ABSTRACT

LEARNING BEYOND BORDERS AND CLASSROOMS: BRAZILIAN STUDENTS IN A CANADIAN POST-SECONDARY INSTITUTION

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Producing interculturally competent students has emerged as a goal on university campuses while international student mobility has increased significantly over the past two decades. This research study explored the experience of Brazilian undergraduate students studying at the University of Guelph during the 2014-2015 academic year as part of a specialized, cohort-based exchange program, Science without Borders. The research was conducted through online surveys and face-to-face semi-structured interviews. Language development and intercultural learning were identified as largely positive experiences, despite an absence of evidence of competency in either area. Lack of information was identified as a challenge area. Understanding the role of the cohort structure in intercultural competency development is important in supporting campus wide internationalization agendas in a growing landscape of international student mobility.
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TERMS AND ABBREVIATIONS

BRIC: A commonly used acronym to refer to Brazil, Russia, India, and China; countries considered to be at a similar stage of economic development.

CALDO: Consortium of nine Canadian research universities who host funded students from Latin America.

CAPES: Brazilian Agency for the Support and Evaluation of Graduate Education; (in Portuguese), Coordenação de Aperfeiçoamento de Pessoal de Nível Superior.

CBIE: Canadian Bureau of International Education.

CiCAN: Colleges and Institutions Canada; Canadian national organization that represents public colleges, institutions cégeps & polytechnics. Previously known as the Association of Canadian Community Colleges.

CNPq: Brazilian National Council for Scientific and Technological Development; (in Portuguese) Conselho Nacional de Desenvolvimento Científico e Tecnológico.

DMIS: Development Model of Intercultural Sensitivity.

ELP: English Language Program at the University of Guelph.

ISA: International Student Advisor.

PACTI: Brazil’s Science, Technology and Innovation Action Plan; (in Portuguese) Plano de Ação para Ciência, Tecnologia e Inovação.

STEM: Science, Technology, Engineering and Mathematics.

SwB: Science without Borders.
CHAPTER 1 - INTRODUCTION

INTRODUCTION

This research study explores the experience of Brazilian undergraduate students studying at the University of Guelph during the 2014-2015 academic year as part of a specialized exchange program, Science without Borders (SwB).

During the past two decades the international activities of universities have increased significantly (Altbach & Knight, 2007; de Wit, 2011; Dunne, 2011; Dunne 2013; Hanassab & Tidwell, 2002; Knight, 2008). As part of this increase, goals around producing interculturally competent students have been developed (Bennett, 2009; James, 2005; Kehm & Teichler, 2007; Luo & Jamieson-Drake; Olson et al., 2013). Broad goals of internationalization have become a strategically focused area at post-secondary institutions both inside and outside of the classroom. A common component of the internationalization agenda at many institutions is increasing the number of international students on campus either through full degree or student exchange programs. This is seen to further the agenda of internationalization by increasing cross-cultural interactions overall on a campus, increasing opportunities for intercultural learning (Bennett, 2009; de Wit, 2011; Dunne, 2011).

While internationalization is key area for many post-secondary institutions globally, it is growing particularly in rapidly developing countries such as Brazil, Russia, India, and China (BRIC) (Carnoy et al., 2013). A common feature of internationalization of BRIC members, such as Brazil, is that it is state-led (Carnoy et al., 2013). As a result of a Brazilian federal government funded program, Canada-Brazil Science without Borders (SwB), the number of Brazilian students entering to study in Canada increased by 50% each year from 2010 until 2014 (Canadian Bureau for International Education [CBIE], 2012). Between 2012 and 2013, Brazil was among the top 15 sending countries with the fastest growing number of international students in Canada, up 17%.
Unlike a traditional student exchange program where an institution may send one or a few students to study abroad, the SwB program sends a cohort of students from different Brazilian institutions to one institution in the receiving country. While the students may not know each other prior to acceptance at their Canadian institution, the cohort-based nature of the program creates a built-in community of Brazilians at the host institution. Other countries are introducing similar cohort-based international programs. The tide is shifting to a need for knowledge in the area of international students in cohort-based programs, and specifically, Brazilians in Canada, as their numbers increase substantially and require universities to provide services and programming to meet their needs.

The Canadian federal government has invested in the processes necessary to bring more Brazilian students to Canada. Supporting the SwB program is one such step (Association of Universities and Colleges of Canada [AUCC], 2010). The federal government has also launched initiatives such as the Canada-Brazil Framework Agreement for Cooperation on Science, Technology and Innovation, Canada’s Strategy for Engagement in the Americas, Emerging Leaders in the Americas Programs and the Conference of the Americas on International Education (international.gov.gc.ca, 2014). Brazil is listed at the top of the list for Priority Education Markets in which the federal government wishes to invest and support (2014). While it is clear that there is interest in bringing Brazilian students to Canada to study and research, our knowledge of what needs to be in place for those students to succeed on our campuses and in our communities is limited.

PROBLEM STATEMENT

Two existing areas of research within higher education that can be applied to cross-cultural exchange are internationalization, including increased acceptance of international students and development of intercultural competency, and student development overall. While these areas are often not combined to examine both the experience of being an international student and a university student at a key point in personal growth and development, they are interconnected and timely with regards to
the needs being expressed by practitioners in the field (Hanassab & Tidwell, 2002; Knight, 2008; Green et al., 2012).

To date, little research has been conducted on Brazilian students in Canadian post-secondary institutions. On the other hand, substantial amounts of research have focused on students from Africa, China and South and East Asia who have traditionally made up the larger number of international students in Canada (Association of Universities and Colleges of Canada [AUCC], 2010; Hanassab & Tidwell, 2002; Sawir et al., 2013), while ignoring the growing number of Brazilians leaving their own country to study abroad in a new and unique cohort-based exchange program (Hanassab & Tidwell, 2002; Altbach & Knight, 2007; Avila, 2007; Sawir et al., 2013; CBIE, 2014).

Understanding the outside of the classroom experience of international students in the Canadian post-secondary context is critical in providing positive intercultural experiences that contribute to development and learning for all students on a post-secondary campus, including that of the Brazilian cohorts.

RESEARCH GOAL & OBJECTIVES

The goal of this research is to describe the experience of Brazilian students in a cohort-based sandwich exchange program, Science without Borders, at the University of Guelph, specifically in the context of co-curricular learning and the University’s internationalization agenda.

This goal will be accomplished through the following objectives:

1. To identify the extent to which SwB students are using the specialized support systems in place at the University of Guelph;

2. To determine if there are any barriers or opportunities for getting involved outside of the classroom related to the cohort-based structure of the SwB program at the University of Guelph;

3. To determine if there are any specific impacts of the cohort-based structure of the SwB programs on the intercultural experiences of students in the program at the University of Guelph.
METHODOLOGY

This is a mixed methods study using both qualitative and quantitative methods. The researcher collected all data and performed the analysis. Data were collected from undergraduate student participants in the SwB program at the University of Guelph, key informants who are staff members associated with the program on campus, and staff from the Canadian Bureau of International Education (CBIE). Methods for data-gathering were document and program review, one-on-one semi-structured interviews, and an online survey. The mixed methods approach and triangulation of the data collection were used to ensure trustworthiness and authenticity of the findings. Complete details of the data collection process can be found in chapter 4 of this thesis. The analysis and findings can be found in chapter 5.

ETHICAL CONSIDERATIONS

There were several ethical issues considered and attended to in the process of this study:

1. **Language used in surveys:** All student SwB participants are required to be proficient in English in order to study in Canada. However, surveys in English may lose some aspects of the cultural component when participants try to respond with words or expressions that do not have a direct equivalent in English. There is always the potential for it to be difficult for students to fully express themselves. The researcher, who is sufficiently fluent in Brazilian Portuguese, took care to develop survey questions that were consistently and simply written. In cases where the meaning of words or expressions shared in interviews that do not have a direct English translation, the researcher insured that they were properly translated from Portuguese to English.

2. **Embarrassment:** Care needs to be taken not to embarrass key informants or, indirectly, the hosting institution itself through the representation of the participants’ responses in the context of this study. Participants were fully
informed of the process and intent of the research, as well as being assured of confidentiality. The option to withdraw from the study was provided. Names of the University staff who were interviewed are not used in this thesis; however, their roles and scopes of work are identified.

During the collection of data the researcher ensured that participants provided informed consent, were clear on timelines to exercise options to withdraw from the research, and had access to their own copies of the consent form to refer to.

LIMITATIONS AND ASSUMPTIONS

This study was not without limitations and assumptions, some imposed internally and others as a result of external factors. The researcher made considerable effort to be aware of her own assumptions, biases, and beliefs about the research topic and the participants in an attempt to be reflexive throughout the process and to provide an additional layer of validity to the study (DeCuir-Gunby, 2008).

Limitations

The time available with which to conduct this study was a limiting factor overall. The research participants were on campus for a short period of time and their availability to participate in this research was limited and had an influence on which methods were used to collect data.

In addition, in 2014-2015, there were only 44 SwB students at the University of Guelph. This is not a large number of potential research participants and meant that any data collected would need to be descriptive in nature and possibly challenging to draw strong conclusions from.

The researcher attempted first to gather data through focus groups. The method of focus groups is ideal for research that is about the experience of individuals as it can determine “…issues of importance to those in the research settings or acquires insights about the phenomenon from those who have experienced it, and different perspectives can be analyzed, highlighted and negotiated” (Palys & Atchison, 2013). Focus groups provide an opportunity for participants to be heard, to share issues of concern to them
and to express their opinions (Palys & Atchison, 2013). Unfortunately, while the researcher attempted to organize focus groups, she was not able to recruit enough participants from the Brazilian cohort in order to do so, meaning that this method could not be employed to help guide the survey questions generation and research in general. This is a limitation to this study, as participant voices were limited to the interview process and surveys only.

In one-on-one interviews, the interviewer can influence the nature of the data collected based on how the questions are asked and structured (Flick, 1998). To mitigate any misrepresentation or misinterpretation of the data, the same researcher interviewed both students and key informants. Additionally, the semi-structured component of the interview included the same questions for both students and university staff. With staff from the host institution participating in the interview process, there is the additional limitation of fear of reprisal or embarrassment hindering their responses. There was only limited student participation in the interviews, and it was not be possible to draw strong conclusions from their responses.

An on-line survey was sent to all in the Brazilian cohort. Responses received through online surveys are subject to the researcher’s interpretation, and anything that is not clear cannot be clarified with the respondent (Palys & Atchison, 2013; Lindlof & Taylor, 2011). Survey questions were written in clear English to avoid uncertainty.

An overall limitation is that the findings from this study cannot be said to be representative of all SwB students at all host institutions, as the context varies significantly at each location. The study was not designed to be generalizable; however, there may be findings that are of benefit to both the University of Guelph and other host institutions. As well, it may be to inform further research.

Assumptions

The researcher made two broad assumptions, one about interviews and one about surveys, when conducting this research.

One-on-one interviews provide participants with the opportunity to share “privately held opinions” and can increase both the rate and accuracy of responses (Palys & Atchinson, 2013). The one-on-one nature also allows the researcher to seek any clarification needed with follow-up with questions to clarify provided responses.
Finally, this method does allow participants to share their opinions without comparison to those that might be shared by others in a setting like a focus group.

Online surveys can allow for the quick and cost-effective collection of data (Palys & Atchison, 2013). In the case of this research, it was also an appropriate method given the lack of response to focus group invitations and the fact that the SwB students are often in communication through online tools and technology.

SIGNIFICANCE OF RESEARCH

This research is a targeted and small-scale study; however, it is significant for three important practical and theoretical reasons. First, at the programming and support services level, findings from this research will serve to further support the development of programming and/or processes that are intercultural in nature and appropriately sensitive to the needs of a cohort based exchange student.

Second, at the broader institutional level this research will provide key information for supporting student services staff and faculty to develop programming and solutions that continue to meet both the needs of the student and the goals of their institution. In addition to the stated goals of internationalization, the learning objectives or outcomes of holistic student development may also benefit from this research.

Finally, this research contributes to the body of literature by studying the experience of international students from the same geographical region participating in a cohort-based program as an example of the implementation of a component of an internationalization agenda at a post-secondary institution. This research provides the opportunity to identify further areas of study moving forward that may contribute to learning and understanding in this field of study.

ORGANIZATION OF THE THESIS

This thesis consists of six chapters followed by a series of appendices.

Chapter two is an overview of literature related to this research. The literature is focused on concepts and aspects of student development theory, international students, intercultural learning and internationalization.
Chapter three contextualizes aspects of this research by examining internationalization at the University of Guelph, explaining the process and context of the Science without Borders program, in particular at the University of Guelph.

Chapter four is focused on the research methods used. This chapter will describe the methodology, including chosen methods for data collection, online survey questions, process utilized for data analysis, and the coding of the research findings. This chapter also addresses changes to the data collection methods that occurred during the study.

Chapter five presents the main findings of the research while the findings are discussed in Chapter six.

Chapter seven makes recommendations based on the findings and draws conclusions from the research.
CHAPTER 2 – LITERATURE REVIEW

This chapter is an overview of the relevant literature reviewed for this research. Beginning with student development theory, specifically Astin’s Theory of Involvement, and then moves to a discussion of international students in particular. This review then discusses the concepts of intercultural learning, the development and purpose of the Developmental Model of Intercultural Sensitivity (DMIS), and internationalization in higher education.

STUDENT DEVELOPMENT THEORY

Participation in post-secondary education is nearly synonymous with growth in personal development. To understand and enhance students’ personal growth and learning is a goal for many educators and institutions. Sanford (1967) defined development as “the organization of increasing complexity” (p.47). Development in Sanford (1967) and Evans et al.’s (2010) view is seen as a positive growth process wherein an individual becomes progressively better able to integrate and act on many different experiences and influences (Evans et al., 2010). Rodgers (1990, in Evans et al., 2010) defined student development as “the ways that a student grows, progresses, or increases his or her developmental capabilities as a result of enrollment in an institution of higher education” (p.27). The term student development has been used to categorize research and theory on adult and adolescent development. In application, it is post-secondary institution staff within areas of student affairs and services that use research and theories to design programs, develop policies, identify and address student needs, and create campus environments that encourage positive growth in students (Kuh, Whitt, & Shedd, 1987).

Student development theories provide the foundation for the practice of student development. Theories of student development date back more than one hundred years and have included focuses such as vocational guidance, personnel or whole student viewpoints and identity development (Evans et al., 2010). In the Western world context, the transition away from a focus on vocational guidance as a form of support and
development was aided by the diversified participation in higher education and a shift in seeing the role of the University not as parents, but as partners in learning (Evans et al., 2010; Schuh et al., 2011). Student affairs and services practitioners working with students outside of the higher education classroom commonly use the term 'student development' and, many would argue, ground their work in the concept that they are facilitating development of the student through their programs and services (Evans et al., 2010).

Theories are socially constructed and reflect the historical, societal, political, and cultural contexts in which they evolved and the perspectives of those who generated them (Schuh et al., 2011, p. 135). Overall, student development theories aim to explain how students in post-secondary institutions gain knowledge from their whole experience, inside and outside of the classroom. While numerous theories do exist, most are grounded in concepts of psychosocial development and growth alongside identity formation (Evans et al., 2010; Pascarella & Terenzini, 2005). Despite the variances between different theories about student development, there are four basic areas of consistency:

1. The individual student must be considered as a whole person.
2. Each student is a unique person and must be treated as such.
3. The student’s total environment is educational and must be used to help the student achieve full developmental potential.
4. The major responsibility for a student's personal and social development rests with the student and their personal resources.

