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Visual Input in the Spanish Classroom: Incorporating Comprehensible Visual Input to Teach Spanish Grammar and Vocabulary in High School

Claudia Lago Raffaele
University of Portland

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Visual Input in the Spanish Classroom: Incorporating Comprehensible Visual Input to
Teach Spanish Grammar and Vocabulary in High School

by

Claudia Lago Raffaele

A dissertation submitted in partial fulfillment
of the requirements for the degree of

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in
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2019

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Claudia Lago Raffaele

This dissertation is completed as a partial requirement for the Doctor of Education (EdD) degree at the University of Portland in Portland, Oregon.

Approved

REDACTED

April 16/2019

REDACTED

Date

REDACTED
Committee Member
REDACTED

April 16, 2019

Date

REDACTED
REDACTED
REDACTED
REDACTED
REDACTED
REDACTED

April 16, 2019

Date

If applicable:

Additional Committee Member

Date

Additional Committee Member

Date

Approved:

REDACTED

REDACTED
Graduate Program Director

4-16-19
Date

REDACTED

Dean of the Unit

4/16/19
Date

REDACTED

Dean of the Graduate School

April 16, 2019
Date

Abstract

The purpose of this quantitative study was to examine the effects of comprehensible visual input in the form of drawing on students' self-efficacy toward learning Spanish as a second language in a classroom setting. The study also compared student test scores in classes receiving comprehensible visual input instruction with test scores of students in classes utilizing traditional second language instruction techniques. Participants for this research included 198 students in Grade 9 and Grade 10 enrolled in second year Spanish in a Catholic college preparatory high school. A 46 items Spanish Self-Efficacy Survey (SSES) was administered which included four scales: Progress, Observation Comparison, Social Feedback, and Physiological States. Participants also completed a machine scored 46 question commercially prepared standardized test. The majority of students (69%) were in Grade 10, and 56% across both grades were male. Three female Spanish classroom teachers were involved in the study. Two of the teachers are native Spanish speakers from Spain and Argentina. The third teachers studied Spanish in Spain where she acquired native like capability. There are between 45 and 60 years old and they all have over 10 years of experience teaching various levels of the language. Two teachers taught the control group, while the teacher-researcher taught the treatment group; each group consisted of 99 students.

Literature on bilingualism revealed the benefits of speaking more than one language. However, in the United States, second language instruction is not federally mandated making learning a foreign language a low priority for students. Difficulty finding qualified and engaging foreign language teachers is a challenge for American

schools, consequently, students who wish to learn a second language may not have the opportunity to do so in some jurisdictions.

Participant's responses on Likert scale items on the SSES and standardized test were also analyzed using of ANCOVAs to account for the effect of the covariant, pretest scores. The analysis showed gains on some items within the four scales of the SSES, and also showed gains in achievement on the standardized test. However, the gains were not statistically significant ($p < .05$) for each of the four SSES scales and for the achievement test. These results may be due to limitations related to the specific context of the study and teacher effect; as other studies have found a significant difference in students' performance when incorporating visual aids during instruction.

This study adds to the literature on bilingualism and second language learning, and highlights the need for further research. This study stresses the importance of providing students with opportunities that will position them well to compete in a globalized world, especially second language learning.

Keywords: Spanish, Bilingualism, Second language learning, Self-efficacy, comprehensible input, sophomore, freshman, high school

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Dedication

To my children, I hope to make you as proud of me as I am of all of you. You are my source of inspiration. To London, I hope you grow knowing that everything is possible and that all dreams are within reach. This work is also dedicated to my students who over the years helped me grow as a person and as an educator. I am forever grateful.

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Chapter 1: Introduction

Globally, there are more bilingual than monolingual speakers (Grosjean, 2010); yet there is a dearth of bilingualism in the United States compared to other parts of the world. Only one in four Americans can hold a conversation in a language other than English (McComb, 2001). Conversely, 54% of Europeans can communicate in at least one language other than their mother tongue, 25% can hold a conversation in at least two additional languages, and 10% can utilize three additional languages (Eurobarometer386, 2012).

The reason for bilingualism being so pervasive worldwide includes several factors including migration, family, employment, and education (Grosjean, 2010). When two or more languages are spoken simultaneously in the home, becoming bilingual is not optional and nearly effortless; for others, second language acquisition is an intentional pursuit, often with the help of an instructor in a classroom setting (Ostler, 2005).

Europeans understand the importance and value the benefits of learning a second language, as many European countries require language study in schools, and learning a second language in a classroom setting is compulsory in more than 20 European countries (Devlin, 2015; Pufahl, Rhodes, & Christian, 2000). Further, the majority of students in European countries have the opportunity to begin learning a second language in school from as young as six years old. On the contrary, in the United States, the majority of students do not start to learn a second language before reaching high school, and there is no nationwide foreign-language mandate at any

level of education (Devlin, 2015). According to the National K-12 Foreign Language Enrollment Survey Report (2015), approximately 20% of the total United States school-age population were enrolled in a foreign language course during the 2014-2015 academic year. As of 2015, only 11 states had a formal foreign language requirement for high school graduation, 19 states had graduation requirements with fulfillment options across a variety of subjects including foreign language, and 20 states lacked any foreign language requirements at all (*National K-16 Foreign Language Enrollment Survey Report*, 2017). In their study's concluding remarks, Pufahl et al. (2000) observe that "Americans have a lot to learn from the way other countries offer language education in their schools" (p. 22). The low number of bilinguals in the United States is unfortunate given the numerous economic, academic, cognitive, and neurological benefits that bilingualism provides.

Economic Benefits of Bilingualism

Saiz and Zoido (2005) analyzed 9,000 responses to interviews conducted between 1993 and 1997. Respondents were college graduates who received their bachelor's degrees during the 1992 and 1993 who answer where they have conversational knowledge of languages other than English. The researchers concluded that "The earnings of college graduates who speak a foreign language are higher than the earnings of those who don't" (Saiz & Zoido, 2005, p. 535)

Stein-Smith (2016) in her book describes many careers, including government officials, medical interpreters, and roles within the performing arts, that either require or pay a premium for relevant second language proficiency. More particularly, Waldman (1994) conducted a telephone survey of 1,544 companies that employed

bilingual administrative support personnel in Michigan, Wisconsin, Pennsylvania, Ohio, California, Illinois, New Jersey, and Texas and found that many companies reported paying bilingual administrative support personnel higher salaries compared to their monolingual counterparts. His study revealed that many of the bilingual workers received their language training in school (Waldman, 1994).

