focus groups concerning the Facebook pages. Students liked the fact that they could ask questions, read others' questions, and also provide some of the answers to their peers, when suitable. One student stated, "I prefer Facebook to email, because it's more personal", adding that she also likes the fact that, often times, her mentor would follow up. One participant, however, stated that it was difficult to take part in the peer mentoring program, as she did not have a Facebook account. In addition, the mentors used the Facebook page to advertise different social activities taking place in Ottawa or on campus, and published information regarding help services (writing help centre, chemistry help centre, etc.), types of courses, University of Ottawa email, student cards, residences, registration, etc. The Facebook group was also used by the students for other various purposes, such as organizing carpools back to their regions during holidays, selling their used books and finding roommates for their second year, among others.

Finally, the social activities organized by the peer mentoring program received much positive feedback. Many students participated in a pizza dinner where they met with other students from their region, as well as the mentors and members of the University of Ottawa's administration. Two mentors organized another group dinner with students from their region, and other mentors participated in activities organized on campus, while encouraging students to join them. According to the mentors, these activities should be presented next year.

Areas Where Improvements are Needed

In the second survey and focus groups, students were asked what services or things mentors could do in order to improve their experience during the second semester or for students starting in September 2013. The majority of students said that nothing needed to be improved, or that they could not think of anything at the time. Some students offered interesting suggestions, the most frequent comment being the importance of organizing more social activities, either "by region" or with the entire cohort participating in the program. They also said that they would like to know more about what goes on at the university in terms of activities, especially French-language activities. Moreover, a few students said that it would be very useful to organize campus tours during orientation, which would in turn help them to know more about the different services offered at the university. Other suggestions related to academics were: suggesting quiet study areas on campus, more help for "the test Épigrame", providing tutoring services to help with written French, offering information about off-campus housing, finding part-time employment and continuing to communicate information through Facebook during their second year.

During the focus groups, students also offered suggestions for improving the peer mentoring program. Again, many students wanted to take part in more social activities with other students from highly minoritized areas, especially off-campus in order to learn to better navigate the city of Ottawa. According to them, some information was not clearly communicated: facts about international exchanges, how the buses function, intramural sports, services offered by the peer mentoring program and information about part-time employment. Students added that they would benefit from certain things for next year, among which we noted information about scholarships and bursaries and a "to-do" list for properly preparing for second year.

In the second survey, students were asked if the university could do anything to improve their experience during the second semester or in the future. Overall, students offered more suggestions than in the previous question concerning the mentors. In addition, many of the suggestions related to the fact that students would like to have access to the mentoring program in their second year. Again, they offered suggestions regarding academics: preparatory courses for exams, giving access to the course list available in the summer before registering for the winter courses, making Rabaska (the registration website) easier to navigate, offering better services for help with science courses, and accelerating the process for obtaining final grades. Other students suggested more social activities on campus, a website that is easier to navigate, as well as giving more information, especially concerning services, before their arrival in Ottawa, rather than during their first week of classes and student federation welcoming activities.

Beyond the Peer Mentoring Program

Although the findings of this mixed-method study of the implementation of the peer mentoring program are rich, they only reflect the experiences of one student cohort from targeted regions where the French language is in a minority context and or highly minoritized. We felt the need to further investigate the relationship between results in the Grade 12 university prerequisite language course and success in the first-year mandatory foundation language courses specifically, and on academic success at the end of the first year of study more generally.

Prior to the beginning of the peer mentoring program, we also carried out institutional analyses of student success data for the 2010 cohort from the boards that would be targeted for the peer mentoring program. These analyses revealed that our francophone students: 1) who come from regions in Ontario where French is highly minoritized; 2) who come from regions in Ontario that are linguistically and culturally diverse; and 3) who meet the provincial standard in *français 4U (FRA4U)* – meaning that they have a grade of 70 to 79% in the Grade 12 language course that is both a secondary school graduation requirement and an admission requirement to study in French-as-a medium-of-instruction programs at the University of Ottawa – achieve a

final grade of 4.5 or less on a scale of 10 in the French foundation language course FRA1710, which is lower than their counterparts from more French-dominant areas such as Quebec or from the Ottawa region. Analysis of francophone students who are at risk at the end of the first semester, that is, who have grades of 4.5 or less on a scale of 10 in two or more classes, reveals a higher incidence of students with a grade of less than 80% in FRA4U.

Further empirical analysis across cohorts was needed. The findings of these analyses are presented in the next section.

By the Numbers: Student Pathways and Performance

One of the main objectives of this study was to understand the role played by language courses both before university and at the university level on student success in an increasing linguistically heterogeneous setting. The findings of the 2010-2011 focus groups made evident that we, as an institution, needed a better understanding of the demographic and sociolinguistic profiles of the francophone undergraduate students. Further analysis of institutional admission and academic data was needed to identify predictors of success in French language foundation language courses. Were there regional differences, such as those highlighted with regards to the student experience, in regards to students' academic results in French foundation language courses or at the end of first year? What other factors or data are predictors of academic success for francophone first-year students? We analyzed the first-entry University of Ottawa undergraduate cohorts from 2008 to 2011 from both a provenance and a linguistic perspective. This large population contributes to the potential generalization of the results presented below. As the university is a bilingual institution, we also analyzed equivalent data for our anglophone cohort to explore similarities and differences.

However, before beginning this analysis we had to define our francophone cohort. We have chosen the language of instruction at the university as the variable defining francophone students, regardless of mother tongue, language in use or language of instruction in the past, as this was the common ground among all the alternative variations.

Profile of Entering Undergraduate Students at the University of Ottawa

From September 2008 to September 2011, the University of Ottawa admitted 28,155 students to its first-entry undergraduate programs,[8] in both English and French. There was a slight annual increase in the size of these cohorts over that time period, from 6,669 entering students in 2008 to 7,212 students in 2011. Entering students can be grouped according to pathway characteristics related to their geographic origin and their type of study prior to registration. Our analysis revealed 13 major pathways, regardless of mother tongue or language of program, as outlined in Table 5 below.

[8] Students entering law, medicine and education faculties are excluded from the analysis.

Table 5: First-Time Undergraduate Students in First-Entry Faculties, Fall 2008 to 2011

Pathway	Canadian Students	Permanent Residents	Student Visa	Other Foreign	Grand Total
Secondary Schools					
Ontario	17,458	680	295	100	18,533
International	324	175	446	37	982
Other Canadian	804	58	27	4	893
Quebec Secondary V	406	18			424
CÉGEP (Yr1 & Yr2)					
	2,504	72	7	1	2,584
College Transfer					
Ontario	1,658	131	57	6	1,852
International	34	43	27	9	113
Other Canadian	97	9	3	1	110
University Transfer					
Canadian	1,346	58	37	5	1,446
International	10	200	131	39	380
Other					
Mature Applicants	355	68	1	6	430
Special Student	258	38	6	3	305
Home Schooling	12		1		13
Grand Total	25,266	1,550	1,038	211	28,155

As expected, the majority of our undergraduate direct-entry students were graduates from Ontario secondary schools, a group commonly known as the “101” population, in reference to the form used by students for their admission request with the Ontario Universities Application Centre (OUAC). Students from all other pathways are referred to as “105s”, in reference to their applicant type at OUAC.

