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Language Learning Effectiveness (Outcome) of an Online Synchronous EFL Program Compared to an ESL Face-to-Face Program

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A dissertation submitted to the faculty of The Ansley Frazier Thornton School of Education at Bellarmine University in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Education and Social Change

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Dedications

This dissertation and the years of study and research are dedicated to my wife Leila Moura Trindade and my daughters, Gabriela Moura Trindade, Luisa Moura Trindade, and Julia Moura Trindade. May they find in their hearts the kindness to forgive my constant absence in their lives as I devoted a great deal of my time in the last couple of years in the pursue of my academic goals. I pray that my daughters inherit my curiosity for knowledge and become lifelong learners like their parents.

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I am eternally indebted to my family here in America and Brazil. My wife for her constant encouragement. Her love and commitment were essential and gave me hope to persevere amid so many professional and family responsibilities. I also need to express my love for my daughters' support; they were generous to allow me to study and were patient with me when I was stressed.

I thank my family and friends who inspired me along the way, and I am particularly grateful to my late mother. She left a remote region of Campos in the state of Rio de Janeiro to

go to the former capital of Brazil (Rio de Janeiro – city) and, at 17 years of age, enrolled in elementary school and persisted until she finished a bachelors degree. Her example and passion taught me to endure life's difficulties and find joy in accomplishing my goals. As a social worker, she entrusted me with the desire to make education available to those in remote areas of the world and promote social change.

Abstract

To provide English learning opportunities to International students while in their home countries, I designed an English as a Foreign Language (EFL) synchronous online program delivered via videoconferences. The purpose of this study was to evaluate the efficacy of an Online EFL program when compared to a regular in-person Intensive English Program (IEP) where students are immersed in the American culture. The control group was composed of 88 students from Spanish and Portuguese-speaking countries in South America that took the IEP offered by a private university in Kentucky in the past five years. Students in the control group had eight weeks of in-person English classes. The experimental group was composed of 88 students who participated in the EFL pilot course offered to Spanish and Portuguese-speaking students. The course was offered free of charge via zoom conferences twice a week for 8 eight weeks. The students were recruited over Facebook and WhatsApp. The study's premise was to have students engaged in meaningful English language interactions with their peers and instructors to verify if there were significant differences between the pre and post-tests gains in both groups (Control and Experimental Group) of treatment (in-person and online English instruction). The results indicated a language gain in listening, grammar, and vocabulary for both groups, suggesting that both treatments produced similar language skills improvements. In virtue of the results, the author recognizes that the implementation of EFL programs delivered 100% online via videoconferences is a viable solution to problems of cost and mobility for English Language Learners (ELL), particularly in times of global crisis, such as the COVID-19 pandemic.

Keywords: CALL, MALL, Language Program Comparison, EFL via videoconferences

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Language Learning Effectiveness (Outcome) of an Online Synchronous EFL. Program Compared to an ESL Face-to-Face Program

Research Background

This dissertation is the result of several years of English as a Second Language (ESL) teaching experience and class discussions during various seminars on the Ph.D. in Education and Social Change at Bellarmine University. The topic is very dear to me because it is directly related to my desire to make higher education more accessible to students in developing countries (Coelho, 2015). After finishing my MA in Hermeneutics in England, I taught at various Bible Colleges in Brazil. During that time, I noticed that many students had problems due to content not translated into Portuguese. Many of my students had come from rural communities to complete their higher education in large cities in Brazil (De Araujo, 2012).

Most students had to work full-time and struggle to adapt to big city life while going to college. Some students lamented having abandoned their rural communities and were facing culture shock. I decided to further my education to pursue alternatives that could bridge the educational divide between cities and rural areas. I translated several articles and educational materials for my classes and had many opportunities to travel to various locations in Brazil to teach and introduce students to academic content that was not previously accessible to them.

In 1999, I moved to the USA, and in 2001 I started designing a distance learning program to reach students in remote areas of Brazil. I contacted investors interested in helping me with the project, and I spoke with educational institutions to request permission to use recorded lectures to be translated and dubbed into Portuguese and Spanish. The idea was to establish educational centers in churches with at least electricity, or an electric generator, a TV, and a

DVD player for students from the community to watch the lectures. My goal was to wait for the Internet to become available in rural areas and then have the education centers online.

Unfortunately, the lack of infrastructure persists, and some locations still do not have access to the Internet (see appendix for ITU statistics for Internet access per region from 2005 to 2019). Nishijima, Ivanauskas, and Sarti (2017) affirm that Brazil's digital divide has decreased since 2013 due to the infrastructure improvement, but the lack of education and digital illiteracy still contributes to the low access to information (Blois, 2004; Dos Santos, 2011; Leite, 2009; Trow, 1999). Access via satellite phones or partnerships with radio and TV stations would be plausible but too costly. In 2011, the Broadband Commission for Sustainable Development (BCSD, 2018) expected that half of the world's population would be connected to the Internet, and the BCSD adopted seven targets to guarantee that the other half of the world's population would have access to the Internet by 2025. The BCSD Report of 2019 (BCSD, 2019) states that although the cost of smartphones has been declining, the cost of the devices and data plans continue to be unaffordable for many individuals, and the digital divide between rural and urban residents continues to augment (Datta, Bhatia, Noll, and Dixit, 2019; Bodah, 2016).

Educational institutions I contacted were hesitant to grant me permission to use their materials. With the crisis of 9/11, the investors pulled out due to the global economic uncertainty (Chernick, 2005). I was determined to reach the goal of providing tertiary education to people in remote areas, even if I had to wait until the technology was available and accessible all over the world. After a few years, I decided to study Linguistics and started teaching English as a second language to international students coming to the USA to enroll in undergraduate and graduate programs. In the following years, I concluded that it would be more liberating to teach a language that gives students access to academic content than simply giving them selected content

translated into their mother tongue. Based on the testimony of my international ESL students, individuals who learn English have higher chances to further their education and improve their lives and the life of their communities.

The EFL program designed and investigated in this dissertation was established at the host university and has the potential to be offered by many universities to give people access to higher education without leaving their communities behind. As a byproduct of education, communities experience development, and individuals see possibilities for social mobility (Owens, St. Croix, 2020). With EFL online programs, universities can help international students have access to higher education.

Democratization of Education

Based on the purpose of making tertiary education accessible to students around the world, I decided to look at the MOOC (Massive Open Online Course) movement literature (Schuwer et al., 2015). MOOCs were able to enroll students from almost all countries, cultures, races, and genders (Al-Imarah & Shields, 2019), making academic information available for people across the planet (Christensen et al., 2014, p. 7; Rohs and Ganz, 2015; Turula and Chojnacka, 2015) without forcing them to move to developed countries. I wanted to consider MOOC's flexibility and its potential to provide more democratic and universal access to education to populations with limited or no formal higher education access. However, MOOCs have been around since 2008 (Carver & Harrison, 2013; Pappano, 2012) and have not resolved the lack of access to higher education (Liyanagunawardena, Adams, and Williams, 2013; Delbanco, 2013; Lewin, 2013). Caswell et al. (2008) claimed that universities gave large populations free access to education through MOOCs. Free materials were available, and students were encouraged to use, redistribute, and adapt (p. 6). Unfortunately, there is still a

disproportional shortage of academic content in languages other than English (Drossel, Eickelmann, and Vennemann, 2020). Even when content is available, the digital divide blocks people in developing countries and small towns (Carver and Harrison, 2013, p. 23). According to Ercikan, Asil, and Grover (2018), the digital divide is not only evident in remote areas of the planet, but limited access to mobile devices, computers, and Internet connection at home is the norm for families living in poverty and minority communities. Ercikan, Asil, and Grover (2018) argue that the lack of resources and access to digital content is intensified by gender and socioeconomic status (SES).

The wide array of formats in which MOOCs are offered also indicates that Universities are still unsure about the concept of education for everyone (Rodriguez, 2014). Access to content is a crucial step toward the democratization of education, an idea that harmonizes with the 1948 Universal Declaration of Human Rights article 26, which states that "everyone has the right to education." (United Nations, 2015; Wallace and Van Fleet, 2005).

It is vital to highlight the fact that some MOOCs had a massive number of enrolled students and promoted intensive interconnectivity between participants (Rodriguez, 2012), but have been heavily criticized for the high withdrawal rate caused by what is described by the participants as "information overload" (Liyanagunawardena et al., 2013, p. 218). Unfortunately, MOOCs are failing to reach communities in poverty. Christensen et al. (2014) stated that in 2014, most students enrolled in MOOCs had completed at least one undergraduate degree and some even a graduate degree before starting a MOOC (p. 7). MOOC students typically live in larger cities and have Internet access at home, work, and mobile devices (p. 8). As reported by Glass, Shiokawa-Baklan, and Saltarelli (2016), MOOC students are 85% male, 65 % between 18

and 34 years old, the average of US MOOC students are full-time employed and earn more than $70K a year, and 80% of the students are college graduates (p. 42-46).

Rhoads et al. (2013) argued that with MOOCs, students could enroll in renowned universities' courses and include the information in their résumé. Rhoads et al. also stressed that Ivy League Schools were disrupting the market and forcing small universities out (p. 107). In this regard, Philip Altbach (2014) claimed that MOOCs were a new form of imperialism from rich countries forced upon less developed countries. Unfortunately, most MOOCs were not as innovative as expected; they did not offer a wide variety of content that once was anticipated (Arnold, 2012) and remained institution-centered and instructor-focused (p. 5).

In my pursuit to find a way to bring higher education to the peripheries, I realized that MOOCs are not the panacea (Fraser and Ryan 2013; Martín-Monje and Bárcena, 2014). However, they shed light on the idea that education can be done in virtual formats, and, if done correctly, online learning can generate opportunities for interactivity and collaboration (Gamage, Perera, and Fernando, 2020). I also looked at CALL (Computer-Assisted Language Learning) from its origins in the 1960s (Huber, 2018) and MALL (Mobile-Assisted Language Learning) and their potential to impact language learning across the world (Kukulska-Hulme, Lee, and Norris, 2017).

Lack of infrastructure and expensive technology are not isolated impediments for individuals in remote areas to access higher education (Li, 2013). According to Rhoads, Berdan, and Toven-Lindsey (2013), “social learning” and online learning are becoming ubiquitous in industrialized countries because of the abundance of collaborative platforms and the reliability of the infrastructure (Rhoads et al., 2013). However, this is not the reality of many remote areas in developing countries. According to Cable.co.uk and M-Lab

(https://www.cable.co.uk/broadband/speed/worldwide-speed-league/), from the 221 countries tested for broadband speed in 2019, 109 countries had an average broadband speed lower than 10Mbps, while the 50 countries with the fastest performing speeds had speeds varying from 36Mbps to 230Mbps. It is difficult to quantify what people can do with limited resources; Barden and Bygroves (2018) state that smartphones and other mobile devices are pervasive even in low socioeconomic communities, and mobile learning opens new possibilities for people in poverty. In a recent study with 161 undergraduate students in Nepal, Parajuli (2016) reports a highly positive willingness (82% of the participants) to use mobile phones for learning, but a complaint (from 55% of the participants) about the lack of support from instructors (p. 48). Parajuli also states that many students can acquire smartphones at a low cost; however, data service fees are prohibitive for students to download the course material needed (2016, p. 51).

Daniel, Kanwar, and Uvalic-Trumbic (2009) estimated that by 2020, 40% of the planet's workforce would be required to have a tertiary diploma. It appears that the demand has not reached the 40% yet, but the demand for higher education is urgent (Waks, 2019). Cliford and Montgomery (2017) see the benefit of diversification and internationalization in tertiary education and highlight the need to adapt the curricula to develop global citizenship.

According to UNESCO (2014), between 1995 and 2012, OECD countries saw a 20% growth in student enrollment at higher education institutions (p. 331). The cost of higher education is another barrier to the democratization of education. Levine and Levine (2012) underlined that student loan debt is a heavy load on graduates starting their careers. They claim that the surge in college tuition fees is caused by a shortage of state and federal funding, rising competition, declining enrollment of international students, and a decrease of full-time faculty in US universities (p. 443). Higher education institutions in developing countries face similar

problems of lack of funding (Dawkins, Hurley, & Noonan, 2019). Some governments and private industries do not see the relevance of tertiary education and question the public provision of funds to universities (Jeannie Daniels, 2017). The decline in funding presents an extra challenge to higher education institutions (see table about world tertiary education ratio from UNESCO in the appendix). Calderon and Mathies (2013) reasoned that higher education might not be the only economic development generator, but they see a relationship between having a higher education diploma and access to social mobility (Cunninghame, 2017).

Rationale for the study

In the 1970s, Paulo Freire was troubled about teachers and educational institutions as the owners of knowledge and students as mere information receptors (1970). Freire proposed a shift in perspective, a revolution that would promote students to creators of knowledge and culture. Freire saw teachers as facilitators, presenting knowledge for students to deal critically with life problems and overcome oppressive powers that forced students into alienation (1970). In this case, the word 'alienation' may imply more than Karl Marx's sense of capitalistic alienation where laborers are extorted to the point of losing their humanity (Wendling, 2009; Freire, 2014; Marx, 1964; Drysdale, 1969). I see the lack of access to education as another enforcer of isolation and social exclusion, so individuals that live in the periphery of civilization do not have the opportunity to enjoy the benefits of the digital age, nor the option of social mobility (Billingham, 2018).

The lack of access to education is part of the economic and digital divide between developed and developing countries (Li, 2013). This divide seems incongruous, especially with the democratization of information through the Internet (Figueiredo and Freitas, 2018). Much needs to be done to elevate the massive open, collaborative production of knowledge to

academia's level and scrutiny rigor. The increasing demand for higher education is directly connected to technology-based jobs being created daily in the market. The main objective of universal education is to help students escape poverty and promote significant social change that will benefit entire communities (Duke, 2004).

Enabling access to more technologically advanced and better-paid jobs may help developing countries prosper (Daniel, Kanwar & Uvalic-Trumbic, 2009). According to Chris Ormell (2012), the influx of better-trained and more capable professionals will stimulate markets. MOOCs may not have been designed to reach marginalized communities and give them access to education, but distance education can enable the democratization of knowledge. According to Coughlan (2013), Harvard is now experimenting with SPOCs (Small Private Online Courses) to guarantee more rigorous assessment and validation. SPOCs and MOOCs highlight the need for telecommuting students to benefit from the campus environment (Coughlan, 2013; Orwell, 2012). Universities that strive to offer distance and hybrid courses to populations in rural and remote areas may look at this study on distance English learning and take actions to promote universal access to education and social change.

Purpose of the Study

One of the best ways to increase access to higher education is to allow students to learn English to acquire content not always available in languages other than English. In my experience, the more opportunities ESL students have to interact with proficient English speakers, the faster their language skills will develop. According to Surdam and Colins (1984), international students who have daily opportunities to interact with English speakers tend to have a faster improvement of their English skills and a faster adaptation to the local culture when compared with those students who are only exposed to English during ESL class time.

According to The Institute of International Education (IIE - https://opendoorsdata.org) and Open Doors (https://opendoorsdata.org/fast_facts/fast-facts-2019/), 57% of the cost for international students in America is funded by their families, and 5.7% by non-US governments and sponsors. Student's work and scholarships fund the remaining 37.3% of the cost. In 2018-2019, international students spent over $41 billion US dollars and were responsible for supporting over 458,000 jobs in this country. According to UNESCO, in 2019, more than 1,095,299 international students were enrolled in tertiary education in the United States, representing 28% of students outside their home countries (UNECO, 2019). From this total, 22,026 International students in the US were enrolled in Intensive English Programs (IEP) (Open Doors Report, 2019 - the exact number of International students and their families in the US in 2019 was 1,180,334). Per ESL Directory, more than 600 universities in America offer ESL immersion programs for international students (https://www.esldirectory.com/esl-program-search/usa/).

The term “immersive language program” refers mainly to L2 (second language) language coursework delivered in the L2. In immersion programs, the target language is the subject matter and the instruction language. Most immersion programs take place in a country where the target language is the official language. Ideally, students will be exposed to the target language inside and outside the classroom environment. Many universities in America offer ESL immersion programs for international students; however, unless students live in dorms with English speakers, they may not have English language interactions outside the classroom. Unfortunately, due to financial constraints, many international students that enroll in ESL immersion programs live with family or co-national students and do not have many opportunities to practice English outside the classroom (Ma and Garcia-Murillo, 2018).

Students who live with co-nationals may have fewer culture shock issues, but they tend to use mostly their L1 (mother language) throughout the day (Makropoulos, 2010). Since the reality of IEP students is not ideal, alternatives can be designed to help students in the USA and students in their home countries. If an EFL online program provides comparable language interactions, international students would reduce their time living in the USA and still improve their language skills to apply for academic programs. The purpose of this study is to evaluate the efficacy of a program delivered via videoconferences to students living in their own countries, compared to an IEP program.

Linguistics Significance of the Study

Linguistic investigations about the natural processes of language acquisition indicate that language interaction is an essential element in language acquisition, not only on L1 but also on L2 acquisition (Lardiere, 2017). In first language acquisition (L1), the more opportunities a child has to hear utterances directed to her, the faster the language development (on feral children and linguistically deprived children see Vyshedskiy, Mahapatra, & Dunn, 2017).

Although there are many theories on language acquisition, it is vital to understand that adult second language acquisition is different from child L1 acquisition due to literacy, interlanguage (Selinker, 1992), and language transfer (Shatz, 2017). If students are not getting sufficient English exposure in immersion language programs, it is prudent to search for alternatives that would be less expensive and similarly effective for students to learn English in their own countries. Regular English immersion programs take 2 to 18 months, depending on the student's language level arriving in the country. Campbellsville University, the university that hosted this investigation, has an intensive ESL – 8 weeks F2F - summer program that served as the control for this study. The pilot online synchronous EFL program also lasted eight (8) weeks.

The following research questions were addressed in this study to investigate the similarities between the two programs (IEP and EFL videoconferences):

RQ1. Are there significant differences in the pre-post language learning outcomes within a fully online synchronous EFL program and within an in-person ESL program?

RQ2. Is the learning outcome of students in a fully online synchronous EFL program comparable to that of students in an in-person ESL program?

Anticipated Benefits of an Online EFL Program

The purpose of this study is to evaluate the efficacy of a program delivered via videoconferences and a Learning Management System (LMS) to students living in their own countries, compared to an IEP program. Students were exposed to English in both language programs and had plenty of language interactions with other English speakers and instructors. Students' language proficiency was measured with an English Placement Test (EPT) at the start and end of the 8-weeks program. In both programs, students had an improvement in their English. In the complete IEP program, students learn how to write academic papers, make class presentations, and acquire the necessary skills to succeed in American universities.

The pilot course was at the intermediate English level, but a complete EFL program will have six intermediate-level courses and six advanced-level courses. Since students will not be required to move to America during the EFL, they will be saving money while acquiring the language competence to be admitted at the university. Although one of the program premises is to shorten the time students are enrolled in the ESL program, the university would still be recruiting international students, and the EFL program would assist students to become college-ready before moving to the USA.

The EFL program would also create opportunities for virtual tours of the campus and interactions with current university students and faculty. It is essential to highlight that the program could also provide a way to help the university's admission department with the selection process, identifying students that show the potential to be successful in rigorous academic programs. EFL instructors would monitor and analyze their students' progress in the online program to recommend acceptance in academic programs.

The EFL online program's long-term expectation is to make sure students improve their English proficiency for academic success (Ameriks, 2009). The program would also introduce students to the American culture to help diminish the culture shock when they come to the US. Some students struggle to learn how to function in a new country and decide to return to their countries without accomplishing the academic goals they had for themselves (Paton, 2007). Being introduced to language and culture while still in their countries would be a less stressful process that might prepare students to become international students in America.

In the globalized world, language learning, and in particular English learning, will benefit individuals and entire communities (Pauwels, 2014). Encounters with languages and cultures will help shape global citizens with broader worldviews and encourage them to promote peace and harmony (Delors et al., p. 17). The Delors Report (2010) advocates for changes that would permeate entire communities believing that education can transform humankind, foster harmonious relationships, promote inclusion, diminish suffering, end oppression (Boff, 1997), and work with diplomacy to reduce rivalry between groups (Delors et al., 2010, p. 11). Unfortunately, higher education is perpetuating inequalities around the world (Selingo, 2013; Ripley, 2012). Based on the belief that education has the potential to stimulate social change and that learning English can increase employability (Shafie and Nayan, 2010), providing access to

higher education to all people must be part of the mission of all universities, and in particular Christian universities.

In the following chapter, I describe various topics from the research about online and computer-assisted language instruction. I look at different terms that define the use of computer in the language learning process, describe the various types of devices used in language instruction, the various online platforms utilized to support the language learning process, and the instructional strategies used in distance language learning. I also highlight the findings and the gaps in the literature.

Chapter 2 - Literature Review

My interest in "Transformational Learning" (Mezirow, 1991), and its connections with Paulo Freire's "Pedagogy of Revolution" (Freire, 1970), led me to the concept that higher education might empower individuals and communities to social mobility (Billingham, 2018). We must take advantage of new technologies to create environments where students will use their target language (L2) to collaborate and solve problems. The learning process needs to be efficient and relevant. The literature on e-learning and computer-based technologies in second language acquisition (SLA) reveals the need for investigations into the efficacy of distance language education. I looked into studies examining the use of computer-assisted language learning (CALL) and mobile-assisted language learning (MALL) and could not find comparisons between CALL/MALL efficacy and immersion programs offered in L2-lands (Schenker, 2013).

Language is best acquired when language learners interact with a speech community (Patrick, 2002). Speech communities help individuals deepen their social cohesion making language interaction an integral part of building a sense of belonging (Passos, 2006). Language is naturally learned (acquired) informally and by sociocultural reinforcement (Krashen and Terrell,

1983). Proficient language learners acquire the ability to maneuver in the speech community, function well in society, and negotiate problems to find solutions (Davis et al., 2016). Consequently, to be successful, an online delivered EFL program will need to create the means to forge a speech-community environment (Passos, 2006). By comparing a typical face-to-face (F2F) ESL program (IEP) with an online synchronous EFL program, the study might reveal the existance of no statistically significant differences between these two programs in promoting positive language learning outcomes.

In the literature, I noticed a vast corpus of research about the effectiveness of e-learning and CALL from the perspective of students' experiences and teachers observations (Patrick, 2002; Wiebe and Kabata, 2010); however, there is a lack of evidence about online synchronous language learning efficacy, and also few studies about synchronous language learning via videoconferences. I have isolated a few topics in the literature and identified a lack of research in online videoconferences used in language instruction compared to regular face-to-face immersion language programs.

Baggaley (2013; 2014) claims that there is no lack of studies about best practices in online pedagogy. Technology-based education is here to stay, and according to Rahma and Usman (2020), distance education's effectiveness is unquestionable. However, the research of online language education and the challenges of adding computerized language teaching in ELL programs at the university level are still scarce. Nonetheless, the COVID-19 global pandemic has boosted the need for online learning due to social-distance protocols (Naciri et al., 2020). According to Toquero (2020), the pandemic has impacted higher education students in 188 countries (p. 1). With challenges, there are also opportunities to change the delivery format of tertiary education. This present study will be beneficial in encouraging universities to invest in

language distance learning and innovation to reach students wherever they may be, in times of social distance and global pandemic, or because they are in remote areas of the planet physically, socially, or economically distant (Liou, 2009; Markova et al., 2017).

This literature review focuses on understanding the different platforms used to deliver language education and their effectiveness. I have a trifold objective: to understand the different platforms added to face-to-face language education, to look at the viability of using CALL/MALL in a fully online language program, and to look into the experience of instructors and students in online language studies to guide me to the design of an EFL videoconferencing program based on the problems and successes of CALL/MALL (Son, 2014; Thomas et al., 2012).

CALL/MALL and Language Learning

CALL/MALL & SLA

Chapelle (2009) compares the theoretical view of language teaching by professionals in the 1990s with the 2000s. According to Chapelle, the goal of designers of computer-assisted language learning (CALL) was to create learning opportunities for second language acquisition (SLA). Chapelle defends that the connections between SLA and CALL are based on four theoretical parameters: cognitive-linguistic (Universal Grammar hypothesis), psycholinguistic (input/output processing theories), human learning (skill acquisition theory), and language in a social context (language socialization, conversation analysis, sociocultural theory). Chapelle claims that more intentional attention to theoretical approaches needs to be considered during the development of CALL applications and tasks. She also advocates the idea that technologies are transforming the nature of communicative competence. Chapelle's article gave an overview of theories concerning language acquisition and was very helpful for me to decide which theory

would serve as the basis for my research. The choice of Krashen's Comprehensible Input hypothesis gave me a better understanding of the importance of designing a treatment that provided opportunities for comprehensible input.

ELL E-learning

In a 2009 study, Halachev (2009) divided 15 students into three groups. Group one attended 85% of traditional lectures (TL) and 15% of blended learning classes (BL), group two attended 50% of TL and 50% of BL, and group three attended only 15% of TL and 85% of BL. Halachev's literature review of the effectiveness of e-learning highlights the following factors that influence learning: learner's attitudes, willingness to participate, course content, course level, teacher's personality and affability, and type and reliability of the technology. For Halachev, effectiveness was determined by successful course completion (Piotrowski et al., 2019). The results indicated that the second group (50% TL and 50% BL) had considerably higher effectiveness levels than the other two groups. Halachev stresses that other subjective factors were at play, and the results indicated that dropout rates are reduced when there was a balance between TL and BL. In this dissertation, I have compared and analyzed the efficacy of traditional face-to-face ESL classes with online synchronous EFL classes, but the measurement of effectiveness is based on test scores. Language learning effectiveness should not be based on course completion but must be evaluated concerning language development.

Butgereit and Botha (2009) describe a study, in South Africa, with a language learning application (Hadeda) designed to encourage primary and secondary school pupils to practice spelling and memorization of English words using their mobile phones. In 2010, a following study by Butgereit et al. (2010) used a web-based application, called *Hadeda*, to be used with school children in their cellphones to practice spelling. The application has a speech technology

system that generates audio clips for the children on their phones or computers via the Internet. The child listens to the words and types into the platform for verification. The study does not report learning results and does not mention the number of children in the study, but presents an African perspective in MALL use, which is scarce in the literature, even though mobile use is common in Africa. The author describes problems faced due to old cell phones, outdated technology, and software problems. Although the authors do not present the results, they claim that cellphones were becoming more accessible and an effective language teaching tool. The digital divide found in all continents and problems with limited access to the Internet may present severe logistical problems for online language courses.

CALL/Distance Learning

In a study to investigate the acquisition of speaking skills in an online distance education course, Volle (2005) recruited 19 Spanish learners, ranging in age from 18 to 40, at the Central Texas College. The study looked at how students improved their speaking skills, particularly pronunciation and conversation, during one semester in a fully online learning environment. The improvement of L2 oral skills in the online course, with no F2F meetings, was examined based on students' pronunciation and language use in two types of recorded speaking activities and two synchronous conversations. To determine students' pronunciation improvements, two audio recordings were collected via e-mail. Students also participated in two Internet (oral) conversations with their instructor. Volle (2005) analyzed articulation scores (pronunciation, stress, and intonation), accuracy scores, and proficiency scores (Thornbury, 2006; Zhang, 2008; 2010). The results indicated significant gains in the area of oral proficiency. Volle claimed that the raters might have had a bias against foreign accents, which could explain the lack of significant gains in articulation. The improvement in oral proficiency may be related to

participants becoming more experienced in recording themselves. Problems with Internet connection and quality of the recordings were some of the technical issues of the study. A similar study today may reveal better results due to the improvement in technology and reliability of the Internet, but Wi-Fi connection is a constant issue in some areas of the globe. Without comparing results with a F2F group, it is problematic to regard language competence improvement to online tools. Considering that this study was done before the iPhone era, the inclusion of videoconferences today creates opportunities for instructors to help students with pronunciation and give them personalized real-time assistance.

Hybrid Language Learning

Al-Jarf (2005) developed a course to teach English grammar online to determine whether online learning to face-to-face grammar instruction would improve students' English competence and attitudes. The results of the study indicated significant differences between the experimental and control groups in grammatical achievement. Al-Jarf concluded that adding an online grammar course helped motivate students and improve their command of English grammar.

According to Blake et al. (2008), EFL forums routinely indicate the importance of adding technology to the curriculum; nonetheless, many teachers profoundly doubt the effectiveness of fully online and hybrid L2 courses. The authors claim that language instructors believe that face-to-face is the best and only way for L2 learners to reach linguistic competence, particularly in oral skills. Blake et al. examined the *Spanish Without Walls* (*SWW*), a hybrid and distance-learning language course offered at the University of California. The study looked at the contribution of technology to improve L2 learning. Three hundred and thirty-four (*N*= 334) students from the F2F and distance-learning groups took the *Versant for Spanish* test, an automated oral test taken by phone. The study results indicate that students in the F2F, hybrid,

and fully virtual classes reached comparable levels of oral proficiency. Blake et al. highlight the fact that oral-proficiency tests are not sensitive to small gains in speaking ability. The limitation of evaluating student's progress utilizing just one computerized system and one language skill needs to be considered (Leakey, 2011). Understanding the effectiveness of hybrid and fully virtual courses compared with F2F is fundamental to help universities decide to support students begin their language studies in their home countries.

Harrington (2010) states that hybrid courses can replace 20% to 80% of face-to-face sessions with online activities. She remarked that ESL/EFL courses were expected to move to hybrid at the same rate. According to Harrington, the TESOL (Teaching English to Speakers of Other Languages) community needs to be proactive in discussing the repercussions of hybrid courses for ESL/EFL students. She highlights compelling ESL/EFL students' problems adapting to hybrid delivery modes as they are vulnerable to culture shock and might become non-participative and perceive the hybrid environment as hostile. Hybrid courses solve many logistic problems, and it is becoming the preferred delivery method for higher education. However, there are potential problems that must be analyzed from the perspective of ESL/EFL students. The COVID-19 pandemic has demonstrated that IEP students can adapt to hybrid courses, and EFL students can be successful in learning a language through fully online courses (Wu et al., 2011; Toquero, 2020; Naciri et al., 2020). Although Harrington's study (2010) lacks evidential data, it discussed the difficulties of implementing hybrid ESL courses and provided practical suggestions and considerations in executing hybrid ESL/ESL programs.

CALL/MALL/MALU

Jarvis and Achilleos (2013) criticize the acronym CALL (Computer-Assisted Language Learning), insisting that non-native English learners constantly use their digital devices outside

the classroom in their L1 and English. Their study looks into the idea that mobile-based activities in second language facilitate language acquisition. The study looks at the generalized move from CALL to mobile-assisted language use (MALU). The ubiquity of mobile devices has impacted lives in many areas, even amplifying people's social networks and making language learning tools always accessible. Language is a social construct (Moll et al., 2017), and being connected via computers or mobile devices, students interact, and language use becomes an essential component of language acquisition. Jarvis and Achilleos's (2013) study looks at social media use and video watching on mobile devices as part of the movement they call MALU. The study collected data from 23 one-to-one interviews and 56 questionnaires with close-ended questions. The subjects were 18-24 years old students at a UK university ranging from intermediate to advanced English level on the International English Language Testing System (IELTS) score. Students were not restricted to using computers; they used their mobile devices to interact with classmates and complete their language activities. The results indicated that MALL was the preferred medium for interacting with native and non-native English speakers and completing academic tasks. Mobile usage impacts language learning; however, Jarvis and Achilleos did not analyze positive and negative impacts. Social media use of abbreviations, expressions, and informal language can pose a problem for students who are in the process of acculturation and preparing to continue their academic studies (Tso, 2019; Tschirhart et al., 2008). Being aware and able to comprehend different *Englishes* (Monfared and Khatib, 2018; Kusumaningputri, 2020) is essential in different venues. Mobile-assisted language use can bring significant advantages as it expands the possibilities for ELLs to interact with native English speakers from several countries.

Levy (2009) describes many technologies used for second language learning back in the early 2000s. Some of the technologies were used to help students develop their grammar, vocabulary, reading, writing, pronunciation, listening, and speaking. Levy stated that different technologies were more effective in specific learning areas, which led him to investigate the technologies in use. Levy's article explained what each technology brings to the language learning scenario and informed decisions of which technologies to include in the current study and which ones to leave for future studies (Chapman and O'Boyle, 2013; Chapman et al., 2014; Gao, 2006).