Furthermore, Saiz and Zoido (2005) who studied U.S. college graduates determined that speaking a foreign language is rewarded in the labor market, and the earnings of bilinguals are higher than the earning of monolinguals. Moreover, in the United States demands for bilingual workers have increased within the last five years (Feinblatt, 2017). In Colorado, job postings for bilinguals have almost doubled from 2,892 to 5,092 from 2010 to 2014 (*Language diversity and the work force*, 2016). In Massachusetts, the demand for bilinguals has increased from 5,612 in 2010 to 14,561 in 2015. In the state of Oregon, the cities of Forest Grove, Cornelius, Milwaukie, and Hillsboro have in place an incentive pay increase for their bilingual employees (City of Hillsboro, 2015). More generally, in the United States, bilingual men between the ages of 18 to 64 earn a higher income than those who only speak English, and they are more likely to have received a higher degree of education (Fry & Lowell, 2003).

Academic Benefits of Bilingualism

Learning a second language provides high school students increased access to colleges and universities (Racoma, 2016). Although the United States has no national requirements for high school graduation, many American colleges and universities have second language requirements and recommendations for first-year students. Many institutions require two to three consecutive years of the same foreign language

program (Grove, 2018). Table 1 shows the entry requirements of several American undergraduate programs. While not always required, it appears that being bilingual or at minimum having coursework in a second language gives students an advantage in the application for post-secondary study and the range of programs for which they are qualified to apply.

Table 1

Colleges' and Universities' Foreign Language Requirements for admission

Institution	Foreign Language Requirement
Carleton College	2 or more years
Georgia Tech	2 years
Harvard University	4 years recommended
MIT	2 years
Stanford University	3 or more years
UCLA	2 years required; 3 recommended
University of Illinois	2 years
University of Michigan	2 years required; 4 recommended
University of Portland	2-4 years recommended
Williams College	4 years recommended

In addition to increased opportunities for undergraduate admission Armstrong and Rogers (1997) found that another academic benefit of bilingualism is that learning a second language at an early age increases students' creativity, cognitive abilities and

has been associated with increased standardized test scores in math (Armstrong & Rogers, 1997). Additionally, the length of time engaged in foreign language study seems to be closely linked to superior SAT- verbal scores (Cooper, 1987).

Cognitive and Neurobiological Benefits of Bilingualism

Learning a second language results in many cognitive and neurobiological benefits. Grosjean (2010) states that only humans have the capability to use language to express ideas and feelings, to communicate with other people, and to preserve culture. Further, bilingualism is a worldwide phenomenon with more than half of the world population speaking multiple languages (Grosjean, 2010). As a result of this ability, in recent years, researchers have shown an interest in studying and comparing the brains of bilingual and monolingual people. Several studies support the notion that the bilingual brain is functionally and physically different from the monolingual brain (Barac & Bialystok, 2012; Bialystok, Craik, & Luk, 2012; Li, Legault, & Litcofsky, 2014; Mechelli et al., 2004; Mechelli, Price, Friston, & Ashburner, 2005; Schlegel, Rudelson, & Tse, 2012).

Increase in white matter in the brain's physical and neural structure is not the only change observed as a response to learning a second language. The outer layer of the cerebrum, composed of gray matter is associated with cognition, emotion, and consciousness, and is also sensitive to training, learning, and memory (Zatorre, Fields, & Johansen-Berg, 2012). Mechelli et al. (2004) studied the effects of second language learning on gray matter. The researchers recruited 25 monolinguals and 25 early bilinguals who had learned the second language before the age of five and 33 late bilinguals who had learned the second language between ages 10 and 15. Special

measurements, specifically voxel-based morphometry, showed an increased density of gray matter in the left inferior parietal cortex areas of the brain in bilinguals compared to monolinguals. The effects of increased gray matter have a positive correlation to second language proficiency and a negative correlation to the age of second language acquisition. In other words, gray matter increases in relation to the level of language skills and decreases in the matter of age. The older a person is at the time of acquisition of the second language, the less change in density of gray matter was observed (Mechelli et al., 2004). Therefore early second language acquisition provides the most cognitive and neurobiological benefits.

The ability to control competing information gives bilinguals an advantage in task switching over monolinguals (Schweizer, Ware, Fischer, Craik, & Bialystok, 2012). Marian and Spivey (2003) explain that language is active at all times. For bilinguals, the two languages are not only active but also in competition with one another. Thus, the bilingual brain has to rely on executive functions of attention and inhibition to maintain a balance between the languages. This ability to manage two or more languages gives bilinguals cognitive reserve. Additionally, Craik, Bialystok, and Freedman (2010) stated that bilingualism is a cognitively demanding condition, and reported data from 102 bilingual and 109 monolingual patients who participated in a study that led researchers to conclude that bilingualism delays the normal cognitive decline associated with age and that bilingualism delays the onset of symptoms of dementia. The increase in cognitive reserve and ability to perform task-switching give individuals learning a second language an advantage in mental health as well as yielding lifelong benefits.

Challenges in Second Language Learning in America

The ability to speak more than one language is important in the globalized world our youth presently encounter. People who can maintain a conversation in a foreign language are needed in social services agencies, courts, hospitals, diplomatic services, and more (Stein-Smith, 2016). Foreign language education plays an important role in preparing American students to meet global challenges such as environmental studies, and public health (Reimers, 2016) and to pursue international education and/or employment because in the 21st century Americans will be competing with candidates who are multilingual (Lewis, 2015).

Despite the personal and professional benefits and opportunities second language acquisition brings, the American Council on the Teaching of Foreign Languages (ACTFL) found that even though there has been an increase in the number of students attending K-12 public school from 2004-2005 and 2007-2008, only 18.5% of all students were enrolled in foreign language courses. Americans mistakenly think they do not need to learn other languages since English has become the global language or *Lingua Franca* for business and trade. As a result, administrators have made foreign language a low priority in our schools (Sigsbee, 2002). Additionally, some discouraging are expressed on social media proclaiming that learning a second language is a waste of time (Carbonell, 2016). Finally, unrealistic expectations by parents and students that one can become fluent in a second language with the limited number of instructional hours a high school second language classroom offers contribute to low levels of bilingualism (Snow, 2017).

A further challenge to bilingualism for American schools is the difficulty in finding qualified and engaging teachers who bring to the classroom new teaching techniques to change the way languages are taught (Friedman, 2015). Eaton (2010) states, “the focus is no longer on grammar, memorization and learning from rote, but rather using language and cultural knowledge as a means to connect to others around the globe (p. 5)” The traditional rote memorization of vocabulary and grammar rules does not provide students with opportunities for real use of the language (Baeale, 2010). Learning a second language takes time, dedication, and hard work (Friedman, 2015). Additionally, consistent effort in and outside the classroom on the part of the student is necessary to achieve true fluency (Eaton, 2011) as well as self-efficacy. Self-efficacy or the internal belief in one’s ability to master a demanding task is an essential motivator for reaching one’s goals (Bandura, 1995). Educational institutions can mitigate problems of students’ motivation and engagement by funding empirical research into new second language instructional methods (Friedman, 2015).

