

THE INFLUENCE OF VISUAL AIDS IN HIGH SCHOOL ELL AND GENERAL
EDUCATION SOCIAL STUDIES CLASSROOMS: A QUANTITATIVE STUDY

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Abstract

New Jersey has a prominent and rapidly growing Latinx community, the majority of which are English language learners (Brey et al., 2019; Ennis, Rios-Vargas, & Albert, 2011; Krogstad, 2019; Krogstad, 2020). There is a gap in the literature as it pertains to methodology in the teaching of English Language Learners. As such, it is essential to find and utilize best practice teaching strategies that may facilitate content-area knowledge acquisition and possibly narrow the achievement gap. Research suggests that the use of imagery and visual aids may aid in content-area knowledge acquisition (Chi & Ceci, 1987; Levie & Lentz, 1982; Meltzer & Hamann, 2005; Vaughn et al., 2009). This experimental action research looks to augment existing research and provide insight into ELL best practice social studies content-area knowledge acquisition by utilizing pre and post-tests, image-based lecture, traditional lecture, and data analysis. The research looks to enrich the existing literature on English language learners' social studies content-area knowledge acquisition.

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I would like to take a minute to acknowledge my parents, whose decision to come to the United States was fraught with obstacles and uncertainty but paved the way for my achievements despite the hardships they endured. Thank you for sacrificing everything to give me a chance at success. I hope to make you proud.

To my siblings for being there for me when I have needed them the most. My brother who inspires me by working hard and always helping others and my sister for being an inspiration to me for my entire life. I learned how to be a good person by watching how you live your lives. I admire your determination. I love the two of you.

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Dedication

To my beloved daughter, while less than two years old you've opened my eyes to so much in so little time. As my parents did before me, I hope I can lay a path for you to climb to success, or inspire you to trail-blaze your own. You motivate me to do better every day, and I hope I can do that for you too. "I'm dedicating every day to you." I love you Mica.

To my beautiful wife, Gisell without whom, none of this is even remotely possible. The long nights and endless rewrites, the research and countless hours of work would not be fathomable without your endless support and encouragement. Your drive drives me, and without it, I'd still be staring at page 1 on a computer screen. I love you so very much, and I could never repay you for your help and encouragement throughout this process. Thank you for always being my rock, our foundation, and the cornerstone to our success. "All of me, loves all of you." I love you babe.

Chapter 1 Introduction

The academic achievement of students of Latinx background is a cause of concern in the United States as there has been no measurable improvement in the gap between White and Latinx learners in Reading and Math since 1992 (Brey et al., 2019). The lack of progress in narrowing the academic achievement gap between White and Latinx students is compounded by the fact that as of 2020 the Latinx population was 18% of the current United States population at over 60.6 million; a population that was 50 million just nine years prior (Ennis et al., 2011; Krogstad, 2019; Krogstad, 2020; Krogstad, Lopez, & Noe-Bustamante, 2020). In fact, Latinxs accounted for over half of the United States population growth from 2010 to 2019 signifying the rapid expansion of an already academically abaft ethnic group (Brey et al., 2019; Krogstad, 2019; Krogstad, 2020).

In order to understand the extent of the urgency behind the Latinx achievement gap issue, a review of the Pew Research Center's statistics on the rapid growth of the Latinx population in the state of New Jersey shows that the Latinx population growth from the years 2000 to 2010 was approximately 438,000 people and accounted for all of the state's growth over the same time period (Passel, Cohn, & Lopez, 2011). This growth made New Jersey the state with the 7th largest Latinx population increase in the nation, and also made the Garden State the 6th largest overall Latinx population in the country in 2010 with 1,555,000 Latinx inhabitants (Passel, Cohn, & Lopez, 2011).

The growth of the Latinx demographic has been prolific, as it was projected in 2015 that by 2065, Latinxs will account for approximately 18% of the total projected United States population of 441 million occupants, which accounts for about 80 million inhabitants (Pew Research Center, 2015). In a few short years that number has since ballooned; as Latinxs already

account for 19% of the population and are now estimated to reach 28%, or 111.2 Million by 2060 (US Census Bureau, 2018; 2019; Vespa, Medina, & Armstrong, 2020). Furthermore, Latinxs have been one of the “the main driver[s] of U.S. population growth” since 1965 (Pew Research Center, 2015, p. 3). The achievement gap between Latinx students and their white, language majority peers is an issue that has not been effectively addressed in over 20 years (Hemphill et al., 2011; Brey et al., 2019). The reality of the actual Latinx population repeatedly outpacing the projected population statistics just several years apart is particularly concerning considering the widening achievement gap (Hemphill et al., 2011; Brey et al., 2019). One should consider this backdrop when evaluating the achievement levels of the Latinx demographic.

The achievement gap between minorities and whites in the United States has not been effectively addressed (American Federation of Teachers, 2003; Hemphill et al., 2011; National Center for Education Statistics (a), 2020; National Center for Education Statistics (b), 2020; Ryan et al., 2016; Brey et al., 2019). Studies suggest that socio-economic factors could play a role in the discrepancy between minority students and their white counterparts (Reardon, 2013; Autor & Kearney, 2008; Belley & Lochner, 2007; Chmielewskia, 2019). While studying the stagnant achievement gap between Latinxs and their White peers, researchers have also noted that the achievement gap is a result of an opportunity gap that originates from the lack of access to resources that minorities have to navigate, in comparison to their White peers (Brown B. , 2020). Students of modest fiscal means may find themselves unable to access many of the opportunities afforded to affluent, predominately White counterparts, which in turn exacerbates the depth of the achievement gaps.

Additionally, COVID has created a new caveat to the achievement gap discussion. According to a report by JERSEYCAN, a study on 15 New Jersey school districts revealed very

concerning data regarding Latinx students' achievement in comparison to their peers. The report found that ELL students had lost approximately 37% of their English Language Arts proficiency, and 33% of their Math proficiency due to COVID (JERSEYCAN, 2022). Furthermore, the Latinx achievement slide, due to COVID-19 is further increasing the achievement gap, as the report has found that "...Latinx students experienced larger percentile decreases in average achievement percentile rank" (JERSEYCAN, 2022, p. 17). The study acknowledged that, "New Jersey's Black and Latinx students lost more learning in both ELA and Math than their peers" (JERSEYCAN, 2022, p. 13). It was determined that Latinx students lost approximately 37% of their ELA projected growth, and 40% in Math (JERSEYCAN, 2022). In comparison, White students suffered no measurable decrease in ELA achievement, and a modest 20% decrease in Math achievement (JERSEYCAN, 2022).

All in all, there is a crisis in the making. Underserved Latinx ELL students are at the mercy of an educational system that has not been crafted specifically for them and the results have shown no measurable increase in the achievement gap of Latinx students and their White peers for over 20 years, and now COVID has compounded this issue by further widening said gap (American Federation of Teachers, 2003; Brey et al., 2019); Hemphill et al., 2011; JERSEYCAN, 2022; National Center for Education Statistics (a), 2020; National Center for Education Statistics (b), 2020; Ryan & Bauman, 2016). It is imperative that educators develop some best practice teaching strategies that facilitate learning for Latinx ELL students and narrow the achievement gap now, which may help narrow the opportunity gap in the future.

A practical development of best educational practices can lead to increased achievement in English language learners. According to several studies, the increased use of images when teaching both traditional students and English language learners has shown to be very beneficial

(Atkinson & Shiffrin, 1968; Banikowski & Mehring, 1999; Bower & Karlin, 1974; Cho & Reich, 2010; Miller & Hill, 2013; Vaughn et al., 2009; Wright et al., 2014; Wright, et al., 2015). ELL students generally arrive from all parts of the globe, speaking a plethora of native languages, and Hispanics are by far the largest of this group (Pew Research Center, 2015). Through the use of imagery to support lecture and instruction, students can relate what they know in their own language, to what they are currently learning, despite language barriers (Daniels, 2005; Gersten & Baker, 2000; Kozulin et al., 2003; Olatoye, 2017; Turuk, 2008; Vygotsky L. S., 1997). Using visual aids to bridge the ELL language barrier can help students, not only have a greater understanding of the material, but spend less time trying to comprehend the information, which ultimately can lead to more engaged learning (Achimugu & Onojahii, 2017; Idris et al., 2018).

Background

The use of visual aids allows students with limited English proficiency to comprehend the material as a bridge between their home language and the information (Ajayi, 2012). Not having to decipher the information being provided, or to translate it from English to Spanish, allows students more time to engage in active listening and learning (Achimugu & Onojahii, 2017; Daniels, 2005; Idris et al., 2018; Kozulin et al., 2003; Turuk, 2008; Vygotsky, 1997). Therefore, it is possible that utilizing visual aids can also lead to an increase in in-class discussion, a very effective method of attaining content-area knowledge (Center for Research on Education, Diversity, and Excellence [CREDE], 2004; Gersten & Baker, 2000; Idris et al., 2018).

As immigrant populations continue to grow, more of these English language learners will enter United States classrooms. The existing literature, including the statistical analysis report titled *How Hispanic and White Students in Public Schools Perform in Mathematics and Reading on the National Assessment of Educational Progress* has offered insight into the English

language learner achievement gap, as well as the importance of content-area teachings to these populations (American Federation of Teachers, 2003; Camera, 2016; Hemphill et al., 2011). The importance of content-area teaching has been acknowledged as essential in promoting the literacy and achievement of EL students, (August et al., 2009; Chi & Ceci, 1987; Meltzer & Hamann, 2005). English language students have noted that the use of graphic media brings the information to an accessible level of understandability and accessibility in comparison to traditional textbook usage and helps develop critical literacies for English-language learners (Clark, 2017; Duff, 2001; Short, 1994; Steiner et al., 2014).

Furthermore, there is research that supports that each discipline has its own vernacular, and as such can help shape and mold student literacy (Armstrong et al., 2018; Wineburg, 1991; 2001). Several studies, including several done by Aida Walqui (2000a; 2000b), including *Access and engagement: Program Design and Instructional Approaches for Immigrant Students in Secondary School*, suggest that EL students are exposed to different teaching styles in content-area teachings and that content-area teachers know best about the demanding academic content that these students need in order to succeed (Walqui, 2000a; 2000b). In *Strategies for Success: Engaging Immigrant Students in Secondary Schools*, written in 2000, Aida Walqui also points out that due to the diversity in content within subject-area classes like history, mathematics, and science, students are exposed to a plethora of teaching styles, graphics, and resources that aid in learning. Specifically, Walqui (2000b) describes the importance of visual aids for English language learners:

Secondary school textbooks are usually linear, dry, and dense, with few illustrations.

Embedding the language of textbooks in a meaningful context by using manipulatives,

pictures, a few minutes of a film, and other types of realia can make language comprehensible to students (p. 3).

With all facts considered, it is important to analyze one such content area, the teaching of social studies to English language learners as a focal point for, not only literacy, but also acculturation. With the current political climate being what it is, English language learners face a tremendous amount of uncertainty (Field, 2017), as many of the programs that directly impact English language learners may be cut or substantially underfunded (Sugarman, 2017). A study conducted in 2007 titled *English-language Acculturation Predicts Academic Performance in Nursing Students* who speak English as a Second Language shows that English language learners who have undergone greater acclimation to the United States, tend to do better in school (Salamonson et al., 2007).

Understanding the impact that refining the teaching of social studies can have on our English language learning demographic can be beneficial in narrowing the achievement gap, content-area knowledge attainment, literacy, acculturation, and self-esteem, among other areas that can positively impact this particular group (AFT, 2003; Camera, 2016; Hemphill et al., 2011). Since Latinx students are the largest group of immigrant populations, it is essential to understand their needs and how to best teach them content-area topics in a way that is both efficient and effective (Hemphill et al., 2011; Endo, 2017; Lumbrears & Rupley, 2019). In consideration of the struggles that this demographic faces upon entering school in a new country and with limited English language proficiency, it is essential that educators understand the most effective method of achieving content-area goals while still being able to reinforce literacy and knowledge attainment. English language students are under-served in academic communities, despite being such a large part of the population (Brey et al., 2019; Ennis et al., 2011).

Purpose

The purpose of this action research is to examine English language learners' social studies content-area knowledge acquisition through the use of visual aids in comparison to general education, non-EL students. The results of this study could be used to recommend some best practice solutions to support students' social studies content area teachers in the classroom. According to Jeffery Glanz, "[a]ction research is disciplined inquiry used to reflect upon and solve practical problems that we may face" (Glanz, 2005, p. 52). To better understand action research, Frost defines it as, "a process of systematic reflection, enquiry and action carried out by individuals about their own professional practice" (Frost & Eade, 2002, p. 25). Therefore, the action research inquiry is the best method to describe this study considering the specific demographics and the 249 student participants.

Furthermore, the research may identify some suggestions which educators can utilize to more effectively teach Latinx English language learners as well as general education students and can serve as a basis of fundamental knowledge and strategies for acculturation. Studies have shown that EL students who acclimate to the United States are more likely to have more academic success (Salamonson et al., 2007). Additionally, these English language learners who will be receiving high quality social studies instruction through an increased use of imagery may be better informed members of the community and could possibly have a greater understanding of social studies content area which can influence their civic engagement such as participating as a member of the electorate, citizenship, and judicial procedures.

As it currently stands, a large population of Latinx English language learners are lagging their White classmates in academic achievement (Brey et al., 2019). Additionally, as is expected, Latinx students arrive to the United States from their native countries with minimal

understanding of America, its laws, history, and culture (Brown, 2007). Without a working knowledge of how the United States has evolved since its infancy, English language learners may not have a full understanding of their adopted country, its legal structure, political frameworks and system of government, which is why social studies content area teachings can be a priority content area and more impactful than other subjects.

With this information in mind, Latinx English language learners may be more likely to make better informed decisions about what it means to be a resident, or even a citizen of the United States. It would be beneficial Latinx English language learners if schools worked towards an idea of best practice teaching methods for the growing population to increase the use of imagery and visual aids in instruction that may prove beneficial to other learning groups as well (Mayer, 2019). The imagery will be introduced via a recording of a PowerPoint lecture which will be shared with groups of high school ELL students, as well as groups of general education students, as part of their usual instruction.

Exposure to social studies content area material may facilitate acculturation, which has been shown to improve language acquisition (Schumann, 1986; Spenader, 2011). English language students begin acculturation by adopting the culture that has been newly introduced and relating it to their own original culture (Unganer, 2014; Schumann, 1986; Kim, 2015). Higher levels of acculturation increase the likelihood of attaining academic success, as well as graduation for Latinx students (Martinez, 2004; Lopez E. J.-V., 2002). Therefore, the purpose of this study is to effectively increase English language learners' social studies content area knowledge and acculturation.

Problem Statement

This study looks to address how Latinx English language students can best acquire social studies content area knowledge. By evaluating the use of imagery in the teaching of social studies to English language learners and comparing it to general education student content-area knowledge attainment, educators and researchers are one step closer to developing a clearer picture of the plan for Latinx limited English proficiency students' content-area knowledge acquisition, as well as language acquisition. This strategy could bring EL students closer to meeting the achievement levels of the native population. It is imperative for schools that service Latinx English language learners to understand what effective methods and pedagogy exist for the teaching of Latinx English language learners and how that compares to their general education teaching strategies. Therefore, the overarching question is: How does the utilization of visual aids influence or not influence social studies content area knowledge acquisition?

Research Questions

Looking at the ever-increasing Latinx demographic and the achievement gap issue plaguing Latinx English language learners students, it is essential to analyze the issue of English language proficiency in addition to content area knowledge and arrive at some pragmatic solutions. The differences in social studies content area academic achievement between Latinx English language learners and their native English-speaking counterparts are of consequence to the educational literature. As such, this study looks to find answers to fundamental questions related to the content-area knowledge acquisition dynamics of this prominent ethnic group.

- 1) What is the influence of gender and the use of visual aids in the Social Studies content area classroom for Latinx English language learners regarding content area knowledge acquisition?

(Ha) There are statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for Latinx English language learners regarding content area knowledge acquisition.

(Ho) There are no statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for Latinx English language learners regarding content area knowledge acquisition.

- 2) What is the influence of gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition?

(Ha) There are statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition.

(Ho) There are no statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition.

- 3) What is the difference in the influence of gender and the use of visual aids in the Social Studies content area classroom between general education and Latinx language learners regarding content area knowledge acquisition?

(Ha) There are statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content

area knowledge acquisition. (Ho) There are no statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition.