Appendix A of this thesis contains a comprehensive overview of student development theories, edited from Schuh et al., 2011 (pp. 138-148). The table is not exhaustive and includes theories and frameworks grounded in empirical research. The chart presents theories by family and subcategory. It is evident by looking through Appendix A that there are a variety of theories and frameworks available for use in working with university- and college-aged students. It is also evident that the individual student remains the centre of focus throughout each theory. Knowing how people interact with and belong to a campus environment, and how those environments
influence people, is an important component of understanding contexts for student learning and development (Schuh et al., 2011).

Astin’s Theory of Student Involvement embodies all four of the criteria listed above and also considers the learning environment. According to Astin (1984), “student involvement refers to the quantity and quality of the physical and psychological energy that students invest in the college experience. Such involvement takes many forms, such as absorption of academic work, participation in extracurricular activities, and interaction with faculty and other institutional personnel” (p.297).

Astin's (1984) theory has five basic postulates:

1. “Involvement refers to the investment of physical and psychological energy in various objects.”

2. “Regardless of the object, involvement occurs along a continuum.”

3. “Involvement has both quantitative and qualitative features.”

4. “The amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in the program.”

5. “The effectiveness of any educational policy or practice is directly related to the capacity of that policy or practice to increase student involvement.” (p.298).

Simply put, the more involved a student is in the university experience, the greater the amount of student learning and personal development. While many student development theories emphasize thoughts or feelings, Astin's theory (1984) includes behavior and action and focuses on those factors that facilitate development.

Many scholars of student development have argued that a more holistic approach to educational research and practice is required to help students develop the array of skills that will enable them to tackle complex contemporary problems, especially those with an intercultural dimension (Baxter Magolda, 1999; Bennett, 1993b & 2009; Kegan, 1994). It is in the co-curricular environment that this learning can take place, complementing the curricular objectives. Today the common term for describing these out-of-the-classroom experiences is co-curricular learning, that is experiences that are
complementary, rather than ‘extra’ or ‘external’ to curricular or typical academic learning.

Students need to be engaged in their environment in order to take advantage of the opportunities for learning and growth. As an environmental theory of student development, Astin’s (1984) concern with the environment a student is a part of is strongly connected to their ability to thrive and succeed.

Student development theories have long lent themselves to being combined with other models, theories, and concepts in order to view development from different and new perspectives (Haynes, 1996). King and Baxter Magolda (2005) have designed a developmental model of intercultural maturity that connects with student development theory. Its focus is on domestic students as intercultural competence and maturity are desired outcomes of a post-secondary experience and particularly of student exchange and study abroad programs (Hamad and Lee, 2013; King and Baxter Magolda, 2005). The developmental model of intercultural maturity is an example how intercultural competency could be viewed through a student development lens.

INTERNATIONAL STUDENTS

An increasing number of students choose to study at a university abroad (Rienties et al. 2013; Russell et al. 2010; Sherry et al. 2010; Ward et al. 2004). The reasons behind the decision to study abroad vary including the chance to explore a different culture, learn new ways of thinking and behaving, make new friends, have access to a different level of education and improve their cross-cultural knowledge and skills (Andrade 2006; McClure 2007). Some choose to undertake their entire degree abroad, while others study for a short period of time on an international exchange.

International student related research has grown during the past 10 years as student mobility across borders has increased (Abdullah et al., 2014). There is no consistent data available on student mobility as different countries and regions define ‘international’ differently. Some countries define international students as being non-citizens that have residency status. In Canada, that would equate to someone with Permanent Residency Status (ISA, personal communication, April 22, 2015). More often, international students are defined as non-residents of the country in which they
study (OECD, 2012). In 2012, there were over 5 million students studying outside their home country, up from approximately 4 million in 2009 (OECD, 2012). Mobility appears to move west, and so most international students can be found at institutions in western countries such as the United Kingdom, Australia, New Zealand, Canada, and the United States (OECD, 2012).

Multiple studies find that the majority of international students have positive experiences, however this is not universal (Abdullah et al., 2014; Rientes et al., 2013). Similar to other students, international students may develop new outlooks, increase their self-esteem and confidence, and mature as a result of their independent life experiences, albeit in another culture. The literature is clear that international students can experience additional challenges as a result of language and cultural barriers, academic and financial difficulties, interpersonal problems, racial discrimination, loss of social support, alienation and homesickness (Yeh & Inose, 2003).

International students are often viewed as a homogeneous group, and not as individuals coming from varying cultural backgrounds who may have different academic and cultural challenges, even if they are from the same country or region (Hanassab & Tidwell, 2002). Adrian-Taylor et al. (2007) found that an international student’s positive experience goes a long way to benefit “domestic students, faculty members, staffs, and members of the institution and community, and the international student benefit from the enriched learning and social environment that results from intercultural interaction” (p. 91). Despite this, most research on international students treats them as a group defined by their status as ‘other’. In fact, a very limited number of studies have focussed on sub-cultural groupings or how social (learning) relations of international and domestic students’ influence how they learn in and outside the classroom (Rientes et al., 2013).

Expectations of host universities may be very different than those of a students’ cultural background (Zhou et al. 2008). Marginson (2012) highlights two distinct philosophies in teaching globally. The first is the Chinese Confucian-oriented teaching which emphasizes obedience and deference to authority but not critical thinking. The second is the Socratic-oriented North American education that includes debates, questioning and critical and original thinking. This reinforces the expectation that students will be responsible for their own learning in a Western setting (Hofstede, 2001;
These differences are substantial and, depending on a student’s origin, can result in international students facing challenges in adapting to the academic setting of their host institution and culture shock (Rientes et al., 2013; Tempelaar & Rientes, 2012). Challenges in adaptation to a new learning environment can be exacerbated when there are large classroom sizes and students are in programmes with many students (Gallego and Casanueva, 2009; Tempelaar & Rientes, 2012). In these instances, Zepke and Leach (2005) argue that students have fewer opportunities to develop strong relationships with the teacher and other students.

The literature is clear that there are several barriers for international students success (Bennett, 1993a; Rientes et al., 2012; Rientes et al., 2013; Sherry et al., 2010; Zhou et al., 2008). Barriers include language fluency (Bennett, 2009; Rientes et al., 2012; Zhou et al., 2011), perceived discrimination (Russell et al., 2010), financial and academic challenges (Sherry et al., 2010; Yeh & Inose, 2003), and the fact that most domestic students already have established friend networks to rely on making it more difficult for international students to join in (Rientes et al., 2011; Hendrickson et al., 2011). For students who are completing their whole degree abroad, there is more time to address some of these barriers. Those participating in a study abroad have a more limited amount of time for adapting.

The number of friends an international student has in their host environment is a major factor in their success (Sherry et al., 2010). In order to support the well being of international students, as campuses aim to do with domestic students, a welcoming university and community is key. Lee and Rice (2007) found that universities emphasize the international students’ need to adapt or adjust, absolving the host institution of any responsibility. What are needed instead are programs and services that help students make friends and connect outside the classroom. A university cannot focus only on the academic needs of international students. Tidwell and Hanassab (2007) argue that an academic needs focus means a university is ignoring the important factors in the potential success or failure of their international students.

With more international students arriving on campuses, Hudzik (2011) emphasizes the need for institutions to collaborate across departments more effectively in order to serve the needs of international students. Departments such as the
registrar’s office, housing, student support services and academic advisors, among others, could all play a more coordinated role in supporting international students.

The presence of international students on a campus is often a central component to an internationalization agenda at an institution. Still, there are three challenges identified in the literature that persist:

1. The voice of international students remains unheard within the global higher education system (Kondacki et al., 2008).

2. Students’ experiences are not well defined; their presence is often seen as a ‘problem’ (Owens and Loomes, 2010)

3. Quality management of students’ experience is conceptualized in a top-down or customer service approach, not a student development approach (Gatfield et al., 1999)

While many international students report having overall positive experiences, the three broad areas above reinforce the fact that international student mobility and success are complicated issues still needing to be addressed.

INTERNATIONAL EXCHANGE ACTIVITIES

The most common or well-known form of internationalized activity is the study abroad or student exchange program (Knight, 2008). These may be a semester abroad program sponsored by a home institution, a course field trip, a co-curricular service learning programs or independent study. It is through these types of programs that many believe they are creating interculturally competent global citizens (Brown et al., 2007; Hanassab & Tidwell, 2002; Knight. 2008).

As Hamad and Lee (2013) have identified there is some variety in what is defined as a short or long-term exchange program but overall anything that is one semester in length or more can be considered long-term. Short-term programs are often described as ranging from 1 to 6 weeks (Davidson, 2001; Hopkins, 1999) and costing less than a longer program (Andrews & Henze, 2009). In many cases they also involve a smaller group (Mansson, 2008). There are some advantages to choosing a shorter program (Andrews & Henze, 2009). There is often less cost associated with a short-term program and participants are not away from family and friends for as long a period of
Long-term programs are more commonly defined as programs that last between a semester and a year (Hopkins, 1999; Penington & Wildermuth, 2005). Long-term programs also have advantages for the participants. Individuals in a long-term program have more time to settle into the new environment, have a greater opportunity for cultural immersion, and may be able to take specialized academic courses that are not offered at their home institution. There is no ‘right’ length of program for a student, it is very much dependent on the individual. However, choosing the right program can provide positive outcomes for students, such as becoming more interculturally competent in a multicultural world (Kitsantas, 2004).

Most exchange programs fall into the ‘sandwich’ category. This category represents a program where students complete part of their degree at their home institution, attend the host institution for their exchange period, and return to the home institution to complete their studies. This type of traditional exchange program is most often a reciprocal, negotiated relationship between the two institutions directly, allowing the exchange students to receive equivalency credit for their courses and often paying tuition to their home institutions. There may be only one student from a particular institution, and the sandwich programs are often one year or less in duration. Overall, this is strikingly different from situations where international students stay on a campus for the full length of their degree program and where their needs and issues mirror more similarly those of immigrants (Hanassab & Tidwell, 2002; Sawir, 2013).

Another model is a semester abroad program where a group of students from one institution moves abroad for a semester or more as a cohort with a faculty and/or staff member from their home institution. The accompanying faculty and staff teach the academic courses from the home institution and credit is granted by the students’ home academic program. Students do not attend classes with those from other institutions or cultural backgrounds. Essentially, their home institution class has been transferred to another location.

There is research to suggest that studying abroad has become a useful strategy in developing and shaping intercultural competencies (see Andrews & Henze, 2009). While proponents of the types of programs just discussed argue that a student’s cultural understanding, awareness, and skill are increased, short length sandwich programs at
the undergraduate level have been seen to fall short of providing effective opportunities for students to engage in intercultural learning and fully explore the academic environment of their host country (Giordano & Pagano, 2013, p. 24). There is a commonly held belief, encouraged by internationalization agendas that emphasize the increase in sending and receiving students through study abroad programs, that a study abroad experience will automatically lead to intercultural learning, development, and competence, i.e. creating global citizens (Bennett, 2009; Brown et al., 2007; Vande Berg, 2009). This is not the case.

INTERCULTURAL COMPETENCE

There are a number of definitions, models, and theories that seek to define what is culture, intercultural, international education, intercultural competence, intercultural education, and other similar terms (Baxter Magolda, 2000; Bennett, 1993a; Bennett, 1999; Byram et al., 2001; Deardorff, 2006; Dunne, 2011; Fennes & Hapgood, 1997; Kidd, 2002; Paige et al., 1999; Pedersen, 1994; Rosen, Digh, Singer, & Phillips, 2000). Before defining intercultural, a concept of culture needs to be explored. Culture is difficult to define. Williams (1983) noted that culture is “one of the two or three most complicated words in the English language (as quoted in Kidd 2002, p. 9). The lack of consensus on what culture is makes utilizing ideas that come from culture, such as intercultural competency, challenging. Among the over 100 definitions of culture a common tenet among the definitions is that culture is related to groups (Dunne, 2001; Keating, Martin & Szabo, 2002; Singer, 1998; Bennett, 1999). As Levine, Park and Kim (2007) explain:

However, regardless of the specific definition adopted, it is usually agreed that culture is a collective phenomenon. It is, by definition, something that is shared among people belonging to the same socially defined and recognized group. Culture is something people have in common with some people but not with others. (p. 207)

A simple way to place individuals into a group that is easy to define and eliminates some of the more challenging contextual components of the individuals is to group by nationality. International students on a university campus are most commonly defined
by country of origin. In the grouping by nationality as a definition for culture, there is still recognition that each individual is culturally unique to a certain extent in that everyone has his or her own experience of the world (Singer, 1998).

The concept of individual cultural uniqueness and culture as a group of people are not incongruent. In a university setting it may simply mean that international students and domestic students are not homogeneous groups. Each student is an individual that brings diverse ideas, experiences and values with them. Culture is more of a spectrum that each individual is on, and they may share more aspects of their culture with others, but not with everyone. With each individual on a cultural spectrum, one could argue that any interaction between two individuals is intercultural in nature. Using the prefix “inter”, and not “multi”, encompasses both domestic and international contexts and implies cultures interacting (Landreman, 2003). While this may not be incorrect, it is not the focus on exchange activities as part of an internationalization agenda. That is more focused on interaction between individuals from different nationalities that are further apart on the cultural spectrum.

One of the principal goals of an intercultural and internationalized curriculum is for all students to develop ‘intercultural competence’ (Kinght, 2004). Several scholars have proposed conceptual models to describe intercultural competencies (e.g., Bennett, 1993b; Howard-Hamilton, Richardson, & Shuford, 1998; Ottavi, Pope-Davis, & Dings, 1994; Pope & Reynolds, 1997; Pope, Reynolds, & Mueller, 2004; Pope-Davis, Reynolds, Dings, & Ottavi, 1994). These models provide useful starting points for identifying the attributes that are associated with this ability. Deardorff (2006) argues that one potentially meaningful outcome of internationalization efforts at post-secondary institutions is the development of interculturally competent students (p.241).

Intercultural competence is another popular yet abstract term, which enjoys much discussion but evades a unified definition (Deardorff, 2006; Deardorff et al., 2012; Scarino, 2009). Deardorff’s (2006) study sought to determine a definition of intercultural competence as agreed upon by panel of intercultural scholars. Once a definition was agreed upon, then tools for measuring competence could be more easily developed. While a single definition was elusive there were several items (Table 1) that scholars were 80% to 100% in agreement upon as components of intercultural competence.
only item that had 100% agreement from the international scholars as to what is intercultural competence is "the understanding of others' world views" (Deardorff, 2006, p. 248).
Table 1- Intercultural Competence Elements with 80% to 100% Agreement Among Top Intercultural Scholars

<table>
<thead>
<tr>
<th>Intercultural Competence - Items</th>
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<tbody>
<tr>
<td>Ability to communicate effectively and appropriately in intercultural situations based on one’s intercultural knowledge, skills, and attitudes</td>
</tr>
<tr>
<td>Ability to shift frame of reference appropriately and adapt behavior to cultural context; adaptability, expandability, and flexibility of one’s frame of reference/filter</td>
</tr>
<tr>
<td>Ability to identify behaviors guided by culture and engage in new behaviors in other cultures even when behaviors are unfamiliar given a person’s own socialization</td>
</tr>
<tr>
<td>Behaving appropriately and effectively in intercultural situations based on one’s knowledge, skills, and motivation</td>
</tr>
<tr>
<td>Ability to achieve one’s goals to some degree through constructive interaction in an intercultural context</td>
</tr>
<tr>
<td>Good interpersonal skills exercised interculturally; the sending and receiving of messages that are accurate and appropriate</td>
</tr>
<tr>
<td>Transformational process toward enlightened global citizenship that involves intercultural adroitness (behavioral aspect focusing on communication skills), intercultural awareness (cognitive aspect of understanding cultural differences), and intercultural sensitivity (focus on positive emotion toward cultural difference)</td>
</tr>
<tr>
<td>Understanding others’ worldviews</td>
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</tbody>
</table>

How one becomes interculturally competent and is able to understand others’ worldviews is complex. If we take the agreed upon statements from Deardorff’s (2006) work as noted in Table 1 above, we can use Paige et al.’s (1999) definition of intercultural competence that recognizes the multiple layers and contexts inherent in such a term. It is:

The process of acquiring the culture-specific and cultural general knowledge, skills, and attitudes required for effective communication and interaction with individuals from other cultures. It is dynamic, development, and on-going process which engages the learner cognitively, behaviourally, and affectively. (p. 50)

This definition acknowledges the varying levels of culture, both the obvious and subtler aspects, as well as the on-going nature of the learning process. While it is assumed that academic objectives are important in higher education study abroad programs, the intercultural objectives should be equally important. Otherwise, why go abroad to study?

