

**LINGUISTIC AND CULTURAL FACTORS IN GRADUATE  
SCHOOL ADMISSIONS: AN EXAMINATION OF LATIN  
AMERICAN STUDENTS AT PURDUE UNIVERSITY**

by

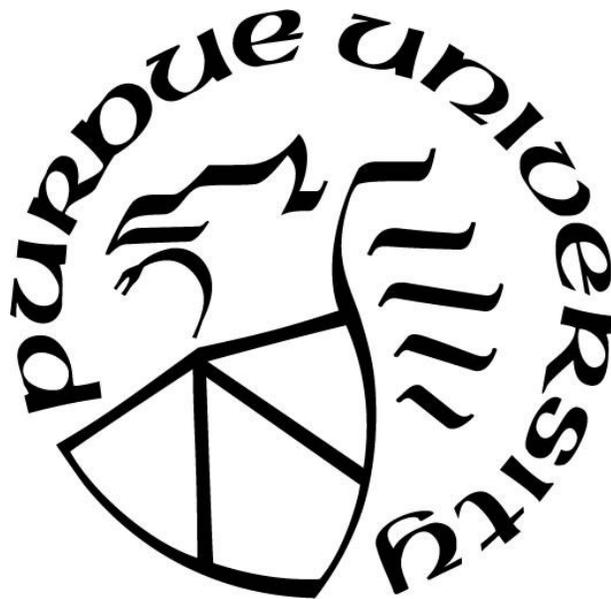
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**A Dissertation**

*Submitted to the Faculty of Purdue University*

*In Partial Fulfillment of the Requirements for the degree of*

**Doctor of Philosophy**



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West Lafayette, Indiana

December 2018

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## ACKNOWLEDGMENTS

I would like to express my deepest appreciation to all those who provided me the possibility to complete this dissertation. They are too many to fit in this page but there are some that need to be mentioned.

To my academic and life advisor Dr. April Ginther for your teachings, work, feedback, thoughtful conversations and trust in my judgement. There are no words to express how grateful I am and will ever be with you.

To Laura Cruz, the most generous, recursive and intelligent statistical consultant I have ever worked with. Thanks to Laura's family for your patience while your mom/wife was spending time explaining and working stats with me.

A special gratitude to the team of people who do not know each other but were a crucial support in the technical parts of the study that were overwhelming at times: Jorge Mario Vega for his consistent support, good disposition and help with the data processing, checking and reviewing; Nancy Kauper for your friendship, kindness and understanding in the stages I needed support and balance work, research and life during my time at Purdue.

To Wendy, Carolina, Matt, Ashley, Ola, Michelle, Tony, Juan Diego and Dr. Wright for their valuable help during the different stages of the process. Each of you know how crucial your help was for this study and I thank you for that.

To all survey respondents, specially to those who volunteered to be interviewed. Your investment of time and bighearted responses paved the way for the discussion of this study.

To my family, who from the distance provided all the emotional support and confidence that I needed during more than five years. Shall this be the first of many other academic achievements for the family.

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## ABSTRACT

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Institution: Purdue University

Degree Received: December 2018

Title: Linguistic, Cultural Factors and Graduate School Admissions: An Examination of Latin American Students at Purdue University.

Major Professor: April Ginther

While the number of graduate students from different parts of the world in the United States is decreasing, the trend in Latin American populations is the opposite. Nonetheless, the current lack of information regarding the reasons behind this tendency, in terms of English language proficiency and cultural aspects, affects all parts involved: graduate students do not know what type of opportunities they can make use of; American universities do not have enough information to provide Latin American students with a sheltering environment; and Latin American governments are unable to make policies that encourage the application and facilitate admission to graduate school in American universities.

The aim of this study is to establish a starting point for understanding the linguistic and cultural complexities of the Latin American population in graduate school in the United States. To do so, surveys and interviews were carried out to explore academic experiences, cultural influences and socioeconomic patterns that influenced the admission of Latin American students to graduate school. Mixed methods were used to describe the patterns of the survey responses quantitatively while leaving room for confirmatory quantitative analysis using the information of the interviews. The participants of this study were graduate students from Purdue University, one of the American universities with the highest number of Latin American graduate students. The results of this study underscore the importance of effective English language instruction during college years for reaching the graduate school admission scores, especially in cases when

English language training during school was not possible or had little impact on the functional proficiency of the learner. Also, there is a large body of evidence indicating that undergraduate research internships could be one of the opportunities with the highest potential to recruit graduate Latin American students, regardless of their socioeconomic background.

## CHAPTER 1. INTRODUCTION

In the academic year 2016–2017, nearly 1.1 million international students were enrolled in American institutions of higher education, a historic peak that sealed the growing trend of an 85% increase in international enrollment over the course of a decade (Oppenheimer, 2017; Saul, 2017). At the beginning of the 2017–2018 academic year, the number of new international students in the United States had decreased by 4%. The reasons for this drop include changing travel abroad trends in countries such as South Korea, the global oil price crash’s impact on scholarship opportunities in oil-dependent countries, and the political instability of travel bans to Middle Eastern countries issued by the American government (Smith, 2017; Anderson, 2017).

In general, the historic participation of countries in the American academic scene has been constant for the last few years. Almost a third of the international student population on United States campuses come from China (362,368 students), while around 206,698 students come from India; South Korea is third with 71,204 students, followed by Saudi Arabia with 55,806 students (Smith, 2017). As can be seen in Figure 1, the top ten countries also include Canada, Mexico, Japan, Taiwan, Vietnam, and Brazil.

In graduate education, the situation is similar. China and India lead the rankings by far in most cases; Europe accounts for 8.8% and South Asia for 5.2%; and Latin American students currently account for approximately 7% of international enrollments on United States campuses. The four leading Latin American countries are Brazil, Colombia, Mexico, and Venezuela, and the percentage of students from these countries is expected to grow (Institute of International Education [IIE], 2017). Due to the Latin American political picture and educational initiatives of the last decade, the countries of this region are regarded as “likely to emerge as even more

substantial outbound markets for the United States and other countries” (Trines, 2017). Latin America is also forecasted to lead the demand for study abroad programs (ICEF Monitor, 2014).

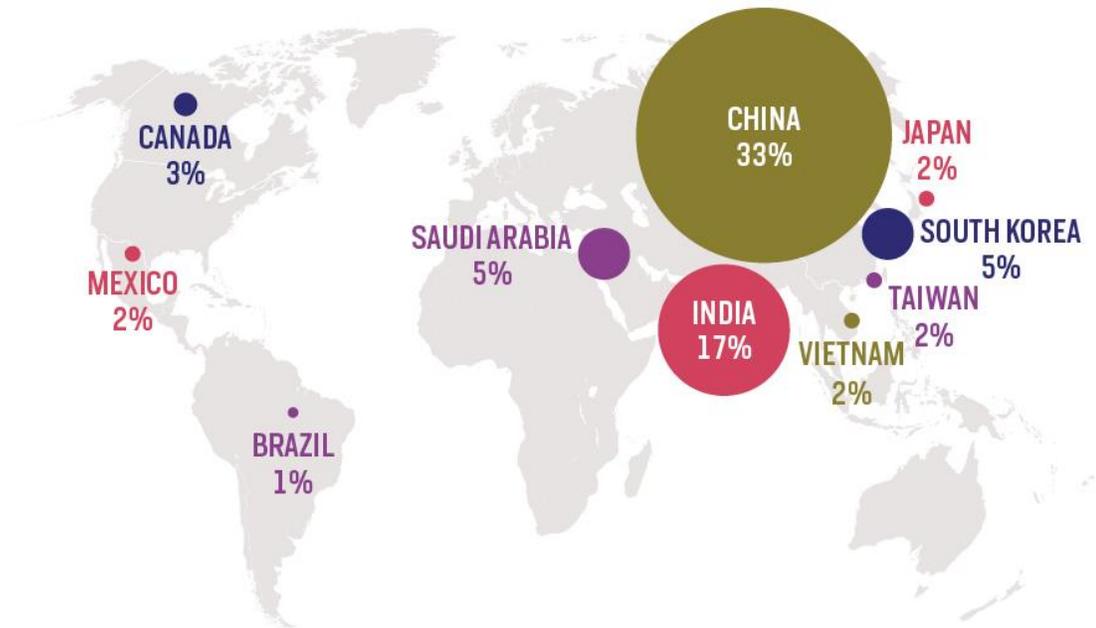


Figure 1. Top 10 countries of origin of international students in the US (adapted from IIE, 2017).

Purdue University has the great opportunity to take advantage of the growing trend of Latin American graduate students in the US. Purdue was the Indiana institution with the highest number of international students in 2017 (IIE, 2017) and a total international student enrollment that ranks 3rd among United States public institutions, 2nd in the Big Ten, and 1st in international students majoring in STEM disciplines (International Students and Scholars, 2017). Nevertheless, Purdue has yet to meet goals regarding diversity with several domestic and international populations. Purdue thrives to achieve a significant representation of Latin Americans through programs such as The Alliance for Graduate Education and the Professoriate (AGEP), Destination Purdue, Explore, Boiler Tracks, and the Minority Engineering Programs (Purdue Advisory Committee on Diversity and Inclusion, 2017). From 2005 to 2016, the number of students from four East and South Asian countries (i.e., China, India, South Korea, and

Taiwan) accounted for 67% of the total number of international graduate students at Purdue (see Figure 2). Currently, 167 countries are represented in the student body at Purdue University; however, students from all South American countries combined account only for 5% of the total international graduate school enrollment.

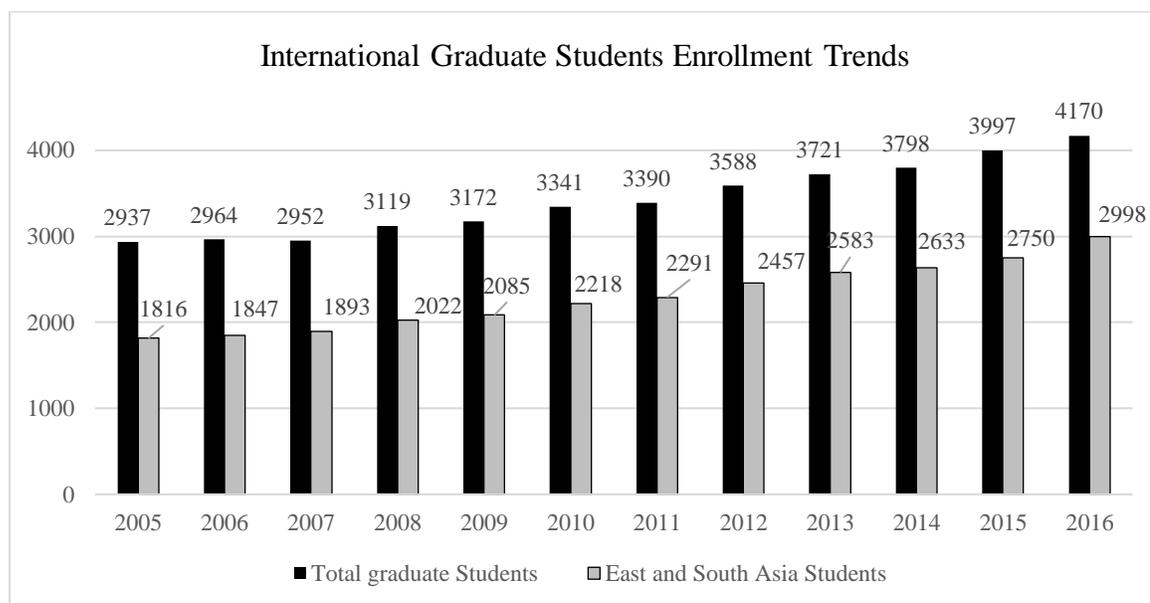


Figure 2. Total enrollment trends of international graduate students from East and South Asia at Purdue.

Purdue’s president, faculty (in all lists prior to this one), and alumni have acknowledged the potential of the wide variety of resources that Latin American countries might provide Purdue, including opportunities for research via access to natural resources, the growing technology sector, and prospective international students. An example of this interest is Purdue’s partnership with Colombia, which was extended through additional administrative agreements fostered by President Mitch Daniels’ 2014 meeting with Colombian president Juan Manuel Santos (Freeman, 2014; “Colciencias y la Universidad de Purdue,” 2014; “Purdue Colombia Advance Partnerships,” 2014). According to the International Students and Scholars’ *Enrollment and Statistical Report* (2017), in fall 2017 Colombia was fifth in international graduate student

enrollment at Purdue, with 99 students. The Office of International Students and Scholars (2016) reports that the Colombian demographic has the second highest growth rate at Purdue (23.9%) and has more than doubled in the last seven years (see Figure 3). Colombian initiatives have complemented the Graduate School's interest in diversifying its student body. In 2015, Purdue's Graduate School initiated the Graduate Student Diversity Task Force to support the recruitment of students from South America, Africa, and Europe (A. Ginther, personal communication, February 2, 2017). Purdue's graduate school website often highlights the South American student demographic as well.

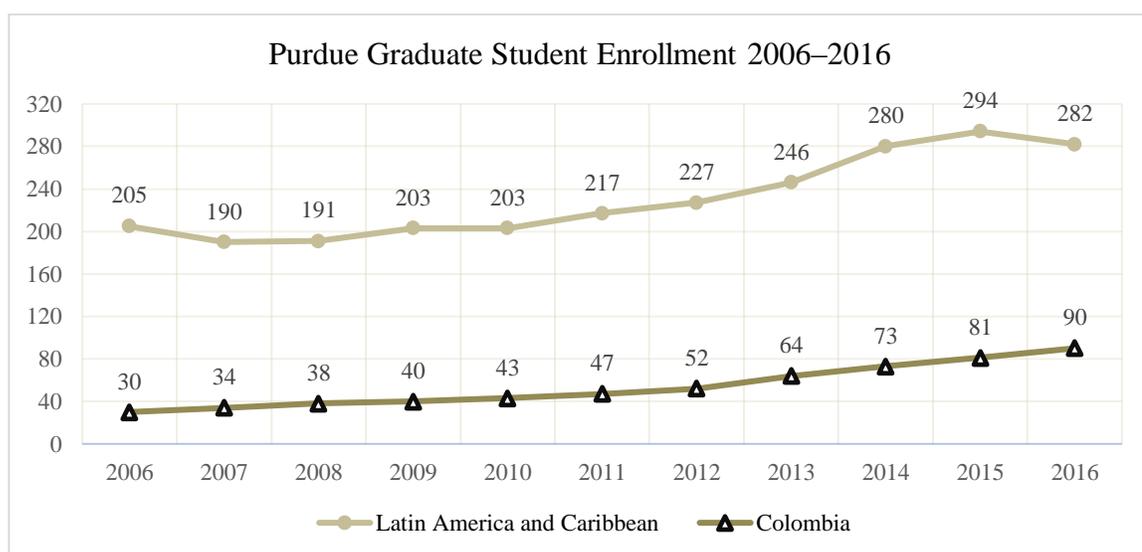


Figure 3. Latin American and Colombian graduate student enrollment at Purdue from 2006–2016.

Purdue University's and Colombia's national government initiatives benefit both stakeholders in this Colombian graduate student recruitment effort. However, in order to increase Latin American students' access to graduate school in the US, in particular to Purdue University, many factors must be considered. Among these factors are the opportunities for study abroad derived from the economic expansion of each country, growth in the rates of higher education, institutional interests in internationalization, and the necessity for English language skills.

Acknowledging the overlap among all these variables, this study will examine Latin American countries' internationalization strategies and the importance of functional English language skills. Internationalization and language skills will be analyzed in the frame of the educational systems of Latin America, which support the development endeavors of the region through increasing the rate of citizens with access to higher education. All this is aimed to increase the generation of knowledge as well as the production of wealth in the region.

The dropout rates in graduate school are relatively low, and the majority of Latin American students return to their countries of origin after they obtain their diplomas (voluntarily or due to pre-acquired funding arrangements). This study is focused on the linguistic and cultural factors that influence the admission of Latin America students in graduate school at Purdue University. The Latino graduate students who can provide us with interesting information for this project are those who earned primary, high school, and/or undergraduate degrees from Latin American countries and have been admitted to graduate school in various fields at Purdue University.

### **Educational Opportunities in Latin America**

In general terms, and despite the advances of this century, Latin America continues to struggle with the quality of its public education. Some rural areas still lack access to education altogether. Although tracking educational measures across Latin America is difficult due to inconsistent operationalization, Education First (EF) has tried to document the region's educational facts, including, for example, the English Proficiency Index (EPI) based on the local statistics of each country. The EPI is determined based on the EF SET, an adaptive online test that assesses reading and listening skills and uses the Common European Framework of Reference (CEFR) as its scale. The EF SET has strong concurrent validity arguments, and its

correlations with the TOEFL iBT and IELTS are high for the whole region ( $r = 0.82$  and  $r = 0.71$ , respectively).

According to Education First (2017), educational access and dropout rates in primary school have improved throughout the region in the last 20 years, and the adult literacy rate is above 90%. However, PISA and UNESCO measures indicate that 50% of third-grade students in Latin America have not achieved a basic level of competency in math and 30% have not achieved basic literacy (OECD, 2016; UNESCO, 2016). Results for secondary students feature similar statistics. One of the reasons the region has yet to address English learning is that its governments have prioritized low achievement in core subjects, including L1 literacy. English, or any other L2, is deemed an unnecessary privilege in the context of other struggles that require more immediate attention. In fact, some of the issues that surround the educational system include national economic instability and a lack of food security. Teachers earn low salaries and have access to limited teacher training, support, and professional development. It follows that these deficits of the Latin American social system negatively affect the region's English language instruction.

Most Latin American countries have started initiatives to improve students' average proficiency level in foreign languages, focusing mainly on English. The average English proficiency level of Latin America is lower than the global average, as measured by the EF English Proficiency Index (EPI) (2017). In the EF EPI, countries like Argentina, Costa Rica, and the Dominican Republic earned a medium score on the 5-point scale while the rest of Latin America achieved the two lowest levels of the scale.

There is also variability in the tertiary education of the region, and none of the 33 Latin American countries are in the top 15 countries for doctoral graduates (OECD, 2014). The ratio of

doctorate degree graduates per capita is far from those of the Organisation for Economic Co-Operation and Development (OECD) members. For example, Brazil, the leader of the region, has one doctorate for every 70,000 citizens, Chile has one for every 140,000, and Colombia has one for every 700,000. The average ratio of the OECD countries is one doctorate for every 5,000 citizens.

In aggregate, one of the ways many Latin American countries have tried to overcome such shortages is by establishing academic and commercial links with developed countries that are well regarded in research. Due to the location and the positive perception of the region in general, the United States is one of the most popular countries to establishment such relationships. The programs, alliances, or agreements between Latin American countries and the United States may include teacher training, student exchange, and (most frequently) attracting volunteer American teachers and temporary faculty to Latin America. However, as Education First recognizes, “these programs are only stopgaps, and are neither scalable nor sustainable” (2017). There have been small successes in the search for mutual collaboration between Latin American universities and the United States. One example is the Colombia-Purdue Initiative, an enterprise that includes high-level agreements between various colleges of Purdue University and public and private sectors of Colombia, including agreements with the Colombian Ministry of Education, Colciencias (the Colombian national science and research foundation), Fulbright Colombia, and a few Colombian universities.

Another important reason the United States is one of the most attractive countries for academics in Latin America (Casallas, 2018) is the English language. Most Latin American student exchanges, scholar visits, and collaborations are motivated in great part by the fact that

interns, students, or scholars are likely to benefit from their exposure to English. This motivation may or may not include the expectation of programmatic language training.

This research will examine the academic, language, and cultural influences of Latin American students admitted to graduate school at Purdue University to identify positive and negative experiences during their stays at Purdue. These, in turn, will suggest ways that the educational systems of Latin America and United States graduate schools may develop effective strategies to increase admission rates of Latin American students. The Colombian case study at Purdue will provide the focus of this research, and is informative due to the steady increase in the number of Colombian graduate school students at Purdue in the last few years. Also, Colombia is the Latin American country with the most ongoing agreements with Purdue. This status may provide valuable information for the current project as well as a possible model for other countries.

The following research questions will be addressed:

1. What are the language, academic, and cultural experiences of Latin American students admitted to Purdue graduate school?
2. What are the English language learning characteristics of the Latin American students admitted to Purdue graduate school?
3. Which experiences of Latin American students admitted to Purdue graduate school may have impacted their admission?
4. Are there any socioeconomic status patterns or groups in the Latin American graduate student population at Purdue?

## CHAPTER 2. LITERATURE REVIEW

### The Definition of English for this Project

The importance of the English language as a lingua franca in world development has peaked in the last two decades. In many cases, English is used to communicate to a wide audience. The role of the English language in culture, politics, demographics, and technology is one of the hallmarks of the globalized world. English language popularity is inextricably embedded in the current political and economic world scenario. The predominance of English is in large part due to the growth of the European and North American economies and the industrial revolution in the nineteenth century featuring European and North American post-war advantages in industry, technology, and politics (Mastin, 2011). Other important factors of the positioning of English in the twentieth century are the unique social circumstances in which the English language developed. Colonization included required education in English and afforded privilege and advantages to those who were able to speak it. Globalization and the communicative revolution boosted the representation of English as an international symbol of success and facilitator of social interaction.

Nevertheless, the term “English” describes a language with many commonalities and accepted variations. These variations are derived from its interaction with both practical and political circumstances. The theory of concentric circles (Kachru, 1981) is one way to explain the varied social perceptions of English. Kachru’s circles classification does not feature any linguistic precepts; rather, it is mainly based on how society has built the structures of power as undergirded by politics. Kachru’s theory is heavily framed in sociolinguistic ideas. The concentric circles revisited and updated the Firthian approach from which the modern conception

of World Englishes (WE) emerged. WE is a socially realistic approach to language (and a contemporary field of linguistics studies) that bases its assumptions on the concentric circles model. The concentric circles model is “a representation of the spread of English [that] provides schema for the contextualization of world varieties of English and their historical, political, sociolinguistic, and literary contexts” (Kachru, 2010 p.522). This model has been widely applied in sociolinguistics in the last two decades, not only in a linguistic sense but primarily as a standard to understand the structures of political and economic power that are necessarily linked to the position each country has in a given circle. As can be seen in Figure 4, the inner circle, also known as “norm providing,” includes not only the countries that have English as L1, but also those countries that hold economically and politically privileged positions.



Figure 4. The three circles of present-day English, according to Jenkins (2003).

Beyond the politics involved in the definition of Englishes, it is found that 670 million people are English users with a high level of proficiency, and almost two billion people can use English in some degree of communication (Graddol, 2006). The number of English users worldwide outside the inner circle surpass by far those in the norm-providing group. Latin American countries are included in the expanding circle of countries in which English is taught and learned as a foreign language.

More importantly, Latin American varieties of English have yet to be recognized in terms of their pragmatic norms and communicative contexts. The majority of Latin American speakers of English are expected to communicate with people in the inner or outer circles. This apparent

instrumental motivation—combined with not being part of the norm-providing circle—is, by definition, one of the outstanding features of the expanding circle countries.

Due to the post-war initiatives of the UK and the US, both countries of the inner circle, there has been a historical reference to English as the language of these two countries. During the second part of the twentieth century, English took the place of Romance languages in the curriculum in all Latin American educational systems. As mentioned before, its use is highly restricted to particular, privileged contexts. Given the lack of a widespread knowledge of English as a foreign language in Latin America, the general Latin American audience may acknowledge that English is spoken in other countries outside of the inner circle, but they are seldom cited in reference to anything to do with English (Velez-Rendon, 2003; Montes, 2016). The US, the UK, Canada, Australia, and New Zealand—mostly inner circle countries—are referred to when using the term “English-Speaking Countries” in order to take into account the convention that, for Latin Americans, these are the countries usually referred to when discussing L1 English countries.

While countries such as Brazil and Colombia have an English profile of use determined by its uses and functions, it seems some time will pass before recognized English varieties emerge that set any countries of the Latin American region apart in terms of pragmatics and use. Even so, the number of English users in Latin America is growing, and educational progress initiatives have demonstrated slow, steady results. Almost 10% of the population in Latin America are current English users (Graddol, 2006).

### **English Medium Instruction as a Globalization Tool**

Despite being a fairly unified concept, globalization takes different shapes and meanings in each country. A nation’s openness to the world depends on its socioeconomic levels. For some

countries, globalization is an opportunity to become part of the global community and participate in initiatives that would not be possible otherwise. For others it may mean ideological, political, and economic links with nations that provide some level of global participation.

The modern concept of globalization in education is usually related to two main concepts: the massification of access (via the internet, usually) and the language of instruction. In the case of the language of instruction, there are different ways in which countries approach teaching and learning, namely Content Language Integrated Learning (CLIL), English as a Lingua Franca in Academia (ELFA), or the umbrella term, English-Medium Instruction (EMI) (Hultgren, Jensen, and Dimova, 2015). The core concept of EMI is that English is used as a means of instruction in contexts in which English is not the L1 (Macaro, Curle, Pun, An, and Dearden, 2018).

EMI in many contexts, including Europe, has received both criticism and support due to a variety of consequences EMI might entail in particular contexts. On the one hand, English might be seen as a threat due to associated historical imperialist abuses with its use, which in many cases have hindered the development of true contemporary multilingualism. Referring to the current place of English in the world, there is evidence that military power and Christian missionaries have worked to support the economic, financial, and political dominance of English-speaking countries from the second half of the twentieth century to today (Phillipson, 2015). This elaborate plan of English dominance—in other words, that of the UK and the US—began in the 1930s with conferences of English as a “world” language. Winston Churchill’s speech at Harvard in 1943 supported this movement (Phillipson, 2009). Churchill acknowledged the symbolic power of language would be far stronger than any colonization attempts in the postwar world. Today, it is evident that English is an asset that benefits the UK and the United

States with billions of dollars in revenue from industries that benefit from the need to have some type of contact with American or British companies and institutions. The economic and social revenue include, but are not limited to, foreign students' tuition, the entertainment industry, and nationwide efforts in most countries in the world to promote English language proficiency as a necessary skill to be successful in the global job market. The conscious influence and reach of English in the globalized world is by no means "free-floating," neutral, apolitical, purely instrumental, or technocratic (Phillipson, 2015).

On the other hand, English is currently a tool of professional communities across fields that allows access to the most relevant conversations in research. English grants opportunities to have one's voice heard, so questioning the status of English in the current sociopolitical context of the Western world can be argued counterproductive to the desires of its users. However, there are views that claim that taking part in the current world trend by participating in the English-speaking community, especially in the academic world, is perpetuating professional imperialism (Illich, 1975). In the case of Latin American countries, and due to their asymmetrical relationships with inner circle countries, the way around this "soft colonization" process is to establish relationships that are beneficial to both parties and apply advances in science and technology (available through English) to the development of the Latin American region. In this sense, globalization and English have involved countries that would otherwise be excluded from the academic conversation, especially in higher education.

EMI discussions in Latin America are unlike those happening in Europe. The imbalance between the expected multilingualism and prevalence of English over local languages is a problem that has not been addressed in Latin America because English has yet to reach a high dominance in Latin American countries, some of which, as mentioned earlier, are struggling with

nationwide L1 literacy. The Latin American population generally has limited to no English proficiency; even so, specific colleges and universities require that their students prepare to participate in the global conversation of the academy by completing four years of instruction in college. The competing values associated with the use of English makes the Latin American context an ideal place to establish a plan for improving the English proficiency across countries that work as a model for other parts of the planet and embrace EMI as an opportunity to share knowledge with the world without making English a threat to the local languages.

The previously cited reports and initiatives show that due to the low impact of the anglophone initiatives in the educational systems, English is still a desired asset in Latin American countries. The Latin American region tends not to see English with conflicting views or as a threat to their local identities or languages. A viable option for the development in the use of English, which is usually possible thanks to monetary investments in education, is to increase the mobility of Latin American students of higher education in order to catch up in their English language proficiency with respect to the rest of the world, or at least to not produce graduates with a low proficiency in English, as previous studies and statistics have shown. In fact, Latin America was not mentioned in a recent systematic review of EMI by Macaro, Curle, Pun, An and Dearden (2018) that featured Europe, the Middle East, and Asia.

If it is true that going to another country to study qualifies as a category of study abroad, some aspects of the formal instruction in short and long stays are relevant to EMI. For instance, at the graduate level, it is expected that international students have sufficient language strategies—if not advanced proficiency—to engage in English language learning with no long-term cost to their academic learning.

The impact of EMI and Study Abroad in relation to target language gains do not vary widely. The results of both approaches are inconclusive, and despite some trends in favor of language development while learning content, the diversity of methodologies and instruments to measure language proficiency in this previous research makes it difficult to yield a reliable discussion.

### **Language and Identity**

Going to graduate school is an experience that is expected to have a strong influence on a student's identity. One's identity is likely to be influenced by various factors, and graduate school itself is a transformation of identity from student to scholar. International graduate students may experience the added complexity of mediating their communication in a different language. Mendoza-Denton (2004) defines identity as "the active negotiation of an individual's relationship with larger social constructs, in so far as this negotiation is signaled through language and other semiotic means" (p. 475). The Latin American context is influenced by Spanish and Portuguese. For our discussion, it is even more important to note that, in general, Latin American countries share common views and attitudes in relation to English, as noted by Gordenstein Montes (2016) and Velez-Rendon (2003). The perception of English in Latin America can be described as favorable regarding the language and cultural representations of English-speaking countries. English-speaking countries are usually tied to professional development, socioeconomic enhancement, and mobility. Such positive views of English as a foreign language and the United States might be explained using categories from variationist research, which gathers identities based on practice-based types of activities instead of dividing groups according to their sociodemographics (i.e., age, gender, occupation, socioeconomic class, etc.). The nature of the variationism is mainly based on theories of social action that are usually

restricted to common social projects and affiliation groups whose purposes are defined by activities or enterprises (Labov, 1972; Wolfram, 1991; Eckert, 1989). Also, thanks to globalization, the ease of L1 communication with acquaintances via the internet and social networks, and the awareness of being part of a diverse community, there are fewer possibilities for Latin American students to lose contact with their L1 and all the sociolinguistic elements that keep them in contact with their relatives and friends, which could aid in the second language acquisition process. This heteroglossic view of learning a second/foreign language supports that rather than it being additive or subtractive in terms of language and identity; bilingualism must be understood as a system in which the languages of a bilingual speaker are interconnected, co-existing (Wright, 2015), and accessible (pragmatically) through the cognitive system (Hopewell and Escamilla, 2015). For the purposes of this project, and due to the diversity of backgrounds across Latin America, this dissertation will rely on variationist studies (Bayley and Tarone, 2011) and the research on communities of practice (Wegner, 1998; Eckert, 2006) to find commonalities based on one of the two main factors Latin American graduate students at Purdue share: 1) they are in a graduate program at Purdue; and 2) they are immersed in an English-medium context. From here, the identity framework can be worked backwards from their admission to graduate school. While it is true that English proficiency is a prerequisite for being admitted to graduate school in the US, the reasons for which Latin American students at Purdue have achieved the required level of proficiency in English within the Latin American educational system are worthy of analysis, especially within an educational system in which students with an intermediate or high level of proficiency are outliers.