Significance

The ever-growing Latinx demographic in New Jersey provides a rich source of research as it pertains to English language learners and content-area knowledge. Currently, Latinx ELL content-area knowledge acquisition has limited research and data that provide a clear understanding of what beneficial interventions can be utilized in the instruction of this growing demographic. Furthermore, a baseline understanding of how interventions affect not only the target ELL demographic but also their general education counterparts can shine light on how beneficial the use of imagery can be to all students, and how visual aids may help narrow the achievement gap. Researcher Vaughn writes, “[w]hen both ELLs and their classmates benefit from an intervention or practice, it meets the criteria for universal design” (2009, p.318). Students in both the general education and Latinx ELL program were randomly assigned to control and experimental groups to receive either an experimental video lecture with visual aids or a control video lecture with no visual aids. This study provides information and data on an essential gap in the literature, High School Latinx English language learners, general education students, and their content-area knowledge acquisition; specifically, how the use of imagery and visual aids impacts ELL content-area achievement in comparison to general education students. The data collected in this study provides districts with extensive and growing Latinx ELL populations with valuable information that can be applied into the creation of best practices for the instruction of limited English proficient Latinx Social Studies students as well as general education students. The experimental action research facilitates the understanding of the research

questions and enriches the existing literature on the topics of English language learners, general education students, imagery, understanding, and best practices.

Limitations

The study presents several limitations. As a result of the nature of recording the lessons for these students, the study will be limited by the amount of care and attention that is paid by the student, to the video lecture. Students will be asked to view the video lecture as part of their regular instruction. Similar to students potentially losing interest in real life instruction, video lessons leave students susceptible to distractions and internet issues which may potentially limit their ability to engage the material. This study will focus on 249 students in a low-income, Latinx majority school district. While the students will be assigned an instructional modality at random, the study is limited to studying participants who return a signed parental consent form.

Delimitations

The research study will be conducted in an urban high school in Northern New Jersey due to practicality of access and availability. The study will contain approximately 129 ELL participants of varying ages ranging from 13-19 and from a variety of Latin American origin countries, as well as 120 participants in the general education program from a variety of ethnicities. The English language literacy of the students will be varied and mixed among the participants from ESL I to ESL IV levels. This study is concentrated in a low-income, urban setting, where most of the students are Latinx and receive free or reduced lunch. Therefore, generalizability of the results from this study is limited in scope to this district. The study will measure participants growth of content area knowledge attainment based on pre and post-test results after the video lecture. The use of video to present the lecture modality potentially strengthens the study by eliminating the teacher as a variable, as both groups receive the same

audio, with different visual instruction. This study focuses on Latinx English language students, in a Latinx majority school, and is not intended to focus on English language learners from other parts of the world.

Definitions

Acculturation: “those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups. . . . under this definition acculturation is to be distinguished from . . . assimilation, which is at times a phase of acculturation” (Redfield, Linton, & Herskovits, 1936, p. 149–152)

English language learner (ELL): a non-native English speaker who is currently learning English (The Glossary of Education Reform, 2021). English Language (EL) student was also used in the same context.

Latinx/Hispanic: a person of Latin-American descent (Merriam-Webster, 2021).

Limited English proficient: individuals who do not speak English as their primary language and who have a limited ability to read, speak, write, or understand English (Colorin Colorado, 2021).

Native English speaker: one who has learned and used English from early childhood (Merriam-Webster, 2021).

Native language speaker: one who has learned and used a language other than English from early childhood (Merriam-Webster, 2021).

Visual aids: an item of illustrative matter, including, but not limited to a film, slide, graph, chart or model, designed to supplement written or spoken information so that it can be understood more easily (Merriam-Webster, 2021).

Summary

New Jersey has a prominent and growing Latinx community. Many of this rapidly expanding group are entering the public school system as limited English proficient, native language speakers, who are English language learners. As such, it is essential to find and utilize best practice teaching strategies that may facilitate content-area knowledge acquisition and possibly narrow the achievement gap. Research suggests that the use of imagery and visual aids may aid in content-area knowledge acquisition. Providing groups of English language learners as well as groups of general education students with lessons that are either traditional lecture based, or image rich lessons can provide data on the most beneficial instructional strategies. Through pre- and post-test surveys, this action research experimental study looks to enrich existing literature and provide insight into how images affect general education students and English language learners, allowing for the opportunity to understand best practice methods for content-area knowledge acquisition. While research on this specific subject is scarce, there is a wealth of literature that has been used to advise and inform this study.

Chapter 2 Literature Review

Introduction

Students of all backgrounds deserve the very best education that academia can develop. English language learners are no different. This is why academia must be reflected upon to find the best way to teach all students. Literature on education is readily available, in a variety of contexts for a plethora of demographics. However, best practice approaches to teaching English language learners that focus on content area knowledge acquisition is hard to come by. In reviewing the literature, I expanded the scope of this work beyond education, looking into areas of psychology as well as marketing and advertising to help inform the research. The breadth of this learning will provide profound insight on the development of best practices for ELL content area knowledge acquisition.

In surveying the literature, it was important to begin with the history of English language learning in the United States. The history of ELL education is essential in understanding the state of ELL education today. The literature then evaluates different types of English Language learners educational programs that have been used to further the academic goals of ELL students in the United States. From there, we take a look at the research pertaining to the use of visual aids in education. While limited, the visual aid and imagery research provides insight on how imagery has been used in education and how it can be used for maximum efficacy. Another important piece of information lies in the evaluation of literature pertaining to language acquisition that will reflect upon some of the learning styles ELL students are accustomed to, which leads us to the use of visual aids for students with limited English proficiency. This portion of the research is essential as it closely reflects the niche which this current study wishes to inform; ELL knowledge acquisition through the use of imagery and visual aids. This study,

however, focuses on content area knowledge acquisition, which is another topic which was surveyed in the investigation of this study. In addition to education, we see that there is evidence of the efficacy of imagery in other fields of study, namely psychology, advertising, and marketing. These fields provide a depth of insight into how the brain processes imagery and how companies who depend on the efficacy of information retention utilize and apply the data to their objective of creating memorable brands and advertisements. The Zone of Proximal development by Lev Vygotsky is of particular importance as it is the theoretical framework which this study leans on.

This study on the content area knowledge acquisition of ELL students in the Social Studies classroom via visual aids is unique in its specificity and research design. It was important to find research outside of the educational field to support the theories presented in this study so as to develop a thorough understanding of what best practices look like. As a result, this study expands beyond the typical areas of study. It is important to understand how all these different fields inform the study. In order to have a better understanding, it is best to start at the very beginning, the history of English language learning in the United States.

History of English Language Learning in the U.S.

Colonial Era

Since the colonial era, the North American territory that was to become the United States of America grappled with the issue of instructing those who did not know how to speak the British mother tongue (Cavanaugh, 1996; Bybee, Henderson, & Hinojosa, 2014). In fact, the first public school established in the land where Old Glory hangs, the Boston Latin School, was established on April 23, 1635, and “taught Latin and Greek and was centered on the humanities. Some of the Boston Latin School’s most well-known alumni include John Hancock and Samuel Adams. Benjamin Franklin was a dropout!” (National Geographic Society, 2020). The colonial

leaders understood the importance of education, right from the beginning. Communities were known to bring youth together for the purpose of instruction in several languages including Dutch, French, German, and Spanish (Crawford, 1992; Kloss, 1977; Kloss, 1998; Blanton, 2005; Tyack & Cuban, 1995). Cavanaugh notes that as early as, “1642 the General Court of Massachusetts passed an act requiring the selectmen in every town to make periodic inquiries of parents and masters concerning the training of children and apprentices” (Cavanaugh, 1996, p. 40).

While all languages were not accepted equally, there was a general acceptance of “linguistic pluralism” in society that included, “bilingual education and native language instruction, the printing and dissemination of newspapers in multiple languages and multilingual theater productions” (de Jong, 2013; Bybee, Henderson, & Hinojosa, 2014, p. 138). As the colonies grew more populous and prosperous, there was no clear consensus on how they were to handle the education of their youth. As a result, communities were generally left to fend for themselves in the development and dissemination of education while accommodating the needs of their communities (Andersson, 1971; Cavanaugh, 1996; Crawford, 1992; Kloss, 1977; Tyack & Cuban, 1995). Early settlers were, in large part, immigrants who developed communities around neighborhoods with culturally similar inhabitants creating clusters of colonists who had similar migratory origins and experiences (Crawford, 1992; Kloss, 1977; Kloss, 1998; Blanton, 2005; Tyack & Cuban, 1995). Subsequently, these immigrant clusters developed instructional programs independently, reflecting and addressing their diverse needs. This needs-based, multilingual educational development was not always welcomed by the English-speaking majority. Not all leaders were fond of the multiculturalism in the colonies, as resistance to linguistic diversity was the subject of debate amongst the forefathers of this nation; as Benjamin Franklin

once commented in 1753 that the “preservation of our language, even of our government was precarious” (Curti, 1935, p. 39). As the country grew after the American Revolution, laws such as the Ordinance of 1787 were passed that officially mandated common schools despite the mix of foreign speaking European immigrants in those territories, as the post-Revolutionary focus was on nationalism and unity (Cavanaugh, 1996).

A New Nation

In the newly formed United States, “resistance to non-English speaking immigrants and the push to “Americanize” the common school were parts a dominant and nationalistic “English-only” language ideology that persisted in U.S. schooling and society for much of the first half of the twentieth century” (Bybee, Henderson, & Hinojosa, 2014, p. 139). The development of ethnic enclaves throughout the country gave poor and sometimes illiterate immigrants linguistic and assimilative refuge to maintain their native language while thriving in the United States of America (Bybee, Henderson, & Hinojosa, 2014; Cavanaugh, 1996).

In 1840, Germans in Ohio were able to pressure the Cincinnati schools to provide German language instruction, similar to Indianapolis in 1869 (Andersson, 1971; Schlossman, 1983). German parents in Chicago in 1865 pushed for native language instruction so fiercely that in 5 years German instruction was provided to one in every fifteen students (Cavanaugh, 1996). Not only was school attendance made mandatory by the Compulsory Education Law of 1889, but it also made English-only education obligatory as well as a reaction to the increase in non-English speaking Europeans and nationalistic foci in politics and society (Cavanaugh, 1996; Bybee, Henderson, & Hinojosa, 2014). In *The Bilingual School in the United States, A Documentary History*, author Paul J. Ramsey discusses some of the efforts of establishing bilingual programs in the United States. Ramsey makes note that a lot of the initial bilingual

programs were created as a “calculated political maneuver” to “cull support” and “lure immigrants into public school for Americanization” (Ramsey, 2014). Specifically, he mentions William T. Harris, a St. Louis public School superintendent who wrote in his annual report to the Board of Directors in 1871 that the “bilingual program was used to attract foreign children to public schools in order to Americanize them” (Ramsey, 2014, p. 31). Immigrant learners from all countries were compelled to either learn the language, or learn nothing, as no adequate educational substitute for English language learners was provided. Furthermore, the intent of bilingual education was not to teach arithmetic and humanities, but rather to Americanize foreign students. English language learners bore the brunt of this socio-political shift, as they were left to sink or swim in this mandatory mono-lingual educational format (Ramsey, 2014).

The 1900's

In the early 1900's, a nationalist fear over the believed subversive nature of the foreign speaking immigrant populations led to the development of new restrictive language laws including limiting war-related propaganda to be printed in English only and a literacy test as foreigners were thought to, “dilute American principles and cause unfair competition” (Cavanaugh, 1996, p. 42). Sink or swim became the new norm for foreign-language speakers as the “Americanization Movement” focused on assimilation as thirty-one states enacted some variation of an English-only instructional approach post-World War I (Bybee, Henderson, & Hinojosa, 2014; Cavanaugh, 1996). A Supreme Court decision in 1924 helped turn the tide as *Meyer v. Nebraska* overturned the *Siman Act*, which mandated English-only instruction in schools as a result of post-World War anti-immigrant sentiment (Bybee, Henderson, & Hinojosa, 2014; *Meyer v. Nebraska*, 1923). Other cases focusing on the de-segregation of students were brought about in the 1930's through the 1940's, but issues surrounding poverty, crime, and

discrimination prevailed concerning the teaching and assimilation of foreign language speaking students (Bybee, Henderson, & Hinojosa, 2014; Delgado et al. v. Bastrop Independent School District of Bastrop County et al., 1948; Independent School District v. Salvatierra, 1930).

Although the first World War may have created some trepidation towards English language learners, global events thereafter showed the United States of America how much further it needed to go.

Pressure was beginning to mount as the deficiencies of our armed forces' ability to communicate with our Allies during World War II was dramatized and the Russian's satellite Sputnik prompted a focus on education (Andersson, 1971; US Senate, 2019). As a result, the National Defense Education Act established more funding on education with a focus on Science, Math and foreign language (United States, 1964). A 1950's report by the United Nations Educational Scientific and Cultural Organization (UNESCO) noted the importance of native language programs, "every effort be made to provide education in the first language until as late a stage in education as possible" (Cavanaugh, 1996, p. 43). As the nation assessed their participation in the global theater, the United States could no longer deny the need to embrace the need to change the way they thought about their role in the world and how that would influence educating English language learners.

While primarily focusing on the integration of Black students into White schools, the keystone Supreme Court decision in the *Brown v. Board of education* in 1954 would open the door to integration of multilingual, multicultural education as students of different races were allowed, although not generally accepted into the mainstream classroom (*Brown v. Board of Education of Topeka*, 1954; Andersson, 1971). Although the Supreme Court decided that educational segregation by race was unconstitutional, many districts justified the segregation of

Latinx students due to their limited English Proficiency (Andersson, 1971; Cavanaugh, 1996).

Jim Crow era laws persisted in the South, limiting the speed at which racial integration was achieved and English language learners suffered similarly in education, with seemingly no end in sight.

English language learners were not only sinking to the bottom of education and opportunity in the United States of America, but they were drowning; struggling to navigate and achieve in the English only landscape that had developed as a result of the socio-political landscape prior to the 1960s (Flores & García, 2017; Andersson, 1971; Bybee, Henderson, & Hinojosa, 2014). Students were disproportionately disadvantaged by their inability to accommodate a forced assimilation by the dominant majority in the United States and they ultimately paid the price of being unable to attain the educational achievement of their language majority counterparts. While the English language education continued to develop prior to the 1960's, minorities found themselves at a huge disadvantage, as the discourse surrounding minority education was primarily based on "problems of inequality in education [that] are rooted in the deficiency of communities of color, and the solution becomes to fix these deficiencies" and while segregation against students of color was rendered unconstitutional in the landmark *Brown v. Board of Education* case, "segregation for the Latinx community was typically rationalized because of linguistic differences" (Flores & García, 2017, p. 17).

1960's Allies in the Courtroom

It wasn't until the 1960's that the tide started to turn in favor of native language instruction and support (Bilingual Education Act, 1968; Bequer, M., 1978; Andersson, 1971). As the mass exodus of Cubans leaving the communist Castro regime, among others, made their way to Florida, schools were flooded with hundreds of thousands of exclusively Spanish speaking

students (Andersson, 1971; Bequer, M., 1978). As a result, in 1963, the Dade county schools developed a successful bilingual program for grades 1-3 that had students taking classes in Spanish for half the day, and English for the other half of the school day for both native English speakers as well as Spanish speaking students; other bilingual programs created in Texas, New Mexico, Arizona, and California in 1964 saw inconsistent results due to lack of support from either parents, staff, or local and state governments (Andersson, 1971).

If *Brown v. Board of Education* opened the door for the multicultural classroom, the Civil Rights Act of 1964 kicked the door down for educational desegregation, and prohibited discrimination based on race, color, or national origin which helped pave the way for equality in education for English language learners (1964). While strides were made to right the wrongs of racial inequality, many Latinx students continued to suffer language based educational segregation in certain parts of the country. Court case decisions in border states like Texas served as precedent to continue the language-based segregation of the Latinx limited English proficient students (Andersson, 1971). These decisions not only limited the educational opportunities for English language learners, but they also seemingly created an atmosphere of accepting that the non-English speaking achievement problem was one of language alone. Limited English proficient students were unfortunately neglected in the essential fight for equality, as their voice was not an English speaking one, but their needs would not be deserted for long.

President Lyndon B. Johnson, who had some personal experience with English language learners, teaching English at Welhausen School in Cotulla, Texas while in college, passed the landmark Bilingual Education Act in 1968 which provides financial assistance to districts to create programs for English language learners and notes a shift in the public perception of the need for programs focused on non-English speaking students (Bilingual Education Act, 1968;

Andersson, 1971; Bequer, M., 1978; Blanton, 2005; Bybee, Henderson, & Hinojosa, 2014). The financial backing provided by the Bilingual Education Act was a major resource for schools to create programs and invest in their immigrant populations using federal funds and an acceptance of responsibility on a national level to develop better teaching strategies for our growing immigrant populations. No longer were school districts able to neglect limited English learning populations, federal funds tied to these groups would help ensure that schools had the resources to address them, however, not all schools did.