The other large groups of students who chose to attend the University of Ottawa included those who had completed studies at a CÉGEP in Quebec,[9] followed by students having attended a college in Ontario, and finally students transferring from other Canadian universities. Students who enter the University of Ottawa from CÉGEP, colleges or universities can transfer credits based on agreements or individual assessment of their files. Some first-entry students are accordingly admitted to the second year of study. From 2008 to 2011, the University of Ottawa welcomed almost as many students graduating from other Canadian secondary schools as students having completed their studies at an international secondary school. We also admitted annually approximately 100 secondary school graduates from Quebec.[10]

All groups can further be subdivided according to citizenship status, such as Canadian students, permanent residents, students using study visas and other statuses (e.g., diplomatic status or undetermined). It is important to highlight the fact that international students are thus represented within both the "101"[11] and "105" applicant pool. A little over 90% of students in our first-year cohorts from 2008 to 2011 were Canadian citizens, almost 6% were permanent residents and a little less than 4% were foreign students. As indicated earlier in the report (cf. context section), about 30% of Canadian students and permanent residents at the undergraduate level were studying in French-language programs. Only 25% of our foreign students were studying in a French-language program.

Other interesting demographic characteristics of our population include mother tongue, language of use, program language and study area. Of the 28,155 students admitted to our first-entry undergraduate programs from 2008 to 2011, 56% identified English as their mother tongue, 28% identified French and 16% a language other than Canada's two official languages. About 12% of francophone students registered in an English-language program; a little over 3% of anglophone students registered in a French-language program, whereas almost 75% of students with a mother tongue other than English or French registered in an English-language program.

Sixty-one per cent of students in the first-year cohort from 2008-2011 were women. The gender divide is not the same within French- and English-language programs. In French-language programs, 65% of students are women, whereas in English-language programs, women represent 58% of students.

The two largest first-entry faculties were Social Sciences and Arts, followed by Health Sciences and Science, then Business/Administration and Engineering. There was a slight variation in students' distribution by faculty when comparing students in English-language programs and French-language programs, as illustrated in Table 6.

[9] Students admitted from CÉGEP also have different profiles. Some have completed their *Diplôme d'études collégiales* (DEC), while others have not. Some have been in the pre-university stream, while others have been in the technical stream. First-entry placement into Year 1 or Year 2 and credit transfer is determined on a case-by-case basis.

[10] These students have completed 11 years of compulsory schooling and have met the graduation requirements for the Quebec secondary school diploma. They must meet specific admission requirements, different from those set for secondary school graduates (Grade 12) from Ontario and other Canadian provinces.

[11] Visa 101 students can be further subdivided into three groups: students who attended a publicly financed secondary school in Ontario; students who attended an accredited private "international" school in Ontario, offering the Ontario curriculum; and students who attended a foreign secondary school accredited by the Ministry of Education of Ontario that offers the Ontario curriculum.

Table 6: First-Entry Undergraduate Students (2008-2011) by Faculty

Faculty	All Programs (N)	Fraction in English-Language Program (%)	Fraction in French-Language Program (%)
Arts	6,367	73.6	26.4
Business/ Administration	3,508	75.7	24.3
Engineering	2,257	72.4	27.6
Health Sciences	3,997	65.3	34.7
Sciences	3,957	76.0	24.0
Social Sciences	8,069	64.2	35.8
Total	28,155	70.2	29.8

A closer look at our institutional data revealed missing information regarding the detailed geographic and/or institutional origin of some students. Cases with missing or conflicting information were removed from the population of study to ensure comparable and valid classifications across all variables of analysis. In addition, with an aim of having coherent data and comparable pathways across observations, we limited the analysis of international students to those entering from international institutions. We also limited the analysis of Ontario undergraduate direct-entry students (101s) to Canadian citizens and permanent residents, to diminish the possible impact of time in Canada on academic language development. The profile of this revised sample that was used for multiple regression analysis in this study is presented in Table 7, by pathway. These pathways were further grouped to form the following three large analytical groups: “101”s Ontario secondary school (N = 18,038), “105”s international students (N = 547) and “105”s domestic students (N = 5,743). Therefore, the original population of 28,155 students was reduced to a sample of 24,325, for a sample loss of about 3,800 students.

Table 7: Revised Sample of First-Entry Undergraduate Students (2008-2011) by Pathway and Immigration Status

Pathway	Canadian Students	Permanent Residents	Student Visa	Grand Total
Secondary Schools				
Ontario	17,371	664		18,035
International			406	406
Other Canadian	717			717
CÉGEP (Yr1 & Yr2)				
	2,195			2,195
College Transfer				
Ontario	1,547			1,547
International			23	23
University Transfer				
Canadian	1,284			1,284
International			118	118
Grand Total	23,114	664	547	24,325

In the analyses that follow, these three groups will be studied separately as the information available regarding the sociolinguistic profile and the academic background for each group differs.

Complex Linguistic Labels

This report focuses primarily on our francophone cohort of Ontario undergraduate direct-entry students (101s). However, some analyses on the Ontario anglophone undergraduate direct-entry cohort and the francophone "105" cohorts (international and domestic) are presented to examine the possibility that various types of minoritized backgrounds share some common characteristics in terms of success once at university. It is therefore imperative for us to present our cohorts from a linguistic perspective. Although this may appear to be straightforward, as mentioned above, there are many characteristics available by which to identify students: mother tongue, language of instruction of their university program, language of instruction of their previous institution (secondary schools, college or university) or language in use.[12] Do we focus only on incoming students who have graduated from French-as-a-medium-of-instruction institutions, regardless of mother tongue? What are the differences between mother tongue and official language of use? How do we identify language of instruction for secondary schools offering immersion programs or bilingual schools? How do we classify bilingual individuals or individuals who graduate from institutions with a language of instruction

[12] Language in use is defined as the mother tongue of the individual when it is English or French. When the mother tongue is other than either of the two official languages, the language of correspondence chosen by students for their communication with the university is assigned to them.

other than French or English? In the end, we settled on the language of the program of study at the university as the variable defining francophone students as this was the common ground among all of the alternative variations.

Table 8 presents the language in use and program language profile for the population under study.

Table 8: Student Groups by Language of Use and Program Language

	Language of Use			Program Language		
Student Group	**English**	**French**	**Total**	**English**	**French**	**Total**
105s	2,897	2,846	5,743	3,138	2,605	5,743
International	407	140	547	414	133	547
101s	13,777	4,258	18,035	13,875	4,160	18,035
Grand Total	**17,081**	**7,244**	**24,325**	**17,427**	**6,898**	**24,325**

A closer look at our Ontario undergraduate direct-entry students (101s) by language of instruction, presented in Table 9 below, reveals changes in the linguistic heterogeneity within these two linguistic groups over the past decade, particularly within the students choosing francophone programs.