## English Language Learning in Latin America

Second language acquisition rarely begins in adulthood for adult learners in Latin America today. Due to the changes implemented in Latin American public educational systems in the 1990s, most Latin American adults have had some type of English as a foreign language instruction during a few years of high school or even as early as primary school. Nevertheless, a few years of English as an academic subject does not necessarily mean that the individual is likely to be proficient in English by the end of high school or college. More important than the years of instruction is the number of hours of direct instruction per week, the importance of which is argued— to be underestimated in reports from the British Council (2015), EF (2017), and the OECD (2016). The number of hours per week that a student receives language instruction, as with any other subject, is expected to influence the expected language proficiency outcomes. Among the many factors that may affect the language proficiency of learners, hours of instruction is a variable that interacts with teaching resources, class size, and teacher training. Indeed, instructors' linguistic competence in English and their language awareness when teaching academic subjects in English play an important role in the English proficiency levels of Latin America. Instructors' types of contact and teaching styles impact the amount of dialogue, feedback, and clarification they provide to their students. Table 1 presents the net enrollment rates by level of education in 10 Latin American countries, as measured by UNESCO (2016). In theory, all represented countries do well in their coverage (of the educational system) and English instruction; however, the actual proficiency outcomes are less encouraging.

Table 1. Net enrollment rate, by level of education (%).

Country	Pre-Primary	Primary	Lower Secondary	Upper Secondary	Secondary
Argentina	72.47	99.35	88.13	62.80	88.25
Brazil	78.72	92.19	79.31	58.69	82.83
Chile	95.31	94.32	78.46	82.31	87.97
Colombia	80.97	90.60	74.73	44.21	78.29
Costa Rica	50.36	96.42	74.84	45.53	79.30
Ecuador	67.97	91.91	78.74	66.33	87.16
México	68.72	95.06	80.79	51.64	67.41
Panamá	66.88	95.90	74.18	48.22	77.83
Perú	88.36	94.08	71.41	56.63	77.68
Uruguay	88.23	94.22	70.30	47.20	76.35

Notes: Based on Cronquist and Fiszbein (2017)

As seen in Table 1, coverage rates of educational systems in Latin American countries are above 90% for primary, and around 75% in average for secondary, which are a result of long-term efforts to achieve them in a region that struggled with literacy from the beginning of its republican history. Literacy rates in L2 (English) are different. Initiatives to make English language instruction part of the curriculum in primary and secondary levels are ongoing, but external measures still show low proficiency rates across skills. Despite the fact that there is no standardized test to assess English proficiency across Latin America—and the samples of the available tests are stratified, meaning-biased outcomes—a similar pattern is evident across different measures. For example, one of the most cited measures is the English First English Proficiency Index (EF EPI), an annual report published since 2011, which ranks 72 countries and territories using information collected via EF’s online English test. Latin America scores below the global average on the EF EPI. When examined in detail, the population demographic of ages

18–20 (post-high school) features the largest disparity in the average score of 3.8 points below the global average. Most language measures in Latin America include the proficiency level according to the Common European Framework of Reference. The Common European Framework of Reference (CEFR) is a common base for the development of language programs, curriculums, manuals and tests (Council of Europe, 2001). The CEFR was born as a document to unify criteria regarding the expectations and levels across the educational systems of Europe. One of the most important and widely known aspects of the CEFR are the language levels of proficiency, which allow to track language development at different stages of the language learning process. Each level has descriptors formulated as “can do” statements aiming the four skills, including pragmatic applications. The CEFR levels are from lowest to highest: A1, A2, B1, B2 and C1 and C2, and despite the levels were designed for the European context, they have been widely accepted and adopted in many countries, including most Latin American educational systems.

Table 2, taken from Cronquist and Fiszbein (2017), shows that there are current educational policy efforts to change these statistics in 10 Latin American countries. While none of the cited countries scored 100% in the measured aspects, all have undertaken the challenge to improve outcomes. Related policy changes are slowly improving the proficiency indices. These measured aspects are as follows: legal foundations, standards for learning, student achievement measures, and teacher qualification measures.

While Latin American educational systems have improved their means for producing proficient high school graduates, most of the individuals who continue in the formal educational system find another opportunity to develop their English language skills in college. English proficiency is a highly-valued skill across professional fields in the region. According to a

Cronquist and Fiszbein (2017) survey, 26%, the largest percentage of Latin American employers, indicated that English is an essential skill for their employees (see Figure 5).

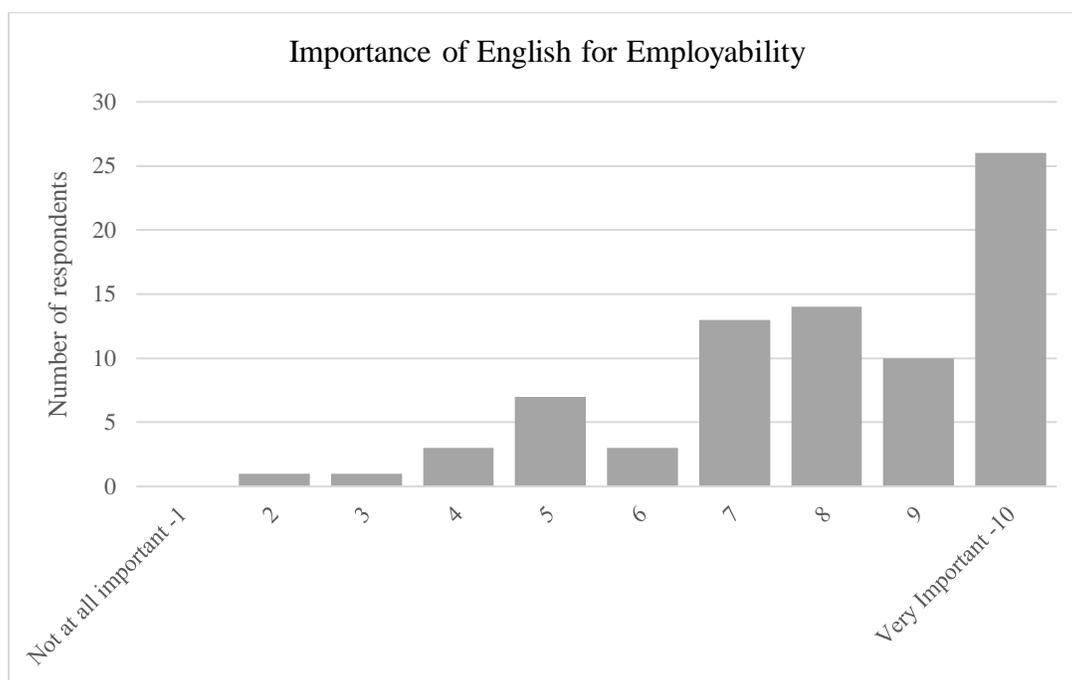


Figure 5. Importance of English for employability. (Source: British Council, Education Intelligence, Latin America Databank, 2014).

The reported value of English in the work environment might explain the efforts of most Latin American universities to produce graduates who are proficient in English. One of the more common approaches is to require a minimum English-proficiency level at the time of graduation. The source of instruction is usually the college faculty, but not in all cases. In fact, some universities do not have a language requirement or the necessary academic resources and staff to teach English as a foreign language.

Table 2. English language learning policy framework: Indicators of progress.

	Argentina	Brazil	Chile	Colombia	Costa Rica	Ecuador	Mexico	Panamá	Perú	Uruguay
<b>Legal Foundations</b>										
English Mandatory by Law	◆	✓	✓	◆	✓	✓	✓	✓	◆	◆
National Plan or Strategy	x	x	✓	✓	x	✓	✓	◆	✓	◆
<b>Standards for Learning</b>										
Learning Standards and Objectives	◆	◆	✓	✓	✓	✓	✓	✓	✓	✓
Teaching Supports, Including Curricula and Programs of Study	x	x	✓	✓	✓	◆	✓	✓	◆	◆
<b>Student Achievement</b>										
Standard of Measurement	x	x	✓	✓	✓	✓	✓	x	✓	✓
Proficiency Goals	x	x	✓	✓	✓	✓	✓	x	✓	✓
Proficiency Assessment	x	◆	✓	✓	✓	◆	◆	x	x	✓
<b>Teacher Qualifications</b>										
Teacher Education Standards	✓	x	✓	✓	◆	✓	x	◆	✓	✓
Proficiency Goals	x	x	✓	✓	✓	✓	✓	x	✓	✓
Proficiency Assessment	x	x	✓	◆	◆	✓	✓	x	x	x

✓ Yes, this topic has been successfully addressed.

◆ There has been some progress in the right direction, but it is not yet sufficient.

x The adequate conditions do not yet exist for this topic.

Notes: Adapted from Cronquist and Fiszbein (2017)

In these cases, an English proficiency requirement may involve private institutions that charge a fee. Other colleges teach credit-bearing and non-credit-bearing English language courses to undergraduate students.

### **Latin American Graduate Students as a Community of Practice**

To address the question of why and how Latin American students meet the Purdue graduate school English proficiency requirements, it is useful to turn to Bell's (1984) "initiative design," defined as a speaker's efforts that exceed the desire to match the proficiency of an audience. This motivation can be categorized as the creation of a community of practice rather than a speech community, due to the diversity in the dialect, language, geographical origin, and socioeconomic background of its members. Latin American students at Purdue are a community of practice within the university community. As Wenger (1998) argued, they share a joint-negotiated enterprise and experience a shared repertoire of negotiable resources accumulated over time, namely English language proficiency. A community of practice (COP) is defined as "a collection of people who engage on an ongoing basis in some common endeavor" (Eckert, 2006, p. 683). As for the use of COP in relation to language, the first notion that must be acknowledged is language use and language change, more specifically the conventionalization of meaning: a shared experience over time and a commitment to shared understanding (Eckert, 2006). This pragmatic socialization is unique in every context; however, when included in EFL instruction, the COP might condition and modify the social ecosystem of the learner beyond the classroom, including new hierarchies, social structures, ideologies, and conventions. Being part of a community of learners of a foreign language –even at basic levels, sets up the foundations for becoming part of a community of practice mediated by the foreign language, given the opportunity. A common example of this type of interaction in an ESL classroom is turn-taking.

In English, minimizing the status markers and downplaying the status differences between the teacher and learners is found more prominently in middle-class American caregivers who implicitly convey an environment of confidence and participation mediated by horizontal relationships, as described by Poole (1992). The types of interaction and experiences that graduate students had as English language learners may have positively affected their learning experiences. Likewise, those students who had previous experiences in academic environments that used English as a means of instruction may have experienced new hierarchies, social structures, and pragmatic uses of English distinct from those traditionally used in a Latin American language classroom.

Communities of practice (COP) are groups that are not necessarily created from scratch, but arise from a social circumstance that attracts prospective members through shared interests, experiences, and common goals. Each of the members has a unique history of English foreign language acquisition. If this acquisition occurred within a formal educational system, it is assumed that the motivation to learn English was part of an investment endeavor with expectations of some type of social or capital “revenue.” In other words, an individual may be willing to put in the work to learn English in order to increase her or his odds of getting a raise, finding a job, or getting into college. As argued by Norton (2013), the construct of “investment” involves the complexity of contextual elements such as social, political, and economic power as well as status to channel a single motivational factor that could determine a new character trait of the subject by outlining new values and aspirations that eventually influence identity.

Regardless of common elements within a COP, its strong bonding capability make possible the existence of such a group more so than any other characteristic. For a language COP, this means that not only do the members of a COP use the same code; more importantly,

they have a common linguistic style that is shared over time and influences the way conventions are developed and meanings are conveyed (Lewis, 1969). One of the most relevant features of COP is that they are not necessarily circumscribed by a geographical location. COPs are informal and may not be perceived by its own members. Latin American graduate student users of English at Purdue University, for instance, are expected to follow certain conventions of academic English. As far as pragmatics go, certain L1 transference and characteristics might become part of the language use. In the case of language, as in any other COP experience, participation in the larger group is required, which influences the group identity and leads to a linguistic practice that articulates the identity (Moore, 2003). In fact, linguistic variables were found to have a stronger correlation with COP participation than other classically-inferred factors, such as parents' social class (Eckert, 2000).

Learning a new language could affect the way a learner perceives the world, the identity of the learner, and the way the learner participates in the world (Moore, 2003). Social meaning comes with language and language conditions our perception of the world. Language and identity are in constant dialogue and framed by certain social requirements and customs. Graduate students as well as other L2 learners might be influenced by university English practices that condition their perception of the world and may result in a yearning to experience new knowledge or carry out certain ambitions that would not be possible without communicating in a second language.

A COP shares a common domain, community, and practice. The identity of the COP is based on the domain of interest. The commitment to the domain is more important than the connections or networks of any other kind. This domain sets the group apart from other people, regardless of its members' awareness. Once there is awareness of the existence of other subjects

who pursue similar goals, COP relationships are established and interactions and mutual learning occur. Eventually, contact and relationships turn individuals into a community with a shared repertoire of resources that can be used to solve problems, approach challenges, and undertake initiatives (Wenger-Trayner and Wenger-Trayner, 2015).

### **Social Networks in Second Language Acquisition**

Another contextual variable that is likely to be a strong influencer of language acquisition is real social networks (as opposed to digital social networks), which include but are not limited to the mediation of language attitudes and the country's sociolinguistic profile of the language to be learned. In the field of Second Language Acquisition (SLA), social networks work in different ways. They mostly fit into the definition of "the informal social relationships contracted by the individual" (Preston, 1989, p. 152). For the purposes of this project, social networks may also influence second language acquisition in the sense that despite not being proficient, some community members share a conventionally understood belief in importance of being competent in a second language. These communities are typically academic and explore the possibilities of sharing disciplinary knowledge with a greater community. English emerges as a requirement to be part of the academic community's social, political, and practical constraints. In fact, 80% of the top academic peer-reviewed journals are in English (Huttner-Koros, 2015). This is part of the rationale to justify the existence of educational initiatives at all levels across Latin America to produce professionals who are proficient in a foreign language, which in most cases is English.

In Latin America, being proficient in English is a large component of professional success, regardless of the field. Social networks reinforce such an idea, which was derived from actual cases of successful people who are proficient in English. In most cases, living in an English-speaking country of the inner circle, as defined by Kachru (1985), is a synonym of

success. This shared popular opinion tends to have a strong influence across the communities and countries of Latin America. The reasons for this assumption, if explored, are not well justified. In fact, the idea of success that living in the United States represents to Latin Americans is contradicted by the stereotypical idea that some Americans have of Latin Americans as hardly representing wealth or symbolic capital. In fact, Latinos in the United States are usually relegated to low-income occupations and manual work. This does not deny the fact that Latin Americans who live in the United States are usually well regarded in their communities, regardless of the occupation they may have. Social networks have reinforced English as an important part of the academic preparation of individuals, and Latin American governments have created, to varying extents, policies that encourage English language learning.

Milroy and Llamas (2013) defined social networks in the SLA of Latin America as a “means of capturing the dynamics of underlying speakers’ interactional behavior” (p. 409). For language variation studies, social networks by definition are not fixed categories. They include attitudinal factors, as mentioned previously, in addition to content and structure. In this line of thought, Milroy (1987) and Milroy and Llamas (2013) argued that personal network structures are not independent of social, political, and economic frameworks. The strength of the different types of relationships and the reasons that underlie social interactions are key to determining the relevance of ideals like language learning among the members of a community. For example, simply being in a competitive environment surrounded by an EFL proficient social network may have positive effects on the priority that an individual, or the community, might give to the learning of English. Alternatively, being surrounded by people who are perceived as successful without being proficient in English might reproduce the idea that a second language is not necessarily required for success.

## Study Abroad Programs

The objectives of study abroad programs today were established by early studies in the field of interculturality (Stansfield, 1975; Carroll, 1967; Freed, 1995) and range from internationalization/cultural competence to preparation opportunities (which may vary in content, disciplinary knowledge, research opportunities, training, etc.). During the second decade of the twenty-first century, study abroad programs have become embedded in United States and Latin American universities in different ways and with different objectives. Exposure to research facility laboratories can be the most important component of some study abroad programs, while the need to expose students to a new educational or research paradigm could be the priority of others. Social interaction and cultural awareness, as well as exposure to a foreign language, are additional program objectives. What makes study abroad programs so attractive and complex is the fact that the previously mentioned goals, regardless of the priority given in the program design, are all involved to some extent.

As is the case of the Colombia-Purdue partnership, government-sponsored study abroad programs often have prioritized research opportunities. This interest is defined by Colombia's developmental goal to raise its national standards of research and become a leader in the fields of science and technology, partially brought about by its recent inclusion in the Organisation for Economic Co-operation and Development (OECD, 2013). Joining the OECD meant that Colombian universities must seek to engage in agreements with research universities around the world. Target institutions in which a language different from Spanish is spoken are preferred due to the added value that second language proficiency represents for students' communication skills. While Colombian institutions acknowledge language proficiency as an important part of study abroad programs, such government-sponsored programs seldom include formal language

learning instruction due to budget limitations. In most cases, it is assumed that attending classes or research meetings in the target L2 is sufficient for students to develop their proficiency in English while sticking to the main goal of the study abroad program: research.

Collentine (2009) argued that the role of context must be considered when studying second language learning. Context has been discussed from different points of view in the field of Second Language Acquisition (SLA). One of the most common context-related issues is differentiating the role of English in the society in which it is taught: if English is a productive language, or L1, it is English as second language (ESL); if not, it is an English as a foreign language (EFL). Variations in the level of involvement of the productive language in the context of learning—and the degree to which the target language is used—determine the widely-accepted idea of learning a second or a foreign language. There are substantial differences in the context in which learning takes place, which include the contextualized exposure, opportunity for contact, and the interaction with L1 users (Isabelli, 2007; Collentine, 2009). Documented evidence has supported the claim that the students who participate in study abroad programs have greater opportunities for employment, salary, and placement (Freed, 1995). Given the current globalization and internationalization policies being adopted in many colleges around the world, the exchange of students has become one of the fastest growing statistics in the last five years, with an average 12% increase per year worldwide (Sood, 2012). Despite the diverse goals of study abroad programs, second language learning is an attractive consideration for stakeholders.

During study abroad programs, there are some major factors that affect language acquisition, including opportunity for learning, input, motivation, identity, and length of stay (Hassall, 2013).

## **Study Abroad and Language Learning**

Study abroad programs offer students the opportunity for professional development. Each study abroad program is unique, even programs that are hosted by the same institution or feature similar content. The components, expectations, and outcomes of a study abroad program vary widely depending on the program budget, and as Freed (1995) found, it is impossible to describe with precision the quality and extent of associated social contacts and linguistic interactions that may occur. In the last part of the twentieth century, largely due to the difficulty of specifying the components of study abroad experiences on second/foreign language acquisition, studies that have explored the intersection between SLA and study abroad have been primarily conducted via program reports, assessments, and evaluations. For the purposes of this project, the definition of study abroad is as follows: “a temporary sojourn of pre-defined duration, undertaken for educational purposes” (Kinginger, 2009, p. 11).

Moving to language performance outcomes, there are mixed results of research on study abroad programs with respect to language acquisition; however, there are some salient trends in the literature. Students who have had the opportunity to study abroad produce more of their foreign language than those who have not. Study abroad students are more fluent, speak at a faster rate, use fewer filled pauses, reformulate more often, and produce longer stretches of speech. They also have a wider range of communicative strategies and better maintain interaction, among other sociolinguistic and pragmatic variables (Freed, 1995; DeKeyser, 1990, 1991; Huebner, 1995). Nevertheless, studying abroad does not necessarily mean that individuals are more structurally accurate. Study abroad learners tend to make overgeneralizations and have consistent linguistic misuses. Study abroad experiences usually mean that –due to the type of

progress made, an individual speaker's language differences are more evident and pronounced within groups (Marriot, 1993; Siegal, 1995).

Based on the results of previous studies in the 2000s, the belief that studying in the target language country will improve language proficiency and cultural understanding was widespread across countries and institutions. The documentation of study abroad experiences and the publication of study abroad research has increased dramatically in the last two decades. Related journals have emerged that range in focus, from the interdisciplinary *Frontiers*, for example, to the specialized *Study Abroad Research in Second Language Acquisition* and *International Education*. Thanks to the proliferation of research on study abroad education and its relationship with language learning, there are now additional tools with which to understand the process of language learning abroad as well as what remains unknown in the field.

SLA research on study abroad contexts is diverse and features linguistic knowledge, fluency, grammar development, vocabulary acquisition, and the development of written skills and learning strategies. According to Pinar (2016), the last decade of study abroad research can be categorized into four groups:

- effects of study abroad on linguistic knowledge;
- individual differences in the study abroad context;
- development of intercultural sensitivity during study abroad; and
- extra-linguistic factors that affect the learning process abroad.

Most of these studies' findings are aligned with previous research; however, their methodologies are more systematic in most cases and investigate a wider variety of program types.

## **Effects of Study Abroad on Linguistic Knowledge**

According to Kinginger (2002), despite the fact that study abroad research is a joint endeavor, the United States has led this effort due its wide acceptance of and commitment to utilitarianism. In other words, the research design of American study abroad initiatives reflects the “desire to prove the effectiveness of study abroad, with learners developing language abilities analogous to ‘concrete’ products” (Lafford, 2004, p. 202), usually in functional terms. This research paradigm is highly appreciated by policy makers, program administrators, and fellow researchers due to its pragmatic advantages. The results of the projects are measured in “can do” statements and cost-benefit relationships.

SLA with respect to study abroad can be divided, according to Kinginger (2009) into two contexts: instructed versus naturalistic language development. Instructed language is formally taught, usually in a classroom with examples external to the context. Naturalistic language learning strategies include the use of the environment as a source of communicative opportunities (Kaiser, 1995). “Sojourners,” or study abroad learners, are a hybrid variety because they have access to instruction, input, and interaction in the target language and immersion context. Kinginger (2009) also presented the following factors, which are not typically studied in the intersection of SLA and study abroad: differential access to learning opportunities and learners’ subjective preferences for or access to social networks.

The effects of study abroad on linguistic knowledge are usually studied via holistic constructs: proficiency, fluency, listening comprehension, reading, and writing. The construct of proficiency is most often the approach of SLA researchers. Proficiency is defined as distinct from achievement and based on criteria established in specific instructional contexts (Kinginger, 2009). Accordingly, a proficiency test is assumed to “measure an individual’s general

competence in a second language, independent of any particular curriculum or course of study” (Omaggio, 1986, p. 9). Many valid and reliable tests measure proficiency, from the Test of English as a Foreign Language (TOEFL) for international students of English to a scale adapted for academic purposes by the American Council on the Teaching of Foreign Languages (ACTFL) and in cooperation with the Educational Testing Service. The levels of the scale are Novice (0), Intermediate (1), Advanced (2), Superior (3 and 4), and Native (5). The levels’ descriptors were generated for the three categories of Function (tasks), Content (topics), and Accuracy (acceptability/grammaticality). Thanks to tests like the TOEFL and ACTFL, shifts have occurred in the priorities given to proficiency components, including a rethinking of the native speaker standard (Savignon, 1985; Barnwell, 1989) and academic tasks that better reflect the American academic environment.

While a standard definition of the term has not been agreed upon by the linguistic community, fluency is “the term most frequently evoked in discussions of the linguistic benefits of study abroad” (McCarthy, 2006, p. 2). Fluency development studies are common in the study abroad field. The components of fluency have been operationalized in the following terms: (a) total words, duration of speaking time, and length of the longest turn; (b) speech rate, hesitation, pauses, mean length of speech run without dysfluencies, repetitions, or repairs (Freed, Segalowitz, and Dewey, 2004); and (c) rate of speech, pause length, or the naturalness of rhythm and intonation (McCarthy, 2006). These studies usually employ previously-trained highly proficient speakers to use a scale to judge participants’ performance on pre-test and post-test conditions of speaking and written fluency (Freed, 1995b). Written fluency was judged based on the length and lexical density of timed writing tasks that compared domestic classroom learners and study abroad sojourners (Freed, So, and Lazar, 2003). Other studies, such as a longitudinal

study by Juan-Garau and Pérez-Vidal (2007), have focused on the grammatical complexity present in the written and spoken performance of Spanish-Catalan bilingual students whose target language was English. The participants' fluency was measured in terms of oral performance in role-play and narrative tasks and operationalized via words per clause or sentence, accuracy (grammatical and lexical), complexity (in clauses per sentence and dependent clauses per sentence), and rate of formula use. In the aforementioned studies, the study abroad sojourners outperformed the domestic classroom learners.

### **Extra-Linguistic Factors that Affect the Learning Process Abroad**

A primary issue of study abroad research is to identify the relationship between language gains and social factors, which can be broken down into two fundamental questions: (1) what do sojourners learn, and (2) which factors facilitate their language learning? Based on social network dynamics, as mentioned earlier, the following possible answers arise: the longer the abroad experience, the better; and intense social interactions in the target language and avoidance of L1 peer social networks yield greater gains, even in short programs (Magnan and Lafford, 2013).

One expectation that second language learners commonly have for their study abroad experiences is contact with target language native speakers in out-of-classroom contexts. However, literature has found that sojourners experience less interactive out-of-class contact than they had expected (Rivers, 1998; Wilkinson, 1998). Opportunities to use the target language during a study abroad experience are based on factors such as living conditions (Briggs, 2015; Allen, Dristas and Mills, 2006). Sojourners may have the choice to use their L1 if they are living with fellow sojourners or have a social network that offers them the choice. Living alone is not a nurturing environment for language use and input opportunities. Nevertheless, living surrounded

by target language speakers is not a totally safe bet, either. Kinginger (2008) found that even when arrangements have been made to live with a host family, various social factors still influence the amount and type of interactions in which sojourners engaged. Negative interactions or experiences may bring about limited interactions with the host family, disinterest, or emotional distancing (Briggs, 2015; Lafford and Collentine, 2006). Negative interactions may be caused by a myriad of factors unrelated to academic or cultural matters, including incompatible personalities, stressful situations, lack of empathy to communicate, lack of patience, and conflicting schedules (Magnan and Lafford, 2013). Also, cultural differences and a lack of tools to express one's sense of self might hinder such interaction and learning opportunities (Pellegrino Aveni, 2005). Usually, sojourners and host families with clear roles in a nurturing environment for learning have the best language development results. In other words, when the family assumes the cooperative role of parent/teacher of linguistic and cultural aspects, the learner is more open to learn and discover what the host family has to offer. This is not the case for the landlord/tenant relationship, or the relationship in which the host family assigns responsibilities to the sojourner to grant them access to family interactions (Isabelli-Garcia, 2006; Churchill and DuFon, 2006).

Length of stay is another factor found to be relevant to the effectiveness of a study abroad program in relation to SLA. As Jackson (2008) and Serrano, Llanes and Tragant (2011) found, linguistic competence might develop at a faster pace in short stays (between 2 to 14 weeks) than does intercultural competence, intercultural sensitivity, and sociopragmatic awareness. Nevertheless, many other studies challenge the results and state that sojourners in short-stay programs have superior linguistic proficiency than those who study at home in either a "domestic immersion" or traditional language course. Dewey (2008), Foster (2009), Pérez-Vidal and Juan-

Garau (2009), and Segalowitz and Freed (2004) found that both domestic and study abroad language learner experiences may result in similar linguistic proficiency development. The linguistic competence learning of short stays, as is the case for longer stays, is more noticeable in speaking and listening skills (Allen and Herron, 2004; Segalowitz et al., 2004). Long-term study abroad experiences develop linguistic knowledge as well, accompanied by confidence, sociolinguistic skills, intercultural awareness, and the creation of social networks (Dwyer, 2004).

Magnan and Black (2007) found that living arrangements—for example, living with a host family, in an individual dorm, or with non-target language speakers—did not make a significant difference in the sojourners' language gains. This finding is supported by Segalowitz and Freed (2004) and Wilkinson (1998), who also found mixed experiences and opinions of learners who had varied interactions with their host families.

Another factor that did not have a strong influence on international students' language gains is the amount of language exposure and use in a study abroad experience. For language improvement, who students spent their time speaking with was more important than the amount of time they spent interacting with language (e.g., while watching TV, reading newspapers, or speaking with fellow L1 speakers in the target language). Crucial factors for improving language fluency while studying abroad were prior language coursework and contact with target language speakers (Magnan and Lafford, 2013).

Kinginger (2009) has pointed out that, while interesting, there are a few factors that are usually not studied in the intersection of SLA and study abroad: differential access to learning opportunities, learners' subjective desires, or access to social networks. To explore these issues further in this study, a survey and interviews were designed and used keeping as main focus the language and cultural factors that influenced graduate students from Latin America at Purdue.

## CHAPTER 3. METHODS

The present study is framed in the mixed methods tradition as defined by Kim (2013), as it “involves a process of collecting, analyzing, and mixing quantitative and qualitative methods to answer” the four research questions proposed. While this approach has received different names—integrating, synthesis, quantitative and qualitative methods, multimethod, and mixed methodology—most researchers have come to a consensus on referring to it as mixed methods. Mixed methods research seeks to combine the strengths of quantitative and qualitative methods while reducing their weaknesses. The combination of these approaches into a new one integrates not only their procedures but their assumptions and theoretical frameworks as well—a union that is expected to result in a more complete understanding of the research problem than would be possible with either approach alone (Creswell, 2014).

The origins of the mixed methods approach to inquiry can be traced back to the late 1980s and early 1990s in diverse fields such as evaluation, education, sociology, management, health sciences, and sociology. As with any other approach to inquiry, mixed methods has not been exempted from scientific scrutiny and has gone through different periods based on epistemological judgements derived from its widespread use in different fields and the reflections that come from those uses. Today, mixed methods has a privileged position in the scientific context to the point that many scientific publications encourage its use, and some journals even specifically emphasize the use of this approach in their titles (e.g., *Journal of Mixed Methods Research*, *Quality and Quantity*, *Field Methods*, and the *International Journal of Multiple Research Approaches*) (Creswell, 2014).

Mixed methods involves collecting both qualitative and quantitative data and analyzing each type of data under its own paradigm (sampling, sources, and step of analysis); eventually,

both types of data need to be connected, merged, or embedded in the analysis (Johnson, Onwuegbuzie, and Turner, 2007).

### Research design

Mixed methods is an umbrella term that includes a detailed classification of approaches that vary in the manner and sequence in which the qualitative and quantitative approaches are used for data collection, analysis, and integration. The different types of mixed methods designs include Sequential Explanatory Design, Sequential Exploratory Design, Sequential Transformative Design, Concurrent Triangulation Design, Concurrent Nested (Embedded) Design, and Concurrent Transformative Design. For the present study, the most appropriate approach was Sequential Explanatory Design, a method of two phases in which the quantitative data is collected first and the qualitative data is collected later in order to further explain or aid interpretation of the findings of the quantitative results, as can be seen in Figure 6 (Creswell, 2003, 2014).

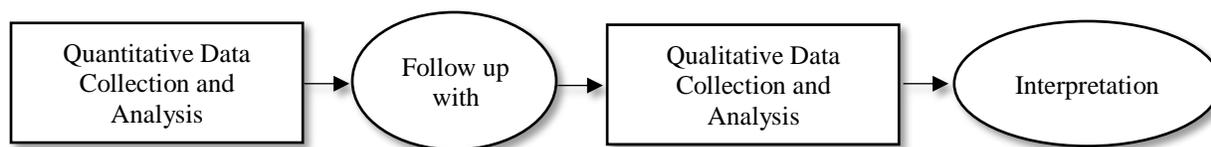


Figure 6. Explanatory Sequential Mixed Methods design.

In the case of the present study, the quantitative data comes from the survey administered to the Latin American graduate students at Purdue University. Items from the survey (see Appendix A) were selected and turned into continuous or ordinal variables to be read by statistical software used for analyses.