Shortly after the Bilingual Education Act was ratified, the milestone United States Supreme court case of *Lau v. Nichols* mandated that districts provide “affirmative remedial efforts to give special attention to linguistically deprived children” (1974, p. 5). This decision gave English language learners a seat at the educational table, by declaring that non-English speakers must be afforded the opportunity to take part in the public-school instructional program. The *Lau v. Nichols* decision was a major victory on the road to educational equality, but more legislative work was necessary in order to ensure a level playing field for English language learners.

Another important piece of legislation concerning the education of English language learners was the Equal Educational Opportunities Act passed in 1974, which prohibits discrimination in education, and mandates that districts accommodate learners regardless of their nationality, race, or English-speaking ability (1974). When a school district in Texas was not living up to the mandates established by the Bilingual Education Act and the Equal Educational Opportunities act, a lawsuit ensued whose outcome created a three-pronged test to measure whether schools are taking the “appropriate action” as mandated by the Equal Educational Opportunities act (1974). A program is in compliance with the Equal Educational Opportunities

act if it is, “(1) based on a sound educational theory, (2) implemented effectively with sufficient resources and personnel, and (3) evaluated to determine whether they are effective in helping students overcome language barrier” (Bybee, Henderson, & Hinojosa, 2014). This three-pronged test is now used to determine the legal efficacy of a bilingual instructional program, providing framework for districts to adhere to while providing their English learning populations with more appropriate education.

One of many issues that arose with the education of immigrant populations is the role of students’ legal status in their education, and whether a district was obligated to provide undocumented learners with an appropriate education. The *Plyler v. Doe* decision helped protect immigrant students regardless of legal status as it determined that, “[t]he undocumented status of these children vel non does not establish a sufficient rational basis for denying them benefits that the State affords other residents” including education (1982). With these legislative tools in place, school districts across the United States of America were forced to deal with the growing immigrant population head-on and develop proper instructional programs for all English language learners, regardless of race, creed, legal status, or country of origin. Leading up to the 1960’s, education was primarily looked at as a primarily English language endeavor in the United States. This situation meant that non-English speaking students were in dire straits, as Nelson Flores and Ofelia Garcia note in *A Critical Review of Bilingual Education in the United States*:

A 1957 Texas report [titled, *The Spanish-surname population of Texas*] showed that the average Spanish-surnamed student spent 3 years in first grade and dropped out of school before reaching fifth grade... a 1960 California study reported that over half of the Spanish-surnamed students had not gone beyond the eighth grade... [i]n 1960, of all Puerto Ricans 25 years of age

and older in the United States, 87% had dropped out without graduating from high school. (2017, p. 17)

English language learners were not only sinking to the bottom of education and opportunity in the United States of America, but they were drowning; struggling to navigate and achieve in the English only educational reality that had developed as a result of the socio-political landscape prior to the 1960s (Flores & García, 2017; Andersson, 1971; Bybee, Henderson, & Hinojosa, 2014). Students were disproportionately disadvantaged by their inability to accommodate a forced assimilation by the dominant majority in the United States and they ultimately paid the price of being unable to attain the educational achievement of their language majority counterparts.

While the English language education continued to develop prior to the 1960's, minorities found themselves at a huge disadvantage, as the discourse surrounding minority education was primarily based on "problems of inequality in education [that] are rooted in the deficiency of communities of color, and the solution becomes to fix these deficiencies" and while segregation against students of color was rendered unconstitutional in the landmark *Brown v. Board of Education* case, "segregation for the Latinx community was typically rationalized because of linguistic differences" (Flores & García, 2017, p. 17). Limited English proficient students have distinct, diverse needs. The development and evolution of English language learner programs in the United States will need to reflect those needs while dealing with the reality of their given contextual development.

English Language Learner Programs

As more and more immigrants made their way to the territories and then colonies that would become the United States of America, bilingual instruction was delivered by newly

founded educational institutions, which were created by and for these communities whose instructional programs were taught in the community's native-language (Andersson, 1971; Bybee, Henderson, & Hinojosa, 2014; Cavanaugh, 1996; Flores & García, 2017; Kloss, 1977; 1998; Ramsey, 2014). These programs did not reflect any uniform educational model, as most were adapted from their home-country and later disappeared as a result of a variety of socio-political factors (Andersson, 1971; Bybee, Henderson, & Hinojosa, 2014; Cavanaugh, 1996; Flores & García, 2017). As author Paul Ramsey notes in *The Bilingual School: A Documentary History*, the industrial revolution and subsequent urbanization brought about a need to utilize public schools to indoctrinate the city dwelling immigrants and, "became guardians of morality to ensure that the vice associated with English manufacturing [and urbanization] did not materialize" (2014, p. 2). These ideas were echoed by famed education reformer Horace Mann in 1848 when he wrote that public school would, "wield its mighty energies for the protection of society against the giant vices which now invade and torment it" (Ramsey, 2014, p. 4). Similar to today's educational focus on teaching ethical components, the initial focus of bilingual instruction was not solely on learning English, reading, writing, and arithmetic, but also, "honesty, hard work, thrift, temperance, and obedience..." as well as assimilation (Ramsey, 2014, p. 4). Despite the fixation of reformers and nationalists, some schools would maintain their autonomy to continue bilingual instruction, and while northern European immigrants and their bilingual programs like German and Scandinavian attained preferential treatment, others were not so lucky, such as Native Americans, Mexicans, Chinese, who were forced into monolingual English programs (Ramsey, 2014). Ramsey makes sure to delineate that while schools created by Anglo Saxon Whites focused on indoctrination, the schools developed in local communities by local immigrants and descendants thereof had different goals in mind, "these bilingual public

elementary schools merely reflected the communities' linguistic needs and composition. For the most part, this "organic" or "natural" pattern of bilingual education did not contain a grand social agenda..." (2014). The creation of bilingual education program here in the United States began with much autonomy and some push back from the mainstream society. It is important to take a look at some of the actual instructional practices to understand where English language learner programs are today.

One of the earliest writings of established bilingual programs in the United States was composed by Dr. Adolf Douai and John Straubenmueller in New York (Douai & Straubenmueller, 1870). In 1868, they stressed the importance of students being able to subordinate to their parents and maintain order and good morals via bilingual teachings (Douai & Straubenmueller, 1870; Ramsey, 2014). Dr. Douai and Straubenmueller presented three reasons for German bilingual education; stressing the need to obey and understand their German speaking parents, as well as the quality of German education and literature while underlining the importance of maintaining the native language as a means of maintaining morality:

The better class of Germans – and the immigration of now-a-days increases from year to year in the degree of education and respectability represented by them - sorely regret that their children and their children's children should lose the privilege of commanding the two master languages of the world, English and German, at the same time. The treasures of the German literature being in no respect inferior to any other, and the usefulness in practical life of speaking and writing a plurality of language is being obvious to every intelligent mind, why would German-born children, who may so easily reap the advantages of a plurality of tongues, lose them by sheer negligence of the parents? (Ramsey, 2014, p. 10).

These German bilingual schools followed the curriculum and instructional model of their country of origin, while making minor adjustments to accommodate the “peculiar circumstance and requirements” of the educational realities of the United States (Ramsey, 2014). The German bilingual education program was a reflection of the needs of recently arrived Germans and their descendants in the United States, as well as their desire to maintain a connection with their homeland. There was no uniform presentation of what Bilingual education should look like, as such schools and specifically teachers, were left to create their own English language learner curricula as a result. In his Report on the Common Schools of Berks County, Pennsylvania, in 1857, Superintendent William Good wrote, after detailing the struggles with primarily German speaking English language learners, about the success and variance of the bilingual program, “It affords me much pleasure to state that, though teachers adopted different methods, the object [of bilingual instruction] has been uniformly aimed at, and that, in this respect, the method of instruction assumed a new character” (Ramsey, 2014, p. 13). These excerpts support the idea that there was no uniformity in the bilingual programs for a long time, and educators were given the autonomy to develop, implement, and maintain their own variation of what bilingual instruction should look like.

As time marched on, different strategies were developed to address the perceived English language learner problem. Initial bilingual instructional efforts centered around translation of English language instruction, as was noted by North Dakota Superintendent V. H. Stickney, in 1894, “I have endeavored to have the school boards... secure the services of teachers who could speak German and English thereby giving the opportunity to such pupils of obtaining a quicker and better insight into our language through explanations made in their own” (Ramsey, 2014, p. 60). In 1901, a sociologist observed the Cleveland’s Steamer Class, which was an “innovative

attempt to meet the unique needs of foreign-language-speaking children” (Ramsey, 2014, p. 65).

While these classes were intended to facilitate the assimilation of foreign-born students into mainstream, English speaking classrooms, the pedagogy focused on language instruction as sociologist Herbert Adolphus Miller (2014) noted:

The educational officers of the city have never worked out any special methods for teaching English to these non-English-speaking children. There is no special supervision of the work and provision in the Normal School for training teachers to do it. As a result, the classes are far less efficient than they should be. There is a special educational technique for teaching a new language which is far different in its methods from that employed in teaching subject matter to pupils in their own language. This has been amply demonstrated in the special classes of several of our cities, notably New York and Boston... in which hundreds of thousands of children are taught the English language so effectively that they successfully carry on their entire schoolwork in it after a remarkably short period of special teaching... (p. 67)

Another North Dakota superintendent, Emma F. Bates, makes note of other strategies, including the development of “rudimentary programs” for immigrant children who were not well versed in English and struggled in English only classrooms (Ramsey, 2014). The idea of placing English language learners in rudimentary programs was not unique to North Dakota as the U.S. Bureau of Education recognized the efforts of New York City Superintendent, William H. Maxwell in 1904; who not only practiced retaining English language learners and placing them in rudimentary classes, but also developed a special program for these students, “the so-called ‘C Class’ was formed for the sole purpose of enabling pupils to attain a knowledge of English sufficient to understand what was said and to express themselves so as to be understood” (Ramsey, 2014, p. 63). Author Paul Ramsey notes that these, “new C classes-somewhat akin to

today's English as a Second Language courses- which sought to prepare foreign language speakers for the regular classroom" (Ramsey, 2014, p. 61). In these C classes, or alternatively while "placing non-English speakers next to 'compatriots' when no C classes were available... essentially a student-led form of bilingual instruction," much of the "language work includes a little practice in reading, the writing of sentences and the description of simple pictures" (Ramsey, 2014, p. 65). As immigrant populations grew, school districts knew they had to come up with a curated approach to educating foreign born students. Teachers could no longer bear the brunt of developing autonomous responses to the burgeoning issue of educating English language learners. As district programs were developed and studied, various instructional ideologies began to develop. As noted by author Paul Ramsey, sociologist Herbert Adolphus Miller credited the New York English learner program in 1901 for its efficacy on instruction (2014). One of the main ingredients in the New York English language learner C Class instruction was the use of simple pictures (Ramsey, 2014). This indicates that while district responses were varied, they attempted to fulfill this instructional need, and one of the instructional methods that received praise early on was the utilization of imagery in the English language learner's classroom.

The early 1900's is when we started to see the development of what is considered the Grammar-Translation Method of English language learning (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). This method of ELL instruction focused on detailed grammar instruction, text translation, and memorization. Since the basis of this instructional model was on grammar and translation, there was no focus on pronunciation, "Educators soon began to notice that because the primary emphasis was on reading and translating passages, the conjugation of verbs, and explanation and memorization of grammatical rules their students were not learning to use the

language (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 92). As a result of the shortcomings of the Grammar-Translation Method, other instructional methods were developed as the framework for teaching English language learners.

The Direct Method was widely credited to German Charles Berlitz who made it the centerpiece to his Berlitz language schools as the anti-thesis of the Grammar-Translation model (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). The Direct Method focused on everyday vocabulary as well as oral expression and comprehension (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). While widely used in the early 1900s, the Direct Method and the Grammar-Translation Method found themselves as part of the collateral damage of World War II as the perceptions of teaching foreign language changed, “It quickly became apparent that the grammar-translation method had not produced people who were able to speak the foreign languages they had studied. The U.S. government asked the universities to develop foreign language programs that produced students who could communicate effectively in those languages” (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). The Audio-Lingual method came about with the idea that language was centered around the way people speak and is based on a set of communicative habits whose extensive study, memorization and exercise would facilitate lingual aptitude while averting the native language use (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). Overall, the method was deemed a failure, as it became readily apparent that students could not effectively communicate in the target language, “...the method was not successful at accomplishing the main goal. It was too prescriptive; there was no opportunity provided for true communication to take place...” (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 94). While parts of these instructional methods exist as exercises in ELL instruction, none of these would prove to be effective as a stand-alone instructional method.

Another method would have to be created to take their place, and in the late 1900s, Bulgarian Psychiatrist and Educator Georgi Lozanov developed a new English language learner instructional method known as Suggestopedia; which takes a more holistic, student centered approach to teaching English language learners (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). Suggestopedia stresses the importance of creating a stress-free classroom environment, which may include Native language use in lieu of English, “[b]ased on the belief that how students feel about learning will make a difference in the learning process, Suggestopedia takes into consideration the affective domain... If students feel they can, they will.” (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 95). Since the goal of Suggestopedia is to focus on the comfort of the student in the learning environment, this means that a bulk of instructional time is spent on activities that focus on creating a stress-free environment (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 95). Through suggestopedia, students are exposed to theater, music, and games to make the language practice more enjoyable and less intimidating. Its limitations have prevented mass adoption, including necessitating small class sizes and time in order to be truly effective.

In addition to these English language learner programs, The Silent Way was created by Caleb Gattegno and rose to some recognition in the 1970s and 1980s as a student driven instructional model, “[b]ased on the belief that students are initiators of learning and capable of independently acquiring language, the silent way provides a classroom environment in which this can take place” (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 95). Through the use of props, teachers model a lesson, and the students are expected to work together to reproduce the work modeled, while teachers are expected to remain silent and encourage students through gestures (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). This method requires extensive teacher

training on how to employ the teaching style, as the teachers are required to speak as little as possible and must interact with students through nods, gestures, and head shakes. Also, many teachers are uncomfortable with the strategy as it requires long periods of silence on the teachers' part, which can become awkward and uncomfortable for those not well versed (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). The complexity of the method and unease have made mass adoption difficult (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). While the utilization of wait-time as an instructional tool is common in education, the Silent Way ELL teaching method requires far more training than many school districts are willing to commit to (Ingram & Eliot, 2016; Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). The Silent Way fell by the wayside as other methods were introduced to facilitate English language learners' instruction.

One such method created in the 1970s was the Total Physical Response method, which was developed by psychologist James Asher, where teachers can use pictures, manipulatives, and commands that students react to physically, "[a]s the teacher gives a command and the students respond physically, the teacher ascertains students' comprehension of the command" (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 96). This method engages all the English language learners in roleplay as they act out the commands, thus building community and confidence in their comprehension and English language proficiency. As students' progress through the curriculum, the commands become more challenging and varied, using a plethora of realia to bring it to life (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). Total Physical Response focuses on the auditory comprehension until lingual competence is established, as such, it is limited in the reading and writing facets of the English language (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). Despite the high level of engagement that Total Physical Response

necessitates, it does not emphasize written production or reading comprehension, which is essential for English language learners. As a result, this method fell out of favor as a ELL instructional method, but remained as one of the many ELL teaching strategies in use today. One of the ways the Total Physical Response instructional method has been used is with the incorporation of the Gouin series, which is the “use of logical sequences of actions” (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 100). The Gouin series lists a series of actions, such as getting ready for school, which a teacher would model, and a student would respond by acting out the steps in the Gouin series, which can be acted out, written, read, or heard; thus, incorporating all facets of language learning. The series continues to be used in language learning today, and several benefits have been attributed to the Gouin series such as linking action to visuals to improve comprehension, and multiple meaning reinforcers that assist in recall, among many others (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 100). The Total Physical Response method, as well as the Gouin series both relied on the use of imagery to assist students in English language learning. Imagery assisted students in their understanding of the English language commands and sequences, which facilitated English language learning. The Total Physical Response instructional strategy did not, however, reinforce communicative competency, and as a result, other instructional methods were developed that took a more “natural approach” to English language learning.