Authors within the existing literature around the challenges of foreign language instruction in the United States are consistent in advocating the importance of preparing American students to become global leaders (Elamthuruthil, 2013; Stein-Smith, 2016). The challenge in achieving the goal of becoming global leaders is to change fundamentally the way students learn about other cultures and languages in the classroom. Language learning is a communicative endeavor and cannot be achieved through traditional teaching methods of rote memorization, multiple choice or fill-in-the-blank exercises. The goal of learning a second language is communication (Pappamihiel & Walser, 2009) and according to Krashen (1992), the acquisition of a

second language, improving the ability to communicate, is improved through comprehensible input.

Comprehensible Input for Second Language Acquisition

The best way for a learner to acquire a second language in or outside the classroom is through comprehensible input (Krashen, 1992). When the classroom is the only place students receive language instruction, the teacher is responsible for offering input that promotes student interest in learning the target language. The comprehensible input theory discourages educators from approaching the teaching of the second language in the traditional way: using rote memorization of vocabulary and emphasizing grammar rules. Instead, the theory directs teachers to focus on comprehension and communication, providing extra support through pictures and real objects to maximize comprehension (Krashen, 1997). The theory further advocates that teachers should use different models of comprehensible input, including the use of technology such as, PowerPoint or movies, to introduce new vocabulary (Patrick, 2015). In one study, comprehensible input in the form of meaningful gestures that represented new foreign language vocabulary was compared with the use of meaningless gestures for the same vocabulary. The results of the study involving thirty-three participants led researchers to conclude that exposure to iconic or meaningful gestures has a positive influence on memorization of new foreign language words while meaningless gestures, not representative of the words, did not render the same benefits (Macedonia, Müller, & Friederici, 2011).

Visual Comprehensible Input in the Form of Real Time Drawing

Vision is the dominant sense through which children learn about the world, and the majority of students in the United States receive information through their visual system (Arwood, 2011; Gangwer, 2009). There are many compelling reasons for the use of images in language classes. Pictures motivate and capture students' attention (Wright & Sherman, 1999). Further, the incorporation of visual aids such as pictures or videos sparks students' interest in reading a literary text in the target language which would be incomprehensible and disengaging without the help of visual information (Yunus, Salehi, & John, 2013). The literature regarding the incorporation of visuals in the language classroom is vast. However, little information exists on the effects of comprehensible visual input (CVI) in the form of real-time drawings on students' self-efficacy and achievement in a language learning classroom.

The Importance of Self-Efficacy when Learning a Language

Attitude, anxiety, motivation, and determination are key factors in second language learning (Aichhorn & Puck, 2017; Clément, Dörnyei, & Noels, 1994; Noels, Pelletier, Clément, & Vallerand, 2000). These key factors are related to a student's perceived self-efficacy for the task at hand (Bandura, 1977).

Self-efficacy is an essential element of cognitive theory and refers to "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura 1977 p. 3). First proposed by Albert Bandura, this theory influences both the field of psychology and education. Brozo and Flynt (2008) explain that academic self-efficacy is the attitude students have toward a specific task and their beliefs toward the achievement of academic success. Raoofi, Tan, and Chan

(2012) found that self-efficacy is a strong predictor of performance in second language acquisition, and call for further investigation relating classroom interactions between teachers, students, and peers, and the effects on self-efficacy. The use of comprehensible visual input by teachers in language instruction is one such interaction that requires closer examination.

Purpose of the Study

The purpose of this study is to examine the effects of comprehensible visual input in the form of real time drawings on students' self-efficacy toward learning Spanish as a second language. The study will also compare student test scores in classes receiving comprehensible visual input instruction with test scores of students in classes utilizing traditional second language instruction techniques to see what effects on student achievement may exist, if any, and how those effects may relate to students' perceived self-efficacy. The study will include students in the 9th and 10th grade, enrolled in their second year of Spanish.

Research Questions

1. How does comprehensible visual input, in the form of real time drawings during class instruction affect Grade 9 and Grade 10 students' self-efficacy toward learning Spanish as a second language?
2. Are there differences in test performance between 9th and 10th-grade students receiving comprehensible visual input in learning Spanish as a second language versus students receiving traditional second language instruction?

Theoretical Framework

In addition to Krashen's theory of Comprehensible Visual Input and Bandura's Social Cognitive Theory, a third major theory to inform this study is the Neuro-Semantic Language Learning Theory (NsLLT) (Arwood, 2011). The NsLLT theory is based on neuroscience and describes learning as a neurobiological process. If a meaningful input from the environment is perceived by the senses, the learner needs an adult to name the input in order to form patterns that will later become concepts. The overlapping of patterns facilitates the acquisition of concepts. Each learner has a particular learning system, either visual or auditory. There is a difference between learning systems and learning styles, and despite their popularity in the education realm, there is no empirical evidence for the existence of learning styles (Macedonia, 2015). In the United States, about 60 to 90% of people create meaning through their visual learning system. In other words, they need to see the ideas in order to form mental concepts (Arwood, 1991; Arwood & Brown, 1999; Arwood & Kaakinen, 2009; Arwood, Kaulitz, & Brown, 2009).

Significance of the Study

As an adult second language learner who arrived in the United States without the ability to speak, read, or write in the English language, the topic of second language acquisition is personal and of great importance. Additionally, as a Spanish instructor to English native speakers, one feels the obligation to contribute to the professional understanding around language learning. This study may inform best practices in providing second language learners with an educational experience that increases their self-efficacy as language learners through the comprehensible visual

input instructional strategy. The comprehensible visual input strategy may help students become confident in their ability to acquire a second language.

The instructional methods used as the intervention in this study incorporate the tenets of brain-based learning theory to help teachers develop an engaging and meaningful curriculum that maximizes student participation and interest in the language beyond the confines of the classroom.

The findings of this study can inform language teachers about the effects of comprehensible CVI on student self-efficacy as a language learner. It may peak to the value of this strategy for student engagement and gains in achievement beyond those attained using traditional instructional methods. Students with special learning needs, such as ADHD (attention deficit hyperactivity disorder), learning/language difficulties, and autism may also benefit from comprehensible input in the form of real-time drawings since the majority of these students utilize their visual learning systems for learning (Arwood & Brown, 1999).