Table 9: Mother Tongue by Program Language of Instruction, Undergraduate Ontario Direct Entry (2008-2011)

Cohort	101s Francophone Programs				101s Anglophone Programs			
	English	Other	French	Total	English	Other	French	Total
2008	8.6%	5.7%	85.7%	100%	87.0%	9.9%	3.2%	100.0%
2009	7.8%	9.3%	82.9%	100%	84.2%	12.3%	3.5%	100.0%
2010	10.1%	11.3%	78.6%	100%	82.8%	13.6%	3.6%	100.0%
2011	10.5%	9.6%	79.9%	100%	83.2%	13.5%	3.3%	100.0%

There appears to be a small downward trend in the percentage of students who declare English as their mother tongue within the 101 students in our English language programs. The change within the French language programs is more pronounced, revealing greater heterogeneity among students.

Sociolinguistic Profiles of First-Entry Undergraduate Francophone Students

As previously mentioned, in many communities in Ontario and in Canada, the French language is highly minoritized; that is, these are communities where Francophones represent less than 5% of the population. Our analyses will test whether coming from a community where French is a linguistic minority has an impact on student success. We have access to two different measures of francophone representation for Ontario undergraduate direct-entry students: 1) the percentage of Francophones in the community where the secondary school of origin is located, and 2) the percentage of Francophones in the secondary school students attended. However, the data for Francophones in schools is only available for public institutions. These distributions are presented in Table 10 below.

Table 10: Distribution of Ontario Undergraduate Direct-Entry Francophone Students by Percentage of Francophones in their Home Communities and in their School of Origin

	Percentage of Francophones in Students' Home Communities	Percentage of Francophones in Students' Secondary School of Origin
Under 5%	9.7%	4.5%
5% to under 20%	60.0%	0%
20% to under 40%	5.2%	1.0%
40% to under 60%	6.4%	8.0%
60% to under 80%	10.8%	25.8%
80% and more	7.8%	60.7%
Grand Total	100.0%	100.00%

Almost 70% of Ontario undergraduate direct-entry francophone students in our sample came from communities where Francophones represent less than 20% of the population. This is unsurprising and consistent with the distribution of Francophones in Ontario. For instance, Francophones represent 17.5% of Ottawa's population, 1.3% of Toronto's population and 90.4% of Hearst's population (Statistics Canada, 2006).

On the other hand, about 85% of Ontario undergraduate direct-entry francophone students in our sample attended a secondary school where more than 60% of the student population reported French as their mother tongue, as per the information collected by Ontario's Ministry of Education. That is, despite the strong minorization of French in Ontario communities, the vast majority of Ontario undergraduate direct-entry students in francophone programs came to the University of Ottawa from secondary schools where the majority of students have French as a mother tongue, although 13% of students attended schools where less than 60% of students have French as a mother tongue. These data, however, do not provide information regarding ease with language, language variety or which language is the main language of use by students.

The second group that we are analyzing consists of first-entry francophone students who come from institutions other than secondary school (105s) and who are Canadian or permanent residents, including transfer students from Ontario's two French language colleges, La Cité and Collège Boréal. For this group, the only sociodemographic information available was the representation of Francophones in their community of origin as defined by the location of their previous institution. This distribution is presented in Table 11. Over 70% of students were from municipalities where Francophones represent at least 60% of the population. The majority of these students were from the province of Quebec.

Table 11: Distribution of "105" (Domestic) Undergraduate First-Entry Francophone Students by Percentage of Francophones in Home Communities

Percentage of Francophones in Students' Home Communities	Total
under 5%	3.2%
5% to under 20%	20.6%
20% to under 40%	3.7%
40% to under 60%	0.5%
60% to under 80%	15.3%
80% and more	56.7%
Grand Total	**100.0%**

The third group in our analysis consists of international francophone students. There is not always information available on the actual percentage of francophone speakers in their country of origin. However, we can provide a good estimate of their geo-linguistic distribution by classifying their country of origin by use of French as an official or status language. Using data on official languages and type of membership in the *International Organisation of La Francophonie,* Table 12 shows that 93% of our foreign first-entry bachelor's undergraduate students enrolled in francophone programs came from countries with French as an official language or as a language with status.

Table 12: Distribution of "105" Students (Foreign) by Status of French in Country of Origin

Status of French	Total
French as an official language	74.4%
French as a status language	18.8%
No status	6.8%
Grand Total	**100.00%**

From Secondary School Language Courses to Foundation Language Courses at the University of Ottawa: Ontario Undergraduate Direct-Entry Students

As mentioned above, to pursue our objective of understanding the relationship between language foundation courses in secondary school and in university and student success, we divided our population of study into three different groups, as their pathways and information available are significantly different. The first group analyzed was that of entering undergraduate students from Ontario secondary schools (101s), for whom detailed information on the admission language requirement was available. This population can be further divided into francophone and anglophone students according to their program of study language. With those specific groups, we can pursue the analysis to determine whether there is any relationship between the language admission requirement and student success, defined as students' results in university-level language foundation courses as well as their GPA after one year of study. The demographic characteristics of the direct-entry group are very similar to those of the overall population of the study described previously.

Table 13: Characteristics of Ontario Undergraduate Direct-Entry Students (2008-2011)

Variable	All Programs (N)	Fraction in English Language Program (%)	Fraction in French Language Program (%)
Mother Tongue			
English	12,246	96.8	3.2
French	3,938	12.3	87.7
Other	2,349	82.9	17.1
Total	18,533	77.1	22.9
Language of Use			
English	14,183	97.2	2.8
French	4,350	11.7	88.3
Total	18,533	77.1	22.9
Gender			
Male	7,328	79.2	20.8
Female	11,205	75.7	24.3
Total	18,533	77.1	22.9
Faculty			
Arts	4,233	80.5	19.5
Business/Admin	2,244	80.0	20.0
Engineering	1,528	74.6	25.4
Health Sciences	2,591	70.1	29.9

Variable	All Programs (N)	Fraction in English Language Program (%)	Fraction in French Language Program (%)
Sciences	3,104	81.1	18.9
Social Sciences	4,833	74.8	25.2
Total	18,533	77.1	22.9
Immigration Status			
Canadian Citizen	17,458	77.0	23.0
Landed Immigrant	680	74.1	25.9
Student Visa	295	95.6	4.4
Other Visa	74	58.1	41.9
Foreign Undetermined	26	38.5	61.5
Total	18,533	77.1	22.9
Cohort			
2008	4,353	76.7	23.3
2009	4,809	78.0	22.0
2010	4,695	77.0	23.0
2011	4,676	76.6	23.4
Total	18,533	77.1	22.9

Language Requirements: Admission and Program

The University of Ottawa requires prospective Ontario undergraduate direct-entry applicants to have completed the Grade 12 university-preparation language course that corresponds to the language of instruction of their university program. Students intending to study in a French-as-a-language-of-instruction program must have successfully completed FRA4U, the Grade 12 French-language university-preparation course offered in French-as-a-medium-of-instruction schools, prior to admission. Students intending to study in an English-as-a-medium-of-instruction program must have successfully completed ENG4U,[13] the Grade 12 university-preparation language course at English-as-a-medium-of-instruction schools.

Furthermore, most of our first-entry faculties require students to complete at least one language foundation course in their first year at university. The required courses are presented in Table 14.