Wang and Heffernan (2010) accentuate the vast range of research on pedagogical theories that could justify the use of each different technology for language learning. The authors also raise ethical concerns about online privacy, security, and plagiarism that require research. Instructors and learners are at ground zero of the CALL/MALL movement, and they need to be heard about their experiences and expectations. Wang and Hefferman's focus was to hear from instructors and students' concerns, perceptions, and suggestions for CALL ethical problems. The study surveyed 57 teachers and 255 university language learners in Japan. The results indicate that teachers and students did not perceive that their personal information and privacy were at risk when using CALL systems. Instructors and students expressed a good understanding of their responsibilities concerning ethical issues and believed they were not infringing any laws when using and sharing digital content with their classmates. According to Atanasova (2019), most students and some teachers are not informed about the potential for online security breaches and are not aware of the regulations about sharing digital material online.

Burston (2012a) investigated an European mobile-phone-based project (MobLang) designed to teach basic L2 communicative skills in Albanian, Basque, Irish, Greek, and Turkish

to speakers of majority community languages. MobLang lessons were sent to students in an off-line media-rich mobile environment. Eighty-five volunteers used the system and provided very positive reviews. No information about the learning outcome was presented.

In a study with forty-five participants (N= 45) from seven countries (India, Japan, Macao, Malaysia, Singapore, Taiwan, and Thailand), Hsu (2013) investigated the student's cross-culture perceptions of the benefits of MALL (mobile-assisted language learning). The participants were given a questionnaire about attitudes towards mobile language learning. The results of the study indicated significant differences among participants from different cultural backgrounds. Though all participants expressed a positive experience with MALL, no measure of the system's efficacy in language learning was presented. There was merit in the study to indicate positive experiences MALL; however, more investigations about MALL effectiveness need to be done to justify the implementation of MALL as an additional tool to be used in ESL programs and EFL programs.

In 2013, Wang and Smith (2013) developed a three-year study to examine the benefits and problems of using cell phones to improve English reading and grammar skills. Fifty-six students received the lessons on their cellphones and answered questionnaires. The results indicated that the success of the mobile-learning project was dependent on five elements: 1) engaging learning materials and short activities (Prince, 2014), 2) teacher-student interaction and monitoring, 3) student interactivity, 4) privacy, and 5) safety of the mobile-learning platform. Wang and Smith stressed that most of the materials and grammar activities used in the project were developed by university teachers, and some of the reading materials were composed by native-English students, which substantially reduced the cost of the project. The readings included English jokes, riddles, cultural differences, proverbs, idioms, entertainment, the environment, English learning methodology, science and technology, and politics. Twenty

percent of the students (20%) said that they read all the materials, forty students (71%) claimed to have read almost all of the materials, and five students (9%) said that they had not read any materials. Wang and Smith did not measure the learning outcomes in reading comprehension and grammar. The participants expressed a preference for using their mobile devices in comparison with computers. Thirty-three students (59%) claimed that this was the first time they used cell phones to learn anything. Since the study was done in 2013, it would be interesting to investigate if that perspective has changed over the years. There are applications for so many different activities today that the notion of a phone as a learning tool is no longer uncommon.

Heift and Schulze (2015) discuss the importance of technology in language learning and its benefits in supporting critical thinking, collaborative learning, and human interaction. According to Heift and Schulze, technology is fundamental to enrich the learning experience, and they claim that through CALL, language learners may expand their contact with other language learners and instructors. The article describes CALL's history and explains how the technology is now being developed primarily for *iCALL*, where artificial intelligence (AI) tries to recreate the natural language process (NLP). They state that NLP will not be focused only on grammar error detection and pronunciation, *iCALL* will be directed to support scaffolding language learning to help students develop language awareness (see Vygotsky's Sociocultural Hypothesis in appendix 5). Heift and Schulze discuss the future trends of language learning, where computers and mobile devices will significantly change the field of language teaching if they are programmed to perform linguistic analyses and provide correct and personalized feedback, something that is not a reality yet. Heift and Schulze do not analyze CALL/MALL's efficacy and do not consider the importance of human interaction in language acquisition (Uther et al., 2005a and 2005b). The research for this study comes from the premise that as long as

technology is used as an added tool to promote student-teacher interaction and student-student interaction, blended language learning could be very effective in ESL Programs and fully online EFL programs (Southgate et al., 2011).

CALL/MALL Devices

In this section, I present several studies about using different technologies and devices used in language teaching.

MP3 Lessons

Allan (2007) investigated the use of MP3 players to enhance the writing skills of students of German (L2). The course had a website with downloadable podcast lessons, vocabulary lists for memorization, pronunciation practices, and 28 poems from Johann Wolfgang von Goethe. The students appreciated the inclusion of poems and said they used the lessons, poems, and activities on a PC rather than MP3 players. Al-Jarf (2012) describes the effects of using MP3 L2 English lessons (TalkEnglish) on oral skills development. Al-Jarf studied a group of 44 students in F2F instruction-only compared to 46 students in an Experimental Group receiving F2F and MP3 lessons accessible via mobile phone, MP3 player, and computer. The pre and post-tests results indicated that students in the Experimental Group outperformed the Control Group in listening and speaking, which could be explained by the additional language exposure the Experimental Group received with the MP3 lessons.

In a study on listening activities using MP3 players compared with mobile-assisted speaking activities, Demouy and Kukulska-Hulme (2010) concluded that the phone users preferred to use the system at home since interactive speaking activities were not easy to do in front of others. Students were asked to work independently while receiving support from peers and tutors. Two groups of 35 students participated (one using iPod/MP3 players, the other using

mobile phones). The authors suggest that mobile devices can support the practice of listening and speaking skills effectively. Students claimed that iPods and MP3 players increased their contact with the language. Mobile devices can augment the time students spend in L2 and increase their learning experience (Plough et al., 2008). However, students' language improvement should not be based on self-reported questionnaires, but the factors contributing to improved language skills should be identified (Plough et al., 2008; 2010; 2011; 2018). The factors that promoted language improvement could have been motivation (Terrell, 2011), pedagogy or collaboration, and not necessarily the iPod/MP3 language activities.

So far, the literature is evidencing that MALL is an efficient tool to be added to the language teaching arsenal; however, language is learned in context and through interactions with native and non-native language speakers. Combining MALL and human interaction may be the best strategy to help students augment their language exposure, motivating them to learn a second language in a similar way they learned their first language (Krashen and Terrell (1983).

MALL – iPods

Amemiya et al. (2007) describe the use of vodcasts (podcasts with video) to support L2/L1 word-pairs learning. Each vodcast was a 5-second still or moving image with the pronunciation of the L2 word, spelling, and the L1 equivalent displayed in the subtitles. A PC application (MultiPod) transfers the vodcasts to iTunes for downloading to iPods. Ten Japanese university students used the system for two months and took a vocabulary post-test. The results indicate that the system was effective for vocabulary learning; however, there was no comparison of learning outcome with students that did not use the MultiPod system.

PDA Multimedia

Chen, Chang, Lin, and Yu (2009) describe a study of a context-aware collaborative writing system (Context-Aware Writing) that used PDAs equipped with RFID (radio frequency identification) tag readers to allow children to read and write L1 Chinese in different locations, to communicate, and peer-review their writing. Twenty-five third-graders used the system for eight weeks, and their writing improved compared to a Control Group with 28 students. The authors state that there were some issues with lack of training and the small screen size, but most students were content with the system.

Anaraki (2009) studied the effect of twelve mobile flash-based multimedia lessons on L2 English learning. The system was used for four weeks by 76 university students with smartphones and PDAs (personal digital assistants). Students expressed higher satisfaction levels with pronunciation and listening skills activities after receiving three lessons per week and independently studying them. The post-tests revealed significant improvement by all students. No control group was mentioned in the study.

To investigate the effect of a PDA-based vocabulary learning app on L2 English proficiency, Chen and Chang (2011) had one hundred sixty-two (162) university students using the PDA program for two weeks. One group (N= 81) had access only to the audio, and the other group (N= 81) accessed the audio and text. No significant effect was observed on task performance between the two groups; however, students with access to the dual-mode (audio and text) outperformed their counterparts. No consideration was made about the type of learner each student was, which seems to play a part in preference of sound or text delivery. This article provided helpful information regarding the addition of multiple forms of media to the current study design.

Chen, Chang, and Yen (2012) study the effect of the presence or absence of a written transcript in L2 English listening-comprehension tests. The study used a PDA-based test with 87 university students. The results indicated that the lower-level English students benefited from the transcripts, but the transcript did not affect the English listening comprehension of the advanced students (see Miller et al., 2019).

Translation/Reading Devices

Chang and Hsu (2011) had a follow-up study based on Hsu, He, and Chang (2009) about the effectiveness of a PDA/web-based translation/annotation application on L2 English reading comprehension. The 2011 study had forty-three (43) university students using the application individually and collaboratively for in-class reading. Testing revealed that groups of 2-4 students achieved significantly higher scores than individual students or groups of five students. Eighty percent (80%) of the students considered the system effective and user-friendly. Chiang (2012) study the use of Kindle e-books in contrast with printed books in an L2 English reading course to understand if students would be equally motivated independently of the format of the books. Thirty-four (34) university students read a novel with half using the e-reader and half a printed book. The study results indicate that the levels of motivation were not significantly different between the two groups.

MALL/WLAN

Chen, Li, and Chen (2007) tested a context-aware vocabulary learning system for L2 English operated on PDAs linked to a web server database via an indoor WLAN that identified the learner's location and delivered vocabulary based on location, current time, free time available, and learner's ability. This personalized learning system can be very engaging, particularly if it could be used in collaborative learning.

Chen and Li (2010) tested a prototype PDA/WLAN-based context-aware L2 English vocabulary learning system (PCULS) (WLAN - wireless communication to form a local area network). PCULS was used for two weeks in 12 private locations by 36 high school students. According to Chen and Li, 94% of PCULS users showed vocabulary gains comparable to 67% for non-users. Seventy-two percent (72%) of users claimed to have had a positive experience with the system.

GPS Enabled Devices

Anderson, Hwang, and Hsieh (2008) used a prototype system (Student-Partner) to promote collaborative learning outside of an L2 Chinese classroom. The system worked with GPS-enabled PDAs and had a campus map. Students were required to produce and share audio recordings, video messages, and text notes with location information. The authors indicate that learners were highly satisfied with the system, but no data was collected to measure learning outcomes. Bo-Kristensen, Ankerstjerne, Neutzsky-Wulff, and Schelde (2009) investigated the use of two geotagging applications (Mobile City and Language Guides) to allow high school and university students to use their cellphones to share photos, audio, text, and videoclips with Google-Map geotag information. The photos, videos, audio, and texts were used in class discussions. Bo-Kristensen et al. claim that incorporating geotagging activities might motivate students to use L2 outside the classroom, but no data about language improvement was presented (Chen, C., 2014).

Cheng, Hwang, Wu, Shadiev, and Xie's study (2010) used a collaborative system in PDAs and phones enabled with GPS to promote location-aware L2 English learning. The study integrated desktop, web-based, and mobile technologies into a multimedia forum called Student-Partner. Users retrieved data while exploring the campus and making English presentations. Ten

university students used the system for five months, and the results indicate that the activities and the system were considered effective and enjoyable for language learning. No measurement of the learning gains was mentioned.

MALL/Smartphone

Al-Sofi (2021) used an online questionnaire and observations of 270 English learners at the University of Bisha in Saudi Arabia to study smartphone apps' effectiveness in vocabulary acquisition. The findings of the study indicate a positive perception of the use of smartphones for vocabulary acquisition. Al-Sofi claims that the student's age and familiarity with the apps greatly influenced their perceptions. No measurement of vocabulary gain and retention was presented.

Podcasting

Chan, Chen, and Döpel (2008) explored podcasting in L2 German learning in Singapore. Fourteen podcast lessons were sent to 225 university students, one per week. Lessons included listening comprehension, grammar, and culture. Only 6% of students accessed the podcasts exclusively via MP3 players, 70% preferred to access the lesson via PC. Students found the lessons helpful, especially for test preparation. Chan, Chi, Chin, and Lin (2011) had two 10-week long podcast projects with one hundred and twenty (120) L2 Chinese and sixty-one (61) L2 Korean students to ascertain students' perceptions of the podcasts' usefulness in L2 learning. The results indicate positive perceptions of the two groups regarding motivation, expectations, teacher encouragement, and experience with mobile learning (see also Chin et al., 2010).

In a study with 113 students in eight university L2 courses over a semester, Abdous, Camarena, and Facer (2009) evaluated the benefits of integrating podcasts into the L2 curriculum compared to podcasts as a supplemental/review tool. The study's findings indicate that when podcasts were integrated into the curriculum for instruction (e.g., for student video presentations,

student paired interviews, and roundtable discussions), students were more likely to use this technology to report educational benefits.

Chi and Chan (2011) describe a three-month podcast project for L2 Korean language beginners. The article discusses the podcast's design, content, and students' access. Students claimed to have a positive experience with the podcasts. The authors conclude that podcasts can be highly beneficial in the development of language learning and highlight the need for further research on the effects of podcasting on language learning.

Abdous, Facer, and Yen (2012) extended a previous study of 2009 comparing the effects of an integrated and a supplemental podcast in L2 university courses. This longitudinal study was conducted at a mid-sized public university in the United States. Based on final grades over four years with 337 students of Chinese, French, German, Italian, Japanese, and Spanish, PIC (podcasts integrated into the curriculum) students' learning outcomes were inconclusive. However, a substantial effect was found with PSM (podcasts as supplemental material) students' results, particularly in upper-level courses. Only about 28% of students used MP3 players to listen to course materials. The conclusion was that the learning outcome of students who used the podcasting-integrated mode was not significant. However, the data indicated a significant effect on students' learning outcomes who used the podcasts as a supplemental resource. The authors mentioned that they did not control for the use of podcasting by instructors and students, and the learning outcome data was based on final grades and self-reporting. The fact that different instructors and different grading parameters were involved needs to be considered in the design of similar investigations (see Abdous, 2015).

MALL/Video-Recording

In a four-week mobile phone-based video-recording project in an L2 French course in Malaysia, Gabarre and Gabarre (2010) studied twenty-two students using their phones in groups to create 5-10 minutes narrated videos promoting a Malaysian tourism website. The participants were from China, Malaysia, and India. The course included 280 hours of intensive French, collaborative tasks, and video-making. Gabarre and Gabarre claim that the videos showed a considerable gain in language performance. In addition to making the videos, the students had to respond to fake complaints from clients using French to provide customer service. The authors discovered that two groups plagiarized their videos; nonetheless, the remaining groups exceeded the expectations with their videos. Gabarre and Gabarre's study seems to be more about collaborative language learning than MALL, and the video recording could easily be used in a F2F classroom, for homework, or in an online class. The language improvement was based on the authors' impressions of the videos and student's self-reporting. I recognize the value of using phones to deliver content and encourage students to work together to solve problems using L2 (Thabit and Dehlawi, 2012).

Gromik (2012) investigated the impact of creating videos with cell phones on L2 English speaking skills. In the study, nine Japanese university students produced 30-second narrated videos. Gromik noted that students voluntarily communicated via SMS to discuss and solve problems in their video creation; some students texted over five times a day during the study. Students demonstrated a 46% increase in word production and a 37% increase in words uttered per second compared to a pre-project evaluation. All students self-reported an increase in their English speaking ability due to producing weekly videos with their cellphones. The students'

voluntary use of texting in this study shows that students collaborated and found ways to interact outside the classroom.

MALL and Tablets

Brown, M. (2012) investigated the advantages and disadvantages of using tablet devices (specifically the iPad 2) in L2 English classrooms for video-making tasks. The study found that students' perceptions of success and satisfaction with the activities were significantly high. However, no measurement of language improvement was presented.

Brown, Castellano, Hughes, and Worth (2012) had ninety-six (96) L2 English university students in four groups using iPads to create KeyNote presentations, retrieve web-based multimedia resources, make voice recordings, and access digital handouts. The study results indicated that students were highly satisfied with the iPad in terms of speed and versatility. Brown et al. claimed that the usefulness of the iPad in language learning depended on the type of task, the application being used, and the student's familiarity with the tablet. Tablets are available in different sizes and makers today, and they are commonly used in language learning activities (see Krasulia, 2018). There is no doubt about the usefulness of tablets, particularly for video conferencing, for their larger screens and better sound quality (the most recent smartphones have larger screens with improved image and sound) (Gitsaki, 2014).

Xiao-Bin (2013) investigated students' use of tablet computers to learn English outside the classroom to see if tablets could foster effective independent language learning. Ten freshmen enrolled in an intermediate intensive English reading course were the participants. Xiao-Bin claims that the tablet-computer is the ideal tool for creating an interactive and collaborative environment for language learning. Students had a favorable attitude and high levels of satisfaction towards the treatment. The study did not have a control group, and it is

difficult to assume that the use of the tablets caused the independence of learning seen; many other factors could be at play before or during the study. The study about the impact of tablet computers on L2 English reading should have used two groups of students tested before and after the treatment to compare the post-test results between the Control Group and Experimental Group to identify the differences in outcome.

Learning Management Systems (LMS)

In a study about the use of the LMS Blackboard in a university of 5000 students in central Taiwan, Liaw (2008) investigated students during one semester to understand the learner's attitudes toward e-learning via the Blackboard learning management system (LMS). A total of 424 students responded positively to participate in e-learning courses and declared a favorable perception of e-learning effectiveness. The results of Liaw's study indicate that the perceived student's satisfaction with the use of Blackboard was directly related to student's decision to participate in the study. According to Liaw, students that were hesitant to participate in the LMS discussions and activities were the ones that reported low levels of satisfaction. The study did not assess the learned content. The study did not measure the benefits of LMS to learning, which limits the usefulness of the results. Nonetheless, since 2008 LMSs such as Blackboard (blackboard.com), Canvas (instructure.com/canvas), Moodle (moodle.com), Schoology (schoology.com/), Google Classroom (classroom.google.com), Sakai (sakailms.org), Itslearning (itslearning.com), Ilias (https://www.ilias.de/en/), Absorb (absorblms.com), Docebo (docebo.com), D2L (d2l.com), Edmodo (new.edmodo.com/), and others have become the norm not only in distance education but as an added tool in regular in-person education at most schools and universities today (Chen and Almunawar, 2019; Hurd, S. 2000 and 2002).

Learning Management Systems are revolutionizing tertiary distance education (Bervell and Arkorful, 2020), and it is becoming very important in language education as well. Soliman (2014) reports that Moodle helps EFL students to develop independent learning and language skills. Soliman highlights that different activities and resources, such as external tools, discussion forums, quizzes, written lessons, and video lessons, provide extra-class opportunities for EFL students to be exposed to the English language. Soliman concludes that e-learning via Moodle without face-to-face teaching has limitations and recommends the use of Moodle to complement face-to-face language learning. The report does not mention any empirical study to support Soliman's conclusions and recommendations (see Stanford, 2009).

EFL and Chat/CMC

The research on the use of chat in EFL classes is another area of CALL and MALL (Harrington, 2012; Peterson, 2009). The most common theoretical frameworks of this subset of CALL research are the Interaction Hypothesis (Long, 1981), which claims that second language acquisition (SLA) can be strengthened when learners negotiate meaning. Blake (2000) asked fifty intermediate L2 Spanish students to participate in pair discussions using a synchronous chat program called "Remote Technical Assistance" (RTA). Based on the recorded chat entries, Blake concludes that computer-mediated communication (CMC) increases the opportunities for interactions and meaning-negotiation outside of the L2 classroom. The study did not detect evidence of grammatical development. In a study with twenty Korean secondary EFL students using a synchronous chat program, Cheon (2003) claims that CMC is a viable tool to increase the opportunities for L2 students to engage in meaningful negotiations. However, because of language simplifications and abbreviations, the author could not verify any improvement in grammatical competence (MacMillan et al., 2014).

EFL and Discussion Forums/SMS/MMS/CMC

In the middle of the 1990s, e-forums were already being used to encourage student participation and critical thinking (Christopher, Thomas, and Tallent-Runnels, 2004). Under the assumption that computer-mediated communication (CMC) promotes evenly balanced student participation, Warschauer (1996) compared face-to-face and electronic discussions between ESL students. Sixteen advanced composition ESL international students well-versed in the Daedalus InterChange Writing computer program were recruited for the study. Half of the students were asked to participate in face-to-face discussions, and the other half in CMC discussions. The discussions lasted 15 minutes, and the groups switched from the face-to-face to the CMC. The results indicated that the discussions in CMC had higher student participation. According to Warschauer, students in the CMC used significantly more formal and complex language than their counterparts in face-to-face discussions.

Sotillo (2000) investigated students' use of discourse functions and syntactic complexity in asynchronous and synchronous discussions via computer-mediated communication (CMC) platforms. The study results indicated a significant similarity in terms of types and quantity of discourse functions used in synchronous discussions and face-to-face conversations. The use of discourse functions in asynchronous conversations was considerably limited when compared to synchronous and in-person discussions. The study indicated that syntactic complexity was significantly higher in asynchronous conversations, probably due to students having more time to produce and revise their answers. Sotillo recommends using both modes of CMC as tools to encourage collaboration and interaction between ESL students.

Hamzah (2004) explored the use of computer-mediated communication (CMC) in an EFL class of seventy-three university students in Malaysia to see if CMC could encourage SLA.

The study focused on students engaged in discussion forums on current and relevant social, economic, and environmental issues. Students reported that they were glad to monitor and edit their writing before posting on the platform; they were encouraged to participate and perceived the online platform as less stressful than in-person interactions.

In a network-based collaborative project about non-native Spanish speakers communicating with native Spanish speakers, Lee (2004) examines online discussions, surveys, and interviews. The results of this study indicate that online collaboration promotes favorable learning conditions for language production. Lee states that students report being encouraged to use specific vocabulary and grammatical structures during the discussions. The study also indicates some problems caused by the lack of computer skills and age differences. These issues should be taken into consideration for the development of a positive learning experience.

Hamzah (2004) explored the use of computer-mediated communication (CMC) in an EFL class of seventy-three university students in Malaysia to see if CMC could encourage SLA. The study focused on students engaged in discussion forums on current and relevant social, economic, and environmental issues. Students reported that they were glad to be able to monitor and edit their writing before posting on the platform; they were encouraged to participate and perceived the online platform as less stressful than in-person interactions.

Clarke, Keing, Lam, and McNaught (2008) investigate the use of SMS for vocabulary learning in an EFL university course with 19 students in Hong Kong. Daily SMS with vocabulary words were sent to the students. Students reported that receiving the SMS was beneficial, and they enjoyed the experience but demonstrated no interest in paying for the service. Unfortunately, there was no measurement of learning in this study.

In a Canadian-Taiwanese study, Chen, Hsieh, and Kinshuk (2008) investigated the effect of using cellphone SMS/MMS to teach students English-Chinese word pairs. One hundred fifty-six (156) Taiwanese university students used the system in a 50-minute in-class session. The findings suggest that learners with higher verbal and visual ability had high scores, and the authors concluded that adding written and pictographic samples improve language learning.

In an Iranian 16-week study of a cell phone SMS-vocabulary program for L2 English, Alemi, Sarab, and Lari (2012) had twenty-eight (28) university students receiving ten words and sample sentences twice a week via SMS. The vocabulary learning scores of the Experimental Group were compared to the scores of a Control Group (N= 17) who used a dictionary to learn the same words. The post-test indicates no significant difference between the groups. However, the SMS group had significantly higher vocabulary retention indicated by a delayed post-test.

EFL and Social Media

In a Chinese study, Borau et al. (2009) describe the use of Twitter with eighty-two L2 English college students for seven weeks. The project evaluated the effect of short informal messages on the communicative and cultural competence of language learners. Using both stationary computers and mobile devices, students generated nearly 800 tweets per week. The study concluded that the out-of-class use of Twitter provided an effective means of fostering communicative and cultural competence without the need for face-to-face contact.

Cavus and Ibrahim (2008 and 2009) investigated wireless technologies in education, focusing on teaching technical English words using Short Message Service (SMS) text messaging. The authors developed a mobile online learning tool (MOLT) and tested 45 undergraduate students at Near Eastern University. A pre and post-test was given to measure the students' vocabulary. The students indicated that they enjoyed learning new words with the help

of their mobile phones. The post-tests indicated a four times higher success rate than the pre-tests for learning new technical vocabulary with the MOLT system. Cavus and Ibrahim measured the effectiveness of MALL and the level of satisfaction of students. Unfortunately, they did not compare the vocabulary learning rate of students with typical in-person classes. During the study, random words were sent to students via SMS every half hour. A similar strategy might not be as effective today since this was not an interactive system. Texting word flashcards may not be compelling to all students learning a language. SMS could still be used as a learning tool to encourage students to use language in context as they interact with each other.

In 2009, Gabarre and Gabarre (2009b) recruited university L2 French students in Malasia for a series of studies about student preferences regarding the delivery of grammar notes via SMS (short message service) and MMS (multi-media service) compared to the same information accessible from an e-learning LMS platform. The study lasted 14 weeks, and the results indicate a considerably higher preference for SMS and MMS over LMS. The researchers claim that students seldomly check for course material on the website and only briefly logged on to the course website in the LMS from their mobile devices. In corresponding studies, Gabarre and Gabarre (2009a 2010a) asked students to take pictures with their phone and post them with comments to prompt group discussions and collaboration in an LMS. In a subsequent study, also with Malaysian students learning French, Gabarre and Gabarre (2010b) students took pictures and added audio recordings to create short video clips to post in the class forum, and other students would respond with short videos or written comments. These studies' findings indicated that students were very comfortable using their phones for language learning and became more interested in using the LMS. Students also expressed being more motivated and feeling a sense of community (2010b, p. 99, 105).

Begum (2011) investigated the use of mobile-assisted learning in L2 learning classrooms. The purpose was to understand the benefits and challenges of using SMS-based lessons as a supplemental tool for language activities with 100 Bangladeshi university students. A lesson on English prepositions was SMSed along with a multiple-choice quiz. Students received feedback via SMS from the instructor. The use of SMS-based instruction was analyzed, and feedback from teachers and students was mentioned. Test results indicate a potential and adequacy for cell phones to be used in language teaching and learning. Further investigations are needed to measure how mobile devices might affect L2 learning if utilized as part of the curriculum. Begum (2011) claims that students and instructors complained about the cost of SMS (depending on their provider and cellular service plan), auto-correction, screen size, and lack of training for teachers and students.

In a similar study in Iran, Derakhshan and Kaivanpanah (2011) describe the use of SMS for L2 English vocabulary teaching to university students. The study had 43 students (control N= 22, and treatment N= 21) exposed to 15-20 words per session during a face-to-face teaching meeting. Students in the treatment group were asked to SMS one sentence for each word to their instructor and three classmates. The control group brought their sentences to the classroom. The results of a post-test indicated no significant difference in word retention between the two groups; however, the Experimental Group outperformed the control group in vocabulary gain. No information about the rate of vocabulary gain was found in the article. Begum claims that MALL is beneficial for vocabulary learning; however, no evidence is shown to justify SMS implementation in language learning. The results of vocabulary gain could be based on the fact that the treatment group had the added opportunity to interact with the instructor and three

classmates outside the classroom, increasing the amount of time using the language and the new vocabulary.

Al-Shehri (2011a) studied 33 university students in Saudi Arabia for 16 weeks using mobile phones and Facebook to build a community of English learners. The participants shared photos, videos, and texted about their lives from their cellphones to Facebook and were asked to respond to each other's uploaded materials. The study concluded that social media provides rich learner-generated contextual language learning opportunities for students. Al-Shehri stated that the student's feedback led him to redesign the study to increase the effectiveness of the intervention. Based on Al-Shehri's concept of using student feedback, I decided to design my study using the feedback from friends and family about their use of social media. Al-Shehri (2011b) argues about the potential of mobile-phone-based social networking to create an effective L2 English learning environment that promotes student-centeredness and collaborative language learning. The study indicates that mobile social networking fostered a shift from traditional teacher-directed instruction to a more collaborative and enjoyable student-centered language learning.

Azabdaftari and Mozaheb (2012) conducted a seven-week study to compare the L2 English vocabulary acquisition of 80 university students in Japan. Students used smartphones for collaborative homework. The Experimental Group (N= 40) used a phone-based vocabulary program (Spaced Repetition System) complemented with SMS communications with the instructor. The control group (N= 40) used hardcopies of flashcards containing English words. The results indicated that the Experimental Group significantly outscored the control group. The study stresses that smartphones used in collaborative activities in L2 courses can potentially impact learning outcomes. The results also indicate that adding mobile collaborative activities to

EFL classes could positively affect students' learning and long-lasting vocabulary acquisition. The use of pre-tests and post-tests demonstrates a possible effect of using mobile tools on vocabulary learning, but the learning outcome increase could also be due to the collaboration and prolonged language exposure in context through reading, writing, and speaking. The Control Group only relied on memorization of vocabulary, while the Experimental Group was required to use the vocabulary in contextual language and collaboration, a strategy that could be used to teach vocabulary even without cellphones.

Social media plays a fundamental role in the way individuals interact in today's society, and lately, it fosters language transformations and promotes second language learning with easy access to content and human interaction. Derakhshan and Hasanabbasi (2015) consider Facebook, e-mail, and other social media platforms to be practical tools to increase students' English learning. According to Derakhshan and Hasanabbasi, social networks afford intense opportunities for language interaction. Social media facilitates communication between native speakers of English and language learners and can help advance and accelerate students' language skills. For Derakhshan and Hasanabbasi, social networks provide stimuli that are not present in face-to-face classrooms.

Gluchmanova (2018) affirms that some aspects of e-learning are ubiquitous in the educational process. Instructors should use learning management systems to tailor the resources according to the student's need and maximize the quality of teaching and the student experience (p. 189). Kapsargina and Olentsova (2020a) claim that modern life's constant transformations require the implementation of new technologies to keep the pace of learning. Students rarely have enough time to study a foreign language, and the tools that can be provided through Moodle help students develop independence in their learning. In their study, Kapsargina and Olentsova

claim to have seen a significant increase in language learning due to the personally-oriented structure of the resources and learning flexibility. Kapsargina and Olentsova (2020b) state that LMS is beneficial in monitoring language learning because LMSs, such as Moodle, enable teachers to check large numbers of students as they log into the system's activities and assessments. According to Kapsargina and Olentsova, any text can be converted into audio files for listening comprehension activities (p. 812), quizzes and games can be offered for grammar and vocabulary learning, discussion forums can encourage students to write, and the students can upload videos for speaking activities (p. 813).

CALL/MALL and Collaborative Learning

In two studies, one in 2009 and a follow-up in 2011, Chang and Hsu (2009; 2011) analyzed the effectiveness of a PDA/web-based translation/annotation system for L2 English reading comprehension. Forty-three Taiwanese university students used a mobile-based system individually and collaboratively for extensive in-class reading during two academic years (2007/2008). The results indicated an optimum number of users in each group for the system to work most efficiently, and groups of two, three, and four students scored significantly higher in comprehension tests than students who worked individually or students in groups of five or more students. The level of satisfaction with the system was 80%, and the system was considered user-friendly. This article highlights the importance of limiting the number of students in collaborative activities to maintain online education and student engagement.

Kuo et al. (2015) stress that educators have suggested that EFL students may never advance their language competence without support. The inclusion of group learning and collaboration might be the best option to maintain student engagement. Based on the literature on the success of the group learning approaches, Kuo et al. argue that online collaborative learning

platforms are the best alternative to in-person collaborative language learning. The study was conducted with university EL students using online-based collaborative tasks and comparing their performance with students performing similar tasks without collaboration in conventional in-person classes. According to the study results, the collaborative learning groups outperformed the non-collaborative group, and the students who were in online English collaborative classes outperformed those in the traditional in-person courses. These critical findings led me to decide to include collaborative learning in my study to increase student interaction and boost their language use and exposure to comprehensible input (Krashen, 1994). It is essential to be aware that the results of collaborative language learning will depend on individual learning styles and preferences (Carrell and Anderson, 1994; Ehrman and Oxford, 1990). Although collaboration encourages language learning, introverted students might benefit less due to higher levels of stress (Ehrman, 2008; Krashen and Terrell, 1983). Language skills can be developed when language is used to solve problems, and in collaborative activities, students can negotiate meaning to perform tasks together. Collaborative language learning is a vital part of my research (Zhao, 2016).

Ilic (2015) studied the impact of using smartphones in collaborative activities on the learning habits of L2 students. This one-year-long multiple case mixed methods study (two groups) had fifty-nine undergraduate students ($N = 59$) divided into two groups, one surveyed in 2011 and the other in 2015. The collaborative activities were available on the class website, accessible by computer and smartphone. Interviews with the students indicated that adding collaborative tasks to an ESL class promoted noticeable effects on students learning behaviors. Ilic claims that the mobile collaborative intervention affected the students' relationships, but he did not discuss how mobile collaborative activities improved students’ language skills. There is

no doubt that social interactions can help language learning (Gass & Selinker, 2008); however, Ilic emphasizes that some students formed separate private groups and collaborated in Japanese via SNS (Social Networking Service) (p. 31). Although it is practically impossible to prevent students from interacting on other platforms and use their native language, it would be beneficial to create a private and closed chat group where students are required to use English to communicate with their peers. The instructor would monitor the conversations and interactions as the administrator of the chat group.