The Natural Approach, also developed in the 1970s, was created by Tracy Terrel and based on Krashen’s theoretical framework (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). This framework is similar to, but not the same as Vygotsky’s Zone of Proximal Development, in that Krashen namely identifies output as a fixed resolute conclusion, “humans acquire language in only one way—by understanding messages, or by receiving ‘comprehensible input’ . . . that

contains structures at our next ‘stage’—structures that are a bit beyond our current level of competence" (Krashen S. , 1982, p. 2). In fact, in William E. Dunn and James P. Lantolf’s article, Vygotsky’s Zone of Proximal Development and Krashen’s $i+1$: Incommensurable Constructs; *Incommensurable Theories* (1998), they state;

Krashen saw movement from one stage of interlanguage competence to the next as ultimately a fixed and predictable process, independent of cultural and historical influences. Thus, for Krashen, an individual’s linguistic future is certain; for Vygotsky, the future is open, uncertain and depends on the material and interactional (i. e., cultural and historical) circumstances in which the individual is situated (p. 422).

In the Natural Approach, the activities in the classroom are organized to facilitate communication amongst students and teachers, and no time is devoted to grammar practice or speech error correction, “[t]he Natural Approach emphasizes providing students with the opportunity to acquire language rather than forcing them to learn it” (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 101). As such, much of the fundamental basis of the Natural Approach parallels language acquisition, since “native language development follows a progression, during the silent period, students would be allowed to respond [to English language questions] in their native language. The emphasis is on listening comprehension...” while being exposed to a plethora of themes while maintaining comfortability with English language acquisition (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 102). This method also heavily relies on the use of visual aids as well as gestures and demonstrations as a means of auditory proficiency, while reading, writing, and grammar lessons are done mostly out of the classroom (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). The use of gestures and visual aids assists students in understanding components of the language they have not mastered in the new

language but are familiar with in their own. While this approach mimics traditional language acquisition in some ways it provides students with exposure to language while reducing anxiety. The limited language production that this model requires makes it unfavorable for widespread adoption. Furthermore, teachers would have to know the student's native language if they are able to utilize it while responding to teacher inquiry thus showing auditory competency. There needs to be an approach that focuses on mastery of several language skills simultaneously and be able to communicate effectively. The Communicative Approach was developed in the 1980s and was based on several theoretical principles including the communication principle which are activities that involve communication promote the acquisition of language (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 102). In addition to the communication principle, the task principle, or activities that engage students in the completion of real-world tasks, promote language acquisition (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 102). These were essential aspects of this method, as well as the meaningfulness principle, where learners are engaged in activities that promote authentic and meaningful use of language (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015, p. 102).

This English language learner instructional method focused on communication, and the ability to use the second language in more practical settings. It relies on learners working collaboratively to bridge the gap and work through second language obstacles and the Communicative Approach works best with varied classroom activities, imagery, and realia (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). Due to the Communicative Approach relying heavily on interaction and small student groups, this learning method was more difficult to implement in denser English language learner districts.

Each teaching method has benefits as well as drawbacks. Collectively, the blend of teaching methods offers English language learners a variety of educative experiences. While all the teaching methods strive for English language learning, they focus on different areas of language production and reception as well as comprehension. Most of the teaching methods for English language learners are most efficacious with the use of manipulatives, imagery, and realia (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). The use of imagery and visual aids in education has been the subject of a plethora of studies that require closer examination.

Imagery and Visual Aids

Many studies suggest that imagery is more effective than words when it comes to memory and comprehension (Stenberg, 2007; Atkinson & Shiffrin, 1968; Banikowski & Mehring, Strategies to enhance memory based on brain-research, 1999; Brown C. L., 2007; Endestad, Magnussen, & Helstrup, 2004; Gersten & Baker, 2000; Idris, Shamsuddin, Arome, & Aminu, 2018; Steiner, Peralta, & Boothe, 2014; Olatoye, 2017; Kirkpatrick, 1894). It has been researched and studied that words are less effective than images at being remembered (Kirkpatrick, 1894; Paivo, 1991; Endestad, Magnussen, & Helstrup, 2004; McBride & Doshier, 2002; Mayer, 2019). While it has been found that pictures with literal, as opposed to metaphorical meanings, stay in one's memory banks for a longer period of time (Endestad, Magnussen, & Helstrup, 2004), overall, results show that pictures and imagery have a superiority over words as it pertains to memory and retention (McBride & Doshier, 2002; Idris, Shamsuddin, Arome, & Aminu, 2018; Olatoye, 2017; Wright, Eslami, McTigue, & Reynolds, 2015). These studies collectively suggest that pictures and visual aids have a significant advantage over only words, both verbal and written.

Georg Stenberg's 2007 study focuses specifically on the phenomenon known as the picture superiority effect. There were three experiments in this study; in one experiment, 19 non-native English-speaking participants were asked to read a combination of pictures, English language words, and/or native language words to see which would be memorized (2007). In a second experiment, Stenberg had 20 students look at a series of items same as the previous experiment to determine whether the item was something that was alive or non-living, and a third experiment had 19 participants view the same items as in the previous experiments, but this time the items were obscured, save for a narrow strip, and the participants had to determine whether the item was reversed (2007). After analyzing the data, Gerog concluded that, "both conceptual and perceptual factors confer advantages to pictures over words in memory" (Stenberg, 2007, p. 27). The picture superiority effect was also the focus of a 2004 study by Tor Endestad, Svein Magnussen, and Tore Helstrup in which they arrived at a similar conclusion after conducting a mixed methods study in which 48 participants had to compare literal items and metaphors via words or imagery (2004), they found:

First, the memory for pictures is superior to the memory for words because pictures are encoded both verbally and visually, whereas words are principally, but not fully, encoded verbally...

Second, metaphor processing strengthens the memory for words compared to literal processing, because metaphors recruit visual imagery, which leads to more elaborate processing. Third, metaphors generated with reference to pictorial stimuli also recruit visual imagery processes. (p. 214).

Another study conducted on the picture superiority effect relied on a series of four experiments structured similarly to some of the previous picture superiority studies, was conducted by Dawn McBride and Barbara Anne Doshier in 2002. Using a mix of Native and English language words,

as well as imagery, McBride and Doshier write, “pictures generally elicit more conceptual processing than words at study and that this is why they result in better performance than words on tasks that require conceptual processing... Pictures showed a conceptual advantage over words” (2002, p. 454). In the studies where the picture superiority effect was analyzed, it was determined that images were, by far, the more effective method of memory retention (Endestad, Magnussen, & Helstrup, 2004; Stenberg, 2007; McBride & Doshier, 2002).

Studies on memory and imagery have long been analyzed. Alison K. Banikowski and Teresa A. Mehring researched memory in their 1999 article, *Strategies to Enhance Memory Based on Brain-Research*. In their meta-data analysis, they determined that, “a number of... strategies ... can be used for both rote and meaningful memorization, including imagery” (Banikowski & Mehring, 1999). They elaborate by stating that the use of imagery, “are powerful strategies that allow prior knowledge of something to influence the learning of something new. Imagery, for example, is based on the knowledge that the brain has an amazing ability to construct and retain images” (Banikowski & Mehring, *Strategies to enhance memory based on brain-research*, 1999, p. 8). Furthermore, Banikowski and Mehring’s beliefs on prior knowledge lie hand in hand with Vygotsky’s research on the Zone of Proximal Development, as they write, “The goal is to allow learners to have an experience to which they can "tie" the new learning” (1999, p. 9).

Over at the University of Oregon in 2000, Russel Gersten and Scott Baker used a qualitative method, multivocal research synthesis, in which the researchers, “evaluate the methods and results of a given set of documents and use rigorous qualitative procedures to analyze” empirical findings (2000). Meeting with 13 professional work groups across the states of Virginia, California, Washington DC, Florida and Arizona, the researchers gathered survey data as well as compiled existing research to determine some of the effective instructional practices for English-

language learners (Gersten & Baker, 2000). They determined that, “[v]isuals are especially successful in English-language development because they help students visualize the abstractions of language” (Gersten & Baker, 2000, p. 463).

Studies focusing on visual aids, can be found around the world. Rafiu Ademola Olatoye conducted a study a quasi-experimental study of 2,349 students with three experimental groups; one receiving charts, another using specimens, and a third using video, and one control group which was taught in a traditional, lecture style teaching method (Olatoye, 2017). Olatoye found that traditional methods lagged all other methods of instruction (2017). Another quasi-experimental study of 100 students was conducted in 2018 in which the students were taught a concept using traditional lecture, tested, then taught again using realia, and retested. The study, conducted in Nigeria, focused on the academic attainment of students following the experimental treatment of utilizing imagery. The various authors of the study arrived at several conclusions, one of which was, “All teachers should be trained on using Audio-Visual Aids to teach...” (Idris, Shamsuddin, Arome, & Aminu, 2018, p. 36). While their focus was on the science content-area, their findings were consistent with the idea that students who are exposed to the use of imagery have greater success in their studies, “[u]se of Audio-Visual Aids enhanced and facilitated the acquisition of knowledge and skills more than the use of traditional teaching methods” (Idris, Shamsuddin, Arome, & Aminu, 2018, p. 36).

Recognizing the potential for utilizing graphic novels in the classroom, Stan Steiner, Claudia Peralta, and Diane Boothe set out to compare studies on these graphic novels and their efficacy in teaching students (Steiner, Peralta, & Boothe, 2014). In 2014, they compared two studies on using graphic novels in the classroom as a teaching tool. One of the studies they referenced included Michael Boatright’s 2010 study on graphic novels, which sought to similarly evaluate

the efficacy of the utilization of graphic novels as an educational tool (Boatright, 2010). Both authors arrived at the same conclusion, “Graphic novels help develop critical literacies for English-language learners (ELL) at all levels” (Steiner, Peralta, & Boothe, 2014, p. 3; Boatright, 2010). Another study evaluated by Steiner et. Al. was that of Margo Gottlieb in 2006 in which its findings support that, “graphic novels can work as a visual support for promoting understanding of content and reinforcement of language use” (Steiner, Peralta, & Boothe, 2014, p. 4; Gottlieb, 2006).

In a 1968 study supported by the National Aeronautics and Space Administration (NASA), Stanford University’s Richard Atkinson and Richard Shiffrin conducted a series of eight experiments involving memory and imagery, testing short- and long-term effects in California (1968). They determined that the use of images in short term and long-term studies were highly beneficial, where in some cases the groups that relied on visual cues performed “40 % [better] in terms of probability correct” (Atkinson & Shiffrin, 1968, p. 117). In an even older study conducted in Winona, Minnesota in 1894 simply titled, an experimental study with memory, 379 students from primary, grammar school, high school, and college were given a set of 30 words to remember (Kirkpatrick, 1894). Kirkpatrick’s 1894 study showed, “that the visual qualities are remembered better than sounds and better than objects imagined.... the pupils were helped by storing in visual images, as will be seen by comparing the reproduction of the names stored in their own way with those stored as a visual image” (1894, p. 604). While Kirkpatrick’s study focused on imagined imagery, the focus on students creating a mental image of the words produced more consistent recollection on average, than those who were instructed to focus on how the word was written or how it sounded (Kirkpatrick, 1894).

The use of visual aids, as the fundamental basis for this study, comes mostly from Vygotsky's work. Specifically, Lev Vygotsky developed the idea of the zone of proximal development, "The theory regards negotiation and creation of meanings as a collaborative act, and through this negotiation and creation; the gap between the interpsychological/social and intrapsychological/individual is bridged." (Turuk, 2008, p. 259). In other words, there is a spectrum that ranges into different zones of development; activities and information the students can process and complete on their own, activities and information students can complete and understand with some assistance, and activities and information that the students cannot do on their own (Vygotsky L. , 1978). He writes, "[T]he distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers." (Berk & Winsler, 1995, p. 26). As is the case, students should be given work and information that exists along the lines of what they can complete with some assistance and what they cannot do without any assistance, scaffolding should be put in place so as to provide students with the assistance needed to do the activities and analyze the information just outside of their zone of proximal development so as to, essentially, increase their zone of proximal development, or, in other words, learn.

Language Acquisition

Although individuals acquire language at different rates, most people learn their first language through repeated exposure and in a sequential fashion (Lightbown & Spada, 2018). This language acquisition sequence reflects brain development and parallels a lot of the developmental milestones that young children achieve as they grow and learn (Lightbown & Spada, 2018). In a study analyzing the language acquisition of children, they found that students

acquired grammatical morphemes in a similar sequence, and students who had learned the more complex morphemes at the bottom of the list, were more likely to have mastered the top of the list, but not vice-versa (Lightbown & Spada, 2018). Things such as negation, questions, and morphemes were acquired by students in a series of stages that corroborated the generalizability of acquisition order in language learning (Lightbown & Spada, 2018). There are a variety of perspectives as to why and how learners acquire language.

Varying perspectives on language acquisition provide an idea of the complexity of brain development and language acquisition. Behaviorists believed that, “when children imitated the language produced by those around them, their attempts to reproduce what they heard received ‘positive reinforcement’” thus encouraging students to practice their acquisition (Lightbown & Spada, 2018, p. 15). Innatists believe that, “all humans are based on some innate universal principals” including language acquisition (Lightbown & Spada, 2018, p. 21). The Critical Period Hypothesis says that, “humans are genetically programmed to acquire certain kinds of knowledge and skill at specific times in life” (Lightbown & Spada, 2018, p. 22). Interactionists and similar developmental perspectives believe that, “language acquisition is but one example of the human child’s ability to learn from experience, and they see no need to assume that there are specific brain structures devoted to language acquisition (Lightbown & Spada, 2018, p. 24).

Language and developmental theorists Jean Piaget believed that, “...children’s language is built on their cognitive development” and as such, “developing cognitive understanding is built on the interaction between the child and the things that can be observed or manipulated,” and since Piaget viewed language as a “symbol system” then “[l]anguage can be used to represent knowledge that children have acquired through physical interaction with the environment (Lightbown & Spada, 2018, p. 25). Piaget believed in the importance of socialization for a child

to acquire language. Vygotsky agreed in this respect, as he believed that, “language develops primarily from social interaction” (Lightbown & Spada, 2018, p. 25). Vygotsky viewed development as being dependent on social interaction and believed students could do more than they would be capable of doing independently, with some assistance, which he called the Zone of Proximal Development, where “conversations provide the child with scaffolding, that is, a kind of support structure that helps them make the most of the knowledge they have and also to acquire new knowledge” (Lightbown & Spada, 2018, p. 25). These theories collectively reflect the idea that children are generally open and able to acquire a primary language, and social interaction is a strong means of doing so.

The acquisition of a second language follows a similar order of acquisition but varies due to the influence of the first language and the development of meta cognition of the learner (Lightbown & Spada, 2018). Author and researcher Susan Foster-Cohen (2004) writes,

[C]hildren[’s language acquisition] become[s] symbolic as a result of their capacity to (a) "read" the communicative intentions of others, (b) acquire words and holophrases through repeated exposure to them in the input, (c) create generalizations through schematization and analogy out of the concrete pieces of language they have heard, constrained by processes of entrenchment and competition, and (d) carry out a functionally based distributional analysis to arrive at paradigmatic categories of linguistic constituents. (p. 491)

As children grow, they develop metalinguistic awareness, which is “the ability to treat language as an object separate from the meaning it conveys” (Lightbown & Spada, 2018, p. 13). This cognitive maturity may help or interfere with learning certain sequences during second language acquisition, as learners may generalize rules and apply them where they may not belong (Foster-cohen, 2004; Lightbown & Spada, 2018). As author Lightbown wrote in 2018, “contrastive

analysis hypothesis errors were assumed to be the result of transfer from learners' first language" (pp. 41-42). Another difficulty in second language acquisition is the contact with the second language, as we know that "first language learners spend thousands of hours in contact with the language... spoken around them" and are "exposed to a far smaller range of discourse types" (Lightbown & Spada, 2018, pp. 38-39). Second language learners go through a process of interlanguage as they rationalize and develop their language knowledge (Lightbown & Spada, 2018). Interlanguage is described by authors and researchers Patsy Lightbown and Nina Spada (2018);

Analysis of a learner's interlanguage shows that it has some characteristics influenced by previously learned languages, some characteristics of second language, and some characteristics, such as the omission of function words and grammatical morphemes, that seem to be general and to occur in all interlanguage systems. Interlanguages have been found to be systematic, but they are also dynamic, continually evolving as learners receive more input and revise their hypotheses about the second language (p. 43).

As such, interlanguage is the fragmented second language that persists until the second language learner acquires the target language. This interlanguage is heavily influenced by the perceived generalizations that the learner believes they can make from their first language to their second language. As they develop their second language skills, they follow a predictable learning sequence that parallels first language acquisition in many ways, including the different stages of negation, possessive determiners, and question rationalization; however, language 1 acquisition and language 2 acquisition differ in that many of the second language acquisition mistakes may come from first language inferences (Lightbown & Spada, 2018). When learners, "perceive a 'crucial similarity' between their first language and their interlanguage, they may generalize their

first language pattern and end up making errors that speakers of other languages are less likely to make” (Lightbown & Spada, 2018, p. 57).