Gonçalves (2011) reflects Paige et al.’s (1999) definition succinctly in stating, “there is evidence that intercultural education promotes intercultural competence and is related to a change in beliefs, attitudes and practices” (p.2). A model that reflects the complex, human process of on-going development and learning in developing intercultural competency can support such programs by providing a grounding framework.

Developmental Model of Intercultural Sensitivity

While cross-cultural research has suggested the importance of intercultural competence in both global and domestic contexts, work by Bennett (1986,1993b) has additionally proposed an underlying theoretical framework for conceptualizing intercultural sensitivity and competence. Bennett (1986, 1993b, 1999, 2004) created the model whose application is ideal in the student-learning environment. In an effort to provide more appropriate training and educational settings that prepared people for intercultural encounters, Bennett (1986,1993b; Bennett & Bennett, 2004) sought to understand how and why some people seemed to improve their abilities for communicating across cultures. The resulting Developmental Model of Intercultural Sensitivity (DMIS) was designed to explain how people move from ethnocentrism, with
one’s own culture as central to reality to *ethnorelativism*, where one’s own culture as a one possibility among multiple realities (Bennett, 2004). The DMIS was developed with a grounded theory approach that involved using theoretical concepts to explain patterns that emerge from systemic observation (Corbin & Strauss, 2008). For Bennett (2004), the patterns that emerged are the stages of the DMIS (Table 2): Denial of difference, Defense of difference, Minimization of difference, Acceptance of difference, Adaptation of difference, and Integration of difference. The first three stages fall into the ethnocentrism category and the last three stages in ethnorelativism.
Table 2 - The Stages of the Development Model of Intercultural Sensitivity

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>ETHNOCENTRIC</strong></td>
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<tr>
<td>Denial of Difference</td>
<td>The inability to construe cultural difference. Indicated by benign stereotyping and superficial statements of tolerance. May sometimes be accompanied by attribution of deficiency to intelligence or personality to culturally deviant behavior. Tendency to dehumanize outsiders.</td>
</tr>
<tr>
<td>Defense of Difference</td>
<td>Recognition of cultural difference coupled with negative evaluation of most variations from native culture. The greater the difference the more negative the evaluation. Characterized by dualistic us/them thinking and frequently accompanied by overt negative stereotyping. Evolutionary view of cultural development with native culture at the peak. A tendency towards social/cultural proselytizing of “underdeveloped” cultures.</td>
</tr>
<tr>
<td>Minimization of Difference</td>
<td>Recognition and acceptance of superficial cultural differences such as eating customs, etc., while holding that all human beings are essentially the same. Emphasis on the similarity of people and commonality of basic values. Tendency to define the basis of commonality in ethnocentric terms (i.e., since everyone is essentially like us, “just be yourself”).</td>
</tr>
<tr>
<td><strong>ETHNORELATIVE</strong></td>
<td></td>
</tr>
<tr>
<td>Acceptance of Difference</td>
<td>Recognition and appreciation of cultural differences in behavior and values. Acceptance of cultural differences as viable alternative solutions to the organization of human existence. Cultural relativity. The beginning of ability to interpret phenomena within context. Categories of difference are consciously elaborated.</td>
</tr>
<tr>
<td>Adaptation of Difference</td>
<td>The development of communication skills that enable intercultural communication. Effective use of empathy, or frame of reference shifting, to understand and be understood across cultural boundaries.</td>
</tr>
<tr>
<td>Integration of Difference</td>
<td>The internalization of bicultural or multicultural frames of reference. Maintaining a definition of identity that is “marginal” to any particular culture. Seeing one’s self as “in process.”</td>
</tr>
</tbody>
</table>

The base concept of the DMIS is that experience is constructed. According to this constructivist view, experience does not occur simply by being in the vicinity of events when they occur; therefore mere participation in a study abroad program is not enough for intercultural competency to develop. The DMIS is not a descriptive model of changes in attitudes and behaviour. Rather, it is a model of changes in worldview structure, where the observable behavior and self-reported attitudes at each stage are indicative of the state of the underlying worldview. And as Deardorff (2006) identified above, the only intercultural competency item that is agreed upon 100% by surveyed scholars is the understanding of others’ worldviews.

Bennett (2004) argues, “greater intercultural sensitivity creates the potential for increased intercultural competence” (p.73). A more interculturally sensitive or competent person can function at the subjective culture level much more readily. The components of subjective culture are such things as perceptions of self-identity, concepts of family, aging, community engagement, ideas about beauty, norms of social relationships, values, and expectations. These components are congruent with the personal growth and development that are outlined in traditional student development theories and reinforced in Student Involvement Theory (Bennett, 2009; Gonçalves, 2011; Pascarelli & Terenzini, 2005). Functioning at the subjective culture level is in itself a display of greater sensitivity to competency.

To achieve sensitivity and competence, an individual needs to acquire a level of intercultural adaptation, that is, the ability to have an alternative cultural experience. Those who perceive through their own cultural lens have only their own cultural worldview to draw from in making sense of their experiences. The DMIS describes how we gain the ability to create an alternative experience that more or less matches that of the people in another culture (Bennett, 2004, p. 74). Those with this ability have the capacity to develop an intercultural worldview. The DMIS proposes that contact with difference creates a pressure to change one’s worldview.

In a study abroad program there is a need for some level of cross-cultural relations that creates pressure to change and develop greater intercultural competence. According to the DMIS, in order for intercultural sensitivity to be developed into competency, intentional and meaningful experiences must be created. In this way, a study abroad program is in and of itself a first step that must then be intentionally
combined with other opportunities in order to create real learning. It is at the campus level, where participants engage in daily activities, that the real experiences for learning can be created most effectively.

Social ties and experiences that are intercultural can create “multicultural networks involving internationals from other countries” (Kashima & Loh, 2006, p.472). Being allowed to compare the home-culture identity to the host-culture identity and other cultural identities “…should enhance newcomers’ heritage cultural identity…leading them to recognize their own cultural uniqueness” (Kashima & Loh, 2006, p. 473). This informs the adaptation process, moving through the DMIS stages from ethnocentrism to ethnorelativism.

The Intercultural Development Inventory (IDI) was constructed to measure place on the DMIS; or more specifically measure orientation towards cultural differences as described in the DMIS (Hammer, Bennett & Wiseman, 2003). The IDI has proved to be a valid tool and the DMIS is supported by the testing associated with the IDI (Hamad and Lee, 2013; Hammer, Bennett & Wiseman, 2003).

With the increase of internationalized activities in higher education, including student exchange activity, it appears more urgent to rely on creating opportunities for intercultural competency to be developed rather than assume that development is happening based on mere presence in a different culture. There is evidence to suggest that positive student interactions and cooperative activities foster intercultural competence (e.g. Dixon, Durrheim, and Tredoux, 2007; Webb and Palinscar, 1996). As Ujitani (2006) clearly states, “Students studying on multicultural campuses cannot experience these benefits unless meaningful interactions between international and local students are facilitated” (p. 6).

INTERNATIONALIZATIONS IN HIGHER EDUCATION

Internationalization and producing interculturally competent students are increasingly emphasized goals among higher education institutions (Harman, 2005; Kehm & Teichler, 2007; Siaya & Hayward, 2003). However, the term internationalization is one that is without a solid definition. In 1999 the OECD defined internationalization in higher education as integrating international and intercultural dimensions into all activities of a university (OECD in Kim, 2009). In practice, this definition is actually quite vague. Many researchers argue that, while internationalization is often presented as a
tool or process by which international understanding and intercultural competence will be developed, that is not necessarily the reality. The challenge in identifying one term to capture the meaning of the word internationalization is in itself an example of how diverse and complex its application is globally.

In the early 1980’s the term internationalization started being used by the higher education sector in connection with the promotion of international exchange programs and international studies (Klasek, 1992). The term, and related activities, developed alongside the process of globalization (Kim, 2009, de Wit, 2011, Knight, 2008). Altbach et al. (2007) rightly observed that, “Universities have always been affected by international trends and to a certain degree operated within a broader international community of academic institutions, scholars, and research. Yet, 21st century realities have magnified the importance of a global context” (p. 7).

Tenets of globalization such as a more integrated world economy, dominance of the English language, international knowledge networks, labour market mobility, and new information and communication technologies have impacted the higher education sector. Internationalization has been almost a by-product of institutional activity that was responding to an increasingly globalized world. As Knight (2004) states, “Internationalization is changing the world of higher education, and globalization is changing the world of internationalization” (p. 5). The two are intertwined in a way that makes defining either term, internationalization and globalization, in the context of higher education a challenge.

What has changed in the last twenty years is that there is now a broadening definition and the appearance of a more intentional and strategic approach to internationalization. Governments and universities are responding through the creation of policy and practice (Altbach, 2013; de Wit, 2011; Green et al., 2012 in SAGE). Organizations at the national level in many countries now play a role in putting forward agendas for higher education that fall under the heading of internationalization (Altbach, 2013; Beck, 2012; international.gov.gc.ca, 2014; Trilokekar & Kizilbash, 2013). Varying levels of government often spearhead international research partnerships, projects, agreements, and, initiatives, with higher education institutions being those that must implement the policies.

There are several motivations for universities to choose to internationalize, including reputation, competitiveness, strategic alliances with other institutions, research
partnerships, profit motivations, improved cultural composition of the institution population and enhanced intercultural learning for students (Altbach & Knight, 2007; Kim 2009; Trilokekar & Kizilbash, 2013). Broadly, internationalization now seems to fall into two categories: curriculum and mobility. The category of curriculum includes the offering of internationally focused programs such as global or peace studies and extends to include integrating global, intercultural and comparative perspectives into the teaching/learning processes and program content inside and outside the classroom curricula. Academic mobility, traditionally seen as faculty and students moving across international borders in exchange programs, has expanded to include more partnership models between institutions and agencies and, in some cases, an emphasis on commercial competition and the monetization of international research output (Trilokekar & Kizilbash, 2013). The curriculum approach, combined with an institution acting as a host for mobility activities, is seen to offer an ‘internationalized’ experience to domestic students through course offerings and content (de Wit, 2011; Knight, 2008). Despite the depth and breadth of activities that fall under the term internationalization, the hosting of international students is still considered to be a hallmark of internationalization (Trilokekar & Kizilbash, 2013).

For the purposes of this study, Knight’s (2010) definition of internationalization at the national/institutional level will be used: “…the process of integrating an international, intercultural or global dimension into the purpose, functions and delivery of post-secondary education” (p.11). While this definition acknowledges the complexity of what the term can represent and the varying levels of involvement and relationships between actors beyond higher education, it also demonstrates the basic principle that participants in internationalization efforts experience change across different dimensions (Choi et al., 2012). Crichton and Scarino (2007) note, “There is general agreement in the literature on the need for internationalization to include an “intercultural dimension” (p. 1). Knight (2010) clarifies her own meaning of international, intercultural or global dimension linking the concepts together more deliberately:

These terms are intentionally used as a triad, as together they reflect the breadth of inter-nationalization. International is used in the sense of relationships between and among nations, cultures, or countries. But we know that internationalization is also about relating to the diversity of cultures that exists within countries, communities, and institutions, and so intercultural is used to address the aspects of
internationalization at home. Finally, global, a very controversial and value-laden term these days, is included to provide the sense of worldwide scope. These three terms complement each other and together give richness both in breadth and depth to the process of internationalization. (p. 11)

These aspects of internationalization are operationalized through mobility activities such as student exchanges and intercultural learning.

CHAPTER 2 SUMMARY

In Chapter 2 the relevant literature related to student development theory, international students, intercultural competence and model of intercultural sensitivity, have been presented culminating in an brief exploration of the internationalization of higher education.

The experience of international students, regardless of the duration of their stay at a host institution, will have an impact on student development. This point has been emphasised time and time again through research; what remains to be seen is the impact of students’ mobility experience on a macro level, in particular using higher education as a tool for nations in diplomacy and policy development (Abdullah, 2014).

In Chapter 3, the concept of internationalization at the University of Guelph and the Science Without Borders program at that institution will be explored.
CHAPTER 3 – THE UNIVERSITY OF GUELPH AND SCIENCE WITHOUT BORDERS

This chapter will contextualize the study by providing information about internationalization at the University of Guelph and an overview of the cohort-based Science without Borders program.

INTERNATIONALIZATION AT THE UNIVERSITY OF GUELPH

As noted in chapter 2, there are several motivations for universities to choose to internationalize, including reputation, competitiveness, strategic alliances with other institutions, research partnerships, profit motivations, improved cultural composition of the institution population and enhanced intercultural learning for students (Altbach and Knight, 2007; Kim 2009; Trilokekar & Kizilbash, 2013). At the University of Guelph, internationalization is presented as having several components in both the curriculum and mobility categories: curriculum development, exchange activity, international faculty and teaching opportunities, and collaboration among others (https://www.uoguelph.ca/international/). Several different departments at the University of Guelph are involved in these categories including academic departments, the Centre for Open Learning and Educational Support, English Language Programs, the Centre for International Programs, the Office of Intercultural Affairs and administrative units responsible for liaising with external bodies such as the Canadian Bureau of International Education, Universities Canada and the relevant provincial and federal ministries.

The University’s internationalization agenda has been influenced by an in-house white paper, The Lighting of a Fire: Re-Imagining the Undergraduate Learning Experience (2005), that discusses, in part, the institution’s current goals concerning internationalizing the curriculum. One suggestion in the white paper is to “renew international recruiting efforts to bring more globally diverse students to Guelph” (p. 32). Institutions recognize that the cost of sending students abroad can be a barrier, and this suggestion speaks to de Wit (2011) and Knight’s (2008) research showing that domestic students can have internationalized experienced without leaving their own campuses by having more students from diverse environments on said campus.
In 2005, the University of Guelph had 63 formal exchange programs in 29 countries as well several semester abroad programs where Guelph students and faculty spent a semester in another country studying and learning together (University of Guelph, 2005). In 2014, the University of Guelph had over 100 formal exchange programs in over 30 countries (https://www.uoguelph.ca/cip/index-page/study-abroad-options). Additionally, there continue to be semester abroad programs and field school programs that bring entire classes to study for three to six weeks in another country. At the same time, the number of full degree international students at the University has increased to over 900 and, in 2012; the University became a host institute for the sandwich cohort based exchange program Canada-Brazil Science without Borders.