[13] EAE4U, offered in French-as-a-medium-of-instruction schools, is an equivalent credit to ENG4U and the admission prerequisite for students from Ontario's French-as-a-medium-of-instruction schools wishing to register in English-as-a-medium-of-instruction programs at the University of Ottawa. Graduates of immersion programs in English schools can be admitted to French-as-a-medium-of-instruction programs with FIF4U as the language admission prerequisite.

Table 14: University of Ottawa Foundation Language Course Requirements

	Foundation Language Course	Course Title	Mandatory for Most Students in
French Programs	FRA1710	*Littérature et lectures du monde*	Arts, Social Sciences, some Health Sciences
	FRA1518	*Le français langue des affaires*	School of Management
	FRA1528	*La rédaction technique et scientifique*	Engineering and Science
	FRA1538	*Rédaction en sciences infirmières*	Nursing
English Programs	ENG1100	Workshop In Essay Writing	Arts, Social Sciences
	ENG1112	Technical Report Writing	Engineering and Science
	ENG1131	Effective Business English	School of Management

Both FRA1710 and ENG1100 use literature to address the mechanics of university-level writing, whereas FRA1518, FRA1528, FRA1538, ENG1112 and ENG1113 focus on discipline-specific writing requirements. We begin this section with a comparison of final averages received in the various required admission language courses (FRA4U and ENG4U) as well as in the foundation language courses for all Ontario undergraduate direct-entry student cohorts from 2008 to 2011. We first performed a simple Pearson correlation analysis between the results in the admission language requirements and the foundation language requirements. The results are presented in Tables 15 and 16. This sets the context for the multivariate analyses that follow.

Table 15: Results in French Language Courses – Admission Requirements and Foundation Courses

Course	Average[14]	Standard Deviation	Pearson Correlation Coefficient with FRA4U
FRA4U	79.60	8.03	
FRA1710	5.30	2.37	.6073*
FRA1518	6.57	2.24	.5000*
FRA1528	6.20	1.91	.4851*
FRA1538	6.90	2.04	.4845*

* Statistically significant at $p<0.05$

[14] The grade in the high school language course is on a 100-point scale, whereas the grades in university-level courses are on a 10-point scale where:

A+	10	90-100
A	9	85-89
A-	8	80-84
B+	7	75-79
B	6	70-74
C+	5	66-69
C	4	60-65
D+	3	55-59
D	2	50-54
E	1	40-49
F	0	0-39

Table 16: Results in English Language Courses – Admission Requirements and Foundation Courses

Course	Average	Standard Deviation	Pearson Correlation Coefficient with ENG4U
ENG4U	80.07	8.05	
ENG1100	6.12	2.04	.4260*
ENG1112	6.91	2.12	.4478*
ENG1131	6.36	1.91	.3768*

* Statistically significant at p<0.05

There is a clear correlation between the results obtained in secondary school requirement courses and the results obtained in university-level foundation language courses. As a case in point, the relation between ENG4U and each of the three English foundation language courses (ENG1100, ENG1112 and ENG1131) was found to be significant, though unlike the relation between the French-language courses, the relation between the courses in English-as-a-medium-of-instruction programs was homogeneous and of lesser intensity than that for FRA1710.

Multiple Regression Analysis Results

We are interested in understanding the correlation observed in Tables 15 and 16 between performance in secondary school language courses (admission requirements) and university language foundation courses. For that purpose, we performed multiple regression analyses that enabled us to control for different possible explanatory variables, in particular those that describe the sociolinguistic and geographic origin of the population under study. Moreover, we are interested in understanding the explanatory power of university-level language foundation courses on student success, defined as the CGPA after year one. Models were run independently for each language of instruction, as their explanatory variables are different (e.g., French foundation courses for French programs and English foundation courses for English programs).

At first, the dependent variable selected was the student's performance in foundation language courses. The following independent variables were included in the model: cohort, local/non-local status,[15] gender, immigration status, program language, Grade 12 language requirement (FRA 4U or ENG4U according to the group under study), admission average, school board, faculty of first registration, linguistic heterogeneity of the secondary school of origin, and linguistic heterogeneity of the students' city of origin (based on the location of the secondary school). The last two linguistic heterogeneity variables were controlled according to official language, in relation to the program language.[16] A second multiple regression was undertaken, this time with the CGPA after year one as the dependent variable, drawing from the same group independent variables.

The results are reported below, by language of instruction of first-entry programs.

[15] Local/non-local status was defined according to the first address on file for the student and whether it was located within the Ottawa Census Metropolitan Area (i.e., within commuting distance to the university) or not.

[16] For example, when running the correlation analysis for an English foundation course, the linguistic heterogeneity variable for the school and for the city were based on the number of individuals indicating English as a mother tongue as reported by the Ministry of Education's school profiles and Statistics Canada's 2006 community profiles (including those who are bilingual, speaking English and French). For French foundation language courses, the variable was based on the number of individuals indicating French as a mother tongue in the school profiles and in the 2006 community profiles (including French and English bilinguals).

French-as-a-Medium-of-Instruction Programs

Using the grade obtained in the relevant FRA foundation language courses as the dependent variable, the first model accounts for about 41% of the variance, as indicated in Table 17. Seven of the independent variables tested were found to be statistically significant: FRA4U, the four different required French foundation language courses, the program faculty, the linguistic heterogeneity of the secondary school, the linguistic heterogeneity of the community of origin, the cohort and the board. Nonetheless, not all sub-variables within a group, be it the type of French foundation language course, the different faculties, the cohorts and the individual boards, were statistically significant. As expected, performance in Grade 12 pre-university French is a very strong predictor of performance in university French foundation language courses. In the first model, FRA4U accounts for 32% of the variance. It is followed in explanatory power by the students' school board of origin, which accounts for 4% of the variance. The type of French language foundation course, the cohort and the faculty explain each 1% of the variance in the model.

Table 17: Ontario Undergraduate Direct-Entry Francophone Students' Performance in French Language Foundation Courses and CGPA – Explanatory Models

	Model 1 – Dependent Variable FRAXXX $F_{33,3017}$[17] **= 63.76*,** R^2 **= 0.41**			**Model 2 – Dependent Variable CGPA** $F_{33,2950}$ **= 52.99*,** R^2 **= 0.37**		
Variable	**Partial Eta-Square**	**Estimate**	**Standard Error**	**Partial Eta-Square**	**Estimate**	**Standard Error**
Intercept		-8.59	.4465			
FRA4U	0.32	0.16*	.0043	0.32	0.15*	.0040
Foundation Language Course	0.01			0.00		
FRA1518		0.42	.4231		0.41	.0637
FRA1528		0.28	.1875		0.17*	.0081
FRA1538		0.89*	.1659		0.15*	.0228
FRA1710		0.00			0.00	
Linguistic Heterogeneity School	0.00	0.01*	.0040	0.01	0.02*	.0037
Mother tongue	0.00			0.00		
English		-0.10	.1830		-0.03	.1698

[17] Some observations from the complete population were dropped from the analyses because there were missing values. There was a variety of such cases. For example, students from a private school may not have a grade for FRA4U; another student at the University of Ottawa exercised the flexibility of taking courses in either official language and did not have any of FRAXXX but took ENGXXXX instead, etc.