Learners tend to find similarities between what they know, and what they are learning to better comprehend the new material. As learners apply previous learning to new material, such as second language acquisition they follow a predictable path of learning different aspects of language depending on their ‘obligatory contexts’ or, “the places in a sentence where the morpheme is necessary to make the sentence grammatically correct” (Lightbown & Spada, 2018, p. 46). In relation to second language grammatical morpheme acquisition, for example, learners will acquire the correct usage of the possessive *-ing*, plurals, and ‘*to be*’ before the irregular past, or regular past *-ed*, third person singular, or possessive ‘*s*’ (Lightbown & Spada, 2018).

Learners who acquire the *-ing* may not yet correctly use the regular past *-ed*, but students who have mastered the regular past tense, will have already mastered the *-ing*. This sequence of language acquisition is visible in various aspects of language learning and allows us to understand that there is a universal language procurement sequence that facilitates acquisition. The use of visual aids in language acquisition may help scaffold interlanguage in a way that makes it more attainable for language and content learners.

Stephen Krashen offers valuable insight as one of the gurus of second language acquisition. Krashen’s Input Hypothesis notes, “...that we acquire language by understanding messages” (Krashen S. , 1989, p. 440). Stephen Krashen understood the importance of second language learners’ need to comprehend the information in order to best process and retain it, “The input hypothesis makes the following claim: a necessary (but not sufficient) condition to move from stage *i* to stage *i* + 1 is that the acquirer understand input that contains *i* + 1, where “understand” means that the acquirer is focused on the meaning and not the form of the message” (Krashen S. ,

1982, p. 21). In parallel to Vygotsky's study of the Zone of Proximal Development, Krashen notes that acquisition occurs when, "understand language that contains structure that is "a little beyond" where we are now" (Krashen S. , 1982, p. 21). Comprehensible input is therefore similar to the Zone of Proximal Development as they both state that putting learners just outside of where they currently are in terms of learning, while still within what they understand or comprehend, is optimal for acquisition (Krashen S. , 1982; Krashen S. , 1989; Vygotsky, Interaction between learning and development, 1978; Vygotsky, Educational Psychology, 1997). Succinctly, Stephen Krashen determined that this is possible because, "we use more than our linguistic competence to help us understand. We also use context, our knowledge of the world, our extra-linguistic information to help us understand language directed at us" (Krashen S. , 1982, p. 21).

Furthermore, Krashen elaborates by discussing the use of comprehensible input, "... the essential environmental ingredient – a richly specified internal language acquisition device ... competence in spelling and vocabulary is most efficiently attained by comprehensible input" (Krashen S. , 1982, p. 440). Krashen determined that the single best way to achieve second language acquisition was through comprehensible input, "Better second language acquisition... is associated with greater competence in vocabulary and writing" (Krashen S. , 1989, p. 441). It was noted in Krashen's 1989 work on comprehensible input that, "[m]ore comprehensible input in the form of listening to stories is also associated with better vocabulary development" (Krashen S. , 1989, p. 442).

The use of comprehensible input was not Krashen's only theory on second language acquisition, it is one of five distinct hypotheses that Krashen developed. The Acquisition-Learning distinction states that adults have two ways of developing second language competency;

acquisition (subconsciously) and learning (consciously) (Krashen S. , 1982). The Natural Order hypothesis posits that children and adults learn the grammar of a language in a predictable, or natural order (Krashen S. , 1982). The Monitor Hypothesis piggybacks off of the Acquisition-Learning hypothesis as it dives deeper into how acquisition and learning actually work in the attainment of a second language (Krashen S. , 1982). All in all, Krashen has provided academia with a wealth of information on second language acquisition.

Visual Aids and Limited English Language Proficiency

Literature presents various examples where visual aids positively relate to academic achievement measures. These examples are found across several subject matter parameters showing the importance of the inclusion of visual aids in the classroom. According to the data, the increased use of images when teaching both traditional and English language learners has shown to be very beneficial (Atkinson & Shiffrin, 1968; Banikowski & Mehring, 1999; Bower & Karlin, 1974; Cho & Reich, 2010; Gersten & Baker, 2000; Miller & Hill, 2013; Vaughn et al., 2009; Wright, McTigue, Eslami, & Reynolds, 2014; Wright, Eslami, McTigue, & Reynolds, 2015).

According to Bankowski and Mehring in 1999, "Metaphors, analogies, imagery. These are powerful strategies that allow prior knowledge of something to influence the learning of something new. Imagery, for example, is based on the knowledge that the brain has an amazing ability to construct and retain images" (1991, p.10). The researchers go on to support the utilization of imagery as a means to acquire content-area knowledge in learners. Miller and Hill's work in *Classroom Instruction that Works with ELLs*, identifies the nonlinguistic representation

of information as essential in learning (2013, p.8). They also realize the importance of content-area knowledge in English language literacy and achievement (2013, p.6).

Similarly, findings in Gersten and Baker's meta-analysis on What we know about effective instructional practices for English language learners (2000) describes:

Teachers used a variety of methods to teach word meanings to students, including visually presenting the words, defining them, and using gestures and other visual techniques (e.g., pictures). Interestingly, both of the outcome measures (i.e., accurate reading of all the words in the story and comprehension of the story) showed dramatically improved results over a method in which teachers previewed the entire story with students by reading it to them (p. 464).

It is also possible to apply some of these findings to non-limited English proficient students (Vaughn, et al., 2009). In Vaughn's analysis of a pair of experimental studies of two Texas schools with over 800 participants and at least 65% limited English proficiency populations, the researchers applied the use of brief videos and graphic organizers to their treatment groups. The researchers (2009) go on to state;

Although this intervention was developed to address the instructional and language needs of English language learners, the students who were not LEP in the intervention classes also benefited. Students who were LEP outperformed their counterparts in the comparison condition on both the vocabulary and comprehension measures. When both the target group (ELLs) and their classmates benefit from an intervention or practice, it meets the criteria for universal design (p.318).

Vaughn (2009) also reinforces the importance of studying content-area literacy and the use of visual aids, "findings from these two experimental studies indicate that students improved in

their word knowledge and their comprehension related to the content area of instruction—social studies" (p. 316).

Latinx Population and Acculturation

The Latinx segment of the population is ever growing (Ennis, Rios-Vargas, & Albert, 2011), (Pew Research Center, 2015). It is essential to study the best practices when teaching content-area subject matter to the Latinx limited English proficient demographic so as to support acculturation (Salamonson, Everett, Koch, Andrew, & Davidson, 2007) and greater academic success (Center for Research on Education, Diversity, and Excellence [CREDE], 2004; Spenader, 2011; Lopez, Ehly, & Enedina, 2002). Furthermore, CREDE also points out the importance of class discussion and instructional conversation as it builds context and reinforces learning (2004). A study by Salamonson, Everett, Koch, Andrew, and Davidson on nursing students who speak English as a second language note that among 273 participants, students who were determined to have greater acculturation to the United States, were more likely to have greater academic achievement (2007).

Research has shown the influence acculturation has on academic achievement. A study by Trueba on high school dropout rates and prevention, pontificated the idea that minority adolescents suffer academically because of cultural differences including language, values, and lifestyle (1988). Other studies support the theory that acculturation has a positive effect on academic achievement (Phalet & Baysu, 2020; Gueerra, et al., 2019; Fang, 2020) suggesting that improving acculturation will yield an improvement on academic achievement. In trying to determine variables for academic success, Lopez, Ehly, and Garcia-Vasquez's study found, "that students who identified as highly-integrated and strongly Anglo-oriented bicultural tended to have higher academic achievement" (2002, p. 245).

Fang's 2020 study on rural to urban Chinese migrant adolescents cross sampled 2,412 Chinese children aged 10-18. Fang's findings support the idea that acculturation is an important factor in academic achievement, "findings of this study indicate that cultivating integration attitudes and skills and bicultural training hold promise for positive school experience and academic achievement" (p. 158). In a study about the link between academic achievement and acculturation, the researcher describes the need to, "foster more inclusive and more enabling intergroup interactions, policies and norms" in order to "amplify acculturation-norms that support integration and thus enable minority inclusion and success" (Phalet & Baysu, 2020, p. 33). The research supports the importance of the role of social studies instruction in acculturation and academic achievement (Szpara & Ahmad, 2007; Haynes, 2005). Social studies helps provide context for acculturation, which should be explored in greater depth as a means to enrich ELL learning and increase academic achievement (Haynes, 2005).

Cultural Proficiency

We understand, based on the research, that students who assimilate better are more likely to succeed, but we also see that schools that practice cultural proficiency are more likely to support minority student achievement (Jones, 2017; Lindsey & Lindsey, 2016; Lindsey, Nuri-Robins, Terrell, & Lindsey, 2018; Nuri-Robins, Lindsey, R. B., & Terrell, 2012). As the Center for Culturally Proficient Educational Practice notes, "Cultural Proficiency is about educating all students to high levels through knowing, valuing, and using as assets their cultural backgrounds, languages, and learning styles within the context of our teaching" (Center for Culturally Proficient Educational Practice, 2022). As such, cultural proficiency in school districts help facilitate learning regarding the minority learners' cultural experience being utilized as a means to relay the academic skills in a more comfortable and familiar context (Jones, 2017; Lindsey &

Lindsey, 2016; Lindsey, Nuri-Robins, Terrell, & Lindsey, 2018; Nuri-Robins, Lindsey, R. B., & Terrell, 2012).

Cultural proficiency relies on five essential components that are outlined in Nuri-Robbins et al. work on the Cultural Proficiency Framework (Nuri-Robins, Lindsey, R. B., & Terrell, 2012). In order for a school district to comply with the cultural proficiency guidelines, a school district must assess cultural knowledge, value diversity, manage the dynamics of diversity in their district, adapt to the diversity, prioritize proper training for faculty and staff, and institutionalize cultural knowledge to advocate for equitable practices (Nuri-Robins, Lindsey, R. B., & Terrell, 2012). All in all, the more a school district increases their cultural self-awareness and implements those findings into teachings, the more likely students are to achieve (Jones, 2017; Lindsey & Lindsey, 2016; Lindsey, Nuri-Robins, Terrell, & Lindsey, 2018; Nuri-Robins, Lindsey, R. B., & Terrell, 2012). While assimilation brings the student closer to the dominant culture, cultural proficiency brings learning closer to the students' own cultural competence which can, in turn, facilitate learning.

Psychology and Memory

Some studies focus on the processes of the brain and how images can help with memorization (Atkinson & Shiffrin, 1968; Banikowski & Mehring, 1999; Bower & Karlin, 1974; Vygotsky, Educational Psychology, 1997). Atkinson and Shiffrin's 1968 memory model discusses short term and long term memory, and how rehearsal of information will lead to it moving from the short term memory stores, into long term memory stores. This is important when understanding why visual aids may lead to higher achievement in Latinx limited English proficient students.

Research also suggests that people can hold several objects in our short term, visual working memory thus giving us a working memory bank of items for recognition and recall (Xu & Chun, 2006; Narain, 2006; Nickerson, 1965). The implication of a visual working memory implies the ability to recall visual elements despite not knowing the language. Visually relayed information can therefore be more accurately identified by students who can build context regardless of the spoken language. When a student receives a lecture based instruction in English, their knowledge retainment is potentially dependent on their understanding of the language of the instruction, however, what the research supports is that students will retain more visual information than information read or heard (Atkinson & Shiffrin, 1968; Banikowski & Mehring, Strategies to enhance memory based on brain-research, 1999; Center for Research on Education, Diversity, and Excellence [CREDE], 2004; Endestad, Magnussen, & Helstrup, 2004; Gloede & Gregg, 2019; Idris, Shamsuddin, Arome, & Aminu, 2018; Levie & Lentz, 1982; Mandler & Ritchey, 1977; Mayer, 2019).

A study of 74 participants who were shown 96 pictures of 64 different objects and 96 sounds of 64 different objects found that, “Visual memory is capable of storing more items and more details of items than auditory memory” (Gloede & Gregg, 2019, p. 1331). Another study conducted by researchers from Rochester, N.Y. supports the idea that subjects can retain over 2,500 images in their working memory (Standing, Conezio, & Haber, 1970). Lionel Standing, Jerry Conezio, and Ralph Norman Haber conducted four experiments in 1970 as part of a single study on 21 students. They determined that, similar to the findings of a previous study by Richard Shepard in 1967 conducted with similar methodology, “It is certain that the bounds of picture memory, if any do exist, must be very high indeed. It is certainly much higher than for memory of names” (Standing, Conezio, & Haber, 1970, p. 74; Shepard, 1967).

Furthermore, retention of image based information could be possible for 4 months (Mandler & Ritchey, 1977), or if the image was repeated over time in the study, it was retained for up to a year (Nickerson, 1968) and in some instances, up to three decades later (Read & Barnsley, 1977). According to the latter study, they note that a young students' processing and storage of early reading materials includes both verbal and visual components interactively (1977). These studies suggest that images influence information retention, allowing subjects to associate an image to information that may be newly acquired or previously learned.

Advertising and Marketing

In marketing, advertisers have a short amount of time to make an impact. Be it through radio advertisements, commercials, or print, advertisers try to make strategic use of what little time they believe they have with a consumer to try and convey a message; similar to teaching, where teachers have a limited amount of time to provide students with information, they hope will stay in their minds for years to come. Furthermore, research and reporting company, Nielson Norman Group (2010) has found, through the use of eye-tracking software, that people pay more attention to information-carrying images that show content that's relevant to the task at hand (Nielson, 2010). Marketing has been focusing on visual aids for years, and its use has been researched thoroughly. According to a report on Social Media Marketing, 37% of marketers said visual marketing was the most important form of content for their business, second only to blogging (38%), and 74% of social media marketers use visual assets in their social media marketing (Stelzner, 2016). Another report indicates that 51% of marketers prioritized creating visual content assets, over other forms of marketing materials (Content Marketing Institute/Marketing Profs, 2016). It has also been documented that people following directions with text and illustrations do 323% better than people following directions without illustrations

(Levie & Lentz, 1982). Marketing offers a lot of insight into the strategies of helping people remember information about a topic area. Much can be learned from advertising and applied into teaching content-area subject matter.

Zone of Proximal Development

When analyzing Lev Vygotsky's idea of the zone of proximal development, one can see a parallel in the usage of visual aids, and English language learners. English language learners have limited English language proficiency; however, they are presumably much stronger in their native language. Providing students with visual aids to bridge the language gaps, they are given the scaffolding to understand things that fall along the lines of their zone of proximal development (Atkinson & Shiffrin, 1968; Banikowski & Mehring, 1999; Bower & Karlin, 1974; Cho & Reich, 2010; Gersten & Baker, 2000; Miller & Hill, 2013; Vaughn et al., 2009; Wright, McTigue, Eslami, & Reynolds, 2014; Wright, Eslami, McTigue, & Reynolds, 2015). Latinx English language learners may not know what the word 'car' means, however, when prompted with a picture of a 'car' they know what it is, what it is used for, and what it does. If the lesson is about a car falling off of a cliff, providing an image of a car falling off of a cliff provides students with the contextual understanding of the lesson, thus providing scaffolding and, presumably, expanding their zone of proximal development.

Vygotsky (1978; 1997) also notes the importance of social interaction in learning. He emphasizes the importance of social interaction in learning and the expansion of the zone of proximal development (Berk & Winsler, 1995). Specifically, he notes, "All higher mental functions--those that are unique to human beings--are initially created through collaborative activity; only later do they become internal mental processes." (Berk & Winsler, 1995, p. 20). If English language learners are provided with visual aids that assist in social studies instruction,

this application of imagery may facilitate engagement and interaction in the classroom which Vygotsky notes as beneficial to learning (1978; 1997). These authors and subject areas of study provide a wealth of knowledge and data that can be applied and consulted in the execution and analysis of this study.

Vygotsky's work on educational psychology, specifically the zone of proximal development (1978; 1997), indicates that for education and learning to be achieved, students must receive work they can do with help, and slowly be introduced to new information that they cannot do or know on their own (Berk & Winsler, 1995; Kozulin, 2003; Vygotsky L. , 1978). Vygotsky (2003) writes, " It also appears that [English language] learners are active in determining which aspects of the language to focus on, paying attention to those properties of the language that are within their ZPD [Zone of Proximal Development]" (Kozulin, 2003). The student must make associations to the information they already know, and the information they are currently learning, to progress.