On the University of Guelph homepage, there is a prominently displayed ‘International’ tab. If a visitor navigates to that page, they will see subheading sections for students, faculty and staff, agencies and partners, and people. The content in each section is both internal and external and covers the mobility and curriculum categories of internationalization. The site addresses issues of sending University of Guelph students/staff/faculty to other institutions abroad, collaborating with international partners; it provides answers to common questions, and information about coming to the University of Guelph. The ‘people’ heading provides a campus-wide view of the staff who are directly connected to internationalization and represents staff from the Centre for International Programs, International Development Studies, Graduate Studies, Learning Commons, Admission Services and the Office of Intercultural Affairs.

The University of Guelph promotes its international connections through statistics that reflect diverse topics under the heading “Global Outlook”:

“U of G maintains strong international connections, including:

- more than 101,000 active alumni in 145+ countries
- 75 study abroad programs (69 exchange and 6 semester abroad) in 36 countries involving 106 partner institutions
- 237 international research projects in 77 countries
- public and private sector partners in 50 countries
• participation in Canadian International Development Agency (CIDA) and International Development Research Center (IDRC) projects in Argentina, Costa Rica, Ghana, India, Kenya, Morocco, Nepal, Peru, south Africa and Vietnam

• approximately 590 U of G students in study-abroad programs/ventures

• More the 10% of undergraduate students have an experience abroad during their undergraduate career

• 1,200+ international students (full degree, Science Without Borders, and Exchange) from more than 90 countries

• earned the highest score (5 stars) for internationalization in the QS Stars rating system. The QS audit evaluates excellence in internationalization in terms of number and diversity of faculty and students, research collaboration, religious facilities and international study (exchange and study abroad)"

The University’s statement on internationalization is clear, and involves international students being present on campus as a way by which domestic students can have an internationalized experienced. According to the Guelph International website:

Internationalization is an integral part of the University’s commitment to learner-centredness; it involves bringing the world to Guelph and opening up international opportunities for our students. The learning and living experience of students at Guelph is enriched by the presence of international students on campus and through a curriculum that fosters global awareness. In addition, the growing number of our faculty who were born or trained abroad bring their distinct perspectives and experiences into the classroom and to their mentorship of students.

The presence of international students is a key component of internationalization and it is therefore not surprising that the University of Guelph is a host campus to the unique SwB program.

SCIENCE WITHOUT BORDERS PROGRAM OVERVIEW

In the past decade, Brazil has become a more prominent actor on the global stage. Brazil is a leading scientific research country in Latin America (Altbach, 2013, p.
2) with an advance graduate student infrastructure in the region, yet Brazil has lacked the focus and assertiveness displayed by other emerging economies when it comes to its system of higher education (Schwartzman, 2008; Salmi, 2009).

In Latin America, regionalization is a common process, promoting collaboration between geographically close countries as a measure to offset external pressures from other nations. Regionalization is accomplished through initiatives such as standardization and harmonizing regional international policies. In contrast, the process of internationalization is, instead, driven by national motivations and focused on initiatives that are beyond nearby geographic boundaries (Enders, 2004; Verger & Hermo, 2010). There is a need to understand government policy as part of the internationalization efforts in Brazil, more so then some other regions, since higher education is centralized under the federal government in Brazil, which provides direct involvement in and control over programs that are part of internationalization efforts (Laus & Costa Morosini, 2005).

Brazil has an emerging economy, and having sufficient highly skilled human resources is a strong need. Currently, the country is experiencing low availability of highly skilled human resources. Federal plans and policies have been developed in an attempt to address what is seen as a national issue. These include the Brazilian National Education Plan and the Action Plan in Science, Technology and Innovation (PACTI). The problem of lack of skilled human resources is considered most acute in STEM (science, technology, engineering, and mathematics) disciplines (Ministry of Science and Technology, 2007, p. 11-15). International mobility in these disciplines is seen as a step towards enhancing the quality of academic preparation for skilled workers. Accordingly, expanded scholarships for study abroad and exchange programs have been created (Ministry of Education, 2010).

For decades, Brazil has sponsored international scholarships, predominantly at the graduate level, through two agencies linked to the Ministry of Education and the Ministry of Science, Technology and Innovation. These agencies are the Agency for the Support and Evaluation of Graduate Education (CAPES) and the National Council for Scientific and Technological Development (CNPq). These agencies have supported both full and partial graduate academic study in foreign universities, helping develop generations of Brazilian researchers. The scope of the scholarship program in Brazil has
recently increased significantly, particularly for undergraduate students in STEM disciplines (Carnoy et al., 2013, p. 233).

In 2011, the Ministry of Education and Ministry of Science, Technology, and Innovation launched the Science without Borders (SwB) program. The program aims to award a total of 101,000 scholarships by 2015, with a focus on STEM disciplines (Science without Borders, 2013). Unlike previous scholarship programs, in SwB more than half of the scholarships, 64,000, are granted to undergraduate students. A total of 33,000 scholarships are distributed to Master’s, doctoral, and post-doctoral candidates, and the remaining 4,000 scholarships are designated for visiting researchers from overseas to enable them to pursue collaborative projects in Brazil (Science without Borders, 2013). SwB follows the ‘sandwich’ format whereby students go abroad for up to one year as part of their studies at a Brazilian institution. This is a common form of international experience for undergraduate students in particular (Knight, 2011). Just as previously the focus was on graduate students only for scholarships, the SwB program as a ‘sandwich’ program is reflective of CAPES’ and CNPq’s move toward less full degree funding for overseas study. The justification offered is that there are now more graduate programs in Brazil, so it is unnecessary for students to complete their whole degrees abroad (de Moua Castor, Barros, Ito-Alder, & Schwartzman, 2012, p. 31).

The estimated cost of SwB is approximately 2.5 billion USD. Seventy-five thousand scholarships come from the government, with industry partners expected to fund the remaining 26,000. As of June 2014 industry partners have funded only 8,000 scholarships. This may have lead to changes in the amount granted each student who was government-funded so that more students could be funded overall. For SwB students at the University of Guelph, this change in funding has resulted in students being more likely to live off-campus than in on-campus accommodations, where the costs are slightly higher (SwB Advisor, personal communication, April 13, 2015).

Brazil has made agreements with a number of countries including the United States, Canada, the United Kingdom, Japan, Australia, South Korea, and European Union member states. To date, the United States has received the highest number of SwB students at over 20,000 (Science without Borders, 2014). From Fall 2012 to Fall 2014, 5,370 undergraduate SwB students have come to Canada, and approximately 800 graduate students have been hosted during that same time period (CBIE, 2014).
For this study, the researcher has elected to use the confirmed number from the coordinating agencies. Winter 2015 marks the end of phase one of SwB in Canada with nearly 6,000 students having studied at Canadian institutions. Fall 2015 marks the beginning of phase two of the program: the Brazilian government has announced that another 100,000 scholarships would be made available between 2015-2018 (Tokarnia, 2014). It is expected that phase two will be marked by approximately 600 undergraduate students arriving in Canada as part of the program for Fall 2015.

This scholarships program has gained international visibility, showcasing Brazil as an investor in human capital. Host countries and institutions have noticed the potential to attract funded Brazilian learners to their campuses. At the University of Guelph, a part-time staff person has been hired specifically to support the administrative needs of SwB participants. Nationally, leaders from 14 Canadian universities visited Brazil in 2013 to promote higher education opportunities in Canada (Humphries & Murphy, 2013).

Implementation problems in SwB are apparent, despite a large amount of publicity around the program. The goal of having 25 percent of the scholarships funded by industry has proven to be unrealistic. Even if that goal is met, operational concerns may be hindering the effectiveness of the program (de Moura Castro et al., 2012).

For example, the process for students to get to a specific institution in their country of choice varies. SwB students are selected in Brazil and at some point apply to specific countries. A list is then published with those who have been selected to Canada. (Canada is the third largest receiving nation behind only the United States (1) and the United Kingdom (2) (Science without Borders, 2014). In Canada, the CBIE manages the first stage for all SwB students. CBIE contacts the students on that list so they can apply online. There are support documents, staff at CBIE, and a webinar designed to help the students complete the application process. Up to three Canadian institutions can be selected. There are 2 other agencies that place students at Canadian institutions: Colleges and Institutions Canada (CiCAN) and the CALDO consortium. If a student selects a CiCAN or CALDO institution, CBIE transfers their information to that agency to manage the application process. This can mean that SwB students coming to Canada may have to submit an application to up to three agencies (CBIE staff, personal communication, June 5, 2015).

Unfortunately, the researcher was unable to speak with anyone at either CiCAN or CALDO. According to CBIE (personal communication, June 5, 2015), approximately 90%
of students are accepted into one of their 3 top choices. The remaining 10% either speak directly with a CBIE representative who helps them make another choice that fits their needs or have a fourth option selected for them. Ultimately, each institution makes the final admissions decision, and students must enter a program that is academically similar to their home program, e.g., engineering to engineering. In 2014-2015, 85% of Canadian SwB students are studying at the undergraduate level (Science without Borders, 2014). An evaluation of the process in Canada is said to be taking place, however no timelines or data are currently available and CBIE could not confirm who is responsible for such an evaluation.

SwB and the University of Guelph

If a student is accepted to the University of Guelph through SwB, they receive e-mail contact from the SwB Advisor regarding specific requirements concerning their status and from the International Student Advisor about general international student information and timelines. If necessary, the English Languages Program (ELP) will also contact them to register for the Academic English program. The student is fully funded; their tuition is paid. They also receive a living allowance and medical insurance, and their internship semester is also fully funded. Most non-Brazilian sandwich exchange students at the University of Guelph are not similarly funded (ISA Advisor, personal communication, April 22, 2015).

The SwB program at the University of Guelph currently has 2 options: a 12-month or a 16-month program. Students in the 12-month program have completed their English language preparation prior to coming to Canada and move directly into academic studies. Those in the 16-month option spend one semester in the English Language Program’s Academic English course. When they have completed that course, they can move into their academic studies. Both options ensure that students have 2 full-time academic semesters and a 3-4 month summer semester of internship.

Consistent with data on SwB students globally, most SwB students at Guelph are studying engineering. The remainder study biology and biomedical sciences and computer science. Consistent with overall program statistics at the University of Guelph, over 50% of program participants come from Brazil’s most populated part of the country, the southeast. This area includes Sao Paulo. Approximately 25% of Guelph SwB students come from the state of Sao Paulo: both students who were interviewed for this
study are from that state. Guelph is the fourth highest recipient of SwB students of the 15 receiving institutions in Canada, behind the University of Toronto, University of Manitoba, and, narrowly behind the University of Alberta.

The SwB Advisor at the University of Guelph is considered the ‘go-to’ person for SwB students. The Advisor’s role is to manage the logistics of the program for students, including course registration and finding internships. The Advisor also advocates for students and helps them get into the courses they need. According to the SwB Advisor at the University of Guelph, the students “don’t meet the typical path for full degrees, are similar to exchange students, but in many ways different.” In an interview with this researcher, the SwB Advisor stated that there are specific course requirements that must be met based on the needs of students’ sponsors from Brazil, including the type and number of courses. The SwB Advisor helps students contact faculty and staff, advocates for them with faculty and staff for them to have access to certain services and courses in order to comply with their program requirements. Unlike traditional sandwich exchange students from other countries, whose home institution has often negotiated a course equivalency with the University of Guelph, this is not the case for SwB students.

Academic departments, labs, and faculty members are contacted to hire a SWB student for a semester long internship that takes place in the summer. Outside companies and agencies can also hire a student. The communication about placements emphasizes that the students are funded from the Brazilian government and, therefore, there is no need to pay them. The SwB advisor visits the internship sites throughout the summer to ensure that students are having a productive experience, one that is related to their program of study, has a designated supervisor who is actively present, and is framed in an experiential learning framework.

The SwB Advisor works with campus partners to ensure that students are prepared for their internships, through the Working in Canada program offered by Cooperative & Career Services with the Diversity and Human Rights Office. Additionally, the Advisor may plan workshops on topics of interest to SwB students and promote the programs and services available to all international students through the Office of Intercultural Affairs. The SwB Advisor plans some social gatherings including a year-end ‘graduation’. As the logistics of this program vary so greatly from other exchange programs on campus, it is clear that having a staff person dedicated to this cohort-based group is necessary in order for them to navigate their student experience.
While the SwB students are on campus for a long-term study abroad program, the type and variety of requirements and activities in which they participate can create unique opportunities for them to engage with domestic students and other international students during their time on campus. For all international students there are a variety of programs and services available to connect them in meaningful ways with domestic students or other international students. There are no formal or required activities except for those who enter into the ELP upon arrival. It is up to the individual student to engage in the available activities.

CHAPTER 3 SUMMARY

In this chapter, the internationalization agenda of the University of Guelph was explored, with focus on the SwB cohort-based sandwich exchange program from Brazil. This chapter provided background and context to the SwB program and details of the program is managed at the University of Guelph.
CHAPTER 4 – RESEARCH DESIGN AND METHODOLOGY

INTRODUCTION & OVERVIEW

The purpose of this chapter is to explain the methodology used in this study. This includes the rationale for the study and method selection, data collection methods, process, and analysis.

The study was undertaken with a constructivist point of view. Constructivism is grounded in the concept that truth is not absolute and is, rather, the result of perspective and social construction: an individual constructs meaning from life experiences (Crotty, 1998; Mertens, 2003; Sale & Brazil, 2004; Twomey Fosnot, 2004). Student development theories can be described as rooted in a constructivist perspective, and Astin’s in particular emphasizes the environmental contexts as key to the construction of learning opportunities (Astin, 1984; Baxter Magolda, 1999; Bennett, 2009). The constructivist viewpoint is also congruent with DMIS as presented by Bennett (2004).

METHODOLOGY

This research was undertaken with the goal of articulating the experience of the Science without Borders (SWB) students at the University of Guelph in the context of co-curricular learning and the University’s internationalization agenda.

For this research, a mixed method approach was used. Mixed methods approaches to research can be a mix of qualitative and quantitative methods. However, it can also simply be a mixing of different types of methods under either the quantitative or qualitative framework or even one single method with aspects of both frameworks included (DeCuir-Gunby, 2008). The plan for this particular study was a mix of qualitative and quantitative methods including focus groups, an online survey, document analysis and interviews (see Appendix B for survey questions).

In the study, the aim was not to develop generalizable findings. Rather, it was to describe this particular example of SwB students at the University of Guelph and to open the door for further research. With that in mind, the sampling for this study was purposeful in nature (DeCrui-Gunby, 2008). The goal was to use each method to its strength, while also accounting for its weaknesses, and to explore the case of the SWB
program and learning from different perspectives (DeCuir-Gunby, 2008; Johnson & Turner, 2003).

The inability to employ a particular method with success, focus groups, required a change in the timing and use of subsequent methods. This change, coupled with the availability of staff key informants for interviews, meant that some data was collected simultaneously.

This mixed methods approach resulted in the collection of data that is descriptive in nature (Johnson & Turner, 2003). Descriptive data can be employed to describe the characteristics of particular individuals and/or groups in a particular social context (Palys & Atchison, 2013).

Institution Selection Criteria

The University of Guelph, the home institution of the researcher, was used as it currently houses a SwB student program alongside a public internationalization agenda. In order to respond to logistical needs such as program compliance and course registration, the University of Guelph has hired a part-time staff person to coordinate such aspects for the SwB students on campus.