In the following sections, the design of the instruments and data collection processes are described in detail.

## **Participants**

### **Quantitative Data Collection**

The method for sampling was voluntary responses. The only inclusion criterion was that the respondents were to be enrolled as international graduate students from any Latin American country at Purdue University. Participants responded to a survey using Qualtrics, an online survey software. The response rate of the survey was 43.87%. The final number of complete responses is 126, as the researchers chose not to allow the software to record incomplete responses in the data reports.

### **Survey**

Surveys are, in a general sense, an examination of opinions, behavior, etc., made by asking people questions. The main feature of surveys is that they are designed to gather information without manipulating the setting or variables of interest in the study (Nunan, 1992; Mackey and Gass, 2005). As indicated by Wagner (2013), surveys are a valuable resource for gathering data from large numbers of participants relatively quickly and efficiently.

In the current study, a survey was administered to a target group of Latin American respondents. The survey included a question that asked participants whether they would be willing to participate in a follow-up interview. Follow-up interviews were conducted with 13 respondents. The survey and the interviews were designed to provide demographics, information on prior experiences, and insights about self-reported data in regard to language use, academic experiences, and coping and learning strategies. Both survey and interviews were intended to be as efficient as possible in the amount of data gathered. Most questions in the survey are closed-ended while the questions in the interviews are open-ended.

The survey used in this research was designed to elicit mostly closed-ended responses, leaving in some cases an option for respondents to include their input in the case that none of the options presented were suitable for them. The survey was self-administered using the online platform Qualtrics, and received clearance from Purdue's IRB before being sent to the potential participants. Understanding that learning is not a process delimited by the most recent experiences, but by the most significant ones, the survey examined a broad range of academic and informal experiences that might have shaped the English language development of the respondents.

### **Survey Development**

The survey designed by the researcher for this study was comprised of 67 questions, and branched, so it led respondents through different subsets of questions depending on key responses. The survey included core questions focused on cultural and educational experiences, including demographic information and previous experiences, and a set of questions to be responded to exclusively by those who had experiences in the U.S. before being admitted to Purdue (research internships or other types of visits). Despite the survey content was not strictly based on any previous instrument, there are some questions that have a similar scope to those of the Purdue-Gallup Index (2014) regarding the influence of training and interpersonal experiences on the academic and professional pursuits of the respondents after their college graduation.

The survey was designed to elicit information about the most relevant aspects regarding formal language instruction and cultural experiences that may have influenced the English proficiency level of the Latin American graduate students at Purdue. The content of the survey was heavily influenced by the literature review of the study and the information publicly

available on the experiences of the graduate students at Purdue. The complete questionnaire of sixty-seven questions is divided into five sections.

The first section, titled High School Experiences, consisted of eleven questions that explore the type and frequency of English language instruction in this stage of the respondents' life. The second section, College Education Background, consisted of twenty-five questions that explore how the academic and social experiences of this stage influenced their English language proficiency and ask for their language proficiency test score used for admission. The third section, Cultural and Social Influences, explored previous experiences outside of academia that might have influenced participants' language development and their decision to apply for graduate school. This section included questions about test preparation because these questions might provide information on how test preparation helps Latin Americans to get admitted and how this preparation may interact with their English proficiency level. The questions about culture and international experiences explore how the cultural aspects, international experiences, and social networks helped (or didn't help) lead to the Latin American graduate students' admission and to the eventual establishment of a community of practice.

The following section, Prior Academic experience at Purdue, branched only for current graduate students that were part of an exchange, scholar visit, internship, or any other type of training in the U.S. before applying to graduate school. This section, consisting of 46 questions, explored the amount and nature of the interactions respondents had during previous experiences in the U.S., with a special focus on their self-perceived exposure and engagement with English language use. This section also includes questions that ask for a possible connection between respondents' previous experience and their admission to Purdue in the academic or social (possible establishment of contacts or academic network) aspect.

The final section, Demographics, explored commonalities and differences in the most general levels of the respondents and assessed if there is any demographic information that may bring all respondents together or determine subgroups within our sample. This section includes gender, age, and contact information in case of wanting to be contacted for the interview. The complete survey is included in Appendix A, and the pretesting, piloting, and the design process is described in detail below.

### **Pretesting**

The final draft of the questionnaire was sent to all members of the dissertation committee. They provided valuable feedback on the sections, wording, and rationale behind each of the questions. From this process, new questions became part of the survey, while others were discarded. It was in this stage that reviewers suggested rearranging the order of the sections to leave *Demographics* as the last part of the questionnaire in order to avoid any sense of discomfort that may lead to participants opting out of the questions at an early stage. It was thanks to the feedback on the questionnaire that the need for a semi-structured survey became evident.

### **Piloting**

In March 2018, a new draft of the questionnaire that included all changes and additions suggested by committee members was entered into the Purdue Qualtrics platform and sent to five Latin American graduate students for them to respond to and make suggestions. There was a glitch discovered with the flow of the survey in one of the sections that was promptly fixed by the researcher. There were also problems with the type of scales used for age, and some options regarding the type of program enrolled in were added. Also, three questions were reworded based on the suggestions of the piloting respondents.

## Design

**High school English language instruction.** Type of responses elicited: single choice selection. In this section, due to the different processes across Latin American countries, there was the need to ask about when and how much instruction in English the respondents had during high school. Initiatives of English Language Instruction (EMI) have been provided in different stages in each country, and the amount of familiarity and input in English during the six years of high school might have influenced their proficiency level upon admission to college. Questions asking how many hours of English instruction they were taught per week, the number of content-based subjects, the type of high school, and the emphasis of the institution (e.g., technical, academic, industrial, etc.) are at the core of this section and are intended to describe how the various EMI processes may affect the English proficiency level of students.

**College English language instruction.** Type of responses elicited: text entry and multiple-choice selection. This section was designed to elicit information about formal English language instruction during college in order to identify possible groups or profiles among the participants in terms of degree, type of English instruction, and language requirements for graduation. The type of higher education institution that participants attended proved valuable in determining the priorities of the students as well as the type of language training that students who are admitted to Purdue graduate school typically receive.

**Cultural and social influences.** Type of responses elicited: text entry and multiple and single choice selection. In this section, participants were asked about their traveling experience to English-speaking countries as well as the duration and the purpose of their visits. The possible experiences in an English-speaking environment and the degree of formality or type of experiences in their visit may have affected their English proficiency level in the long run and

their intentions to apply to graduate school in the U.S. The last question of this section asks specifically if participants had an academic experience at Purdue before being admitted to graduate school. Those who responded affirmatively were branched to a separate survey section to explore their previous academic experience in detail.

**Prior academic experience at Purdue.** Type of responses elicited: text entry, single and multiple-choice selection, ranking, matrix, and Likert scale. This section focused on the type of academic experience respondents had at Purdue (e.g., research scholar, internship, or visiting scholar) and the dynamics of it in terms of English language use, language training, academic demands, social interactions, and how much the academic experience influenced their decision to apply to Purdue graduate school. During the design of this section, there was a hypothesis that many of the members of the current Latin American graduate student body were part of the community of former interns or research scholars at Purdue.

**Demographics.** Type of responses elicited: single choice and ratio scale. This section allowed the researcher to gather general information on the participants of the questionnaire. Determining the age range, gender, L1, and socioeconomic status in the countries of origin of participants helped us to establish the type traits of the Latin American students in graduate school at Purdue. The section was left at the end of the survey to avoid negative predisposition by the respondents, in case they would not feel comfortable with any of the questions asked.

### **Survey Administration**

Once the IRB protocol was approved, the researcher requested the email database of all Latin American students in graduate school at Purdue, but the Graduate School required that the survey be sent by the grad school, so prospective respondents' email information, which is private, would be protected. The survey was sent to the 320 Latin American graduate students at

Purdue University on April 13, 2018, with a reminder sent two weeks later. The response rate was 43.87%. Survey administration was conducted digitally through the Purdue Qualtrics site. Data collection took place during 4 weeks between April and May 2018.

Once some preliminary results from the survey were analyzed, interviews with former interns who were graduate students in the spring of 2018 at Purdue were conducted between July 10 and August 4, 2018. Interviews with faculty and staff involved with the Colombia-Purdue partnership were conducted from July 28 to August 9, 2018.

### **Survey Analysis**

Survey data were analyzed using reports generated by the Qualtrics program. Descriptive data were coded and classified in Microsoft Excel. Some of the analyses were carried out in Microsoft Excel and some in SSPS, a software package used for interactive, or batched, statistical analysis (SPSS, 2016).

In order to use the information from the questionnaire, different analyses were conducted. For each of the analyses, the survey questions were operationalized into continuous and ordinal variables that were able to provide us with different types of information. Categorical variables are reported in the analyses as required.

The linguistic and cultural influences that affect Latin American students in graduate school at Purdue University were presented primarily using frequencies, means, and percentages. Heatmaps are presented to establish the strength of the correlations between the TOEFL scores by skills and language use during the academic internships.

Before starting any analysis or presenting descriptive statistics, finite population correction was applied to all data from the survey. Finite population correction (FPC) is a mathematical procedure used to reduce the standard error of the mean given that the sample size

$n$  is not assumed as a sample of an infinite population, or at least so large that the effect of withdrawing items during the sampling has a negligible effect (Nicholson, 2014). Instead, to apply FCP, the sample size is to be a significant factor (and fraction) of the population, usually more than 5% of the true population  $N$ . FPC is used to adjust the estimate of standard error, resulting in a narrower confidence interval for the population mean. The equation is adjusted from  $\sqrt{\frac{N-n}{N-1}}$  for an infinite population to  $\sqrt{\frac{N-n}{N-1}} * \frac{\sigma}{\sqrt{n}}$  where  $N$  is the true population size,  $n$  is the sample from the population, and  $\sigma$  is the standard deviation of the sample. This conversion is applied for all questions' responses presented in graphs and tables that required mathematic calculations.

In the case of the survey of this study, in every item with quantitative outcomes, the number of respondents were adjusted to the true population of Latin American students per country in the Purdue graduate school, giving each of them a weight in the total sample related to the number of students of the country represented. The weight of every participant by country is presented in Table 3. In the Weight column, each participant is expressed as a proportion, which, depending of the number of respondents from every country, may (a) be equal to 1, in the case of a person who represents the whole population of that country at Purdue because he or she is the only person from that country (i.e., Nicaragua, Uruguay, Paraguay), (b) more than 1 if the total sample represents a significant proportion of the population, and (c) less than 1 if the number of respondents from the country is overrepresented in the sample. For instance, in the case of Colombia, given the high number of responses, to avoid overestimation and bias in the descriptive statistics, the FPC yielded a true weight of each respondent of 0.61. That is, the information of each Colombian respondent contributes only with an estimated value of 61% to every equation instead of 1 (or 100%). Thanks to FCP, the results of the descriptive statistics and

analyses can be argued to be not just a representation of the sample but of the actual population of Latin American students at Purdue University.

Table 3. True weight of participants per country.

Country	Respondents	True number of Graduate Students	Weight in the population	Adjusted Weight
Bolivia	0	1	0	NA
Paraguay	1	1	0.01	1.00
Uruguay	1	1	0.01	1.00
Nicaragua	1	1	0.01	1.00
Guatemala	1	1	0.01	1.34
Panama	4	5	0.03	0.60
Chile	2	7	0.02	1.56
Argentina	3	8	0.02	1.19
Costa Rica	4	9	0.03	1.01
Honduras	5	9	0.04	0.80
Peru	2	13	0.02	2.90
Venezuela	5	13	0.04	1.16
Ecuador	4	23	0.03	2.57
Mexico	8	39	0.06	2.18
Brazil	11	48	0.09	1.95
Colombia	72	99	0.57	0.61
Total <i>n</i>	126			

### Qualitative Data Collection

Thirteen interviews were conducted with volunteers who responded positively to one item in the survey that asked them if they would like to be contacted further for an interview.

Three interviews to gather background data on the Colombia-Purdue partnership were conducted as well.

### **Post-Survey, Semi-Structured Interviews**

Follow-up semi-structured interviews with participants in the questionnaire who had indicated their willingness to participate in a follow-up interview were contacted by e-mail and invited to schedule an interview. Thirteen graduate student interviewees provided a complementary source of information about the characteristics of their traits, habits, and experiences that made them successful applicants to Purdue graduate school. Seven of the interviewees were former interns and six applied to graduate school without previous internship experiences at Purdue. The semi-structured interview was used to elicit the information that is beyond the scope of the questionnaire. This type of interview emerges as a good fit for this study, as it starts with a structure determined by the researcher that includes the topics related directly to the interest of the study and the foreseen factors that might influence the language proficiency of interns at Purdue, “while leaving space for participants to offer new meanings to the study focus” (Galletta, 2013, p. 24). In this case, the questions’ starting points were related to their experience with English as a foreign language and with those elements they considered as key to reaching the proficiency scores required for their admission, as well as the learning strategies they used for English learning and learning opportunities in the Purdue context. Other information students were asked to address included (a) common influences/experiences, (b) the impact of language training (or lack thereof), (c) habits, (d) adjustment challenges, (e) culture shock, (f) hopes and aspirations, and (g) visions of the future. For a detailed sample of the interview, see Appendix B.

In addition, an interview (complete sample available in Appendix C) was done for stakeholders at Purdue and in Colombia who work closely with the CPP, aiming to identify

background information regarding the management and selection process as well as their expectations and opinions about the research internship program. The interviewees were

- Ulianova Vidal Gómez, CPP Graduate Administrative Professional;
- Juan Diego Velasquez, Managing Director Colombia-Purdue Partnership Leader at Purdue University; and
- Nancy Rozo, Coordinator of the Office of International Relations at the Universidad Nacional de Colombia in Bogotá.

As for qualitative data, all interviews were transcribed and analyzed using Nvivo to identify patterns and relevant themes.

### **Coding**

For the purposes of this study, coding is approached from the definition by Saldaña (2012), in which a code is a word or a short phrase that symbolizes a salient or essence-capturing attribute to a portion of language-based or visual data. The main purpose of coding in this study was to classify patterns or recurrent themes documented in the interviews.

Interviews were manually transcribed, and two randomly selected samples equivalent to 15% of the transcriptions were checked to assess for coding accuracy. When interviews were reported, each interviewee was given an alias to protect their privacy. After this, interviews were formatted and imported into Nvivo, a mixed methods software program used to organize, classify, and analyze qualitative data. The researcher, based on the notes taken while the interviews were conducted and the patterns that emerged from the transcribed material, came up with twenty-one main categories for coding the interviews.

The initial twenty-one codes were modified in two rounds of drafting and editing before a final coding scheme was established. Some codes were reclassified as part of a bigger concept

(e.g., mentions of Purdue Writing Lab, Purdue Language and Cultural Exchange, or Lafayette Adult Resource Academy were condensed under the node “Resources used in the Greater Lafayette Area”), some were eliminated due to lack of references in the interviews, and some new nodes were added to respond to the common references mentioned during the interviews (e.g., Exposure to Different Accents). The final number of nodes (code words in Nvivo) used for this study was 10. Nodes are the most basic way in which Nvivo allows researchers to organize the information entered in the software. Nodes also allow the query of emerging patterns and display the frequency of the nodes across all input in the same project—in this case the transcribed interviews. The categories that were used as nodes for the analysis based on their frequency of occurrence and relevance to the research questions were as follows:

- Reported Self-Disciplined Traits: Parts of the interview in which the respondents revealed attributes of self-regulation and willingness to achieve goals voluntarily.
- Exposure to Different Accents: Parts of the interview in which the respondents revealed stances regarding their contact with users of English with accents.
- Independent Application: Parts of the interview in which the respondents claimed to have applied to Purdue independently, without help or facilitation from academic or study abroad programs and organizations.
- Informal Academic Contacts at Purdue: Parts of the interview in which the respondents acknowledge to have academic contacts at Purdue before applying for graduate school.
- Intercultural Exposure/Tolerance: Parts of the interview in which the respondents recognize some intercultural exposure situation that had an impact on their experience at Purdue or beyond.

- **Internship Experience:** Parts of the interview in which the respondents with previous experience at Purdue mentioned how this situation affected their language proficiency, intercultural skills, or academic development.
- **English Language Training:** Parts of the interview in which the respondents referred to any type of formal language training experiences before or during their time as Purdue graduate students.
- **Opinion about English Language Training in their Home Country:** Parts of the interview in which the respondents referred to their language training at school or during college, as well as any reference to private English language training.
- **Outperformer/Overachiever Traits:** Parts of the interview in which the respondents referred to behaviors or experiences that revealed that they were overachievers or went above and beyond their call of duty during their academic training or social activities, including volunteering.
- **Professor-Student Relationships:** Parts of the interview in which the respondents describe the type of contact they had with instructors, professors, or advisors.

During the analysis in Nvivo, coding query was used to count the frequency of the codes. Based on the analysis of the codes and its frequency, themes emerged. Themes, a more general and symbolic way of classifying or grouping nodes, were used for the analysis and embedded into the results and discussion section. For all references in the results and discussion section, the names of all interviewees were changed to protect their privacy.

### **Inter-Coder Reliability**

A second coder was invited to assess the reliability of the coding in terms of accuracy. The second coder, a Purdue graduate student with experience in coding in Nvivo, was acquainted

with the study and the nodes previously created. A sample equivalent to 15% of the interview transcriptions was coded independently by the second coder. Both coded files were compared using the coding comparison query in Nvivo. The results are displayed individually in terms of Kappa Coefficient and percent agreement for all sources and nodes. The Kappa Coefficient is a statistical measure of reliability that, unlike other types of correlation or percentage agreement, accounts for the amount of agreement that can be expected to occur by chance (Cohen, 1960). For interpreting Kappa values, the standards are pretty similar to other type of correlation statistics in social sciences: values above .75 are considered as excellent agreement.

All the results of the coding comparison were reviewed using the “Show coding comparison content” option. In most cases, the coding results were similar, and when different, they would account for the coders’ judgement on where the node should begin and end. The coding comparison yielded a Kappa Coefficient of .91 and a percent agreement of 96.41%. With the reliably coded interviews, the researcher moved on to the frequency and detailed analysis of the information presented by the interviewees.

## CHAPTER 4. RESULTS AND DISCUSSION

The following section summarizes the findings of the survey data that are relevant, interesting, and noteworthy for the research questions and scope of this study. When convenient, and for the sake of the discussion, some categories of the survey responses were combined (e.g., time ranges or hours of instruction in English). Despite most questions being designated as “required response” to allow participants to advance in the survey or finish it, an error in the survey platform resulted in some responses being sent with one or more questions without responses. When the number of responses is different from 126, the actual number of responses is presented for each question, and the reported count or percentages are calculated based on the number of respondents per item. The presentation of the results does not break down the survey question by question; instead, the researcher focused in the themes of the research, which sometimes required an alteration to the order in which the questions of the survey were asked. With the intention to provide a coherent narrative, some responses were used more than once and presented differently, of course (e.g., for establishing the relationship of two variables across survey sections). Lastly, a few responses were discarded to avoid overlapping in the analysis. Final reports of the survey questions with statistic content may be found in Appendix D.

### General Profile of Responses

Participants were comprised of 126 Latin American graduate students enrolled at Purdue University’s West Lafayette campus during the spring semester of 2018. The age range was 21 to 49 years old; 45% of the respondents were female and 55% male; and they represent all colleges at Purdue across many fields. There are 13 countries represented (see Appendix D). The countries without any respondents were Bolivia, Cuba, Nicaragua, El Salvador, and Guatemala.

Colombian students, as they are the majority of the Latin American population in graduate school at Purdue, account for 56% of the responses.

The number of respondents by country is presented in Table 4. As expected, the numbers are unbalanced, as the true Latin American population in graduate school at Purdue is unbalanced. However, in most cases, the number of responses is a representative proportion of the actual number of students at Purdue graduate school by country. To control for the differences in the proportion of respondents by country, and in order to avoid over or underestimation of the results, finite population correction was applied to all descriptive statistics in the study that involve all Latin American respondents. For a detailed explanation and calculation of the weight of each country according to the responses, refer to the methods section of this study on page 44. The corrected frequencies and percentages are those that are reported.

Table 4. True count of students and proportion of participation per country.

Country	Number of Students	Number of Participants	Proportion of Respondents
Argentina	8	3	38%
Bolivia	1	0	0%
Brazil	48	11	23%
Chile	7	2	29%
Colombia	99	72	73%
Costa Rica	9	4	44%
Ecuador	23	4	17%
El Salvador	1	0	0%
Guatemala	3	1	33%
Honduras	9	5	56%
Mexico	39	8	21%
Nicaragua	2	1	50%
Panama	5	4	80%
Paraguay	1	1	100%
Peru	13	2	15%
Uruguay	1	1	100%
Venezuela	13	5	38%
Total <i>n</i>	282	126	45%

In terms of education, all participants studied high school in the same country that they are from. As for college, there were five participants that reported going to college in a different country from their country of origin. These five respondents are from Ecuador (2), Guatemala, Nicaragua, and Perú. They all received a college degree from Zamorano University in Honduras. The reason for this, is that Zamorano University, located in Honduras but registered in the United States educational system, has academic agreements and offers grants to many countries in Latin America. Zamorano is an agricultural school, and professors there have had long-term academic relationships with Purdue University, and they are constantly encouraging students to carry out their graduate studies at Purdue.

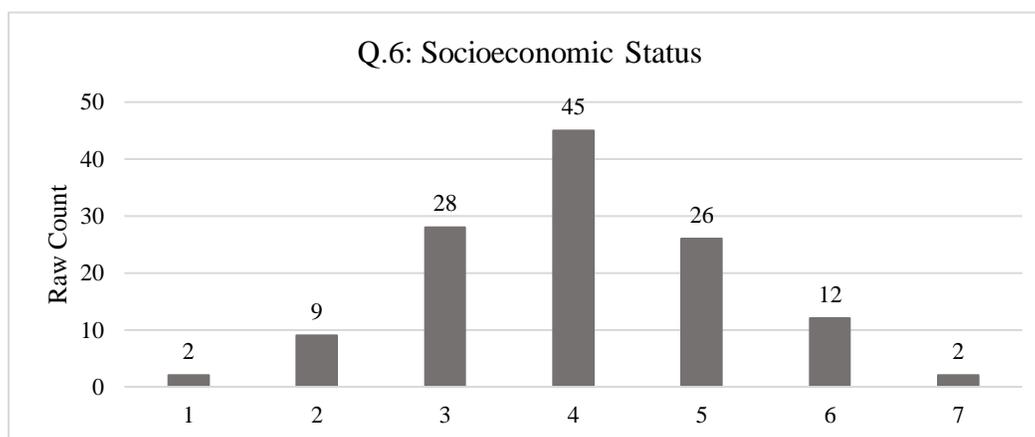


Figure 7. Socioeconomic background of Latin American students in graduate school.

According to the survey, in terms of socioeconomic background, the profile of Latin American students at Purdue graduate school is varied. As can be seen in Figure 7, the largest group reported to come from a middle point on the scale, which runs from 1–7 with 1 representing the lowest income and 7 the highest. This is important for our study because in Latin American countries socioeconomic status is related to educational opportunity. Students

come from all backgrounds, but in the following sections this variable will be studied further in combination with other variables to explore possible patterns that may be derived from it.

In relation to the socioeconomic status patterns or groups in the Latin American graduate student population at Purdue, the sample represented a normally distributed socioeconomic background (see Figure 8b). Nonetheless, as Figure 8a shows, Latin American income is not normally distributed. Given the 7 points that represent socioeconomic background of the population of graduate students from Latin America at Purdue, the highest frequency of students at Purdue come from level 4, with representatives from all other levels. Given the social inequalities existing in Latin America that rank it as the most unequal region of the world (World Economic Forum, 2016), as well as the large amount of the population that live in poverty (levels 1 and 2), the graduate students at level 4 fall in the upper bound of the middle class. Compared to the greater Latin American population, the upper middle class is privileged. The actual distribution of income in Latin America (see Figure 8a) shows that even with the conservative measures of The World Bank (2012), the medium daily income per capita in a Latin American household is below or around 10 USD (the lower bound of the middle class), which locates this large part of the population in levels 1 or 2 of the scale. This stands in sharp contrast to the scale derived from the survey, in which Purdue graduate students from all socioeconomic backgrounds are in the range.

### **Latin American Graduate Students at Purdue and High School English Instruction**

In regard to the type of high school the respondents attended, there is an important difference between the number of students who attended private schools and public ones. The fundamental reason behind the need for obtaining this information is that, despite there being no hard rule across all countries, private institutions in Latin America are known for implementing

English education at an earlier stage and are more consistent in their implementation than public schools. This is caused by competitiveness with other institutions as well as the financial, staffing, and accessibility constraints that public schools of the region may have had in the past (more so than today). The majority of the students from Latin America at Purdue University (61%) received a high school diploma from a private institution, while 39% received their degrees from a public institution (see Figure 9).

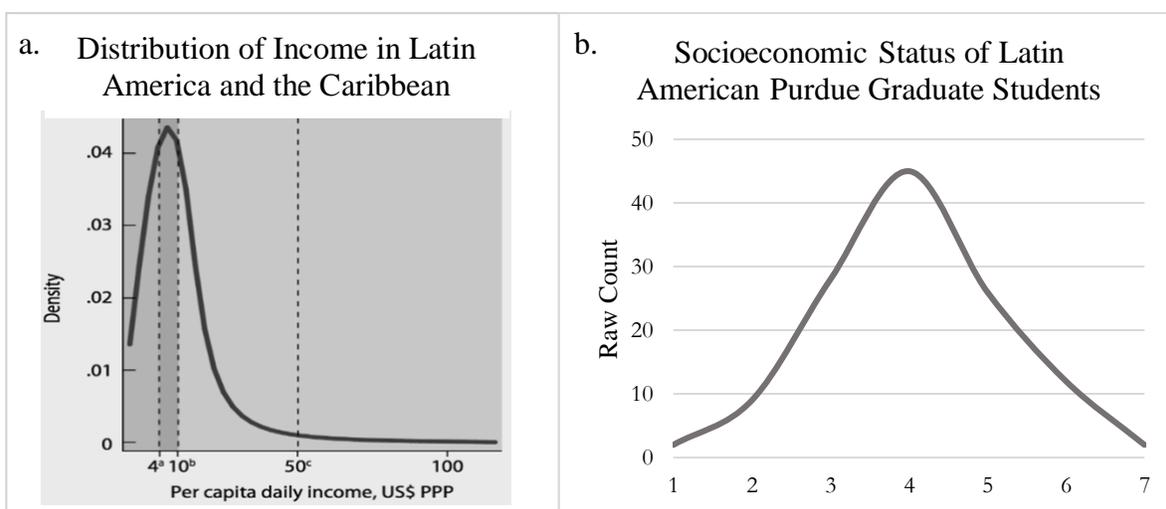


Figure 8. Comparison of distribution of income in Latin America and the Caribbean in 2009 and socioeconomic background of Latin Americans at Purdue graduate school (Source of chart [a]: The World Bank, 2012)

As within each category, public and private, differences are expected to be found, Table 5 presents the type of school and whether the school had English as a medium of instruction (EMI). Here, the hypothesis that in most cases, public schools in Latin America do not have EMI instruction is found to be accurate. Only 6% of public schools have EMI. On the other hand, private schools do not necessarily have it either, as only 26% of the private schools have EMI.

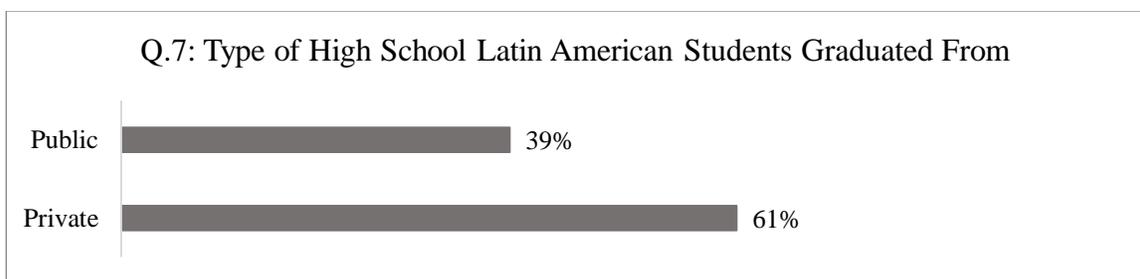


Figure 9. Type of high school Latin American students graduated from.

Contrary to the intuitive assumption that Latin American students who made it to graduate school in the United States come from a consistent (and strong) educational background in English as a foreign language, the survey results show that only 16% of the Latin Americans in Purdue graduate school come from a private EMI school, and only about 19% come from any type of EMI school (public or private). As can be seen, coming from a private or public Latin American high school with instruction in English, on its own or combined with EMI, does not seem to have had a strong influence on admission to graduate school in this study. In order to understand this fully, it is necessary to explore college education or extracurricular/informal education in English as a foreign language, or the combination of the type of school with other variables. This will be explored in the sections to follow.

Table 5. Q.7 and Q.8: Type of high school and EMI rates.

Type of School	EMI	
	No	Yes
Private	74%	26%
Public	94%	6%

In order to consider another possibility—that, due to the time it is still taking to implement EMI programs in the Latin American region, there may be some differences in the English instruction received across participants of different ages—participants were asked if they

had formal English language instruction in high school. Ten percent of the participants did not receive English instruction in high school, and surprisingly the average age of respondents who had English instruction is two years higher than those who did not (see Tables 6 and 7). That means that the assumption that older people are likely not to have started training in English at an early age is not supported by the evidence of this study. Despite the unlikeness of finding the difference in the ages of the two groups to be compelling, regardless of the imbalance in the sample sizes, the intersection between age and high school instruction cannot be considered as a factor that influenced the English proficiency level of the Latin American graduate students at Purdue University. In other words, if a Latin American student went to a private school, he/she is not more likely to have been involved in an EMI.

Table 6. Q.10 and Q.66: High school English language instruction and average age of respondents.

High School English Instruction	Average Age	Percentage
No	28.50	10%
Yes	30.72	90%

As expected, concerning the type of school attended (EMI or regular), students who attended public non-EMI schools had the lowest average of English instruction per week, followed closely by private non-EMI schools, as can be seen in Table 7.

Table 7. Q.7 and Q.11: Number of hours of English instruction per week by type of high school.

	English Language Instruction	
	No	Yes
Private	3.95	7.42
Public	3.08	9.25

On the other hand, respondents indicated that public EMI schools had a higher average number of hours of instruction of English per week than private EMI schools (9.25 vs. 7.42 hours per week). The difference between EMI and non-EMI schools can be considered substantial—more than 3 hours per week. How this affected the proficiency of students in the long run can be seen in Table 8, in which the TOEFL scores per skill<sup>1</sup> were divided into three groups: level 1 for students who received 1–6 hours of instruction of English per week; level 2 for those who received 6–12 hours of instruction; and level 3 for those who received 13+ hours. For all data presented in this chapter that use TOEFL scores by skill, the sample number is 111. Four scores were incomplete and were discarded for all TOEFL scores by skill analyses. Due to a technical problem with the survey, the four respondents that used IELTS did not input their scores by skills, only the total. IELTS test takers had their reported total scores converted to the TOEFL scale, and these results were used only in the analyses of total scores.

Table 8. Q.11 and Q.26: TOEFL scores by number of hours of instruction received in high school.