The findings of this study may inform colleges and universities in improving their teacher training programs to address the challenges educators face in preparing students to become global citizens. It is crucial for teacher training institutions to prepare and equip future educators with strategies that maximize student learning (Carew & Magsamen, 2010). Furthermore, this study intends to inform parents, educators, and the public in general of the benefits of bilingualism and the importance of students' beliefs in their ability to learn a second language in a classroom. If students are provided with opportunities to learn a second language in a meaningful

manner, they will become members of society who are better prepared to excel in a competitive global marketplace.

Summary

Although the economic, academic, cognitive, and neurobiological benefits of bilingualism are well known the United States does not have a requirement for second language learning and less than 20% of K-12 students are enrolled in foreign language courses. The ability to communicate in a language other than English is an important advantage in a globalized world. The unrealistic expectation of how long it takes to become fluent in a second language, difficulty in finding qualified and engaging teachers, and the traditional rote memorization of vocabulary and grammar structure are, according to recent research the major challenges in second language teaching and learning in America (Sigbee, 2002)

This study seeks to investigate student acquisition of a second language and to explore the effects of comprehensible visual input in the form of drawings on students' self-efficacy and academic performance related to language acquisition. Chapter 2 will include a review of the literature on the topic of language acquisition, language education, comprehensible input, and self-efficacy. Chapter 3 will present the methodology for this quantitative study; Chapter 4 will present the results of the study and finally Chapter 5 will provide a discussion of the findings related to the research questions, and will offer suggestions for further research and disclose the limitations of the study.

Chapter 2: Literature Review

We live in a time of permanent change where technology has made the world smaller with information at our fingertips, and globalization has brought new communication challenges (Elamthuruthil, 2013). To prepare our youth to meet the challenges of a more interconnected world, it is of crucial importance to provide them with opportunities to learn other languages (Stein-Smith, 2016).

Learning a second language is a complex process and has been the subject of study since ancient times. Philosophers, linguists, and pedagogues have tried to understand how humans acquire language (Bialystok & Hakuta, 1994; Martín Sánchez, 2009). This literature review aims to present various aspects of language acquisition by exploring current findings in the disciplines of neuroscience, linguistics, and psychology. Furthermore, the literature review addresses the overarching concept of language acquisition itself and the impact of perceived self-efficacy as a learner and as a language learner. While researchers in these disciplines have independently addressed language acquisition, interdisciplinary collaboration is limited. The benefit to language learners is greater when psychologists, cognitive scientists, neuroscientists, and educators work together (Carew & Magsamen, 2010). The literature that informs this study allows for the integration of information provided by several disciplines to better understand how students acquire a second language. A clearer picture of best practices emerges in second language teaching and learning

when interdisciplinary collaboration and students' perceived efficacy for language learning are considered together.

Neuroscience

What we know about the brain, its parts, and its function is based on studies conducted on patients who suffer from trauma or lesions that altered their behavior, cognition, or personality. Pierre Paul Broca and Carl Wernicke identified, in the 1800s, structures of the brain involved with speech and language (Baars & Gage, 2010). Speech production is localized in a portion of the frontal region of the left hemisphere known as Broca's area. Wernicke's area is located in the upper left part of the temporal lobe and is linked to language comprehension. These two areas are connected by a bundle of nerve fibers called arcuate fasciculus (Baars & Gage, 2010) see Figure 1.

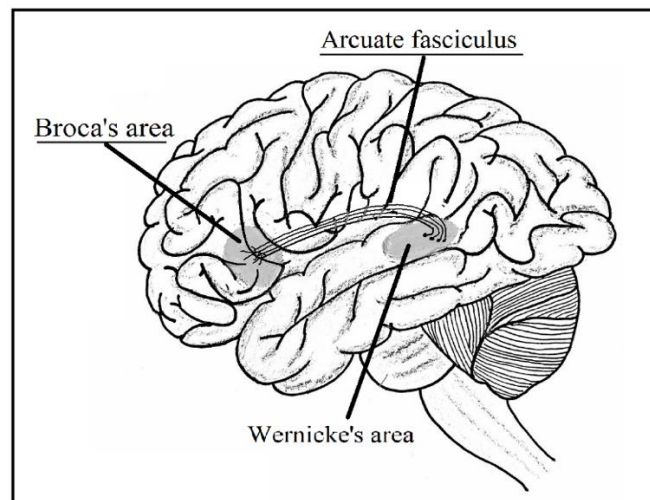


Figure 1. Language areas of the brain.

New non-invasive technologies, such as positron emission tomography (PET), functional magnetic resonance imaging (fMRI), and Magnetoencephalography (MEG) have added new information about brain structure and function (Fadiga, Craighero, &

D'Ausilio, 2009). Broca's and Wernicke's areas are not the only structures of the brain involved in language. The thalamus, located above the brain stem, whose function is to send motor and sensory information to the cerebral cortex, is especially important. The hippocampus and the amygdala are also important brain structures associated with various aspects of language. The hippocampus is known to be involved in memory (Baars & Gage, 2010) and language learning (Meinzer et al., 2010). The amygdala controls the emotional response to language (Kennedy, 2006). Although the left hemisphere of the brain is associated with language processing, production, and comprehension, both hemispheres are involved with most processes (Van der Haegen, Cai, & Brysbaert, 2012).

The human brain reorganizes itself, a process called brain plasticity, in response to cognitive demands (Li et al., 2014). Schlegel et al. (2012) conducted a study of 27 college students, both men, and women, to investigate the effects of long-term second language learning on the structural organization of the adult brain. Of the 27 college students, 11 participants enrolled for three school terms in Chinese language classes. The 11 students who participated in language classes showed an increase in white matter in the left superior temporal gyrus, right inferior frontal gyrus, caudate nucleus, and fusiform gyrus of the brain. White matter, or myelin, is a fatty substance that covers and protects the neurons' axons, serving as insulation, maximizing the speed of *action potential* propagation. More specifically, action potential defines the way neurons communicate with each other and transmit electrical signals from the body of the cell through the axon to the terminal branches, causing the release of neurotransmitters (Baars & Gage, 2010). The left superior temporal

gyrus is involved in sound processing and speech comprehension (Buchsbaum, Hickok, & Humphries, 2001). The right inferior frontal gyrus is associated with inhibition and attention (Hampshire, Chamberlain, Monti, Duncan, & Owen, 2010). The caudate nucleus is associated with the development of speech and language (Watkins et al., 2002), and finally, the fusiform gyrus is an area involved in visual and prelexical representation (Dehaene, Le Clec'H, Poline, Le Bihan, & Cohen, 2002).