When discussing Vygotsky's zone of proximal knowledge, Turuk identifies that, "The theory regards negotiation and creation of meanings as a collaborative act, and through this negotiation and creation; the gap between the interpsychological/social and intrapsychological/individual is bridged." (Turuk, 2008, p. 259). From the literature, it is becoming apparent that the works on short and long term memory, coupled with Vygotsky's work on the zone of proximal development would indicate that if a student has created a memory with an image, or a graphical element, and was introduced to a new theory using graphical elements they are familiar with, they can assign new meanings, and learn the new information efficiently (Vygotsky, Educational Psychology, 1997; Kozulin, 2003; Xu & Chun, 2006; Narain, 2006; Standing, Conezio, & Haber, 1970; Read & Barnsley, 1977). Vygotsky (1997) understood the importance of symbolism,

imagery, and language, "[Vygotsky] understood intellectual development in terms of intellectual tools, such as language, that we accumulate as we grow up in a society and that mediate the kind of understanding that we can form or construct. Though symbolic tools can be of a different nature, language in its different forms undoubtedly constitutes the major symbolic tool appropriated by children that shapes their understanding of the world." (Kozulin, 2003). This can be seen as a visual metaphor of sorts, and can be linguistically universal, in much the same way math symbols can be interpreted across linguistic lines. Vygotsky adds;

In planning teaching, to draw a principle from this observation, we should not only dwell on the concepts that are important, but give at least equal time to reflecting on the images that are a part of them. It is the images that can vividly carry the concepts most richly to the students' understanding. The image can carry the imagination to inhabit in some sense the object of our study and inquiry (2003, p. 91).

New York Times' bestselling author Dr. John Medina's *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School* (2014) describes the power of imagery in advertising. He details that if a piece of information is heard, a person will only remember 10% of it, however, if this information is accompanied with an image, 65% of it is remembered (Medina, 2014). Visual metaphors, and imagery can be seen throughout a variety of mediums, including advertisements, as companies use data science on the use of imagery to sell goods.

Content Area Teachings

The importance of English as a Second language, bilingual programs and content-area teaching has been acknowledged in promoting the literacy and achievement of English language learners (August, Shanahan, & Escamilla, 2009; Chi & Ceci, 1987; Francis, Lesaux, & August, 2006; Meltzer & Hamann, 2005). August and Shanahan's 2006 meta-analysis studied the impact

of language instruction on a student's second language development by looking at 72 studies and their bilingual programs. Although their 2009 work later found some of the issues with their initial study, they explored the efficacy of bilingual programs as opposed to English-only programs, citing the importance of studying the effectiveness of bilingual programs for English language learners, and the need to evaluate best practices in teaching Latinx English language learners.

In Meltzer and Hammann's 2005 paper on of *Meeting the Literacy Development Needs of Adolescent ELLs Through Content-Area Learning* we see the direct impact of content-area studies and English language literacy. The authors identified and reviewed over 250 different pieces of literature on the academic literacy development of adolescents as well as the educational experiences and learning needs of adolescent English language learners. Their goal was to analyze what the research says about literacy and understanding content-area literacy development (2005).

Their research concludes:

Under this scenario, which follows Miramontes et al.'s (1997) assertion that serving ELLs is the responsibility of the whole school, adequately prepared content-area teachers can lead one part of the effort to successfully educate secondary school ELLs (p. 60)

Their research also identifies the importance of imagery in content-area studies and English language literacy:

Helping students to apply these same critical literacy skills to the analysis and discussion of visual media, including political cartoons, graphic novels, films, photographs, and images found online and on television, is also important. In daily life, students are

flooded with visual images and need strategies for analyzing and evaluating their meaning and value (p. 32).

Content-area knowledge has been studied by a plethora of academics, including Chi and Ceci as far back as 1987, when they researched the role of content-area knowledge in cognitive development. They noted, "the meaningfulness of a word can be interpreted as the richness of the semantic interconnections in the knowledge base surrounding that word concept" (p. 114). This further emphasizes the importance of content-area studies in English language literacy, and what can be interpreted as extending Vygotsky's theory of proximal development (1978; Kozulin, 2003) to include that students can internalize more words, by assigning the word a contextual meaning in content-area subject matter, thus increasing vocabulary, and more importantly, English language literacy (Chi & Ceci, 1987).

Summary

The history of ESL and Bilingual education has evolved from haphazard in class adaptation, to full fledged pedagogical models (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). Although politics has swayed support away from foreign language instruction in the past, it has also ultimately supported it through policy and funding (Ariza, Yahya, Morales-Jones, & Zainuddin, 2015). Today's ESL programs were born out of necessity, refined through different lenses, expanded upon, and ultimately supported due to the growing number of immigrants in the United States (Ennis, Rios-Vargas, & Albert, 2011; Pew Research Center, 2015). The largest growing demographic in the United States currently comes from Latin America, and best practices should be developed to best support this growing student base (Ennis, Rios-Vargas, & Albert, 2011; Pew Research Center, 2015). Visual aids have been used in other areas to provide some of the strongest information retention in a limited amount of time, so much so that companies have

relied on psychological research to support the proliferation of imagery in marketing materials (Content Marketing Institute/Marketing Profs, 2016; Levie & Lentz, 1982; Nielson, 2010; Stelzner, 2016). Marketing offers a lot of insight that could potentially be applied into teaching content-area subject matter. Vygotsky believed that students could increase their knowledge base by working through their zone of proximal development, and evidence suggests that imagery could be used in this theoretical framework to support content area knowledge acquisition despite language barriers (Vygotsky, *Educational Psychology*, 1997; Kozulin, 2003; Xu & Chun, 2006; Narain, 2006; Standing, Conezio, & Haber, 1970; Read & Barnsley, 1977). A study focusing on the social studies content area knowledge acquisition of ESL students using visual aids would help provide support for this theory, and potentially lead to the development of a pedagogical best practices for the English language learners in content area classrooms.

Chapter 3 Methodology

Due to the rapidly growing Latinx population of the state of New Jersey, it would be beneficial to develop a series of best practices for the education of Latinx English language students. English language learners present a growing demographic, whose content-area knowledge is often understudied. This action research would enrich the literature by providing data on Latinx English language students and their social studies achievement and provides support to the idea that the use of imagery and visual aids could possibly increase ELL social studies content-area knowledge attainment. In this chapter the research design, as well as the research setting will be discussed. Also, the instruments used in the study will be evaluated, as well as the research questions, in addition to a discussion on data analysis and collection.

Research Design

Through pre and post-tests, this experimental action research looked to enrich existing literature by providing insight on the content knowledge attainment of general education students and Latinx English language learners via different teaching modalities. One hundred twenty nine Latinx English language students were separated into experimental and control comparison groups; the same was done with 120 general education students, who were also be separated into experimental and control comparison groups. Individual participants were randomly assigned to the condition, which classifies the study as an experimental study (Cook & Campbell, 1979). Approximately 129 English language learners enrolled in ESL History courses, as well as approximately 120 general education students in East Jersey High School were studied. Of the ELL students, there were two randomly assigned groups, 60 randomly received the experimental application while the other 69 randomly served as the control group. The same was done with the general education participants, where 63 randomly selected general education students served as

the control group and the remaining 57 participants served as the experimental group. The students in the experimental groups received an English language social studies video lesson, utilizing PowerPoint, with a limited number of English language words on it, and visual aids, including but not limited to, graphics, charts, images, graphs, etc. The control groups received a more traditional English language social studies video lesson, also with PowerPoint, which included more written English language words and no imagery. Quantitative data was collected in this action research by pre-test to assess participant's prior knowledge in all groups, both Latinx ELL and general education. After the video lesson, all participants in both experimental and control groups for the general education as well as Latinx ELL participants received a post-test on the material presented in the video lecture to measure differences between the growth or academic achievement of the experimental and control groups. The difference of the pre-test and post-test scores was used to determine student growth. The post-test will evaluate student growth after the experiment was rendered, to measure the influence of the instructional modality. Analysis of variance was conducted on the basis of gender and to better assess the impact of visual aids on the participants. An analysis of the research questions is included in Table 3.3.

Research Setting

The participants of this study were enrolled in East Jersey High School, located in New Jersey. According to the census data, the 5.2 square mile township has a total population of just under 63,000 inhabitants, of which, 15.2 % or approximately 9,559 are school aged children from the ages of five to the age of seventeen, 68.4 % of the population that lives in East Jersey classified themselves as Latinx, and 49% of the total population is foreign born (U.S. Census Bureau, 2017). The 2015 American Community Survey estimates that approximately 15.8% of the inhabitants of East Jersey live at or below the poverty level; which is about 5% points above

the state average for New Jersey (DADS, 2015). The information provided in Table 3.1 summarizes the demographics for East Jersey Township. Approximately 129 Latinx English language learners and 120 general education students enrolled in History courses in East Jersey High School were studied.

Table 3.1

East Jersey Township Demographics

East Jersey Township	Total Number	Percentage
Inhabitants	63,000	-
-School Aged	9,559	15.2%
-Latinx	43,092	68.4%
-Foreign Born	30,870	49%
-Below Poverty Level	9,954	15.8%
High School Students	2,587	4.1% of population
-Minority	2,302	89%
-Economically Disadvantaged	1,863	72%

Sample

One hundred twenty nine English language learners and one hundred twenty general education students from East Jersey High School participated in this study. These students were randomly assigned to their experimental or control groups. Of these 249 total participants, 119 were females and 130 males. Specifically, there were 72 males and 57 female ELL students, and 58 males and 62 female general education students.

Table 3.2

Participant Sample

East Jersey High School	N	Gender	Experimental	Control
English Language Learners	129	72 Males	36 Males	36 Males
		57 Females	24 Females	33 Females
General Education	120	58 Males	32 Males	26 Males
		62 Females	25 Females	37 Females
Total	249	130 Males	68 Males	62 Males
		119 Females	49 Females	70 Females
			117 Total	132 Total

Data Collection

Latinx English language learners and general education students were randomly selected to the experimental group, with the instructional modality containing visual aids and the control groups, containing no visual aids. The experimental classes received a video lesson, utilizing PowerPoint, with a limited number of words on it, in English, and visual aids as the main source of information, including but not limited to, graphics, charts, images, graphs, etc. The control groups received a more traditional video lecture, also with PowerPoint, which includes thoughts, topics, and ideas that are explicitly written, and no imagery. The audio in both videos was the same to ensure that it has no influence over the results of the study. All the participants from

both groups were given a pre-test on the social studies subject matter, which was covered in the video lectures, to assess prior knowledge. Participants were given a post-test on the subject matter presented in the video lectures, in which they answered questions about the topics covered in the experimental and control video lectures. The difference in pre-test and post-test scores was considered student growth for the sake of this study.

Instruments

For the research to be useful, it must be both valid and reliable. The reliability of this study is ensured by administering the study to different experimental and control groups. This will make certain that other factors are minimized, and the use of imagery and visual aids is truly the factor being studied for Latinx ELL and general education students. The pre and post-tests consisted of 16 questions each, relating to the material presented in the video lecture. These questions were derived directly from the educational textbooks that have served as the source materials for the video lectures. The instrument was evaluated by other experts, including History teachers in both ELL and general education classrooms. The tests have 16 items, four open ended questions worth 10 points each, and twelve multiple choice items worth 5 points each. The open-ended questions were field tested and graded by two social studies teachers to ensure inter-rater reliability. Grades were agreed upon by all reviewers, and any disputed grades were discussed collaboratively, and a decision was attained. The Cronbach Alpha coefficient was used as a measure of the internal consistency of the test items. The measure of reliability as per the Cronbach Alpha is .741 which is within acceptable range of reliability for the test items (Lavrakas, 2008).

Research Questions and Hypotheses

The Latinx demographic has been exceeding population projections and rapidly increasing in the United States. The ever-widening achievement gap is an issue that is plaguing English language students. It is important to address the issue of English language proficiency in addition to content area knowledge and develop some best practices. As a result, this experimental study looks to find answers to fundamental questions related to the content-area knowledge acquisition dynamics of this prominent ethnic group.

1) What is the influence of gender and the use of visual aids in the Social Studies content area classroom for Latinx English language learners regarding content area knowledge acquisition?

(Ha) There are statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for Latinx English language learners regarding content area knowledge acquisition.

(Ho) There are no statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for Latinx English language learners regarding content area knowledge acquisition.

2) What is the influence of gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition?

(Ha) There are statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition.

(Ho) There are no statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition.

3) What is the difference in the influence of gender and the use of visual aids in the Social Studies content area classroom between general education and Latinx English language learners regarding content area knowledge acquisition?

(Ha) There are statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for general education and Latinx English language learners regarding content area knowledge acquisition.

(Ho) There are no statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for general education and Latinx English language learners regarding content area knowledge acquisition.

Data Analysis

To investigate the possible differences in content area knowledge attainment between the use of visual aids and a traditional lesson, an analysis of variance, or ANOVA test was carried out on the quantitative research questions. To analyze the data, the statistical software SPSS was used. The analyses focused on the aforementioned software and used descriptive analysis to evaluate the similarities and differences in teaching modalities including pedagogical practices. Both measures of central tendencies and analysis of variance were used for the study in the categories of gender and teaching modality for English language learners versus general education students. The following Table 3.3 elaborates the analysis of the research questions.

Table 3.3

Statistical Analysis

Research Questions	Variables	Statistical Analysis
What is the influence of gender and the use of visual aids in the Social Studies content area classroom for Latinx English language learners regarding content area knowledge acquisition?	Dependent Variable- Pre/Post Tests- Growth Content specific questions Independent Variables Modality • Traditional PowerPoint • Primarily text • Visual Aid PowerPoint • Images instead of words • Gender	Analysis of variance (ANOVA) was used to determine if there was a significant difference among genders in the ELL students' achievement and due to the instructional modality.
2. What is the influence of gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition?	Dependent Variable- Pre/Post Tests- Growth Content specific questions Independent Variable • Gender • Instructional modality	Analysis of variance (ANOVA) was used to determine if there was a significant difference among genders in the general education students' achievement due to the instructional modality.
3. What is the difference in the influence of gender and the use of visual aids in the Social Studies content area classroom between general education and Latinx English language learners regarding content area knowledge acquisition?	Dependent Variables • Pre/Post Test - Growth Independent Variable • Gender • Instructional modality • Program	Analysis of variance (ANOVA) was used to determine if there was a significant difference among genders between the general education students' achievement and the ELL achievement due to the instructional modality.

Summary

Chapter three of this dissertation describes the methodology utilized during this this experimental action research study. The purpose of this study was to determine whether or not the use of visual aids would facilitate the content area knowledge acquisition by Latinx English language learners and how that compares to general education students. Factors examined included previous knowledge, as determined by the pre-test, knowledge attained from the application of the experimental or control conditions, as determined by the post-test. The results of these analyses will be presented in the next chapter.

Chapter 4 Findings

Introduction

In the low income, urban school district of East Jersey, 129 English language learners, and 120 general education students participated in this action research study to evaluate the efficacy of visual aids in student learning. These students were given pre and post-tests which focused on the social studies material being presented in their respective lectures. The students in this experimental study were divided into two groups; 132 total students in the control group who received a traditional, word based PowerPoint video lecture. Latinx English language learners accounted for 69 participants in the control group and 63 were general education students. One hundred seventeen students in the experimental group received a PowerPoint video lecture that was based on visual aids; 60 were Latinx ELL and 57 were general education students. Participants in both groups were given a pretest on the material to be presented in the study. At the completion of the pretest, students were given a video lecture; the experimental

group received an English language presentation with visual aids. The control group received an English language presentation without visual aids. At the conclusion of the video, students completed a post-test. This chapter yields the findings of the data analysis related to the research questions and their respective hypothesis. The analysis in this study was to determine the efficacy of visual aids in student learning. The following analyses and discussion present the research questions in conjunction with the findings and interpretations of the data.

Operationalization of the Variables

Prior to disseminating the findings and subsequent discussion, the operationalization of the independent variables in the study must be addressed. This study is defined by three principle independent variables. The variable of gender consisted of two primary options of either male (0) or female (1). The variable of program of study, consisted of either general education students (0), or Latinx English language learners (1) as determined by East Jersey High School. Additionally, the independent variable of instructional modality was either the experimental group (0), which contained visual aids in their history lecture video, or the control group (1), which did not contain visual aids or imagery in their video lecture.

Analysis of Data

This research on instructional modality, more specifically, the use of visual aids in the social studies content area classroom, is centered around three research questions. The use of visual aids was studied on Latinx English language learners as well as general education students along with the influence of gender. Student achievement, or growth, was determined by the difference of the pre-test and post-test scores. These growth scores inform the study on the efficacy of the instructional modality; whether or not the use of visual aids and gender has an influence on student achievement.

Research Question #1: What is the influence of gender and the use of visual aids in the Social Studies content area classroom for Latinx English language learners regarding content area knowledge acquisition?