	Model 1 – Dependent Variable FRAXXX $F_{33,3017}^{17} = 63.76^*$, $R^2 = 0.41$			Model 2 – Dependent Variable CGPA $F_{33,2950} = 52.99^*$, $R^2 = 0.37$		
Variable	**Partial Eta-Square**	**Estimate**	**Standard Error**	**Partial Eta-Square**	**Estimate**	**Standard Error**
French		0.12	.1306		-0.15	.1205
Other		0.00			0.00	
Gender	0.00			0.00		
Female		0.10	.0772		-0.08	.0717
Male		0.00			0.00	
Cohort	0.01			0.00		
2011		-0.10	.0942		-0.16	.0874
2010		-0.12	.0933		-0.14	.0867
2009		0.27*	.0929		-0.05	.0862
2008		0.00			0.00	
Faculty	0.01			0.01		
Arts		0.23*	.0928		0.30*	.0866
Business/ Administration		0.73*	.4210		-0.54	.0482
Engineering		0.57*	.2257		-0.44*	.2088
Health Sciences		0.31*	.1078		-0.04	.0997
Science		0.93*	.1880		-0.68*	.1733
Social Sciences		0.00			0.00	
Local	0.00			0.00		
No		-0.00	.0986		0.02	.0913
Unknown		0.06	.1075		0.08	.0996
Yes		0.00			0.00	
Linguistic Heterogeneity City	0.00	-0.01*	.0025	0.00	-0.00	.0024
Board	0.04			0.05		
Board A		-1.83*	.8117		-1.57*	.7447
Board B		-1.60*	.8105		-1.07	.8303
Board C		-0.78*	.1799		-1.03*	.1668

	Model 1 – Dependent Variable FRAXXX $F_{33,3017}^{17} = 63.76^*$, $R^2 = 0.41$			Model 2 – Dependent Variable CGPA $F_{33,2950} = 52.99^*$, $R^2 = 0.37$		
Variable	**Partial Eta-Square**	**Estimate**	**Standard Error**	**Partial Eta-Square**	**Estimate**	**Standard Error**
Board D		-0.12	.1498		-0.26	.1387
Board E		0.04	.1808		0.03	.1678
Board F		-0.97*	.2732		-0.77*	.2509
Board G		-.181*	.2131		-1.56*	.1987
Board H		-0.67*	.2733		-0.52*	.2533
Board I		-1.09*	.4078		-1.40*	.3831
Board J		-0.40*	.0951		-0.43*	.0883
Board K		-0.40	.2619		0.01	.2420
Board L		1.19*	.4182		1.37*	.3839
Board M		0.49	1.7999		1.56	1.6512
Board N		0.00			0.00	
Immigration Status	0.00	0.33	.1789	0.00	-0.16	.1650

*Statistically significant at p<0.05

The second model, where the dependent variable is the CGPA, accounts for 37% of the variance. Similar to the first model, the stronger explanatory factor in the GPA results is the final grade in FRA4U (effect size 32%). Other significant variables that account for some variance, as indicated by the partial eta-square, include:

- The percentage of French speakers in the school (1%);
- The faculty (1%), significant for Arts, Engineering and Science relative to Social Sciences;
- The students' originating district school board (5%), significant for boards A, C, F, G, H, I, J and L relative to N

We also analyzed a third model in which we replaced the grade in FRA4U with the admission average (calculated with the six best secondary school grades). Although this specification captures more of the variability in cumulative university performance (48%), the conclusions about the other variables tested remain the same. Most of the results obtained thus far are quite intuitive. It was expected that performance in the secondary school foundation language courses would largely account for the performance at the university-level language courses. The significant difference observed between the various language foundation courses, in particular FRA1538, could be further explored as it suggests that there may be pedagogical differences across courses that have differential impacts on students' performance.

In addition to these main findings, the modeling indicated a statistically reliable negative relation between the proportion of Francophones in the student's city of origin and the success in university foundational language courses. The negative sign of this relation is surprising but should not be over interpreted. The effect size is very small (less than 1% variance) and a scatter plot of the relation shows a nearly flat regression line.

Another interesting result is that observed in the school board of origin, as its significance is maintained even after controlling for linguistic heterogeneity and other variables. The school board effect is summarized in Table 18, where school boards are grouped by region.

Table 18: Least-Square Means in University-Level Language Courses for Students from French First-Language District School Boards, by Region, Model 1

Northern Ontario		Central Southwestern Ontario		Eastern Ontario	
District School Board	LS-Mean Model 1	District School Board	LS-Mean Model 1	District School Board	LS-Mean Model 1
A*	4.46	C*	5.51	D	6.17
B*	4.68	H*	5.62	J*	5.89
E	6.32	K	5.89	L	6.28
F*	5.31				
G*	4.48				
I*	5.20				

Table 18 reveals that results of students from five of the six French first-language northern Ontario district school boards had lower averages in their FRA course than their peers from eastern and southcentral Ontario. However, students from Board E, also in northern Ontario, generally outperformed their peers.

English-as-a-Medium-of-Instruction Programs

Table 19: Ontario Undergraduate Direct-Entry Anglophone Students Performance in English Language Foundation Courses and CGPA – Explanatory Models

	Model 1 – Dependent Variable ENGXXX $F_{85,9387}$ =33.08*, R^2 = 0.23			Model 2 – Dependent Variable CGPA $F_{85,9563}$ = 47.65*, R^2 = 0.30		
Variable	**Partial Eta-Square**	**Estimate**	**Std. Error**	**Partial Eta-Square**	**Estimate**	**Std. Error**
ENG4U	0.17	0.11*	.0024	0.25	0.13*	.0023
Foundation Language Course	0.02			0.00		
ENG1100		0.00			-0.43*	.2019
ENG1112		1.28*	.0866		0.00	.2112
ENG1131		0.86*	.2150		0.00	
Linguistic Heterogeneity	0.00	0.01*	.0017	0.00	0.00*	.0016

	Model 1 – Dependent Variable ENGXXX $F_{85,9387}$ =33.08*, R^2 = 0.23			Model 2 – Dependent Variable CGPA $F_{85,9563}$ = 47.65*, R^2 = 0.30		
Variable	**Partial Eta-Square**	**Estimate**	**Std. Error**	**Partial Eta-Square**	**Estimate**	**Std. Error**
School						
Mother Tongue	0.00			0.00		
English		0.12*	.0638		-0.05	.0591
French		-0.13	.1682		-0.06	.1542
Other		0.00			0.00	
Gender	0.00			0.00		
Female		0.19*	.0413		0.08*	.0383
Male		0.00			0.00	
Cohort	0.00			0.00		
2008		0.00			0.00	
2009		-0.06	.0566		-0.13*	.0504
2010		-0.18*	.0570		-0.15*	.0509
2011		-0.18*	.0583		-0.06	.0521
Faculty	0.01			0.02		
Arts		-0.18*	.0514		-0.06	.0474
Business/Administration		-0.54*	.2160		-0.56*	.2024
Engineering		-0.75*	.1142		-1.00*	.1065
Health Sciences		-0.07	.0630		-0.11	.0573
Science		-0.32*	.0833		-0.84*	.0772
Social Sciences		0.00			0.00	
Local	0.01			0.00		
No		0.05	.0670		-0.07	.0614
Unknown		-0.03	.0659		-0.02	.0608
Yes		0.00			0.00	
Linguistic Heterogeneity City	0.00	-0.00	.0028	0.00	-0.00	.0025