	Listening	Reading	Speaking	Writing	Total
Level 1 (1-6 hours)	24.8	25.0	22.3	23.2	86.5
Level 2 (6-12 hours)	26.3	27.0	24.2	22.9	86.2
Level 3 (13+ hours)	26.7	25.3	20.0	18.7	97.5

Note: scores by skills n=111; score by total n=116

The sixth column of Table 8 presents the total TOEFL scores of the Latin American graduate students at Purdue by the levels previously described. Students in group 3, with 13+ hours of English instruction per week, had a weighted higher score than those in any of the other

<sup>1</sup> TOEFL scores are self-reported in the survey. Subskills are only included for those students who took TOEFL. IELTS scores cannot be broken down by skills, so only the total IELTS scores were converted to their TOEFL scale equivalents and included in the total columns of all tables that have score information.

two groups. The number of respondents in each level is also unbalanced, but the difference between proficiency levels was more than 10 points on the TOEFL scale. Nonetheless, when the scores are broken down by skill, the picture changes: students from group 3 had the most unbalanced score, as their speaking and writing average scores were lower than those for reading and listening. The difference in the best case (reading vs. speaking) is more than 5 points on the TOEFL scale. In all cases, regardless of the number of hours per week of instruction in English, listening and reading scores were higher than speaking and writing. When levels 2 and 3 are combined, as presented in Figure 10, the differences were small, but the trends in both cases are still similar: listening and reading were higher than speaking and writing. As expected, the scores for level 2 students were higher than those for level 1; and despite the difference not being bigger than 3 points on average on the TOEFL scale, level 2 students had lower scores in writing than level 1 students.

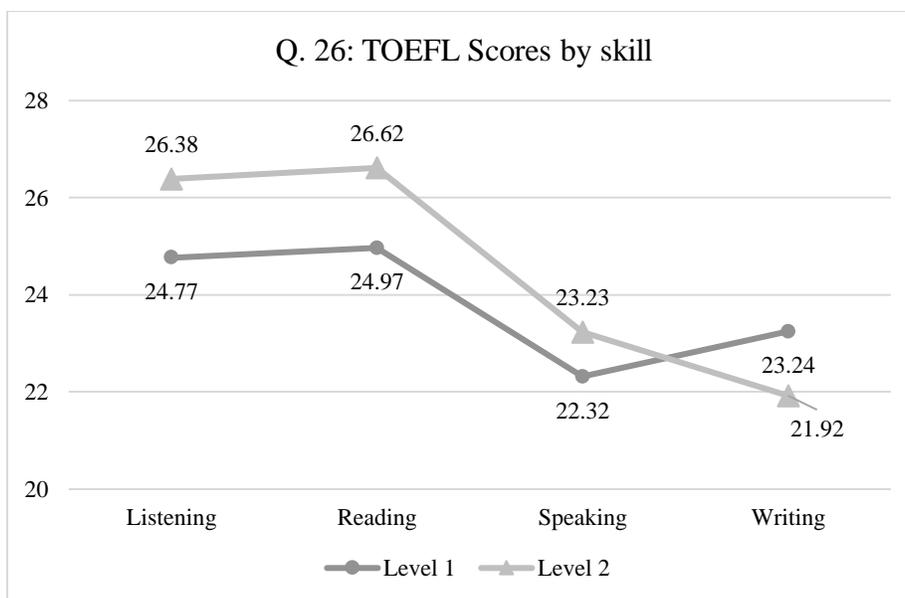


Figure 10. TOEFL scores by levels broken down by skill (n=111).

In relation to the number of hours that participants received using English as a means of instruction in specific subjects (or EMI), only 23% reported to have had this experience. The

TOEFL total scores of those who had had EMI were lower than those who had not (81.30 vs. 88.42). This raises questions about the quality or pertinence of EMI and makes necessary a detailed analysis that is beyond the scope of this study. Students who received instruction in content in English were divided into 3 levels according to the number of hours of instruction per week. There is no clear trend here either. In fact, those students in level 1, who received less time of content instruction in English (1–4 hours per week), had the highest scores, followed next by level 3, the group with the most hours of instruction (10–14 hours per week), and then, in last place, by the level 2 group, which received between 5 and 9 hours of content instruction in English per week.

All things considered, the long-term results (as measured by English proficiency tests for graduate school admission) of the effects of the high school English instruction is surprisingly scattered with few clear trends. The possible explanations for these trends are all in the realm of speculation, which might include that the reported EMI institutions do not stick to their denomination, or that the hours devoted to instruction in English are not having the expected impact on the learners. On the other hand, the trends of English instruction at the college level are clearer.

### **Latin American Graduate Students at Purdue and College English Instruction**

At the college level, respondents who took English language classes as undergraduate students had on average slightly higher TOEFL scores than those who did not (88.4 vs. 83.9). The respondents who took English language classes at college were divided into three levels based on the number of semesters of instruction received: those in level 1 received 1–4 semesters of instruction, those in level 2 received 5–8, and those in level 3 received 9–10. Training in English in college appears to affect the TOEFL score. The more hours of instruction respondents

had in college, the higher the score by skills, except in speaking, in which level 2 respondents were one point above those in level 3 (see Figure 11). There were 45 respondents who reported not taking English in college; their TOEFL scores by skills were close to those in level 1, and they had the lowest total proficiency scores. Regarding total scores, the differences disappear as group of respondents who took English in college had a total score similar to those who did not: 88.4 vs. 83.9 on the TOEFL scale.

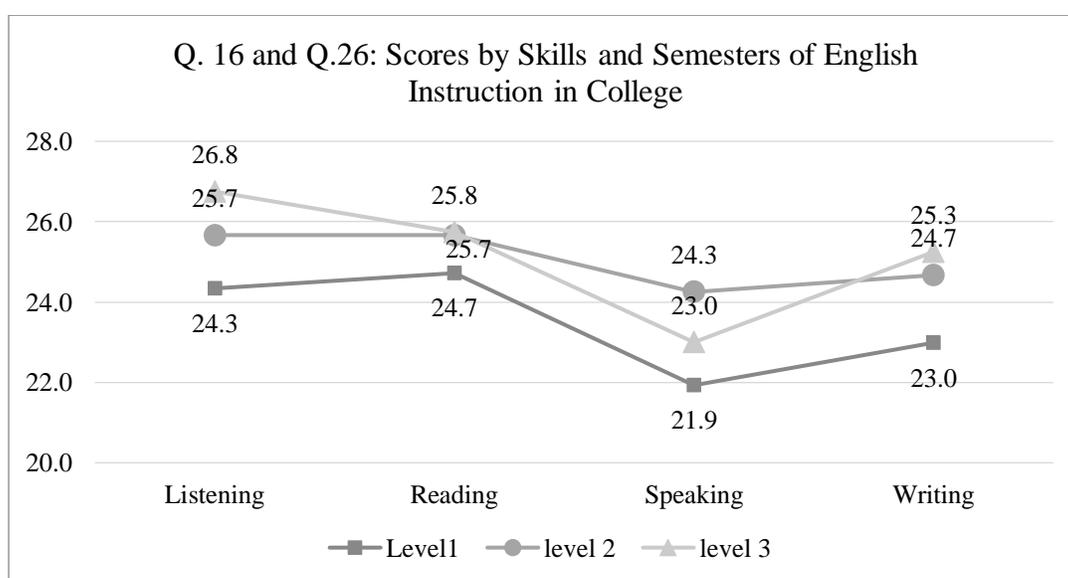


Figure 11. TOEFL scores by skills and hours of English instruction in college (n=79).

Not all Latin American students at Purdue who took English during college started at the same level. Many took an English placement test and started instruction at different levels according to their results. As can be seen in Figure 12, the largest groups of respondents started instruction at college at the A1 and B1 levels. Most students who started at A1 went on until B2, the minimum level required by most colleges to graduate. Four of the students who started at A1 went on to C1, and three went on to the C2 level of instruction. Three out of 6 who started at the A2 level did not move forward in the sequence of the courses offered by their college. This may

be for different reasons but could include them taking English classes at private institutes, self-instruction, taking online classes, or skipping one course (via testing) and being moved to a more advanced class. Most students who started college courses at the B1 level, another popular expected level, went on to either the B2 level or the C levels of instruction. Minimum required levels above B1 are less common, but some universities, depending on their students' expected professional profile, may require it. All 5 B2 level starters moved forward to C1, and 2 moved on to the C2 level. From there on, in C levels, the patterns are varied, and the frequency is relatively

Q.17: English Courses by Level Taken as an Undergraduate

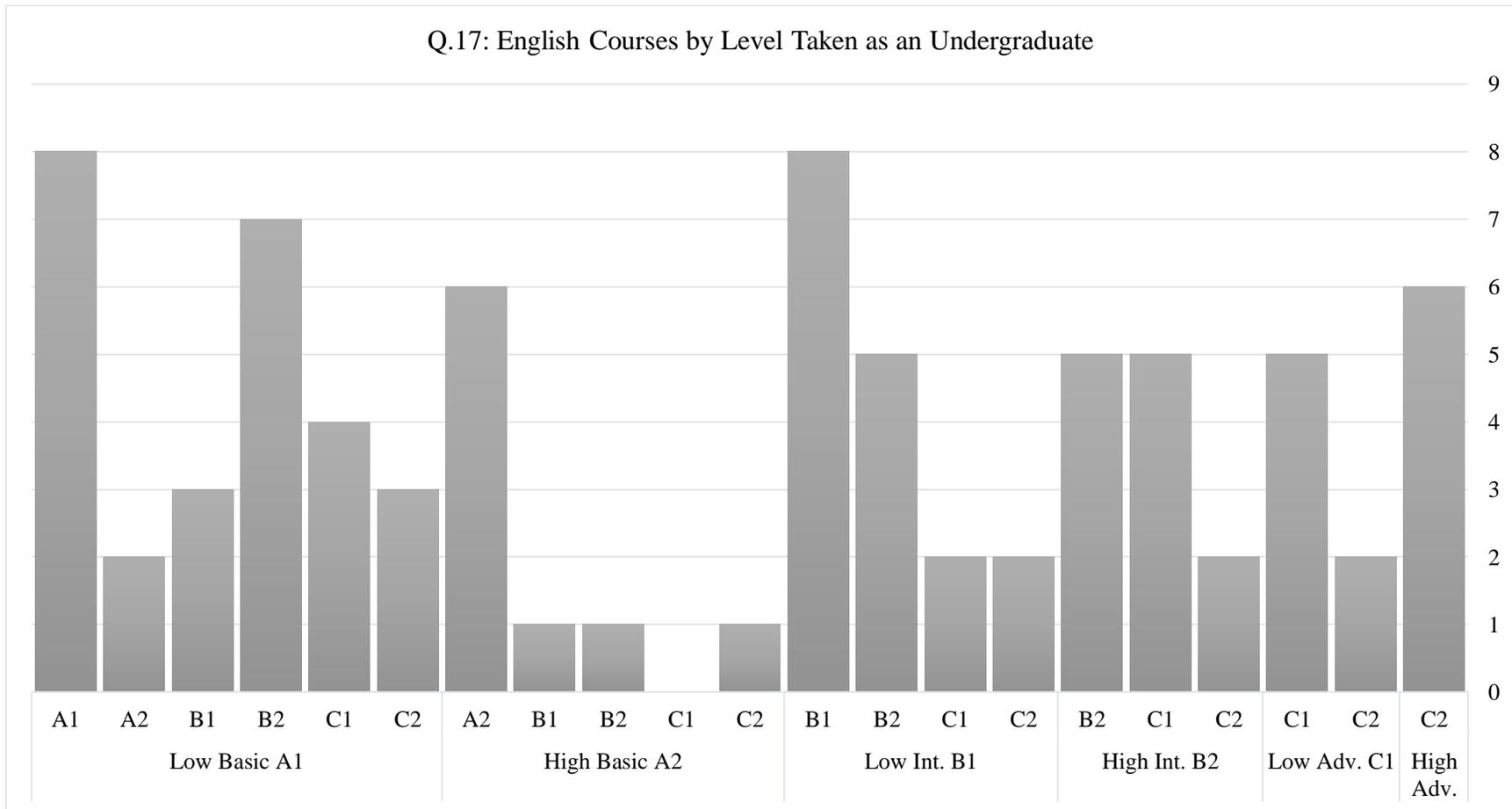


Figure 12. Level of instruction in college as reported by respondents (n=78)

lower than for those in the A and B levels, as the courses at the C level are fewer across colleges and are usually beyond the minimum required level for graduation. The most frequently required English proficiency level for graduation is B1, followed by B2, A2, and C1. It must be noted that 61 out of the 123 respondents with valid responses in Q.11 had not achieved the desired graduation English proficiency levels.

### **High School and College English Instruction Opinions**

In general, most Latin American graduate students have strong opinions on the quality of their English language instruction, which can be summarized by stating that English training in high school, while consistent, does not have a positive effect on their language proficiency scores to be accepted to Purdue graduate school. The few cases of EMI schools are the exception to this trend. What both EMI and non-EMI groups agree on is the high regard to which they hold their language instruction in college, in which those with a good proficiency level developed stronger skills and those without proficiency (who considered that they did not have good language training before college) caught up during their freshman year with those students who had a higher proficiency. In the interviews, high school English training is usually seen as a stage of acquaintance with the foreign language, but not necessarily as a learning stage, which in most case lasts six years:

*In high school [English instruction] I think it's not very good. At least where I come from. We had four hours of English a week, but they did not teach us beyond vocabulary. Each year began with the same topics. (Margarita:13)*

*Yes, I had English in high school, but it wasn't good enough because the only topic we had during the last three years was 'do,' 'does' and that was the only thing. There is no other additional tool, maybe 'to be' and 'do and does. (Diomedes:14)*

*The public system is just terrible and there is little emphasis on new methodologies in language teaching. (Gabriel:17)*

*Most of the English that I learned in high school was in the secondary part and it was just the English structures. How to make present, past, future, progressive; vocabulary and things like that. (Alfonso:18)*

*In my High School we did have—I think more or less 4 hours. We were learning the verb ‘to be’ until we graduated. It was not good at all. (Carmen:17)*

Some of the interviewees described high school English language instruction as repetitive and with no clear sequence, teaching only a few or the same topics each year without putting them in context or moving forward. The previous opinions contrast with the importance some interviewees acknowledge to the English instruction in college, which to a major degree helped them to meet the cut scores of Purdue graduate school:

*I took an intensive course at the university and that was a great course. (Vicky:19)*

*I think that [English language instruction] in the public schools, is not very good. Because I think I didn’t learn a lot in my high school. But in the university, I improved, improved a lot (Federico:22)*

Some students recognize English language instruction as part of a bigger social issue related to the economic resources available for the public high schools. A graduate student coming from a private high school and college acknowledged that the English proficiency level is conditioned, or at least influenced, by the socioeconomic background:

*[English proficiency level] has to do with the social background. If you can afford it, then you will have a good level of English and if you cannot, you will not have it. If you study in a government college, your level of English is low because you only have four hours of English a week and the class hour lasts forty-five minutes long. In addition, in a classroom there may be up to sixty students, the teacher cannot interact with the students one-on-one. Also, each person learns at a different pace. If you can pay a private language institution [your English will improve]. I was in a cheap program. It was three hours of classes on Saturdays. It helped me. (Florinda:19)*

Another excerpt from an interviewee with a language education degree reveals that the negative perception of language instruction is not limited to the educational intervention only, but to the language instructors as well.

*My whole family was disappointed when they learned that I wanted to be an English teacher, especially because I was a girl with such good grades, with high expectations, always willing to cooperate and eager to learn (Marcela:25).*

The negative views on the language teaching profession might not be related to the negative results of the instruction or the low levels of proficiency in English of Latin America when compared with some other regions of the world, but instead to the working conditions of the teachers in terms of salary, work load, resources provided, and location, among others. These factors, combined with the opinions expressed by the students, as seen in the previous paragraphs, reinforce the idea that highly motivated students with lots of potential for success might not find professions in education particularly attractive options.

### Other Factors Influencing English Language Proficiency

#### Private, Additional, or Supplementary Language Instruction

Forty-two percent of the survey respondents reported to have taken English language courses at a private institute or another non-degree-granting institution. Figure 13 shows the percentage of the respondents in each group (language requirement and no language requirement) that took language classes outside of the formal system in their countries. Surprisingly, more than half of the respondents who had a language requirement for graduation in college took extra language courses, while only 32% of those who did not have to demonstrate a certain English proficiency for graduation took private classes.

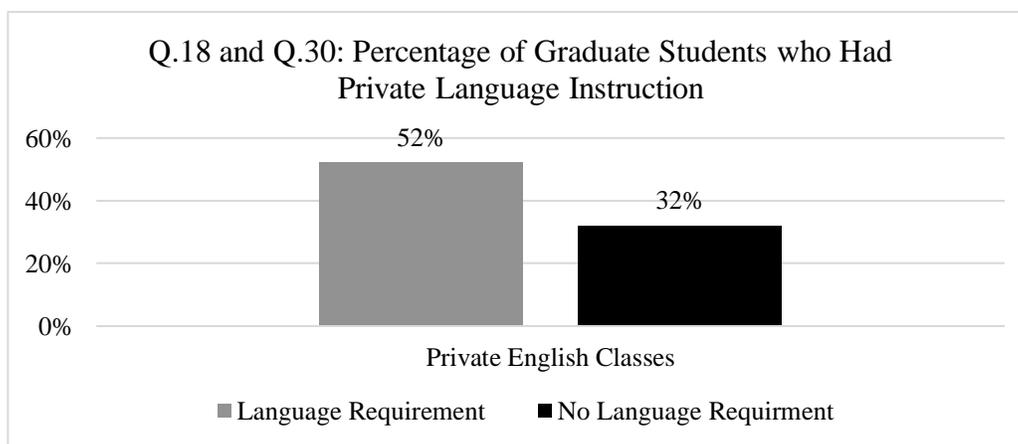


Figure 13. Percentage of Latin American graduate students who took private English classes.

The type of non-degree language instruction Latin American graduate students at Purdue had is broken down in Figure 14. There is a strong preference for language institutes, which students usually attend on Saturdays or in the evenings while they are at college or even before that, with some starting at a young age, as described in the interviews:

*Since I was twelve years old, my aunt paid me an English course on Saturdays from seventh to tenth grade. I went to English every Saturday and I also had an English teacher at school. (Clotilde:3)*

*My parents enrolled me in English course—extracurricular stuff. I don't know if you know Colombo-Americano. I went there once a week at the beginning. I think they enrolled me in this since I was 6 years old probably, something like that. I was very very young. (Carmen:4)*

*So, when I was in my last years of high school I went to English extracurricular classes in the morning, and in the afternoon, I went to school. And I think that for me that was a very good experience. I got the most out of it. I got experience with English. (Diana:2)*

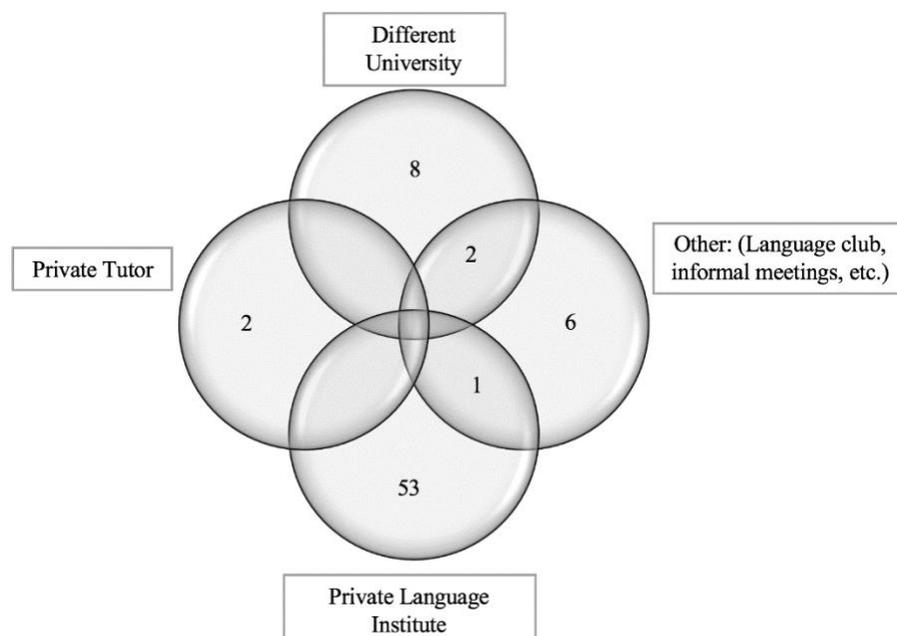


Figure 14. Type of non-degree English training.

There are also a few respondents who went to language classes at universities other than where they were pursuing their degrees. In Latin America, it is common that private universities with good reputations offer language courses to the general public. Language departments and

language programs in different universities have diverse requirements in terms of English. Under those circumstances, at a given university, the offering of English courses to the public is not necessarily connected to the language programs of the undergraduate students, but the programs might share resources between them, including facilities, pedagogical materials, and even instructors. A few students chose to engage in language practice or instruction informally by joining language clubs or similar groups to practice their language skills. According to the references in the interviews, these meetings could require a fee or not, depending of the setting, and are usually hosted by native English speakers who are learning Spanish:

*Back in Medellín, she [a friend] invited me. It was like a community from people from abroad who wanted to learn Spanish and local people who wanted to learn English. So, we went out to a bar to drink beer and interact. We talk to them in English for certain time and then we switched, they talked to us in Spanish and we made the corrections. (Diomedes:11)*

*In Bogotá there were a couple of English clubs. There was one called Gringo Tuesdays. I would go there every Tuesday and practice some English with foreigners and sometimes, as it was in a bar, we would dance and go out for dinner and that sort of things. (Jaime:18)*

The informal meetings for language interchange could take place in parks, houses, bars, or restaurants, usually in big cities.

The least popular option to learn English outside college was private tutoring, which is expected due to the high price this type of service has and the lack of a consistent offer of qualified trained professionals to tutor independently.

## **Travel**

Only 37% of the respondents had had an international experience in an English-speaking country before coming to Purdue for graduate school. Also, international experience is closely related to socioeconomic background. As expected, in both cases, as shown in Figure 15, there is a clear trend: the lower the income, the less likely it is that the students had visited an English-

speaking country before coming to Purdue. Conversely, among those who responded, the higher the socioeconomic background the higher the percentage of respondents who had been to an English-speaking country at least once before coming to Purdue for graduate school.

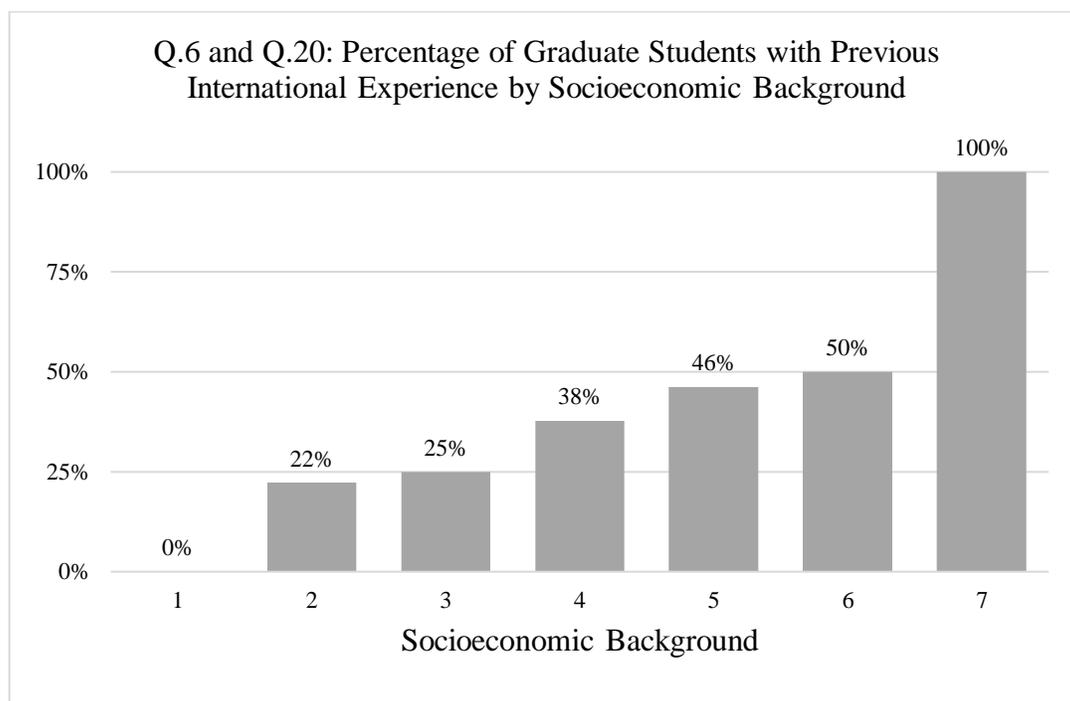


Figure 15. Percentage of respondents' visits to an English-speaking country before graduate school by socioeconomic background.

Those respondents who had an international experience reported different reasons for their trips, as can be seen in Figure 16. Twelve out of 13 respondents who reported to have traveled for vacation also reported to have had as an objective to be in a short study program. Seven traveled with study as their only objective, and only 2 people reported having traveled to an English-speaking country to study English. Three respondents reported to have traveled to learn or practice English informally (without formal instruction), and 1 had the same plan while being on a vacation trip.

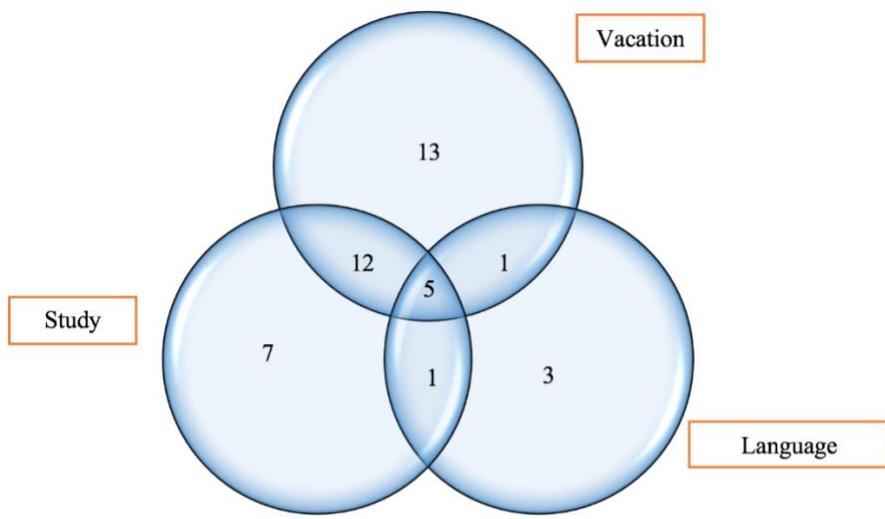


Figure 16. Purpose of the visit to an English-speaking country.

### Test Preparation Courses

The majority of the respondents (58%) reported not having taken any proficiency test (i.e., TOEFL or IELTS) preparation course. As seen in Figure 17, respondents who did not take a test preparation course outperformed those who did in terms of the average total TOEFL score.

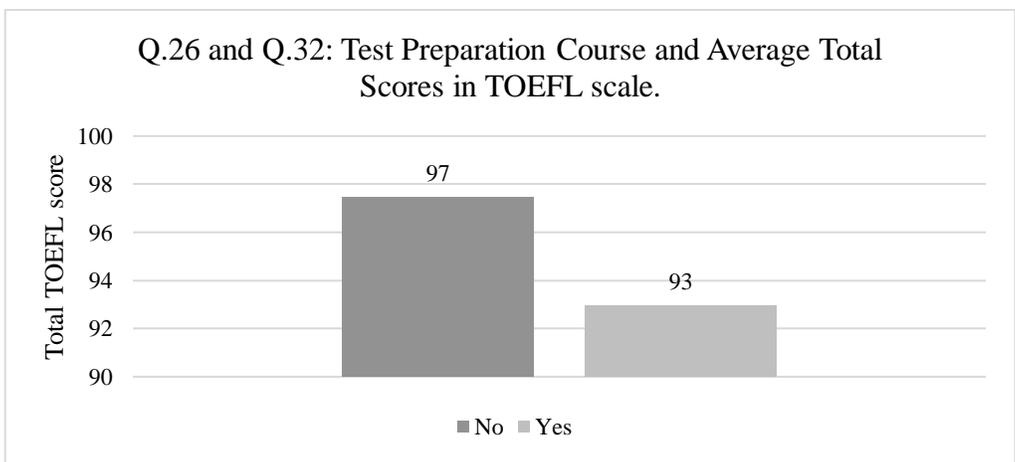


Figure 17. Test preparation course and average total TOEFL scores.

The pattern is similar among those who made one or two attempts to get the proficiency scores required for admission. The respondents who succeeded at getting the admission scores in their first attempt (66% of the respondents) had higher scores in all skills compared to those who needed to take the test more than once. The pattern is consistent across skills in those who took the test twice before getting the application requirements. But as Figure 18 and Table 9 show, those who took the TOEFL 4 times or more outperformed those who took the test exactly 3 times before getting the minimum required score for admission, in all skills except speaking. Multiple test takers, in general, had lower scores.

The difference in the performance show a pattern that makes sense in terms of proficiency: prospective graduate students with higher proficiency take TOEFL once to get Purdue graduate school admission scores; while those with levels of proficiency below the Purdue cut score must take the proficiency test more than once. In fact, the lowest the score across skills, the more attempts were needed to reach the admission scores.

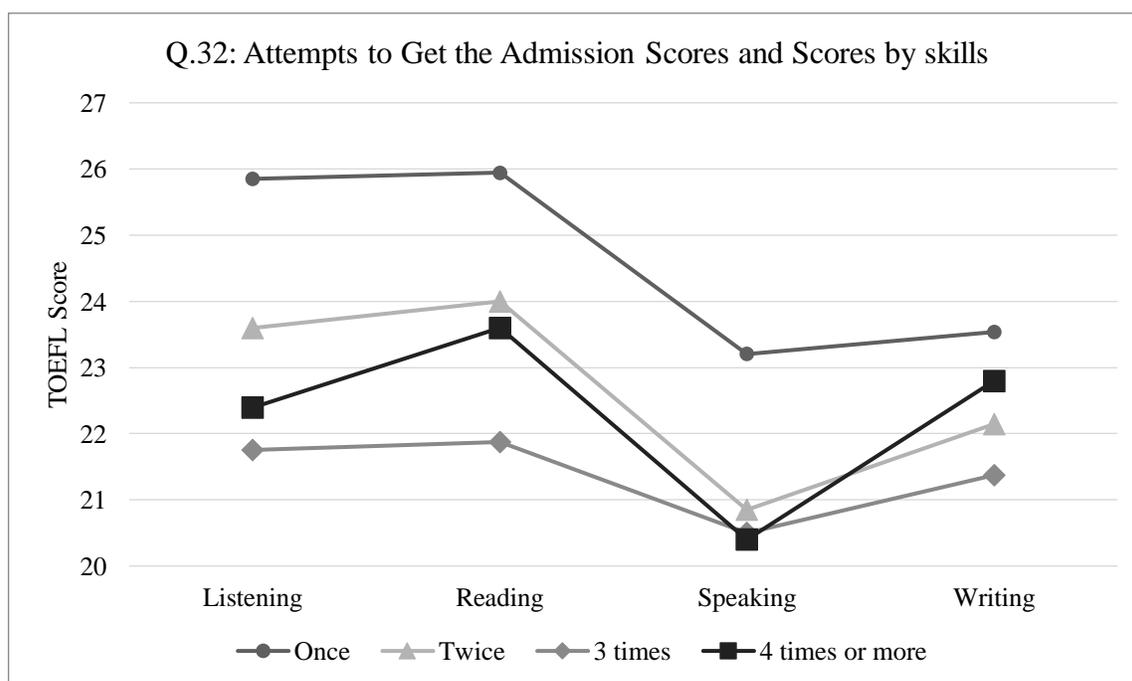


Figure 18. Attempts to achieve admission scores and scores by skills.