Chen, Carger, and Smith (2017) implemented a multiple-case study to explore the learning outcome in L2's narrative writing skills of five ELLs (2 boys and 3 girls, ages 9–13) from ELL families using tablet computers and a digital handwriting app (Penultimate). The study lasted four weeks, students wrote about their experiences, and parents were asked to help the young ELLs using the Penultimate system. According to Chen et al. (2017), the study's major logistical problem was the lack of Internet in some homes. The analysis of essays pre and post-treatment indicate a significant improvement in language production. The ELLs demonstrated a high level of engagement and satisfaction using the Penultimate app. The study required family participation and cultural integration, so the use of MALL cannot be isolated, and to regard the increase in outcome (language production) to the use of MALL is questionable.

CALL/MALL and Gamification

Amer (2010) explored how a group of forty-five (45) L2 English university students used a mobile application (Idiomobile) with a game and customizable quizzes to learn idiomatic expressions and collocations for one week (average usage of 10 hours). The results indicated that the increase in scores was directly related to the number of hours they used the program.

Learners claimed that Idiomobile was very effective in helping them to learn idiomatic expressions and collocations.

CALL/MALL and Flipped Language Classrooms.

Chen and Tsai (2009) study a prototype of a location-aware PDA/WAN-based L2 English learning game (WAN - wide area network). The game requires learners to locate a book, integrates virtual objects with real scenes in the university library, and was tested by ten (10) university students. Chen and Tsai state that 90% of the students said the game was entertaining and helpful for learning English. No mention of learning gains was presented. In a 2010 published 2009 report, Chen and Tsai (2010) describe the location-aware PDA/WAN-based L2 English learning game and discuss location detection technologies (RFID, WLAN, Back-Propagation Neural Networks). It would be interesting to use a similar system with students in different countries to share their location information with classmates to locate each other on a global map.

Boticki, Wong, and Looi (2011) recruited 37 L1 Chinese primary school children to play a collaborative learning Chinese and Math character game (Chinese P-P) using smartphones. Students in the Control Group used a card-based version of the game. The results indicate that the Experimental Group was better at collaborating with their peers and their scores were significantly higher than the Control Group (see Wong and Looi, 2010).

Plonsky and Ziegler (2016) describe an analysis of CALL/MALL research corpus. The study compared quantitative results from various studies about CALL/MALL in connection with second language acquisition (SLA). The authors looked at 14 studies about the effect of various types of technology on L2 learning outcomes. The major types of technology were: translation, computer-mediated communication (CMC), and game-based language learning (GBLL). Plonsky

and Ziegler suggest that L2 learners using CALL might have better learning outcomes than those in traditional face-to-face-only contexts. Their analysis indicates significant benefits of CALL in comparison with non-CALL/MALL contexts. Nonetheless, the impact of game-based language learning was inconclusive. Plonsky and Ziegler claim that more research will be needed to clarify the efficacy of game technology for L2 learning. According to the authors, the language improvement observed with CALL/MALL may be due to the addition of L2 exposure time, not necessarily due to the type of technology used. Plonsky and Ziegler highlight that studies differ in terms of sample size, research setting, educational context, L2, types of tasks, exposure time, and testing instruments. The study stresses the shortage of studies that measure the impact of CALL compared with the addition of L2 exposure. In my study, I am comparing F2F with an EFL via videoconferences (CALL/MALL) since the time of language (L2) exposure will not be added but subtracted to understand if a computer-assisted language interaction can produce similar language outcomes.

Wang (2016) investigated a mobile-assisted learning system (Cross-device Mobile-Assisted Classical Chinese learning system) to teach classical Chinese to teenagers in a flipped-classroom approach. The participants were fifty-six students from two classrooms in Taiwan. Wang compared the test scores of students who used the CMACC system to those who did not use it. The results indicate that students in the CMACC group outperformed the students who used textbooks only. Wang observed that students who used the mobile-assisted learning system were more motivated than their counterparts. Although this study was limited to an Asian country, teenagers, and Chinese learning, it indicates the benefits of implementing collaborative and computer-assisted systems in language e-learning.

Intelligent Tutoring Language System.

Evens et al. (1997) state that in 1992 there was an intelligent tutoring system (ITS) capable of using input and output natural language to identify and analyze syntax, spelling, sentence fragmentation, and lexical ambiguity (p. 14), it was a system designed to have conversations with students of medicine to help them understand cardiovascular physiology.

Ferreira and Atkinson (2008) investigate using an intelligent tutoring system for learning a Foreign Language. They speculated about the possibility of incorporating two teaching strategies in AI systems for computer language tutoring (Dodigovic, 2005). The first strategy would be giving-answers to emulate a teacher that directs students to become aware of their errors by giving them the correct language form or indicating the error, and the second strategy is prompting-answer where the system would emulate a teacher that indirectly encourages students to become aware of their errors and correct them.

In a study about the effect of using mobile phones with an intelligent tutoring system (ITS) for language learning, Troussas, Virvou, and Alepis (2014) used an application with an ASR (automated speech recognition) component to diagnose language errors. Through collaboration, students help their peers, discuss complex problems, and solve problems. The program mimicked real instructors. According to Troussas et al., the students and teachers who evaluated the system expressed high satisfaction levels. The study lacks an evaluation of language performance gains. The results seem to confirm the usefulness of collaborative and computer-assisted learning, but it remains at the student/teacher’s satisfaction level. Student satisfaction is an essential element in learning, but pre and post-test should always be used to measure the system's effectiveness in helping students improve their language skills.

Alhabbash et al. (2016) state that Intelligent Tutoring Systems (ITS) are now being designed to help students learn English grammar. The system describes and explains English grammar topics followed by automatically generated questions to stimulate students to answer. The tutoring system was adaptive to help individual students progressively advance to higher levels of grammatical complexity. The students and teachers who used the ITS reported higher satisfaction levels.

Abu Ghali et al. (2018) had students and teachers from various age groups use and evaluate an Intelligent Tutoring System (ITS) that automatically adapted to the student's level of instructions and offered instant feedback without human instructors' support. The ITS was designed to interact with students via reading (output) and writing (input). The authors concluded that students recognized the potential of ITS to help them study English grammar and suggest that ITS could be used to help language learners in listening, speaking, and writing. Programs such as Rosetta Stone (www.rosettastone.com) and Duolingo (www.duolingo.com) claim to have adaptive platforms tailored to provide lessons according to strengths and weaknesses of individual students, but their focus is more on the audio-lingual method (ALM) and repetitions than the adaptive language learning with ITS (Kerr, 2016; Loewen et al., 2019; Munday, 2016; Perlmutter et al., 2016; Teske, 2017; Lambropoulos, 2008 and 2009).

Speech Recognition and EFL.

Ahn and Lee (2016) analyzed and evaluated students' experience using a mobile-based speech recognition technology application funded by the South Korean government. The study had 302 (N = 302) middle school students, using an ASR (automatic speech recognition) prototype of the application *Speaking English 60 Junior* in their mobile phones for two weeks in and out of English classes. The results indicated that students had a positive attitude towards the

use of the application and expressed their appreciation for the instantaneous feedback. Although the authors highlight a positive potential of ASR for English learning, the study did not consider student's speech improvement. Pre and post-tests could have been used to evidence speech development. The fact that students used the ASR prototype for only two weeks, and there is no mention of the number of hours students were using the system, makes me question the results on the efficacy of ASR in language learning. Studies on ASR should help us understand the impact of ASR applications in L2 speaking. Based on the literature cited by Ahn and Lee (2016), CALL and MALL incorporated with ASR could allow language learners to improve oral competence and pronunciation because students can use the system outside the classroom, "lowering speaking anxiety." (Ahn and Lee, 2016, p. 780).

CALL/MALL and Testing.

Ally et al. (2007) describe a tutorial program accessible via web-enabled mobile devices to teach L2 English remedial grammar to adult learners. The program had 86 lessons with exercises. The authors concluded that the 100 adult learners in the study had a positive attitude about using a mobile phone to learn English grammar. Browne and Culligan (2008) used a free English language learning application, for PCs and mobile phones, with an algorithm to analyze what high-frequency words still need to be learned by the students. Once the vocabulary deficiency was identified, the study used the program *Word Engine*, a language system from Japan, to teach words using digital flashcards, language games, intercalated repetition, reading exercises, and listening materials. Ally et al. also discuss Item Response Theory (IRT) and Computer Adaptive Tests (CAT) in assessing L2 learners' lexical ability, which is essential in English placement testing. IRT and CAT are used in the TEOFL, SAT, and GRE (Oliveri and Lawless, 2018). A similar analysis about IRT and CAT is done by Hashim et al. (2017).

Wagner (2007) states that the lack of research about the use of video in L2 teaching has created a misunderstanding about the extent to which L2 listeners watch videos when taking a video test. The study investigated the behavior of test-takers on an L2 video listening test. The study had thirty-six test-takers who were video-recorded while taking a listening test to monitor the time test-takers looked at the video. The data indicate that participants looked at the video 69% of the time and looked at the video more during dialogues (67%) than lectures. It would be relevant to measure how listening comprehension was affected by the amount of time a student looked at subtitles during the test. The general impression among English instructors is that it is not advantageous for L2 students to be reading captions or subtitles while doing listening tasks. It is believed that L2 students may be hindering their listening comprehension ability when they read subtitles and consequently slowing down the comprehension process (Metruk, 2018; Napikul et al., 2018).

Chen and Chung (2008) tested an L2 English vocabulary learning system with Item Response Theory (IRT) algorithms and a learning memory cycle. The system was accessible via PDAs linked to a remote management server. The system prompted vocabulary words, generated tests, and assessed performance. The study had 15 university students using the system for five weeks, and the results revealed modest levels of improvement in vocabulary learning. Chen and Hsu (2008) tested a prototype web-enabled PDA-based reading/vocabulary system (PIMS) used by fifteen (15) L2 English university students for five weeks. The system also used Item Response Theory (IRT) algorithm that recommended English news articles to learners and automatically identified unfamiliar words for review. The study results confirmed that the system could recommend appropriate news articles to individual learners regardless of their reading abilities. There was no mention of learning outcome.

Chi-Fen and Wei-Yuan (2008) inform that automated writing evaluation (AWE) software is designed for instant output computer-generated scores and feedback on essays. According to the authors, most studies on AWE, up to 2008, focused on evaluations of language aptitude; however, Chi-Fen and Wei-Yuan's study investigated the student's perception of AWE's effectiveness as a pedagogical tool in writing classes. The study had 68 students upper-intermediate level EFL university students in Taiwan, using *MY Access!* (Version 5.0), an AWE program (Vantage Learning, 2007; Yang, 2004). The study explored the student's perceptions of AWE effectiveness to improve writing skills. The study's findings indicate that AWE was not perceived very positively by the students in terms of improving their writing skills. However, students claimed that AWE was beneficial in the drafting process. The students also appreciated the feedback from the teacher and peers. Chi-Fen and Wei-Yuan determined that AWE as a writing coach tool without human facilitation was frustrating for students. Teachers also voiced severe concerns toward the use of AWE as a writing coach. Vendor-funded studies on AWE programs (Vantage Learning, 2007) suggest significant improvements in standardized writing tests. However, almost thirteen years after this study, AWE's use is still very limited in EFL classes at major universities and schools, and the efficacy of AWE is still being questioned (Wilson and Roscoe, 2020). It would be relevant to compare the writing assignments of ELL students using AWE with those who do not use AWE and compare pre and post-writing assignments to measure the level of improvement or lack thereof.

Baleghizadeh and Oladrostam (2010) investigated the benefits of using cellphones to record L2 English short speeches. Twenty (20) university students recorded 2-3 minute speeches on their phones to analyze spoken mistakes. Students demonstrated significantly higher grammatical accuracy than a control group (N= 20) that did not use phones. Başoğlu and

Akdemir (2010) describe a six-week study on the effectiveness of a cellphone-based flashcard application (ECTACO) for L2 English vocabulary acquisition. The study was done with 30 university students using the application and a Control Group of 30 students (N= 30) that used printed flashcards. The multiple-choice pre and post-tests indicated that the experimental group significantly outscored the Control Group. The students in the experimental group claimed that learning English vocabulary on a cellphone was more effective and entertaining.

Crossley and McNamara (2013) studied automated assessment platforms related to speech, language use, and topic development. The automated system simulated human judgments of proficient speech in a second language (L2). The study analyzed 244 transcribed TOEFL speech samples. The overall variance in terms of the automated systems was 52% lower than the human rating variance. According to Crossley and McNamara, the study provides evidence for the predictive capacity of automated language assessment. Since the study used only two human raters, it can be assumed that having a larger number of human raters would improve the understanding of the variance in human judgment indices, which would provide a better comparison with automated assessment systems. Even with a complex rubric, the assessment of students' speech ability will vary substantially depending on the instructor (Berzak et al., 2018). To avoid discrepancies, having three instructors could assess the same student to get a better average of the results. Assessing speech competence is not an easy task because students may be anxious, have good listening comprehension, but not a vast vocabulary and raters may ignore grammatical errors if students communicate ideas in a logical format. Automated assessment platforms cannot consider the student’s emotional status and, consequently, be less acquiescent than human raters.

Xu and Ding (2014) used two programs, the “Inputlog 4.0” and the “Camtasia 6.0” to record the writing process of twenty-four (24) Chinese EFL students. The participants had at least four years of computer experience. The authors explored L2 writers’ pausing patterns in computer-assisted writing to understanding how pausing patterns would be related to writing time allocation, writing fluency, and text quality. The results suggest that while skilled writers allocated significantly less time to prewriting, they paused significantly longer than the less-skilled group. The two groups displayed no significant difference in pause frequency or duration in the composing stage. Text quality correlates positively with prewriting pause duration and writing fluency but negatively with the prewriting time. The results suggested that web-search and dictionary use positively impacted the quality of the writing activities. Xu and Ding (2014) concluded that computer-assisted L2 writing offers a distinct advantage to L2 writers using only pen-and-paper for writing; however, no data was presented to demonstrate that the study compared the effect of computer-assisted L2 to the pen-and-paper alone.

EFL and Videoconferences.

The use of videoconferences in language classes is not a new teaching strategy (Loranc-Paszylk, 2015), but it has become a trend due to the COVID-19 pandemic in 2020 (White, Zheng, and Skyrme, 2020). Looking at videoconferencing as a possible substitute for the face-to-face language classroom, McAndrew, Foubister, and Mayes (1996) describe a study done with a videoconferencing system called Hipernet (based on GBN, a privately-owned optical-fiber backbone network used to connect various Cambridge University institutions). The system was designed to establish video-mediated communication between learners and instructors. The system also allowed content sharing between participants. The authors report that students had the opportunity to work with partners remotely, via videoconference, and also worked together in

person at the same location. The study indicates no significant difference between the student's presentations using Hipernet and in-person presentations without computer assistance. The results suggest that videoconferencing is suitable to support collaborative task-based language learning (McAndrew, Foubister, and Mayes, 1996; Dörnyei, 2014; Li, 2013; Thomas and Reinders, 2010).

Coverdale-Jones (2000) states that by the end of the 1990s, the technology for videoconferencing was still unreliable; however, universities were exploring the use of videoconferences in remote presentations and lectures and studying its application to human interaction (p. 28). On the same concept of promoting student interaction, Yuping Wang (2004) claims that the software NetMeeting (a famous audio/videoconferencing and instant messaging application included with Microsoft Windows 95 to XP) was an appropriate computer-mediated communication (CMC) tool to support distance language learning via student-student and teacher-student interaction. Wang (2004) states that videoconferences have great potential in terms of written, oral, and oral-visual interaction.

In a study with ten ELE (*Español como lengua extranjera*/Spanish as a Second Language) students from an American university and ten EFL students from a Spanish university, O'Dowd (2000) asked the participants to make home videos about their cities and culture, and mail them to the students in the opposite country. The students also had three videoconferences (via Integrated Services Digital Network, a telephone line used to transmit voice and video) to discuss the topics of the videos. The students were in their classrooms as a group in their own countries. Students reported having a positive experience in language and intercultural learning via videoconferences.

In a follow-up study about task-based via CMC, Wang (2006) argues that the negotiation of meaning in a desktop videoconferencing system (NetMeeting 3.01) approximates the interactions in a face-to-face L2 classroom (p. 123). The study had three university students interacting with their instructor in Chinese (L2) on-campus and five students from the distance learning program interacting with the instructor via videoconferences (five sessions). The study indicates a high frequency of communication breakdown in videoconferencing, but the author concludes that these breakdowns encouraged L2 meaning-negotiation.

Lin (2007) investigated the learners' perceptions of videoconferencing by thirty-seven college students in Northern Taiwan using videoconference activity between groups in addition to in-class discussions. In questionnaires and semi-structured interviews, students reported having a positive change in attitude and a perceived improvement in their language skills and cultural awareness. Students also claimed an improvement in confidence to use English in their presentations and discussions. Similar student perceptions were reported by Michael Marek (2008) and Vivian Wu in their research on Internet videoconferencing and EFL learning. Their findings demonstrate a positive student perception of the collaborative interactions and a self-report enhanced motivation. Students praised the instructional design, the inclusion of interesting topics, and authentic interactions with native speakers as the causes for their perceived language improvement.

In 2010, Xiao, Yang, and Zhang (2010) investigated the effects of an Internet-based desktop videoconferencing for interactions between twenty undergraduate English major Chinese students and English native-speakers in America. The Chinese students were considered intermediate English level. The English Speech class was taught by native speakers and lasted for two hours a week. The treatment group (N= 10) used Skype 2.0 to talk with English native-

speakers for one hour a week. The face-to-face group (N= 10) had one-to-one (one-hour) conversations with a native-speaker English instructor at the university. The results indicate a significant improvement in fluency; however, no enhancement in language complexity. Students perceived a considerable enhancement in their language fluency and said that videoconferencing "creates a comfortable, spontaneous, and less threatening environment for L2 learners" (p. 118).

In another study about students' perceptions of the advantages and disadvantages of integrating videoconferencing in the L2 classroom, Jung (2013) had university students from Korea interacting via videoconference with students from Japan, Singapore, Philippines, Hong Kong, Taiwan, and Malaysia. The study results indicate that most students perceived videoconferencing as an effective tool to improve language acquisition. Students stated that videoconferencing with students from other countries encourages cross-cultural understanding and engagement in two-way communication (see Wu, 2016).

Wu, Marek, and Chen (2013) claim that most studies on CMC benefits for EFL learning are based on questionnaires and interviews with students. Their study analyzed students' essays and pre and post-tests of oral performance. In the study, 16 Taiwanese EFL students had videoconferences discussions about culture with a native speaker from the United States. Wu et al. state that the sample size was too small for statistical analysis (N = 16; see Wu et al., 2013, p. 519); however, students' verbal scores improved on average 44.5% by the end of the study, and the essays had evidence of critical thinking. Students praised the instructional design of the class, demonstrated a positive attitude, and spoke about having enhanced their assertiveness in using English (see Marek, 2008 and 2014, June and July).

In a collaborative study between one college in the US and one in China, Lu, Goodale, and Guo (2014) had forty-five Chinese pre-service teachers and five American undergraduates

participate in a 10-week online videoconference project. The results indicate that videoconference sessions with native English speakers positively impacted the English pronunciation and fluency of the Chinese students, but no significant difference was found in terms of confidence.

Concerned with the poverty of comprehensible input and output in EFL classes, Eguchi (2014) investigated cross-cultural video conferencing benefits. Eguchi asked eight Japanese and seven Mexican university EFL students to engage in uni-cultural (students from the same country) video conferencing and cross-cultural video conferencing (between Japanese and Mexican students). The number of students' utterances was measured in interactions with co-nationals and students from the opposing country. The findings indicate that students' language production and meaning negotiation were noticeably higher in cross-cultural discussions, which led the author to conclude that cross-cultural videoconferencing is an effective strategy to engage students in meaningful interactions.

In a study about synchronous computer-mediated communication (SCMC) used by EFL learners, Alshahrani (2016) had thirty-six (36) Saudi Arabian university EFL students interact with two native English speakers via videoconferences. Alshahrani assessed students' performance, and the findings indicated a low improvement in student's speaking proficiency but a positive attitude about videoconference as a learning tool.

In a study with two instructors and twenty-five ESL students of advanced writing classes, Vurdien (2019) highlights the benefits of using desktop videoconferencing to offer students opportunities to practice their L2 oral skills outside the classroom. Vurdien's study had the students divided into two groups, one with task-based activities via Zoom and the other with similar tasks in a face-to-face class. The findings indicate that the videoconferencing group

outperformed the face-to-face group. Vurdien claims that students in the video conference group were encouraged to negotiate meaning and consequently improve their confidence and communicative competence.

El-Khatib (2020) states that due to the COVID-19 pandemic, online education is becoming the norm, and video conferencing can support distance language learning in higher education. El-Khatib looks at studies on videoconferencing systems such as desktop video-conferencing (VCM), interactive video-conferencing (VCI), and web video-conferencing (VCW), highlighting the benefits and challenges in terms of access and learning experience. Concerning previous studies about videoconferencing in higher education, El-Khatib concludes that all videoconferencing systems offer similar challenges and benefits. The major challenges are technical issues, computer illiteracy, lack of motivation, and fear of notoriety. The benefits are access to shareable content, interaction and collaboration with instructors and classmates, and opportunities to solve problems and meaning negotiation.

Considerations About the Literature.

The literature review indicated that past studies were primarily focused on understanding how to transform language learning through virtual learning environments (Von Der Emde et al., 2001). Studies have highlighted the need to find best practices in online language learning (Felix, 2004; White, 2016) and even indicated the benefits of peer-to-peer feedback and telecollaboration (Ware and O'Dowd, 2008; Belz, 2002). Mobile devices are ubiquitous in society, and the advances in speech recognition technology have led scholars to investigate the effect of MALL as an added tool in F2F language teaching (Baleghizadeh and Oladrostam, 2010). Unfortunately, most studies are limited to a short period of time and focus on student

satisfaction using CALL/MALL, not measuring the language learning improvement after the treatment.

When it comes to the effectiveness of e-learning in the process of language acquisition, the literature is limited to studies that looked at self-reported student satisfaction and teachers' perceptions of how easy or difficult it is to incorporate CALL/MALL technologies into in-person language classrooms (Zou, 2014). The literature review indicates a gap in understanding how effective online synchronous videoconference platforms would be for language learning. According to Burston (2015), in about twenty years of studies about mobile-assisted language learning (MALL), from 1995-2015, "statistically reliable measures of learning outcomes are few and far between" (p. 16). Burston also claims that from the 291 studies he analyzed, only thirty-five met the minimal criteria of duration and sample size to be considered reliable, ten were executed in less than a month, and sixteen had serious design problems. Only nineteen studies consistently indicated learning outcomes of mobile-based language applications (see also Burston, 2012b). Over 400 studies were reviewed, confirming the scarcity of CALL/MALL studies that measure learning outcomes.

This literature review discussed the results of studies about online language education and some of the challenges of implementing online language teaching in ELL programs at the university level. The focus was to learn if CALL/MALL could provide effective language education to international students enrolled in ESL programs at American universities and also help EFL students in their home countries. The motivation for this study came due to informal observations of international students struggling to adapt to American values, undergo language/culture shock at Intensive English Programs (IEP).

An important goal for the ELL teacher is to provide resources to students and facilitate their learning process. The benefits of online learning, especially for higher education, are inquestionable; regrettably, many online courses lack student-teacher and peer-to-peer interactions (Avery et al., 2006) that are fundamental to keep students engaged (Schapiro, 2003). Language students undergo crises and culture shock that impede the development of their second language competence. Some students from the same country of origin share living accommodations and end up speaking their mother tongue for most of their day. Students with low levels of English go through a very intense culture shock experience, and many have to return to their countries because they do not master the language neither gain the academic skills to be successful in college (Meyer, 2014). The longer students stay in an IEP, the harder it is for them to transition to college credit courses (see Amos, 2013, for an overview of the dropout dilemma of ELL students in K-12 schools).

In the case of international students, the reasons for dropouts are the exhaustion of funding, a decrease in motivation, and a growing sense of inability (Amos, 2013). English learning can be improved to reduce the time students spend in immersion ESL programs, and students must be trained for the academic demands of higher education (Kasemsap, 2017). The mission of the English as a Second Language department is to help students expedite their language learning and be successful in college. At the start of this research, it was uncertain that language learning could be done entirely online because language learning is more than acquiring vocabulary and grammar; language learning is acquiring culture, context, perspectives, and values. Because human interaction and experiences with a speech community are essential (Patrick, 2012), the EFL Videoconferencing Pilot design focused on incorporating plenty of opportunities for human interaction.

Selingo (2013) affirms that we cannot rely merely on the adoption of new technologies to reinvent higher education, which is also confirmed in the case of English as a Second Language, when different technologies are introduced to ESL/EFL courses (Abdous, M. (2015). Technologies should be used efficiently to improve access to content. Nonetheless, the most revolutionary change must happen regarding adopting the vision of teachers as personal trainers or coaches. I also appreciate the notion of peer-to-peer instruction and collaboration (Hargreaves, 1994). Based on these premises, I have been trying to use different platforms in my courses and assignments to test the effectiveness of these tools in giving my students better opportunities to learn. All of my International students have mobile devices and find themselves at ease with technology (Persson and Nouri, 2018). However, most of them have a tough time with collaboration. They value and respect the instructor; nevertheless, they do not see value in their peer's inputs. I am still testing in class and online activities to help students develop communication skills, collaboration, self-motivation, critical thinking, and social responsibility.

In face-to-face sessions, I have students help each other, and also during web conferences, I ask students to connect with a peer to learn how to participate in the discussions, but when I see that they need extra help, I offer assistance. I try to nurture collaboration and give the necessary support for my students to excel; however, I was unsure what technologies work best on language learning and how effective they are compared to only face-to-face learning. This study has helped me see that we could create a speech community for language learners to thrive through video conferencing.

Even small private universities that have seen a boom in their online and hybrid programs (Biddix, Chung, and Park, 2014) know that the trend of having one hundred or more students in one hybrid class is unsustainable. At the university hosting this study, there are more than 8000

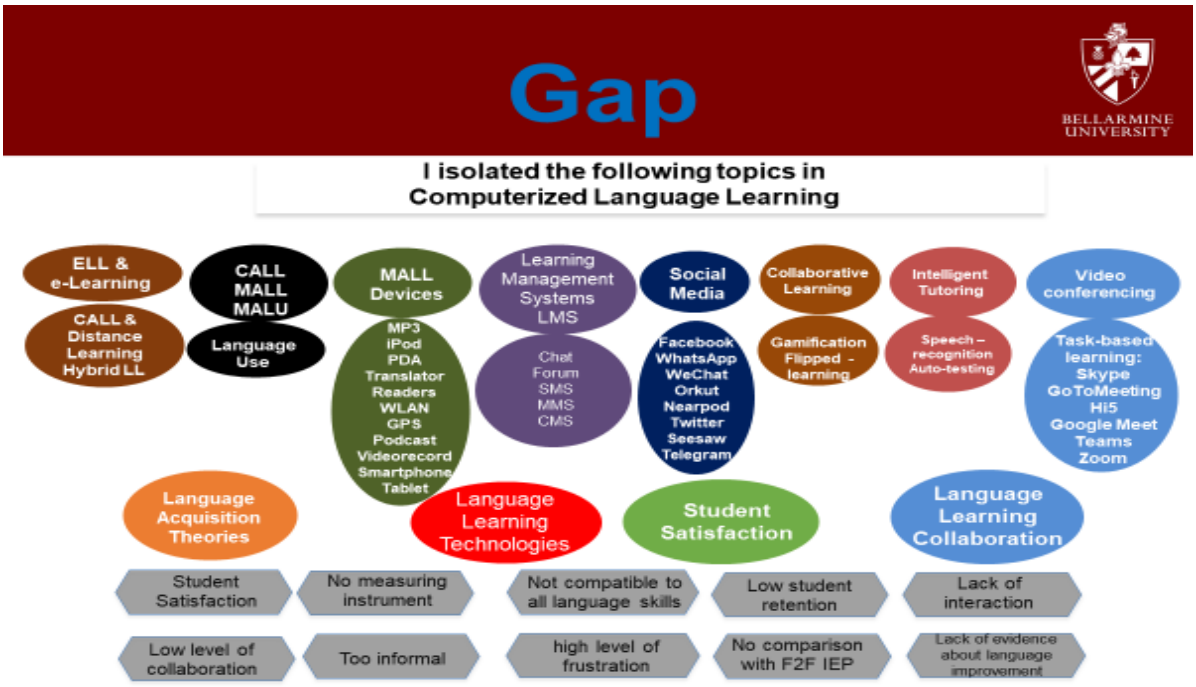
students enrolled in hybrid graduate programs. The student enrollment increased 700% in just a couple of years. In large-sized classes where there is very little interaction with the instructors, language learning will not be effective (Morgan, 2000).

Ivy League universities have discovered that MOOC was not a silver bullet to deliver content to the masses and the low student retention numbers made them question the effectiveness of the concept (Liyanagunawardena et al., 2013, p. 218; Tello, 2007). To have a more rigorous assessment and validation and to help maintain the retention rate of the university (Coughlan, 2013), Harvard has been experimenting with SPOCs (Small Private Online Courses) (Freitas and Paredes, 2018). The main complaint is that in large-sized online classes, e-education is no different than "how-to videos" found in platforms such as YouTube, Vimeo, Vine, and Instagram, which no possibility for interaction occurs.

According to the literature reviewed here, the main topics studied in computerized language learning are CALL (computerized assisted language learning), MALL (mobile assisted language learning), MALU (mobile-assisted learning use), ASR (automated speech recognition), social media in language learning, incorporation of technology in the face-to-face language programs, hybrid language learning, collaborative language learning via online platforms, automated testing, intelligent tutoring systems, and videoconferencing.

For my study, I looked and tested several videoconferencing platforms to decide which one would work seamlessly to provide students the opportunity to actively participate in class discussions and breakout rooms, share screens and sound, and work collaboratively (Wong et al., 2012). I tested Skype (skype.com), Google Meet (meet.google.com), GoToMeeting (gotomeeting.com), Hi5 (hi5.com),Teams (Microsoft.com), and Zoom (zoom.us). I decided to use zoom because it had the most features needed, and it was reliable and user-friendly.

Some of the major problems in the studies are the lack of comparison between different modes of delivery, high dependency on student satisfaction and self-reporting of language outcome, high level of informality, and low student retention levels. See the picture below:



This study focuses on a synchronous online ESL pilot program with students from South America using videoconferences. The purpose was to measure the effectiveness of such a program compared to an immersion ESL F2F program offered at a liberal arts private university in Kentucky.

In the next section, I present an overview of the most prominent theories of Second Language Acquisition and argue for the use of Krashen's Comprehension Input Theory as the theoretical framework of this study. In chapter three, the design, and execution of the study will present the adoption of the main aspects of Krashen's theory to guarantee that the Pilot EFL Program promotes opportunities for language acquisition.

Theoretical Framework

Second Language Learning/Acquisition Theories

Throughout the years, many theories have been presented to explain the process of language learning (Mitchell et al., 2013; Beretta, 1991; McLaughlin, 1987; Schumann, 1978; Spolsky, 1989). Researchers and language teachers alike have argued that many factors contribute to second language acquisition (SLA), such as motivation, personality type, target language exposure, and teaching methodology. (Gardner, 2010; Krashen, 2009a; Long, 1983; Wong, 2015). Larsen-Freeman and Long (1991) affirmed that they found more than forty theories of second language acquisition (SLA), including creolization, language change, and language learning. Theories differ in terms of language acquired or learned, various elements that impact the learner, awareness of language structures, and the importance of the context or environment (p. 287; Larsen-Freeman and Long, 2000 and 2000a).

One way of looking at these theories is to categorize them into two main groups, the theories that are focused on the environment and the theories focused on the cognitive aspects of language acquisition. The most critical SLA theories provide a background to the theory chosen as this study's theoretical framework. The first group is the environmentalist theories, such as behaviorism (Skinner), acculturation (Schumann), interaction (Long and Hatch), and sociocultural (Vygotsky), which is in the threshold of the environmentalist and the cognitivist theories. The second group of theories emphasizes the cognition processes without discarding the importance of the environment. The theories that represent the second group are the output hypothesis (Swain), the universal grammar hypothesis (UG - Chomsky), and the monitor theory (or comprehension input theory - Krashen). The latter will serve as the framework of this study (See an overview of theses theories in Apendix 3).