While the brain structures are needed for speech production and comprehension, which are all aspects of language acquisition, Kuhl (2010) asserts that a variety of inputs are also important. Kuhl notes that babies learn the language through their interactions with a caregiver. Furthermore, she explains that language cannot be learned by exposure to only audio or television. Language is a social construct that drives human cognitive development, and it is social because others in our environment have to mediate our experiences and assign them cultural perspectives (Bakhurst & Shanker, 2001). Children are born in a social environment that fosters language (Pearson, 2008). Bruner (1983) adds that language is a vehicle of culture transmission. Dor (2015) states, “Language resided between speakers, not simply in them, at a level of complexity that transcends the individual mind-brain and cannot be reduced to it.” (p. 108).

Linguistics and psychology

Experts and researchers in the fields of linguistics and psychology have tried to shed light on the topic of language acquisition. Two major figures, psychologist B. F. Skinner and N. Chomsky, offered in the 1950s and 1960s their theories on language acquisition and development.

Acquisition of the first language. B. F. Skinner explains that children are a tabula rasa or a blank slate and acquire language through reinforcement, or operant conditioning. In other words, if a child pronounces a word correctly or uses a grammatically correct sentence, they get a positive reaction from the caregiver. Unlike the classical condition, Skinner's operant condition is presented after the behavior (Skinner, 1957).

Linguist Noam Chomsky criticized Skinner's Language learning theory. Chomsky proposed the Universal Grammar, the notion of an innate biological capacity to acquire language. In other words, Chomsky believes that humans are born with a brain that is biologically pre-wired to learn and use language. Chomsky (2006) explains the existence of a mechanism that allows humans to acquire language or what he calls the Language Acquisition Device (LAD).

Having some knowledge of the characteristics of the acquired grammars and the limitations on the available data, we can formulate quite reasonable and fairly strong empirical hypotheses regarding the internal structure of the language-acquisition device that constructs the postulated grammars from the given data. (p. 100)

Today, both Skinner's verbal behavior theory and Chomsky's nativism theory as they relate to language acquisition are considered outdated and have been replaced by neural theory, which is supported by a new understanding of brain structures and functions (Andresen, 1990). According to Kuhl (2000) "Infants are neither the tabula rasa that Skinner described nor the innate grammarians that Chomsky envisioned" (p. 11,856) but rather are capable of learning the language in a unique manner. Six tenets

are considered by new studies on language development: with exposure to language infants begin to detect patterns; infants begin to detect which sounds go together, sound imitation allows for the association of speech perception and production; adults unconsciously alter the way they talk to infants to accommodate for the infants' learning strategies; the critical period for language is measured by time as well as by neural commitment (Kuhl, 2000). Neural commitment is, according to Kuhl (2004) the ability of infants to take statistical data from the sounds they hear combined with social interactions or experiences.

The research surveyed indicates that, in general, linguists, neuroscientists, and psychologists agree on the concept of the critical language learning period. The critical period for sound development starts at birth and closes when the child turns one year old (Gopnik, Meltzoff, & Kuhl, 1999). During this period, babies can discriminate sounds from any language, and collect data on sound structures and patterns pertinent to the language they hear (Kuhl, 2000; Pearson, 2008). This critical sound period may explain later limitations on second language acquisition (Hohenstein, Eisenberg, & Naigles, 2006). Learning a second language anew after the onset of puberty requires intentionality, effort, and practice (Bialystok & Hakuta, 1994; Kuhl, 2010; Van Lommel, Laenen, & d'Ydewalle, 2006).

Acquisition of Second Language. Scholars in the fields of neuroscience, psychology, and linguistics agree that there are critical periods for both second language learning and first language learning (J. Johnson & Newport, 1989). The first period is placed between the ages of three and five; young children learn languages naturally and spontaneously; thus, formal instruction in the second language is not

necessary (Ferjan Ramirez, 2017). Another critical period of second language learning is before the onset of puberty. During puberty, the brain goes through a process of pruning or discarding the sounds and grammar that are no longer needed for the language or languages the child hears. As a consequence, it is almost impossible for second language learners to achieve native-like competency (Derakhshan & Karimi, 2015; Kuhl, 2010).

Second language learning processes vary, and conflicting results have emerged from various studies regarding the optimal age of exposure to the second language. Despite the discrepancies and personal differences, native-like competency is difficult to achieve when acquisition begins after puberty (Aragonés González, 2006). Asher and García (1969) tested the biological predisposition hypothesis, a theory which denotes the existence of critical periods in second language acquisition. The researchers compared two groups. The experimental groups feature 71 Cuban immigrant children ages seven to 19. Of those 71 participants, 26 were boys, and 45 were girls who had lived in the United States for five years. The control group was composed of 30 American-born children of the same age as the experimental group. All participants, American and Cuban, had learned English in California. The study led the researchers to conclude that regardless of the age of the child upon arrival in the United States and regardless of how long the child has lived in the country, none of the 71 Cuban children achieved native English pronunciation. However, younger children achieved near-native pronunciation. For older children, between the ages of 13 and 19, that was not the case. Additionally, when learning a second language, the brain develops two differentiated linguistic systems that are intimately interconnected.

For young children, these interconnected linguistic systems develop effortlessly (Berens, Kovelman, & Petitto, 2013), and children show a higher degree of second language attainment than adults (Vanhove, 2013).

Studies on second language phonological development are consistent. After puberty, pronunciation is subject to the limitations of that critical period (Kuhl, 2000). Additionally, learners who start to learn a second language later than the age of 12, approximately, will never be able to sound like a native speaker (Scovel, 1988). Hohenstein et al. (2006) studied the bidirectional transfer of vocabulary and grammatical structures in bilinguals in relationship to the age of acquisition. The study included 37 bilingual speakers of English and Spanish (18 of whom had learned English before the age of five and 19 participants who had learned English after the age of 12). The result showed significant bidirectional transfer in vocabulary and grammatical structure domains in both groups.

Additionally, late bilinguals demonstrated higher levels of cross-language transfer in lexicon and grammar. Older bilinguals, who learned the second language after 12 years of age, produced fewer verbs, and the dominant language's vocabulary influenced the second language pronunciation (Ferjan Ramirez, 2017). In this way the first language that is learned naturally and effortlessly at home both helps and hinders the ability to learn a second language later in life (Hohenstein et al., 2006).

Education

According to the National K-12 Foreign Language Enrollment Survey, 20% of students in the United States are enrolled in a foreign language course. To increase enrollment in foreign language classes, American schools, need qualified teachers.

However, it is a difficult challenge in the United States to find competent second language educators who can bring to the classroom new ways to engage students and create a classroom environment where students can thrive (Friedman, 2015).