(Ha) There are statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for Latinx English language learners regarding content area knowledge acquisition.

(Ho) There are no statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for Latinx English language learners regarding content area knowledge acquisition.

Table 4.1

Latinx English Language Learners: Descriptive Statistics for Experimental and Control Groups

Gender	Instructional Modality	Mean	Std. Deviation	N
Male	Experiment (Visual Aids)	9.86	15.24	36
	Control (No Visual Aids)	3.47	14.43	36
	Total	6.67	15.08	72
Female	Experiment (Visual Aids)	8.54	13.55	24
	Control (No Visual Aids)	3.48	12.28	33
	Total	5.61	12.96	57
Total	Experiment (Visual Aids)	9.33	14.48	60
	Control (No Visual Aids)	3.48	13.35	69
	Total	6.20	14.14	129

An Analysis of Variance (ANOVA) was conducted, to determine whether there were significant differences between the growth (as determined by the difference in pretest and post-test scores) of Latinx English language Learners based on their gender (male or female), and their instructional modality (experimental group with visual aids or control group with no visual aids). Initial descriptive analysis of means and standard deviations for Gender and Instructional Modality are presented in Table 4.2 and is briefly addressed below.

The male Latinx ELL experimental group appears to have the highest mean growth score of 9.86, (SD = 15.24, N = 36). Students belonging to the female ELL experimental group had the second highest growth mean score of 8.54 (SD = 13.55, N = 24). The lowest mean scores were noted for the control groups for both males and females (see Table 4.1). Mean growth score results obtained for the students in the female control group was 3.48, (SD = 12.28, N = 33). The growth of all students in the experimental group yielded relatively higher scores than the control group with no visual aids.

Table 4.2

Analysis of Variance Results for Latinx English Language Learners: Gender and Modality's effect on Growth.

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>P</i>
Corrected Model	1125.28 ^a	3	375.09	1.92	.13
Intercept	5043.09	1	5043.09	25.77	.00*
Gender	13.39	1	13.39	.07	.79
Modality	1027.28	1	1027.28	5.25	.02*
Gender * Modality	13.91	1	13.91	.07	.79
Error	24463.47	125	195.71		
Total	30550.00	129			
Corrected Total	25588.76	128			

a. R Squared = .044 (Adjusted R Squared = .021)

* $p < .05$

The two-way ANOVA model yielded the following results. The overall ANOVA model presented in Table 4.2, was not significant, $F(3, 125) = 1.92$, $p = .130$, and the main effect gender, ($p = .79$), and the interaction effect ($p = .79$) were also not significant. However, a statistically significant result was found with the main effect, Instructional Modality, $F(1, 125) = 5.25$, $p = .02$. Knowing that Instructional Modality produced a result that was determined to be statistically significant by the analysis of variance, we can take a closer look at the mean growths of the Experimental and Control groups and assess which group had a higher growth rate.

This result showed that visual aids do, in fact, support the Latinx English language learners in content area knowledge acquisition, as seen by the estimated marginal mean growths of both the control group (3.48) and the experimental group (9.20). The study found that students who were in the experimental group with visual aids had a growth rate of approximately 5.72 points higher, on average, than those in the control group. According to the data, those students that received visual aids reported an increase of 164.37% over the control group. This includes both male and female Latinx English language learners. Although the results fail to reject the null hypothesis as the whole model is not significant, this result has educational value. The result of this analysis gives insight into the efficacy of the use of visual aids with Latinx English language learners. This is an indication that visual aids can have a positive effect, and the use of visual aids in a social studies content area classrooms should be considered when developing curriculum.

The second research question focused on the analysis of general education students and the performance of both experimental and control groups to determine if there were differences in the growth patterns based on the use of visual aids.

Research Question #2: What is the influence of gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition?

(Ha) There are statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition.

(Ho) There are no statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom for general education students regarding content area knowledge acquisition.

Table 4.3

General Education Students: Descriptive Statistics for Experimental and Control Groups

Gender	Instructional Modality	Mean	Std. Deviation	N
Male	Experiment (Visual Aids)	16.09	17.86	32
	Control (No Visual Aids)	7.31	19.09	26
	Total	12.16	18.78	58
Female	Experiment (Visual Aids)	12.80	14.44	25
	Control (No Visual Aids)	9.32	17.49	37
	Total	10.73	16.29	62

Total	Experiment (Visual Aids)	14.65	16.39	57
	Control (No Visual Aids)	8.49	18.04	63
	Total	11.42	17.48	120

A second Analysis of Variance (ANOVA) was conducted, to ascertain whether there were significant differences between the growth (as determined by the difference in pretest and post-test scores) of general education students based on their gender (male or female), and their instructional modality (experimental group with visual aids or control group with no visual aids). Initial descriptive analysis of means and standard deviations for Gender and Instructional Modality are presented in Table 4.3 and is briefly addressed in the following section.

Overall, the male general education experimental group appears to have the highest mean growth score of 16.09, SD = 17.86 (N = 32), similar to the Latinx male students in the experimental group. Students in the female general education experimental group had the second highest growth mean score of 12.80 (SD = 14.44, N = 25). The lowest mean scores were noted for the control groups, and for both males and females (see Table 4.3), once again a similarity to the Latinx group. The growth of all students in the experimental group yielded relatively higher scores than the control group with no visual aids.

Table 4.4

Analysis of Variance Results for General Education Students: Gender and Modality's effect on Growth.

Source	Type III Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>P</i>
Corrected Model	1348.80a	3	449.60	1.49	.22
Intercept	15157.36	1	15157.36	50.22	.00**
Gender	11.93	1	11.93	.04	.84

Modality	1099.54	1	1099.54	3.64	.06
Gender * Modality	206.23	1	206.23	.68	.41
Error	35010.37	116	301.81		

a. R Squared = .037 (Adjusted R Squared = .012)

*p < .05

The two-way ANOVA model yielded the following results. The overall ANOVA model presented in Table 4.4, was not significant, $F(3, 116) = 1.49$, $p = .22$, and the main effect gender, ($p = .84$), and the interaction effect ($p = .41$) were also not significant. Also, unlike in the case of Latinx students, a statistically significant result was not found with the main effect, Instructional Modality, $F(1, 116) = 3.64$, $p = .06$. Despite knowing that Instructional Modality produced a result that was not determined to be statistically significant by the analysis of variance, one can still take a closer look at the means of the experimental and control groups to understand the growth patterns in these participant groups, which may have some educational value.

The means of both the control group (8.49) and the experimental group (14.65) as presented in Table 4.3 show that students receiving the experimental modality with visual aids appears to have achieved more growth than their general education control group peers. The study found that students who were in the experimental group with visual aids scored approximately 6.16 points better, on average, than those in the control group. According to the data, those students that received visual aids reported an increase of 73.680% over the control group. This includes both male and female general education students. Although the results fail to reject the null hypothesis as the whole model is not significant, this inquiry may have educational value. These findings may suggest that educators may find it beneficial to include visual aids in their instruction.

The third and final research question focused on the analysis of both general education students and their Latinx English language learner counterparts to compare the effects of visual aids on these groups.

Research Question #3: What is the difference in the influence of gender and the use of visual aids in the Social Studies content area classroom between general education and Latinx English language learners regarding content area knowledge acquisition?

(Ha) There are statistically significant differences regarding the influence of gender and the use of visual aids in the Social Studies content area classroom between general education and Latinx English language learners regarding content area knowledge acquisition.

(Ho) There are no statistically significant differences regarding the influence of gender and the use of visual aids in the Social Studies content area classroom between general education and Latinx English language learners regarding content area knowledge acquisition.

Initial descriptive analysis of means and standard deviations for Gender and Instructional Modality are presented in Table 4.5 for the general education and Latinx English language learners. The following discussion highlights the growth patterns of the general education students and their Latinx ELL counterparts.

Table 4.5

Latinx English Language Learners and General Education Students: Descriptive Statistics for Experimental and Control Groups

Gender	Instructional Modality	Program	Mean	Std. Deviation	N
Male	Experiment (Visual Aids)	Latinx ELL	9.86	15.24	36
		General Education	16.09	17.86	32
		Total	12.79	16.69	68
	Control (No Visual Aids)	Latinx ELL	3.47	14.43	36
		General Education	7.31	19.09	26
		Total	5.08	16.51	62
	Total	Latinx ELL	6.67	15.08	72
		General Education	12.16	18.78	58
		Total	9.12	16.99	130
Female	Experiment (Visual Aids)	Latinx ELL	8.54	13.55	24
		General Education	12.80	14.44	25
		Total	10.71	14.03	49
	Control (No Visual Aids)	Latinx ELL	3.48	12.28	33
		General Education	9.32	17.49	37
		Total	6.57	15.43	70
	Total	Latinx ELL	5.61	12.96	57
		General Education	10.73	16.29	62
		Total	8.28	14.95	119
Total	Experiment (Visual Aids)	Latinx ELL	9.33	14.48	60
		General Education	14.65	16.39	57
		Total	11.92	15.60	117
	Control (No Visual Aids)	Latinx ELL	3.48	13.35	69
		General Education	8.49	18.04	63
		Total	5.87	15.90	132
	Total	Latinx ELL	6.20	14.14	129
		General Education	11.42	17.48	120

Total	8.71	16.02	249
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The male general education experimental group appears to have the highest mean growth score of 16.09, (SD = 17.86, N = 32). Students belonging to the male Latinx ELL experimental group had the second highest growth mean score of 9.86 (SD = 15.24, N = 36). The lowest mean scores were noted for the control groups, and for both males and females in both the ELL and general education programs (see Table 4.5). Mean growth score results obtained for the group of students in the female ELL control group, which yielded the lowest growth of all groups, was 3.48, SD = 12.28, (N = 33). In summary, the growth of students in both the general education and Latinx ELL experimental groups yielded relatively higher scores than either of the control groups with no visual aids.

Table 4.6

Analysis of Variance Results for Latinx English Language Learners and General Education Students: Gender and Modality's effect on Growth.

Source	Type III Sum of Squares	df	Mean Square	F	P
Corrected Model	4164.91	7	594.99	2.41	.02*
Intercept	19014.22	1	19014.22	77.05	.00**
Gender	25.26	1	25.26	.10	.75
Modality	2126.82	1	2126.82	8.62	.00**
Program	1538.86	1	1538.86	6.24	.01*
Gender * Modality	166.96	1	166.96	.68	.41
Gender * Program	.00	1	.00	.00	.99
Modality* Program	2.52	1	2.52	.01	.92
Gender * Modality * Program	59.89	1	59.89	.24	.62
Error	59473.84	241	246.78		
Total	82550.00	249			
Corrected Total	63638.75	248			

a. R Squared = .065 (Adjusted R Squared = .038)

* $p < .05$

** $p < .01$

An Analysis of Variance (ANOVA) was conducted to assess the differences in the influence of gender and the use of visual aids in the Social Studies content area classroom between general education and Latinx English language learners. This ANOVA model yielded the following results. The overall ANOVA model presented in Table 4.6, was statistically significant, $F(7, 241) = 2.41, p = .02$.

There were several statistically significant findings in this analysis of variance that are of great interest to this action research. A statistically significant result was found with the main effect, Instructional Modality, $F(1, 241) = 8.62, p = .004$. This indicates that there were differences in growth patterns between the groups that used visual aids and the group that did not use it. This result showed that visual aids do, in fact, support the Latinx English language learners as well as the general education students in content area knowledge acquisition. This can be seen by the estimated marginal means of the general education control group (8.31) and the experimental group (14.45) as well as the Latinx ELL control (3.48) and experimental group (9.20) as can be seen in Table 4.7.

Table 4.7

Latinx English Language Learners and General Education Students: Estimated Marginal Means for Experimental and Control Groups

Test Type	Program	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Experiment	Latinx ELL	9.201	2.070	5.124	13.279
	General Education	14.447	2.097	10.317	18.577

Control	Latinx ELL	3.479	1.893	-.250	7.207
	General	8.316	2.010	4.356	12.276
	Education				

The study found that students who were in the experimental group with visual aids performed approximately 5.92 points better, on average, than those in the control group regardless of which educational program they were enrolled in, or which gender they were. According to the data, those students that received visual aids reported an increase of 100.34% over the control group. The analysis of variance determined that these differences were statistically significant thus supporting the theory that visual aids increase the academic achievement of students.

Additionally, note that the program in which a student was enrolled in was also deemed to be statistically significant $F(1, 241) = 6.24, p = .01$, once again denoting differences between general education students and their Latinx English language learner counterparts. The highest performing group was the general education group with an estimated marginal mean growth of 14.45 points after having received the experimental video lecture containing visual aids, whereas the Latinx ELL group also showed an increase of 9.20 points to their estimated marginal means after having received the experimental instructional modality. This difference of 5.25 points makes sense, as the test was in English, a language that general education students practice with greater frequency in all their classes, in comparison to Latinx English language learners, who are still in the process of acquiring their English language abilities.

The rate at which Latinx English language learners were affected by the use of visual aids, in comparison to their general education classroom peers was a notable finding as well. All groups were determined to receive a boost on their academic achievement as determined by the growth scores after the experimental instructional modality with visual aids, Latinx English language learners benefited more than their general education peers. While general education students achieved an increase of 73.68% with the use of visual aids, Latinx English language learners were able to increase their achievement by 164.37%. These findings suggest that Latinx English language learners received an 90.69% increase in achievement OVER their general education classmates with the use of visual aids.

However, the main effect gender ($p = .75$) was not significant showing that there were no differences in the performance of males and females. Also, the interaction effect of gender and modality ($p = .41$) was not significant. Similarly, the interaction effect between gender and program ($p = .99$) and modality and program ($p = .92$) were also determined to be not statistically significant. The three way interaction effect of gender, modality, and program ($p = .62$) was also assessed to be not statistically significant. Since the ANOVA model was significant, we can reject the null hypothesis, and determine that there were statistically significant differences regarding gender and the use of visual aids in the Social Studies content area classroom between general education and Latinx English language learners regarding content area knowledge acquisition.

Discussion of Results

The general results of this action research supports the theory that visual aids benefit all students, as their growth was determined to be significant. When this action research looked

only at the Latinx students, male and female participants had no statistically significant increase in the scores from their pre-test to their post-test. The analysis of variance determined that there was a statistically significant difference concerning the experimental and control groups. That difference was influenced by the instructional modality as the students receiving the experimental social studies video lecture containing visual aids outperformed the control group, which did not contain visual aids. The educational value of this finding is simple, Latinx English language learners perform better when receiving instruction with visual aids. When this study looked only at general education students, the experimental group once again outperformed the control group. In education, the value of this finding is that it suggests that general education students perform better also when they receive instruction containing visual aids.

There was a significant difference between English language learners and general education students' growth, as determined by the difference between the pre- and post-tests. General education students did better on the post-test, on average, in comparison to ELL students, which was to be expected, as the test is in English, a language that English language learners are in the process of attaining.

As mentioned earlier, there is a gap in the research as it pertains to visual aids and gender achievement in social studies content area classrooms. This action research study and its results find that while gender does not play a role in social studies content area knowledge attainment, the use of visual aids does. Ultimately, the most statistically significant variable in the entire study was the modality of instruction, or in other words, the use of visual aids. The educational value of this finding is the same as the previous assessment; students achieve better scores with visual aids.

Summary

In this quantitative action research of an urban school district in Northern New Jersey, the researcher analyzed the use of visual aids and its effects on the Latinx English language learner population, as well as general education students. A pre-test was given to assess prior knowledge, then students were exposed to a video lecture either containing visual aids, or not. The difference between their pre-test scores, and their post-test scores was used to determine the influence of visual aids in content area achievement. The 129 Latinx English language learners and their 120 general education peers who participated in this study all achieved a statistically significant increase due to the use of visual aids during the lecture video. This chapter presented the findings of this action research to determine the potential influence of the use of visual aids in content area knowledge acquisition. Namely, whether or not there are any significant differences between males and females and or general education students and their Latinx English language learning counterparts are influenced by the use of visual aids. Descriptive analysis, as well as Analysis of Variance findings were provided, and a discussion on the performance of these groups was also assessed. It was determined that both Latinx English language learners increased their academic achievement with the use of visual aids. The findings also suggested that Latinx English language learners benefited more from their use of visual aids than their general education classmates. The next chapter will provide insights on conclusions, recommendations, suggestions, and action plans to help potentially fulfill the purpose of this study, which is to develop some best practices on how to teach content area knowledge to ELL students, as well as some suggestions for future research.