The Acquisition Model Theory/Monitor Model Theory in SLA.

The also called Comprehensible Input hypothesis was formulated by Stephen D. Krashen and is heavily influenced by Chomsky's theoretical premises applied to second language acquisition (Krashen, 1977, 2009a, 1985, 1987). However, Krashen is not describing the process of first language acquisition, and for him, when Chomsky's theory is applied to adult language learning, it was describing the "product" and not the process of the second language acquisition (Krashen, 2009, p. 6). Krashen also refutes the assertion that LAD diminishes its ability as the individual ages, particularly after the "critical period" (CP), stating that the older adult's apparent failure to acquire a language is due to emotional reasons, or what he calls, the "affective filter" (Dulay, Burt e Krashen, 1982, p. 112), and not necessarily because of their age (Krashen, 2009; Fromkin et al., 1974). It is important to emphasize that the CP concept was applied to language acquisition by Penfield and Roberts (1959), without much contestation by linguists (Vanhove, 2013; Muñoz & Singleton, 2011; Singleton, 1995).

Krashen's SLA theory is constituted of five (5) hypotheses: 1. *The Acquisition-Learning Hypothesis*. Learning refers to the conscious process where the individual receives systematic teaching in a formal and explicit educational environment; acquisition refers to the unconscious mental processes that happen when an individual is constantly exposed to a language (Krashen, 1981). 2. *The Natural Order Hypothesis. Language a*cquisition is the result of the mental processes that are based on comprehensible input that unconsciously makes sense of the grammatical structures in a predictable sequence (Dulay et al., 1982, p. 254). 3. *The Monitor Hypothesis.* Conscious learning serves as a Monitor to filtering and editing the production of language (Krashen & Terrell, 1983). 4. *The Affective Filter Hypothesis.* Elements of anxiety and discomfort will also act as a buffer that impedes the effect of the input in the unconscious mental

processes, which is called the affective filter; the less it is activated, the more efficiently the language acquisition happens (Krashen, 1987). 5. *The Comprehensible Input Hypothesis.* For Krashen, this is the most important of the five hypotheses. The acquisition of a language happens through the understanding input that is just a little higher than the learner's language level (i + 1) (Krashen & Terrell, 1983, p. 32). Krashen stresses that the input must be a comprehensible input to allow the individual to scaffold the new language elements onto the language they already know. The comprehensible input hypothesis serves as the theoretical framework of this dissertation (Krashen, 1985, 1994, 1997, 2004).

The Acquisition-Learning Hypothesis. For Krashen (1985), there is a clear distinction between learning and acquisition. Acquisition is an involuntary and unconscious process that happens when there is a need for communication. There is no need for the learner to have an intention or determination to assimilate the language; it will happen informally and without a conscious understanding of the target language's grammatical structures. The focus is to communicate, and the learner starts to "feel" when the sentences are correct but is not aware of rules that must be followed to make a correct sentence (p. 26). For acquisition to happen, the language acquirer must be exposed to the target language in a communicative context.

Acquisition happens naturally, intuitively, just like children acquire language before learning the language rules in the formal context of school (Krashen, 1985, p. 28). Learning is the conscious process that happens in formal settings, where there is an instructor that uses paralinguistic devices such as facial expressions, body language, tone, and gestures to help learners understand different aspects of the language (Najarzadegan and Dabaghi, 2017) and to develop metalinguistics awareness (Roehr-Brackin, 2018; Leow et al., 2015). For Krashen

(1988), language learning results from a personal effort to understand the target language formally (Krashen, 1985).

The learner needs help from instructors or from computer-assisted language learning (CALL) applications to understand the rules of the language being learned and be able to explain the rules and structures of the language (Krashen, 2009b). Krashen highlights the importance of learning but asserts that learning will not become acquisition (Krashen, 2009a, p. 83). It is important to clarify that Krashen refers to communicative competence here, and he is not claiming that learning a particular grammatical structure does not help acquisition. For example, learners may have problems communicating verb tenses or conditionals, and once they learn how verb tenses work and how conditionals are structured in the target language, they will use the learned concepts until these structures become second nature. However, an individual's language competence may show that the acquisition of complex sentence structures generally happens before the individual can consciously explain the rules. That is to say that for Krashen, the acquisition process will result in near native-like language competence, but the learning process alone will not suffice in reaching native-like language competence (Krashen, 2009a, p. 10).

Krashen infers that language learners may only reach the competence to engage in simple conversations and will have a hesitant speech pattern because they are usually more concerned with the form than with communication, which is the opposite of the natural language acquisition where communication takes precedence over correctness (Krashen 2009a, p. 14).

There cannot be language acquisition without input in Krashen's theory, so the level of proficiency in a second language is directly related to the amount of input or language exposure (Krashen, Long, & Scarcella, 1979). In my tenure as an ESL instructor, I have seen anecdotal evidence that leads me to concur with Krashen that the amount of exposure, and its quality, will

affect language acquisition. Despite that, each language student undergoes different circumstances and has a different set of variables that will impact their language acquisition. Certainly, Krashen's theory provides a very plausible explanation of the processes of language acquisition and, at the same time, values language instruction (Krashen, 2013).

The understanding of grammar and the knowledge of the target language's linguistic structures do not produce acquisition, which is an unconscious, intuitive, and natural assimilation of a language. Language acquisition is the product of interactions within real situations with human beings, where the language acquirer actively participates in exchanging information (Krashen, 2009a). The development of the ability to communicate and understand meaning results from the acquisition process (Krashen, 2013).

According to Martins (2015), a classic example of language acquisition without formal learning is when an immigrant acquires the host country's language without formal instruction, achieving language proficiency comparable to native speakers of the language, without being able to explain the language structure (p. 5). Martins mentions that many graduates of a four-year degree in teaching English, Spanish, or French, had a good knowledge of these languages to pass their exams and get a teaching license required to teach a foreign language in schools; however, some of these graduates lack the language competence of someone who acquired the language in real-life situations (p. 5).

The Natural Order Hypothesis. Krashen's understanding is that acquiring a second language is the direct result of the comprehensible input and that the acquisition follows a "universal or natural order" (Dulay, Burt, & Krashen, 1982 p. 259). This hypothesis refers to language acquisition, not to learning. Krashen states that this hypothesis does not mean that there is a sequence of grammatical structures that students must learn in order; on the contrary,

Krashen has expressed that there should be no such sequence for teaching a language (Krashen, 1992). Krashen postulates that language students will only be exposed to a limited amount of grammar in the classroom (p. 16), and he affirms that instructors should not assume that language students would acquire grammatical and linguistic structures always from the simplest to the complex. Hence, his advice is to teach grammar in context, not in a specific sequence, to help students navigate the language they are acquiring (p. 14, 16). In terms of L1, children acquire the language without being taught the structure, and only when they reach school age will they start to learn the language structures, usually from the simplest to the complex, according to Brown, R. (1977, p. 286). In the words of Krashen,

> The input hypothesis runs counter to our usual pedagogical approach in second and foreign language teaching. […] our assumption has been that we first learn structures, then practice using them in communication, and this is how fluency develops. The input hypothesis says the opposite. It says we acquire by "going for meaning" first, and as a result, we acquire structure! (Krashen, 1992, p. 21)

Krashen's understanding is that although children tend to acquire language structures from simple to complex, the acquisition of a second language does not need to follow the difficulty sequence since children and adults alike already master complex structures in their L1 and are better prepared to learn complex structures (Krashen, 1985). Krashen also claims that language instructors should be aware that the order of acquisition is not determined by the teaching sequence used in the classroom, but it will occur in a natural sequence with some individual variations (2013).

Krashen cited a study by Dulay and Burt (1974) about the order of acquisition of English morphemes by EFL children as an example of a natural order of acquisition. Nonetheless, Dulay

and Burt conclude that there is no way to design a teaching strategy that would support the natural order since "as the speech product is the result of the interaction between the child and the input language, the product should reflect both, i.e., the product should not be constant if the language input varies significantly." (p. 52). Krashen could not describe in detail what the natural order is or if the natural order would be the same one for all individuals learning the target language.

For McLaughlin (1987), the only way to find evidence for this hypothesis would be with a longitudinal study with a large number of second language learners. Even with such a study, it would be difficult to establish with certainty what types of structures would be acquired first since each acquirer may be in a unique situation depending on variables that are present in their experience with the language and the types of inputs they receive (p. 35). McLaughlin concludes that what Krashen is saying is that each individual will naturally acquire some structures before others (p. 35), and instructors should not expect to discover how to teach in a perfect and natural sequence because the natural order varies from acquirer to acquirer. Another criticism from McLaughlin (1987) is that Krashen has not established a measurement to identify the level of language acquisition or devised a way to know what structures were acquired and how the acquisition happened (p. 24). McLaughlin also emphasizes that some of the variables in the natural order of acquisition may be related to the acquirer's mother tongue (L1) (p. 33). Other variables could be added to the criticism, such as interlanguage, intralanguage, intersemiotic translation, code-mixing, and fossilization (Gort, 2012).

For Krashen and Terrell, many grammar aspects will not be acquired until the acquirer has reached the proper time to use those structures to understand and communicate ideas (p. 21). Additionally, considering the element of creativity and randomness of language use, it is

virtually impractical to establish a teaching sequence that would work for all acquirers. (p. 21). Krashen's advice is that classroom activities should be targeting acquisition and must be in an environment of low stress where students will be gently encouraged to participate and incentivized to collaborate in a way that will make them be less aware of the language structures but value meaning conveyance (p. 21). Krashen and Terrell (1983) give several examples of activities that could be used in an ELL classroom to create real-life situations and incentivize input that generates acquisition. They also clarify that not all language acquirers will acquire language in the same sequence and that the hypothesis simply states that certain linguistic features will take precedence over others (p. 28).

Krashen is fully aware of the intense scrutiny his natural order hypothesis has been subject to, and he mentions studies that were looking at the acquisition order of several linguistic structures in English (Krashen, Sferlazza, Feldman, and Fathman 1976; Keyfetz-Futler 1978) and in other languages (Snow and Hoefnagel-Hohle 1978). As stated above, Krashen's definition of the natural order is not prescriptive; it may vary depending on the individual acquirer. Nevertheless, Krashen states that the natural order is usually composed of the following phases: 1. Nonverbal responses, 2. One or two-word responses, 3. Three or four-word responses, 4. Very simple sentences. 5. Longer sentences, and 6. Complex sentences and coherent speech or prose (Krashen, 1983, p. 24). Krashen also claims that grammatical correctness improves from phrase three (3) as a result of the acquisition process and as more communication happens (p. 25), meaning negotiation is required.

The Monitor Hypothesis. The Monitor hypothesis stresses the validity of the learning process and values formal language instruction. Krashen claims that it is natural and intuitive for the language acquirers to use creativity to form utterances in the new language, and instructors

must provide opportunities for students to try different combinations of words and different grammatical structures (Krashen, 1983, p. 101). Krashen understands that acquirers that are formally taught language, benefit from a language Monitor, which works every time the acquirer is producing language. As the acquirer begins to formulate utterances in their mind, they are able to check the sentences against their compendium of learned grammatical structures to correct the structure of the sentences before uttering them (Krashen, 2009a, p. 15).

The Monitor is responsible for policing the creativity and reminding the acquirer of the rules the sentences must follow to become acceptable and intelligible spoken utterances or written sentences (Krashen, 2009a, p. 16). Krashen claims that the Monitor's usage may vary depending on the situation and the personality of the acquirer (Krashen and Terrell, 1983, p. 44). The introvert acquirer or the perfectionist will overuse the Monitor, which may affect the creativity and hinder the spontaneous use of the language. On the other side of the spectrum, the extrovert acquirer and those who use language more casually will tend to underuse the Monitor and never reach the correctness required in formal situations. Krashen and Terrell affirm that in normal circumstances, the acquirer will only use the consciously learned grammar (Monitor) if three conditions are present: 1) sufficient time, 2) enough emphasis on correctness, and 3) competent knowledge of the rules (p. 16). The acquirer must also want to produce correct utterances and have proficient knowledge of the target language's grammatical structures (Krashen, 1985, p. 2). The Monitor acts just like the autocorrect software function in word processors making suggestions for corrections of grammar mistakes; but this time, the suggestions may include pronunciation, word order, syntax in speech, and spelling when writing. Consequently, the Monitor's overuse will make the speech hesitant and broken, and the speaker

will have to decide when it is appropriate to correct mistakes to communicate the message without upsetting the interlocutor.

One of Krashen's most severe critics, McLaughlin (1978), states that the Monitor hypothesis is probably the more detailed of the five Krashen's hypotheses since the Monitor would be active before and after the production of an utterance or text which places a great value on language instruction (1987, p. 19).

The Monitor hypothesis is similar to the Vygotskyan concept of inner speech (Vygotsky, 1987); however, for Krashen, the Monitor dialogues with the acquirer, helping to edit the language production (Krashen, 1979, p. 154). Krashen does not specify if the Monitor would be active in listening or reading, but it is evident that the conscious knowledge of grammar helps comprehension of speech and text. Evidence of that could be detected in comprehension mistakes and the way second language acquirers will understand the conveyed meaning in some complicated grammatical structures because they have previously learned and understood the structures. However, Krashen insists that understanding may happen even without the structures' formal knowledge (Krashen, 2009b).

Furthermore, it is extremely difficult to verify the Monitor's presence and if the speaker recalls learned grammatical structures during regular communication. We may assess the ability a learner has of recalling learned structures in a test; however, in conversation, mistakes may occur because the speaker could not recall the structure, was translating from L1 or decided to ignore the suggestions of the Monitor and compromise language correctness and precision for the benefit of fluidity (Thombury, 2006; Rose, 2020).

The Affective Filter Hypothesis. Krashen's theory has impacted language teaching since the 1980s, and with the Affective Filter hypothesis, he emphasizes Chomsky's concept that

human beings have an innate ability to acquire language or a language acquisition device (LAD) (Krashen, 1985, p. 45). Krashen (1987) stresses that the LAD does not subside with age and provides the affective filter hypothesis to explain why some adults are less successful in learning languages. I have had mature students (50+ years old) who reached almost native-like competence in over a couple of years. I also have acquaintances (50+ years old) who have lived in the United States for over 15 years, have been in ESL classes, and have impressive grammar knowledge, but their English language production is still in the low intermediate level. To say that some mature adults would not be capable of learning new languages is to ignore millions of adults that learn new languages and reach a high level of proficiency (Hartshorne, Tenenbaum, & Pinker, 2018, p. 8).

According to Hartshorne, Tenenbaum, and Pinker (2018), the performance of second language learners exposed to an average of 5 years of language immersion was similar to simultaneous bilinguals with the same exposure time, older non-immersion learners with averages of 8 years ages of exposure performed similarly to young non-immersion learners with averages of 4 years of exposure, which may indicate a slower learning process, but not necessarily a lower ability to learn the language (p. 8).

Krashen's Affective Filter hypothesis explains that adults may have more emotional impediments that hinder their acquisition of a second language (Krashen, 2009a, 2003). The affective filter is part of the unconscious process and regulates the levels of assimilation of the target language (Krashen, 1985, p. 12). The Affective Filter is an emotional apparatus responsible for several affective variables that impact the acquisition of the target language, such as anxiety, self-esteem, motivation, and sense of belonging (Krashen, 2009b, p. 8).

Krashen affirms that the higher the level of the emotional variables, the lower the acquisition and vice versa, making these variables the filter that deters acquisition from happening or filtering out the comprehensible input the acquirer is exposed to (Krashen, 2009a, p. 9). Krashen and Terrell advise language instructors to create a welcoming classroom environment to counteract the affective filter or emotional variables impacting and preventing interactions of comprehensible input from facilitating language acquisition (Krashen and Terrell, 1983, p. 19-20).

Motivation or grit (Khajavy, MacIntyre, and Hariri, 2020) is valued as one of the most critical emotional variables contributing to second language acquisition. Consequently, the more motivation the acquirer has, the less impact the affective filter will have, and language acquisition will have a higher chance of success. Gardner (1990) claims that the learners' affective responses and attitudes to stimuli and context tend to severely impact their motivation to acquire a new language (Gardner, 2010, p. 175). Gardner also argues that although there are different motivation types, such as intrinsic, extrinsic, instrumental, and integrative, their effect is related to their intensity to promote language acquisition (p. 4). In other words, intrinsic motivation happens when there are no apparent external reasons to do something, and language learning is pleasurable by itself (Noels, 2001). The extrinsic motivation happens when the language learner expects some reward for engaging in the learning process (Noels, Clément, & Pelletier, 2001). The integrative motivation happens when the individual is involved in acquiring a second language due to a personal interest in the target language's people and culture (Gardner, 2001).

Dulay, Burt, and Krashen (2009a) describe motivation in three senses: 1) "instrumental motivation," when the acquirer is yearning to become proficient and to improve their living

conditions, 2) “integrative motivation,” when the acquirer’s goal is to become fully integrated within the host culture, and 3) “social group identification motivation,” when the acquirer target is to be able to fully espouse the social identity of the speech community (p. 361). The “social group identification motivation” is the longing to become a member and belong to the social group that speaks a particular language (p. 94).

Gardner, Day, and MacIntyre (1992) suggest that the instructor’s behavior may impact the motivation of the language learner and that it is fundamental that instructors find ways to keep students engaged and focused on their learning goals (Gardner, MacIntyre, and Lysynchuk, 1990, p. 54). Gardner (1990) claims that the attitude of being open to learning and the willingness to interact with members of the language community is crucial and depends on life experiences and experiences with the language (p. 47).

Krashen (1987) and Onwuegbuzie, Baley, and Daley (2000) see the overpowering effect of anxiety in acquiring a second language. Onwuegbuzie, Baley, and Daley state that international students required to enroll in ESL classes report high anxiety situations due to the requirement of passing the ESL classes to be accepted by the university in academic programs (2000, p. 217; Gajek, 2016). In my teaching experience, I have seen ESL instructors so concerned in preparing international students to enter academic programs that they assess students in terms of task completion, punctuality, participation, and content, emulating requirements of academic programs and neglecting to assess the students’ language proficiency (Carey, 1993). According to Short (1993), it is virtually impossible to detach language from content and more straightforward to focus on assessing content knowledge than language proficiency, which could be responsible for ELL’s poor academic performance and maybe cause anxiety (Short, 1993, p. 629).

MacIntyre and Gardner (1989) highlight the function of two types of anxiety that can affect positively and negatively language acquisition (p. 252). They assert that "facilitating anxiety" functions as an endowment that contributes to language acquisition because the acquirer seeks to use complex structures in the target language. In contrast, the "debilitating anxiety" serves as an obstacle to acquisition because the acquirer fears devastate the acquisition process, and the acquirer will avoid stressful situations (Scovel, 1978, p. 139). For Scovel, the activation of these two types of anxiety will depend on the acquirer's personality (p. 139). Individuals with higher self-esteem tend to have higher facilitating anxiety (fight); individuals with low self-esteem tend to activate the debilitating anxiety (flight) (p. 139).

For MacIntyre and Gardner (1989), self-esteem can significantly impact the acquirer's motivation (p. 255; Gardner, Tremblay, & Masgoret, 1997; Masgoret and Gardner, 2003). It should be noted that Krashen emphasizes that input alone will not suffice; the acquirer must have a positive attitude or be predisposed affectively to assimilate and understand the input (Krashen, 1985, p. 3). Additionally, Krashen says that if the acquirer is emotionally rejecting the target language, the "affective filter" will block or impede the acquirer from processing the input. If the "affective filter" is high, the acquirer may even partially understand the input, but the LAD will not be activated (Krashen, 1985, p. 81).

The "affective filter" is Krashen's explanation for how individual differences between acquirers' abilities impact their success and the assertion that age would not be as important (1985, p. 90). Krashen does not provide a detailed description of how the affective filter works, but he emphasizes that motivation, self-esteem, and anxiety play significant roles in acquiring a second language (Krashen, 1977). McLaughlin (1978) claims to concur with Krashen's assertion that affective factors may contribute or hinder the acquisition of a foreign language; however,

McLaughlin criticism of the "Affective Filter Hypothesis" was delineated in three main aspects: 1) there is no need for the "Affective Filter" because there were previous theories that propose the notion that psychological factors interfere in the acquisition process, 2) there is no definition of how the "Affective Filter" works, and 3) there is no empirical evidence of the "Affective Filter" at work (McLaughlin, 1987, p. 54).

Krashen refutes McLaughlin's criticism (Krashen, 1979, p. 162) reaffirming that the idea of the "Affective Filter" must be credited to Dulay and Burt (1977), and stating that in several of his published articles, he presented empirical data supporting his hypotheses (Krashen, 1979, p. 165). In a recent study, Namaziandost, Nasri1, and Ziafar (2019) compared the language development of two groups of ELLs. Group one was called "i + 1," and the input offered was one level above the student's level, and the second group was called "i – 1," and received input one level below the student's level (p. 8). Namaziandost, Nasri1, and Ziafar claim that the test results of the study indicate that the "i + 1" group outperformed the "i -1" in language comprehension, and students in the "i +1" group demonstrated to be more motivated than the students in the "i – 1" group (p. 17). For Krashen, since acquiring a new language is a slow process, instructors must create activities where comprehensible input is provided in diminished anxiety situations. These activities should gently encourage students to use language to collaborate, and mistakes should not be corrected all the time (Krashen, 2009a, p. 7).

The Comprehensible Input Hypothesis. This hypothesis is based on the input acquirers will receive in interaction inside and outside the classroom. Krashen refers not to the formal language learning process but to the informal and unconscious process where the input stimulates the language acquisition device (2009a, p. 83). He claims that language development follows a natural order when the input is comprehensible, even if it is just above the acquirer's

linguistic competence level (Krashen, 1979, p. 164). Krashen states that comprehensible input is more than input on the level of the acquirer. The input must be comprehensible, engaging, and the activities must be intended to help students maintain their motivation and reduce anxiety (Krashen, 2009a, p. 74).

For Krashen (1987), a high level of language exposure and grammatical structure repetition exercises can be helpful; nevertheless, the acquisition will only happen when the acquirer is ready to assimilate and use such structures. The input received by the acquirers must be just above their competency level; it should be an input level "i + 1," where "i" indicates the current language capacity of the individual and "1" indicates a language competence level just above the acquirer (Krashen, 2009a). Krashen exemplifies the process in an old lecture where he teaches German with incomprehension input and then teaches the same lesson with comprehensible input (Santiago, 2015; Rounds, 2010). The difference is that in the lesson with comprehensible input, Krashen uses the context, extralinguistic information, gestures, and repetitions to guarantee that the audience will follow and understand what he is saying in the lesson even without knowing any German.

Krashen has presented ten arguments for the comprehensible input hypothesis (1985) that I am going to comment on here:

1. The Caretaker Speech Argument (Krashen, 1985) refers to the simplified language used by children caretakers, and that facilitates the acquisition process because it is focused on communication. This simplified language helps the child to understand the message by the use of extra-linguistic resources such as gestures, body-language, facial expressions (Shih, 2016), and tone of voice. The caretaker provides "i + 1," and the LAD is activated for language acquisition (Krashen, 1985, p. 84). As the child demonstrates understanding and language competence, the

complexity of the input increases naturally. Krashen urges second language instructors to utilize a similar strategy simplifying the language for maximum comprehension and then gradually increase the complexity of the language as students acquire higher levels of language competency (Krashen, 2009a, p. 24-26; Krashen, 1984; Bidarra, 2016).

2. The Silent Period Aargument (Krashen, 1985) refers to the phenomenon of acquirers being silent in the lower level of language acquisition. This phenomenon is observed frequently in children and young adults learning a second language in an immersion environment. This period may last several weeks or months until the individual is comfortable to attempt speaking the language (p. 87). Krashen states that a silent period may also occur with adults acquiring a second language, but they may attempt to use memorized sentences (Krashen, 2009a, p. 26), sometimes without understanding what they are saying and dreading the answers from their interlocutors. Krashen states that in the "silence period," acquirers of a second language remain silent but are still being exposed to the new language and building language competence through listening and reading (Krashen, 2009a, p. 26).

According to Krashen (1985), language production is the effect of acquisition, not its cause. Language production manifests itself after the acquirer is exposed to enough comprehensible input to construct their language competence (p. 80). Krashen advises instructors not to pressure students in the silent period to produce creative language to avoid increasing their anxiety and prevent them from relying on L1 rules to structure sentences in the target language (Krashen, 2009a, p. 27). In other words, premature language production tends to increase L1 interference (Newmark, 1966) and may cause language fossilization where "incorrect linguistic features become a permanent part of the way a person speaks or writes a language" (Han, 2004,

p. 19). McLaughlin (1987) calls attention to the problem of silent acquirers not providing feedback and causing interlocutors to lose interest in trying to communicate with them (p. 37).

3. The Age Differences Argument (Krashen, 1985) refers to Krashen's claims that data indicates that young children are usually more efficient in second language acquisition than adults and teenagers; however, adults and teenagers tend to acquire language faster at the beginning level due to a higher exposure to comprehensible input (p. 90). Young children may be more efficient due to a lower level of stress, less responsibilities, and a lower "affective filter." McLaughlin (1985) states that young children usually reach higher language competency levels than adults in the long run (p. 175). According to Krashen, adults tendency to stagnate in lower language levels not due to diminishing LAD ability but due to a higher "affective filter" (Krashen, 2009a).

4. The Instruction Effect Argument (Krashen, 1985) refers to the benefit of formal instruction in situations where immersion is not possible or immersion is overwhelming for students, which may be the case of beginners (p. 91). Krashen argues that language classes focused on comprehensible input would be less stressful and encourage a lower affective filter (Krashen, 2009a, p. 7).

5. The Exposure Effect Argument (Krashen, 1985, p. 92) refers to the benefits of being exposed to comprehensible input (p. 92). Krashen states that it is not the amount or how much time of language exposure that contributes to language acquisition, but how comprehensible the input is (Krashen, 2003, p. 4). Krashen argues that language exposure not necessarily "entails comprehensible input," and in such cases, the acquisition process tends to stagnate (Krashen, 2009a, p. 41). Language stagnation can happen even if the acquirer is taking language classes

where language is always explained at the same level and with little comprehensible input + 1 being provided (p. 51).

6. The Lack of Access to Comprehensible Input Argument (Krashen, 1985, p. 92) refers to situations where the individual is living in the country of the target language; however, there is a poverty of stimuli in cases where the acquirer lives with co-nationals and receives very limited comprehensible input, or children of hard of hearing parents (Krashen, 2009a, p. 63). For Krashen, the lack of comprehensible input explains delays in language acquisition and language stagnation (Krashen, 1985, p. 91).

7. The Diverse Methodologies For Language Teaching Argument (Krashen, 1985) refers to different methodologies used in language instruction focused on grammar and drill-based exercises (p. 91). Such teaching strategies offer very little comprehensible input and consequently do not encourage acquisition (p. 92). The natural approach promoted by Krashen and Terrell (1983) would be more efficient because it creates a low anxiety environment and sufficient comprehensible input through acquisition activities (p. 95).

8. The Immersion Teaching Programs Argument (Krashen, 1985, p. 94) refers to the positive effect of immersion language programs where students spend the majority of their waking hours in intensive language classes where they are exposed to comprehensible input in their interactions with instructors and classmates (p. 94). Krashen emphasizes that in many immersion programs, students are safe from ridicule when they make mistakes because they spend the majority of the day segregated from native speakers. Instructors can control the environment and provide comprehensible input according to the level of the students (Krashen, 2009a, p. 171). One of the problems in evaluating such programs' effectiveness is that input is always provided within specific contexts. Students are generally evaluated on their ability to

comprehend and assimilate the content covered and very little on their linguistic competency (p. 172). The segregation of these immersion classes facilitates the acquisition and prepares students to transition to regular academic classes where the context is not always provided and the language used is designed for native speakers, not for second language acquirers.

9. The Bilingual Programs Argument (Krashen, 1985, p. 95) refers to bilingual programs' success by providing comprehensible input. Krashen states that successful bilingual programs promote language acquisition through subject matter instruction in two languages (Krashen, 2009a, p. 170). Successful bilingual programs provide students with subject-matter instruction in their native language to help students understand the subject and then reinforce the instruction in their second language, giving them opportunities to discuss the content in both languages without translating (Krashen, 1985, p. 95). Bilingual programs that provide content mainly in the student's native language and only second language grammar-focused instruction typically emphasize translation rather than meaning negotiation and comprehensible input and consequently tend to be less successful (p. 96).

10. The Reading Hypothesis Argument (Krashen, 1985, p. 96) refers to the idea that reading can be a source of comprehensible input and profoundly help students acquire the language and improve their language production in writing and speaking (Krashen, 1984). Krashen (2004) looks at the power of reading for pleasure as an effective way to promote language acquisition (p. 37). Besides, Krashen asserts that compared to formal instruction, reading for pleasure is significantly more effective (p. 120). Krashen claims that reading for pleasure helps the individual reach a state of "flow," as theorized by Dr. Mihaly Csikszentmihalyi, a Hungarian Psychologist who postulated that the "flow" is when individuals reach a state of engagement and satisfaction for being in an activity that is at the same time

challenging and exhilarating (Csikszentmihalyi, 1991, p. 71). In situations where the second language student is in the state of flow, the LAD will be activated to the fullest. Simultaneously, the individual is consciously engaged in the activity and unconsciously and effortlessly acquiring new vocabulary, grammatical structures, and language competence (Krashen, 2004, p. 147).

As mentioned above, McLaughlin (1987) and others (Abukhattala, 2012; Lightbown & Spada, 1998; Gregg, 1984; Liu, 2015; Zafar, 2011) have criticized Krashen's hypotheses due to the vagueness of his definitions and the difficulty to empirically verify the mechanisms of the acquisition process. McLaughlin (1987) also stresses the difficulty to accurately measure the level of acquisition of students (p. 55) and the difficulty to define what comprehensible input is (p. 57). Consequently, it becomes challenging to apply the expression i + 1 in the classroom, especially considering the different acquisition levels of each student. Nonetheless, Krashen's hypotheses occupy a vital place in understanding how language acquisition happens, and from the 1970s have contributed to the discussion of how instructors can assist ELLs in their journey to language acquisition.

Because of Krashen's hypotheses, teachers have emphasized the need to offer comprehensible input and create a classroom environment that diminishes the anxiety and negative feelings of acquires against the target language (Namaziandost et al., 2019; Krashen et al., 1984). Krashen (1979) affirms that his theory explains many aspects of the language acquisition processes, and since we do not have a physiological instrument to measure what is happening, his theory relies on abstractions to predict observable phenomena (p. 152). Based on Krashen's hypotheses, I designed a study that looked at the effectiveness of ELLs in two different programs, one an immersion intensive ESL and the other an independent and new

program designed and executed by me with the assistance of faculty of private Liberal Arts University in the Southern of the United States of America.

The next section of this dissertation, chapter 3, will narrate the context, design, and execution of the study. The project's design took into consideration the identified shortcomings of studies analyzed in the literature review and recommendations of best practices. The Pilot Program design also considered ways to apply Krashen's Comprehension Input Theory, making sure that language learners would be exposed to comprehensible input and interact with their instructors and classmates in a manner similar to in-person language programs instigating and supporting language acquisition.

Chapter 3 - Methodology

Relevance and context of the study

The main focus of this research is the effectiveness of a synchronous online delivered ELS program in terms of providing language learning skills, creating the capacity for English learners to problem solve, develop creativity, use analytic thinking, collaborate with each other, and establish effective communication (Garrison, 2011; Davison, 2005).

My interest is to understand how effective online language learning could be, focusing on the potential benefits a program like that could create, especially for learners that do not have the means to move to an English-speaking country to further their studies. In my position of coordinator of an ESL program at a local private university in Kentucky, I realize that developing an ESL program to be delivered online could further the university's mission. I also trust that giving students in remote areas access to the English language will promote positive social changes in many communities.

The typical account I receive from my international students is that English proficiency is required to be accepted in well-paid jobs in their countries. Most of my ESL students plan to return to their countries with a Diploma from a US university; they claim that this alone can enhance their chances to ameliorate their lives and the lives of their families. Employability enhances when applicants demonstrate English skills (Shafie and Nayan, 2010). In many developing countries, employers are particularly focused on hiring English-speaking personnel to help their institutions establish and maintain international relationships that will translate into business (p. 119-121).