RESEARCH PARTICIPANTS

SwB Students

The student participants in the study were SwB students who arrived at the University of Guelph in July 2014, August 2014, or January 2015. In total, there were 44 student participants in the program. All of the students are studying at the undergraduate level in STEM programs. Twenty (the number of students in your study) of the forty-four students in the SWB program participated in this study.

Key Informants

Additionally, there were research participants in the role of key informants. Key informants are those with specialist knowledge about a topic that is more extensive, detailed, or privileged than that of ordinary people (Payne & Payne, 2004). In this study key informants included student advisors with direct responsibilities to SwB students at the University of Guelph. These key informants were contacted directly using information
obtained from the university directory. Both student advisors responded positively and quickly to the request for an interview (see Appendix C for the letter of invite and Appendix D for the consent form).

Potential key informants also included administrators at the Canadian Bureau for International Education, the administrative centre-point for the SwB program in Canada (CBIE, 2014). The contact at CBIE was made through the SwB Student Advisor who, in response to a question about what other key informants should be contacted, suggested CBIE and the SwB program director. As part of the ethics approval process it was agreed that the title and work location of staff, both on and off campus, would be used in the writing of the research, however their names would not be shared.

DATA COLLECTION METHODS

Contact Procedure

For privacy reasons, direct access to student participants by the researcher was not possible. The Centre for International Programs at the University of Guelph communicated directly with SwB students on the researcher’s behalf. Staff key informants were contacted directly via e-mail by the researcher.

Focus Groups

Three separate focus group times were established in late February 2015 and early March 2015. The purpose of the focus groups was to establish questions for the online survey. In February 2015 the SwB Student Advisor sent e-mails to each of the SwB participants inviting them to register for a focus group with the researcher. No one responded to these e-mails, and there were no participants for the three scheduled focus groups: there was a response rate of 0% and the idea of using the focus groups to gather data was abandoned.

Key Informant Interviews

Key informant interviews with the University of Guelph staff were held one-on-one in-person and the interview with the CBIE contact took place via telephone. The purpose of these interviews was to understand the role that staff plays in the support and administration of the SwB students and their program. These interviews also helped the
researcher create a better understanding of the context of the program, the process for students in participating in the program, the available learning programs and support services outside of the classroom for individuals, and assumptions student services staff make about the international students with whom they are connected. All three interviewees were asked the following questions:

1. What is the nature and scope of your role with SwB students?
   a. Prior to arrival?
   b. In-course?
   c. After departure?

2. If your role involves interactions with other international students, do you find any differences with those interactions versus with SwB students?

Other questions were asked based on responses as follow-up or probing questions. Requests were made of staff in other U of G departments with connections to SwB students; however, they were unavailable to participate.

The SwB Student Advisor in the Centre for International Programs and the International Student Advisor in the Office of Intercultural Affairs were both interviewed in April 2015. The interviews took place in the University Centre at the University of Guelph. Besides providing valuable information, these interviews also assisted the researcher in finalizing questions for the online survey. The interviews included semi-structured and open-ended questions. An off-campus key informant, the Director, Canada-Brazil Ciência Sem Fronteiras (Science Without Borders in Portuguese) from the Canadian Bureau for International Education, was interviewed in June 2015. This key informant provided otherwise unavailable information about the process for SwB students coming to Canada. This interview was conducted via telephone. Each interview was between 35-45 minutes in length. The researcher typed notes following each interview for the respondent to review in order to ensure that there were no misunderstandings or misinterpretations of the information provided.

Online Survey

Initially, the researcher intended to generate survey questions through the examination of responses received during focus groups. Unfortunately, with a response rate of zero for participation in the focus groups, this was not possible. The three
questions originally intended for the focus were included in the online survey. These questions were:

1. What have you found most challenging about your experience in the program?
2. What have you liked the best about your experience in the program?
3. Based on your own experience, what changes would you like to see to the program in order to make a better experience for other students?

Key informant interviews with the staff advisors to the program helped in the crafting of survey questions by identifying common reasons for SwB participants to seek out these staff, clarifying what the overall process is for SwB students at Guelph, and providing information on their views of the experience of these students.

In May 2015 SwB Brazilian undergraduate students were invited to respond to the survey using an online survey tool provided by the University of Guelph (Qualtrics). The invitation and link to the secure survey was sent through the SwB Student Advisor, with one reminder sent 48 hours prior to the survey closing. Within 24 hours of the e-mail being sent, 15 of the 44 students responded to the survey. When the reminder e-mail was sent by the SwB Student Advisor 48 hours prior to the survey closing an additional 5 students responded to the survey (see Appendix E for survey letter of information and consent). At the end of the online survey, participants had the option to sign up for an individual interview.

Each respondent was informed that by completing and submitting the survey they were providing consent (see Appendix E for consent form). The option to print the consent form along with all of their survey questions was clearly indicated. The University of Guelph had 44 Brazilian undergraduates from the SwB program in 2014-2015 (Science without Borders, 2014). The intended sample was the current students at the University of Guelph in the SwB program. In the end, a total of 20 students completed the survey for a response rate of 45.4%.

The survey had a total of 34 questions and it was designed to take 15-30 minutes to complete. Not all questions were displayed to all respondents: there was a variation based on responses to specific questions that would then allow for one to three follow-up questions. The inclusion of these skip and display logics within the survey meant there were anywhere from 26-34 questions available to each respondent. Each question was
written to be easy to read and comprehend, and no questions were made to require a response, meaning that respondents could move on to the next question without needing to have answered the previous questions. Any inclusion of additional comment boxes was without character limitations. All surveys were anonymous.

Participant Interviews

SwB participants who respond to the online survey were provided the opportunity to sign-up for a one-on-one interview with the researcher. It was made clear that their survey responses would not be connected to their interviews. Five students selected the interview option, and two students followed through with scheduling the interview and attending. One reminder e-mail sent to the three students who did not followed through with selecting an interview time. When no response to this reminder was received, the researcher moved on so as to avoid any perceived coercion in working to have those students sign-up for an interview.

This interview method included semi-structured questions and open-ended questions where some answers were probed for elaboration (Payne & Payne, 2004). Both interviewees were free to choose the location for the interview, and they chose the same location: a common area of the Library at the University of Guelph. Each interview lasted 45 minutes and took place during late May 2015 and early June 2015. Both respondents completed a consent form at the beginning of the interview and were provided with their own copy of the form to keep (Appendix F). In addition to questions confirming when the participant arrived at the University, their program of study and living arrangement (on or off-campus), there were a series of questions posed to both participants similar to what was in the online survey, with follow-up and probing questions to dig deeper into the topic. The researcher typed notes during each interview and walked through a summary of those notes with the respondent at the end of the interview to ensure that there were no misunderstandings or misinterpretations of the information they provided.

DATA ANALYSIS

The data collected through interviews and surveying were predominantly qualitative in nature, with some of the survey data being quantitative. Therefore, a mixed
methods approach to the analysis was used. Analysis employed manual open coding, axial coding, and descriptive statistics generated through the Qualtrics survey system (Lindlof and Taylor, 2011). During the manual open coding process, survey responses of the SwB students were analyzed line by line, and responses that suggested a theme or category were grouped together. Responses from SwB participant interviews and key informant interviews were used to reinforce or challenge themes that emerged in the initial open coding process used in the first survey analyses.

Following the initial first round of open coding, descriptive statistics were generated, and the two forms of analysis were pulled together. This process involved identifying themes and categories from the descriptive statistics, and then looking for both similarities and inconsistencies that could provide an opportunity to look further at those responses and respondents to identify if there were any other anomalies in their responses. This was done both manually, and using cross-tabulations. Again, interview data was used to highlight and reinforce themes and categories. Three major themes emerged from the data; these themes are Language, Intercultural Learning, and Preparation & Support. Sub-themes were also identified and are discussed in Chapter 5.

Since one goal of this research was to describe the out of the classroom experience of SwB students, descriptive statistics were used to summarize the quantitative data generated from the online survey.

Steps were taken to ensure integrity throughout the process and to remove bias where possible. While the low number of interview respondents limited the ability for the responses to be used to draw conclusions, they did provided soft confirmation of themes in the analysis.

CHAPTER 4 SUMMARY

In Chapter 4 the methods employed in this study were explained and the process of research participant selection and data analysis was shared. In Chapter 5, the findings of the analytical process will be presented.
CHAPTER 5 – RESEARCH FINDINGS

INTRODUCTION & OVERVIEW OF RESEARCH FINDINGS

This chapter describes the findings of the study. Data was collected through an online survey from twenty of forty-four SwB students currently attending the University of Guelph. Two SwB students were also interviewed and three key staff informant semi-structured interviews conducted; two with staff at the University of Guelph connected to the SwB program and one with a staff member at the CBIE. Responses from student interviews will not be used to draw conclusions however will be used to highlight themes and concepts present in the survey data.

Three major themes emerged from the data; these themes are Language, Intercultural Learning, and Preparation & Support. Below is a description and discussion of the data that explores the three major themes and related sub-themes.

RESEARCH POPULATION

The SwB student respondents are all undergraduate students who arrived at the University of Guelph in either July or August 2014. They are studying in STEM programs. The two University of Guelph staff key informants are the SwB Advisor from the Centre for International Programs and the International Student Advisor (ISA) in the Office of Intercultural Affairs in Student Life. The SwB Advisor’s role is to support program participant students directly in course registration and program logistics while the ISA’s role is to support cultural adjustment and provide resources on issues like study permits and immigration. The CBIE key informant is the director of the SwB program for CBIE, managing the staff that oversees the application and institution-matching component of the program.

LANGUAGE

As international students, SwB participants are required to meet a standard for English language fluency in order to attend classes at the University of Guelph. In phase one of SwB participants could complete their language training either in Brazil or at the Canadian institution where they are studying. In Table 3, we see that eleven student
respondents completed their English language preparation in Brazil prior to arrival, eight participated in the English Language Program at the University and one respondent selected “Other” and described that response as “Both”.

**Table 3: Where did your English language preparation take place?**

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response (n=20)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Brazil</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td>At the University of Guelph</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Of these students, 75% majority found their language preparation to be either Very Good or Excellent (Table 4). Only two respondents identified their preparation as Fair and none identified their preparation as Poor.

**Table 4: Your English preparation has been:**

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response (n=20)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>Very Good</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td>Good</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>Fair</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>Poor</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

According to the CBIE, the experience for host institutions and student participants in phase one of SwB has been that many students were not as prepared in terms of their English language skills. So while they may identify their preparation as having been Very Good to Excellent, this is not necessarily an indication of their language skill or competence in an English environment. In phase two of SwB, beginning in Fall 2016, language training will take place exclusively in Brazil. The respondents in this survey did not have a marked difference in judgment of language preparation being connected to where that preparation took place. Of the two respondents who selected ‘Fair’ in response to question nineteen, one had preparation in Brazil and the other at the University of Guelph.
Only three of fifteen responses to question thirty-one regarding challenges in the program were related to language difficulties. One respondent commented that “the language and making friends” were the most challenging aspects of the program for them. The two other respondents mentioned “talking in English fluently” and “my communication skills” as the most challenging. These respondents identified as having Very Good English language preparation. Two of these respondents completed their preparation at the University of Guelph and the third in Brazil.

Four of fifteen responses to a question about what participants liked best about their experience in the program mentioned language as a positive highlight, often in combination with another component of their experience such as learning about other cultures or making friends. One respondent commented, “I’m being able to deal with cultural differences and improving my second language” while another was focused solely on their language skills commenting, “Being able to practice my English” as what they liked best.

Three of the four respondents represented by the quotes above live exclusively with other Brazilians and identify as having had Very Good to Excellent language preparation. However, these students responded to having had fewer outside of the classroom experiences, potentially providing less opportunity to practice communicating in English. Whereas the respondent with the answer “Being able to practice my English” lives exclusively with non-Brazilians and has been involved outside of the classroom. Despite having identified as having Very Good language preparation in Brazil, this respondent also commented that their biggest challenge in the program was their communication skills. This may signal more awareness of what level of English language skill is actually required to interact with other non-Portuguese speakers.

Other than the one student who mentioned their communication skills as the most challenging element of their experience, students who identified as having been involved outside the classroom either in co-curricular events or socially with non-Brazilians on a daily or weekly basis did not identify language as a difficulty. The opposite was true. Language learning was facilitated by interactions with those not in the SwB program. Living with non-Brazilians was mentioned as providing incentive to speak English. One respondent provided a key insight into their own language learning and commented, “Making friends who didn’t speak Portuguese helped me feel more comfortable speaking English. Friends help with grammar. Which is different than the teacher correcting you”.
INTERCULTURAL LEARNING

Throughout the data the theme of intercultural learning was strongly present. This is not surprising given the context of the SwB program where students living and learning in a different country for twelve to sixteen months.

Intercultural Learning

Guelph is a place full of International Students. SwB student

100% of the survey respondents said they learned more about other cultures while at the University of Guelph (Table 5). Without any additional qualification some may say this alone is an indicator of the success of the program. Eleven of fifteen (73%) comments to the question about what they liked best about their experience related positively to cultural learning and exposure.

Table 5: While attending the University of Guelph, did you learn more about other cultures?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response (n=20)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

While respondents to question twenty-nine (Table 5) were unanimous that they have learned more about other cultures as part of their experience, notably absent from the comments are mentions of Canadian students or culture. Of the seven students who commented on their answer six identified Asian cultures and peoples as part of this intercultural learning experience. This includes notes about meeting and being friends with Chinese, Japanese, Sri Lankan, Bhutanese, Korean, Singaporean, and Bangladeshi international students. All seven students who commented on this question participated in the ELP at the University of Guelph where there is a high number of students from Asian countries in attendance (ISA Advisor, personal communication, April 22, 2015). Some respondents commented that they became involved outside of the classroom through the ELP and that is the location where they also made friends who were not
Brazilian. Participating in ELP “Really improved English, made friends with people from difference countries and cultures.”

Some SwB students who participated in ELP also continue to stay involved in the programming options available to them such as excursions to nearby tourist sites and social programming. The ELP appears to have served as a space for SwB students to have intercultural experiences. While some students may have stayed engaged, others may have stopped being engaged with others once they finished in the program. According to one respondent, “I had more contact with non-Brazilian students when i [sic] was doin [sic] the ELP and the guys who I live with.”

The differences between how education works at the University of Guelph and at a participants’ home institution was commented on:

Dealing with how the study in this university focuses a lot more in practice than all my work in my university in Brazil. SwB student

Have the chance to see how it works other universities, know other cultures, make new friends. SwB student

The curricular component of the experience is an aspect of culture that impacts students on a daily basis. As they are taking classes that will count towards their degrees in Brazil, their ability to be successful academically is paramount.

In addition to learning more about other cultures, 90% of respondents also believe they have shared their culture with non-Brazilian students (Table 6) and eight of the respondents, or 40%, choose to comment on their cultural sharing. Four of those comments were related to the ELP program as a source of sharing.

<table>
<thead>
<tr>
<th>Table 6: I have shared my own cultural practices, such as music and food, with other non-Brazilian students:</th>
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</thead>
<tbody>
<tr>
<td>Answer</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>Yes</td>
</tr>
<tr>
<td>No</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>
The ELP was mentioned as a space where intercultural contact was present and sharing of the Brazilian culture took place, “I shared it with my classmates in the ELP.” The cultural items being shared may vary and were not always specifically mentioned with some students making a broad statement “I feel really happy about the opportunity of sharing my culture and I'm constantly showing people how things are in Brazil.” Others were more specific about the elements of their culture that they have shared and alluded to learning from others of different cultures, “I cook for them. I like to know about history and religion so sharing stories about my country and learning about theirs. Each of my friends have a different culture and religion…Muslim, Chinese-Buddhist, Chinese-Christian.”