Table 9. Count and percentage of number of attempts to get the English proficiency scores.

<u>Number of attempts</u>	<u>Count</u>	<u>Percentage</u>
One	82	66%
Two	21	17%
Three	8	6%
Four or more	7	5%
No response	8	6%
<b>Total</b>	<b>126</b>	

### **The Case of Research Internships**

Purdue University has official and informal academic agreements with Latin American universities, including but not limited to academic exchange programs and study abroad opportunities. Academic internships at Purdue or short stays as visiting scholars when Latin American students are still undergraduates are the most common of these programs. The visits have ranged from one to six months across colleges and are diverse in their objectives. The goals of the internships or short stays include research experience, laboratory use, or bibliographic research. Interestingly, as Figure 19 shows, more than a third of the Latin American students enrolled in the Spring 2018 semester had an internship before coming to graduate school. Five percent of the respondents left the response blank. All of them voluntarily left their contact information at the end of the survey to be interviewed further. All of them had also been to Purdue before being admitted as the spouse or partner of a graduate student, and after establishing academic contacts on campus, they applied for graduate school successfully.

Latin American graduate students are distributed across fields at Purdue. Based on the survey, the number of former interns account for an important percentage of Latin American graduate students in most of the colleges in Spring 2018 (see Figure 20), including Engineering, Liberal Arts, Management, Science, and Technology. For Agriculture and Education, the number of former interns is higher than those who did not have any contact with Purdue before.

Furthermore, in the case of Agriculture, as previously mentioned, a large proportion of graduate students are Zamorano alumni. So, in this case the number of internships interacts with this college.

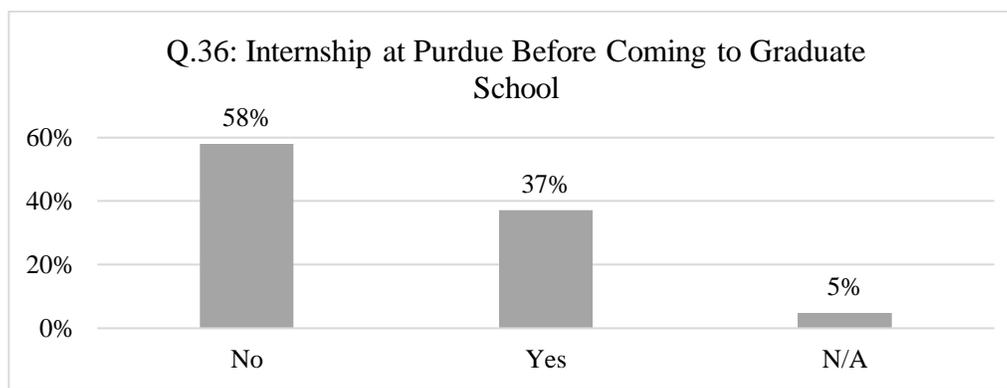


Figure 19. Percentage of former interns from Latin America who became graduate students at Purdue.

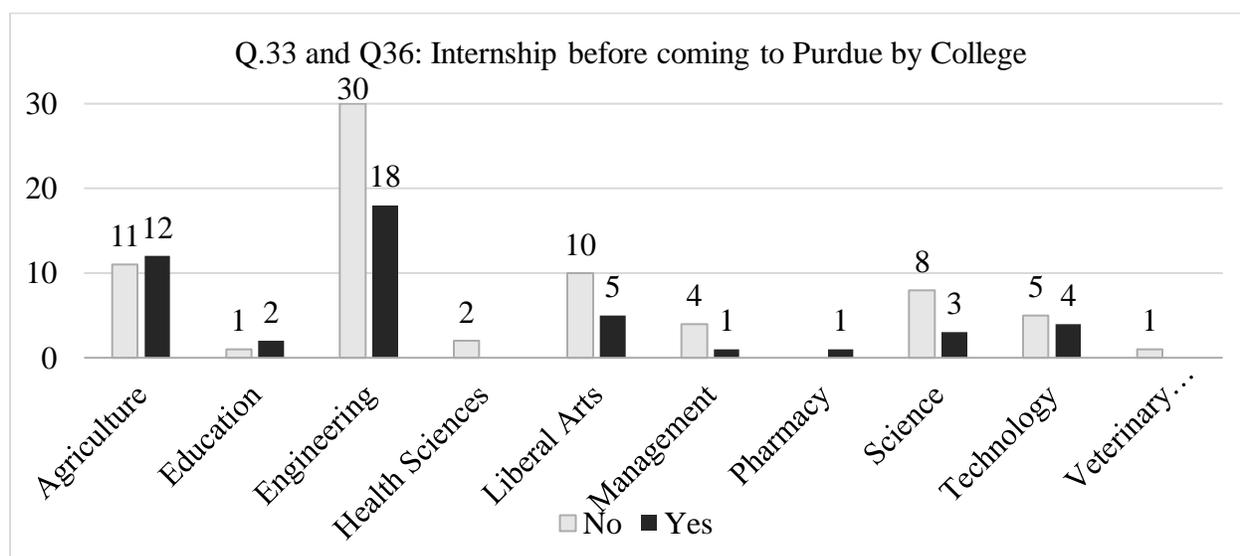


Figure 20. Frequency of Latin American graduate students with internships by department (n=118).

Figure 21 and Table 10 present the count and percentage of former interns at Purdue graduate school in Spring 2018 by country. When divided by country of origin, it is clear that in Spring 2018, Colombia is the country with the highest proportion of former interns in graduate school, with 42 students (68%) with a previous internship coming from that country.

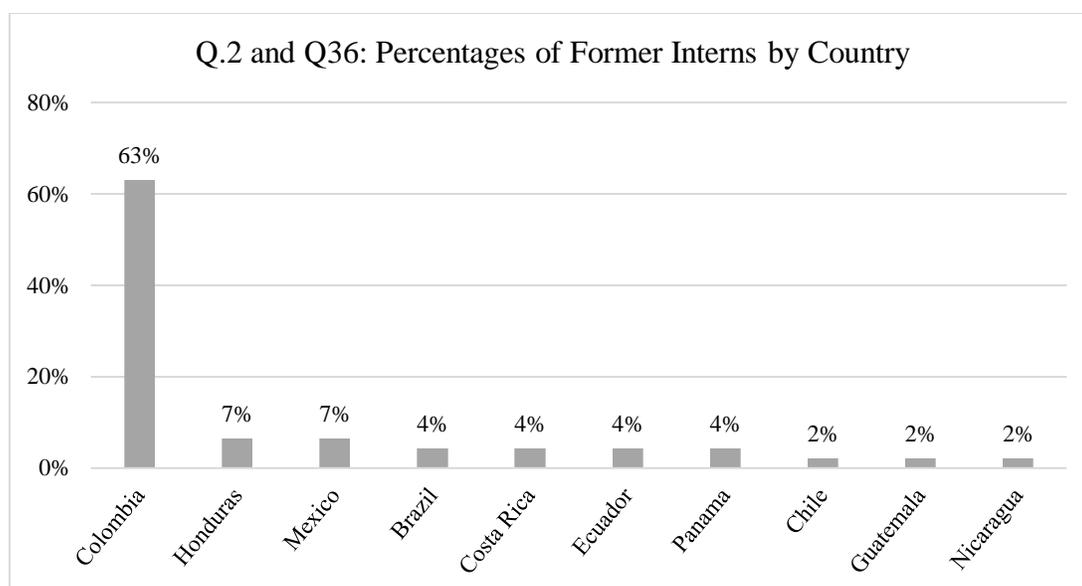


Figure 21. Percentage of former interns from Latin America at Purdue graduate school by country.

Table 10. Q.2 and Q.36: Count and percentage of former interns at Purdue graduate school in Spring 2018.

Country	No Internship	Internship	Percentage of the total interns
Colombia	42	29	63%
Honduras	2	3	7%
Mexico	5	3	7%
Brazil	8	2	4%
Costa Rica	1	2	4%
Ecuador	1	2	4%
Panama	2	2	4%
Chile	1	1	2%
Guatemala	0	1	2%
Nicaragua	0	1	2%
Venezuela	4	0	0%
Argentina	2	0	0%
Panamá	2	0	0%
Perú	1	0	0%
Paraguay	1	0	0%
Uruguay	1	0	0%
<b>Total</b>	<b>73</b>	<b>46</b>	<b>100%</b>

Note: Total valid responses: 119

It may be the case that this high percentage of interns can help to explain the leading position of Colombia in the number of graduate students from Latin America at Purdue and why the number of Colombian students across fields of study in graduate school has climbed in five years, from 52 in 2012 to 119 in 2018 (Purdue Office of International Students and Scholars, 2018). The following sections will explore in detail the dynamics of internships in general over graduate school admissions, with special focus on the Colombian case.

### **Type of Internship**

As shown earlier in Figure 19, 37% percent of the graduate students from Latin America who were surveyed reported to have had a previous academic experience at Purdue before being admitted to graduate school, and the majority of these were involved with internships in the College of Engineering (see Figure 24). Figure 22 shows that these students were mainly interns or visiting scholars. Interns, visiting scholars, and exchange students were all still undergraduates when they came to Purdue for the first time. In the case of the respondents who chose “Other,” all of them mentioned in the interviews that they lived in town as dependents or partners of graduate students and that they got involved in academic activities informally before applying to Purdue graduate school.

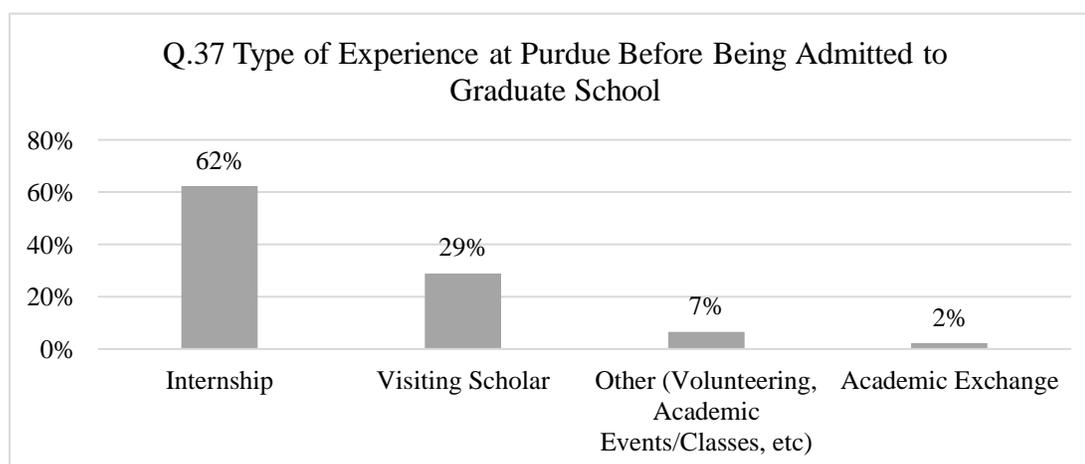


Figure 22. Type of previous academic experience at Purdue.

Figure 23 displays the large proportion that the Colombian population represents for Latin American graduate students with previous experience in academic programs at Purdue University. Other Latin American countries rely largely on visiting scholar programs to have their students get research experience at Purdue University as undergraduates—e.g., Zamorano University in Honduras, Universidad de Los Andes in Colombia, and Costa Rica Institute of Technology. Most former interns and a third of the visiting scholars are from Colombia. In a pool of 17 countries, the fact that only one country accounts for the majority of this variable is an interesting finding to be explored further. For this reason, the former Colombian interns were asked about the type of program that sponsored or supported them for their scholar visit or internship. In the case of the visiting scholars, the common pattern was professional recommendations from their Colombian advisor to a coinvestigator at Purdue, who was in charge of advising the research during the time of the visit. All 4 students who had this profile came from one of the top private universities in Colombia. As for the Colombian internships, when asked further, respondents had a common response in all cases: The Undergraduate Research Experience – Colombia (UREP-C).

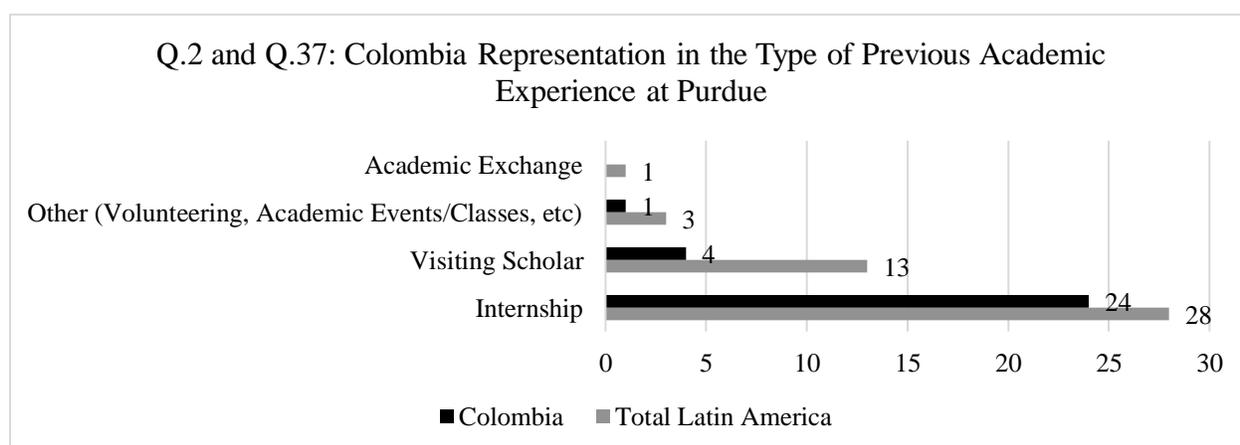


Figure 23. Comparison of the type of previous academic experience between Colombia and all of Latin America.

## **The Colombia Purdue Partnership**

Since 2010, the Purdue-Colombia partnership, originally named the Colombia Purdue Initiative (CPI), was led by the College of Engineering in collaboration with the Colombian Ministry of Education, the Colombian Department for Science, Technology, and Innovation (Colciencias), and Colfuturo, a Colombian private foundation that promotes, orients, and finances Colombian graduate students studying outside the country (Pacheco, 2011). Purdue's president, faculty, and alumni have seen the potential of the wide variety of resources that Colombia might provide Purdue in terms of opportunities for research through access to Colombia's abundant natural resources, growing technology sector, and prospective international students. The partnership has been extended through additional administrative agreements fostered by President Mitch Daniels' 2014 meeting with Colombian president Juan Manuel Santos (Freeman, 2014; "Colciencias y la Universidad de Purdue," 2014; "Purdue Colombia Advance Partnerships," 2014).

The original aim of CPI was to assist Purdue in diversifying the graduate student population, primarily in STEM programs and collaboratively work with Colombia to build a pipeline of PhD educated students that would return to Colombia and help advance science and technology efforts. As the initiative gained support, and the circumstances were deemed adequate, the partnership started to coordinate and co-sponsor research internships for 20 to 40 undergraduate researchers and postdoctoral scholars, funded in part by Colombian universities and Colciencias (one year). Eight years later, the majority of the objectives of the first partnership have been met, and the ties between Purdue and Colombia have been strengthened.

At Purdue, CPI is the nexus for several ongoing and proposed research and academic projects involving both undergraduate and graduate students.

## The Undergraduate Research Experience Purdue–Colombia

The Undergraduate Research Experience Purdue–Colombia (UREP-C) is a research-based study abroad program (usually during the fall semester) for high-achieving Colombian undergraduate student researchers from the Universidad Nacional de Colombia to engage in research projects that extend their undergraduate training in Purdue’s graduate programs. The program consists of six-month internships with Purdue faculty or researchers across various fields (Colombia Purdue Initiative, 2018).

During CPP’s existence, from 2010-2018, six cohorts of top seniors from Colombian universities have spent six months at Purdue as research assistants mainly in the Colleges of Agriculture, Engineering, Science, Liberal Arts, Management, Education, Technology, Veterinary Medicine, Pharmacy, and Health and Human Sciences. UREP-C students visited Purdue for the first time in Fall 2014, and Universidad Nacional de Colombia has consistently sent a group of students every fall since then. Table 11 shows the number of students in each UREP-C cohort (Flick, 2015; “Undergrads from Colombian University,” 2015; The Colombia Purdue Initiative, 2016).

Table 11. Colombia Purdue Partnership research internships information.

Term of the internship	Name of the program	Number of interns	Language instruction
Fall 2014	UREP-C	27	No
Fall 2015	UREP-C	49	No
Spring 2016	Nexo Global	20	Yes
Fall 2016	UREP-C	20	No
Fall 2017	UREP-C	30	No
Fall 2018	UREP-C	29	No

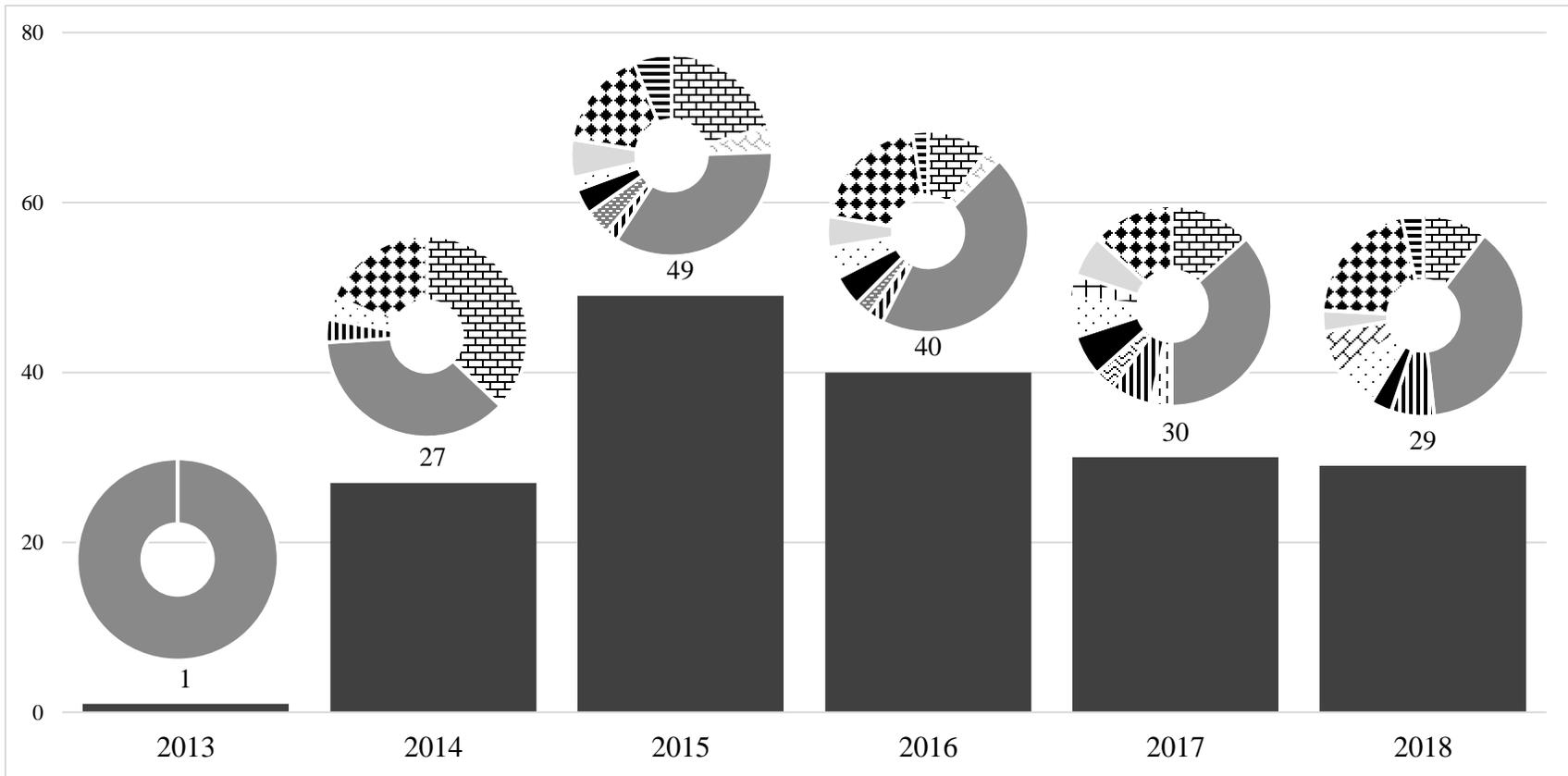
In addition to the UREP-C cohorts, 20 Nexo Global undergraduates completed a six-month internship at Purdue in Spring 2016. While the participating Colombian institutional partners share similar objectives, they had distinct demographics and each cohort has had different levels of support as a function of institutional budgets, selection procedures, and opportunities provided by Purdue. One of these aspects is language instruction: the Nexo Global students' program included an English language instructional component, while UREP-C did not. During Fall 2018, there were 24 graduate students at Purdue from CPI internship programs, 5 from Nexo Global, and 19 from UREP-C. A summary of the CPI number of interns by cohort and their distribution across Purdue departments is presented in Figure 24.

### **Language Proficiency and Internships**

With the exception of Nexo Global internships, none of the exchange or internship programs (Colombian or not) included language training at Purdue as a formal component of the experience. Nexo Global interns received English language training in an ESP course designed to enhance their academic communicative and presentation skills. Nexo Global was a pilot experience for the Colombian government and was eventually shut down due to budget constraints.

English language training before the internship is recommended and encouraged by all CPP (UREP-C and Nexo Global) stakeholders, and English language proficiency is considered in the intern vetting process. However, CPI interns do get language training before the internship beyond the language requirements of the university, but they had opportunities of extra language training (no credit bearing) at Universidad Nacional de Colombia (UNAL) through the Interinstitutional Relations Office, an initiative to encourage students to apply to academic exchange programs outside of Colombia. The Interinstitutional Relations Office language

programs are not limited to English, but include other languages such as French and German, and the courses have flexible schedules, usually after hours or during Saturdays. Nonetheless,



- ⊃ Agriculture
- Engineering
- ▨ Health and Human Sciences
- ⊗ Krannert School of Management
- ⋅ Pharmacy
- ⊥ Purdue Libraries
- ⬧ Science
- ⋄ Education
- ⋈ EVPRP
- ⊗ ITaP
- Liberal Arts
- ⋄ Purdue Center for Regional Development
- Purdue Polytechnic
- ▨ Veterinary Medicine

Figure 24. CPI Programs distribution of interns by department.

despite extra language training being voluntary, UNAL has language as an aspirational requirement for graduation. The language requirement must be met or in a stage close to be met by the time of the internship application. Plus, there is a minimum language proficiency requirement as part of the CPI internship application process. The instrument used by UNAL to classify students' language wise is the Oxford Online Placement Test (OOPT).

According to Purpura (2009), the OOPT is an online test that helps place students into the appropriate level for a language course. It measures general language ability focused on grammatical and pragmatic knowledge. It is divided into two parts, a grammar section and a listening section. The first section is divided in four parts: (1) grammatical forms, (2) semantic meaning, (3) grammatical form and meaning, and (4) pragmatic meaning. The listening part of the OOPT is composed of three parts that assess literal and encoded meanings using short and long dialogues and an extended monologue. The results of the OOPT are presented using the Common European Framework of Reference descriptors and levels (Oxford English Testing, 2010).

Nonetheless, the cut scores used by UNAL for preselection of internship candidates, as well as other details about the use of OOPT scores, are not publicly available. After the OOPT scores, the second language filter for CPI interns is a one-on-one short interview with a CPI representative who visits UNAL campuses for this purpose. The interview focuses on academic language competency and seeks to assess the academic profile and expectations of the applicants.

However, as Figure 25 shows, Purdue is more flexible than UNAL regarding language proficiency. As there is not a formal proficiency test requirement for being an intern or a visiting scholar at Purdue, 33% of Latin American graduate students who were interns reported that they were not required to take a proficiency test formally during the internship application process.

evidence for the internship. Nonetheless, all internships at Purdue, in conformity with the United States Student Exchange Visitor Program must prove their ability to speak, read and write in English. This can be determined by each educational institution by diverse means (besides proficiency tests), including oral interviews.

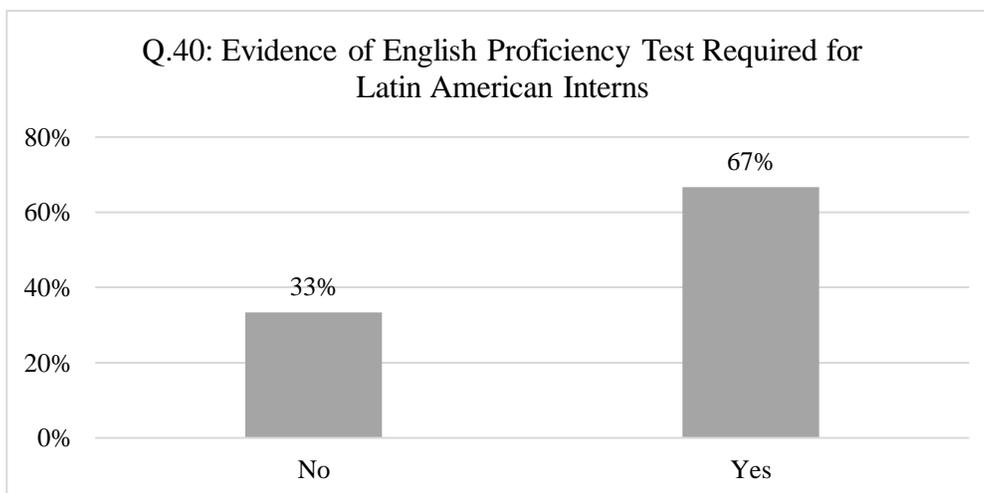


Figure 25. Frequency of evidence of proficiency test required for internship.

UREP-C has some “implied” L2 development expected outcomes without formal language training. These expected outcomes are based on the type and frequency of the interaction with professors, fellow interns, and Purdue graduate students using English as a means of communication. For UREP-C interns, a key component of English use during the internship is the weekly seminar, a meeting in which interns take turns talking about their research progress and provide feedback to fellow interns in terms of language, presentation skills, and specific area content. The weekly seminars have a conference-like structure with turns of twenty minutes to present research and five to ten minutes for questions, all in English. The weekly seminars are led by a graduate administrative professional, a position appointed to a senior Colombian graduate student by the Colombia-Purdue Partnership for this and other year-

long logistic functions, including but not limited to assisting the visa process of future interns, supervising their living conditions, and assisting them with practical concerns during their stay at Purdue.

As in most cases CPP interns did not have language training during the internship, the weekly seminars were a particularly outstanding language practice opportunity that, according to the interview references, positively impacted their language proficiency and helped them focus and present their research according to the conventions of the academic community, which was a new thing for some of the interns. The following references from the interviews discussed the weekly seminars:

*I think one of the positive things we have here as interns is the weekly seminar because we had the opportunity to know what each one was doing. You become in contact with the English used in other areas because here there are students from all the departments in the university. (Margarita:30)*

*Being able to present to your fellow interns is a good opportunity. That weekly meeting is very good, but it is also good if you could have feedback. (Vicky:24)*

The opportunity to develop critical thinking through giving and receiving feedback is one of the most important parts of the seminar, as acknowledged by both sides involved, the interns and the leaders of the program (represented by the graduate administrative professional). During the interview, one of the UREP-C former interns commented on the weekly seminars. He is one of the few that focused on language and not only on content feedback. He had a degree in linguistics and he thought that the academic language components were particularly difficult to master during the internship:

*One particular thing that I really loved was that every Tuesday we had a seminar where we gather together, and we made the rule that everyone would speak English. In these seminars we shared our research experiences. Everybody had like an academic presentation and shared topics. I took it as a habit to make notes and give feedback because I am an English teacher and one thing I could give to other people was to tell them how good they had presented, if they lacked vocabulary skills and pronunciation. So, I would keep a log and at the end of the presentation I would tell the people about*

*ways to improve, or if they had done a great job. There were a few students who had crazy good English, most of them had studied in bilingual [EMI] schools so they had very good English. Sometimes I was like I wish I had your English skills. (Jaime:32)*

*So, basically in our research seminar what we do is: how to make the hypothesis, how to express the scientific question, how to present a graph, how to explain a graph . . . in this seminar one student presents the work . . . they have to present the seminar in the correct day, and also they fill out a survey to evaluate the presentation of the student of the specific day. We need to be good partners. (Graduate Administrative Professional:19)*

As graduate students, former CPP interns value the importance of English training before the internship. In fact, during the interviews some interviewees made direct references to the language training courses offered by UNAL:

*I believe the main reason I was chosen for the internship is because I had studied English in my school and then in the university I studied an English course which I think is the best English course that I ever had. It was an intensive English course right before I came here . . . that was taught by people who were outside of Colombia. I also met many accents. (Vicky:3,12)*

*So, the school of Engineering school back in Universidad Nacional gave us like a preparation course and an English course at the same time. So, we had three different professors, one of them was he studied like English in England. (Alfonso:3)*

*I have a younger brother who studies at another university and did not have this opportunity to get here. His English is very basic. The [English training] courses were very important and were given because the National University wants more students to go abroad. (Martín:20)*

During the internship, not all Latin American interns had regularly scheduled meetings with their advisors. In fact, 18% of the former interns in graduate school reported not holding meetings with their professors on a regular basis. The remaining 82% of respondents, as seen in Figure 26, had regular meetings scheduled with their advisors or professors at different frequencies, and half of them had meetings once a week.

While most of the duties of interns were likely to require using English in different ways, sometimes giving priority to one or some skills over others, there is no evidence of written academic assignments for interns that provided scaffolding or constructive feedback.

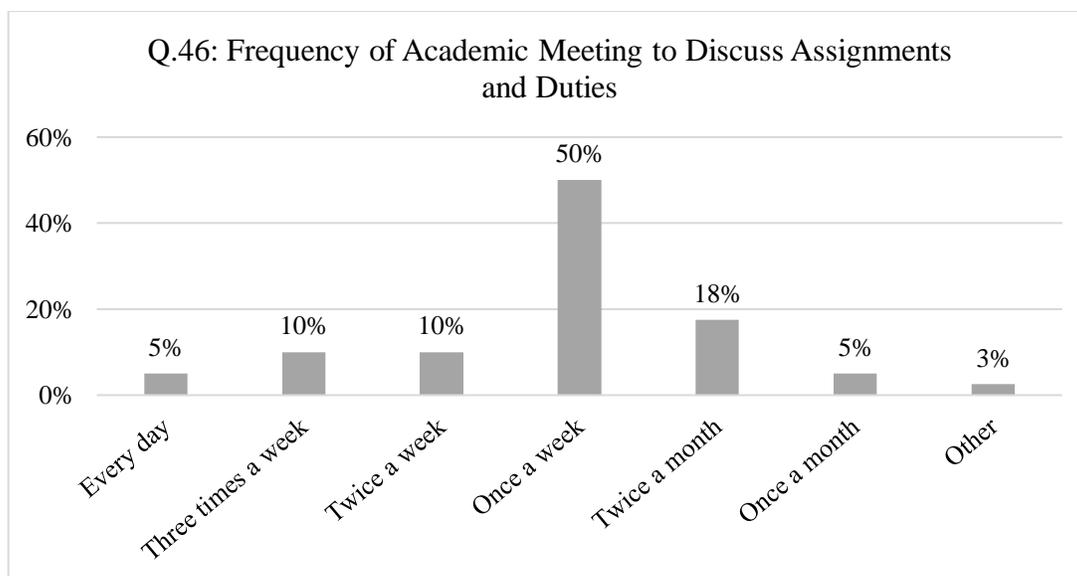


Figure 26. Frequency of academic meetings professor-intern.