If we want to empower ostracized communities and students in remote areas, major changes will be required, from infrastructure to pedagogy (Langer de Ramirez, 2010). Levine and Levine (2012) highlight the trend of student loan delinquency, increase alienation due to decline in full-time faculty positions, and deplete access to higher education, a trend that will impact not only American students but many communities around the world (Hager, 1998). The Delors Report (2010) embraces changes that would permeate entire communities on the belief that education can transform mankind (Boff, 1997), foster harmonious relationship, promote inclusion and work for the decline of suffering, oppression, and rivalry between groups (Delors, 2010, p. 11). The Delors Report sees globalization as a powerful force to provide comfort to people who lose their roots, land, culture, and language.

People tend to cling to elements of their identity and close themselves to different communities. The effort to find meaning in their situation without being gradually exposed to other cultures and language is not easy. Providing people with access to languages and cultures will help shape global citizens who will always search for peace and harmony (Delors, p. 17). Access to language education could be an efficient way to promote mutual understanding and

international cooperation. An effective curriculum will encourage learners in the four pillars of education: learn to live together, learn to know and become a life learner, learn to experience skills in life, and learn to be a global citizen (Delors, pp. 20-23).

An important element that needs to be analyzed is the effectiveness of the face-to-face (F2F) ESL classes and online English programs, in terms of providing international students the language skills and academic training to be successful in their transition to undergraduate and graduate programs when they come to America.

This study was conducted between February and May 2020. We offered the EFL synchronous online program to Latino students in South America and the USA. I used the Michigan English Placement Test as the pre and post-tests for the study. The validity of the measuring instrument is based on the claim that the various tasks in the test are appropriate to measure the proficiency level of the test takers (Cambridge Michigan Language Assessments, 2014, p. 10; Weigle, 2000; Weyant and Chisholm, 2014).

In terms of unidimensionality and reliability (Anastasi, 1986; Cronbach, 1988) the collection of evidence of validity begun at the design of the test and is an unending process. CaMLA (Cambridge Michigan Language Assessments) claims to continuously gather random results of test-takers to maintain evidence of the appropriateness of the measuring tasks (Cambridge Michigan Language Assessments, 2014, p. 11; 2013; 2014a; 2014b; 2014c; 2015; 2015b; 2015c; 2015d; 2017; 2018; 2019; 2020; Römer, 2017; 2019). Papageorgiou, Stevens, and Goodwin (2012) compared the listening comprehension test and claimed that there is validity in terms of accurately measuring and quantifying the level of test-takers (LaFlair et al., 2015 and 2017; Verhelst et al., 2016). Having two groups of students, one who took in-person English lessons and the other synchronous online English lessons, I compared the data from all the pre

and post-tests to see if there were significant differences in the results of the two groups of students (see also Goodwin, 2017).

The results of this study will be available to the university where the study occurred and will serve for the development of a regular online EFL program. The English Proficiency Test instrument (MEPT) (Aryadoust et al., 2011; 2014; Goh and Aryadoust, 2010; Kang et al., 2016; Pearce et al., 2018 and 2019; Wagner, 2004; Walter and Hentschel, 2013 and 2014; Wang, 2006) was also chosen because it has been used by the university for the past 12 years in the placement of international students according to their English competence in the IEP (Intensive English Program).

As a result of the analysis of the instrument, I have developed a new in-house test to help the university assess the English level of its students before they come to the USA. Having the copyright of such a test will also make it possible for the ESL department to administer the test via LMS with the help of a videoconference platform and video proctoring software. I have been doing that since May of 2020. In terms of proctoring, I am researching different proctoring systems to reduce the need for live proctoring by faculty (Suvorov, 2019). Automated proctoring systems claim to authenticate the test taker's identity and monitor the test takers to guarantee the integrity and security of the test, and check of the requirements of the exam are followed (Slusky, 2020; Arnò et al., 2021; Lee et al., 2021).

The in-person ESL and the synchronous EFL mode have their distinct characteristics; I have established similar degrees of language exposure to compare the learning outcomes. I have compared the learning outcomes of students from similar mother-tongue (L1 belonging to the same language family) in the two modes of the program. Students were in a similar age group and had a similar educational background.

In terms of program design, students in both programs had access to the same learning resources. The ESL in-person students enrolled in the F2F (Control group) with eight (8) weeks of classes following the regular university summer schedule and language teaching strategies. The EFL students enrolled in the Synchronous Online Videoconference Mode (Treatment group) with eight (8) weeks of classes with videoconferences and short videos, short quizzes, group assignments over the Internet, group discussions, peer-to-peer interactions, and interviews with the instructors. The fully online mode was delivered by Zoom (zoom.us), for the video conferences, WhatsApp, and Moodle, for extra resources and homework assignments. The F2F mode was measured with the data collected by the ESL Institute using a selected group of students from the intensive ESL summer program of the university (the criteria to select students was that they had to be from a Romantic language - L1 and test in the English intermediate level).

Krashen's theory helped me decide on the types of technologies to be used to support peer-to-peer interaction, add different types of activities to maintain student's engagement, and training instructors to use a variety of pedagogical strategies during the videoconferences to ensure students opportunities to negotiate meaning with their classmates and have the support of the teachers. The design of the structure, scope, and sequence of the lessons was based on trying to make as similar as possible to the IE Program, and yet creating an interactive and engaging environment for students to be less concerned about the technology and the mechanics of English to emulate a natural language acquisition process (Krashen and Terrell, 1983).

This study will be valuable to universities that offer ESL programs, so they can have students start their English classes while still in their countries. The study will also be beneficial to students, as it will look into the evidence of English learning potential in an online

environment. Other studies may follow to understand the student experience and satisfaction, the student retention rate of such a program, the student recruitment potential of reaching students in their own countries, and virtually introducing them to the university.

Interactivity

Most experts would agree that language learning is more effective in an environment where human interaction is intentional and plentiful (Kinginger, 2013). Shaw (2013) highlights the importance of interaction and collaboration in language learning in his investigation about computer-supported collaborative learning (CSCL) as a tool to improve the learning outcome of language learners. Computer assistance is definitely a good tool, but language learning happens best in connection with the linguistic community, or in other words, within the speech community (Patrick, 2002). A speech community is the most important social group. It is a group that interacts by means of speech. The speech community deepens people's social cohesion or integration in a particular social setting (Passos, 2006). Language is fundamentally learned informally and by social reinforcement in all civilizations of the world. Proficient language learners acquire the ability to maneuver the speech community, function well in society, and negotiate problems and find solutions, typically acquiring 21st-century capacities (Davis et al., 2016). Consequently, to be successful, an online delivered ESL program will need to create the means to forge a speech-community environment.

I am aware that universities have not been engaged in online language teaching at the same level as private organizations and app developers. I also understand that there is a general skepticism among faculty members in many universities about the practicality of technological alternatives to F2F teaching modes, especially when language programs are concerned. They

doubt the potential to teach critical thinking through the new technologies and point out the difficulties of assessing students' progress in online courses (Walsh, 2011).

Language as a Political and Social Tool

Power struggles within communities can occur in public places, schools, and government offices, where language becomes another inability to hinder immigrant populations as they try to find ways to capitalize within the system (Tenzer and Pudelko, 2017). In the navigation at the language crossroads, we see the importance of language proficiency as the means for people to exercise power. Without the freedom to speak (communicate), an individual cannot experiment with the benefits of citizenship; he/she is no higher than a slave; language can provide the freedom to participate in a democratic, egalitarian society (Foucault & Pearson, 2001, p. 29, 61). A good example of such power struggles can be seen when the use of language is not taken into account in the identity of the immigrant population, and the dominant identity is imposed upon minorities even in education (Gibson, 2004). Gibson affirmed that even with the consciousness of identity being constructed and at the same time construed by language, several conflicts among bilingual and monolingual workers in America take place every year (p. 2).

Pilot Program Design

Language learning happens through interaction and video-lessons are not enough. The use of video lessons and prerecorded videos can generate class discussions or ensure that students have acquired the same content knowledge or context for class activities. Face-to-face language classes are effective in creating learning opportunities for language learners to develop their language skills; however, I propose that fully online synchronous language classes can be as effective as F2F classes (on-site classes), if the delivery of content is not unidirectional. This ESL synchronous course must be more than how-to-videos on platforms such as YouTube,

Vimeo, Vine, and Instagram, which do not offer the possibility of interaction between the video authors and the audience.

If language interactions are to occur, the course must be designed to provide a variety of opportunities for the language learners to interact with each other and with the instructors. Lack of interactivity is a problem that can also happen in an on-site classroom, but it can be remediated if the instructor is ready to utilize different pedagogies and teaching strategies. Peer interaction and collaboration have the potential to incentivize the use of language and promote language development (Gromik, 2012). I added the WhatsApp chat platform in the pilot design to allow students to collaborate between videoconferences (Tudini, 2010).

My goal with the Synchronous online ESL program is to build a speech community of sorts, where students will be at ease with each other and learn how to use English to negotiate their interactions as they solve problems together (Denzin and Lincoln, 2018). It is essential to highlight that there are no measurements that we can use to verify how much exposure students will have to language interactions because each student, even living in America, will have a particular housing arrangement and their contact with English speakers outside the classroom environment will vary. Moreover, the effects of interconnectivity are unknown, especially when it refers to online language learning (Brennan, 2013).

Drawing Conclusions from MOOCs

In many MOOC (Massive Open Online Courses), students have stated that because online communities have become part of their daily life, the use of web tools such as blogs, wikis, and social media platforms, are expected to promote social participation (Davis et al., 2014, p. 110). Even though students spend most of their day using their mobile devices to be connected with family, friends, and coworkers, using their devices as learning tools is still not a

common practice (Ekanayake and Wishart, 2015). One of the major problems for online courses is student retention (Brennan, 2013). In order to resolve the student retention problem, the design of an online language program must facilitate the interaction between learners and instructors and incentivize persistence in the program (Sultana, 2007).

Another crucial aspect to be considered is the demographics and the individualities of the students that would successfully complete a synchronous EFL program. Again, the design of such a course should take into consideration that not all participants are persistent enough to complete online courses. We know that participants that completed MOOCs were self-motivated, lifelong learners (Christensen et al., 2014). Christensen highlights that the population of MOOC students is young, with over ninety-five percent of learners being younger than 25 years old (Christensen et al., 2014, p. 2).

MOOCs students are generally well-educated; 79% of them have a tertiary degree and usually are well-employed (p. 4). The typical student that embarks on a MOOC serves as a good parallel to an online EFL Program because he/she comes from different countries and circumstances and is seeking alternative ways to have access to higher education (Carver and Harrison, 2013).

Even in remote areas, access to the Internet is no longer a major problem for many students; nevertheless, having the language skills to navigate and comprehend new content is still a leading drawback for many students. The MOOC audience of professional people is not necessarily the same demographic that will need an EFL online program since most of Mooc's students already have enough language skills to be successful in short MOOCs and encounter the answer for their immediate needs. One of the factors that make students successful in massive open online courses is the sense of community (SoC) that is created among students through peer

sourcing and group activities, which are encouraged (Chiou and Shih, 2015). Discussion boards and activities were designed into the EFL online program with the intent of building a sense of belonging (Shackelford and Maxwell, 2012).

Social Change and English Language Learning

My goal is not simply to give English learners opportunities to develop their writing skills or communication skills to function in the marketplace. My audience is comprised of students that are finishing high school or college in their own countries or graduates that wish to study abroad but lack the English skills to be accepted at undergraduate-level courses. Some students with bachelor's degrees find it hard to be accepted at universities in America due to a lack of English skills and low scores in language assessment tests (TOEFL, TOEIC, IELTS, DET). For these students, spending three semesters or more in ESL classes in America is extremely expensive and time-consuming. The increasing number of foreign adult students seeking undergraduate and graduate degrees in the US is creating a demand for alternatives that can provide learning opportunities for students that cannot reach English fluency in their own countries (Council of Graduate Schools and Educational Testing Service, 2010). In order to provide opportunities for international students other than through the TOEFL exam, universities offer ESL/ELL programs where students can take advantage of being in an immerse English environment and be prepared for entering college (Leki and Carson, 1997; Dobson et al., 2001).

While universities are noticing the adult student's demands for more interactive and up-to-date technologies in all college courses, very little has been done to incorporate technologies and Internet-based tools in the ESL programs (Chang & Shih, 2007). Creating a program that could reduce the time and expenses of students in the US is undoubtedly a challenge. I am aware of the difficulty of developing a program and the need to study the benefits of such an endeavor.

According to Kotter (2009), true leaders are the ones that are ready to defy the status quo and search for alternatives to reach better results. Leaders should be aware of the threat of being confined by traditions and ineffective approaches (Daeschner, 2014, p. 32).

Creating an environment where students can have the liberty to communicate their ideas will provide them access to their academic goals as they learn the language. Students will use language as an instrument in their interactions. I know firsthand that when one is learning a language, there are moments when one feels incapable, vulnerable, and unintelligent, just because of the struggle to express ideas and concepts.

Languages are meant to be learned in infancy, where family and society show a unique placid disposition to support the learner to build up vocabulary and confidence to reach language proficiency. Adult language learning is not always natural nor welcoming. There must be an openness to re-think the pertinence of traditional procedures (Daeschner, 2014, p. 18) and recreate real-life circumstances where language learners can develop their language skills without the pressure of language precision. The need to provide alternative programs is evident; apathy will result in failure (Collins, 2001). The idea of looking at an ESL program that is delivered in a hybrid or fully online mode is my attempt to rethink the validity of the F2F traditional methods of language teaching. These alternatives would offer learners a modern and effective way to recreate contexts where language interactions will be used to forge a realistic L2 learning environment.

Instructors are often blamed for the poor language-learning outcome of their students; nonetheless, the lack of real-life situational opportunities for learners to exercise their language skills is the real culprit (Mondahl and Razmerita, 2014). Pedagogical challenges and lack of opportunities for learners to practice speaking, listening, reading, and writing skills, may impede

individualized feedback. These factors produce teacher frustration and student disinterest (Locastro, 2001). I stand on the premise that class activities must emulate reality in language learning, where real and mundane situations require language proficiency. I also believe that in academic and professional formal occasions, human interactions have a different set of expectations, and in these contexts, language needs to be formal and precise. A language-learning program that does not focus on creating opportunities for students to practice real-life language usage would not show respect for students (The Belmont Report, 1979).

According to Selingo (2013), universities will need to reinvent themselves to respond to the demands from students for the inclusion of interactive and technology-integrated ways to deliver content. In ESL programs offered by universities, technologies and Internet-based tools are even scarce (Chang & Shih, 2007). One possibility to incorporate technologies in the ESL programs would be to partner with companies such as Rosetta Stone (www.rosettastone.com), Babbel (www.babbel.com), Pimsleur (www.pimsleur.com), and Duolingo (www.duolingo.com), which offer interactive tools that students can use as additional resources to improve their language skills. On the Duolingo platform, for instance, teachers can create classrooms and have their students participate in activities directly target to specific language skills; they can also assign activities for students to do on their own. Unfortunately, the cost of these partnerships is high and small colleges and universities would have a difficult time adopting these tools in their budgets (Selingo, 2013). Elaine Tarone (2015) states that online interactive language courses claim to be an effective alternative to face-to-face in-class language courses; however, the lack of longitudinal studies prevents us from comprehending how beneficial and efficient computer-based language courses are compared to F2F courses (Tarone, 2015, p. 393). This is one of the

reasons for combining computer-assisted and synchronous face-to-face interactions in an online EFL program.

The skepticism about the effectiveness of using technology in language learning can be the result of an array of incidents and frustrations experienced by students and teachers (Hamilton, 2009, p. 149; Evans, 2011). I expect that this study will be followed by an investigation of participants' perspectives and benefit from their input about what technological tools and activities helped them the most in their language learning practice (Leki and Carson, 1997).

I am aware of claims that there is no way for educators to be objective and neutral in their interactions with students (see Collins, 2005, and Zaytoun, 2006). I also understand that teachers empathize with their students depending on their personal learning experiences (Stevens, et al., 2010). Having gone through the stages of acquiring L2 and L3 when I was in my twenties, I have experienced similar struggles in my students' adult language learning process. Nonetheless, I recognize that, even though the technologies available today can help students in their L2 acquisition, if not properly utilized, devices and tools may become obstacles and distractions that hinder language learning (Heflin et al., 2017).

Language Acquisition and Pedagogical Strategies.

Culture and language are social constructs (St. Clair, 2008). Consciously or unconsciously, individuals within the same community share an understanding of social concepts, rituals, and practices. The awareness of one's culture, rituals, and language becomes more evident when cultural encounters occur and individuals are drawn to societal and cultural comparisons. A simple lexicon analysis would suffice to make it clear that by the scarceness or abundance of vocabulary to describe things or concepts, a language demonstrates how important

or common things and concepts are for a particular community (St. Clair, 2008). Each culture has the aptitude to physiologically perceive different objects, colors, and even emotions; nevertheless, this ability is determined and constrained by cultural values and context. Once anything is perceived, there is a need for a language to create the linguistic symbol for that, which is perceived. Things and concepts that are not perceived are filtered out by the particular language of the specific culture (St. Clair, sd., p. 140). In other words, if the culture does not perceive something, it has no need for words or symbols to represent it. In the language learning process (L2), the learner is faced with cultural encounters, he/she becomes aware of the way his/her original culture makes sense of life and is invited to step out of the constraints of the mother culture/language and embrace the boundaries of the new language/culture being acquired (Trindade, 2011).

In terms of sense of urgency to provide international students linguistic, academic, and global competencies, I aspire to see language education accessible to students around the world as a catalyst of Transformative Learning (Mezirow, 1991) and the establishment of a "consciência" that supports the emancipation of all learners, in all social strata, to attain the privileged and responsibilities of global citizens (Freire, 2000; Greening, 2017). My positionality in terms of language acquisition is that there are cases where late L2 learners obtain near native-like phonological awareness and production due to high levels of L2 exposure and motivation. Older L2 learners with a richer L1 vocabulary, particularly academic terminology, exposed to comprehensible input in a second language L2 have a high potential to excel in the L2 language learning process (Singleton and Ryan, 2004; Krashen et al., 1979; Singleton and Lengyel, 1995).

The relationship-building process that is stimulated in the classroom, being in-person classes or online synchronous environments, promotes a sense of community that helps diminish

the negative “affective filter” and facilitates the language learning process (Stevens et al., 2010; Krashen, 1987). The inclusion of technological tools to facilitate collaboration between English language students is a fundamental element to promote the effectiveness of IEP and EFL programs in English-speaking countries and beyond national borders. English can facilitate collaboration to intermediate global citizenship education (Reimers et al., 2016; Yeager et al., 2013). Collaboration resonates with the UN 2015 goals to help students become global citizens. Acquiring the English language in a diverse and multicultural environment with students from different countries will facilitate the communication between countries, expose students to different cultures, different value systems and encourage international alliances to solve humanity’s challenges (Chen, 2011).

Social, cultural, and emotional barriers can be neutralized through collaboration in EFL synchronous communities each time a videoconference takes place. Encouraging meaning negotiation and cooperation (Long and Porter, 1985), an EFL synchronous program may help students master collaborative tasks and promote human ingenuity and partnership to build a global civilization invested in problem-solving.

One of the targets of this study was to measure language skills and proficiency, attitude and engagement, and not simply student satisfaction (Violante and Vezzetti, 2015). The design of this pilot program emphasized the use of interactive exercises, where the exchange of information and discussions about content become the main focus of the activities, and subsequently, language acquisition occurs subconsciously (Dulay, Burt, and Krashen, 1982). I also valued the contact with the participants and prompt reports of their interactions with other learners and instructors, mediated by technology. It was rewarding to hear that students agreed

that the pilot program was helpful to enhance comprehension and generate more confidence in their language aptitude (Thurmond and Wambach, 2004).

Experimental studies have highlighted the positive effects of interactivity in developing language skills in terms of improvement in learning outcomes (Moreno and Mayer, 2005). My intention is to emphasize the necessity of interactivity and peer-to-peer collaboration in L2 learning (Long, 1996), highlighting the crucial need for meaningful and comprehensible interactions to propel the SLA process. There is no doubt that input and language exposure are critical ingredients in L1 acquisition (Long, 1990). SLA is a multifaceted cognitive process that involves the incremental development of skills, which will, with time, become unconscious and spontaneous (Pütz and Sicola, 2010).

Reading and writing skills might improve with the use of social media, mainly because students are interacting with real people (Derakhshan and Hasanabbasi, 2015). I have created groups using Facebook (facebook.com), WhatsApp (whatsapp.com), WeChat (wechat.com), Orkut (orkut.com), Nearpod (nearpod.com), Twitter (twitter.com), Telegram (web.telegram.org), and Seesaw (web.seesaw.me/) and could observe students engaged in activities and interactions outside the ESL classroom. Social media could allow students to maintain their interactions outside the classroom and encourage students to collaborate in face-to-face or remote language learning. My main concern is with the use of informal language and the amount of time to monitor interactions. Most of my students are interested in acquiring academic language, so the informal language in social media, although positive in terms of language development, has to be adapted to a more formal and academic environment. In this case, the instructor would need to monitor the conversations to require the use of formal language. Derakhshan and Hasanabbasi did not provide evidence of the benefits of social media and e-mail for language learning, but the

literature mentioned in their article helped me consider including social media as a language learning tool in my study.

It is relevant to be aware that L2 acquisition includes acculturation (Schumann, J. H. (1978a; 1978b), and the more L2 learners acculturate to the host community, the better they will develop second language competence, still maintaining L1 culture and language markers (Long, 1990, p. 653; Hammer, 2017). Interaction is essential for language proficiency (Hall et al., 2011). According to Long, second language learning cannot occur without input, and input should be negotiated in order for the linguistic, cognitive processes to develop (Long, 1996). Furthermore, the development of higher mental processes is always influenced by society and language interactions (Vygotsky, 1978). Considering that acculturation and L2 acquiring are linked together, the design of this study included topics of culture to instigate group discussions and investigate the experiences of the participants and their understanding of the American culture.

Rationale for the Quantitative Study

This research was designed to quantify language improvement in two different language teaching programs to make generalizations of the potential application of the programs to larger populations. The study used a quasi-experimental research method (causal-comparative study) because I could not randomly place subjects into the two groups (Cook and Campbell, 1979; Maciejewski, 2020). Students apply to the IEP and come to the USA to enroll in F2F classes, and the EFL subjects were recruited via Facebook and WhatsApp. The admission into the two groups was based on a pre-test Placement English Test that selected students who tested in the intermediate level of English competence. The goal was to understand the statistical correlation of variables within groups and between groups. The study compared the within-group measurements (pre and post-test) of the following variables: listening comprehension, grammar,

and vocabulary. The between-group factors were the Intensive English Program and the EFL videoconferencing. The rationale is that if no statistical differences are observed between groups, the inferred conclusion will be that both programs have equivalent potential to promote language learning gains.

Limitations of the Study and Design.

The study did not attempt to control all aspects of the L2 acquisition process; nonetheless, it provided plenty of opportunities for acculturation and language interactions through a rigorous program that included language mechanic skills and collaborative activities with other students and instructors. Being in direct contact with students and instructors of the two modes of delivery in the study (IEP-F2F and EFL-Videoconferencing) gave me a rich opportunity to learn from the subjects and instructors about issues with Internet connectivity and platform glitches that will serve as the basis to develop training resources for instructors and students.

Investigating the phenomenon of second language acquisition through this study allowed me to look at real language learning contexts to understand the participant's experiences in depth. The design illustrates the strategies used to mimic the IEP on the EFL course considering the limitations of time and interpersonal interactions of a course delivered exclusively via videoconferences and collaborative learning.

Similarities and differences between the experimental and control groups were considered not in terms of equality but in terms of proportionality and the maximum time adults were willing to participate in videoconferences twice a week for eight consecutive weeks. The results reflect a lower level of improvement but indicate that students enrolled in the EFL pilot had significant levels of language improvement. The main differences between the groups are the

number of hours IEP students spend in F2F classes, 20 hours per week, while EFL videoconference students had only two hours per week.

The level of student interactivity and collaboration was higher in the videoconferencing group, students were sent to break-out rooms a couple of times in every videoconference, and students had discussions via WhatsApp on the days in between lessons. Other factors that could have been taken into account were student social and gender diversity, level of L2 exposure outside the lessons, family and work commitments, and cost of the program. These factors were not measured in this study but could be analyzed in future investigations to ascertain their impact on IEP and EFL online programs.

Subject and Recruitment.

Upon their arrival at the university for the start of the IEP Program, students on the control group were required to take the Michigan English Placement Test (EPT) to be placed in courses according to their English level. The selection of the subjects for the control group was based on their first language (L1 Spanish or Portuguese) and having gone through the IEP Program in the past five years. The ESL Institute provided the files of students from Spanish and Portuguese speaking countries in the past five years, and I asked the ESLI to randomly select 89 students from their files, and I created a database (in Microsoft Excel) with pseudonyms, gender, L1, and scores for the pre and post-tests on listening, grammar, and vocabulary. All personal data and information that could be used to identify an individual subject were omitted from the database. A separate and password-protected list of codes associated with identifiers was created to protect subjects' privacy.

The Intensive English Program (IEP) goal is to prepare its students to be successful in the academic programs they enroll in after graduating from the ESL. The program goes beyond

teaching English and preparing students to read and comprehend academic texts, listen and comprehend formal lectures, participate in class discussions and debates, make oral presentations, write academic essays and APA formatted papers. The intention of designing an English as a Foreign Language Online Synchronous Program (EFL-OS) is to reach students in their own countries to equip them with the means to improve their English skills and the opportunity to start their English academic training before coming to universities in the USA.

If universities decide to implement EFL-OS programs, I recommend that it mimics the IEP focusing on listening, speaking, reading, writing, and good use of English grammar. The expectation is that students will develop their English proficiency in real-life situations, interacting with instructors and classmates via weekly videoconferences. Also, students will learn and discuss matters of culture and society. I also expect that students who successfully complete the EFL-OS could be admitted in the Advanced level of IEPs, or continue in an EFL-OS advanced level, or take the TOEFL/IELTS tests to apply for admission into academic programs.

To investigate the learning effectiveness of the participants, in relation to the delivery mode of the ESL or EFL Program, this study focused on 176 subjects, 88 participating in each mode (face-to-face ESL and fully online synchronous EFL). The participants were selected based on the premise that they shared specific characteristics that could be compared in terms of the SLA theoretical framework of this study (Krashen, 1977). The criteria for the selection of the participants was based on their English level (since I did not offer multiple levels of the program to facilitate the comparisons), ethnicity (I wanted to have a variety of nationalities in each class to avoid students reverting to their mother tongues in-class interactions and to be able to compare the experiences across different culture and language groups), and mother tongue (L1).

Some considerations have been raised about the recruitment of the participants. This being a pilot program, I wanted to take advantage of the international recruitment that is already done by the university where the study took place. The university uses independent recruiters in several countries, but in contact with the international department and with recruiting agencies, I was informed that students would not be willing to participate in a pilot project; the agents advised me that after the study was concluded and the university approved the program for students to learn English in their own countries, then recruiters would be able to advertise and recruit students, but not for a pilot program. It is important to emphasize that the F2F ESL Immersion Programs, although not always affordable to many people, offer students the opportunity to improve their language skills and get a first-hand experience in America. An extra advantage is that students who finished the program with a passing grade are not required to take an English proficiency test when applying to undergraduate and graduate courses. The traditional program includes five classes a day for four days a week, and students under an F1 student visa are required to attend classes to maintain their visa status.

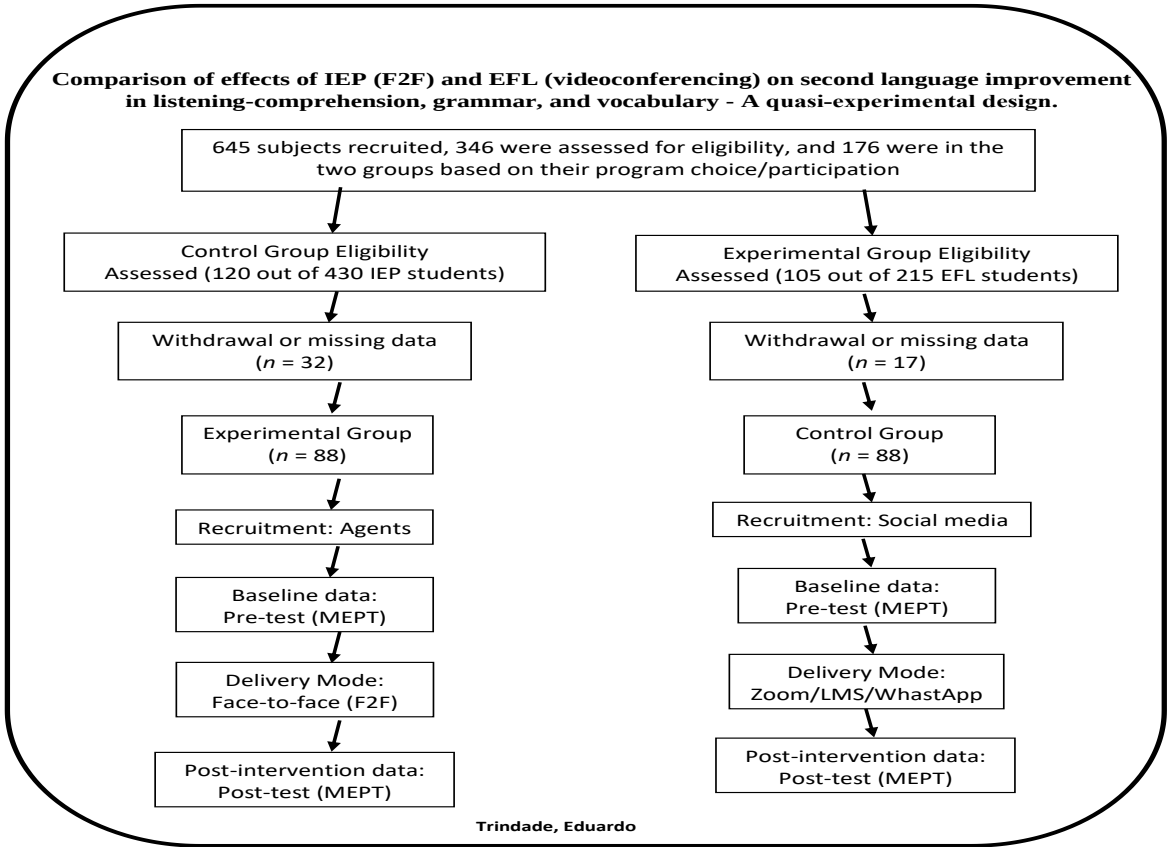
In an effort to treat participants as autonomous agents, giving them ample freedom to express their feelings about the experience in the program, I encouraged participants to articulate their understanding of the experiences via private interviews and WhatsApp chats (The Belmont Report, 1979). Besides the pre and post-tests, I conducted informal interviews and asked the instructors to assess the participants' progress in the fully online mode of the program. I intend to have a follow-up study that considers the opinions and feedback from students and teachers participating in an online EFL synchronous program via videoconferences. The F2F regular program already has a system of weekly informal and formal assessments.

From the start of the pilot program, I advised students that if they were not comfortable in the fully online mode, they had the freedom to drop the class and enroll in the F2F regular ESL program at the university. The selection of the participants for the two different modes was based solely on their L1 and English level to avoid discrimination (The Belmont Report, 1979). The F2F group (control) is usually recruited via agents, social media, recruiting trips, and former students, the recruitment of the EFL online group (treatment) was done via social media, Facebook, and WhatsApp, and I asked the people interested in the program to contact their friends and family members. I had the recruitment for over two weeks, and a total of 215 students were recruited over Facebook and WhatsApp to take the pre-test to qualify to participate in the pilot program; students had to test intermediate, be available to participate in 16 lessons and extra class activities, and take a post-test. A total of 145 agreed to take the pre-test, and 113 came to a zoom meeting to take the test. Five test appointments were set every day (M-F) over a period of two weeks, and many students had problems with their Wi-Fi connection and missed the test time because they did not notice the time zone, even with multiple reminders or had personal problems.

A total of 105 students were selected; however, only 88 students were able to complete the eight weeks of the program in the treatment group. I allowed around 26 students in each of the four classes of videoconferences. Nevertheless, we ended up with an average of 22 students from each class that took the post-test. Those who did not complete the program did not receive the certificate of completion from the university. Some students dropped from the program for personal or technical reasons and missed the post-test. Four students from different L1s (not Spanish or Portuguese) were allowed to participate in the pilot to add diversity, but their tests were not included in the study.

The control group was composed of 88 students that had taken the regular 8-weeks IEP at the university in the last five summers. I had no control over the selection; the students were selected based on their country of origin and L1 from a list of the students at the ESL Institute of the university where the study was done. The Criteria for selecting the control group were to be from a Spanish or Portuguese speaking country and test in the intermediate English level. More than 430 students were enrolled in the IEP in the past 5 years and about 120 were from Spanish or Portuguese speaking countries and had taken the pre-test and were classified as intermediate. I could find records of the post-test for 88 of these students. The premise of the study was to have students engaged in meaningful English language interactions and instruction to verify if there was a considerable difference between the pre and post-tests and compare between the control and treatment groups.