	Model 1 – Dependent Variable ENGXXX $F_{85,9387}$ =33.08*, R^2 = 0.23			Model 2 – Dependent Variable CGPA $F_{85,9563}$ = 47.65*, R^2 = 0.30		
Variable	**Partial Eta-Square**	**Estimate**	**Std. Error**	**Partial Eta-Square**	**Estimate**	**Std. Error**
Board[18]	0.02	*		0.03		
Immigration Status	0.00	-0.27*	.1106	0.00	0.02	.1028

*Statistically significant at p<0.05

In this model, eight variables are significant, as compared to seven for French-as-a-medium-of-instruction programs. Three variables that are found to be significant here were not in the French model: gender, mother tongue and immigration status. In addition, in the anglophone model, the linguistic representation of anglophone students in the city of origin, which also accounts for the proportion of French speakers and speakers of languages other than French and English in the city of origin, is no longer significant. Significant variables in this model that account for more than 1% of variance include:

- Results in ENG4U (17%);
- Type of English foundation course (2%);
- Students' originating district school board (2%)
- Faculty (1%), significant for all except Health Sciences.

In addition, although significant, immigration status, mother tongue and gender each account for less than 1% of the variation. Detailed analysis of the country of origin of students who are not Canadian citizens revealed an interesting difference between the francophone and anglophone groups. The great majority of visa students in French-as-a-medium-of-instruction programs came from countries where French is an official language or a language of status, whereas most visa students in English-as-a-medium-of-instruction programs came from countries without an English language heritage. This explains having immigration status and mother tongue as significant explanatory variables in the model for anglophone students, as for this group these demographic characteristics become differentiating factors. Anglophone boards, like the francophone ones, showed variability in how well their students were prepared for university studies. The table below shows a few examples.

[18] See the detailed list of school boards in Appendix I, Table 22.

Table 20: Examples of Variation Across English Language District School Boards

Northern Ontario		Central Southwestern Ontario		Eastern Ontario	
District School Board	LS-Mean Model 1	District School Board	LS-Mean Model 1	District School Board	LS-Mean Model 1
31	6.15*	56	6.15*	67	6.79*
49	6.44	66	6.55*	12	5.81*
29	6.02	23	6.16*	45	6.39*

*Board #67 was used as the reference in the model.

As with the French-as-a-medium-of-instruction programs, we ran an additional specification using the CGPA at the end of the first year of university studies as the dependent variable. The results for the second model, which accounts for 30% of the variance, are also presented in Table 19.[19] Three variables in this model account for important partial variation, as indicated by the partial eta-square, including:

- The final grade in ENG4U (35%);
- The faculty (1.5%), significant for Business/Administration, Engineering, and Science; and
- The students' originating district school board (3.3%), with varying levels of significance across boards and regions.

As with the first model, not all sub-variables are statistically significant.

Discussion

The results above summarize our findings for the most important entering group, the Ontario secondary school students (101s). Although linguistic heterogeneity is found to play a statistically significant role in explaining student success, its contribution to the understanding of the results is relatively small when compared to results in secondary language courses. In general, it appears that the quality of academic preparation supersedes or can supersede most other background events. Nevertheless, there are significant regional differences, such as among boards, even when controlling for all other variables. Since these differences may relate indirectly to pedagogical practices, further research should clarify the differentiating factors across boards. Furthermore, the role of immigration status and mother tongue are different for francophone and anglophone students and should be approached accordingly.

French-as-a-Medium-of-Instruction Programs: "105" Students

Although Ontario undergraduate direct-entry students (101s), whether English or French, constitute the bulk of our entering cohort, "105" students are also important from an institutional perspective as they add to the overall diversity of the student body. They come from a variety of different pathways with a myriad of prior experiences, both from an academic and cultural perspective. They also contribute greatly to the

[19] As with the francophone students, we ran a third model, where the cumulative first year GPA was the dependent variable and the secondary school language requirement (ENG4U) was replaced by the admission average (based on secondary school grades). Again, although this model explains greater variance (40%), given that the explanatory value of both models is extremely similar, only the results from the first specification are presented.

heterogeneity within our classrooms. It was therefore also important to examine "105" students registered in our French-as-a-medium-of-instruction programs.[20]

Before expanding on the types of analyses conducted and the high-level results obtained, we must first state the limitations encountered during this component of the project. Indeed, there are substantial limitations within our student information system (SIS) that are the result of some of our processes; the SIS has never been adapted to optimize our capacity to capture and analyze data such as those required for this project. Some examples of limitations encountered according to different pathways are included. Perhaps the most important limitation is that without access to all the secondary school variables (i.e., result in Grade 12 language course, type of language course, secondary school admission average, and linguistic heterogeneity of school) for all pathways, we do not have a common baseline for comparison.

a) CÉGEP Students

Although this is a critical pathway of incoming students at the University of Ottawa, some of the relevant information has never been captured within our SIS. For example, we are unable to distinguish the type of prior language courses followed and those for which transfer credits were given. We are also not sure that such information is similar from one CÉGEP to another, or even within the various programs of a given CÉGEP. Further, CÉGEP students can either follow a university preparation program or a technical program. However, these data are not readily available in our admissions database.

b) College Transfers

Our admissions team generally looks at both the college and secondary school files when considering an application from this pathway, thereby ensuring that all of the prerequisites are achieved prior to entry into a program. However, language courses can vary from one college to the next as their respective curriculums may differ. We can, however, identify their language of instruction, as Collège Boréal and La Cité are the only two French-as-a-medium-of-instruction colleges in Ontario.[21] Moreover, types of languages courses may also differ across programs (for instance, discipline-focused writing vs. general writing). In addition, we do not store individual course marks for this category of applicants in our SIS. We only store the overall admission average upon which the admission decision is made.

[20] Given our interest in the impact of minority backgrounds on francophone students, although there are data to undertake similar analyses for the "105" anglophone population, this study focused on the francophone community.
[21] It is important to acknowledge that the Université de Guelph – Campus d'Alfred also offers a college-level French-as-a-medium-of-instruction program.

c) International Secondary Schools

These students also constitute an important pathway to our undergraduate programs, and one that is likely to grow given institutional outreach efforts. However, this is far from being a homogenous group as countries of origin may vary greatly, from former French colonial countries to non-francophone countries (e.g., French-speaking students from China). In addition, the curricula may vary enormously (e.g., *Lycée français*; secondary schools following the French baccalaureate; International Baccalaureate; etc.). Finally, the sample size for international francophone students was an issue, forcing us to discard this group from a quantitative analysis perspective, as the sample was simply too small. Being cognizant of the limitations identified above, we ran a plurality of multiple regression analyses on our "105" students, focusing solely on Canadians, as sample sets for domestic "105" students were much larger and more interesting.