Based on studies of brain structure and function we know adults and adolescents can acquire a second language (Mangubhai, 2006). Krashen (1982) defines acquisition as the informal, subconscious way to pick up a second language through exposure. The traditional rote memorization of vocabulary and grammar rules are, according to Krashen, not conducive to language used for communication purposes. Learning about the language (nouns, verb conjugation, syntax) is not the acquisition of language, and it diminishes students' opportunity for real use of the language (Baeale, 2010).

The acquisition of the second language as well as the first language involves two people (Arwood, 2011). Acquiring a first language requires repetitive input from the adult in a familiar setting (Bruner, 1983). Acquiring a second language in a classroom setting can be achieved by changing the way in which information is presented to students; ideas presented graphically are easier to comprehend and remember than those presented as words (Kliegl, Smith, Heckhausen, & Baltes, 1987). More specifically, drawings activate overlapping networks of the brain suggesting significant cognitive differences between drawings and writing (Yuan & Brown, 2015). To acquire language, the learner has to understand the information the instructor presents. When students capture the meaning, then, the input becomes comprehensible.

Comprehensible input

According to the Comprehensible Input theory (Krashen, 1992), students advance in their learning of a second language when given input that is just one step above their current linguistic understanding. Krashen (1992) explains that the current stage of the learner is called '*i*.' Krashen calls this stage, $i + 1$. A parallel can be established between the way the first and second language is learned. For children to learn and develop concepts in the first language, the adult has to name the objects in question. During this process, children begin to comprehend the world around them (Ferjan Ramirez, 2017; Kuhl, 2000). For a student to acquire a second language, the teacher or instructor has to provide appropriate, plentiful, and comprehensible input which is the necessary first step in helping students become proficient in the target language (Patrick, 2015).

Furthermore, children receive input from the environment through their sensory organs, eyes, ears, skin, nose, and mouth, but only interactions with the adult mediate meaning and the development of concepts (Arwood, 2011). Children learn language from the caregiver whose intention is not to teach the language, but rather to be understood (Krashen, 1982). As the child develops understanding of the world around them, they also learn the structure of the language. In other words, language is learned with the purpose of communication (Arwood, 2011; Bruner, 1983; Dor, 2015; Krashen, 1982). In the same manner, teaching the structure of language should not be the focus of second language teaching. Instead, the focus should be fluid and dynamic communication that allows the learner to form mental representations. This type of language focus is called input (VanPatten, 2013). Children learn from those who

assign meaning to the things around them by providing comprehensible input $i + 1$.

Thus, the first step in acquiring the first as well as the second language is comprehension or understanding. Second language learners have to comprehend first, in order to produce language later. The period between language comprehension and production is called the silence period which varies in length from one learner to another.

While learning a second language students should not be forced to produce language, but rather they should be encouraged and supported in doing so (Krashen, 1982). Production in the second language in the form of conversation does not necessarily promote learning. However, when the learner engages in conversation, she or he welcomes new input. As the input increases, so does second language attainment. Interlocutors who pair conversation with demonstration can highly increase comprehension (Kim & McDonough, 2008; Krashen, 1982). In other words, conversation indirectly affects the acquisition, by increasing input. Figure 2 shows the cycle of comprehensible input, learning, and conversation output.

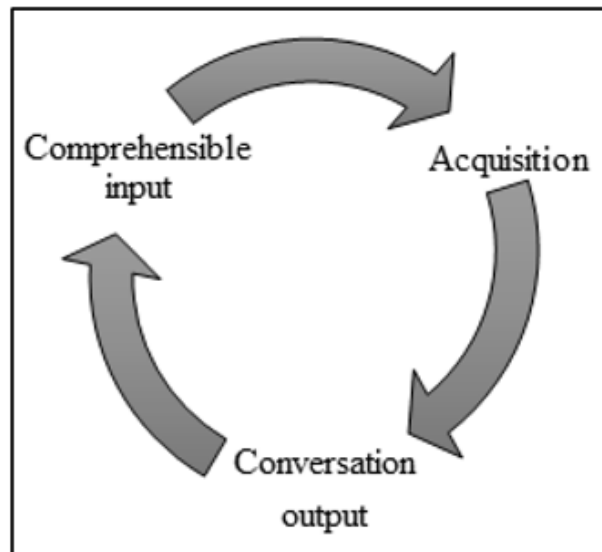


Figure 2. The cycle of language acquisition.

Krashen (1997) explains that second language teachers should provide non-linguistic ways to promote comprehension in the classroom. Non-linguistic support in the form of visuals such as pictures is significant, as visuals provide conceptual scaffolding for the association of images and words (Nation & Newton, 2008). Images have been associated with improving memory (Paivio, 1990; Yates, 2013) and motivation (McMahon, 1973). Educational philosophers and psychologists also place high importance on images. Dewey (2018), for example, writes, “Gestures, pictures, monuments, visual images, and finger movement, anything consciously employed as a sign is logically language” (p. 3).

In the current educational context especially, it is of utmost importance to recognize that children and young people are arguably the most visually stimulated generation. High school students have access to cable television, video games, and computer programs that help them learn as well as the internet where information is at

their fingertips. Recognizing that students today may need to be taught in a different way and addressing their needs is of crucial importance to guarantee students' learning success (Gangwer, 2009). Medina (2008) adds that students learn and remember through pictures, not through written or spoken words, and suggests converting wordy PowerPoint presentations into visual aids. For students in second language classes, learning new vocabulary is essential to attain proficiency, but learning new words in the traditional language-teaching manner of rote memorization of vocabulary lists does not provide students with the mental representation or comprehensible input they need (VanPatten, 2013).

In the quest to find the best comprehensible input, Macedonia et al. (2011), compared teaching new words utilizing iconic gestures to meaningless gestures in second language vocabulary. The participants were 33 native German speakers (17 females and 16 males). Students were randomly assigned to two groups (A and B). Both groups were trained with a video showing an actor performing two kinds of gestures, iconic or meaningful (gestures that represented the word) and meaningless (gestures that did not represent the word), while at the same time participants heard new words. fMRI images led the researchers to conclude that iconic gestures, compared to meaningless gestures, greatly help in the memorization of foreign language words. Most importantly, the study showed that gestures created motor images matching the representation of the concepts. Based on these findings, it is possible to conclude that images aid the brain in understanding. Krönke, Mueller, Friederici, and Obrig (2013) further investigated the effects of gestures on implicit retrieval of newly acquired words with 11 volunteers participating in a research study

in which the subjects were trained in a similar manner as the Macedonia et al. (2011) study. The main difference was that in Macedonia's study participants were presented with a video showing an actor performing meaningful (iconic) and meaningless gestures; and in Krönke's study the 14 participants were presented with computer-generated images. After three days of training, fMRI from participants of both groups were examined, and differences were observed. The images showed stronger hippocampal activation in subjects who received meaningful gestures treatment, since the hippocampus is associated with memory (Baars & Gage, 2010). Participants in the experiment groups experienced a higher degree of novel words recall, suggesting that when students' memory is enhanced and new words are introduced through iconic visual gestures the input is meaningful and for that reason is better understood (Krönke et al., 2013; Macedonia et al., 2011)