Recruitment and Data Collection Design Graph



Teaching Strategies and Design.

The IEP used in the control group has a teaching structure that has been in practice for over 15 years (ESLI-CU, 2017). The ESL Institute estimates that over 1800 students have completed at least one period of eight weeks in the IEP in the last 15 years, and since its creation back in 1980, the ESL program has helped students from more than 80 nationalities to improve their English language skills and successfully complete their undergraduate and graduate studies in the university or transfer to other universities around the United States (ESLI-CU, 2017). The IEP is structured with low numbers of students per class (teacher/student average ratio of 1/10), which is the norm in ESL classes at universities comparable in size to the university where the study took place (Horne, 1970; Bahanshal, 2013). Locastro (2001) claims that class size is a variable that plays a significant role in language learning. Instructors report that they have difficulties engaging every student in language classes with more than 15 students (Pedder, 2006).

According to Rosebrough and Leverett (2011), smaller size classes enable teachers to create student-centered lessons and encourage students to interact with their classmates. In a study comparing large and small language classes, Harfitt and Tsui (2015) concluded that small classes promote a higher sense of community and solidity, and students tend to support their classmates to reach higher levels of language competence. In contacts with language schools from universities of similar size, it was confirmed that the ESL typical class size is as follows: Dallas Baptist University, 8-12 students (www.dbu.edu/international/english-language-institute/); Azusa Pacific University, 3-12 students (www.apu.edu/international/alci/iep/); La Roche College, 5-25 students (www.laroche.edu/esl/); Iowa Wesleyan University 4-12 students

(www.iw.edu/esl-program/); and Campbellsville University, 4-15 students (www.campbellsville.edu/academics/programs/english-second-language/).

EFL Course Rationale.

The EFL offered two videoconference classes (1 hour each) every week for eight weeks to mimic the IEP, which offers classes in different language skills in a period of eight weeks. The EFL-OS followed the same premises of the intensive ESL program. Class participation, assignments, and homework were required to guarantee the language progress of each student. Based on the equivalence of the two programs, students were expected to have a higher performance after taking the EFL online pilot program, even though they did not have the same level of language exposure as the students in the IEP have.

A distance-learning program relies heavily on technology, which is why it is so crucial for students to have the right equipment to ensure their success. All students must have access to a computer and/or a mobile device and have a reliable Internet Connection.

The **scope and sequence of the course** were designed in collaboration with the instructors recruited to teach the four classes of EFL. These instructors are the leading IEP instructors at the university where the study took place and had years of experience teaching international students. I gave the instructors a seminar to train them to use Zoom, Moodle, and Canvas before recruiting students. I found solutions for most of the technical issues I encountered during the recruitment and testing phase. I had weekly conversations via zoom and in-person with the instructors to explain how to use all the features of Zoom, how to set up the meetings for student participation and interaction, and what to when students had problems with their Internet connection. In our meetings, we selected resources from the textbooks used in the IEP program and previous textbooks used by the university, but instructors were advised to

create their presentations and materials to avoid copyright infringement since we would be using the materials with students in multiple locations and multiple countries.

The instructors had the liberty to prepare PowerPoint presentations and were asked to communicate via WhatsApp with the students in their classes in the days between videoconferences providing resources and encouraging them to engage in discussions in English. Recognizing the value of using mobile devices to deliver content and encourage students to work together using L2 (Thabit and Dehlawi, 2012), I asked the instructors of the pilot EFL to include activities where students could collaborate. It is helpful to incorporate mobile apps to increase English language exposure and incentivize students to engage in conversations using English outside the classroom environment (Wang, 2016). I made a list of apps and asked the instructors in my investigation to recommend their students to use mobile apps to interact with each other outside the videoconferences. Some students typed their comments and answers on their WhatsApp group, some recorded audio, and others recorded videos. Some students added links with videos, articles from online journals, YouTube videos, and interactive games to practice the language skill discussed in the videoconference lessons (Todd and Tepsuriwong, 2008). Some students contacted me privately via WhatsApp to express how appreciative they were with the opportunity to participate in the study and how happy they were with the design of the lessons, the collaborative tasks, how helpful the instructors were, and their desire to continue in a course structured like the pilot. The following table presents the content and scope used during the eight weeks of the pilot program:

WEEK	DAY	TOPIC	SUBTOPIC	BOOK RESOURCES	GRAMMAR FOCUS
1	1	CULTURE	Holidays & Festivals	Grammar Explorer 2, Unit 1: Customs and Traditions (Lesson 2)	Present Tenses
				World Link 2, Unit 7, Lesson B: Festivals and holidays	
	2		Food	Pathways 2, Unit 6: Let's Eat!	Count/Non-Count Nouns
				Grammar Explorer 2, Unit 3: Health and Fitness (Lesson 2	
				Reading Explorer 3, Unit 7, Lesson A	
				World Link 2, Unit 2, Lesson A: Foods we like	
2	1		Music & Art	*Pathways 2,* Unit 3: Culture and Tradition (Lesson B)	Modal Verbs
				Grammar Explorer 2 , Unit 12: Art and Music (Lessons 2 & 3)	
				Grammar Explorer 2 , Unit 12: Art and Music (Lesson 1)	
				Reading Explorer 3 , Unit 11	
	2		Sports	*CAC* , 7 Playing and Watching Sports	
				Grammar Explorer 2 , Unit 13: Sports	
				Reading Explorer 3 , Unit 1	
3	1 & 2	LIFESTYLES	Work & School	*Grammar Explorer 2, Unit 10 lesson 2 & 3*	Infinitives, Gerunds, & Conditionals
				CAC , 12 Job Interviews	
				Pathways 2 , Unit 10: Entrepreneurs and Innovators	
				World Link 2 , Unit 6, Lesson B: After Graduation	
				World Link 2 , Unit 9: The World of Work	
				World Link 2 , Unit 1, Lesson B: School Days	
				World Link 2, Unit 6, Lesson A: Starting out	
4	1 & 2		Health and Fitness	*CAC,* 11 Handling Stress	Quantity & Measurement
				Pathways 2, Unit 1: Healthy Lives & Unit 5: Inside the Brain	
				Grammar Explorer 2 , Unit 3: Health and Fitness	
				Reading Explorer 3 , Unit 2	
				Reading Explorer 3 , Unit 6, Lesson A	
				Reading Explorer 3 , Unit 10, Lesson A	
				World Link 2 , Unit 2, Lesson B: Eating well	
				Grammar Explorer Unit 3 Lesson 3	
5	1	NATURE	Oceans/Marine Life	*Grammar Explorer 2* , Unit 4: Going Places (Lesson 2)	Prepositions
				Grammar Explorer 2 , Unit 9: The Natural World (Lesson 3)	
				Grammar Explorer 2, Unit 10: Work and Play (Lesson 1)	
				Grammar Explorer 2, Unit 10: Work and Play (Lesson 3)	
	2		Water Management	*Pathways 2* , Unit 4: A Thirsty World	
				World Link 2 , Unit 11, Lesson B: Making life better	
6	1		Global Warming & Natural disasters	*Grammar Explorer 2* , Unit 5: A Changing World (Lesson 1)	Past Tenses
				Pathways 2 , Unit 7: Our Active Earth	
				Grammar Explorer 2 , Unit 9 (Lesson 2)	
				Reading Explorer 3 , Unit 4	
	2		Endangered Animals	*Pathways 2* , Unit 9: Species Survival	Future Tenses
				Grammar Explorer 2 , Unit 6: Appearances and Behavior (Lesson 1)	
				Grammar Explorer 2 , Unit 11: People and Places (Lesson 2)	
				Reading Explorer 3 , Unit 3	
				Reading Explorer 3 , Unit 10, Lesson B	
7	1 & 2	TECHNOLOGY	AI, Transportation, & Medicine	*Pathways* 2, Unit 2: Technology Today and Tomorrow	Adjectives & Comparatives
				Grammar Explorer 2 , Unit 14: Innovations (Lesson 1)	
				Pathways 2 , Unit 5: Inside the Brain	
				Grammar Explorer 2 , Unit 5: A Changing World (Lesson 2)	
				Grammar Explorer 2 , Unit 14: Innovations (Lesson 2)	
				Reading Explorer 3 , Unit 12	
8	1 & 2		Space Exploration	*Grammar Explorer 2* , Unit 16: Exploration (Lesson 3)	Quoted & Reported Speech
				Reading Explorer 3 , Unit 9	

In the fully online format EFL program, students will be in their own countries, which translates into a significant cost reduction for them but poses some disadvantages, especially in terms of the realistic number of classes per week and the duration of the classes. The pilot program was designed with a two-hour twice a week synchronous meeting plus weekly group assignments, but since students will not be exposed to English as much outside the classroom, improvements in their language skills may not be as significant as the in-person ESL program. Moreover, the participants were tested at a minimum intermediate language proficiency level to be accepted in the online synchronous program due to the minimum required language ability to

understand instructions and be understood in a synchronous online classroom and participate in group activities.

During the study, all students were required to take the English Placement Test. After the data collection and observing how engaged the students were during the pilot, I presented an informal report of the results to the university and was allowed to start a new program called The EFL Synchronous Online Program at a reduced cost for students in their home countries. The university's recruiting agents are advertising the program in several countries, and five classes have already been offered since July 2020. Students are responsible for the tuition fee, but the university embraced my vision of making this program affordable to students in developing countries. The idea is that students enrolled in the fully online program can transfer to the IEP at any time, and those who complete the intermediate and advanced levels of the EFL Synchronous Online Program will not be required to take ESL classes when they come to the US for undergraduate or graduate programs in our university.

The fact that I went through a similar experience of learning English as an adult, gives me a very close understanding of students' experiences. However, my own ESL experience as a student was before the availability of the Internet and computer-based technologies. At the time, I was single, I had a very constrained time for learning English, a limited budget, and my ESL course was in England. My background, experiences as a second language learner, and qualifications as a researcher, gave me the passion for this project (Denzin and Lincoln, 2018). I have been interested in serving L2 learners who will pursue higher education because I earnestly believe that education can promote social change (Duke, 2004).

My experience working with students in hybrid learning formats in previous investigations during my Ph.D. helped me learn more about how a virtual environment could be

used in language education (Sadler, 2012). It also helped me understand that technical issues can hinder the learning process and generate frustration for students and instructors. My understanding and training in online course design were essential assets to my research.

Data Collection

In virtue of funding and student recruitment issues, the project's design started in the Fall of 2018, but the data collection began in the Spring of 2020 and was completed by the Summer of 2020. Before the data collection phase, I designed a hybrid ESL course and used it with ESL students to verify the work of the platforms and to identify possible technical issues to be resolved to make students comfortable using the online tools and participating in videoconferences. The ESL instructors were trained to use the platforms efficiently, as they shared screens, divided students into break-out rooms, and monitor the students' collaborative tasks. Discussions with IEP faculty were held to look at diversified ways to implement group activities and apply similar pedagogical strategies already used in the in-person ESL classes in the fully online mode to establish similarities that would facilitate the comparison between the two modes of English language lessons. The reason for establishing a period of at least eight weeks of continuous classes was to provide students with language exposure over time (Yin, 2009). During the data collection, students had multiple opportunities to express their impressions of the program, and the feedback was relayed to the instructors for them to add new activities, give students more discussion time, and redesign their lesson plans. Most of the fully online synchronous sessions (videoconferences) were recorded for observation in future studies and to help train the instructors in the future. The F2F classes were visited by the researcher for observations, and a few of the observation notes are also archived for future reference.

In the literature review, most studies focused on student satisfaction and seldomly assessed students' language skills development or compared the achievement of language students using CALL/MALL to the achievements of students enrolled in traditional intensive language face-to-face programs (IEP). For this reason, I decided to design a study that would look at four groups of ELL students selected to participate in the EFL online Pilot Program for 8 weeks. All the students that participate in the treatment group (online mode), independently of the instructor, were asked to 1) watch short videos in English about the content being studied, 2) take short online quizzes, 3) work with classmates in group assignments over the Internet (where they had to collaborate and discus about the topics and tasks before coming to class), 4) take part in discussions via videoconferences (within virtual breakout rooms), 5) have peer-to-peer interactions (via WhatsApp outside the videoconference), and 6) have personal interviews with their English instructor.

Students were asked to finish online activities on their computers or smartphones before the videoconferences. Each videoconference lasted one hour, and there were two videoconferences every week for eight weeks. Students in the control group were enrolled in a face-to-face traditional IEP Program with regular class activities and homework assignments for eight weeks at a private university in the Southeast of the United States of America.

Class-participation in the control group was required; however, in the traditional IEP, students had classes of fifty minutes in five language areas four days a week for eight weeks. To measure language learning progress, I chose a well-known instrument, the Michigan EPT Testing - MEPT (Spaan et al., 2006; Barkaoui, 2015; Lin, 2017), an instrument used by many universities and IEPs since 1973 (https://michiganassessment.org/michigan-tests/m-ept/). The MEPT is a measuring instrument designed to assess English language mastery used by the

university where the study was conducted. The test is used to test arriving students and place them in the various levels of English courses offered by that institution.

As part of my administrative role in the ESL department and director of the MA TESOL Program, I strive to find ways to improve the learning experience and efficiency of our ESL (and EFL) students and communicate the findings to my MA TESOL students to make sure that the new generation of ESL/EFL instructors will be equipped to assist students in F2F or online language classes (Hubbard, 2006). Typically, the IEP students take the placement test at their arrival in America and then at the end of the eight-week program. Students that start at lower levels might stay in the program for another 8 to 16 weeks, and they will retake the test as they graduate from the ESL Program. The assessment of the control group indicates considerable progress, especially in the areas of listening and grammar; however, I did not have access to the information about students that repeated the course. In the post-test, there was a small number of students with a declined score in some of their English skills when compared to the pre-test. The decline was mainly in the reading and vocabulary tests, which was also observed in the treatment group but with a lesser frequency. I noticed that some students did not take, or the university did not have the recorded post-test scores. Even though the number of students that had a lower score was not significant, as a consequence of the examination of the data, I have suggested pedagogical and logistical measures to avoid future outliers in the post-test of the IEP. The ESL Institute now requires that the post-test be done as a condition for students to graduate from the IEP, and we will analyze the results of future ESL cohorts to see if the measures implemented are sufficient to resolve the problem and improve the outcome of the program.

Motivation, culture, and mother tongue linguistics are characteristics that highly impact ELL students (Gardner, 2010; Krashen, 2009a; Long, 1983; 2014). Extensive research has been

conducted to test the influence of personality type on second language learning (see MacIntyre & Charos, 1996; Howard, J.B., 2010; Ehrman, 2008). In my observations, more introverted students may take longer to develop their English skills when compared with extroverted students; however, introverted students usually have better grammar and pronunciation in terms of proficiency.

To minimize the linguistic variants in this study, all the participants were from the same language family (Romance languages - Stein-Smith, 2018), in this case, Portuguese and Spanish. In a normal IEP, students are not separated by culture and linguistic characteristics. To mimic that multicultural, multilingual environment and avoid restricting students' exposure to other cultures and accents, I allowed a very small number of students from Asia and Africa to participate in the control group; however, the tests from these students were not included in the analysis.

Under the assumption that online activities would be helpful to ELLs, online tools focusing on vocabulary and grammar were recommended to the students. To make sure that students were exposed to comprehensible input (Krashen, 2009a) and would have plenty of opportunities to speak during the lessons, the lessons were designed with short teacher-led instructions followed by a group discussion in break-out rooms. The instructor visited the break-out rooms to make sure students are on task. Whenever possible, MA TESOL students and visiting faculty would help in the break-out rooms. Students could contribute to the discussion, engage with their classmates, and augment their exposure to the English language. Students were invited to a WhatsApp chatroom for activities outside the classroom environment where they could ask questions directly to the instructor and classmates about the topics discussed in the previous lessons and the topic of the next videoconference.

Language acquisition happens in an environment of human interaction within the speech community (Patrick, P. 2012). The videoconferences and chat rooms provided students with resources that helped them interact with the instructor and their classmates to develop their language skills. During the study, I noted that not all online resources are created equal and that some can help students, and some hinder their language development. For instance, the use of virtual reality games (Bonner and Reinders, 2018; Cook et al., 2019) and other online interactive activities during the videoconferences did not work very well, and instructors were forced to switch to other activities to maintain student engagement and participation.

During the recruitment of the students, I used the LMS Canvas because to use Moodle, I would have to add all the participants as students in the university system, and it would require the assistance of the Admissions Department, and it would influence the way the university manages and measures student's applications. I used the free version of Canvas (https://canvas.instructure.com/), and there I created teaching resources to be used by the students to complement the videoconference lessons. I also created a WhatsApp group to advise the candidates about how the tests would be administered via zoom conferences and Canvas, about the consent forms, and to answer questions about the structure and content of the course. Once the recruitment was completed, students were divided into four groups based on their availability and the availability of the instructors.

Two groups had videoconferences on Mondays and Wednesdays, the lower intermediate group had their meetings from 6-7 pm EST, and the high intermediate met from 7-8 pm EST. The other two groups met on Tuesdays and Thursdays from 6-7 pm (low intermediate) and 7-8 pm (high intermediate). Each instructor had one low intermediate group and one high intermediate. I created four new WhatsApp groups, one for each class, and invited the selected

students to join the groups. Most of the students that were not selected were unresponsive, missed the pre-test, even after I sent several reminders and offered alternative times for testing, and a few tested too low or too high in the test.

Both instructors reported that the groups were very homogeneous and that the student participation was very high in both groups. The content, topics, and teaching resources were the same for all groups, but the instructors stated that they tried to simplify the language when interacting with the lower intermediate groups. The discussions in the breakout rooms, according to the instructors, were very inclusive and lively. I was a guest at some of the videoconferences and watched the recorded videoconferences. I attest that the lessons were very interactive, and every student was encouraged to participate in the class discussions and the breakout rooms. Instructors visited the breakout rooms to ensure the students were engaged in the discussions, were on task, and offered assistance.

The design of the lesson was based on the concept that intermediate and advanced students will develop independence and language skills by using the language in communication in a learner-centered classroom (Kaymakamoglu, 2018; Benson, 2012; Philominraj et al., 2017; Blake, 2008a), which is the goal of the IEP at the university where the study was executed. The goal was to maintain a ratio of teacher talk time (TTT) and student talk time (STT) of around 30% to 70% (Kareema, 2015) to maximize student participation, creating opportunities for comprehensible input and meaning negotiation through listening, speaking, and reading (Krashen, 2009b; Fernámdez-García, and Martínez-Arbelaiz, 2002).

Although in some lessons teachers have to use more time to explain some concepts, in my observations of the in-person IEP classes and the EFL videoconferences, teachers resolutely

find strategies to maintain students engaged in conversations to increase STT (student talk time) and language use (Kareema, 2015; Sudiran and Vieira, 2017; Berk, 2012).

It must be noted that in videoconferences, there is a longer transition time required for students to be transferred from the main conference to the breakout rooms and back, and sometimes due to their Internet connection or the type of device being used, it may take a couple of minutes for them to enter the room and be ready to engage with their classmates. In face-to-face environments, the transition time is shorter, but students can hear the conversations from other groups due to the room size, which does not happen in the videoconferences. In terms of listening, the fact that students need to learn how to lower their voices and filter out competing stimuli (Gilakjani and Ahmadi, 2011; El-dali, 2017) might have positive effects that unfortunately cannot be reproduced effectively in a videoconference.

In chapter four, I present the results of the data collected from the Pilot EFL Program and the EIP and compare the results of the pre and post-tests of the treatment and control groups to determine if there were significant statistical differences in language improvement within and between the two groups. The results will be presented and analyzed to investigate (RQ1) the differences in the pre-post language learning outcomes within a fully online synchronous EFL program and within an in-person ESL program, and (RQ2) how the learning outcome of students in a fully online synchronous EFL program compares to that of students in an in-person ESL program.

Chapter 4 - Results and Findings

The primary objective of this study was to examine the efficacy of an EFL program delivered via videoconferences to students living in their own countries, compared to an ESL

IEP (Intensive Immersion Program). The intention of the study was to answer the following research questions:

- RQ1. Are there significant differences in the pre-post language learning outcomes within a fully online synchronous EFL program and within an in-person ESL program?
- RQ2. Is the learning outcome of students in a fully online synchronous EFL program comparable to that of students in an in-person ESL program?

It was hypothesized that (1) the learning outcome of students in a fully online synchronous EFL program is similar to that of students in an in-person ESL program, and 2. there is no significant difference in the language learning outcomes between the two programs.

The control group (in-person instruction) was composed of 88 students from Spanish and Portuguese-speaking countries in South America that took the IEP offered by a private university in Kentucky in the past five years. Students in the control group had eight weeks of in-person English classes. The experimental group (online instruction) was composed of 88 students who participated in the EFL pilot course offered to Spanish and Portuguese-speaking students in Latin America. The course was offered free of charge via zoom conferences twice a week for 8 eight weeks. The students were recruited over Facebook and WhatsApp.

Both groups of students were assessed before and after the interventions using the Michigan EPT Testing - MEPT (Spaan et al., 2006), an instrument designed to assess English language mastery used by many universities since 1973 (https://michiganassessment.org).

Descriptive Statistics

The descriptive statistics of the Listening pre and post-tests for the Control and Experimental Groups are presented in Table 1. The results from the Listening pre-test indicate that the two groups did not start from the same level. The average score for the Listening pre-test

of the Control Group was 58.50 (*M* = 58.50, *SD* = 12.18), and an average of 40.23 (*M* = 40.23, *SD* = 21.88) on the Listening pre-test for the Experimental Group. The Listening post-test for both groups indicate an increase in the outcome for both groups, the Control Group post-test average was 68.81 (*M* = 68.81, *SD* = 9.26), and the post-test average result of the Experimental Group was 56.14 (*M* = 56.14, *SD* = 21.07). The Listening post-test results indicate an outcome increase in both groups, 10.3 points for the Control Group and 15.9 points for the Experimental Group. A difference of 5.6 higher for the Experimental Group.

Table 1

Descriptive Statistics for the Listening Pre and Post tests

	CG (IEP) and EG (EFL)			
	control		experimental	
	Pre List	Post List	Pre List	Post List
Mean	58.50	68.81	40.23	56.14
95.0% Lower CL for Median	60.00	70.00	25.00	50.00
95.0% Upper CL for Median	65.00	77.00	45.00	65.00
Median	60.00	70.00	35.00	55.00
Standard Deviation	12.18	9.26	21.88	21.07

The descriptive statistics of the Grammar pre and post-tests for the Control and Experimental Groups are presented in Table 2. The results from the Grammar pre-test indicate that the two groups did not start from the same level; however, the difference does not appear to be significant. The average score for the Grammar pre-test of the control group was 62.65 (*M* = 65.65, *SD* = 12.12), and an average of 57.99 (*M* = 57.99, *SD* = 20.12) on the Grammar pre-test for the Experimental Group. The Grammar post-test for both groups indicate an increase in the outcome for both groups, the Control Group Grammar post-test average was 72.67 (*M* = 72.67, *SD* = 7.88), and the Grammar post-test average result of the Experimental Group was 65.32 (*M* = 65.32, *SD* = 19.07). The Grammar post-test results indicates an outcome increase in both groups,

10.02 points for the Control Group and 7.33 points for the Experimental Group, a difference of 2.7 points higher for the Control Group.

Table 2

Descriptive Statistics for the Grammar Pre and Post tests

	CG (IEP) and EG (EFL)			
	control		experimental	
	Pre Gram	Post Gram	Pre Gram	Post Gram
Mean	62.65	72.67	57.99	65.32
95.0% Lower CL for Mean	60.08	71.00	53.73	61.28
95.0% Upper CL for Mean	65.21	74.34	62.25	69.36
Median	64.00	73.00	58.50	67.00
Standard Deviation	12.12	7.88	20.12	19.07

The descriptive statistics of the Vocabulary pre and post-tests for the Control and Experimental Groups are presented in Table 3. The results from the Vocabulary pre-test indicate that the two groups did not start from the same level; however, the difference is not significant. The average score for the Vocabulary pre-test of the control group was 64.07 (M = 64.07, SD = 11.76), and an average of 62.92 (M = 62.92, SD = 20.86) on the Vocabulary pre-test for the Experimental Group. The Vocabulary post-test for both groups indicate an increase in the outcome for both groups, the Control Group Vocabulary post-test average was 73.06 (M = 73.06, SD = 9.86), and the Vocabulary post-test average result of the Experimental Group was 70.15 (M = 70.15, SD = 18.69). The Vocabulary post-test results indicate an outcome increase in both groups, 8.99 points for the Control Group and 7.23 points for the Experimental Group, a difference of 1.76 points higher for the Control Group.

Table 3

Descriptive Statistics for the Vocabulary Pre and Post tests

	CG (IEP) and EG (EFL)			
	control		experimental	
	Pre Vocab	Post Vocab	Pre Vocab	Post Vocab
Mean	64.07	73.06	62.92	70.15
95.0% Lower CL for Mean	61.58	70.97	58.50	66.19
95.0% Upper CL for Mean	66.56	75.15	67.34	74.11
Median	65.00	75.00	67.00	73.00
Standard Deviation	11.76	9.86	20.86	18.69

It is important to note that the pre-test for the Control Group does not appear to be equal to the pre-test of the Experimental Group in the Listening and in the Grammar assessments; however, the pre-test Vocabulary assessment appears to be equal for both groups. It is also important to highlight that when compared to the post-test results, the differences in learning outcome increase are not consistent and not unidirectional among the groups and variables tested. The Control Group had a higher increase in Grammar from pre to post-tests, but on the Listening, the Experimental Group had a higher increase in outcome from pre to post-test. In terms of Vocabulary, both groups appear to start from similar levels and the difference in learning outcome increase from pre to post-tests between the two groups does not appear to be statistically significant.

Statistical Differences Between Control and Experimental Groups Pre-Tests

In virtue of the observable differences between the Control and Experimental Groups and the pre and post-tests, it was determined the need to test the data for statistically significant differences between the Control and Experimental groups on the pre-tests only to compare the starting point of the Control Group to the Experimental Group in the three variables assessed (Listening, Grammar, and Vocabulary). To test for statistically significant differences between

the Control and Experimental groups (pre-test), an independent-samples t-test was run. The group statistics shown on table 4 confirm that there is a difference between Control and Experimental pre-tests, a large difference in Listening (CG - M = 58.50, EG - M = 40.23), a small difference in Grammar (CG - M = 62.65, EG - M = 57.99), and a non-significant difference in Vocabulary (CG - M = 64.07, EG - M = 62.92).

Table 4

Pre-test Group Statistics

Group Statistics

	CG and EG	*N*	*M*	*SD*	*SE*
Pre List	control	88	58.5000	12.18441	1.29886
	experimental	88	40.2273	21.87883	2.33229
Pre Gram	control	88	62.6477	12.11633	1.29161
	experimental	88	57.9886	20.12004	2.14480
Pre Vocab	control	88	64.0682	11.76279	1.25392
	experimental	88	62.9205	20.85705	2.22337

The independent t-tests (table 5) indicates that the only statistically difference between the two groups' pre-tests is observed on the Listening, where a statistically significant difference is presented ($p < .001$), the observed results on Grammar pre-test indicate that the two groups are close to being equal ($p = .064$), and the same test indicates that on Vocabulary pre-test, the two groups are equal ($p = .65$). These conclusions were made based on the p value > .05 as the threshold for equality of variances between variables. This indicates that the probability of the two groups not being equal in Vocabulary pre-test scores is not statistically significant since $p >$ .05. For Grammar, the two groups are not truly different because the difference of the magnitude observed is about .06 or 6%, which could be explained by random chance. The results for Listening, nonetheless, indicate a significant probability for the two groups being different and further considerations will be made for that variable.

Table 5

Independent Samples Test (CG and EG Pre-tests)

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	*p.*	*T*	df	*p*	*d*	*SE*	95% CI	
									Lower	Upper
Pre List	Equal variances not assumed	35.087	<.001	6.845	136.2	.000	18.27	2.67	12.99	23.55
Pre Gram	Equal variances not assumed	35.780	<.001	1.861	142.8	.065	4.65	2.50	-.290	9.61
Pre Vocb	Equal variances not assumed	37.908	<.001	.450	137.3	.654	1.5	2.55	-390	6.20

Research Questions

The first research question guiding the study was focused on investigate the differences in the pre-post language learning outcomes within a fully online synchronous EFL program and within an in-person ESL program. In other words, the study aims to determine if there was an increase in language learning from pre to post-tests within both groups (control and experimental) for Listening, Grammar, and Vocabulary. To verify the increase in learning outcomes a factorial mixed model analysis with two level within/repeated factor (pre and post-tests) and two-level between factor (in-person and videoconferences) was conducted via the General Linear Model – Repeated Measures task in SPSS. The analysis allowed me to distinguish between the effects of the two different interventions over time to test the gains in outcomes of Listening, Grammar, and Vocabulary. The same analysis was replicated for each of the three dependent variables (Listening, Grammar, and Vocabulary).

Based on table 6 of the descriptive statistics of the Control and Experimental Groups on pre and post Listening tests, the Listening pre-test average for the Control Group was 58.50 (M = 58.50, SD = 12.18), and the post-test was 68.81 (M = 68.81, SD = 9.26). The Listening pre-test average for the Experimental Group was 40.23 (M = 40.23, SD = 21.88), and the post-test was 56.14 (M = 56.14, SD = 21.07).

Table 6

Descriptive GLM Repeated Measures CG and EG – Listening Pre and Post

Descriptive Stats - GLM Rptd M - CG & EG – Pre & Post Listening

	CG and EG	*M*	*SD*	*N*
Pre List	control	58.50	12.18	88
	experimental	40.23	21.88	88
	Total	49.36	19.89	176
Post List	control	68.81	9.26	88
	experimental	56.14	21.07	88
	Total	62.47	17.43	176

The Box's Test of Equality of Covariance Matrices indicates that the observed covariance of the dependent variables is less than 0.01 ($p < .001$), suggesting that the assumption of homogeneity of variance assumption was not met. For this reason, a Multivariate Test was used, and the results of the Wilk's Lambda Test, indicates that there was a significant difference between the pre-scores and the post scores for Listening in both groups ($p < .001$), and the direction suggests a significant increase in Listening post-tests for the two interventions, in-person ESL and EFL via videoconferences. It is important to note also that there was a significant interaction between treatment and time ($p < .001$), and the effect size was statistically significant ($\eta^2 = .059$), indicating that the effect size for pre and post-test scores for Listening was great ($\eta^2 = .59$) for both treatments (IEP and EFL videoconferences); however, a small effect

size for the type of treatment was observed (η^2 =.061), due to only 6% of the variance explaining the increase in Listening outcome by the type of treatment, which indicates that the effect size for type of treatment is about ten times smaller than the difference coming from pre to post-test (see table 7).

Table 7

Multivariate Tests – CG and EG – Listening Pre and Post-Tests.

effect		Value	F	df	p	η_p^2	Observed Power[c]
factor 1	Wilks' Lambda	.413	247.45	1.000	<.001	.587	1.000
factor * Trtmnt	Wilks' Lambda	.939	11.30	1.000	.001	.061	.917

In terms of finding a significant difference between pre and post-tests in Listening, the answer was yes. In other words, both programs, the IEP and the EFL Videoconferences produced a significant increase in student Listening learning (outcome).

The second research question (RQ2) is to investigate how the learning outcome of students in a fully online synchronous EFL program compares to that of students in an in-person ESL program. To determine if there is a difference in Listening learning increase between the Control and the Experimental Groups overtime, the Test of Between-Subjects was used (table 8). The Between-Subjects test indicates that there is a significant increase in the Listening skills overtime in both groups, but the increase is different between Control and Experimental (p = < .001). That is to say that the main effect of group showed that there was a statistically significant difference in mean Listening skills increase between intervention groups F (1, 174) = 40.71, p < .001, partial η^2 = .19. Knowing that the difference between the two groups is statistically significant, we can look at the descriptive statistics (table 6) to identify where the differences are.

The net gain in Listening skills for the Control Group was 10.31 points, and the net gain for the Experimental Group was 15.91 points. The Experimental Group had a significantly higher increase than the Control Group in terms of Listening skills, even though the Experimental Group started at a lower overall level of Listening competence.