All the internships are related to research duties. In the survey, interns were asked to break down the type of duties they were assigned by their Purdue advisor. The way these assignments are related to each intern's academic objectives are as diverse as the number of interns, but based on their responses, four main types of duties were found. As shown in Figure 27, the greater group of interns were placed in activities closely related to research (e.g., bibliographic review, data analysis, and writing), followed closely by field work activities (e.g., collecting samples, keeping records on field, feeding animals, and surveying). In third place are the typical laboratory assignments (e.g., pipetting, laboratory supervising, and sorting samples). Those interns who had to carry out duties that required exclusively reading/writing reports, grading, or preparing teaching materials as part of their duties account for the smallest portion of the interns: only three reported responses, making these the least frequent assignments.

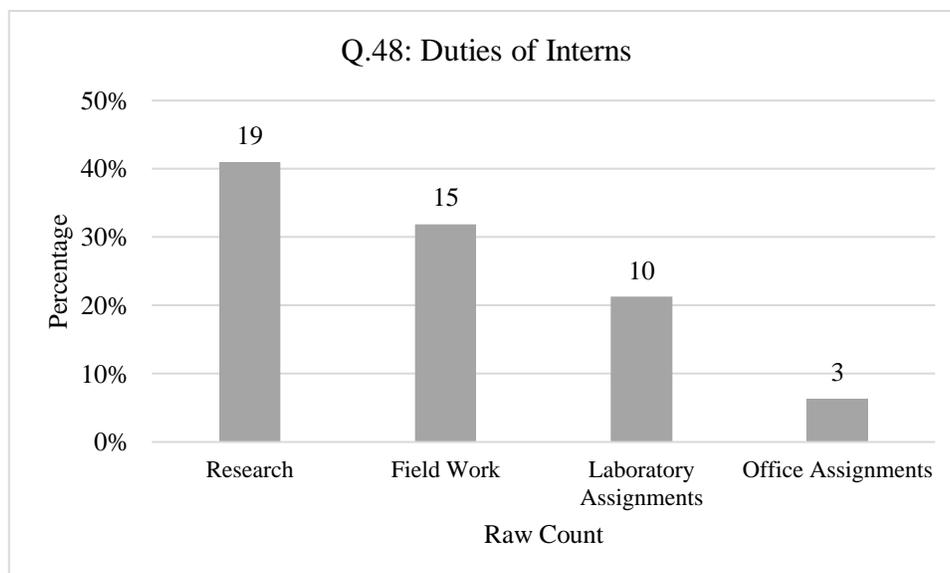


Figure 27. Type of internship assignments (n=46).

From the interviews, it can be inferred that in all internship cases, as expected, students had the opportunity to interact in English with their peers or graduate students in their laboratories or workplace. Nonetheless, there are a few cases, especially with interns from Brazil and Colombia for whom the advisor/professor in charge of their internship would communicate in their L1 (Portuguese or Spanish). Based on the survey responses, regardless of the type of internship or country of origin, there are two main factors, or starting points, that affect the language use in academic settings for former interns in graduate school at Purdue: English proficiency previous to the internship and professor–student contact in formal contexts during the internship. Professor–intern language interaction interrelates in different ways with other types of language interactions such intern–roommates, intern–acquaintances, or intern–other interns. Survey results reveal that in general terms, interns who had at least a weekly meeting in English with their professor or advisor had higher TOEFL scores across skills regardless of the language they used in informal settings, such as with acquaintances and roommates, even if it was their L1. On the other hand, those interns who did not have academic meetings with their

advisors at least on a weekly basis using English as a means of communication had lower TOEFL scores across skills.

By skills, results varied. For receptive skills, reading, and listening, there was not a clear trend that could provide enough information about the interaction between English language use during the internship and the TOEFL reading scores used later for admission to Purdue. On the other hand, productive skills, writing, and speaking showed clear trends in the relationship between language use during the internship in different settings and the TOEFL scores.

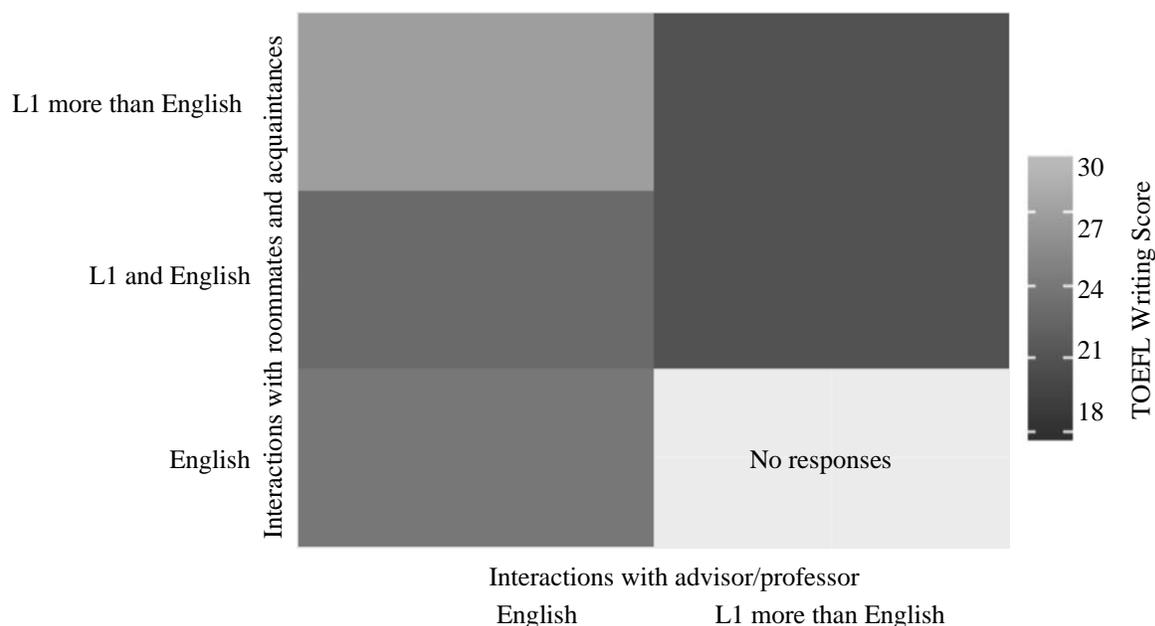


Figure 28. Strength of the correlation between language use during internships and TOEFL writing scores (n=40).

For questions 49 (use of L1 or English in different interactions) and 26 (English proficiency scores), heatmaps were used to represent the correlation. Heatmaps are an intuitive way to represent matrix data graphically by representing values in colors (Deng, Wang, Liu, Cheng and Yu, 2014). Figure 28 presents a heatmap based on the interaction between language use and TOEFL writing scores. Regarding writing, interns who spoke more English with their

advisor had higher scores regardless of the language used for interactions with peers and acquaintances (in the heatmap, the lighter the shade of grey, the higher the scores). In fact, students who used their L1 outside of the academic setting had the highest scores in writing. This trend is confirmed by the fact that those interns who used their L1 with their professor/advisor as well as with their roommates and acquaintances got the lowest TOEFL scores in writing.

CPP interns had a fellow intern roommate with whom communication was mostly in Spanish. Nonetheless, in the interviews former interns reported that there were many opportunities to use English at Purdue, even without formal training. One of the interns compared her internship experience to the time she lived in Malta to study English:

*Although I lived here with Colombians, my internship here [at Purdue] was more beneficial for my English development, which was not the case of Malta, despite there [in Malta] I lived with a Korean roommate and had to speak English obligatorily. Here, to be around people who speak English all the time in the supermarket, the radio is in English, the television is in English, the conversations you listen are in English, all in English helps. I think I chose the wrong place [Malta] to learn English. There, they speak Maltese which is their language and the people there speak Maltese in the streets. Also, there was not a university environment where I could feel what English really is, like here. Therefore, for me it was better to come here to do my internship for six months. (Margarita:30)*

For speaking, the patterns are similar to those found with writing skills: interns who used English had higher scores than those who used L1 with their advisor. Figure 29 presents a clearer trend in relation to the informal language interactions of the interns who spoke in English with their advisors/professors: those who reported using their L1 more than English with roommates and acquaintances had the highest scores in speaking (as in writing), followed by those who used a combination of both (it is assumed that this group considered that they had a balanced number of interactions with some acquaintances who spoke their L1 and some other acquaintances that required them to use English for communication). The group of students that used English more

than their L1 in informal interactions had lower speaking scores than the other two groups previously mentioned, but still higher than those who interacted in both formal and informal settings using their L1 exclusively.

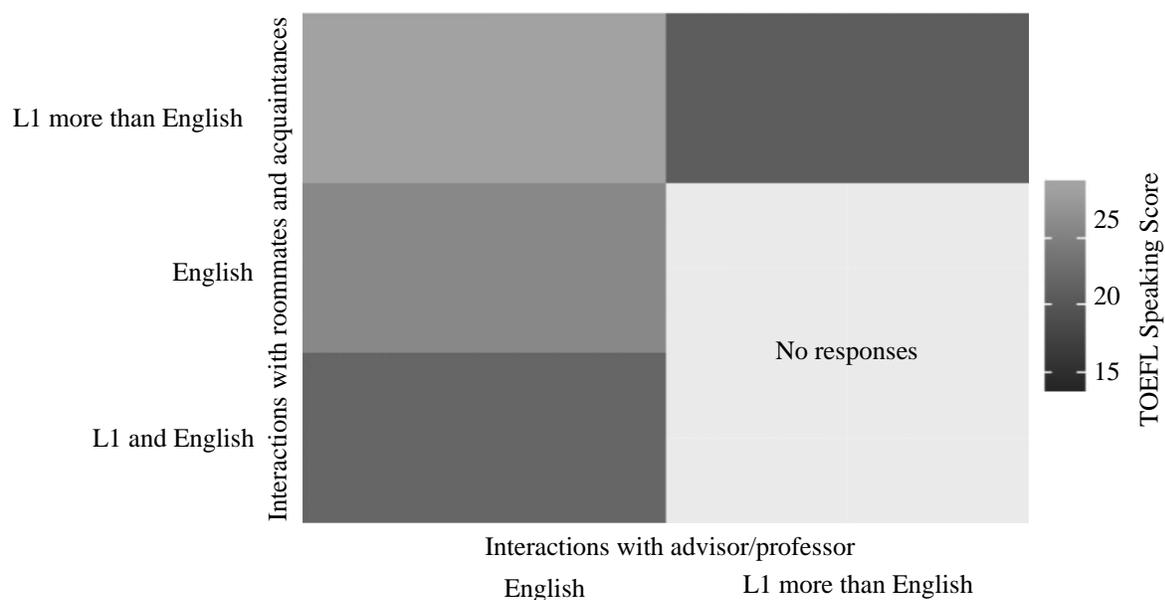


Figure 29. Strength of the correlation between language use during internships and TOEFL speaking scores (n=40).

The results presented in Figures 28 and 29, which show higher TOEFL scores in speaking and writing in interns that used their L1 during their six-month experience in informal interactions, support the studies that provide L1 or internal speech in L1 with mediator role (including transfers) in the second language acquisition, which allows learners across different proficiency levels to accomplish tasks that would be unattainable or would take more time using only L2 as support (Centeno-Cortés and Jiménez, 2004; Lantolf and Yáñez, 2006; Negueruela and Lantolf, 2006), given that L1 and L2 are part of a co-existing and interconnected linguistic and cognitive system (Wright, 2015; Hopewell and Escamilla, 2015). Additionally, there are

metacognitive processes that play a beneficial role in the development of the L2. During the interviews some former interns established a direct relation between their listening and speaking skills after the internship to their exposure to the English language in a way that they had not experienced before:

*I think that improved my listening greatly because at that time I could read and speak, but when I arrived, due to different accents, listening was not good for me and I could not understand . . . all those different accents and to be in contact with them here, I think they helped a lot in my listening during the internship. (Margarita:8)*

In relation to listening, one of the themes with the most references in the Nvivo analysis of the interviews is the importance former interns gave to the exposure to different accents. A total of 13 positive references to being part of an international community that uses English as lingua franca were found, including the following:

*[T]alking to people with different accents, saying things, reducing that shyness that you may have. (Clotilde:11)*

*I think that coming here and learning to talk about my specific field helped me a lot. And listening. Because in my lab apart from Americans there was also a Hindu, someone from Korea. That helped me get used to the different types of accents. (Florinda:6)*

*But there we could listen to different accents, how different people of different places make English, how they communicate in English. (Jaime:16)*

*So, like of course for example, if you ask to an Indian person, they have more like British words, British oriented words so their grammar is kind of different, the way to speak is kind of different too. Also, if you talk for example to a German, they tend to be more like American English than British English which I find kind of interesting too. (Alfonso:18)*

As can be seen, graduate students who had internships find interacting in English—and not only with Americans—as one of their most valuable experiences, in some cases contrary to their expectations. Exposure and adaptation to different accents and varieties of English made interns feel less self-conscious about their performance in English and gave them some feeling of empowerment as they were part of a community that valued them as the representative of the

Latin American community, just as they were valued and recognized by people from other places:

*When I came, I thought I knew English. That was quite a shock. But I had to deal with accents. That's very difficult. But I value that at Purdue because there are a lot of people here from all over the world and everybody talks English in a very different way. (Clotilde:10)*

Conversely, interviewees who had not had the opportunity to interact with L1 English speakers reported, as expected, the importance of being exposed to this type of interaction. These students consider that speaking with an L1 English speaker is the real test they need to overcome:

*Even though I had many courses before and even though this course from my undergraduate was very good, I feel that is not until you get the opportunity to talk with someone who is a native speaker, that you to feel comfortable with it [speaking English], because it is like a step that you had to do. (Vicky:8)*

Some former interns are less enthusiastic, though, when their expectations of English language use are not met by L1 English speakers:

*Even if I make many mistakes when I speak I am always aware of the particular utterances and slang other people use, sometimes I am like, come on, you are a native English speaker why don't you speak better than that. And that happens. I've noticed people use [English] here by the way people are used to talk. But there are things that are unacceptable like "she don't" and I go like, why do you say that? "I wish I would have went" instead of "I wish I would have gone" and I'm sometimes shocked that's part of the language, I suppose. (Jaime:35)*

In general, former CPP interns who were graduate students at Purdue during Fall 2018 acknowledge English language training and development as one of the key components during their internship application process and during the six months of the internship. Despite language training not being a formal component of the internship in most of the documented cases, there are many opportunities for interns to explore and develop their English skills in academic and informal settings.

## Motivations for Applying for Internship

The motivations former interns revealed for applying for the internship are presented in Figure 30. The results yielded three main categories, which the Purdue Latin American graduate students ranked in level of importance. These categories of motivation were based on the gap between the frequency of two of the reasons presented in the survey and the type of motivation that each category represented. The three categories are: (1) Academic/Professional Goals, (2) Intercultural/Language Awareness, and (3) Personal Expectations.

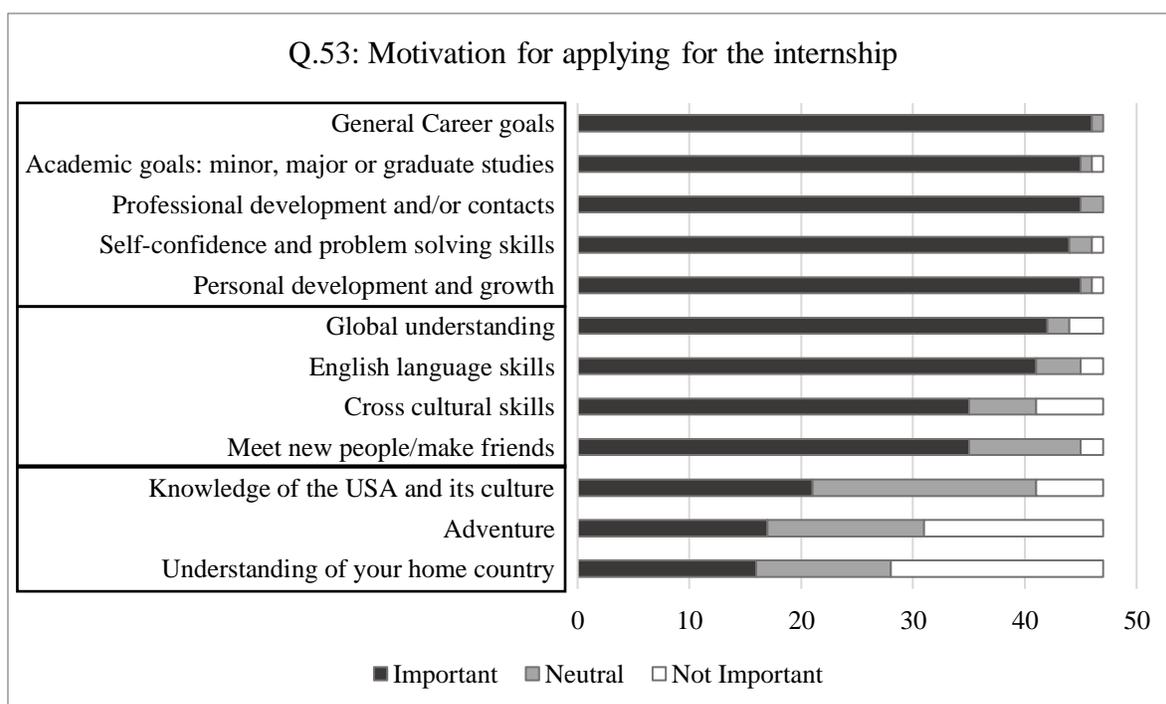


Figure 30. Motivation for applying for the internship (n=46).

As expected, in the Academic/Professional Goals category, 90% or more of the respondents acknowledged career related goals as the most important factors that drove them to make the decision to apply to the internship. Within this main group of motivation fall the following subcategories: personal development and growth, self-confidence and problem-solving

skills, professional development and/or contacts, academic goals (minor, major, or graduate studies), and general career goals. It makes sense that these categories are the almost unanimously ranked as important due to the goals pursued in the internships and the context in which they will take place.

The second category that the results yielded, based on an importance response between 75% and 90%, was Intercultural/Language Awareness. The following subcategories are part of this group: meeting new people / making friends, cross cultural skills, English language skills, and global understanding.

Interculturality is one of the most frequent themes in study abroad research. In fact, most study abroad programs rely heavily on its potential to call for future interns while being a key factor in the endeavors of many higher education institutions to provide their students with elements of global citizenship while acknowledging values such as tolerance and understanding. But even though this main category still accounts for a high percentage of the motivation of interns, it is not the main one. This might be explained by the many possible “pitches” for recruiting applicants that each institution may have used, or it may simply be because the former interns found the academic objectives to be the most relevant ones at the time of the application.

The third category, with a frequency of being marked “important” between 30% and 50%, is composed by three subcategories: understanding of the intern’s home country, adventure, and knowledge of the USA and its culture. While two of these categories are closely related to the perception of their own culture and their understanding of United States culture, these do not seem to be as important as understanding across cultures regardless of punctual references. It is interesting that interns make a clear distinction between categories such as “Global Understanding” and “Knowledge of the USA and its Culture,” which may be interpreted

as their way to express that their personal expectations regarding the internship went beyond the realm of them being specifically in the USA. The perception of the USA in Latin American academic communities is at least controversial, but outside of the academic context, it is in general highly positive, with particularly well-regarded achievements in the scientific field, law enforcement, city planning, and job opportunities. Understanding the intern's own country's values or putting it into perspective by seeing it from outside does not seem to be a highly motivating factor for an intern to apply for an internship either. Adventure, the third subcategory of this group, is another aspect which does not have much potential to determine the likelihood of applying for an internship. A spirit of adventure is a trait usually associated with people who like to travel abroad in general, but it is one of the aspects that academic interns explicitly present as one of the determining factors to apply for an internship. In general terms, Latin American interns do not consider adventure as a key factor for applying for an internship. This does not necessarily mean that they do not have a high sense of adventure, as moving even temporarily from their home country might be considered as an adventure, but they do not consider the internship as an opportunity to explore or be adventurous.

The importance of interculturality in the academic experience is acknowledged for both type of interviewees (former interns and applicants without internship) as there were many aspects of their contact with international students and faculty that had an impact on their experience and life. Aspects such as tolerance, respect, language, and mutual understanding are part of the themes found in the responses:

*I also think it [the internship] made me more open-minded. When I was there [home country], and I'm a bit sad to say, I was against gay people. . . . Another thing that changed my personal life, was getting involved with other cultures. See how people have different smells, different ways of eating the same things. (Margarita:10)*

*Having to relate to other people, probably from a different culture, not only Americans, but the Indians, the Chinese, the way they think, trying to understand them. . . that's very interesting. (Alfonso:19)*

*When I started making friends here in USA, they kept asking me about some specific words or some specific vowels that I was not pronouncing, and, like, what are you saying? I understood how important it is. (Carmen:13)*

*Culture. We expect to find only Americans here, but then we came and there were people from everywhere. That is something I really appreciate because a person is a whole world and a person is made by all these cultural, familiar and experiences, and getting to know people from all over the world was one of the best things of the internship. (Vicky:14)*

*I value what I said before, this global view that you earned when you come here [to Purdue] and you have to work with people of all the continents and different countries' accent and cultures and then realize that we are very similar and that we have to take down all these stereotypes. (Clotilde:43)*

The positive views of the intercultural skills that are linked to the academic experience in graduate school of Latin Americans at Purdue show that they consider them an important part of their personal and professional development—despite, as in the case of interns, it not being the main reason for coming to Purdue.

When asked about how much of the goals in Figure 30 were achieved during the internship, with exception of small shifts in within groups, there were not big changes in the ranking of the three main categories or groups (see Figure 31). In all cases, though, the percentage of respondents that chose “accomplished” was higher than the results presented in Figure 30. This is one of the signs that most former interns are satisfied with the outcomes of the internship and that they feel they achieved more than what they expected they would. For one thing, the lowest selection of “accomplished” was 60% in “Adventure,” a category which only 36% considered important in Figure 30. Keeping with the same priorities as in Figure 30, respondents believe they achieved most of the goals of their internship presented in the survey, even those they did not consider important before the internship. This is confirmed by the fact that in two different questions of the survey, Q.56 and Q.58 (see Appendix D), all 47 former

interns responded that they accomplished their internship goals either satisfactorily or to a great extent, and they believed their internship was overall good or excellent.

Aspects not particularly salient to the survey, as compared to the ones with the highest “accomplished” rates, were mentioned during the interviews. This is the case with the understanding of their own home country, which included some reflection on their education:

*I think I learned to appreciate more my family, like, my friends back in Colombia, my life in Colombia, like the culture of Colombia. (Federico:20)*

*At first, I was a little afraid. I said, it's the United States of America, there people are more intelligent, but no. Here, people have many advantages to study that we do not have, however, we have a good level of education. I have realized that I have a good level of education and even higher than here. In my country we took more courses, I studied for six years. Six years is a lot when you compare it with here that there are only four. Here I had the opportunity to recognize this. (Martin:15)*

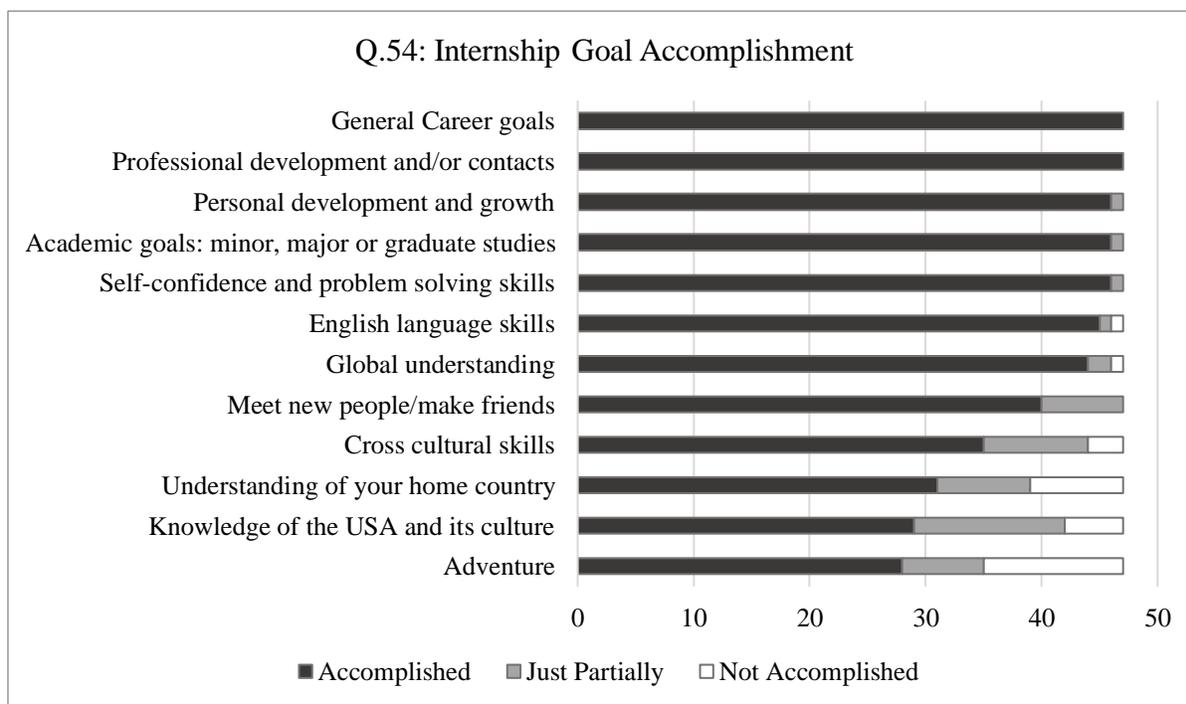


Figure 31. Internship goal accomplishment (n=46).

These opinions underscore the type of collateral effects that the international experience may have on the interns, especially on those who had not had the opportunity to travel abroad before the internship.

As for the reasons former Latin American interns consider Purdue to be different from their undergraduate institution after the internship, they were given three options for ranking them, ranging from 1, the most salient difference, to 3, the least salient one. As Figure 32 shows, 26 respondents (57%) considered that the most salient difference were the laboratories, equipment, and technology used during the internship. The other options ranked far behind the one previously mentioned; these were the research paradigm used, with 12 responses ranking it 1, and the interaction between professor and student, which was the most salient difference for 9 respondents. Two respondents included other factors that deserve mention as the most important difference: room for working on independent/self-directed projects and the type of interaction with fellow researchers. The relevance that interns give to the aspects mentioned can be used as anchor factors, based on evidence, to persuade future Latin American interns about the advantages of doing internships at Purdue University.

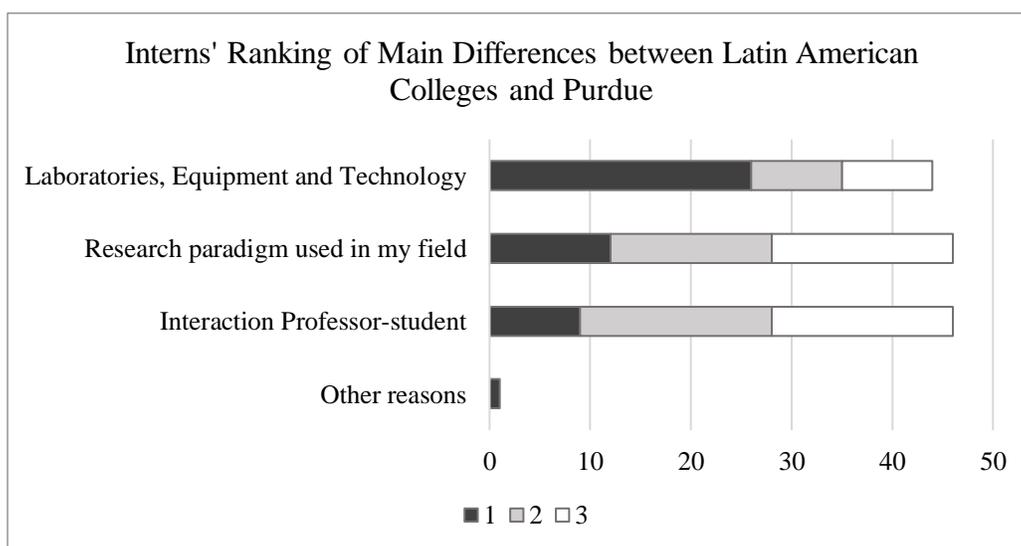


Figure 32. Ranking the difference between Latin American colleges and Purdue University (n=46).

Together with interns' opinions on the resources available for research, former interns as well as graduate students without previous internship expressed during the interviews interesting stances on the academic coursework, homework load, and evaluation:

*One of the most important differences is that here you have everything, books, resources, everything you need. If you want to study, you have everything to achieve your goals, but in Colombia, many people cannot do it for different reasons, for the parents, for the university; here if you want, you can. I think that is a big difference. Here the professors give you everything, books, materials, they give you homework. In Colombia they do not give you homework at school. In Colombia you should study more on your own than here. (Martin:21)*

*Homework, they give you here [in the USA] lots of homework. I have learned this is valuable. In Colombia you can, it depends on how easy you understand the stuff, you have lots of tests. You have like exams, three exams across the semester, but nobody is going to tell you, 'Okay, we are going to do work on these exercises, so you prepare for this exam.' So, what happens is that one week or two days before the exam, people try to pump everything in and you take the exam. I like the strategy here: give you lots of homework and this homework will translate into what they are going to ask you in the exam. (Clotilde:39)*

*In Colombia we have, at least in my case, we have less homework, but we rely more in the exams. So, the exams were more important. Homework was just for you to practice or labs. . . . Here the percentages of the homework [in the final grade] are higher than in Colombia. So, let's say in Colombia it was a 20% for homework, 80% for exams. Here it would be more a 40–60 ratio. (Alfonso:28)*

These informed opinions on academic aspects can only be made as graduate students, as interns cannot take courses at Purdue University. Latin American students at Purdue graduate school feel, in a general sense, academically prepared for the challenges of American academic dynamics; however, they do acknowledge some differences that might take some students some time to adapt to, as can be seen in the interview excerpts above.

The last part of the survey for interns explored how much the internship influenced their decision to apply for graduate school at Purdue. Figure 33 presents the information from three questions (Q.59–Q.61) and shows that all interns established contacts during the internship that they consider had a positive effect in their application, which eventually led them to be admitted to graduate school at Purdue. Likewise, almost 90% of the former Latin American interns

consider that the internship had an influence in the decision to apply for a graduate degree at Purdue. Conversely, question 59 confirms the results of the previously described results in a different way: 72% of the Latin American graduate students (former interns) at Purdue during Fall 2018 had not considered applying for graduate school at Purdue before their internship. This changed during the internship.