For these students (N= 5,743), we ran two different models using the CGPA as the dependent variable. The first model included the French foundational language course (for those students who did not receive a transfer credit) as an independent variable, while the second model included all students, even those who did not have to complete a foundational language course. Both models also considered the following seven independent variables: mother tongue, linguistic heterogeneity in the home community, gender, cohort, the faculty of first registration, applicant pathway, and if students are from the Ottawa region (local/non-local).

Both models explained much less variation than did the Ontario undergraduate direct-entry (101s) results. In fact, the first model only explained 15% of the variation, while the second was only slightly higher at 17%. Results for the second model are presented in Table 21.

Table 21: Multiple Regression Analysis for "105s" CGPA – Model 2

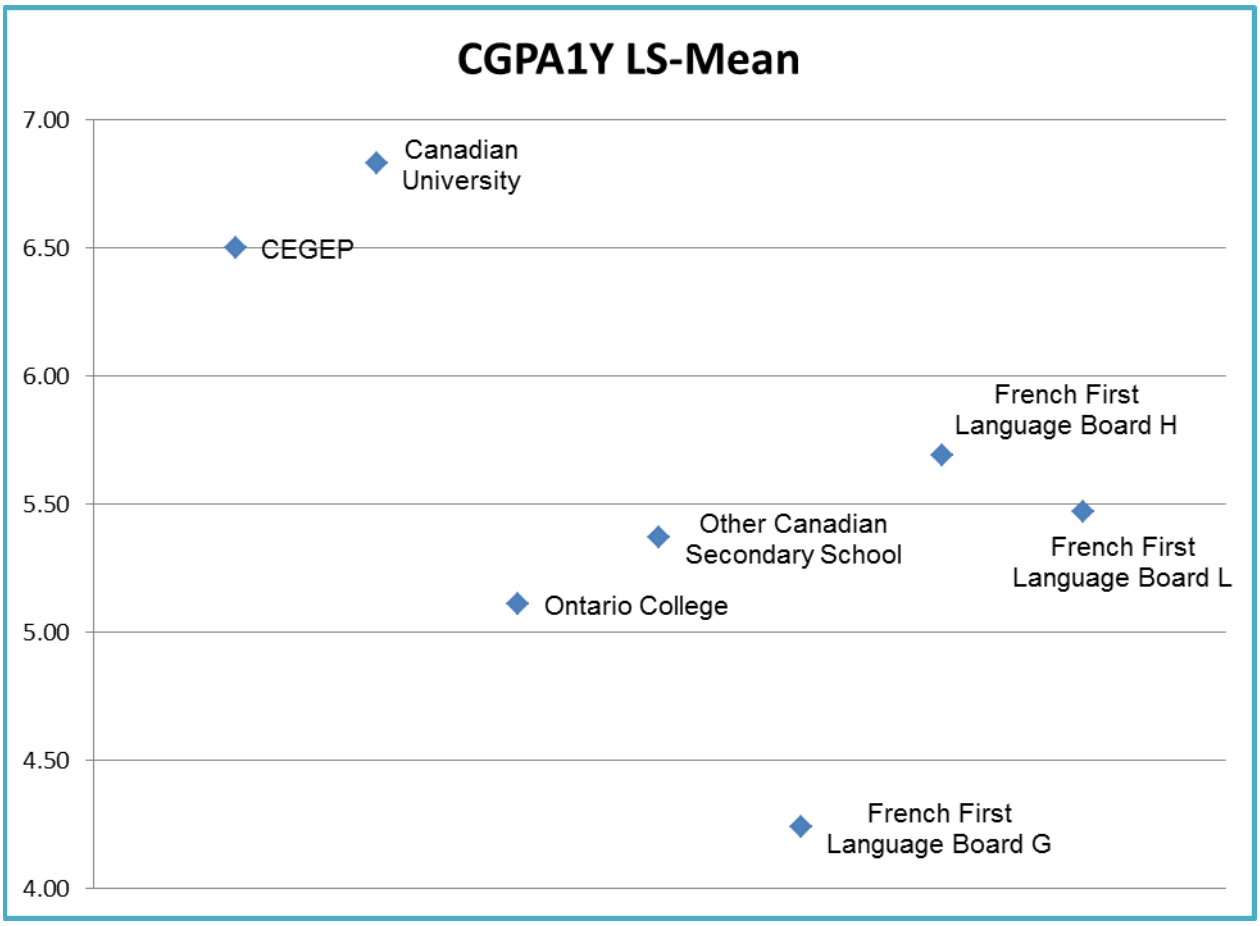
	Model 2 – Dependent Variable CGPA $F_{18,2372}$ **= 26.05*,** R^2 **= 0.17**		
Variable	**Partial Eta-Square**	**Estimate**	**Standard Error**
Binary foundation language course variable	0.00		
Equivalency given for foundation language course		-0.11	0.1282
Foundation language course taken in university		0.00	
Mother tongue	0.01*		
English		0.05	0.2660
French		0.56	0.1510*
Other	0.00		
Gender	0.00*		
Female		0.17	0.8427*
Male		0.00	
Cohort	0.00		

	Model 2 – Dependent Variable CGPA $F_{18,2372}$ = 26.05*, R^2 = 0.17		
Variable	**Partial Eta-Square**	**Estimate**	**Standard Error**
2008		0.00	
2009		0.08	0.1173
2010		-0.04	0.1148
2011		-0.02	0.1145
Faculty	0.04*		
Arts		0.58	0.0971*
Business/Administration		0.05	0.1540
Engineering		0.57	0.1963*
Health Sciences		1.10	0.1170*
Science		0.46	0.1440*
Social Sciences		0.00	
Linguistic Heterogeneity City	0.00	0.00	0.0023*
Applicant type	0.05*		
CÉGEP		1.13*	0.2004*
Canadian University		1.47*	0.2054*
Ontario College		-0.26	0.2136
Other Canadian Secondary School		0.00	

Both models did confirm some prior assumptions regarding the performance of our "105" students. This is probably best depicted in Table 21 above, which focused on the various applicant type pathways analyzed. In this model, mother tongue, gender, linguistic heterogeneity of the city of origin, the faculty and applicant type were significant variables, with the last two explaining jointly 9% of the variance. Women tend to succeed better than their male counterparts, and students' whose mother tongue is French achieve significantly better results than their colleagues with other mother tongues studying in French. Four of the five faculties proved to be significant, save Business/Administration. A similar tendency is noted for applicant type. Specifically, "105" students coming to our programs from a CÉGEP or from another Canadian university are performing well at a statistically significant higher rate than other Canadian secondary school graduates or college transfers.[22] For inter-university transfers, the better performance can probably be ascribed to the fact that these students have already undergone a university admission selective process, including having completed several university-level courses. For CÉGEP students, the better performance point to the benefits of college preparation in a pre-university oriented curriculum. This relationship is illustrated in Figure 1 below. However, without secondary school control variables, we have no measure of previous academic success.

[22] It is important to note that we do not have access to any secondary school control variables for students from these pathways.