A conclusion that can be drawn from these studies is that iconic gestures help the acquisition and retrieval of new vocabulary only if the images are created to represent the concepts. Visuals should be used in the classroom to encourage learning, maximize retrieval, and to increase motivation (Shabiralyani, Hasan, Hamad, & Iqbal, 2015). However, not all input is comprehensible. Krashen (1992) explains that teachers should take into consideration the students' previous knowledge and discuss topics that are familiar to them. Eliminating incomprehensible input can be achieved by first establishing the meanings of new vocabulary, providing repetition of words in various contexts, and by using visual cues. Input should be interesting and relevant, focusing on communication and not on grammatical constructs (Gaab, 2014). In fact, the optimal input should be abundant, provided under the $i + 1$ premise, and not

grammatically sequenced. Arwood (2011) proposes Viconic Language Methods (VLMs) based on the Neuro-semantic Language Learning Theory (NLLT). The principle of the VLMs is to translate auditory language into a visual representation to allow the formation of concepts. The conversion from auditory information into visual input addresses the needs of the majority of students including those with special learning needs (Arwood & Kaulitz, 2007; Arwood et al., 2009; Bakhurst & Shanker, 2001). Krashen (1997) explains that every student brings previous life experiences to the class; for example, students bring their knowledge of their first language to second language classes. Building on these experiences creates relevance for the student and makes the input comprehensible.

Comprehensible input is not a teaching strategy, but rather, a message students understand. Moreover, the traditional method of teaching language: grammar, vocabulary lists, and practice, does not constitute comprehensible input. Comprehensible input is providing the information necessary for mental representations to form; students have to hear and see language as it is used to convey meaning (VanPatten, 2013). Simple, high contrast and two-dimensional drawings are techniques that make the input comprehensible, these types of drawings are more effective in the classroom than complex or lifelike illustrations (Arwood & Brown, 1999; Medina, 2008). Moreover, strategies proposed by Arwood and Brown (2002) such as shaping of words, cartoons, and picture dictionaries help students create mental pictures and re-tag, with words from the target language, concepts and ideas they previously have formed and are helpful communication aides.

In summary, visual images are powerful tools in the classroom, capturing students' attention (Medina, 2008) and allowing them to visualize events and objects. In the language classroom, comprehensible visual input is more effective than auditory input, since auditory information is difficult for students to remember (Kouyoumdjian, 2012). Text and oral presentations are significantly less efficient than pictures for retaining information. After 72 hours of receiving oral information, people remember only 10% of it; whereas if the information includes pictures the recall increases by up to 65% (Medina, 2008). It is not possible to learn a second language by listening to the radio or by watching television (Kuhl, 2011). Krashen (1997) states that television offers very limited comprehensible input to a beginner second language learner; however, intermediate level learners may benefit from watching television or listening to the radio in the target language. However, it is possible to learn a second language in a classroom where instructors provide adequate and sufficient comprehensible *i + 1*, input, communication is emphasized, and structures of the language are not the goal (Krashen, 1995). Additionally, Krashen suggests that a classroom be free of stress providing an environment conducive to learning where self-motivation naturally occurs (Krashen, 1995).

Student self-efficacy

In the introduction to this chapter, the perceived self-efficacy of students toward language learning is presented as an integral component to their ultimate success in acquiring the second language, provided instruction is based on best practices. Bandura (1977) defines self-efficacy as people's beliefs in their

capacity to exercise behaviors to produce a certain outcome. People tend to try something new if they believe they can be successful. In that way, self-efficacy is the source of both empowerment and motivation to achieve one's goals (Bandura & Locke, 2003). Self-efficacy plays a crucial role in the way a person approaches new tasks. People with a strong sense of self-efficacy approach difficult tasks as challenges to be mastered, not as threats that should be avoided (Bandura, 1989; Bouffard-Bouchard, 1990). Furthermore, people with strong self-efficacy believe that they have control over the situations they encounter (Artistico, Cervone, & Pezzuti, 2003). This belief allows them to recover quickly from setbacks and failures. For students, self-efficacy is the confidence they have in their personal ability to achieve learning success (Lent, Brown, & Larkin, 1986)

Self-efficacy is particularly important in education. Lent et al. (1986) explored the relation of self-efficacy to education performance with a study that included 105 (75 men and 30 women) undergraduate first-year students and second-year students considering science and engineering careers in the United States. In their findings, researchers concluded that self-efficacy expectations are associated with indices of academic performance behavior. In other words, self-efficacy influences academic motivation, perseverance, learning, and achievement (Lent et al., 1986).

In addition, Lent et al. (1986); Zimmerman, Bandura, and Martinez-Pons (1992) studied the effect of perceived self-efficacy on students' academic goal setting and learning attainment. Researchers conducted the study in a high school with 102 participants, 50 male and 52 female students in Grade 9 and Grade 10. The information obtained through a survey completed by both parents and students

suggested that perceived efficacy to achieve success motivates academic attainment and influences goal setting. Bandura, Barbaranelli, Caprara, and Pastorelli (2001) examined the socio-cognitive influences that determine students' career ambition and academic achievement. They had 272 participants, 142 males, and 130 females ranging in age from 11 to 15 years. The longitudinal study took place in Italy in a community representative of the larger society. Based on the analysis of the perceived self-efficacy for academic achieving questioner, the researchers concluded that self-efficacy is a reliable indicator of achievement and success for children, as well as adults.

Additionally, perceived social self-efficacy affects students' career choices and aspirations. If students believe that a subject is too complicated, they will be less inclined to dedicate time and effort to such classes. On the contrary, if students find a particular subject relevant, useful, and interesting, they will be prone to tackle the task with a higher degree of dedication.

After surveying 389 freshmen students at a public, all-girls high school in Seoul, Korea, Bong (2004) reports that students form motivational beliefs that are subject-matter specific, suggesting that students may be highly motivated in one area and not in others. Such findings suggest that students may be confident in math and not a foreign language. Linnenbrink and Pintrich (2003, p. 136) suggest that "Teachers can design and organize their instruction to have a positive impact on student self-efficacy and, in turn, on student engagement and learning in the classroom."