Opinions of former interns in the interviews back up the information of the surveys:

*To be admitted, I believe that my letter of recommendation and my training were the key. I came here in 2015. My teacher knows me, he knows my preparation and my work in the internship. That's why I think this played a relevant role. (Martin:10)*

*I had those ideas before my internship, but I think the internship helped me consolidate those ideas. I was more sure and confident about my research skills, communication skills, and I said: OK I have done these things for a couple of months here in the United States, maybe I'm able to do it for life. (Jaime:15)*

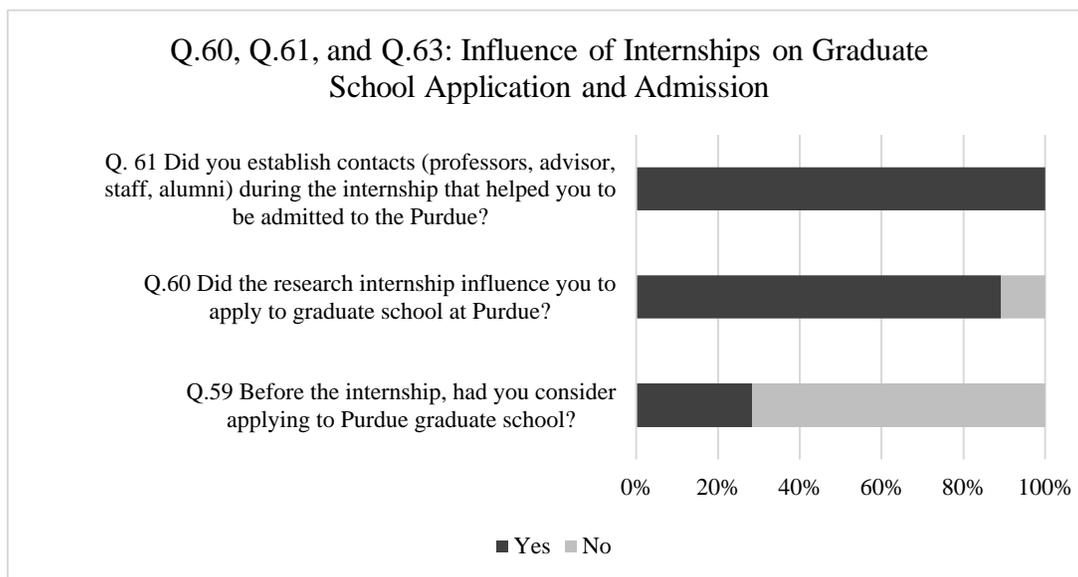


Figure 33. Influence of internships on graduate school application (n=46).

While internships might seem like a good way to recruit future grad school applicants, this study only surveyed the students who are currently in graduate school from Latin America. Any claim beyond the description presented previously would be an extrapolation of the data. To establish the actual “return rate” of interns as graduate students at Purdue, it would be necessary

to get university-wide information, about which there is little information about the type of records kept, and if the information exists, it is not publicly available.

As for the Colombia-Purdue Partnership (CPP) programs, which are well documented, the “return rate” at the time of writing this study is 20%, with 29 admitted students out of 147 interns at Purdue over the last few years. This percentage can be considered a positive and unexpected benefit of participation in the internship programs given that graduate admissions was not included as an explicit objective when these programs were instituted. This percentage is contingent upon many variables that are hard to control for the CPP stakeholders—e.g., there are personal and academic factors that condition the fulfilment of the requirements for graduate school application and would make an intern apply three or four years after the completion of the internship. So, the return rate cannot be assessed on a short-term basis. Equally important is the fact that not all former CPP interns apply to Purdue graduate school but may apply and be accepted by other graduate institutions. The lack of data on the graduate school student return rates of CPP interns or on how much the internship actually helped them to be admitted to other graduate schools prevents any conjecture in this regard. Informal accounts on the importance of the CPP internship in academic and personal aspects that eventually led to admittance to a graduate school in Colombia, or to any school other than Purdue, can only be handled currently as anecdotal information.

Returning to the discussion of all Latin American interns, the last question of the survey, presented in Table 12, asked them if, when considering all the previously mentioned aspects, they considered that the research internship or scholar visit helped them to be admitted to Purdue graduate school. The responses here agreed with their previous ones: 37 out of 46 Latin American graduate students were very confident that the internship helped them to be admitted

to graduate school, while six more students said the internship “probably” helped. Only three students responded they did not know or had no opinion on the matter.

Table 12. Do you think that in general the research internship helped you to be admitted to Purdue graduate school?

Q.64. Do you think that in general, the research internship helped you to be admitted to Purdue graduate school?	
Definitely yes	37
Probably yes	6
Do not know / No opinion	3
Probably not	0
Definitely not	0

But, as mentioned previously, the ultimate goal of the internships is not recruitment for graduate school, but to provide the interns with a research experience in a research university, a goal that all interns consider met as questions 56 and 58 (see Appendix D) and the interviews confirm:

*It [the internship] was positive because when I returned to Colombia, I arrived with new skills, I could do things, I could do more. (Alfonso:18)*

*There are many things I can't even count them because there are so many. I learned how to be a leader . . . [and] my English improved a lot with my internship. (Vicky:11)*

*I think that . . . I now understand how to do real research. I never did that in Colombia. Here I really learned what research is. (Margarita:23)*

*When I was here in 2015 I focused on the laboratory to acquire the skills I needed for the experiments. (Martin:14)*

Internships were a game changer for some of the students, but they are not the only way Latin Americans get to graduate school. As mentioned earlier, six of the thirteen interviewees were CPP interns, but from the seven remaining interviewees (who responded to the invitation to be interviewed and actually met the researcher), six had had some type of academic contact with

Purdue University professors or advisors, which leaves only one out of the thirteen interviewees with an independent application.

It turns out that independent applications without previous contacts at Purdue are rather unusual cases. During the interviews, it became apparent that graduate students established academic contacts with their Purdue advisors to be through academic conferences, internships in other American universities, their advisors in Colombia who were coresearchers with Purdue professors, or through professional connections based on independent informal academic agreements between professors:

*I come from the ICESI in Cali and they have kind of research program or summer course with a professor from my [current] department [at Purdue]. (Florinda:8)*

*I learned about Purdue because I came for the internship that my former PI back in Colombia suggested for me to meet my current PI. (Diana:11)*

*I met someone from Purdue that went to EAFIT [University] while I was working, and he described the university, the things you can do . . . and I knew a lot about Purdue because of all the contacts between Purdue and Colombia. (Clotilde:28)*

*I had the chance to meet my advisor before I studied my program. (Carmen:9)*

*I didn't apply by myself. At CIAT [The International Center for Tropical Agriculture] I met a professor and he was very interested in me coming to Purdue. He believed in my abilities and capabilities, his work made me choose Purdue and no other university. (Diomedes:25)*

These accounts underscore the importance of establishing academic contacts between researchers even if there are not academic agreements or official exchange or study abroad programs between institutions. Similarly, the interviews revealed another aspect of the Latin American graduate students at Purdue: there was a professor in their home country who believed in their potential to become a graduate scholar. In the excerpt above by Diomedes, he mentioned that a professor “believed in his abilities and capabilities,” which was not an uncommon reference across interviews. In fact, there were 13 references in the interviews, which became the node *Professor-Student Relationship*. Some samples from the interviews follow:

*One of my coworkers back home, he's a PhD graduate from Purdue University in the same department [I currently study]. So, I started talking to him, he was one of my bosses back there. I started to do my masters research and he was my advisor. So, once he saw all my capabilities, he told me that I could apply [to a PhD at Purdue].*

*(Nairo:17)*

*Then, she [internship advisor] told me why [don't you] come back for a PhD.*

*(Margarita:10)*

*[My advisor told me:] 'Yes, apply for the fellowship, you'll get it, don't worry' when I was asking myself who was going to accept me. (Clotilde:4)*

*I met this professor and he said: 'You should come to Purdue.' (Diomedes:12)*

*And now that I'm in graduate school, I think of my counselor who said that I first had to do a master's degree because that's the way this program is. (Marcela:14)*

*I always had to have meetings with my advisor here at Purdue, but through Skype, right? So, every week I had to present all the results that I had in my research back in Colombia, in my master. So, I think he was very interested in me because of that and that's why he proposed me to come here as a visiting scholar in first place. (Federico:2)*

The previous excerpts support the finding that professors, mentors, and advisors are key elements in the network of contacts that lead to a successful application. Along with the objectivity of the documents presented for admission, there is a subjective component in the way students are persuaded to pursue their graduate school goals. There are some cases in which the graduate students doubted of their own capabilities or did not see them as potentially valuable to Purdue graduate school, but they were motivated by a figure of academic authority to apply for graduate school. The emotional role that this vote of confidence by an academically respected figure plays is an important factor that goes hand-in-hand with the academically exceptional profile of the graduate students. Indeed, acknowledging and recognizing the scholarly potential of the interviewed students was a first step in bringing about the process that led to graduate school admission. Without the confidence of the advisor, professor, or mentor, the application process would have been different, to say the least, for many of the applicants. The reason professors in graduate students' home countries and at Purdue persuade outstanding students is clear: they see potential for success in the prospective student's and in their own scholarly endeavors. In this sense internships have created means for professors to recruit candidates with

known records of performance –i.e., the success of the programs works both ways: the professors encourage prospective students to apply and students find an opportunity to be admitted to a higher education institution that would have been less likely to admit them otherwise. The traits of the graduate students that are highly valued in the academic environment are explored in the following section.

### **Latin Americans at Purdue Graduate School as a Community of Practice**

While it would be a hard task and an oversimplification to condense the responses of the survey and the interviews into a few personal traits, it must be noted that there are some common elements among the responders that lead to some tentative generalizations on their personalities that extend beyond the information provided, there is at least a vibrant community of practice (COP) among the Latin Americans at Purdue graduate school.

As mentioned in the second chapter of this study, for a COP to exist, the members must share interests, experiences, and common goals (Norton, 2013). All the elements mentioned to this point in this chapter—which many of the participants of this study have in common (as well as those who did not participate and are represented by them)—start to shape the COP, which takes a more consistent form when they are admitted into Purdue graduate school. The constructs of the Latin American Purdue graduate students COP could be condensed to the following: investment, academically functional English language proficiency, overachiever traits, and their common domain.

Investment as a construct concentrates the complexities of the sociopolitical contexts of the Latin American region as well as the students' efforts made as academics in their undergraduate degrees. The essential point to understand about investment as a common trait of the Latin American graduate students at Purdue is that, regardless of their background, they are

part of a community that values learning and pursuing a degree as a valuable asset for their professional development. This sub-community of learners belongs to a community that is already small compared to the size of their region, as Latin American universities serve less than 10% of the population (Worldfund, 2017). The value given to education and pursuing a degree is not measurable, so it can only be assumed that the aspirations and values of the COP are important components of the identity of each individual.

The second trait of the Latin American COP at Purdue graduate school is the linguistic functionality in English, which, while it does have a range, is guaranteed by the admissions process to meet a common minimum proficiency level as assessed by internationally accredited tests. The academic functional proficiency in a second language (English) is another feature shared by the COP, which is not determined by geographical location but extends across the region and relies mainly on the investment, priorities, and expectations derived from their professional identity. It is important to note, though, that the COP as presented here exists informally; their members might not be aware of the commonalities they have.

The common domain of interest, and the one that actually brings together Latin Americans from different backgrounds to Purdue, is the scientific or scholarly pursuit of knowledge. The commitment to become part of the COP of graduate students with the expectation to hold a master's or PhD degree sets the group apart from any other community in their region of origin—or in the United States, for all the variables that are exclusively shared by them. Additionally, within the Latin American COP at Purdue graduate school, there is much room for subdivisions; for example, academically by college, school, and department and socially by nationality, common interests, and relationships, each of these narrowing the scope of the COP with many overlaps among them. To sum up in terms of Wegner-Trayner and Wegner-

Trayner (2015), COPs turn individuals into a community with a shared repertoire of resources that can be used to solve problems, approach challenges, and undertake initiatives.

The last trait of the Latin American COP at Purdue graduate school is one related to personality: most of the member of the COP are overachievers. As stated earlier, the individuals that make it to graduate school at Purdue are not part of the majority of the alumni of Latin American colleges, as they usually are highly motivated and have a relatively high proficiency compared to their peers; and in addition to that, thanks to the interviews, it is reasonable to say they are overachievers. During the interviews, all the responders made references to their past experiences, and most of them revealed an intrinsic and transversal desire to go above and beyond their call of duty. The interviewees presented their overachiever traits in different ways, which included volunteering, self-discipline, and academic honors. In fact, most of them stated directly or indirectly that they were either in or at the top of their classes:

*I was top of my class, not only in my undergrad program but also in high school and everything before that. So, I think that's a way to say that I was more disciplined than the others and somehow, I take more advantages of all the things that were taught. (Nairo:14)*

*Most of the time I did not keep only what was said by the teachers and I went beyond the contents [of the class]. (Jaime:23)*

*I was the best student in my class when I graduated, so I guess that made a difference. (Carmen:18)*

*When I was in college I had the opportunity to be a teaching assistant, which is uncommon for an undergraduate student. (Vicky:16)*

*I worked at the university as teaching assistant. I also did research with a Colombian professor. (Martín: 24)*

It is not strange to find that the students that made it to Purdue graduate school are part of the best students in their cohorts and colleges, but it is interesting to find that their accomplishments in the academic field are usually accompanied by a strong motivation evident in their discipline. This discipline could be linked to resourcefulness and taking advantage of learning opportunities beyond the classroom, as can be seen in the following interview excerpts:

*I was really determined in accomplishing my career goals. (Nairo:19)*

*I read a lot and I liked Harry Potter since I was about eight years old. My dream was to read Harry Potter in English. So, I started reading it, looking for words and making my little dictionary. More than at an academic level, it was at the level of experience. I liked reading and listening to music. I liked listening to lectures rather than listening to music. Chats and conversations [in English]. (Marcela:10).*

*Yes, [I improved my English proficiency] out of curiosity because it was something I liked and not something I had to do. I am stubborn. If I want something, I get there no matter what. That's something that got me to Purdue. (Diomedes:21)*

The overachieving attitudes of the graduate students earlier in their lives were transferred socially to initiatives in which they were leaders or took part voluntarily. Being part of research groups, consultant groups, teaching assistantships, or community service eventually led them to enhance their skills and enrich their profile with meaningful experiences. Many of these experiences could also help in understanding the good academic and social relationships of the graduate students with their professors and advisors in their home countries, as sometimes as students they worked or volunteered for them:

*I consider that I am a person who is interested in cooperating. . . . I started the website of my research group without anyone asking for it. (Margarita:2)*

*I worked at the university as teaching assistant. I think this helped me to have a good CV. I also did research with a Colombian professor. This made me have strong research abilities before coming to Purdue. (Martin:19)*

*I volunteered for a German library in my college. (Marcela:15)*

*I was always close to my teachers. In the first semester, there was a teacher who was doing her PhD in Colombia and I helped her make transcripts of her interviews. At first, I did it as a volunteer, but in the end, she paid me. (Jaime:16)*

*I volunteered in the national park system during summer. I also helped in the organization of a couple of conferences in my area that my college was organizing. (Carmen:23)*

In Latin America, there are many opportunities for volunteering, but institutions of higher education and employers do not encourage community service as in other regions of the world. In fact, volunteering in Latin America lacks the motivational perk that it has in the American context (e.g., volunteering transcriptions and a line of community service on one's CV). This might explain why volunteering is not common among college students in Latin America.

Many members of the Latin American COP of graduate students at Purdue University use some of the academic resources available on campus or in the Greater Lafayette area to support their academic endeavors and as a way to continue their social and personal development process. All the resources referenced in the following excerpts are not part of the students' formal plans of study:

*I'm trying to write a cover letter or a statement of purpose and those things. . . . I attended to a Center for Career Opportunities workshop. (Clotilde:22)*

*I was in a cheerleading club, but I was also part of the Boiler Catholics. They were very interesting because in those clubs we were studying the bible, in Saint Thomas. There were already things in the Bible that I knew in Spanish but listening to them in English not only allowed me to learn vocabulary, but also to understand that some things here are understood differently. (Margarita:18)*

*I was a board member in the Colombian Student Association. I was the secretary. We went to a lot of meetings, we organized a lot of discussions, we organized an academic event in which we brought some professors here. (Alfonso:20)*

*I'm attending some workshops that the graduate school has and some workshops in the Writing Lab. (Martin:16)*

As can be seen, most of the Latin American graduate students interviewed take advantage of the resources provided by Purdue University as well as the opportunities of social integration, not only as mere participants but in some cases as leaders or board members.

## CHAPTER 5. CONCLUSIONS

### **Research Question 1: What are the language, academic, and cultural experiences of Latin American students admitted to Purdue graduate school?**

The language and the academic and cultural experiences of Latin American graduate students at Purdue are varied due to the wide range of backgrounds they represent. During high school, Latin American English language learners do not experience the gains that might allow them to achieve intermediate levels in proficiency, which are based on the time and amount of exposure to English language lessons. The results of the survey and the interviews show that most of the Latin American graduate students at Purdue do not have favorable opinions about the way English is taught in high school, and their scores in the proficiency scores do not seem to be strongly influenced by early language instruction. As the researchers Baker and Wright (2017) point out, the relationship between age and language acquisition is still a controversial issue; on one hand, studies do show evidence that early classroom language lessons or exposure lead to a higher proficiency; but on the other hand, studies show that highly motivated late learners or adults can achieve native-like competence in a second language. The length of exposure to second language lessons is closely linked to the quality of the instruction, but as the interviews suggest, in most cases the contents of English lessons are repetitive and too basic to achieve a level of competence that corresponds with the aspirational expectations and demands of the educational systems of Latin America. The Latin American governments' efforts aimed to improve the English proficiency of the region, for the time being, rely on the time of exposure, as there are many limitations that do not allow for relying on the quality of instruction, including a large number of students per classroom, instructors with little or no training, and a lack of learning resources to support the teaching process, among others.

Supplementary and additional English instruction, beginning with instruction as young adults, is the most common trend among Latin American graduate students at Purdue. After high school, the highly motivated and disciplined learners took advantage of the opportunities and resources at hand, including but not limited to English lessons at college or in private institutions. As adults they used the learning strategies that they found the most effective to aid in their language learning process and combined them with opportunities for professional growth. The opportunity that Latin American English language learners had to catch up on English proficiency during adulthood with successful language learners from other parts of the world — to the point of achieving a graduate school proficiency score requirement— should be a motivating factor for prospective graduate students from the same region who, despite having unsuccessful EFL courses in school, may still find strategies (similar to the ones used by graduate students at Purdue) to overcome limitations in English proficiency that may hinder their opportunities.

Students that come to Purdue from Latin America do not belong to the majority of their respective cohorts and could be labeled, due to their academic status, as exceptional cases for many reasons, including but not limited to English language training, motivation, discipline, priorities, and expectations. Their learning experience with English in high school did not represent great gains in proficiency and seldom matched the expectations and demands of their broader educational system. In general, they have negative views on language instruction in Latin American schools. On the other hand, they have positive views on their college instruction in general, and during college, both their professional skills and their English language proficiency improved due to different factors, catalyzed by their motivation and discipline. The most important factors that influenced their language proficiency were international/study abroad

experiences, whether academic or not; formal, meaningful English instruction in college; and self-study. In fact, as Latin Americans at Purdue graduate school come from diverse socioeconomic and academic backgrounds, the beginning of their COP was in college, when they were “conditioned” by their undergraduate environment to shape their profile to be eligible for graduate school in the U.S.

**Research Question 2: What are the English language learning characteristics of the Latin American students admitted to Purdue graduate school?**

When focused on the English language learning characteristics of the Latin American students admitted to Purdue graduate school, we find that in college the learning trends and experiences are clearer than in high school. Most of their English proficiency development took place during their college years through English instruction in college or in private language centers. Nonetheless, students who took English courses in college had higher proficiency in academic-based tests, such as the TOEFL iBT.

The trend is clear: the higher the number of semesters of English instruction, the higher the TOEFL iBT scores. Students who did not take the English in college had lower scores than any other group that took at least one semester of English language instruction in college. This can be explained by the fact that English in college is closer to the academic English requirements of the TOEFL iBT and IELTS, or it may be because of the amount of exposure the students had in the months or years before taking the proficiency test. The reasons for students not taking English classes in college are diverse: they could have tested out at the beginning of college by meeting the minimum proficiency level required; they could have chosen to study English in a different setting from college; or they were not required to meet a minimum proficiency level by the university. It must be remembered that almost half of the respondents did not have a language requirement in college.

One interesting trend found in the data from the survey was that those Latin American Purdue graduate students who did not take test preparation courses had higher total English proficiency scores than those who took them. Taking a test preparation course might be interpreted as a strategy to compensate for weaknesses in language skills with test expertise. Likewise, more than half (52%) of the Latin American graduate students at Purdue who had a language requirement for graduation in college enrolled in a non-degree language course, either in a private language institute, in another university that offers courses language courses to the general audience, with a private tutor, or in a language club. The reasons for this trend are diverse, but the interviews revealed that some of them are strong critics of the English instruction methods and priorities across high school and college. Most Purdue graduate students from Latin America are overachievers; and those who are not functionally proficient in English at the time of the application (44 of the survey respondents) are persistent enough to accomplish the English proficiency cut scores, in some cases, after four or more attempts. As a group, this determination might explain the extra language training they had even when they were not required, or when their language requirement was going to be met with completion of the English courses in college. This trend reinforces the hypothesis that they have an unfavorable view of the formal educational system regarding language instruction.

**Research Question 3: Which experiences of Latin American students admitted to Purdue graduate school may have impacted their admission?**

The experiences of Latin American students admitted to Purdue graduate school that impacted their admission were academic excellence, intermediate/advanced English language proficiency, and academic contacts with Purdue professors; additionally, many of them have had international experiences in countries with a foreign language, or more importantly, an academic experience in the United States.

The academic experiences (e.g., internships and scholar visits) at Purdue or other universities in the U.S. are some of the most important experiences for the Latin Americans at Purdue, as they paved the way for their admission to graduate school by establishing academic connections with professors who played an important role in the admission process. Regardless of the type of academic experience—including contact with Purdue faculty during international conferences or meeting Purdue faculty while working with their advisors in their home country—there are two main factors, or starting points, that affect language use in academic settings: evidence of English proficiency previous to the academic experience and professor-student contact in formal contexts. The results of the present study confirm the outcomes of the Gallup-Purdue index (2014), which found that aspects such as support and enriching experiences during college had a stronger influence on long-term goals of college graduates than aspects related to graduates' academic and workforce preparation. In fact, for college graduates the level of engagement at work and the choice to pursue personal dreams was highly influenced by three factors that have been also argued as important in the present study: (1) being mentored by professors who excite them about learning, cared for them as persons and who encouraged them to pursue their dreams, (2) working on projects with long-term products or research, and (3) being selected for an internship/job that allowed them to apply what they had learned in the classroom (Gallup Inc., 2014).

In the case of internships sponsored by inter-institutional agreements, the case of Colombia stands out thanks to the Colombia Purdue Partnership, which explains why Colombia is the country with the highest number of interns and also the Latin American country with more potential in recruitment of graduate students for Purdue. At their least ambitious level, the CPP internships are effective in bringing people to Purdue during their undergraduate education to

give interns an international academic/research experience. Also, internships might work as a recruiting strategy for professors who may find traits of future graduate students in the interns. Despite having growing trends in the years preceding its creation, with the beginning of the CPP the population of Colombian students at Purdue graduate school grew by 100% in 6 years. Nonetheless, even after good performances during the internships and willingness to pursue graduate studies, many Colombian prospective students may not achieve the language proficiency cut scores to be admitted to Purdue. To put it in other words, language proficiency and cultural characteristics appear as critical variables of Colombian applicants and are certainly among the significant factors that contribute to the success or failure of the enrollment efforts (T. Atkinson, personal communication, October 1, 2016). In particular, some prospective Colombian graduate students have been unable to achieve the required TOEFL-iBT scores (Writing, 18; Speaking, 18; Listening, 14; Reading, 19; Total, 77), even after residence as sponsored research interns (Rodríguez-Fuentes and Levy, 2015).

Academic meetings during the internship are extremely important to develop interns' language proficiency, especially because they do not have formal language training while at Purdue. Regarding the language used during the internships of graduate students at Purdue from Latin America, the students' TOEFL scores in productive skills (speaking and writing) interacted with the language used with their advisors during the six months that the internship lasted. The nature of these advisor-student conversations is assumed to be closer to the academic register, which is the same used by English proficiency tests such as the TOEFL and IELTS. At the same time, interns used both English and their L1 (Spanish or Portuguese) to interact and establish social relationships. In fact, most of their non-academic interactions were in their L1. This is expected because of the short time provided to establish new social relations and the few

opportunities to make American/international acquaintances, which results in students sticking to the Latin American community at Purdue, including fellow interns and roommates. In fact, the interns that used their L1 more than English in informal interactions with roommates and acquaintances had higher TOEFL scores for Purdue graduate school admission.

Interns expressed that language training would be a great addition to the internships, but while it is not currently an available option, language exposure and interaction in English in academic settings must be maximized, not only with professors but with peers. Moreover, interns value the fact that, while at Purdue, they are exposed not only to American varieties of English but to the English of other international students. As graduate students, former Latin American interns consider that, given the large number of international scholars at Purdue, getting used to different varieties of English and accents could be as important as understanding the American varieties they expected to be in contact with.

In general, study abroad programs for adults, mainly internships, have great potential for recruiting and bolstering graduate students from Latin American countries. In the case of the CPP internships, it is hard to tell the actual successful recruitment rate for graduate school of students with internships, as there is not a defined time for application after the internship is completed. To get an actual recruitment rate, it would be necessary to set a time frame (comprising the time between the end of the internship and the application date) to get the numbers, and there is no clear pattern for establishing this period. As it is possible that some students start their application as soon as they return to Colombia, others need more time, sometimes years, to fulfill the application requirements. Students need to fulfill different requirements for graduation according to their programs, and there are many types of personal constraints that affect the time between the internship and the actual application or admission

date. Likewise, many former interns use the experience and knowledge gained during the six months at Purdue to apply to different universities.

In any event, return rates has not been one of the measures of success of the CPP internship programs and any return as graduate students can be considered an unintended and clearly positive indication of success. To determine if the CPP internships have been a success in terms of return rate of interns as graduate students, different ways to evaluate success need to be taken into account. Firstly, the CPP internship programs as such and some parts of the recruitment process are not stable; in fact, they are heavily conditioned by the practical needs and budget constraints of the universities involved. For instance, despite stakeholders recognizing that language instruction must be an important part of the internships, the program's tight budget does not allow it to be part of the training at Purdue. Likewise, an established threshold for language proficiency has not been established as part of the recruitment process. In other words, the 16% return rate of interns as graduate students to Purdue during Spring 2018 could be seen as both a success or a failure depending of the type of factors evaluated. In Spring 2018, CPP interns accounted for 24% of the Colombian population at Purdue graduate school, but again, as clear objectives beyond accomplishing the research experience have not been established, there is no way to judge the success of the CPP internships in other aspects, for instance, by return rates to Purdue graduate school or other universities.

Despite all the challenges at UNAL and at Purdue, for most stakeholders, the CPP internships have been successful. In order to make the CPP internship program stronger, it is recommended to add the systematic track of admission and matriculation to the outcomes of the internships. Other aspects that would be beneficial for the CPP internship programs are to:

- be clearer about the expected proficiency levels that interns are expected to have. This threshold might be set in CEFR proficiency level or in the scale of an updated, reliable and valid proficiency test.
- create a database with contact information of the interns to track the influence of the internship with surveys or interviews.
- establish the indicators of accomplishment and success of the program by cohort and by benchmarks tracked over the long-term. (e.g., academic events attended, completion of research projects, application rates to Purdue graduate school, application rates to other universities' graduate schools, expected time frame of application after the internship, etc.)
- assist interns who are offered or express desire to return to Purdue as graduate students.
- keep track of the academic programs in which interns are more valued by their skills.
- monitor the academic programs in which interns and Latin American students are underrepresented.
- host training sessions with Purdue professors/mentors/advisors about intercultural issues that allow them and the interns to explore all the potential skills of interns without possible cultural and linguistic aspects hindering the process.
- explore formal English language training options during the internship at Purdue or make enrollment in free the Purdue Language and Exchange Program (PLaCE) short courses part of the duties of the internship.
- ask Purdue professors about the areas of research with the highest demands by field and use the information for the selection process of the interns and for determining the priorities in the training in the Colombian universities that send interns to Purdue.

#### **Research Question 4: Are there any socioeconomic status patterns or groups in the Latin American graduate student population at Purdue?**

With regard to socioeconomic background, as Figures 7 and 8 showed, the Latin American students at Purdue graduate school do not match the proportions of the actual Latin American population in terms of daily income. The majority of Purdue students from Latin America come from the higher end of the middle-class (level 4 out of 7), and their curve looks normally distributed with representation from all socioeconomic backgrounds. On the other hand, the Latin American population's income is heavily skewed to the left (Figure 8a) with more than 50% of the population earning less than 10 USD per day. Understanding that there is diversity in places of origin, ethnicity and socioeconomic status can help to design plans to balance the educational opportunities that Purdue can provide to better address the needs of the Latin American population in terms of language and cultural training.

#### **Limitations**

Importantly, as the current study is limited by the lack of availability of information from the Latin American students who were not admitted to graduate school, other types of inferential statistics could not be run in order to compare the proficiency and experience between admitted and non-admitted students. Establishing the patterns of admitted and not-admitted students could show a clearer picture of the educational, linguistic and social factors that affect Latin American students' admissions to Purdue.

Access to records of former interns who did not apply for graduate school or applied to a school different from Purdue was not available. It would have been interesting to explore the "unsuccessful cases" to give robustness to the conclusions of this study. Likewise, for reliability

purposes, it would have been ideal to access to the actual language proficiency scores used for application, but due to their confidentiality it was not possible, and the proficiency scores used in the study were self-reported.

Also, there were several themes from the interviews that, if they had been discovered earlier, would have been turned into survey items during the process of revising and refining (e.g., how the training and methods used in private language institutes made the English language experience more motivating and successful than those used in formal training).

It is also important to acknowledge the role of the researcher as a member of the Latin American graduate school community at Purdue University. The researcher was not a participant in the data collection stage to avoid bias.

## **APPENDIX A. SURVEY - LATIN AMERICAN GRADUATE STUDENTS AT PURDUE UNIVERSITY**

### **Q1 RESEARCH PARTICIPANT INFORMATION SHEET**

Language and Cultural Influences on Latin American Students Admitted to Grad School at Purdue University  
Researcher: Rodrigo A. Rodriguez-Fuentes, Ph.D. Candidate April Ginther, Ph.D. Professor Second Language Studies English Department Purdue University

**What is the purpose of this study?** This study explores, among a diversity of experiences, common factors, language and culture wise, that contributed to the admission of Latino applicants to graduate school at Purdue University. This study aims to identify key elements in the academic and cultural influences to make them part of future syllabi in educational programs that encourage students to study in graduate programs in similar contexts as Purdue.

**What will I do if I choose to be in this study?** Participants who elect to be included in the study will complete a survey designed specifically for this project. You will be asked a series of questions and your answers will be recorded. Completing the survey will take approximately 10-15 minutes. At the end, one question about personally identifiable information will be asked and the respondent will choose if it chooses to answer it or not.

**How long will I be in the study?** The only participation required is the completion of the survey, which takes approximately 10-15 minutes. In case you want to be contacted for a short follow-up interview, the information collected in the last question will be used. Your answers to the questions will be included in ongoing research on language and cultural influences on Latin Americans students admitted to graduate school at Purdue University over

the next year and may also be reported in publications about this research over the next several years.