Figure 1: CGPA Least-Square Means by Applicant Type, "105s" Model 2 with Three French First-Language Boards as Reference



Summary of Findings of Quantitative Analysis of Institutional Data

The findings presented in this section are of significant interest to three different actors: universities, secondary schools and their respective boards, and first entry-students from Ontario and Canada.

The first conclusion from the quantitative analyses is that the quality of the academic preparation in secondary school, especially in language courses, is a primary factor in the likelihood of success in university, both in language foundation courses and in overall grade point average. This conclusion emerges from the observation that the single most important independent variable among those tested was the grade in FRA4U or ENG4U. It accounted for the most variance, almost as much as the complete admission average. These quantitative results converge with the indication that had emerged from the 2010 exploratory focus groups, where several students who experienced difficulty in the French foundation language course stated that their FRA4U course had not adequately prepared them for university French courses. This being said, we must

also recognize that there are also many other uncontrolled factors influencing success in university studies, as the very best model accounted for no more than about 40% of the total variance.

Based on the analysis of institutional data from a linguistic perspective, focusing on the results in both the language admission requirement and student success data in their first-year foundation language course, we have shown that there is a significant and strong relationship between secondary school-level language courses and student success. The school board of origin was determined to be a significant predictor of student success in French foundation language courses and of overall student success. The results in Table 18, when analyzed in light of the sociolinguistic and linguistic studies on the varieties of French in Ontario (cf. page 1 of this report) suggest that regional linguistic heterogeneity is an important factor. As a result, the transition between Grade 12 language course outcomes and the expectation of acquired skills upon entry into first-year foundation language courses should be further investigated and modulated by participating institutions. The university must also be aware of the characteristics of its students in and across cohorts, by pathway and by linguistic characteristics, as these play an important role in their academic performance.

Furthermore, the multiple regression analysis models using the variables available in our information system only account for a small part of the variance observed. What other variables are at play? For this purpose, data from a variety of sources should be integrated to allow for a more complete analysis.

We also need to investigate further the impact of content-specific or discipline-specific language skills in order to diversify or adapt foundation language courses as required. Given the significant impact of Grade 12 language results on students' CGPA after year one, the university may wish to investigate setting a specific minimum admission requirement in the ENG4U and FRA4U course in addition to its specific minimum required average for admission.

Secondary schools and their district school boards need to address the harmonization of delivery of the university preparation language curriculum across schools within a district school board and across school boards. A better understanding of the importance of literacy skills, including language register, on student success across disciplines, particularly in their writing competency, is required. A focus on content-specific or discipline-specific language skills may be an important area of investigation at this level as well. Schools and students must be aware of the importance of Grade 12 language requirements in particular as a foundation for success at university.

Finally, given data limitations, we are unable to document extensively the performance of "105" students (domestic and foreign) from various pathways. Efforts to collect relevant information should be pursued to enable the additional research required.

Lessons Learned: Research-Informed Policies and Practices

As we look back upon the implementation of the pilot peer mentoring program that was the foundation for both parts of the project addressed in this report, we have identified seven lessons that will inform our practices and policies.

First, the most important lesson was the realization that our student body has changed and that we, as an institution, need to adapt. The changes are far more complex than what can be gleaned by general labels or variables such as mother tongue, language of program, pathway, “101s”, “105s”, and so on.

Second, this project brought together academics, administrators, researchers, students and staff from various sectors of the university who had not previously collaborated. The approach was truly collaborative rather than top-down. Tremendous opportunities arose once we broke down institutional silos. Collaboration must move beyond the research team to implementation teams.

Third, we have gained a new appreciation for the application of evidence-based practice to direct further institutional policy and practice. Knowledge must be mobilized to a greater variety of actors to effectively bring about change that allows us to better adapt to our students.

Fourth, the overwhelmingly positive response to the peer mentoring pilot project on matters regarding student transition to university as well as social and academic integration led to an expansion of the program to 15 different groups representing over 6,000 anglophone and francophone first-entry students. Based on the principle of “somebody like me”, students are grouped by a shared characteristic such as geographical origin (e.g., GTA students), special programming (French immersion) or pathway (CÉGEP). Near real-time documentation and analysis of interactions are key to the success of this program, allowing various institutional divisions to be advised of situations that may negatively impact the student experience.

Fifth, as an institution, we need to improve the way we capture data (e.g., more specifically for the 105s) and the way we link various databases and information systems on campus in order to provide empirical data when evaluating practice and thus inform policy.

Sixth, the peer mentoring program demonstrated the importance of empowering our students to be agents of change at various levels within the institution. We need to identify more opportunities to empower students to be agents of change within the institution and beyond.

Finally, this project highlighted the importance of systemic K-12 collaboration with our district school board and CAAT partners to ensure adequate access to and/or sharing of data regarding student success (beyond the grades to inform admission decisions) in order to better understand student trajectories and success regardless of pathway.

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Appendix I

Table 22: Detailed List of School Board Tests for Entering Ontario Undergraduate Direct-Entry (101s) Anglophone Students – Model 1.

Board	Estimate	Standard Error
1	-0.09	0.2294
2	-0.71*	0.1668
3	-0.01	0.2932
4	0.09	0.3174
5	-1.35*	0.3374
6	0.53	0.5326
7	-3.00*	1.2886
8	-0.25	1.2953
9	-0.20	1.8266
10	-0.38	1.8144
11	1.84	1.2863
12	-0.98*	0.1307
13	-0.16	0.2996
14	-0.65*	0.1913
15	-0.49*	0.17315
16	-0.10	0.1944
17	-0.43	0.2790
18	-0.36	0.2658
19	-0.26	0.1929
20	-0.40*	0.1387
21	0.16	1.8161
22	-0.53*	0.2361
23	-0.63*	0.2078
24	-0.21	0.1811
25	-0.38	0.3747
26	-0.07	0.3957
27	-0.60*	0.1610
28	-1.22*	0.4357
29	-0.77	1.8154

Board	Estimate	Standard Error
30	-3.13*	0.9126
31	-0.64*	0.3163
32	-0.47	0.2613
33	-0.71*	0.1615
34	-0.34	0.2472
35	-0.01	0.2436
36	-0.87*	0.2394
37	-0.28	0.3256
38	-0.87	0.7447
39	-0.24*	0.0654
40	-0.01	0.1453
41	-0.95*	0.1763
42	0.31	0.4385
43	-0.78*	0.2404
44	0.11	0.2614
45	-0.40*	0.1925
46	-0.14	0.1575
47	-0.84*	0.1958
48	-0.53	0.3327
49	-0.35	0.3776
50	0.21	1.2840
51	-0.01	0.1637
52	-0.39*	0.1418
53	-0.35	0.6095
54	-0.77	1.0492
55	-0.56*	0.2107
56	-0.64*	0.1350
57	-0.40	0.2072
58	-0.67	0.1187
59	-0.16	0.2021
60	0.00	1.8148
61	-0.24	0.2912
62	0.04	0.1749

Board	Estimate	Standard Error
63	-0.78*	0.3260
64	-0.10	0.4318
65	-0.18	0.1719
66	-0.24*	0.1209
67	0.00	.

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