Chapter 5 Summary Conclusion, and Action Plan

Introduction

The purpose of this experimental research study was to analyze the influence of the use of visual aids when teaching social studies content area courses in an urban school district in Northern New Jersey. Specifically, the purpose of this action research was to examine English language learners' social studies content-area knowledge acquisition through the use of visual aids, in social studies, in comparison to general education, non-English language learners. This chapter includes a summary of results for the experimental research and conclusions based on the analysis of the findings. There are also recommendations for school districts to apply the findings of this research to best practices for English language learners and general education students.

Summary and Discussion of Results

This study was defined by three independent variables; gender, test modality (experimental lecture with images, or control lecture without images), and educational program (English language learner or general education student). The pre-test was administered, followed by the video with the distinct modalities, and a subsequent post-test for all the participants in the study and the results were analyzed. The rationale to collect the data and determine student growth, or academic achievement as influenced by the experimental or control video lectures was to determine the effect of the modality on student achievement. Based on the results of the pre and post-tests, and the assessed growth, or student achievement, it appears that Latinx English language learners received a statistically significant boost in growth from receiving the

experimental video lecture with visual aids. The results of this study are consistent with the literature, which suggests that English language learners benefit from the use of visual aids (Ajayi, 2012; Ariza, Yahya, Morales-Jones, & Zainuddin, 2015; Clark, 2017; Steiner, Peralta, & Boothe, 2014; Walqui, 2000a; Walqui, 2000b).

Furthermore, this study's findings also support the theory that all students may benefit from the use of visual aids. The use of visual aids in both Latinx English language learners and general education students, and the subsequent positive effect on student achievement as determined by the growth between the pre and post-tests, was significant. These findings were also consistent with the literature that supported the theory that all students can benefit from the use of visual aids (Bower & Karlin, 1974; Endestad et al., 2004; Mayer, 2019; Standing, Conezio, & Haber, 1970; Olatoye, 2017). Both Latinx ELL and general education experimental groups showed statistically significant improvement in their post-test scores in comparison to their control group counterparts irrespective of their English language learner or general education status. This is supported throughout the study by numerous authors who broach the potential influence of the use of visual aids on student learning and content area knowledge acquisition (Armstrong et al., 2018; Atkinson & Shiffrin, 1968; Banikowski & Mehring, 1999; Berk & Winsler, 1995; Boatright, 2010; Bower & Karlin, 1974; Endestad et al., 2004; Endo, 2017; Gersten & Baker, 2000; Gloede & Gregg, 2019; Kirkpatrick, 1894; Levie & Lentz, 1982; Lumbrears & Rupley, 2019; Mandler & Ritchey, 1977; Mayer, 2019; McBride & Doshier, 2002; Olatoye, 2017; Paivo, 1991; Vaughn et al., 2009; Walqui, 2000a; Walqui, 2000b; Wright et al., 2014; Wright et al., 2015). Bankowski and Mehring write, "Metaphors, analogies, imagery... are powerful strategies that allow prior knowledge of something to influence the learning of something new" (1991, p.10). This is also supported by Vaughn's experimental study on the use

of realia, whose research concurs with the findings in this study, that, “Although this intervention was developed to address the instructional and language needs of English language learners, the students who were not LEP in the intervention classes also benefited” (2009, p. 318).

While there was a significant difference between the growth rates of English language learners and their general education counterparts, this finding was to be expected as the test and video lectures were both in English, as was the audio in both videos. General education students achieved an increase of 73.68% with the use of visual aids and the Latinx English language learners received a 164.37% increase to their scores with the use of visual aids. This action research found that Latinx English language learners achieved more growth than their general education classmates after receiving instruction with visual aids. In fact, Latinx ELL growth was almost 85% more than their general education counterparts. This suggests that English language learners would greatly benefit from the use of visual aids, and that their use may help narrow the achievement gap.

Gender was determined to be an insignificant factor in the study. While it appears looking at the growth rate that general education and Latinx ELL males outperformed females, the difference in scores was not significant to the findings in this study.

Overall, the results of the study are consistent with the literature, in that not only is the use of visual aids beneficial for Latinx English language learners, but for general education students as well (Bower & Karlin, 1974; Endestad et al., 2004; Mayer, 2019; Standing et al., 1970; Olatoye, 2017). According to scholars who studied English language learners, the use of visual aids was determined to be a bridge between their native language and the English

language, allowing English language learners to grasp the context of the lesson while still in the process of acquiring English language skills (Ajayi, 2012; Ariza et al., & Zainuddin, 2015; Clark, 2017; Steiner et al., 2014; Walqui, 2000a; Walqui, 2000b). Academic research on the use of imagery supports the idea that all students may benefit from the use of visual aids (Bower & Karlin, 1974; Endestad et al., 2004; Mayer, 2019; Standing et al., 1970; Olatoye, 2017). The focus on visual aids to relay information and the effects of retention have been studied by several researchers in a variety of fields; from psychology, and neurology, to advertising (Atkinson & Shiffrin, 1968; Banikowski & Mehring, 1999; Bower & Karlin, 1974; Content Marketing Institute/Marketing Profs, 2016; Mandler & Ritchey, 1977; Medina, 2014; Nickerson, 1968; Nickerson, 1965; Standing et al., 1970; Stelzner, 2016; Stenberg, 2007; Wright et al., 2014; Wright et al., 2015; Xu & Chun, 2006). The findings in these studies are consistent with the results of this research in that visual aids are beneficial for most participants as it not only increases contextual understanding and increases scores, but also benefits information retention (Armstrong et al., 2018; Atkinson & Shiffrin, 1968; Banikowski & Mehring, 1999; Berk & Winsler, 1995; Boatright, 2010; Bower & Karlin, 1974; Endestad et al., 2004; Endo, 2017; Gersten & Baker, 2000; Gloede & Gregg, 2019; Kirkpatrick, 1894; Levie & Lentz, 1982; Lumbrears & Rupley, 2019; Mandler & Ritchey, 1977; Mayer, 2019; McBride & Doshier, 2002; Olatoye, 2017; Paivo, 1991; Vaughn et al., 2009; Walqui, 2000a; Walqui, 2000b; Wright et al., 2014; Wright et al., 2015).

The theoretical framework for this research stems from Lev Vygotskys work on child development and the Zone of Proximal Development. The Zone of Proximal Development ascertains that between what a student can do individually, and what a student cannot possibly complete on their own, there is a zone in which students can achieve with the proper assistance

and scaffolding (Vygotsky, 1997; Vygotsky, 1978). This scaffolding can come in many forms, and this study suggests that a statistically significant scaffold, or support, can be the use of visual aids in a social studies content area classroom. Vygotsky acknowledges the importance of visual aids and how they add to student learning, “[i]t is the images that can vividly carry the concepts most richly to the students’ understanding. The image can carry the imagination to inhabit in some sense the object of our study and inquiry” (2003, p. 91). Although some of the findings in this research study did not yield significant results, they are still relevant to the current school district and other school districts who are interested in understanding the effects of visual aids on content area knowledge acquisition. Ultimately, this study adds and fills the gap in the existing literature in that visual aids can positively influence student learning and achievement in both Latinx English language learners and general education students. The following section provides recommendations to the school district which can influence improved student achievement in content area classrooms amongst English language learners, as well as general education students.

Recommendations

Two hundred forty nine students participated in this action research to determine the efficacy of visual aids in the instruction of social studies. Approximately 129 Latinx English language learners, and 120 general education students in an urban school district in northern New Jersey took part in this study. The results of this study gave us invaluable information about the importance of the use of visual aids in the teaching of social studies content. Furthermore, the following recommendations are a result of these findings that suggest that visual aids help general education and Latinx English language learners in social studies content area achievement.

Recommendation 1. Acquire, develop, and utilize realia that supports lesson objectives. This action research was able to support the idea that the use of imagery not only increases Latinx English language learners' achievement, but all students benefit from its use. As such, it would behoove the educational community, and school district to make a more conscious effort to implement imagery in lessons. Imagery is seen in lower-level classrooms; however, it may fall by the wayside in the higher levels. This may happen for a variety of reasons, however, what was seen in the data analysis was that high school students benefit from this instructional strategy. The use of imagery may bring instructional topics that students would otherwise not understand, into their Zone of Proximal Development, which lend towards greater student achievement.

Recommendation 2. Train teachers to use and develop visual aids. The use of visual aids has been determined to be beneficial for Latinx English language learners as well as general education students. Teachers should receive training on how to best implement the use of visual aids in the classroom instruction. Guidance on how to use visual aids effectively should be provided to teachers so they can reap the benefits of visual aids in their classrooms as soon as possible. Ultimately, teachers are terrific innovators, and while school districts should assist in the procurement of imagery, educators can be professionally developed to recognize the most effective use of imagery and implement it so as to help raise student achievement

Recommendation . Promote the use of visual aids in ELL and general education classes. In general teachers should aim to include as many graphical elements as deemed appropriate by curriculum developers. Both ELL and general education students benefit from the use of visual aids (Clark, 2017; Idris, Shamsuddin, Arome, & Aminu, 2018). Graphs, maps, and other realia have shown to increase student achievement, regardless of ELL or general education program

status (Idris, Shamsuddin, Arome, & Aminu, 2018; Kirkpatrick, 1894; Levie & Lentz, 1982).

The advantage of the use of visual aids, cannot be denied, and should be used to support student learning. Including imagery to help provide context to lessons may provide students with an added advantage in the study of their classroom content.

Recommendation 4. Place emphasis on expanding ELL vocabulary with the use of imagery to increase content comprehension. English language learners are limited by their lack of English language vocabulary when receiving English language instruction. Researcher Walqui acknowledges that content area classrooms have their own vocabulary (2000a; 2000b). Content area learning in many ways can be considered an extension of English language learning, and as such the expansion of ELL vocabulary would be beneficial, not only to their content area knowledge acquisition, but also to their English language acquisition as well. A study on the use of flash cards or similar applications to expand ELL vocabulary and minimize the language barrier in content area knowledge acquisition with the use of visual aids may help produce some best practices that increase learning efficacy.

Recommendation 5. Expose students to more content that lies on the outskirts of their Zone of Proximal development using visual aids. Vygotsky wrote about how there are a variety of strategies that draw difficult or otherwise unattainable material within a student's Zone of Proximal Development. Visual aids provide a bridge to the so-called unattainable material, as it presumably facilitates understanding and eases language barriers for Latinx English language learners. Imagery gives students a helping hand in comprehension, while giving educators the ability to allow students to learn independently. While students may require some scaffolding, the repeated exposure to increased rigor could prove beneficial to student achievement if executed appropriately. In the development of best practices, the introduction of new and

difficult concepts should incorporate visual aids to facilitate the efficacy of comprehension and content area knowledge attainment. School district should increase professional development efforts on the best ways to increase rigor and exposure to more difficult material with visual aids.

Recommendation 6. Even though this action research only looked at one high school in an urban district, the above-mentioned recommendations may be of value to other districts, especially those with an influx of Latinx students.

Future Research

The limitations of this study provide a good basis to consider the kind of future research that may be beneficial to supplement existing literature in the instructional methods and approaches to improve academic achievement of the Latinx English language learner. The following recommendations for future research could compliment this study and add invaluable insight to school districts and academia as a whole, particularly in the development of best practice for not only Latinx English language learners, but all students in content area classrooms.

1. Expand this study to include schools with different demographics. This study focused on Latinx English language learners and their general education counterparts. The student demographics for this school district are overwhelmingly low-income and majority Latinx. As a result, the scope of this research is limited to evaluating the effects of visual aids on this particular demographic. Expanding the study to include students of all races, creeds, and socio-economic statuses would paint a clearer picture of the benefits of visual

aids for a variety of student populations. Studies that focus on different demographics would be complimentary to this particular study and enrich the existing literature.

2. Study the influence of visual aids on Special Education students including the Section 504 and IEP populations. According to this study, it was determined that both Latinx ELL populations as well as general education populations in a majority Latinx school district (with majority free and reduced lunch) to have been positively affected by the use of visual aids. Studies should be expanded to include any and all low performing students that can benefit from closing the achievement gap. Special education students vary greatly in their abilities and needs. A thorough study on the effects of the use of visual aids in the instruction of a wide variety of special education students may yield results that support greater achievement and understanding with visual support.
3. Study non-Latinx English language learners and the use of visual aids in their overall instruction. This study focused primarily on Latinx English language learners in social studies content area classes. However, the Latinx demographic, while being the largest, and fastest growing, is not the only ELL group. There are many countries from which English language learners come from with ranging cultures and visual interpretations. A study on the use of visual aids in a more culturally diverse ELL classroom may present interesting and relevant findings as different students may have varying interpretations of imagery and symbols that differ from those of Latinx English language learners.
4. Investigate students' creation of realia for social studies content area classes. Due to the results from this action research in the use of visual aids, it was determined that students

are visual learners or at the very least, are apt to learning visually. With the proliferation of social media, specifically apps like TikTok and Instagram, students are producing and consuming visual materials at a rapid rate. School district should be amenable to the use of social media, and social media-like programs that allow students the creativity to produce content that would benefit their academic achievement.

5. Evaluate which types of imagery work best. When evaluating whether or not visual aids had any influence over Latinx English language learners and their general education peers, this study incorporated the use of a variety of imagery, including static images and moving gifs, as well as maps, and symbols such as arrows. While the use of imagery was determined to be beneficial, perhaps there were other images that could have been used instead to yield better results. It is possible that certain images and symbols may be interpreted differently by different groups of people, thus causing more confusion to the context of instruction. As such, evaluating the best use of imagery in a cultural context of a lesson may increase the efficacy of visually stimulating instruction.
6. Study the efficacy of videos vs. imagery. The experimental video lecture of this study utilized imagery, both static and moving, in place of English language words. While the study was video based, the lecture presented was a PowerPoint presentation. This means that in this particular study, there were no fluid story telling animations. Cartoons and animated characters, telling a story in a more conversational or documentary style may yield varying results instead of visual aids as pictures in place of words, which is worth exploring.

7. Study the use of native language use in conjunction with imagery. Native language programs have shown positive results in content area knowledge acquisition. While this study showed positive results in the use of visual aids with all classes, ELL students lagged behind the growth of their general education counterparts. This can be because the videos were presented in English, the presumed native language of the general education population. Perhaps a study on the use of ELL native language in conjunction with imagery may yield even better results as the information would be made much more accessible via native language expression.
8. Assess student perception on the use of visual aids. One's perception of an instructional method is essential as it may determine the efficacy of the pedagogical model (Könings, Brand-Gruwel, & van Merriënboer, 2011; Könings, Seidel, Brand-Gruwel, & Merriënboer, 2014). Qualitative data on the student perception of the use of visual aids would provide valuable insight into how receptive and interested students are in the instructional material. Understanding student perception of the use of visual aids may also help researchers and educational staff comprehend what kinds of visual aids are most effective, and in what ways can visual aids be used to yield the greatest results.
9. Expand study to other content areas. The focus of this study is the use of visual aids in the social studies content area classroom. There is some literature that supports the use of visual aids in other content area classes such as mathematics and science (Endo, 2017; Haynes, 2005; Idris et al., 2018; Mayer, 2019; Olatoye, 2017; Steiner et al., 2014; Walqui, 2000a; Walqui, 2000b; Wright et al., 2014; Wright et al., 2015). The study by

Olatoye, for example, evaluated the efficacy of the use of imagery in a science classroom (2017). Evaluating the use of imagery in other courses may provide insight in understanding how students learn best.

10. Longitudinal study on long term image-based content area knowledge retention. Several studies support the notion that imagery is retained in the memory for longer periods of time. A study on the use of visual aids in content area knowledge acquisition of students over longer periods of time could help solidify best practice instructional methods that support long term knowledge retention. A study with 5 or 6 data collection points measuring changes in outcomes over time would best support the literature. Particularly of interest would be the long-term effect on the achievement gap. A longitudinal study would best evaluate how visual aids could affect the achievement gap as well as its influence on the COVID effect of diminished achievement due to the extenuating circumstances surrounding the COVID pandemic.

Summary

It is essential to understand the findings of this research as it can lead to an increase in Latinx English language learners' student achievement in content area classrooms. This study verified that general education students were also positively impacted by the use of visual aids. As a result, the proliferation of visual aids and imagery in the social studies content area classroom should be recognized and adopted as standard practice. It is important that school districts invest in their growing Latinx ELL populations by using as many advantageous strategies as possible, including, but not limited to, the use of visual imagery in the education of

content area classrooms. As the Latinx population grows and districts feel the strain on their Latinx ELL population achievement scores, school districts would benefit from this research and the recommendations delineated in addressing the academic challenges of the Latinx English language learning population, placing English language learners in the best position to succeed. Furthermore, English language learners are not the only ones that can benefit from implementing the simple measure of increasing the use of visual aids in content area instruction. High-quality social studies content area courses should be expanded to provide the best practices that support top tier results for all students.

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