**What are the possible risks or discomforts?** There are no expected risks or discomforts. Participants need only to answer a series of multiple-choice questions.

**Are there any potential benefits?** Your answers to the survey questions will help to create knowledge about important factors and priorities in the Latin American educational system that aim to increase the number of graduate students from Latin America in countries with English language as a means of instruction, and with academic dynamics similar to those of Purdue University. This information may be used to inform Latin American educational policy and/or help to support new and existing resources in the Purdue campus.

**Will information about me and my participation be kept confidential?** Yes, all records of this survey will be kept confidential. Despite this survey has a question in which your identifiable information is asked, you can choose not to respond to this question. In either case, the project's research records, which may include your answers to the survey questions, will be reviewed by departments at Purdue University responsible for regulatory and research oversight.

**What are my rights if I take part in this study?** Your participation in this study is voluntary. You may choose not to participate or, if you agree to participate, you can withdraw your participation at any time without penalty or loss of benefits to which you are otherwise entitled.

**Who can I contact if I have questions about the study?** If you have questions, comments or concerns about this research project, you can talk to the principal researcher. Please contact Rodrigo A. Rodriguez-Fuentes at [rodri246@purdue.edu](mailto:rodri246@purdue.edu) or (765) 476-

1141, or Professor April Ginther at [aginther@purdue.edu](mailto:aginther@purdue.edu) If you have questions about your rights while taking part in the study or have concerns about the treatment of research participants, please call the Human Research Protection Program at (765) 494-5942, email ([irb@purdue.edu](mailto:irb@purdue.edu)) or write to: Human Research Protection Program - Purdue University Ernest C. Young Hall, Room 1032 155 S. Grant St. West Lafayette, IN 47907-2114 **I have read, understand, and agree to the above**

Yes (1)

No (2)

---

Q2 In what country did you attend high school?

- Argentina (1)
- Bolivia (2)
- Brasil (3)
- Chile (4)
- Colombia (5)
- Costa Rica (6)
- Cuba (7)
- Ecuador (8)
- El Salvador (9)
- Guatemala (10)
- Honduras (11)
- México (12)
- Nicaragua (13)
- Panamá (14)
- Paraguay (15)
- Puerto Rico (16)
- Perú (17)

- República Dominicana (18)
  - Uruguay (19)
  - Venezuela (20)
- 

Q3 How much time have you spent in the United States or any other English speaking country altogether?

- 1-6 months (1)
  - 6-12 months (2)
  - 1-1.5 year (3)
  - 1.5-2 years (4)
  - 2-3 years (5)
  - 3-4 years (6)
  - 4-5 years (7)
  - 5-6 years (8)
  - 6-7years (9)
  - >7 years (10)
-

Q4 What was the primary language spoken in your home as a child?

Spanish (1)

Other. Which one? (2) \_\_\_\_\_

-----

Q5 In what country did you attend college?

- Argentina (1)
- Bolivia (2)
- Brasil (3)
- Chile (4)
- Colombia (5)
- Costa Rica (6)
- Cuba (7)
- Ecuador (8)
- El Salvador (9)
- Guatemala (10)
- Honduras (11)
- México (12)
- Nicaragua (13)
- Panamá (14)
- Paraguay (15)
- Puerto Rico (16)
- Perú (17)

- República Dominicana (18)
  - Uruguay (19)
  - Venezuela (20)
- 

Q6 From 1 (very low) to 7 (very high), what was your socioeconomic status back in your country of origin?

- 1 (1)
  - 2 (2)
  - 3 (3)
  - 4 (4)
  - 5 (5)
  - 6 (6)
  - 7 (7)
- 

Q7 From what type of institution did you get your high school diploma?

- Public (1)
- Private (2)

---

Q8 Did you study in a bilingual English/Spanish or English/Portuguese school?

- Yes (1)
- No (2)
- 

Q9 What type of high school diploma did you obtain? Choose the one that applies the most.

- Academico (1)
- Tecnico (2)
- Comercial (3)
- Normalista (4)
- International Baccalaureate (IB) (5)
- Other. Indicate: (6) \_\_\_\_\_
- 

Q10 Did you take English language classes in high school?

- Yes (1)
- No (2)
-

*Display This Question:*

*If Q10 = Yes*

Q11 Give a rough estimate of how many hours per week you took English language classes in high school.

- 1-2 (1)
- 3-4 (2)
- 5-6 (3)
- 7-8 (4)
- 8-9 (5)
- 10-11 (6)
- 12-13 (7)
- 13-14 (8)
- >15 (9)

---

*Display This Question:*

*If Q10 = Yes*

Q12 Give a rough estimate of how many hours per week you took classes that used English as a means of instruction (Biology in English, Social Studies in English, etc) in high school (other than English language classes).

- I did not receive any content classes in English (10)
- 1-2 (1)
- 3-4 (2)
- 5-6 (3)
- 7-8 (4)
- 8-9 (5)
- 10-11 (6)
- 12-13 (7)
- 13-14 (8)
- >15 (9)

**End of Block: Intro and High School**

---

**Start of Block: College Education Background**

Q13 In which university did you complete your undergraduate degree?

\_\_\_\_\_

-----

Q14 In which college (facultad) did you study in your undergraduate university?

---

---

Q15 What was your undergraduate degree in?

---

---

Q16 How many semesters did you take English classes as an undergraduate?

- I did not take English language classes as an undergraduate (6)
  - 1 semester (1)
  - 2 semesters (2)
  - 3 semesters (3)
  - 4 semesters (4)
  - 5 semesters (5)
  - 6 semesters (12)
  - 7 semesters (13)
  - 8 semesters (14)
  - 9 semesters (15)
  - 10 semesters (16)
-

Q17 What levels of English did you take as an undergraduate? Choose all that apply

- I did not take English language classes as an undergraduate (7)
  - Low Basic / A1 (1)
  - High Basic / A2 (2)
  - Low Intermediate / B1 (3)
  - High Intermediate / B2 (4)
  - Low Advanced / C1 (5)
  - High Advanced / C2 (6)
- 

Q18 Was a certain English proficiency level (or certification) a requirement to graduate from your university?

- Yes (1)
  - No (2)
  - Not Applicable / I do not know (3)
- 

*Display This Question:*

*If Q18 = Yes*

Q19 What was the minimum English proficiency level required by your university for obtaining your undergraduate degree?

- Low Basic / A1 (1)
  - High Basic / A2 (2)
  - Low Intermediate / B1 (3)
  - High Intermediate / B2 (4)
  - Low Advanced / C1 (5)
  - High Advanced / C2 (6)
- 

Q20 Had you been to other (non-Spanish/Portuguese dominant) countries prior to coming to Purdue?

- Yes (1)
  - No (2)
- 

*Display This Question:*

*If Q20 = Yes*

Q21 How many times have you traveled to other (non-Spanish/Portuguese dominant) countries prior to coming to Purdue?

- 1 (1)
- 2 (2)
- 3 (3)
- 4 (4)
- 5 (5)
- 6 or more times (6)

---

*Display This Question:*

*If Q20 = Yes*

Q22 What was the main purpose of your travel abroad? Choose all that apply.

- Study (1)
- Vacation (2)
- Camp (5)
- Visit family / friends (8)
- Language training (3)
- Other. Indicate: (4) \_\_\_\_\_
-

*Display This Question:*

*If Q20 = Yes*

Q23 List the countries you have visited. You can include the same country more than one time, if necessary.

- Visit 1 (1) \_\_\_\_\_
- Visit 2 (2) \_\_\_\_\_
- Visit 3 (3) \_\_\_\_\_
- Visit 4 (4) \_\_\_\_\_
- Visit 5 (5) \_\_\_\_\_
- Other visits: (6) \_\_\_\_\_

*Display This Question:*

*If Q20 = Yes*

Q24 How long did you stay for each visit? Indicate the number of days, weeks, months, or years for each each.

- Visit 1 (1) \_\_\_\_\_
- Visit 2 (2) \_\_\_\_\_
- Visit 3 (3) \_\_\_\_\_
- Visit 4 (4) \_\_\_\_\_
- Visit 5 (5) \_\_\_\_\_
- Other visits: (6) \_\_\_\_\_

Q25 Which English proficiency test did you use to apply to Purdue? Based on your response you will be directed to a different scale.

- TOEFL (INTERNET based test) (1)
- IELTS (2)
- Pearson Test of English (4)
- TOEFL (PAPER delivered test) (6)
- Other. Which one? (3) \_\_\_\_\_

*Display This Question:*

*If Q25 = TOEFL (INTERNET based test)*

Q26 What were your scores by skill?

( 3 € 5 1 1 1 2 2 2 3  
2 5 8 1 4 7 0

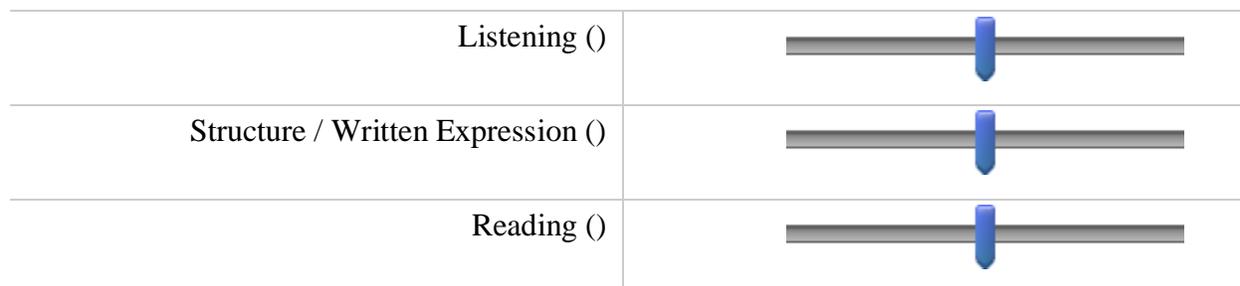
Listening ()	
Reading ()	
Speaking ()	
Writing ()	

*Display This Question:*

*If Q25 = TOEFL (PAPER delivered test)*

Q27 What were your scores by skill?

3      3      3      4      4      5      5      5      6      6      6  
1      5      8      2      6      0      3      7      1      4      8

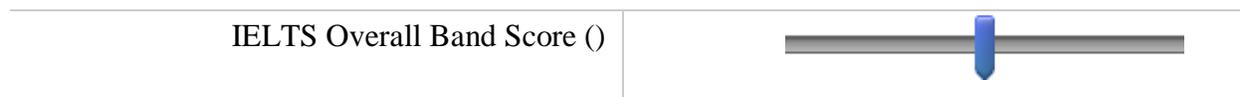


*Display This Question:*

*If Q25 = IELTS*

Q28 What was your band score?

1      2      3      4      5      6      7      8      9



*Display This Question:*

*If Q25 = Pearson Test of English*

Q29 What was your score?

10      20      30      40      50      60      70      80      90

---

PTE Global Score ()

---



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Q30 Did you take additional English language courses **in your home country** beyond the required courses for undergraduate degree? Choose all that apply.

- No, I did not take additional courses (5)
  - Yes, at a university (1)
  - Yes, with a private language institute (2)
  - Yes, with a private tutor (3)
  - Other. Explain: (4) \_\_\_\_\_
- 

Q31 Have you taken a TOEFL/IELTS (or equivalent proficiency test) preparation course?

- Yes (1)
  - No (2)
-

Q32 How many times did you take TOEFL/IELTS before being accepted to Purdue?

- Once (1)
  - Twice (2)
  - 3 times (3)
  - 4 times or more (4)
-

Q33 What is your college at Purdue?

- Engineering (1)
  - Science (2)
  - Education (3)
  - Technology (4)
  - Agriculture (5)
  - Liberal Arts (6)
  - Veterinary Medicine (7)
  - Management/Business (8)
  - Health and Human Sciences (9)
  - Pharmacy (10)
  - Purdue Polytechnic (12)
  - Other. Which one? (11) \_\_\_\_\_
-

Q34 What degree are you pursuing at Purdue?

- M.A. (1)
- M.F.A. (2)
- M.S. (3)
- M.B.A. (4)
- Ph.D. (5)
- Other. Which one? (6) \_\_\_\_\_
- 

Q35 What is the name of your specific degree program at Purdue? (e.g., Comparative Literature or Mechanical Engineering).

\_\_\_\_\_

---

Q36 Did you have any previous experience at Purdue before coming to graduate school (i.e., Internship, visiting scholar)?

- Yes (1)
- No (2)
- 

*Display This Question:*

*If Q36 = Yes*

Q37 In which program did you have a previous experience at Purdue before coming to graduate school?

- Undergraduate Internship (1)
- Visiting Scholar (2)
- Academic Exchange (3)
- Other. Please Indicate: (4) \_\_\_\_\_

**End of Block: College Education Background**

---

**Start of Block: Prior experiences (ONLY FOR FORMER INTERNS)**

Q38 In which college did you have the research internship at Purdue?

- Engineering (1)
  - Science (2)
  - Education (3)
  - Technology (4)
  - Agriculture (5)
  - Liberal Arts (6)
  - Veterinary Medicine (7)
  - Management/Business (8)
  - Health and Human Sciences (9)
  - Pharmacy (10)
  - Purdue Polytechnic (12)
  - Other. Which one? (11) \_\_\_\_\_
-

Q39 Indicate the time of your research experience / scholar visit at Purdue

- Fall 2012 (1)
- Fall 2013 (2)
- Fall 2014 (3)
- Fall 2015 (4)
- Spring 2016 (5)
- Fall 2016 (6)
- If more than one semester, please indicate period: (7)
- 
- Other time: (8) \_\_\_\_\_
- 

Q40 To be eligible for the research internship/scholar visit, did you have to provide evidence of your English proficiency?

- Yes (1)
- No (2)
- 

*Display This Question:*

*If Q40 = Yes*

Q41 Did your internship require a certain level of English proficiency for eligibility?

Yes (4)

No (5)

---

*Display This Question:*

*If Q40 = Yes*

Q42 What exam was used to assess your English proficiency for the internship?

---

*Display This Question:*

*If Q40 = Yes*

Q43 On this English exam, what was your total score or level?

---

Q44 Did you have English language training specifically TO PREPARE YOU for the internship?

Yes (1)

No (2)

---

*Display This Question:*

*If Q44 = Yes*

Q45 What type of English language training?

- Intensive English language course (1)
- Other. Please indicate: (2) \_\_\_\_\_

**End of Block: Prior experiences (ONLY FOR FORMER INTERNS)**

---

**Start of Block: Research Internship (ONLY FORMER INTERNS)**

Q46 During the internship/visit, did the professor assigned to work with you hold regularly scheduled meetings with you?

- Yes (1)
- No (2)
-

Q47 How often did you meet your professor to discuss your assignments and duties?

- Never (8)
- Once a month (1)
- Twice a month (2)
- Once a week (3)
- Twice a week (4)
- Three times a week (5)
- Every day (6)
- Other (7) \_\_\_\_\_
- 

Q48 What were your duties as a research intern at Purdue? **Choose all that apply.**

- Bibliographical Research (1)
- Laboratory Assignments (2)
- Office Assistant (3)
- Field work (gather data or samples) (4)
- Other. Please explain: (5) \_\_\_\_\_
-

Q49 During the research internship, what was the primary language you used to communicate with your

	Spanish more than English (1)	English more than Spanish (2)	Both Spanish and English equally (4)	Other (3)
professor/advisor? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
roommates? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
friends and acquaintances? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
fellow interns? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q50 Were you required to have formal English language training at Purdue DURING the internship?

Yes (1)

No (2)

*Display This Question:*

*If Q50 = Yes*

Q51 If you had formal language training at Purdue during the internship, how would you rate it?

Excellent (1)

Good (2)

Average (3)

Poor (4)

Terrible (5)

---



---

Q53 In a regular week, during your internship/visit, of all the time you spent speaking in any language, what (estimate) percentage of time were you speaking in English?

- 0-9 % (1)
  - 10% (2)
  - 20% (3)
  - 30% (4)
  - 40% (5)
  - 50% (6)
  - 60% (7)
  - 70% (8)
  - 80% (9)
  - 90% (10)
  - 100% (11)
-

Q54 During the internship/visit, indicate how important each of these goals was.

	Not important (1)	Slightly important (2)	Moderately important (3)	Important (4)	Very important (5)
Global understanding (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal development and growth (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledge of the USA and its culture (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
English language skills (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-confidence and problem solving skills (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding of your home country (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cross cultural skills (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Career goals (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional development and/or contacts (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adventure (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Academic goals:  
minor, major or  
graduate studies  
(11)

Meet new  
people/make  
friends (12)

Other. Indicate:  
(13)

Q55 For the goals that were important to you, to what extent did you succeed in accomplishing the following?

	Not Applicable (1)	Not at all (2)	Very little (3)	Somewhat (4)	To a great extent (5)
Global understanding (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal development and growth (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Knowledge of the USA and its culture (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
English language skills (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Self-confidence and problem solving skills (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding of home country (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cross cultural skills (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Career goals (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Professional development and/or contacts (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Adventure (10)	<input type="radio"/>				
Academic goals: minor, major or graduate studies (11)	<input type="radio"/>				
Meet new people/make friends (12)	<input type="radio"/>				
Other. Indicate: (13)	<input type="radio"/>				

---

Q56 All things considered, to what extent did you succeed in accomplishing your goals?

- Not at all (1)
  - Very little (2)
  - Somewhat (3)
  - Satisfactorily (5)
  - To a great extent (4)
-

Q57 Rank the following reasons for which you consider an internship in United States to be different from being in your home country (1 the highest). You can drag the options to rank them.

- \_\_\_\_\_ of the laboratories, equipment and technology in the working environments (1)
  - \_\_\_\_\_ the research paradigm used in my field (2)
  - \_\_\_\_\_ interaction professor-student (3)
  - \_\_\_\_\_ Other(s). Please explain. (4)
- 

Q58 Overall, how would you rate the quality of the internship program/visit.

- Excellent (1)
- Good (2)
- Satisfactory (3)
- Poor (4)
- Terrible (5)

**End of Block: Research Internship (ONLY FORMER INTERNS)**

---

**Start of Block: Influence of the internship for graduate school (ONLY FORMER INTERNS)**

Q59 Before the research internship, did you consider applying to graduate school?

- Yes (1)
- No (2)

---

Q60 Did the research internship influence you to apply to graduate school at Purdue?

Yes (1)

No (2)

---

Q61 Did you make contacts (professors, advisor, staff, alumni) during the internship that helped you to be admitted to the Purdue graduate school?

Yes (1)

No (2)

---



---

Q64 Do you think that in general, the research internship helped you to be admitted to Purdue graduate school?

- Definitely yes (1)
- Probably yes (2)
- Do not know / No opinion (3)
- Probably not (4)
- Definitely not (5)

**End of Block: Influence of the internship for graduate school (ONLY FORMER INTERNS)**

---

**Start of Block: Demographics**

Q65 What is your gender?

- Female (1)
  - Male (2)
  - Other (4)
  - Prefer not to say (3)
-

Q66 Drag the bar to indicate your age.

15

60

Years old ()	
--------------	--

---

Q67 Would you be willing to be (shortly) interviewed for this project?

Yes (1)

No (2)

Q68 In case you are willing to be contacted further, please type your name below. If not, leave the field empty.

**End of Block: Demographics**

---

## **APPENDIX B. INTERVIEW FOR FORMER INTERNS AS GRADUATE STUDENTS**

1. What do you think made you different from other fellow undergraduate students? Talk about experiences, habits or influences that made you able to achieve the cut score for admission in graduate school in the USA.
2. Which elements do you consider were key to reaching the proficiency scores required for your admission?
3. What are your learning strategies used for English as a Foreign Language?
4. What learning opportunities (content learning, language learning) did you have in the Purdue or Lafayette area as an intern?
5. What recommendations would you give to the internship leaders to improve the experience? What do you think they should keep doing?
6. How did this internship experience affect you at a personal and professional level?
7. What were the differences and similarities across educational contexts that were most noticeable, problematic, not problematic? As an intern and as a graduate student.
8. What do you think about the EFL instruction in Colombia?
9. How do you imagine their experiences at PU, 1st as interns then as grad students influencing their future . . . e.g., had they considered grad school before their internships, how are they now considering their future prospects?

## APPENDIX C. INTERVIEW FOR CPI STAKEHOLDERS

1. What is your position at Purdue University/any other institution?
2. If involved, How did you become involved in the CPI initiatives?
3. How do the internship programs for Colombian students generally work at Purdue?
  - Are there differences across programs?
  - Have there been developments in particular programs that have changed you thinking about or management of these programs?
4. What do the research internships consist of?
5. What is your role in the process?
6. How are these programs financed?
7. How do you take part in the selection process of the research internships?
8. Is there any training for the faculty members in terms of their role and the role of the students in the internships?
9. What is the communication process with Colombian/Purdue stakeholders before the internship like?
10. What is the communication process with Colombian/Purdue stakeholders during the internship like?
11. Who designs the “program” for the internships?
12. Is there anything in particular that informed the development of these programs?
13. What are the objectives of these internships?
14. As a faculty/staff member, what are your expectations for future CPI internships?
15. What could make this program better?
16. Are you planning on reaching more students?

17. What is the language profile of Colombian interns when they come to Purdue?

18. How are students screened?

- Is language proficiency is included in selection?

## APPENDIX D. REPORT OF SURVEY QUESTIONS WITH STATISTIC CONTENT

Q3: How much time have you spent  
in the United States or any other  
English-speaking country  
altogether?

>6 years	19
1-6 months	4
1.5-4 years	38
4-6 years	38
6 months-1.5 years	25

Q4: What was the primary language  
spoken in your home as a child?

Portuguese	11
Spanish	113

Q5: In what country did you attend college?

Argentina	3
Brazil	11
Chile	2
Colombia	72
Costa Rica	4
Ecuador	2
Honduras	10
México	8
Panamá	4
Paraguay	1
Perú	1
Uruguay	1
Venezuela	5

Q6: From 1 (very low) to 7 (very high), what was your socioeconomic status back in your country of origin?

Socioeconomic Status	Frequency
1	2
2	9
3	28
4	45
5	26
6	12
7	2

Q7: From what type of institution did you get your high school diploma?

Private	76
Public	48

Q8: Did you study in a bilingual English/Spanish or English/Portuguese school?

No	101
Yes	23

Q10: Did you take English language classes in high school?

No	12
Yes	112

Q11: Give a rough estimate of how many hours per week you took English language classes in high school.

Q7: From what type of institution did you get your high school diploma?

	Bilingual	
	No	Yes
Private	3.95	7.42
Public	3.08	9.25

Q12: Give a rough estimate of how many hours per week you took English language classes in high school.

Hours per Week	Frequency
>15	4
1-2	26
10-11	5
13-14	1
3-4	56
5-6	13
7-8	6
8-9	1

Q16: How many semesters did you take English classes as an undergraduate?

1 semester	15
10 semesters	4
2 semesters	25
3 semesters	6
4 semesters	14
5 semesters	2
6 semesters	4
7 semesters	1
8 semesters	6
9 semesters	2
I did not take classes of English as an undergraduate	44

Q17: What levels of English did you take as an undergraduate?

	A1	8
	A2	2
Low Basic A1	B1	3
	B2	7
	C1	4
	C2	3
	A2	6
High Basic A2	B1	1
	B2	1
	C1	0
	C2	1
Low Intermediate B1	B1	9
	B2	5
	C1	2
	C2	2
High Intermediate B2	B2	5
	C1	5
	C2	2
Low advanced C1	C1	5
	C2	2
High Advanced	C2	6
I did not take Classes		44

Q18: Was a certain English proficiency level (or certification) a requirement to graduate from your university?

No	50
Not Applicable / I do not know	10
Yes	63

Q19: What was the minimum English proficiency level required by your university for obtaining your undergraduate degree?

High Advanced / C2	2
High Basic / A2	11
High Intermediate / B2	16
Low Advanced / C1	7
Low Basic / A1	2
Low Intermediate / B1	25
N/A	61

Q20: Had you been to other (non-Spanish dominant) countries prior to coming to Purdue?

No	77
Yes	46

Q21: How many times have you traveled to other (non-Spanish dominant) countries prior to coming to Purdue?

Once	16
2 times	5
3 times	2
4 times	7
5 times	3
6 or more times	12
N/A	79

Q22: What was the main purpose of your trip abroad?

Language training	3
Other	3
Study	7
Study, Language training	1
Study, Vacation	12
Study, Vacation, Language training	5
Vacation	13
Vacation, Language training	1

Q:26 Which English proficiency test did you use to apply to Purdue?

IELTS	4
TOEFL (INTERNET based test)	119

Q30: Did you take additional English language courses in your home country beyond the required courses for undergraduate degree?

No, I did not take additional courses	42
Other	6
Yes, at a university	8
Yes, at a university. Other	2
Yes, with a private language institute	53
Yes, with a private language institute. Other.	1
Yes, with a private language institute. Yes, with a private tutor.	4
Yes, with a private tutor	2

Q31: Have you taken a TOEFL/IELTS (or equivalent proficiency test) preparation course?

No	72
Yes	46

Q32: How many times did you take TOEFL/IELTS before being accepted to Purdue?

3 times	8
4 times or more	7
Once	82
Twice	21

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Q33: What is your college at Purdue?

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Engineering	48
Agriculture	23
Liberal Arts	13
Science	12
Technology	9
N/A	4
Management/Business	5
Education	3
Grad School	3
Health and Human Sciences	2
Pharmacy	1
Veterinary Medicine	1

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Q34: What degree are you pursuing at Purdue?

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M.A.	2
M.B.A.	4
M.F.A.	1
M.S.	21
Ph.D.	90

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Q36: Did you have any previous experience at Purdue before coming to graduate school (i.e., Internship, visiting scholar)?

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No	72
Yes	46
N/A	6

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Q37: In which program did you have a previous experience at Purdue before coming to graduate school?

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Internship	28
Visiting Scholar	13
Other (Volunteering, Academic Events/Classes, etc.)	3
Academic Exchange	1

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Q38: In which college did you have the research internship at Purdue?

Agriculture	13
Education	2
Engineering	15
Liberal Arts	2
Other	3
Pharmacy	1
Purdue Polytechnic	1
Science	3
Technology	2

Q40: To be eligible for the research internship/scholar visit, did you have to provide evidence of your English proficiency?

No	14
Yes	28

Q46: During the internship/visit, did the professor assigned to work with you hold regularly scheduled meetings with you?

No	7
Yes	33

Q47: How often did you meet your professor to discuss your assignments and duties?

Once a week	20
Other	1
Three times a week	4
Twice a month	7
Twice a week	4

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Q48: What were your duties as a research intern at Purdue?

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Bibliographical Research,Field work (gather data or samples)	3
Bibliographical Research,Laboratory Assignments	3
Bibliographical Research,Laboratory Assignments,Field work (gather data or samples)	4
Bibliographical Research,Office Assistant,Field work (gather data or samples)	2
Bibliographical Research,Office Assistant,Other. Please explain:	1
Bibliographical Research,Other. Please explain:	1
Field work (gather data or samples)	1
Field work (gather data or samples),Other	1
Laboratory Assignments	10
Laboratory Assignments,Field work (gather data or samples)	4
Laboratory Assignments,Office Assistant,Field work (gather data or samples)	1
Office Assistant	2
Office Assistant,Field work (gather data or samples)	1
Other	6

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Q49a: During the research internship, what was the primary language you used to communicate with your - professor/advisor?

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English more than Spanish	36
Spanish more than English	4

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Q49b: During the research internship, what was the primary language you used to communicate with your - roommates?

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Both Spanish and English equally	3
English more than Spanish	14
Spanish more than English	23

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Q49c: During the research internship, what was the primary language you used to communicate with your - friends and acquaintances?

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Both Spanish and English equally	9
English more than Spanish	13
Spanish more than English	18

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Q50: Were you required to have formal English language training at Purdue DURING the internship?

No	35
Yes	5

Q51: If you had formal language training at Purdue during the internship, how would you rate it?

Good	4
Poor	1

Q52: In a regular day, in each of these situations, how frequently did you use English as means of communication as opposed to your L1, during the internship/visit?

	with roommates	in laboratories or working space	in Academic events	with acquaintances at Purdue	with advisors or professors	buying goods or services	with Purdue staff
About half the time	5	4	2	5	2	0	0
Always	8	26	31	18	32	32	35
Most of the time	2	6	5	13	4	7	3
Never	14	2	2	1	1	1	2
Sometimes	11	2	0	3	1	0	0

Q53: In a regular week, during your internship/visit, of all the time you spent speaking in any language, what (estimate) percentage of time were you speaking in English?

20%	2
30%	1
40%	2
50%	7
60%	9
70%	2
80%	12
90%	3
100%	1

Q54. During the internship/visit, indicate how important each of these goals was

	not important	slightly important	moderately important	important	very important
Global understanding	2	3	1	15	16
Personal development and growth	0	2	2	10	23
Knowledge of the USA and its culture	4	5	14	11	3
English language skills	1	1	6	14	14
Self-confidence and problem-solving skills	0	1	2	17	17
Understanding of your home country	10	5	12	8	2
Cross cultural skills	1	7	8	12	9
Career goals	0	0	1	12	24
Professional development and/or contacts	0	0	2	11	24
Adventure	3	9	12	6	6
Academic goals: minor, major or graduate studies	0	1	1	13	22
Meet new people/make friends	0	4	14	12	7
Other.	2	0	1	0	0

Q55. For the goals that were important to you, to what extent did you succeed in accomplishing the following?

	not important	slightly important	moderately important	important	very important
Other	2	0	1	1	3
Knowledge of the USA and its culture	2	0	7	16	11
Understanding of your home country	7	2	5	11	11
Adventure	1	2	10	12	11
Cross cultural skills	0	0	4	20	12
Meet new people/make friends	1	0	6	13	16
Global understanding	1	0	2	15	19
English language skills	1	0	1	13	21
Self-confidence and problem-solving skills	0	0	1	15	21
Personal development and growth	0	0	0	13	24
Professional development and/or contacts	0	0	1	10	26
Academic goals: minor, major or graduate studies	0	0	1	9	27
Career goals	0	0	0	9	28

Q56. All things considered, to what extent did you succeed in accomplishing your goals?

Not at All	0
Very little	0
Somewhat	0
Satisfactorily	30
To a great extent	16

Q57. Rank the following reasons for which you consider an internship in United States to be different from being in your home country (1 the highest). You can drag the options to rank them.

	1	2	3	4
Laboratories, Equipment and Technology	26	9	9	2
Research paradigm used in my field	12	16	18	0
Interaction Professor-student	9	19	18	0
Other reasons	1	0	0	1

Q58. Overall, how would you rate the quality of the internship program/visit.

Excellent	33
Good	13
Satisfactory	0
Poor	0
Terrible	0

Q59. Before the research internship, did you consider applying to graduate school?

Yes	13
No	33

Q.60 Did the research internship influence you to apply to graduate school at Purdue?

Yes	41
No	5

Q61. Did you make contacts (professors, advisor, staff, alumni)  
during the internship that helped you to be admitted to the  
Purdue graduate school?

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Yes	46
No	0

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Q64. Do you think that in general, the research internship  
helped you to be admitted to Purdue graduate school?

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Definitely yes	37
Probably yes	6
Do not know / No opinion	3
Probably not	0
Definitely not	0

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Q65: What is your gender?

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Female	49
Male	59

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