The SwB Advisor and ISA report there have not been a large number of cases of students seeking support around cultural transition. Those that enter directly into their academic semester attend a transition program for international students offered by the OIA, START International, that does explore concepts of cultural difference and intercultural communication, addresses what resources are available to support transition and how to deal with the Canadian weather. The program also addresses specific aspects of university learning in Canada such as the relationship with faculty and expectations of student learners generally. SwB students entering into ELP do not attend START International, however some of the same learning topics are covered throughout the ELP.

The ISA stated that she sees few SwB students and they are always directed to her from the SwB Advisor. This has been seen as a positive experience as they appear to trust the SwB Advisor and then see the ISA as a trusted resource. Only four survey respondents said they saw the ISA during their first month at the University of Guelph and the same four also saw the ISA after the first month. It was a mix of sometimes seeing her alone and other times seeing with others. The students reported that they found the interactions to be very helpful and the meetings were about “Learning about Canadian culture” and “Learning about services at Guelph”. This is consistent with reports from the ISA.

It’s about helping them navigate. This is how it is here, but you can keep your cultural identity. They have questions about how to approach their group members, office hours, conversations with a faculty member. ISA, April 2015.
In contrast, of the seventeen respondents who saw the SwB Advisor only one noted that learning about cultural aspects was the reason for their visit. This is consistent with the roles that each of these staff play for SwB students.

Some SwB students have made intentional choices about whom they live with during their time in the program. Both students, identified as ID01 and ID02, who followed through on providing an interview as a part of this study choose to live off-campus with non-Brazilian students.

I live with Canadians. I’m here to be in contact with a new culture. What’s the point of staying here with the same people? ID01 SwB student

I live off-campus with 2 Canadians, 1 Chinese, and 1 Ethiopian. I arrived early to find housing. I wanted to live with non-Brazilians because I live with Brazilians at home. So why do that here? ID02 SwB student

The student interviewees expressed that living with non-Brazilians has helped them with their English, that they feel confident navigating group work in class settings because they are used to being with others unlike themselves, and it has helped them get involved. Both of these students have attended events for international students, joined at least one club, attend social events with non-Brazilians campus. However, both ID01 and ID02 mentioned that they felt their involvement was limited, as they need to dedicate time to their studies. Despite this, each interviewee has had the opportunity to share their culture with their roommates on a regular basis through food, music, and stories.

Intracultural Learning

Intracultural interactions are normal for students, even in an intercultural context. SwB students have access to people who speak their language, are sharing a similar experience and who may also be experiencing some of the same struggles and challenges. A significant amount of intracultural contact is not surprising in a cohort-based study abroad program like SwB. This type of contact could be a relief or comfort to individuals in an otherwise challenging intercultural environment. 80% of respondents
identified as having learned more about their own culture while at the University of Guelph (Table 7).

Table 7: While attending the University of Guelph, did you learn more about your Brazilian culture?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response (n=20)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>16</td>
<td>80%</td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>100%</td>
</tr>
</tbody>
</table>

With the cohort-based nature of this program there are many participants living with one another which is different from regular exchange students who may live with other international students or Canadian students, but are less likely to live with those from their own country (ISA Advisor, personal communication, April 22, 2015). As a result of this, the SwB participants have an opportunity to learn about aspects of their national cultural that may not exist had they remained in Brazil. Some students commented about identifying what is Brazilian, “I notice now when something is Brazilian. Even with food. Like putting chips on stroganoff.” Others were inspired to learn more about their culture in order to share with others, “People are always curious about Brazil, so sometimes they would ask things that even I didn't know the answer, I start to learn more about agriculture, economic and society of my own country.” That statement is an example of intercultural interactions leading to intracultural learning. While others were more specific about the interpersonal interactions of making friends with people from different parts of the country and comparing cultural differences from the regions of Brazil.

SUMMARY OF INTERCULTURAL LEARNING

Overall, cultural learning was self-identified by respondents both of other cultures and their own Brazilian culture. Those involved outside of the classroom with non-SwB participants on a daily or weekly basis were more likely to report recognition of different cultures and the need to make changes to adapt to these. While many students have not accessed the cultural transition support available by the ISA, some have which has helped them in “Adjusting to different cultures regarding how to handle personalities in certain situations.”
While learning and sharing about culture has been identified, it is not evident that intercultural competency has been developed as part of the program.

Learning from others about culture depends on the level of friendship both inside and outside the classroom. It happens naturally. It’s not like math. SwB student.

PREPARATION & SUPPORT

A third theme that was identified in the data was that of Preparation & Support. SwB participants have high expectations of the level of support they should have available to them throughout their time in the program and have expressed that they require more information to be available to them prior to arrival.

As discussed in Chapter 3, international students at the University of Guelph have access to staff whose main role it is to support their transition and help them navigate the University. Most international students have the ISA only. Exchange students also work with staff in CIP to register for courses and ensure that they are meeting the requirements of the exchange agreement with their home institution. SwB students have much more direct support in the SwB Advisor whose role is focused solely on SwB participants and their experience at the University of Guelph.

Seventeen of twenty respondents met with the SwB Advisor during their first month at the University (Table 8) and again over the subsequent months (Table 9). During the first month, 53% of respondents met with the SwB Advisor 1-2 times. Students arrived in late July through to August 2014 and will have been contacted by either the SwB Advisor or the ELP prior to arrival. With this in mind, the first month that is identified here would likely be August through to mid-September. This would mean that there were 7 months from mid-September to mid-May to be the timeframe for “after your first month on campus”. In those following seven months, 59% of respondents met with the SwB Advisor 3-5 times or once every five and half to nine weeks.
Table 8: Thinking back to your first month at the University of Guelph, how often did you meet with the SWB Advisor?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response (n=17)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 times</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>1-2 times</td>
<td>9</td>
<td>53%</td>
</tr>
<tr>
<td>3-5 times</td>
<td>6</td>
<td>35%</td>
</tr>
<tr>
<td>5+ times</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 9: After your first month on campus, how many times time would you say you have met with the SWB Advisor?

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response (n=17)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 times</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>1-2 times</td>
<td>5</td>
<td>29%</td>
</tr>
<tr>
<td>3-5 times</td>
<td>10</td>
<td>59%</td>
</tr>
<tr>
<td>5+ times</td>
<td>2</td>
<td>12%</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>100%</td>
</tr>
</tbody>
</table>

The SwB Advisor noted that she does see every student in the program at least once during his or her time at Guelph and that some students come by more often than others. Often, students come to a meeting or drop-in hours for the first time with others and then eventually on their own.

Table 10: In MOST of your meetings with the SWB Advisor have you gone alone or with other SWB students? Please check all that apply.

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response n=17</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alone</td>
<td>12</td>
<td>71%</td>
</tr>
<tr>
<td>With others</td>
<td>8</td>
<td>47%</td>
</tr>
</tbody>
</table>

Registering for classes is consistently the main reason for visits with the SwB Advisor. During the first month at the University, learning about services at Guelph also tops the list with thirteen of seventeen respondents selecting that as one for the reasons for their visit to the SwB Advisor (Table 11). In subsequent months, the number of respondents seeking information about services at Guelph drops from thirteen to two (76% to 12%). The SwB Advisor acknowledged the challenges with course registration for SwB students, as they don’t meet the typical path for full degree students or exchange students. The course selection and registration process on campus is not set-up for mid-degree students whose home institutions do not have a specific agreement with the host institution. In many cases, SwB students need to have their courses count
towards completion of their degrees at home so must choose carefully. However they do not always have recognized prerequisites to register for second to fourth year level courses. The SwB Advisor noted, as the respondents have as well, that most meetings are related to course registration. She said that she encourages SwB students to speak with faculty members to work out how to get into a class and that there is balance of needs between the SwB students and other students in terms of accessing courses. So while a goal may be to register prior to arrival, this may not always be possible since many registrations are exceptions to the rule, requiring signatures on forms in order to be processed.

**Table 11: During your first month at the University of Guelph, your meetings with the SWB Advisor were MOST often about [check all that apply]:**

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response (n=17)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Looking for housing</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Registering for classes</td>
<td>13</td>
<td>76%</td>
</tr>
<tr>
<td>Learning about services at the Guelph</td>
<td>13</td>
<td>76%</td>
</tr>
<tr>
<td>Learning about the transit system</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Finding an internship</td>
<td>3</td>
<td>18%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>6%</td>
</tr>
</tbody>
</table>

**Table 12: What was the most common topic of your meetings with the SWB Advisor?**

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response (n=17)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registering for classes</td>
<td>11</td>
<td>65%</td>
</tr>
<tr>
<td>Finding an internship</td>
<td>3</td>
<td>18%</td>
</tr>
<tr>
<td>Learning about services at the Guelph</td>
<td>2</td>
<td>12%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>17</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

In Table 12 the respondent who selected “Other” as the topic for their meeting with SwB advisor commented that “grades” were the reason for their visit. The topic of academic performance was commented on by respondents who cited not being clear on expectations and not necessarily feeling supported if they were experiencing challenges.
SwB students do have access to all learning support programs on campus however that does not mean they will necessarily engage in those programs.

The program would be better if the students had CLEAR information about what is expected from them in terms of academic performance. SwB Student

Overall, sixteen of seventeen SwB participants find their interactions with the SwB Advisor to be helpful to very helpful (Table 13). Only one respondent stated that their interaction was not helpful. This respondent was one of the few who only saw the SwB Advisor once during their time and the topic was finding an internship.

**Table 13: Your interactions with the SWB Advisor have been:**

<table>
<thead>
<tr>
<th>Answer</th>
<th>Response (n=17)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Helpful</td>
<td>7</td>
<td>41%</td>
</tr>
<tr>
<td>Helpful</td>
<td>9</td>
<td>53%</td>
</tr>
<tr>
<td>A little helpful</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Not helpful</td>
<td>1</td>
<td>6%</td>
</tr>
<tr>
<td>Other:</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>17</td>
<td>100%</td>
</tr>
</tbody>
</table>

In response to question thirty-three “Based on your own experience, what changes would you like to see to the program in order to make a better experience for other students?”, pre-arrival preparation seems to be a dominant concern for SwB students. Several mentioned wanting to know more about Guelph, the cost of living (including housing) and what to expect during the transition phase. The researcher is unclear on what specific training or support is provided to participants prior to arrival, however interviewees mentioned that there was little to no preparation. Specific mention of needing more preparation before arrival indicates that some students felt unprepared for their experience. This could hinder their involvement and competency development if they are spending time learning and responding to issues that could have been addressed prior to arrival.

A point to improve is the delivery of information while we are still in Brazil, preparing to come. We don’t have enough information regarding housing and cost of living in Guelph. SwB Student
I think giving us more information about Guelph and Canada. SwB Student

The preparation phase, prepare students more about their new life when they still are in Brazil. SwB Student

Since the SwB Advisor is the go-to person for the students in this program it is possible that the expectations of support and guidance are higher that that of other students.

I think there should be people experienced with residence issues at the city, someone who is officially from the SWB program. There are some people around Guelph who help students find houses and such, but they are not official staff. This has caused some issues to some students already. SwB Student

The statement above acknowledges a challenge around housing, which many students, international or domestic could experience. The suggestion that only an official city staff person whose main role is to support SwB students in their housing needs would be a solution is where things may be different than other students.

The responses to suggested program changes center predominantly on the need for more support that is targeted and directed at SwB students exclusively. Interestingly, some comments to question thirty-three suggested that more interaction with Canadian students would improve the program. There is no lack of opportunity for SwB and Canadian students to connect, with a number of programs designed to support international student transition alongside the hundreds of clubs, sports games, and events that are open to SwB students. While is it not unreasonable to request an increase in pre-arrival education and preparation, there is also an element of individual responsibility. Those who commented that they thought the program would be better if there was more interaction with Canadian students are also those that live with other SwB students, have been minimally involved and spend little to no time with non SwB students outside of the classroom.

Some of the comments around preparation and support are items that are common to many university students and could be experienced by anyone leaving their home to attend school away. Without knowing the experience these respondents had at
home in Brazil, it is difficult to determine how much of the challenges they are experiencing is due to being in Canada.

The distance between my family and my friends. Here I didn't have so many friends like me, who like to hang out (go to a bar drink a beer, talk, dance) during the week, in some moments I felt lonely. SwB student

Having to prepare my meals daily is terrible. =( But that's ok, I would had to learn it eventually. SwB student

Deal with other cultures, the courses load, and how it works. SwB student

The style of the tests, the amount of homework. SwB student

CHAPTER 5 SUMMARY

The themes of Language, Intercultural Learning, and Preparation & Support were present across the survey responses and interviews. Overall, learning about cultures is the most highly reported ‘like’ about the program, while wanting more interaction with other non-Brazilian students is the most commonly suggested program change. In Chapter 6, each of theses themes will be more thoroughly discussed.
CHAPTER 6 – DISCUSSION OF THE RESEARCH FINDINGS

The goal of this research was to describe the experience of Brazilian students in a cohort-based sandwich exchange program, Science without Borders, at the University of Guelph, specifically in the context of co-curricular learning and the University’s internationalization agenda.

This goal was to be accomplished through the following objectives:

1. To identify the extent to which SwB students are using the specialized support systems in place at the University of Guelph;

2. To determine if there are any barriers or opportunities for getting involved outside of the classroom related to the cohort-based structure of the SwB program at the University of Guelph;

3. To determine if there are any specific impacts of the cohort-based structure of the SwB programs on the intercultural experiences of students in the program at the University of Guelph.

In this chapter, the findings will be discussed with these objectives in mind.

LANGUAGE

The findings indicate that language plays an important role for SwB students. Only one student reported not getting involved outside of the classroom in any way, and that student clearly stated that it was because their English was not good enough to maintain a conversation. This respondent is one of two who said they had only ‘Fair’ English preparation. This student also lives off-campus exclusively with other SwB students, providing a daily opportunity to speak Portuguese. Yashima, Zenuk-Nishide, & Shimizu (2004) study showed that willingness to communicate in a second language is associated with high levels of self-esteem and greater interest in international activities. A great deal of the literature stresses that English language proficiency is vital to the success of international students. English language skills are very important in terms of both the academic and social adjustment (Andrade 2006). If a student is not comfortable with communicating in English this may be a barrier for getting involved; which is one thing that could actually help a student improve their language skills.
The opportunity to practice and learn English featured as a positive for many students. However the skill level they have is questionable and few commented on specifics of fluency. For those who participated in the ELP during their first semester, their friend circle may include other international students, however most SwB students seem connected strongly to other SwB students. There is little indication from the data if many SwB students are practicing English with first language English speakers.

The opportunity to practice non-native language and communication skills is a core component of most student exchange program (Kim, 2009). This is no different in the SwB program. However, as a cohort based program where 70% of respondents live with other Brazilians in the SwB program, the number of occasions to practice their language skills may be diminished versus those students who live with non-Portuguese speaking students. Students may be unaware of their language proficiency if they are not often tested with challenging language situations.

Outside of ELP, there are programs available on campus to support students in their language development including Conversation Partners where they can be paired with an English first language speaker to practice speaking and the LINK program. These are free programs and they are advertised to the SwB students (SwB Advisor, personal communication, April 13, 2015). However few students participated in either of these programs. It is unclear if the specialized nature of the program hinders participation in activities that are not specifically ‘for’ SwB students or if the heavy course load, in a second language, is a barrier to involvement in activities that would support a students’ language development.