Table 8

Test of Between-Subjects Effects - Listening

Tests of Between-Subjects Effects – Listening
Measure: MEASURE_1
Transformed Variable: Average

Source	SS	df	*MS*	F	*p*	η_p^2
Intrcpt	1100626.39	1	1100626.39	2127.13	.000	.924
Trtmnt	21064.57	1	21064.57	40.71	.000	.190
Error	90031.54	174	517.42			

a. Computed using alpha = .05

Based on table 9 of the descriptive statistics of the Control and Experimental Groups on pre and post Grammar tests, the Grammar pre-test average for the Control Group was 62.65 (*M* = 62.65, *SD* = 12.12), and the post-test was 72.67 (*M* = 72.67, *SD* = 7.88). The Grammar pre-test average for the Experimental Group was 57.99 (*M* = 57.99, *SD* = 20.12), and the post-test was 65.32 (*M* = 65.32, *SD* = 19.07).

Table 9

Descriptive GLM Repeated Measures CG and EG – Grammar Pre and Post

Descriptive Stats - GLM Rptd M - CG & EG - Pre & Post Grammar

	CG and EG	*M*	*SD*	*N*
Pre Gram	control	62.65	12.12	88
	experimnt	57.99	20.12	88
	Total	60.3182	16.72	176
Post Grammar	control	72.67	7.88	88
	experimnt	65.32	19.07	88
	Total	68.99	15.01	176

The Box's Test of Equality of Covariance Matrices indicates that the observed covariance of the dependent variables is less than 0.01 ($p < .001$), suggesting that the assumption of homogeneity of variance assumption was not met. For this reason, a Multivariate Test was used, and the results of the Wilk's Lambda Test indicates that there was a significant difference between the pre-scores and the post scores for Grammar in both groups ($p < .001$), and the direction suggests a significant increase in Grammar post-tests for the two interventions, in-person ESL and EFL via videoconferences. It is important to note also that there was an interaction between treatment and time ($p < .001$), and the effect size was statistically significant ($\eta^2 = .55$), indicating that the effect size for pre and post-test increase scores for Grammar was significant ($\eta^2 = .55$) for both treatments (IEP and EFL videoconferences); however a weak effect size for the type of treatment ($\eta^2 = .028$), due to only 2% of the variance explaining the increase in Grammar outcome by the type of treatment, which indicates that the effect size of the type of treatment is about 25 times smaller than the difference coming from pre to post-test (see table 10).

Table 10

Multivariate Tests – CG and EG – Grammar Pre and Post-Tests.

Multivariate Tests - CG and EG Grammar Pre and Post[a]

Effect		Value	F	df	*p*	η_p^2	Observed Power[c]
factor1	Wilks' Lambda	.452	211.07	1.000	<.001	.548	1.000
factor1 * Treatmnt	Wilks' Lambda	.972	5.0[9]	1.000	.025	.028	.611

a. Design: Intercept + Treatmnt
Within Subjects Design: factor1

b. Exact statistic

In terms of finding a significant difference between pre and post-tests in the two groups, the answer was yes. In other words, both programs, the IEP and the EFL Videoconferences produced a significant increase in student Grammar learning (outcome).

The second research question (RQ2) is to investigate how the learning outcome of students in a fully online synchronous EFL program compares to that of students in an in-person ESL program. To determine if there is a difference in Grammar learning increase between the Control and the Experimental Groups overtime, the Test of Between-Subjects was used (table 11). The Between-Subjects test indicates that there is a significant increase in the Grammar skills overtime in both groups, but the increase is different between Control and Experimental ($p <$ .001). That is to say that the main effect of group type showed that there was a statistically difference in mean for the Grammar skills increase between intervention groups F (1, 174) = 6.94, $p < .009$, partial $\eta^2 = .04$. Knowing that there is a difference between the two groups, though not statistically significant, we can look at the descriptive statistics (table 9) to identify where the differences are. The net gain in Grammar skills for the Control Group was 10.02 points, and the net gain for the Experimental Group was 2.7 points. The Experimental Group had a lower increase than the Control Group in terms of Grammar skills; however, the Experimental Group started at a lower overall level of Grammar competence.

Table 11

Test of Between-Subjects Effects - Grammar

Tests of Between-Subjects Effects – Grammar
Measure: MEASURE_1
Transformed Variable: Average

Source	SS	df	*MS*	F	*p*	η_p^2	Observed Power[a]
Intrcpt	1471511.6	1	1471511.6	3217.9	<.001	.949	1.000
Trtmnt	3174.0	1	3174.0	6.9	.009	.038	.745
Error	79568.9	174	457.3				

a. Computed using alpha = .05

Based on table 12 of the descriptive statistics of the Control and Experimental Groups on pre and post Vocabulary tests, the Vocabulary pre-test average for the Control Group was 64.07 (*M* = 64.07, *SD* = 11.76, and the post-test was 73.06 (*M* = 73.06, *SD* = 9.86). The Vocabulary pre-test average for the Experimental Group was 62.92 (*M* = 62.92, *SD* = 20.86), and the post-test was 70.15 (*M* = 70.15, *SD* = 18.69).

Table 12

Descriptive GLM Repeated Measures CG and EG – Vocabulary Pre and Post

Descriptive Stats - GLM Rptd M - CG & EG - Pre & Post Vocabulary

	CG and EG	*M*	*SD*	*N*
Pre Vocab	control	64.07	11.76	88
	experimnt	62.92	20.86	88
	Total	63.49	16.89	176
Post Vocab	control	73.06	9.86	88
	experimnt	70.15	18.69	88
	Total	71.60	14.97	176

The Box's Test of Equality of Covariance Matrices indicates that the observed covariance of the dependent variables is less than 0.01 ($p < .001$), suggesting that the assumption of homogeneity of variance assumption was met. The Multivariate - Wilk's Lambda Test, indicates that there was a non-significant difference between the pre-scores and the post scores for Vocabulary in both groups ($p < .001$), and the direction suggests a significant increase in Vocabulary post-tests for the two interventions, in-person ESL and EFL via videoconferences. It is important to note also that there was a statistically significant interaction between treatment and time ($p > .001$), and the effect size is significantly large ($\eta^2 = .53$), indicating that the effect size for pre and post-test scores for Vocabulary was statistically significant ($\eta^2 = .53$) for both treatments (IEP and EFL videoconferences); however, an extremely small effect was observed

for the type of treatment (η^2=.013), due to only 1% of the variance explaining the increase in Vocabulary outcome by the type of treatment, which indicates that the effect size is over 53 times smaller than the difference coming from pre to post-test (see table 13).

Table 13

Multivariate Tests – CG and EG – Grammar Pre and Post-Tests.

Multivariate Tests - CG and EG Vocabulary Pre and Post[a]

Effect		Value	F	df	*p*	η_p^2	Observed Power[c]
factor1	Wilks' Lambda	.465	199.91	1	<.001	.535	1.000
factor1 * Treatmnt	Wilks' Lambda	.987	2.3[6]	1	.126	.013	.333

a. Design: Intercept + Treatmnt
Within Subjects Design: factor1
b. Exact statistic
c. Computed using alpha = .05

In terms of finding a significant difference between pre and post-tests in Vocabulary, the answer was yes. In other words, both programs, the IEP and the EFL Videoconferences produced a significant increase in student Vocabulary learning (outcome).

The second research question (RQ2) is to investigate how the learning outcome of students in a fully online synchronous EFL program compares to that of students in an in-person ESL program. To determine if there is a difference in Vocabulary learning increase between the Control and the Experimental Groups overtime, the Test of Between-Subjects was used (table 14). The Between-Subjects test indicates that there is a significant increase in the Vocabulary skills overtime in both groups, but the increase is different between Control and Experimental ($p < .001$). That is to say that the main effect of group type showed that there was no statistical difference in mean for the Vocabulary skills increase between intervention groups F (1, 174) =

.75, $p < .39$, partial $\eta^2 = .004$. Knowing that the difference between the two groups is statistically non-significant we can look at the descriptive statistics (table 12) to identify where the differences are. The net gain in Vocabulary skills for the Control Group was 8.99 points and the net gain for the Experimental Group was 7.23 points. The Experimental Group had a non-significant lower increase than the Control Group in terms of Vocabulary skills, and both groups started at almost the same level of Vocabulary competence.

Table 14

Test of Between-Subjects Effects - Vocabulary

Tests of Between-Subjects Effects - Vocabulary

Measure: MEASURE_1

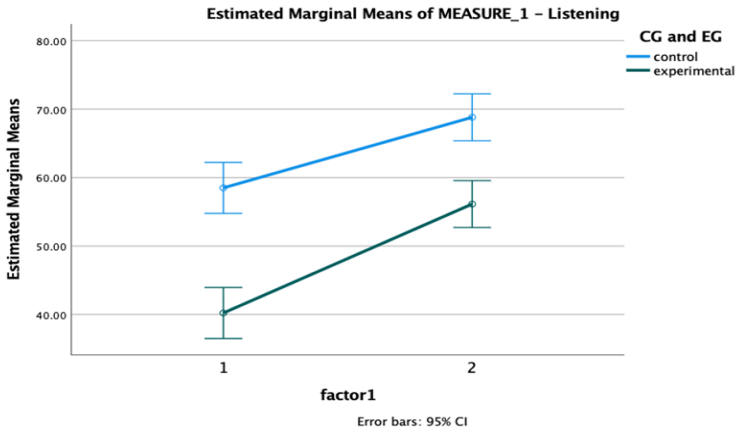
Transformed Variable: Average

Source	Type III Sum of Squares	df	*M Square*	F	Sig.	η_p^2	Noncent. Parameter	Observed Power[a]
Incrcpt	1606095.82	1	1606095.82	3339.37	<.000	.950	3339.37	1.000
Trtmnt	362.07	1	362.07	.75	.397	.004	.753	.139
Error	83686.61	174	480.96					

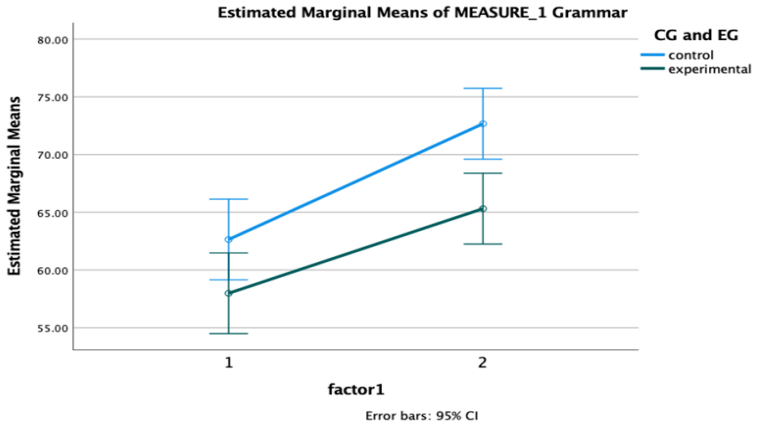
a. Computed using alpha = .05

The profile plots for Listening, Grammar, and Vocabulary pre and post-tests (graph 1, 2 and 3) presented below indicate the increase in language learning (outcome) within and between Control and Experimental Groups.

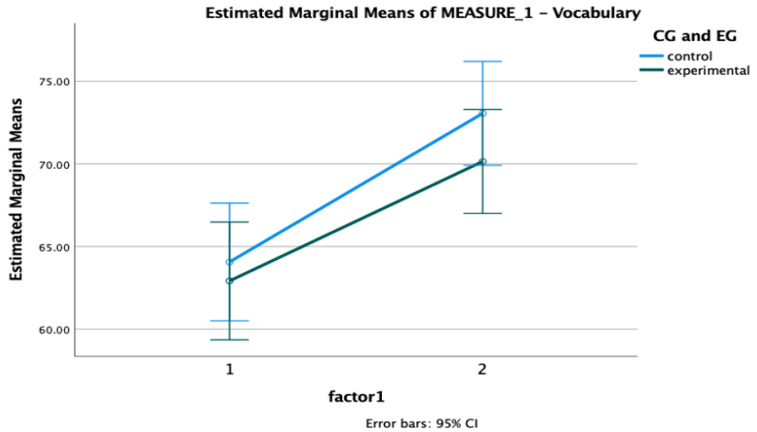
Graph 1 – Profile Plots – Listening



Graph 2 – Profile Plots – Grammar



Graph 3 – Profile Plots – Vocabulary



The following table presents a summary of the findings within each group in terms of learning outcome increase from pre to post-tests, and the findings between groups in terms of differences of learning outcome increase between the tso groups, the IEP (in-person) and EFL Videoconferenceing Pilot (online).

	Summary of the Within and Between Effects		
		Pre - Post	Online – In-person
Listening	p-value	.001[1]	.001[2]
	Effect size (η^2)	.59	.19
Grammar	p-value	.001[1]	.009[2]
	Effect size (η^2)	.55	.04
Vocabulary	p-value	.001[1]	.39
	Effect size (η^2)	.54	.004
[1] Pre < Posr [2] Online < In-person			

In chapter five, I discuss the implications of the results of the data analyses from the comparisons between pre- and post-tests within and between the Pilot EFL Program and the EIP groups. The chapter discusses the considerations about the language competence increase in the three language skills analyzed, the implications of the theoretical framework utilized, the limitations of the study, and the recommendations for future research.

Chapter 5 – Conclusions and Recommendations

In this research, I investigated the similarities between an Intensive English Program (IEP) and an EFL videoconferences pilot based on the following research questions:

- RQ1. Are there significant differences in the pre-post language learning outcomes within a fully online synchronous EFL program and within an in-person ESL program?

- RQ2. Is the learning outcome of students in a fully online synchronous EFL program comparable to that of students in an in-person ESL program?

According to the results of the pre and post-tests for students in the two programs, the analysis indicated that the students' post-test scores in Listening, Grammar, and Vocabulary were significantly higher for both groups, the IEP and the EFL Videoconferencing. The results suggested that the two programs had similar learning outcomes.

Synthesis of the Findings

To examine the efficacy of an EFL program delivered via videoconferences, students were required to take pre and post-tests in the areas of Listening, Grammar, and Vocabulary. The study also had students from an ESL IEP (Intensive Immersion Program) take the same pre and post-test to compare the students' learning outcomes from the two groups after the two interventions.

In relation to the first research question, RQ1, about the differences in the pre-post language learning outcomes within a fully online synchronous EFL program and within an in-person ESL program, the results indicate that in Listening and Grammar, students in the Experimental Group started from a lower level of competence. However, in Vocabulary, both groups started from a similar level of competence.

Even though the starting level of the two groups was different (Listening pre-test average of 58.50 for the IEP Group and 40.23 for the EFL Group), in Listening, the post-test scores were significantly higher after the two interventions, a 17.6% increase for the IEP Group and a 39.6% increase for the EFL Group. The conclusion is that both programs promoted a statistically significant increase in Listening competence.

It is vital to emphasize that the Grammar scores were significantly higher after the two interventions even though the starting level of the two groups was different. The Grammar pre-test average was 62.65 for the IEP Group and 57.99 for the EFL Group. There was an increase of 16% for the IEP Group and 13% for the EFL Group in the Grammar post-test. The conclusion is that both programs promoted a statistically significant increase in Grammar competence.

In the Vocabulary pre-test, the students in both groups scored very close, demonstrating a similar level of competency before the interventions. The Vocabulary pre-test average was 64.07 for the IEP Group and 62.92 for the EFL Group. In Vocabulary, there was an increase of 14% for the IEP Group and 11.5% for the EFL Group. The conclusion is that both programs promoted a statistically significant increase in Vocabulary competence.

In relation to the second research question, RQ2 Is the learning outcome of students in a fully online synchronous EFL program comparable to that of students in an in-person ESL program? The results indicate that although both groups had significant learning outcome improvement after the interventions, in Listening and Grammar, students in the Experimental Group started from a lower level of competence. In Vocabulary, both groups started from a similar level of competence. Conclusions about the increase from pre to post-tests must take into consideration the EFL lower competence in Listening and Grammar, and then look at the language outcome considering that the IEP Group had 12.5 times more in-class time than the EFL Group.

The EFL Videoconferencing Group pre-test Listening scores were considerably lower than the IEP in the pre-test, but there was a higher increase in the post-test of the EFL Group compared to the IEP Group. An increase of 5.6 points higher for the EFL Group. It is imperative to mention that some students in the EFL Group experienced technical issues during the

Listening pre-test, and some mentioned being stressed because it was their first time taking an English language test on the computer. Krashen affirmed that language acquisition could be compromised when the stress level is elevated (Krashen, 1998, p. 179), and indeed, students will have a lower Listening comprehension performance if they are unfamiliar with the technology during a test. The students in the IEP took a pencil and paper test with their cohort, and the audio was played on high-quality speakers in the testing site.

The EFL Videoconferencing Group post-test Grammar scores were lower than the IEP in the pre-test (4.66 points difference between groups on the pre-test), and there was a moderately higher increase in the Grammar post-test of the IEP Group than the EFL Group. A difference of 2.7 point increase higher for the IEP Group over the EFL Group was observed. Although the IEP in-class time is 12.5 times higher than the EFL, the grammar competence increase difference between groups is of a low magnitude. The similarity in Grammar outcome increase between the two groups could indicate that a higher level of language use, interaction, and collaboration facilitates the improvement of language learning (Shaw, 2013). It is relevant to point out that the students in the IEP had 33 hours of Grammar in-class instruction (in a 200 hours in-class time program), while the EFL students had 16 hours of in-class (videoconferences with instruction and class activities). The EFL Pilot was focused on Grammar, but the design of the lessons included short instructor-led presentations combined with group activities and collaboration to promote language use and comprehensible input (Patrick, 2002; Krashen and Terrell, 1983, p. 20).

The Vocabulary post-test indicated a similar increase between groups. The EFL Videoconferencing Group Vocabulary post-test scores were marginally lower than the IEP in the pre-test (1.15 points difference between groups on the pre-test), and there was a similar increase

in the Vocabulary post-test of the EFL Group compared to the IEP Group. A difference of 1.76 point increase higher for the IEP Group over the EFL Group was observed. Even though there is a difference in vocabulary competence increase between groups, the results indicate that the difference is significantly low and should not be considered. Similarly to grammar, the fact that the vocabulary outcome between the two groups was so close could be attributed to a higher level of language use, interaction, and collaboration that happened in the EFL Pilot Program (Shaw, 2013). The mentioned similarities in terms of Vocabulary might also be attributed to subjects' L1 (mother tongue) being Portuguese and Spanish, and the fact that Latin languages have a high level of word cognate with English (Rabinovich et al., 2018).

It is vital to stress that the design of the EFL Videoconferencing program included pedagogical strategies and course objectives similar to the IEP. However, considering that the pilot program was only one course of two hours of videoconferences per week and the IEP has five courses (Listening, Grammar, Reading, Writing, and Speaking), and twenty-five hours a week of in-person classes, the differences in learning outcome were not statistically significant, and the conclusion was that the EFL Online Program is a viable option for international students to learn English from their home countries.

Implications for Online Language Learning

The literature review indicated that over 400 studies were primarily focused on understanding how to innovate language learning with the use of virtual learning tools and platforms (Von Der Emde et al., 2001). Previous studies highlighted the need for best practices in online language learning (Felix, 2004; White, 2016) and indicated the benefits of peer-to-peer feedback and telecollaboration (Ware and O'Dowd, 2008; Belz, 2002). Unfortunately, most studies were limited to a short period of time, focused on student satisfaction using

CALL/MALL, and did not measure the language learning improvement after the treatment (Burston, 2015).

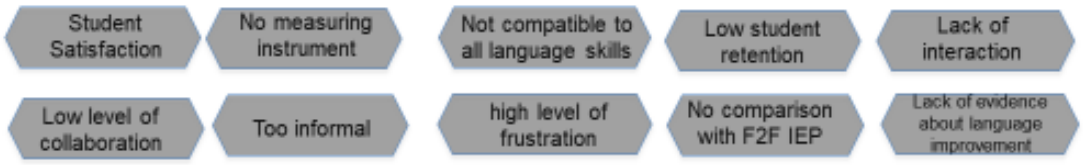
The literature review also highlighted that studies were limited to looking at self-reported student language improvement, student satisfaction, and teachers' perceptions of the benefits of adding CALL/MALL technologies into in-person language classrooms (Zou, 2014). The literature review indicated a gap in understanding how effective online synchronous videoconference platforms would be for language learning.

In this study, an EFL synchronous online pilot program was designed to use videoconferences to provide English language instruction and promote language interaction and collaboration. My intent went beyond learning if CALL/MALL could benefit language education to international students enrolled in ESL programs at American universities, and it was focused on helping EFL students in their home countries and analyzing the potential of learning language via videoconferences in comparison with immersion programs.

The mission of English as a Second Language departments is to help students expedite their language learning and be successful in college. This study has confirmed that language acquisition can happen entirely online if human interactions are synchronous and a sense of a speech community is stimulated (Patrick, 2012).

The results of this study have confirmed that IEP students have a significant improvement in their language skills. The study also confirmed that the EFL videoconferencing students were able to participate in live discussions, collaborate, and use English to communicate with each other. There were some technological problems, but the language competence improvement of students in the EFL Pilot Program was comparable to the students in the in-

person IEP. This reiterates the potential for creating a speech community and a welcoming language learning environment for students to develop their language skills remotely.



Looking at the main problems identified in the Literature Review (above), this study confirmed that an EFL videoconferencing program promotes student engagement, was designed to encourage collaboration, used a formal and informal language to help students in their academic goals, utilized a well-known measuring instrument to measure the effectiveness of such a program and compared to an immersion ESL immersion program.

Implications for the Theoretical Framework

In the design of the EFL Pilot Program, elements from the theoretical framework were intentionally considered, in particular, the Affective Filter Hypothesis, and the Comprehensive Input Hypothesis. The results of the study indicate that Krashen's hypothesis that emotional impairments, such as high anxiety levels, low self-esteem, absence of motivation, and low social bond (Krashen, 2009b, p. 8), might hinder the acquisition of a second language (Krashen, 2009a, 2003). However, students may deflect these obstacles when language instructors' strategies and the design of a program create a welcoming language learning environment and promote interactions of comprehensible input that enables language acquisition (Krashen and Terrell, 1983, p. 20).

Krashen (1987) affirmed that a high level of language exposure and grammatical structure repetition exercises could be helpful if the language acquirer is ready to use such grammatical structures in real-life situations. The input must be just above the competency level ("i + 1") of the acquirer (Krashen, 2009a). Krashen also defends that context, extralinguistic

information, gestures, and repetitions make the input comprehensible (Santiago, 2015; Rounds, 2010). The design and execution of the EFL Pilot Program account for comprehensible input intercalating short audio-visual teacher presentations and collaborative activities for students to be exposed to comprehensible input and produce comprehensible output (Swain, 1995 and 2006, see appendix 5).

Krashen defends that the more a language acquirer is exposed to comprehensible input, the more she will acquire the second language (Krashen, 1985, p. 92). The study results confirm Krashen's argument that language exposure without comprehensible input might not produce language acquisition (Krashen, 2009a, p. 41). In the case of the EFL Pilot students, the intentional encouragement of comprehensible input may be the reason for the significant increase in language competence observed.

In Krashen's argument on lack of access to comprehensible input (Krashen, 1985, p. 92), he reasons that poverty of stimuli and comprehensible input may occur even when the second language learner lives in the L2 host country but does not interact with L2 speakers because h/shee is surrounded by co-nationals and family (Krashen, 2009a, p. 63). Students in the EFL Videoconferencing Program were in their home country, but due to the use of diverse methodologies, the creation of a low anxiety environment, and many opportunities for comprehensible input, language acquisition was stimulated through acquisition activities (Krashen and Terrell, 1983, p. 95).

Recommendations for Future Studies.

Limitations of the Study and Design.

The study did not attempt to control all aspects of the L2 acquisition process. However, the EFL pilot course was designed for students to use the English language in interactions that

included language mechanic skills, collaborative activities, and plenty of comprehensible input. My conversations with students and instructors of the two modes (IEP-F2F and EFL-Videoconferencing) allowed me to learn about problems with Internet connectivity, platform glitches, and online activities that will help me develop training resources for instructors and avoid similar problems in the future.

In future studies, I plan to look at other variables such as students' social and gender diversity, age, level of L2 exposure outside the lessons, family and work commitments, and knowledge of other languages to ascertain the impact of these variables on IEP and EFL online programs.

Another element that I could not investigate is the inclusion of gamification in an online EFL program. The fact that students were working full-time and some had problems with their Internet connection prevented me from including games and interactive activities for multiple players (Berns et al., 2013). Gamification might be a very engaging element in online EFL, and a future study could investigate the learning effects, issues, and best practices (Melchor-Couto, 2019).

My goal with the Synchronous online ESL program was to build a speech community of sorts, where students would be at ease with each other and learn how to use English to negotiate meaning and solve problems together (Denzin and Lincoln, 2018). Students in the four classes of the pilot program developed friendships and were communicating outside the videoconferences, but it was not possible to measure if the concept of speech community was accomplished in this pilot program; so further studies should be developed to create a measuring instrument to confirm the relationship to second language learning.

Teaching Strategies and Design.

The IEP (Control group) has a teaching structure that has been in practice for over 15 years (ESLI-CU, 2017). During the study, it became clear that there is a need for studies that compare language teaching strategies and program structures to verify if teaching language in separate skills, such as grammar, speaking, listening, reading, and writing, is as effective as combine language skills in the same course. A further study could also focus on analyzing the ratio of teacher talk time (TTT) and student talk time (STT) to verify if the reduction of TTT contributes to higher language learning.

Social Change and Language Learning

My goal was to provide international students with the opportunity to learn English in their home countries as an alternative for those that cannot afford to come to the USA for an extended period in IEPs. In this study, I created a program that can reduce the time and expenses of students applying to universities in English-speaking countries.

This study had the support of Campbellsville University, and after seeing the students' engagement, the university allowed me to start a new program called The EFL Synchronous Online Program at a reduced cost for students in their home countries. The university is recruiting students for the program in several countries, and five classes have been offered since July 2020. Students are responsible for the tuition fee, but the university embraced my vision of making this program affordable to students in developing countries. Students enrolled in the fully online program can transfer to the IEP at any time, and those who successfully complete the intermediate and advanced levels of the EFL Synchronous Online Program will not be required to take ESL classes when they come to the US for undergraduate or graduate programs in the university.

With the mission of helping students escape poverty and promote significant social change in their communities (Duke, 2004), many graduates of an EFL Synchronous Videoconferencing Program can become agents of social change, they will have access to better-paid jobs, and will invest in the development of their communities (Daniel, Kanwar & Uvalic-Trumbic, 2009).

My initial interest in this study was to understand how effective online language learning could be. After the study, I understand the practicality of an EFL Videoconferencing program and the potential for many English learners to have the means to further their education (Jung, 2013). I also recognize that an EFL online program can support the mission of Christian universities, as it reaches students in remote areas and promotes positive social changes in many communities.

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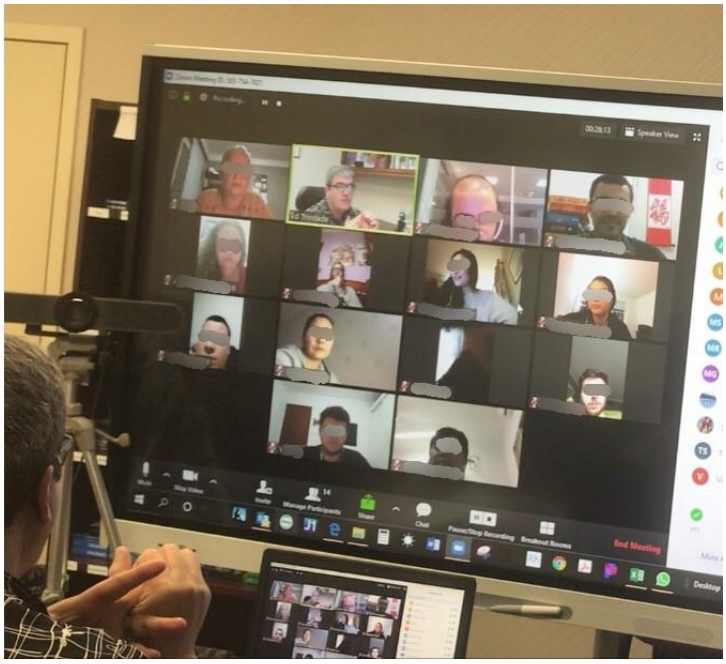
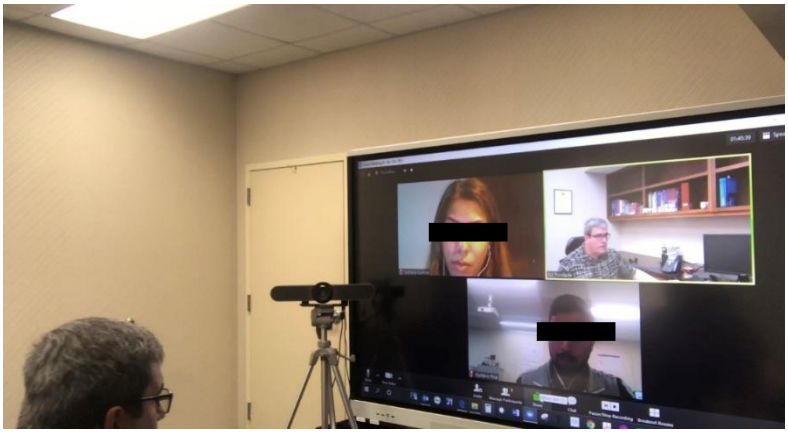
Appendix 1 – Photos of the EFL Pilot Program

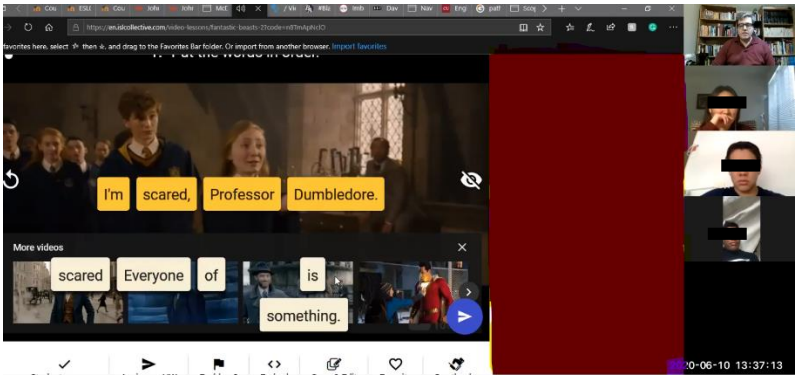


EFL Videoconferences online Synchronous - language test

Videoconference small group



Breakout room



Listening game

EPT Zoom Orientation

EFL Videoconferencing

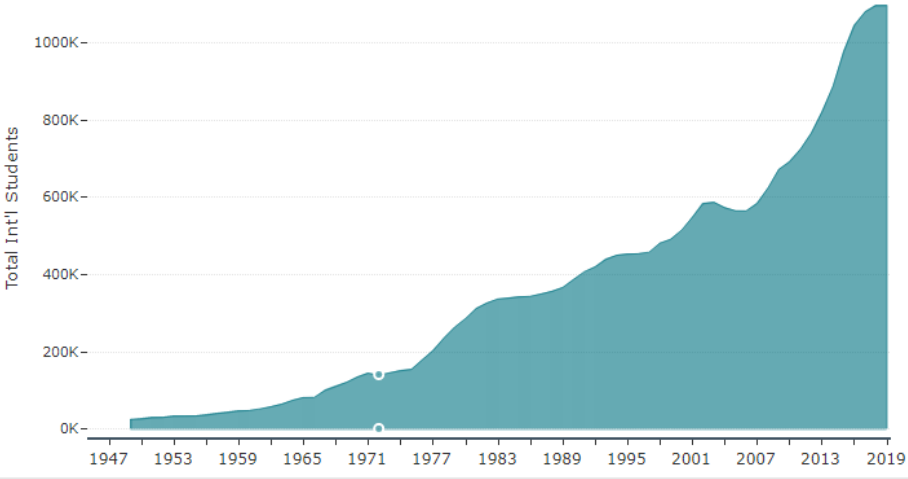
Appendix 2 - Supporting Data

Enrollment Trends

INTERNATIONAL STUDENT DATA
FROM THE 2019 *OPEN DOORS*® REPORT

open doors

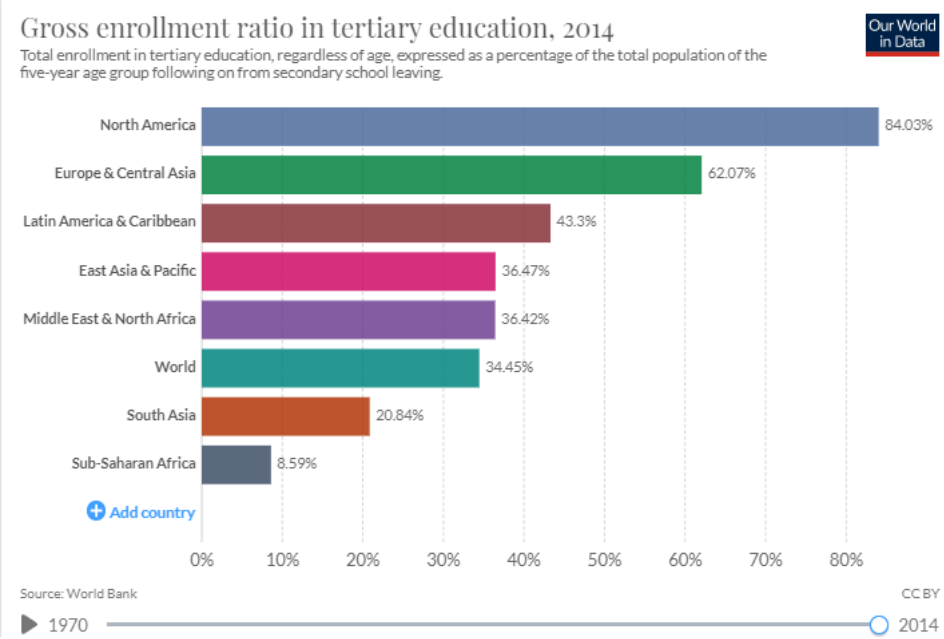
Year	Enrolled Int'l Students	OPT	Total Int'l Students	Total U.S. Enrollment*	% Int'l	Annual % Change
2018/19	872,214	223,085	**1,095,299**	19,828,000	5.5	**0.05**
2017/18	891,330	203,462	**1,094,792**	19,831,000	5.5	**1.5**
2016/17	903,127	175,695	**1,078,822**	20,185,000	5.3	**3.4**
2015/16	896,341	147,498	**1,043,839**	20,264,000	5.2	**7.1**
2014/15	854,639	120,287	**974,926**	20,300,000	4.8	**10.0**
2013/14	780,055	105,997	**886,052**	21,216,000	4.2	**8.1**
2012/13	724,725	94,919	**819,644**	21,253,000	3.9	**7.2**
2011/12	679,338	85,157	**764,495**	20,625,000	3.7	**5.7**
2010/11	647,246	76,031	**723,277**	20,550,000	3.5	**4.7**



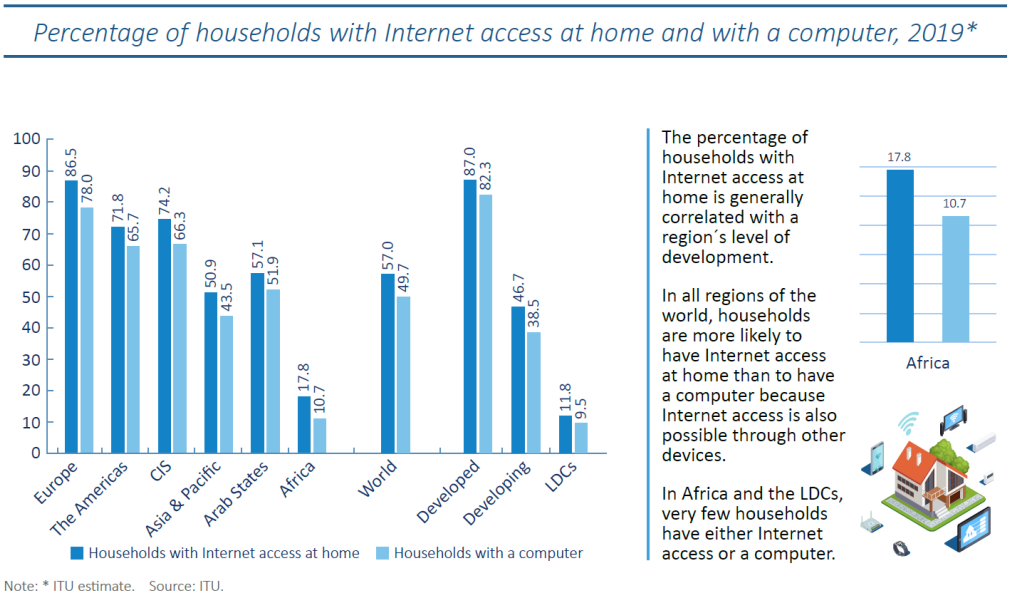
*Data from the National Center for Education Statistics.
**The data collection process was changed in 1974/75. Refugees were counted from 1975/76 to 1990/91.
***OPT was first reported separately for the 1979/80 academic year.