The question asking respondents to identify how good they thought their language preparation was remains useful, however a question asking about how they self-identified their language skill would have been helpful in matching up opinions on preparation and skill level. There are still remaining questions of whether the students who have been more involved outside of the classroom with non-Brazilians were more self-aware of the limitations of their language skills and/or developed better language skills during their time at the University of Guelph.
INTERCULTURAL LEARNING

The data tells the story of SwB students learning interculturally with others, and intraculturally with each other. Intercultural learning is the acquisition of intercultural competence that can be applied to dealing with cross-cultural contact in general (Bennett, 2010). The idea of the competency being applied ‘in general’ refers to one’s ability to apply their skill towards more than one different culture. A common outcome of study abroad programs is that there is a significant positive learning impact as a result of immersing one’s self in a different setting. This impact often has an increase in tolerance of cultural difference but does not necessarily result in an increase in the development of intercultural competency. Culture is often defined by one’s nationality, however there are many other pieces that make up a person’s cultural background and identity. Dunne (2011) expands on Singer’s (1998) work related to individual cultural uniqueness to examine the idea of a culture within a culture. The intracultural dimension then is the learning and competency development that takes place between individuals who share a nationality (Dunne, 2011). It is clear from the data that SwB students identify as having learned about other cultures and their own by participating in the program, whether or not actual competency was developed is not possible to tell definitively from the limited data collected.

Intercultural Learning – Learning About Difference

The comments responding to the question regarding learning about other cultures were centred on experiences within the ELP. All of the comments from question twenty-nine regarding learning about other cultures mentioned cultures from Asian countries. The ELP has domestic students involved in Peer Helping and organizing roles. In this way, participants could be interacting with international and Canadian students learning and sharing about a variety of cultures. It is possible that the Canadian students are not perceived to be peers because they are in not in a student role in the program or that SwB students do not recognize Canadian culture.

The ELP is an obvious source of opportunity to engage with students from other cultures, share and learn, practice language skills and learn about services at Guelph. There are shared experiences amongst participants that can provide motivation for engaging with students who are perceived to be culturally different from them. When students are registered in the ELP some activities may be required, however continued
participation could fall into the self-motivated category. Multiple engagement opportunities have the potential to lead to more intercultural learning (Dunne, 2013).

Once the ELP is over, not all students maintain their connections with the friends they made. The cohort-based nature of the program means that SwB students can quite easily be with other Brazilians. Ward et al. (2004) highlights the point that individuals who choose to inhabit an “expatriate bubble” and have minimum interactions with domestic students and staff, are less likely to develop intercultural competence (p. 281). Bennett (2004) cites the often-missing piece to move towards ethnorelativism as cultural self-awareness, where your own culture is the context through which you view others. If a student is culturally self-aware, they can grasp the importance of intercultural difference. The experiences SwB students have in the ELP, in their classes, with their roommates and with others may assist in them in developing a level of cultural self-awareness that moves them from one stage of DMIS to another. The students who made active choices to live with non-Brazilians may have arrived at Guelph already in a higher stage of DMIS. Others may continue to live in the “expatriate bubble” limiting their intercultural interactions and hindering their ability to develop further.

Interviewees & Intercultural Learning

While many of the SwB students seem to live in their “expatriate bubble”, the two students who participated in the interviews seem to have made conscious efforts to step outside the bubble. With both students living with non-Brazilians, the researcher immediately wondered if their increased practice with ‘others’ made them more readily willing to connect with a stranger to share their experience. Because of their active decisions about living and getting involved with non-Brazilians, some probing questions were asked to gauge whether international experiences as part of the norm for them. Neither ID01 or ID02 had travelled internationally nor identified with experiences of living, working or knowing people who were from different cultures than their own prior to coming to Brazil. Both shared that the decision to live with non-Brazilians was intentionally made in order to get more out of the SwB experience. In embracing the idea of new experiences, ID01 still lived at home in Brazil and ID02 lived with Brazilian students at her home institution.

Both interviewees were extremely friendly and forthcoming about their experiences and emphasized repeatedly that they felt they were learning more than
some of their peers in the program because of their living arrangements. They mentioned hearing and/or noticing that other participants were finding note taking in class difficult and did not participate in classes much. Both were part of the ELP and continued to stay involved in activities and trips after the program was done. Both took advantage of the LINK program, with ID02 maintaining a close relationship with her LINK\(^1\) buddy throughout the year including visiting her house and family several times in a nearby town. Additionally, ID02 travelled to China with a friend made through ELP. ID01 stated that “it’s been easy to get involved because everyone is so friendly.” Each had joined at least one club over the course of the year, participated in events for international students and attended varsity athletic games with non-Brazilians. Sherry et al., (2010) are clear that international students involved outside of the classroom integrate better and self-identified as having good intercultural skills.

Overall, the two interviewees appear to be outliers in the data in having been so involved outside of the classroom and living with non-Brazilians. It does beg the question, what is so different about these two students? There are many potential answers to that question and without having the opportunity to engage in a more in-depth discussion with the interviewees and with other participants it is impossible to know for certain what, if anything, is really different about them. Something that was evident in their interviews is that they are not challenged academically in terms of subject matter, although do find the amount of coursework to be substantial. If they are comfortable in English and not feeling overwhelmed by their academic work then it is possible they have more time and energy to engage with others who are culturally different. It is also possible that they are simply trying to embrace this unique experience as much as they can.

The simple self-motivated acts to live with non-Brazilians and get involved outside of the classroom created daily opportunities for these students to develop intercultural sensitivity leading to competency. While this does not mean that they actually developed

\(^{1}\) The LINK Program is provided by the Office of Intercultural Affairs and connects new international students with University of Guelph students to help ease the transition into Canadian culture and life at the University of Guelph.
any increase in intercultural competency, it is more likely that those who have remained in the expatriate bubble.

**Intracultural Learning – Reinforced Community**

The level of intracultural learning that has been experienced by SwB students is reported as being high. It should not be surprising that SwB students will connect within one another through the shared experience of being in the program together. Shared experience is part of the university experience and many students, domestic and international, find others with whom they identify, creating a group of friends who can socialize together, and navigate challenges together (Evans et al., 2010). SwB students may have arrived with their community already developed and if you already have a community, is there a need to get uncomfortable in order to build another?

Students typically learn and become more skilled and capable as a result of taking a series of steps (King and Baxter-Magolda, 2005). For SwB students, more intracultural learning may be a step towards intercultural learning. The fact that the group of students is a cohort where many live together and attend classes’ together means that there is a higher need for them to actively seek out and take advantage of opportunities to engage with those who are culturally different in order to develop any substantial level of intercultural competency. What is unknown is if what they have learned from one another in Guelph is any more or less than what a student would have learned if they attended university in their home country, but in a different region.

When international students are from smaller nationality groups, they are more likely to integrate better with domestic and other international students (Rientes et al., 2013). SwB students are in a large nationality group, reinforced by the amount of specialized support required to help them meet the program requirements. Cross-cultural experiences are associated with greater intercultural learning (Dunne, 2013; Bennett, 2009; Vande Berg, 2009) and Crichton and Scarino (2007) argue ‘interaction as the key principle in both the practice and development of intercultural awareness (p.15). The structure of the program may be creating a barrier to intercultural learning, competency development and integration.
Preparation & Support – Same or Different?

A lack of information in the preparation phase was a theme identified, most strongly in the survey question seeking suggestions around program changes. However most of the issues identified by the SwB students are no different than what domestic students have identified as challenges and needs. In most cases, the resources are already present but have not been accessed.

One comment in particular seemed to encapsulate an underlying theme that the researcher felt was emerging.

I think there should be people experienced with residence issues at the city, someone who is officially from the SWB program. There are some people around Guelph who help students find houses and such, but they are not official staff. This has caused some issues to some students already. SwB Student

The underlying theme is dedicated support. No other international students have ‘official’ staff resource people dedicated to them in the way that the above student believes there should be for SwB students. This may be because on campus they already have the SwB Advisor, while other international students share resource persons from ELP, CIP and OIA. In the Frequently Asked Question section of the CIP website there are three streams, one for outgoing study abroad students (approximately 150 students), one for exchange students (approximately 150 students) and one for SwB students (44 students). It is not necessarily the fault of SwB students that they have high expectations for what is essentially service delivery. Reading through the SwB questions, it is obvious that their program is quite different from a regular incoming exchange student and it would be extremely challenging for a participant to navigate the University without support from a staff person. The program, having been designed in Brazil to be implemented in countries around the world, does not necessarily fit with how a Canadian institution is structured or managed.

Other identified needs such as wanting more information about Canada, Guelph, and the cost of living (including housing and food) are no different than that of other incoming students, domestic or international. Resources are available online through the University of Guelph website, the City of Guelph website and other sites. Additionally, the SwB Advisor sends out information that addresses some of these topics and the OIA offers workshops and orientation programming as well. The University of Guelph does have an Off-Campus Living office that provides resources to student living off-campus,
however domestic students and other international navigate the process of finding housing without direct official support that meets their specific individual and cultural needs. Part of that navigation process may provide learning opportunities.

The expectations of knowing what things may be like where are you going are not unreasonable. However the resources are readily available to be explored and staff are available to answer questions.

Academic Expectations

Respondents identified that expectations around academic performance was unclear. Academic requirements appear to be established by the SwB program, and more specifically from the body that is financially sponsoring their experience. The need to be academically successful is high, and comments from the respondents seem to indicate that a participant was sent home for not succeeding although the SwB Advisor did not confirm this information. If an individual was sent home earlier in the year for academic failure, it would be understandable that the issue was forefront of mind to respondents. Regardless of what specifically motivated the responses, academic transition issues are common with international students (Sherry et al., 2010; Yeh & Inose, 2003).

All students in SwB must be academically high achieving in order to be accepted to the program. The courses they take at the University of Guelph will be counted towards their degree in Brazil. Both interviewees commented that they found the subject matter of their courses to be easy, however the amount of coursework involved to be challenging. Overall, they expressed pleasure in choosing courses here, taking courses that present different perspectives and one said they were excited to share some of the differences from the lab they are working in here with the one they work in at home. The difference perspectives and new academic learning was also something other students mentioned as part of what they liked best about the program. The amount and difference of the coursework may be a barrier to competency development since it is such a large adjustment. Asked if it was a barrier to participating in focus groups that were offered for this study, both interviewees said yes sharing that all of February and March was very busy with assignments and presentations.
Summary of Preparation & Support

Some of the issues identified by SwB students as needing more preparation and support seem to be due to the nature of their program in making the requirements fit into the context of the University of Guelph. However, many identified issues were not unlike those that new students on a campus often experience. A number of programs and services exist to support both groups of students, however not everyone engages with the programs that would help them find their way. The reasons for this are likely quite varied and there was not room in this particular study to explore those possibilities.

Also, international students can rely more on their fellow nationals to solve problems than engaging with available resources (Pedersen, 1994). Even with direct support from the SwB Advisor, it is possible that students struggling with getting involved, cultural adaptation or academic performance are seeking guidance from other SwB students and not from experts on campus and in the community.

SUMMARY OF CHAPTER 6

A challenge of a sandwich study abroad program such as the SwB is that students are entering into the final years of their degree. Domestic students have established relationships and patterns with their friends in classes. The challenge to integrate and connect as an international student, working in a second language, can be made that much more difficult. Coupled with a program that allows one to maintain their culture safety net by providing a large group of other Brazilians to be with and you encounter what the findings described; students who seem to be learning more about each other than about others.

In addressing the objectives of this research the findings and discuss do address that students are connecting with the specialized support systems such as the SwB Advisor, however they are also wanting more specialized support. The cohort-based structure of the program may in fact be one of the barriers to intercultural experience, however seems to be creating a number of intracultural experiences.

In Chapter 7, recommendations will be made regarding the program and for further research and final conclusions will be made.
CHAPTER 7 – CONCLUSIONS & RECOMMENDATIONS

This final chapter draws conclusions from the findings and makes recommendations for the SwB program at the University of Guelph as well as for further research. While the aim of this study was not to be generalizable to all international students at the University of Guelph, the results of this research do offer initial insights into the experience of international students in the SwB program and open the door for further research.

RECOMMENDATIONS

Boucouvalas (2005) argues that international education, of which student exchange programs are a component, must concern itself with “both the individual adult as well as development of the greater context in which adults find themselves, whether it be the nation, society, the community, an organization, or a group” (p. 18). With that in mind, there are changes that could be made to the how the program is structured and how it is supported on campus that may increase the potential for intercultural competency development, and respond to some of the expressed challenges of the SwB students.

The ELP is a strong source of intercultural contact and involvement opportunities, yet it will no longer be an available for SwB students starting in the Fall 2015 when all English language preparation will be done in Brazil. There is a possibility that SwB students will become even more insular in their outside of the classroom engagement unless opportunities are created and facilitated for these students as the majority are not self-motivated.

Astin (1984) argues that “the amount of student learning and personal development associated with any educational program is directly proportional to the quality and quantity of student involvement in the program.” The SwB Advisor should encourage program participants to join in on international student events and activities and represent Brazil. As the group is already a cohort, attempts to attract individual students to events may not prove successful. Reinforcing the group’s Brazilian identity may open the door for them to share with other international students and domestic students.
There is a heavy academic focus for this program that could serve as a springboard for involvement and intercultural learning. The SwB Advisor should connect directly with the student groups that represent the academic programs SwB students are studying in to inform them of the program and assist in connecting the group with SwB participants. Contacting the Engineering Society to let them know about the SwB students and encouraging the SwB students to reach out as well to share what the academic experience is like in Brazil may lead to some personal relationships or enhanced classroom relationships.

Create targeted, for SwB students only, promotion of existing international and domestic student services that addresses the expressed needs of SwB students such as increased connection with international students and Canadian students, cultural transition support and workshops on topics such as budgeting.

A lack of clarity around academic expectations was expressed as a concern for program participants. If there is consistency around requirements for students this information should be added to the frequently asked questions section of the CIP website and included in any initial orientation programming.

According to Dunne’s (2013) research, knowing the benefits of intercultural contact encourages students to engage with those who are culturally different. The University of Guelph should focus on identifying the benefits of intercultural contact in order to promote contact not only with SwB students, but also with other international students. This could be targeted into academic programs with higher numbers of international students and would more intentionally serve the stated internationalization agenda of the institution.

FURTHER RESEARCH

As the SwB program is continuing at the University of Guelph, and international student mobility is increasing year over year, there are clear opportunities for further research.

The Intercultural Development Inventory (IDI) should be administered either pre-arrival or upon arrival on campus, and again at the end of the student’s experience. The use of this tool would allow evidence to be gathered that demonstrates what, if any, movement among the DMIS SwB students are making as part of their experience at
Guelph. Additionally, another tool could be utilized with the goal of identifying what intercultural competency is developed through participating in the experience.

There is an on-going need to better understand how to create and foster welcoming campus learning environments where intercultural awareness and competency can be developed is called for. More research into what motivates individuals to engage in intercultural contact would be welcome as well as further research to determine the experience of domestic students with international students on campus.

Research that provides a better understanding of the cohort bond would be a valuable contribution to the literature. A variation on this study, with successful focus groups and in-depth interviews could be beneficial for accomplishing this.

CONCLUSIONS

Contrary to some commonly held beliefs in study abroad, the most intercultural learning does not occur when students are immersed in host-culture education. Rather, they learn best when they are in mixed situations with compatriots, other international students and host culture students. (Bennett, 2009, p.S7)

It is apparent from the findings that SwB students identify as learning about culture, including their own, during the program and enjoyed the opportunity to study and live in a different country for the year.

Different cultures all around. This is an unique opportunity. I'm really glad of participating on that. SwB student

However it is not apparent that there is any development of intercultural competency or substantial social integration outside of the program cohort despite available opportunities for mixing with other international students and domestic students. The cohort of student participants is quite close knit with students living together, and spending time socially together. The specialized nature of the program and required specific staff support may serve to reinforce the cohort concept. The academic requirements for the program are also demanding reducing the amount of time and
energy program participants have for getting involved outside of the classroom where intercultural interactions can take place.
REFERENCES


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# APPENDICES

## APPENDIX A

Theories About College Students, Environments and Organizations.

<table>
<thead>
<tr>
<th>Theory Family</th>
<th>Subcategory</th>
<th>Focus of Theory</th>
<th>Specific Theories</th>
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<td>Men's</td>
<td>“Putting my man face on”: A grounded theory of college men’s gender identity development.</td>
<td>Journal of College Student Development, 50(2), 210-228.</td>
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<td>Men's</td>
<td>Student organizations as venues for Black identity expression and development among African American male student leaders.</td>
<td>Journal of College Student Development, 48(2), 127-144.</td>
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<td>Reflective judgment</td>
<td>The reflective judgment model: Twenty years of research and epistemic cognition</td>
<td>King, P.M., &amp; Kitchener, K.S. (2002).</td>
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<td>Personal epistemology: The psychology of beliefs about knowledge and knowing</td>
<td>Mahwa, NJ: Eribaum.</td>
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<td>Care and responsibility</td>
<td>In a different voice: Psychological theory and women’s development</td>
<td>Gilligan, C. (1982).</td>
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<td>Cambridge, MA: Harvard University Press.</td>
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<td>Spirituality</td>
<td>Big questions, worthy demons: Mentoring young adults in their search for meaning, purpose, and faith</td>
<td>Parks, S.D. (2000).</td>
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<td>The role of faith in the development of an integrated identity: A qualitative</td>
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<td>Temperament and development</td>
<td>Psychological type</td>
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**Organizational Approaches**

|---------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|

**Campus Environments**

|---------------------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|

**Human aggregates**

- Educational administrators
- Faculty members
- Student affairs professionals
- Student leaders
- Staff members

**Environmental press**

- Community engagement
- Environmental sustainability
- Social justice
- Civic engagement
- Health promotion
- Wellness

**Campus culture**

- Inclusion
- Equity
- Diversity
- Social justice
- Social change
- Public service
- Community partnerships
- Service learning

**Constructing environments**

- Environment for inclusion
- Environment for safety
- Environment for involvement
- Environment for community
<table>
<thead>
<tr>
<th>Modified model of</th>
<th>Milem, J.E. &amp; Berger, J.B. (1997). A modified model of</th>
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| Emerging Theoretical Perspectives | Critical race theory  
|                      | Queer theory  
|                      | Intersectionality  
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<th>Theoretical Critiques</th>
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APPENDIX B

Survey Questions

1. When did you arrive at the University of Guelph?
   July 2014
   August 2014
   January 2014
   Other

2. Do you live on campus or off campus?
   On
   Off

3. Who do you live with? Please check all that apply.
   I live alone.
   I live with other Brazilian Students in SWB.
   I live with other Brazilian Students not in SWB.
   I live with International Students other than Brazilian students.
   I live with Canadian Students.
   Other

4. Thinking back on your first month at the University of Guelph, which of the following did you do? (Please check all that apply.)
   Met with the SWB Advisor
   Met with the International Student Advisor [ISA] 
   Met with other staff members
   Participated in START International
   Attended a LINK event
   Participated in another international student activity: text box
   Participated in general campus events? (examples: orientation week, athletic event, or similar)

   IF YES TO SWB Advisor
   5. Thinking back to your first month at the University of Guelph, how often did you meet with the SWB Advisor?

   0 times
   1-2 times
   3-5 times
   5+ times
6. In MOST of your meetings with the SWB Advisor, have you gone alone or with other SWB students? Please check all that apply.
Alone
With others

7. During your first month at the University of Guelph, your meetings with the SWB Advisor were MOST often about [check all that apply]:
Looking for housing
Registering for classes
Issues related to your study permit
Learning about services at Guelph
Learning about the transit system
Finding an internship
Other: text box

8. After your first month on campus, how many times time would you say you have met with the SWB Advisor?
0 times
1-2 times
3-5 times
5+ times

9. What was the most common topic of your meetings with the SWB Advisor?
Registering for classes
Finding an internship
Learning about services at Guelph
Other: [open text box]

What is the most common topic of your meetings with the International Student Advisor?
Learning about Canadian culture
Issues related to your study permit
Learning about services at Guelph
Other: [open text box]

10. Your interactions with the SWB Advisor have been:
Very helpful
Helpful
A little helpful
Not helpful
Other: [open text box]

LOGIC - IF YES TO ISA
11. Thinking back to your first month at the University of Guelph, how often did you meet with the International Student Advisor [ISA]?
12. In MOST of hour meetings with the International Student Advisor, have you gone alone or with other SWB students? Please check all that apply.

Alone
With others

13. During your first month at the University of Guelph, your meetings with the International Student Advisor were MOST often about [check all that apply]:

Learning about Canadian culture
Issues related to your study permit
Learning about services at Guelph
Other: Text Box

14. After your first month on campus, how many times would you say you have met with the International Student Advisor?

0 times
1-2 times
3-5 times
5+ times

15. What was the most common topic of your meetings with the International Student Advisor?

Learning about Canadian culture
Issues related to your study permit
Learning about services at Guelph
Other: Text Box

16. Your interactions with the International Student Advisor have been

Very helpful
Helpful
A little helpful
Not helpful
Other: [open text box]

LOGIC – IF YES TO OTHER STAFF

17. If you did meet with staff other than the International Student Advisor and Science Without Borders Coordinator during your first month at the University of Guelph, with whom did you meet?
Who did you meet with?
[open text box]

18. Where did your English language preparation take place:
   In Brazil
   At the University of Guelph
   Other

19. Your English language preparation has been:
   Excellent
   Very Good
   Good
   Fair
   Poor

20. In my academic classes, I work with students who are not part of the SWB program:
   Daily
   Weekly
   Monthly
   Other [open text box]

21. Outside of class I spend time with students who not part of the SWB program:
   Daily
   Weekly
   Monthly
   Other [open text box]

22. Since your arrival on campus, in which of the following events have you participated outside of the classroom. Please check all that apply:
   Intramural sports
   Attending varsity athletic events
   Learning Services workshops
   Events for International Students
   Sunday Night Cinema
   Joined a club
   I have not participated in events outside of the classroom
   Other events in which I have participated: [open text box]

LOGIC - IF YES TO ANY OF THE ABOVE
23. I usually participate in outside of the classroom events with: [check all that apply]

   Alone
   With other Brazilian Students in SWB
   With other Brazilian Students not in SWB
   With other International Students
   With Canadian Students
   Other [open text box]

LOGIC - IF ‘DID NOT PARTICIPATE’
24. Why did you not participate in events outside of the classroom? [Open text box]

25. I have shared my own cultural practices, such as music and food, with other non-Brazilian students while at Guelph?

   Yes
   No

26. Make a comment on your choice: [Open text box]

27. While attending the University of Guelph, did you learn more about your Brazilian culture?

   Yes
   No

28. Make a comment on your choice: [Open text box]

29. While attending the University of Guelph, did you learn more about other cultures?

   Yes
   No

30. Make a comment on your choices: [open text box]

31. What have you found most challenging about your experience in the program? [Open text box]

32. What have you liked the best about your experience in the program? [Open text box]
33. Based on your own experience, what changes would you like to see to the program in order to make a better experience for other students?

[Open text box]

ON A SEPARATE PAGE:
34. Thank you for taking the time to complete this survey. If you would like to continue to contribute to this research project by talking about your experience in a personal interview please click the link below to sign-up. Your name will not be connected to your survey responses.
Letter of Invitation - Staff

Dear __________,

You are being invited to participate in an interview for the research study: *Learning Beyond Borders and Classrooms: Brazilian Students in a Canadian Post-Secondary Institution*. The goal of this research is to better understand the experience of Science Without Borders students at the University of Guelph in the context of outside of the classroom learning and support.

Staff with direct connections to student participants in the Science Without Borders (SWB) program at the University of Guelph are invited to participate. The interview will take between 30-45 minutes and can be scheduled at your convenience. It will ask you questions about your work and experience with SWB students.

We will not share your name however key areas of responsibility as it relates to the study participants will be identified. In this way you may be identified. You will also have the option not to answer questions or withdraw from the study.

Your participation would be very much appreciated. In order to participate, please respond to this e-mail indicating that you are willing to participate by March 23rd, 2015.

If you have questions about the study or participating, contact:
Shannon Thibodeau, Graduate Student Researcher
Telephone: (519) 824-4120 ext. 54362
shannon.thibodeau@uoguelph.ca

This research has been reviewed and approved by the University of Guelph Research Ethics Board (REB# 14DC015). If you have any questions regarding your rights as a research participant, please contact: Director, Research Ethics; (519) 824-4120 est. 56606; sauld@uoguelph.ca

Thank you for taking the time to consider participating.

Shannon
APPENDIX D

Consent – Staff Interview

Master’s Thesis Research: Learning Beyond Borders and Classrooms: Brazilian Students in a Canadian Post-Secondary Institution

This is a consent form to participate in a short interview. You are asked to participate in a 30-45 minute interview. The questions are tailored towards your work with Science Without Borders students at the University of Guelph. Your time, participation and opinions will be very much appreciated.

The goal of this research is to better understand the experience of Science Without Borders students at the University of Guelph in the context of outside of the classroom learning and support. Your participation in this study is entirely voluntary and you are free to answer only questions you are comfortable with. You are also free to withdraw at any time prior to or during the research process with no penalty.

Any information you share will be used solely for the purpose of this research. It is understood that there is the chance for embarrassment or concern as a staff member participating in a research study as a representative of the Institution. As a staff person connected to the students in this study, your title and role on campus will be identified. This information will be kept until the project is complete.

If you would like to withdraw from the study, or have questions regarding participating in the study, contact:

Shannon Thibodeau, Graduate Student Researcher
Telephone: (519) 824-4120 ext. 54362
shannon.thibodeau@uoguelph.ca

OR

Dr. James Mahone, Principal Investigator
Telephone: (519) 824-4120 ext. 56781
jamahone@uoguelph.ca

After the research is complete, participants will be contacted to receive a summary of the findings. The master’s thesis derived from this study will also be available at the University of Guelph library.

This research has been reviewed and approved by the University of Guelph Research Ethics Board (REB# 14DC015). If you have any questions regarding
your rights as a research participant, please contact: Director, Research Ethics; (519) 824-4120 est. 56606; sauld@uoguelph.ca

SIGNATURE OF RESEARCH PARTICIPANT

I have read the information provided for the study “Learning Beyond Borders and Classrooms: Brazilian Students in a Canadian Post-Secondary Institution” as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

__________________________________
Name of Participant (please print)

__________________________________
Signature of Participant

__________________________________
Date

SIGNATURE OF WITNESS

__________________________________
Name of Witness (please print)

__________________________________
Signature of Witness

__________________________________
Date
APPENDIX E

Letter of Information and Consent – Student Survey

Dear Student,

As you may recall, a couple of months we invited you to participate in a research project about understanding the outside of the classroom experience of international students. This is a follow up consent to participate in a short online survey. Participants will complete a 15 – 30 minute online survey of approximate 25 questions. The survey questions are tailored towards your experiences and challenges in adapting to the University of Guelph. The survey is composed of both Likert-scale and open-ended questions. You have the option to print a copy of the survey for your record. Your time, participation and opinions will be very much appreciated.

The goal of this research is to better understand the experience of Science Without Borders students at the University of Guelph in the context of outside of the classroom learning and support. Your participation in this study is entirely voluntary and you are free to answer only questions you are comfortable with. Participants are also free to withdraw at any time prior to or during the research process with no penalty. It is important to note that the online survey is confidential. We will ask you to identify when you arrived at the University of Guelph however will not ask for any other identifying information such as your name. As such, the research team will not be able to identify participant data in the event of withdrawal and therefore complete withdrawal of data from the online survey once submitted might not possible.

Any information you share will be used solely for the purpose of this research and your privacy will be protected. All the research findings from the online survey will be grouped into categories and coded to protect your privacy and to avoid direct identification of you and your responses. Please note that confidentiality cannot be guaranteed while data are in transit over the internet.

At the end of the survey you will be invited to sign-up for an interview to talk about your experience in the Science Without Borders program. The sign-up process is not connected to your survey in any way.

After the research is complete, you can locate the master’s thesis derived from this study will also be available at the University of Guelph library.

This online survey has been reviewed and approved by the University of Guelph Research Ethics Board (REB#14DC015). If you have any questions regarding your rights as a research participant, please contact: Director, Research Ethics; (519) 824-4120 ext. 56606; sauld@uoguelph.ca

Please note that by completing and submitting this online survey, you have consented to participate in the survey. You can download or print a copy of your completed survey for your records.
APPENDIX F

Consent - Student Interview

Master’s Thesis Research: Learning Beyond Borders and Classrooms: Brazilian Students in a Canadian Post-Secondary Institution

This is a consent form to participate in a short interview. You are asked to participate in a 30-45 minutes interview. The interview questions are tailored towards your experiences and challenges in adapting to the University of Guelph. Your time, participation and opinions will be very much appreciated.

The goal of this research is to better understand the experience of Science Without Borders students at the University of Guelph in the context of outside of the classroom learning and support. Your participation in this study is entirely voluntary and you are free to answer only questions you are comfortable with. You are also free to withdraw at any time prior to or during the research process with no penalty.

Any information you share will be used solely for the purpose of this research. All the research findings from the interviews will be grouped into categories and coded to protect participant privacy and to avoid direct identification of participants and responses.

Any information you share will be used solely for the purpose of this research. It is understood that there is the chance for embarrassment or concern in participating in a research study while still a student at the University of Guelph. No identifying information will be kept or shared. This information will be kept until the project is complete.

If you would like to withdraw from the study, or have questions regarding participating in the study, contact:

Shannon Thibodeau, Graduate Student Researcher
Telephone: (519) 824-4120 ext. 54362
shannon.thibodeau@uoguelph.ca

OR

Dr. James Mahone, Principal Investigator
Telephone: (519) 824-4120 ext. 56781
jamahone@uoguelph.ca

After the research is complete, participants will be contacted to receive a summary of
the findings. The master’s thesis derived from this study will also be available at the University of Guelph library.

This research has been reviewed and approved by the University of Guelph Research Ethics Board REB#14DC015. If you have any questions regarding your rights as a research participant, please contact: Director, Research Ethics; (519) 824-4120 est. 56606; sauld@uoguelph.ca

SIGNATURE OF RESEARCH PARTICIPANT

I have read the information provided for the study “Learning Beyond Borders and Classrooms: Brazilian Students in a Canadian Post-Secondary Institution” as described herein. My questions have been answered to my satisfaction, and I agree to participate in this study. I have been given a copy of this form.

______________________________
Name of Participant (please print)

______________________________
Signature of Participant

______________________________
Date

SIGNATURE OF WITNESS

______________________________
Name of Witness (please print)

______________________________
Signature of Witness

______________________________
Date