Suggested citation: Institute of International Education. (2019). "International Student Enrollment Trends, 1948/49-2018/19." *Open Doors Report on International Educational Exchange*. Retrieved from http://www.opendoorsdata.org

US Department of State. (2019). Institute of International Education. *Open Doors Report on International Educational Exchange*. https://opendoorsdata.org



Gross Enrolment Ratio, Tertiary, Both Sexes (%) Variable time span: 1970 – 2014. World Bank EdStats. UNESCO Institute for Statistics. https://data.worldbank.org/data-catalog/ed-stats

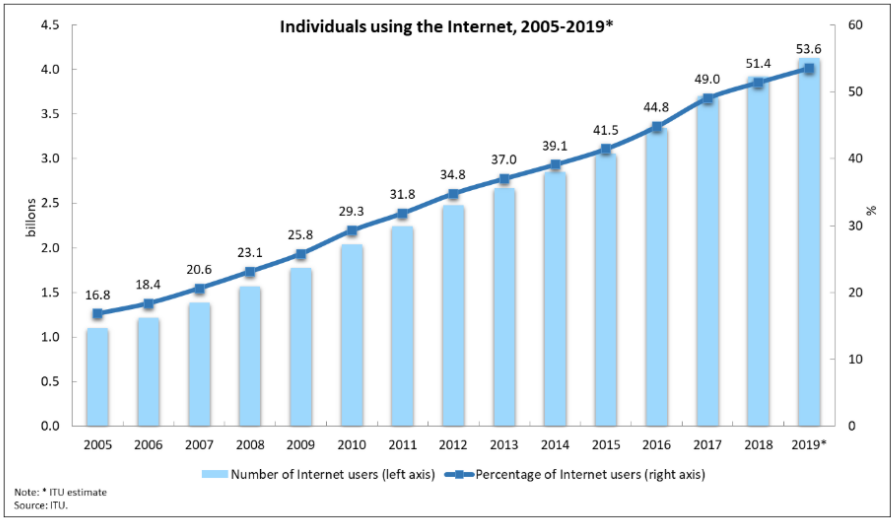


International Telecommunication Union (ITU). (2019).

Measuring digital development facts and figures 2019.

https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2019.pdf

ITU estimates that at the end of 2019, 53.6 per cent of the global population, or 4.1 billion people, are using the Internet.



International Telecommunication Union (ITU). (2019).

Measuring digital development facts and figures 2019.

https://www.itu.int/en/ITU-D/Statistics/Documents/facts/FactsFigures2019.pdf

Appendix 3 – Consent Form

LANGUAGE LEARNING EFFECTIVENESS (OUTCOME) OF AN ONLINE SYNCHRONOUS ENGLISH LANGUAGE LEARNING (ELL) PROGRAM COMPARED TO AN ENGLISH AS A SECOND LANGUAGE (ESL) FACE-T0-FACE (F2F) PROGRAM

Subject Informed Consent

Introduction and Background Information
You are invited to participate in a research study by Bellarmine University. The study is being conducted by Dr. Grant Smith and Eduardo Trindade. The study is sponsored by Campbellsville University. The study will take place during the months of March and April 2020 and the participants will connect via zoom meetings to videoconferences hosted by the ESL and MA TESOL instructors of the English as a Second Language Institute of the Campbellsville University. Approximately 80 subjects will be invited to participate in this study. Your participation in this study will last for eight (8) weeks (16 videoconferences, 2 per week).

Purpose
The purpose of this research study is to investigate the effectiveness of an English Language program delivered via videoconferences to students synchronously connecting from their home, school, or workplace. The objective is to determine if the delivery method of the program is comparable to a face-to-face program offered by the same university as an intensive immersion summer program. The research will analyze the language learning progress of the students to see if there is evidence of a significant positive impact on language learning from the beginning to the end of the eight weeks of the program. The practice has been shown to increase focus, handle stress, and face challenges in a positive way.

Procedures
In this study, you will be asked to attend 16 (1-hour) videoconference sessions of ELL classes with instructions and group activities, take a pre and post English Placement Test, actively participate in the class activities, and complete some homework every week. These sessions will take place in the evening twice a week for eight consecutive weeks. Students volunteering for the study will be randomly assigned to one of the four classes offered.
Participants will be exposed to 60-minutes ELL lessons twice a week during March and April 2020. Video recordings of each videoconference will be available online (LMS) for each class for the duration of the pilot program and will not be shared with other classes until the research is complete.

Potential Risks
There are no reasonably foreseeable risks.

Benefits
The possible benefits of this study include the development of opportunities for students to have access to an English Language Program that has been offered since 1980 as a gateway to undergraduate and graduate programs in America. Students will also gain exposure to ELL classes with instructors from a university in America, be able to experience a typical university classroom environment without having to spend the money to move to the USA. The data collected in this study may not benefit you directly. However, the information learned from this research may be helpful to others in the future and to the design of a regular online ELL synchronous program.

Compensation
Students will have the opportunity to attend English lessons for free for the duration of the pilot program and will get a certificate of completion from Campbellsville University. Students must be present for the pre and posttest and attend the most of the 16 videoconferences to be eligible for the certificate.

BELLARMINE UNIVERSITY
IN VERITATIS AMORE

ENGLISH LANGUAGE LEARNING VIA VIDEOCONFERENCE
Subject Informed Consent

Confidentiality
Although absolute confidentiality cannot be guaranteed, confidentiality will be protected to the extent permitted by law. The study sponsor or the Institutional Review Board may inspect your research records. Should the data collected in this research study be published, **your identity will not be revealed**.

Voluntary Participation
Your participation in this research study is voluntary. You may refuse to participate or withdraw your consent at any time without penalty or losing benefit to which you are otherwise entitled.

Your Rights as a Research Subject and Contact Persons
If you have any questions about your rights as a research subject, you may call the Institutional Review Board Office at (+1) 502-272-8032. You will be given the opportunity to discuss any questions, in confidence, with a member of the Board. This is an independent committee composed of members of the University community and lay members of the community not connected with this institution. The Board has reviewed this study.

You acknowledge that all your present questions have been answered in the language you can understand. If you have any questions about the study, please contact Dr. Grant Smith at (+1) 502-272-7921 or Eduardo Trindade at (+1) 502-314-9905.

Consent
You have discussed the above information and hereby consent to voluntarily participate in this study. You have been given a signed copy of this consent form.

X _____	_____	_____	
Name of Participant (print)	Signature of Participant (if minor signature and name of Guardian)	Date Signed	
Dr. Grant Smith	_____	_____	
Investigator (print)	Signature of Investigator	Date Signed	
Eduardo L. Trindade	_____	_____	
Co-investigator (print)	Signature of Co-investigator	Date Signed	

By signing below, I, the participant, give my consent to participate in the research study described above.

X _____	_____	_____	
Name of Participant (print)	Signature of Participant (if minor signature and name of Guardian)	Date Signed	

Appendix 4 - IRB Exemption Notice

From: "Christy D. Wolfe" <cwolfe@bellarmine.edu>
Date: May 19, 2020 at 20:05:10 EDT
To: "Grant S. Smith" <gsmith2@bellarmine.edu>, "Eduardo L. Trindade" <etrindade01@bellarmine.edu>, "eltrindade@campbellsville.edu" <eltrindade@campbellsville.edu>
Cc: "Christy D. Wolfe" <cwolfe@bellarmine.edu>, "Connie R. Smith" <csmith6@bellarmine.edu>, "Francis T. Hutchins" <fhutchins@bellarmine.edu>, "Mark R. Wiegand" <mwiegand@bellarmine.edu>
Subject: IRB#843: Language Learning Effectiveness of an Online Synchronous ELL Program Compared to an ESL F2F Program

BELLARMINE UNIVERSITY
IN VERITATIS AMORE

May 19, 2020

Dr. Grant Smith
School of Education, Bellarmine University

IRB#843: Language Learning Effectiveness of an Online Synchronous ELL Program Compared to an ESL F2F Program

Dear Dr. Smith:

The IRB has concluded the review of your application for the project entitled *Language Learning Effectiveness of an Online Synchronous ELL Program Compared to an ESL F2F Program*. Thank you for addressing the concerns of the reviewer. Your submitted protocol has undergone an exempt review and has been approved under Category 1, "research in established or commonly accepted education settings that involves normal educational practices". Please inform us in advance of any changes that may be made to the protocol in the course of this study.

If you have any questions, please let me know. We wish you the best with your project!

cw

Christy Wolfe, PhD
Associate Professor of Psychology
Chair, Bellarmine IRB
Bellarmine University
2001 Newburg Road
Louisville, KY 40205
(502) 272-7971
Office: McGowan Hall, Room 173

Appendix 5 – Extended Review of the Literature on SLA Theories

The Behaviorist Theory in SLA

One of the best-known environmentalist theories was proposed by Skinner (1957). Skinner's theory is recognized as the behaviorist or stimulus-response theory, which explains the phenomenon of learning a language as a learned behavior that is reached via stimuli and rewards or reinforcement. According to Skinner's laboratory experiences, the process called "operant conditioning" must be constantly reinforced to avoid degeneration of verbal behavior (p. 28). Through the "operant conditioning," the person understands that there are consequences associated with behaviors, and learning a language is dependent on the exposure to the environment and, on the same token, dependent on what Skinner called "verbal behaviors" (1957).

One could conclude that in the behaviorist theory, learning a language would be similar to acquiring any ability; it happens by repetitions until a behavior automatically generates a conditioned response, in the case of language, a "verbal behavior" (1957, p. 70). The classical conditioning perspective suggests that reactions of conditioned responses are involuntary and reflexive and could be emotional or physiological responses (Watson, 1916). However, Skinner sees the brain's capacity to understand the behavior and respond consciously to stimuli, in this case, "conscious verbal behavior," that permits innovative responses which, according to Skinner, are the product of an incubation period of the unconscious verbal behaviors (Skinner, 1957, p. 419). For Skinner,

> A child reared in a family which reinforces generously is likely to possess such behavior in great strength and will talk upon almost any occasion. A child reared in the absence of such reinforcement may be relatively silent or taciturn (Skinner, 1957, p. 149).

It is only logical to conjecture that there must be more abundant stimuli in a household where a child is reinforced continuously. According to Larsen-Freeman & Long (1991), stimulus-response would not suffice to explain the acquisition of a second language; it might be highly beneficial to help learners improve pronunciation and automatically recall complete formed sentences. Nonetheless, learners will have problems deciding how to reply to speakers with a different accent from their teacher, to sentences that do not follow the same patterns memorized and comprehend figurative language (Piker-Piriz & Alejo-Gonzalez, 2016).

It might be said that Skinner behaviorist theory on language learning reached global notoriety because of Chomsky's (1959) famous review of Skinner's "Verbal Behavior" (1957), and also due to the many audio-lingual language learning methods (ALM) developed in the 1940s to help Americans learn the languages of their allies and enemies after the war, according to Maleki (2005). The audio-lingual method was also known as the military or the Army Method, and it was teacher-centered, focused on mechanical repetitions of sentences and dialogues. The goal of ALM was to help students learn sentence structures without explicit grammar teaching and with almost no explanations and little space for cognition (Griffiths, 2004). By the late sixties, the ALM was being questioned due to learners' frustrations over tedious repetitions and the desire to learn how to translate and use language creatively (Griffiths, p. 7).

Despite the shortcomings of the ALM, it is not uncommon to find teachers still using some of the principles of the method in their classes and in language proficiency assessments (Kim, Tracy-Ventura & Jung, 2016). The renowned Pimsleur Language Method from the 1950s uses repetitions like ALM and does not provide opportunities for spontaneous language use. However, the Pimsleur method provides translations and input enhancement technics (Smith,

1993; Choe, 2016) that promote language awareness in the second language (Macaro, 2006; Smith, 1981).

The Acculturation Theory in SLA

Another theory based on the environment is the acculturation theory, proposed by Schumann (1978). Schumann's research concluded that second language learning is the result of a process of acculturation. In Schumann's view, "The degree to which a learner acculturates to the target language group will control the degree to which s/he acquires the language." (Schumann, 1978a, p. 34; see also Schumann, 1986). In the acculturation theory, Schumann argues that the degree of social and psychological distance between the language learners and the speech community will determine the acquisition level (Schumann, 1986, p. 388). It is vital to highlight that Schumann did not define what would be the levels of social and psychological proximity that would be considered optimal to acculturation (Larsen-Freeman & Long, 1991). He did not present a measurement indicator or instrument to predict language learning outcomes. Although Schumann's theory presents a reasonable description of many second language learners' social and psychological struggles, Schuman has been criticized for not providing validated and reliable instruments for measuring acculturation (Zaker, 2016; Ellis, 1997). Even with the mentioned problems, acculturation might be a reasonable alternative to Lenneberg's theory of the "critical period" (Lenneberg, 1967; Hartshorne, 2018). The acculturation theory relies on other variables besides age to account for some adults' failure to learn a second language.

Few researchers have tried to design acculturation measuring instruments; for instance, Kelley (1982) developed a questionnaire to measure four (4) levels of social and psychological distance, but no further use of his questionnaire appears in the literature (Kelley, 1982). There

are some other measurement instruments, such as the "Bogardus Social Distance Scale" (Bogardus, 1925), and others (Payne et al., 1974), used to identify behaviors and attitudes that would indicate acculturation disposition (Wark & Galliher, 2007). Nevertheless, it is not easy to extrapolate the use of these instruments to predict language learning predispositions. According to Brown (1980), the solution for Schumann's dilemma of finding a measurement instrument could be solved with Acton's "Professed Difference in Attitude Questionnaire" (PDA) (1979). The PDA, which has been disputed in terms of reliability (England, 1983), is a self-reporting instrument that asks language learners to quantify the differences between their original cultures concerning the target culture and their attitude towards the members of the target culture (Acton, 1979).

Based on Schumann's longitudinal studies (1978a), the acculturation theory identified eight social and four psychological variables that would affect second language learning. In Schumann's terms, "social distance" and "psychological distance" affect the learning process (Schumann, 1978b). In this view, language learning would be optimal in immersion environments, and distance language learning would be inconceivable, especially in times of global pandemic with required physical social distance. Walker & Lê (1999) remind that in distance learning and computer-assisted learning, the Information Technology (IT) community has its own discourse and culture, and learners have to go through an acculturation process to function in virtual spaces of the IT community.

One of the social distance variables is "social dominance patterns," which are defined by circumstances when the target language group is considered inferior. In such cases, learners will see no need to learn the target language. The same might be true when the target language is imposed on a subjugated group that reacts against the language of the dominator. The conquered

use the imposed language in a significantly reduced form for essential communication, resulting in pidginization (Schumann, 1978b).

The following variable is the "integration strategies," which have three levels: total assimilation of the target language by the complete abandonment of the native culture and language, partial assimilation when learners maintain their native culture and language but assimilate the target culture, and adaptive or bicultural when learners learn how to negotiate in their native culture and the target culture - depending on the group with whom they are interacting.

The following variable is "enclosure," when groups share similar spaces or cultural preferences, the learning will be promoted; when the two groups are enclosed and separate, language learning will diminish. 'Length of residency" or exposure will impact language learning. "Cohesiveness" happens when the learner has limited contact outside the target language group. The "size" of the L1 or L2 community will also impact learning. The "cultural congruence" or cultural likeness between native and target language groups impacts language learning. Feelings and "attitudes" between groups may affect the learning process (Brown, 2000, 1997; Pinnegar & Teemant, 2019).

In terms of psychological variables, the acculturation theory accounts for "language shock," which is the period when a learner cannot communicate the most basic ideas in the target language, and consequently, the learner experience a psychological crisis in which they have a constant sense of inability, and an identity crisis (Kovtun et al., 2018). The next psychological variable is "cultural shock," which is a disorienting feeling characterized by anxiety about the host culture and an intense longing for one's native culture (Berry, 2019; Berry et al., 1986). "Motivation," which is still an enigma for many (Lai et al., 2020; Chai et al., 2016; Thompson &

Vásquez, 2015), is another psychological variable. The last psychological variable considered by the acculturation theory is "ego-permeability," which is the degree of rigidity in the L1 or the flexibility the L2 learner has in developing a new cultural and linguistic identity (Zaker, 2016; Bluestone, 2009). In other words, individuals that fully acquire new languages and new cultures open themselves or their identity to portraying themselves in a new persona, not that they have multiple personalities, but that their ego infuses itself with characteristics of the other language/culture (Keeley, 2014).

Interaction Hypothesis in SLA

The next theory is the interaction hypothesis formulated by Hatch (1978) and Long (1981, 1996). Hatch and Long understood that output and input alone would not suffice to promote second language acquisition, and they claim that conversational interaction fills the gap between the comprehensible output hypothesis and the comprehensible input hypothesis (Muho & Kurani, 2014). Long (1981) argues that through interactions and negotiation of meaning with native speakers of the target language, L2 learners prompt linguistic and discourse modifications that facilitate language acquisition (Long, 1996). Hatch (1978) emphasizes that through conversation, language learners develop their grammar in the second language. For Long (1983a and b), input can only be comprehensible with interaction that provides context and meaning negotiation. Long concludes that interaction requires linguistic adjustments and explanations of meaning and feedback about the meaning of utterances (Gass, MacKey, and Pica, 1998). Hatch (1978) presents a series of examples of discourses (conversations) to affirm that he discords that language learners first process input to be able to interact. Hatch gives examples of children interacting with adults and second language adult learners interacting with native English speakers to show that in simple conversations, there is a process of meaning negotiation between

the interlocutors, no matter the language level of the language learner (p. 423). The natural interaction provides opportunities for the learner to get content words, recognize the topics of the conversation, and begin to make predictions and as he/she understands the meaning and improves comprehension and performance (p. 423-424).

Long (1996) affirms that the negotiation of meaning is essential in the process of language acquisition, and the negotiation is an indication of the understanding that occurs even when the interlocutors ask questions. In this negotiation process, the interaction activates the language device, and "grammar is the product of the interaction of the acquisition device with experience; no grammatical knowledge is inborn" (Doughty & Long, 2005, p. 37). The interaction hypothesis promotes three techniques necessary in interactions, comprehension checks, confirmation checks, and clarification requests. (Ortega-Auquilla, Hidalgo, and Heras-Urgiles, 2019, p. 3). The interaction hypothesis affirms that comprehensible input is necessary, but it is insufficient to promote SLA. With interaction, the language learner is motivated to modify their initial output to be understood by the interlocutor, and this is the negotiation of meaning that promotes SLA (Gass and Varonis, 1994).

Sociocultural Hypothesis in SLA

Another SLA theory rooted in the environment but also heavily dependent on cognition is the sociocultural hypothesis (SCH) based on the works of the Russian psychologist Lev Semyonovich Vygotsky (1978), which describe the development of cognition through social interaction or collaborative dialogues that facilitate the 'internalization of language' (Gass & Selinker, 2008). Lloyd & Fernyhough (1999) noticed the similarity between Vygotsky's notion of "internalization" and Hegels' "Verinnerlichung," which labels the process of assimilation of societal culture via the development of language skills, particularly in children (p. 385). Without

negating the sociocultural theory's contribution to in-person language learning/ teaching (VanPatten and Williams, p. 222), it is essential to emphasize that this theory may not explain distance SLA when sociocultural interaction is limited.

Vygotsky's sociocultural theory tries to explain the development of higher forms of mental behavior, stating that social and cultural practices and language facilitate human psychological functions and manifest these functions through a comprehensible sign system (Azabdaftari, 2013). Although Vygotsky is considered the father of the sociocultural hypothesis to SLA, and this is so because the theory draws from Vygostian works on sociocultural theory, Frawley & Lantolf's (1985) article on second language discourse is the precursor of the SCH. It is also important to emphasize that Frawley and Lantolf questioned Vygotsky's work affirming that Vygotsky was unsuccessful in corroborating his claims with data (1985; Brooks and Donato, 1994; Lantolf and Thorne, 2007).

Although Vygotsky's sociocultural theory is applied to second language acquisition, it was not his original intention, and the criticism must focus on the application of the theory and not necessarily on Vygotsky's work. Johnson (2004) asserts that the principal element of the sociocultural hypothesis is that it contributes to the understanding of SLA is the zone of proximal development (ZPD), which explains that language learners develop private and inner speech as a result of social interaction. In other words, the second language learner is in a constant ZPD and advances their language proficiency via interactions and collaborations with others in higher proficiency levels of language use (Newman & Holtzman, 1993).

Vygotsky's sociocultural views on ZPD and scaffolding learning reinforce the value of language instructors and mixing students of different levels to nourish the environment with opportunities for collaboration and meaning negotiation (Lantolf and Appel,1994; Lantolf,

2000). It is important to note that in terms of language instruction, Vygotsky's ZPD and Krashen's comprehensible input are similar as both are determined to promote interactions and collaborative learning (Duff and Uchida, 1997).

Vygotsky (1987) hypothesizes the existence of three distinct forms of speech: the social speech used to convey meaning to others and is externally manifested in audible or visual (for sign language) communication; the private speech, used by the individual to formulate thought (inner manifestation), build communication, self-regulate behavior, which will eventually be externalized in communication (intellectual function), and as the individual develops their intellectual functions, private speech is transformed into a silent inner speech (Schinke-Llano, 1993).

For Vygotsky, thought and language begin as separate systems; however, later in the child's development, these two systems amalgamate, and thought becomes verbal, or "verbal thinking" (Miller, 2011). Socioculturalists would affirm that adults and older children would undergo a similar process in acquiring a second language (Khaliliaqdam, 2014). The learner has gone through this process while acquiring their first language and activates memory and awareness's cognitive functions to become verbal in a second language (Lantof & Thorne, 2007). In the sociocultural hypothesis, cognitive processes are sustained by the participation in social and cultural contexts present in institutions such as family, school, work, and religious gatherings (Halliday, 1978). In the words of Vygotsky, "the path from object to child and from child to object passes through another person. This complex human structure is the product of a developmental process deeply rooted in the links between individual and social history" (Vygotsky, 1978, p. 30).

Vygotsky affirmed that “internalization” is a process where individuals assimilate sociocultural ideas and structures due to the interaction with social settings (Vygotsky, 1997). He understood that internalization can only happen within the zone of proximal development where mental functions are activated and social relations are internalized, and meaning is comprehended (Vygotsky, 1997, p. 105; Dunn & Lantolf, 1998; Goos, 2004). In such cases, the neophyte interacts with individuals more knowledgeable of the target language and culture, and the negotiation to create meaning happens (Bakhtin, 1981). Through continual interaction, the language learner will internalize the new culture and language and construct a new identity conformed with the new context (Weedon, 1987; Bourdieu, 1997).

If taken at face value, second language acquisition will depend on learners’ exposure to target language social settings. The semiotic exchanges in a language classroom recreate, as much as possible, life situations that mimic the culture and societal structures of the target language. The application of the Vygotskyan theory in second language acquisition does not take away the teacher’s role of mediator and promoter of learning experiences but advocates the participation of all the students in interactions that will forge the language acquisition. (Feryok, 2013, p. 215). In the context of distance language learning through videoconferences, it would be considerably challenging to promote the level of interactions necessary for the process of internalization to take effect.

Comprehensible Output Hypothesis in SLA

The comprehensible output hypothesis, formulated by Swain (1985) focuses more on the language learner than the environment. According to Swain (1995, 2006), through output or comprehensible output, second language learners become aware of the discrepancy between what they intend to convey and what they can convey (Swain & Lapkin, 1995). As a result of the

awareness of this deficiency, the learner presses on to enhance their fluency (Swain & Lapkin, 1995, p. 372).

According to Swain, there are three distinct functions of comprehensible output: 1) the "noticing function," which is the awareness of the language gap between meaning intended and meaning conveyed by the utterances. 2) the "testing function," which results from the first function and is what triggers the learner to try different utterances with variations in grammar and syntax to test their hypotheses about the target language. Based on feedback from an instructor, or any target language speakers, the learner analyses his/her utterances checking them against the linguistic hypothesis being tested. 3) the "metalinguistic function," which is a conscious reflection on the language being produced to verify if it is comprehensible. This metalinguistic analysis is a reflection about language structure and linguistic features that second learners must assimilate to gradually enhance their performance, meaning negotiation to undergo the acquisition of the target language (Swain & Tocalli-Beller, 2005, p. 380).

For Swain (2005), in using language, second language learners observe their personal errors and focus on learning how to modify their output, adjusting it to the correct form of the target language. In other words, the output activates a cognitive process that will facilitate second language learning (p. 5).

Stephen Krashen has raised some considerations about the comprehensible output hypothesis (Krashen, 1998), as well as Anthony (2008), who sees the need to combine comprehensible input and output to assist language learners to reach proficiency in the target language (p. 474). For Krashen (1994), comprehensible output is insufficient to produce language proficiency, and he says that there is no evidence that comprehensible output produces language acquisition (Krashen, 1994, p. 175). Krashen also argues that second language

"competence is possible without output" and happens exclusively based on reading and listening (Krashen, 1998, p. 180). For Krashen, comprehensible output requires interaction and may help, but it may also be the cause for added stress and consequently may be an impediment to language learning (p. 179). I will look into Krashen's claims that comprehensible input is a better contributor to language acquisition when discussing his Monitor Theory.

Universal Grammar (UG) Hypothesis

Chomsky's theory of language was initially called "Transformational Grammar" and was described in his book *Syntactic Structures* (Chomsky, 1957). Chomsky made changes to his theory based on the research of various languages to establish similarities between languages and contradicted the notion that languages are unique (Chomsky, 1986; Sapir, 1921; Loucky, 2010).

Chomsky (2002) defines language as the "set (finite or infinite) of sentences" (p. 13) that obey rules, which enables speakers of that language to understand the meaning conveyed. Chomsky states that language is more than the repertoire of memorized sentences and responses to stimuli (Chomsky, 2006, p. 16). Language is used with creativity by human beings that are able to produce a completely new combination of words (2006, p. 196).

Chomsky also theorizes that all human beings are biologically designed to understand and acquire any natural language they encounter (2006, p. 100). The cognitive system involved in deciphering and comprehending language is called language acquisition device (LAD), and this device can identify universal structural elements in any language. These universal elements are called "universal grammar" (UG). The hypothesis is that UG is the human intellectual capacity (Chomsky, 2006, p. 24) or the "genetically endowed, biological system" that enables humans to identify and acquire the rules and principles of languages (2006, p. 42). It is essential to highlight that the language acquisition device (LAD) should not be confused with Universal

Grammar (GU), because GU is the framework of knowledge that every typical child is born with, and when exposed to natural environments, will make sense of language and its structures, even with limited available data (Chomsky, 2006, p. 100, 151). Chomsky clarifies that through internalized grammar, individuals clearly discern the acceptable and well-constructed phrases within their language. This decision does not depend on formal instruction but is perceived intuitively by the native speakers of a language, even when they cannot consciously articulate the rules of their language (Pinker, 1995).

Chomsky claims that the environment is insufficient to enable humans to acquire language and produce new sentences that were never uttered or heard by the language learner (2006, p. 52). Chomsky devised the concepts of LAD and UG to explain that all humans are born with an innate mental device to understand how language acquisition works. This device is activated by exposure to language (Chomsky 1957; 1965, p. 32), which explains how children acquire language even in environments where there is "poverty of stimuli" (2006, p.201). UG has been a controversial proposition disputed for over fifty years because it is virtually impossible to verify what elements are present in all human languages and how this innate human faculty works (Sampson, 2005).

Some researchers claim that even if the UG hypothesis was correct in explaining how children acquire language, acquiring a second language is an entirely different process (O'Grady, 2012; Hymes, 1974; Firth & Wagner, 1997; Birdsong, 1994; Birdsong and Vanhove, 2016). The understanding is that there are processes that happen in SLA which are not necessarily present in first language acquisition, such as intralanguage, interlanguage (Selinker, 1972), language transfer, and fossilization (Selinker, 1996; Han, 2004). Chomsky refutes the criticism stating that

the UG parameters would continue to operate in SLA, even if other mechanisms are present (Chomsky, 2015, p. 25).

The last theory reviewed is the Comprehensible Input Theory by Stephen Krashen chosen as the theoretical framework of this study. Please refer to the Literature Review Chapter (pp. 75-96). The references for the Extended Review of the Literature on SLA Theories are included in the References section of this manuscript (starting on p. 156).