Figure 3 shows that self-efficacy, as is the case with language acquisition, is a continuous cycle. Students who gain confidence due to past success believe they can succeed again. That belief increases their dedication, which allows them to thrive and in turn increases interest and dedication.

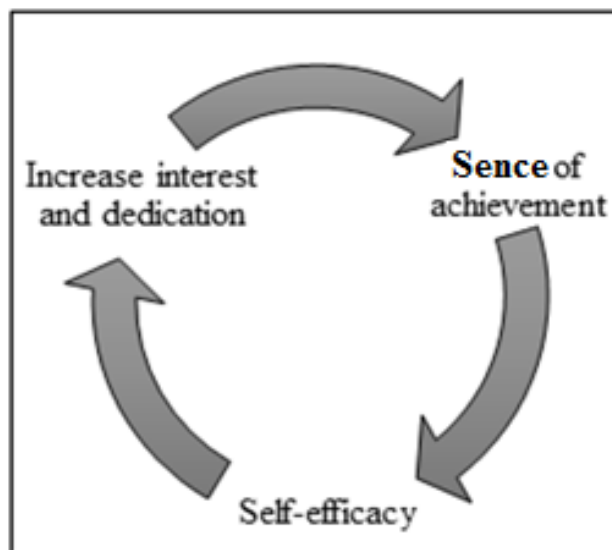


Figure 3. Cycle of self-efficacy

Self-efficacy and its influence on second language learning was the focus of Hsieh and Kang (2010). Their study of 192 students in Grade 9 learning English as a second language in two public schools in Korea supported the claim made by Bandura (1977) stating that self-efficacy and academic achievement are closely related. The result of the study also indicated that learners of English as a second language with high self-efficacy attributed academic outcomes to internal and personal factors, whereas students with lower self-efficacy attributed academic outcomes (usually low) to external factors. Because self-efficacy is strongly related to effort, motivation, and academic success, foreign language teachers should be especially aware of students' belief in their own self-efficacy, not just concentrate on academic performance (Hsieh

& Kang, 2010). Horwitz (1988) utilized the Beliefs About Language Learning Inventory (BALLI) to survey 150 first year university students enrolled in a first-semester foreign language course. This questionnaire was designed to assess students' difficulty in learning the target language, as well as their aptitude, communication strategies, motivation, and expectations. Students who were expected to achieve fluency in less than a year were more likely to abandon the program. Also significant, students who believed that the language was difficult were not as successful compared to those who believed that the language was easy to learn. This speaks to students' efficacy for language acquisition based upon pre-determined expectation of the content and learning process. Finally, students who had expected foreign language study to consist of translation, vocabulary memorization, and grammar showed negative outcomes (Horwitz, 1988). From these studies, it would appear that expectations influence levels of student efficacy for language learning.

In the year 2000, the National Capital Language Resource Center collected information from high school students enrolled in beginning language courses. The purpose of the study was to establish a possible relationship between language learning strategies and self-efficacy. Subjects responded to two questionnaires: one about language learning in reading, listening, speaking, and writing, and one about self-efficacy. Results showed a positive correlation between acquired strategies and self-efficacy. The organization that conducted the survey subsequently advised language teachers to engage students by teaching learning strategies such as predicting, reviewing, and scaffolding to increase student confidence. Finally, the report suggested that motivation should be addressed as soon as possible, as certain

students are enrolled in their language classes not out of a strong desire to study a second language, but rather to meet prerequisites to further their education at a college level.

At the high school level, the beliefs and perceptions of teachers, parents, and students about second language teaching and learning have an impact on student achievement. This is demonstrated in the work of Young and Oxford (1993) who conducted a survey about students' preferences regarding textbook adoption. Increased student involvement in the process of textbook selection resulted in a more positive perception of the students' second language experience. For this reason, it is important that teachers are involved with students as much as possible and that they advocate for increased student participation in many areas beyond textbook selection, including offering choices for topics of study or classroom activities (Young & Oxford, 1993). When students feel engaged, their positive perceptions, attitudes, and involvement have the potential to affect both language learning and student success (Young & Oxford, 1993).

Summary

This chapter summarized the literature on language acquisition. Neuroscience, linguistics, and psychology explain the complex process of language acquisition in a different way. All these disciplines agree on the existence of critical periods for first and second language learning, however there are differences on the ages of these critical periods. This chapter also summarized the similarities and differences in the acquisition of the first language and the acquisition of the second language. Research on comprehensible input as it pertains to foreign language acquisition in a classroom

setting as well as research on the role self-efficacy plays on education in general and in second language learning in particular, are presented. The research suggests that foreign language should be taught with the purpose of communication, avoiding concentrating on grammar and vocabulary lists. Several studies suggest to incorporate visual aids such as gestures, pictures, and drawings to improve memory and address the needs of students who require a mental representation of language structure and vocabulary. The current research also recognizes the important role self-efficacy has in education. Chapter 3 will be guided by the research presented in this chapter

Chapter Three: Methodology

This chapter discusses the methodology and the rationale used to determine the potential effect of comprehensible visual input, as instructional methodology, on students' achievement and self-efficacy toward learning Spanish as a second language in a high school classroom setting. A quantitative quasi-experimental approach using pretest and posttest data collection was used to determine participants' perceptions and achievement regarding the research questions.

This chapter includes a description of the research questions, rationale for methodology, description of the participants and their context, data collection methods, data analysis methods, ethical considerations, and the role of the researcher.

Research Questions and Hypotheses

The purpose of this study is to examine the effects of comprehensible visual input in the form of real time drawings on students' efficacy toward learning Spanish as a second language and the impact on achievement by comparing test scores of students receiving treatment with those receiving traditional instruction.

The research questions for the study are:

1. How does comprehensible visual input, in the form of real time drawings during class instruction, affect Grade 9 and Grade 10 students' self-efficacy toward learning Spanish as a second language?
2. Are there differences in test performance between students in Grade 9 and Grade 10 receiving comprehensible visual input in learning Spanish as a

second language compared to the test performance of students receiving traditional second language instruction?

The hypotheses of this study are:

H. 1 Students receiving comprehensible visual input, in the form of real time drawings, will show statistically significant increases in self-efficacy toward learning Spanish.

H. 2 Students receiving instruction using comprehensible visual input in the form of drawings in real time will achieve statistically significant higher scores in test performance in second language learning.

Rationale for Methodology

This study used a quasi-experimental pretest-posttest control group design (Gay, Mills, & Airasian, 2012). The study employed a quantitative approach to properly address the research questions and to determine cause and effect (Muijs, 2011). This type of quasi-experimental study not only looked to establish a cause and effect relationship but also looked to expand the understanding of the relationship between the intervention and the outcome (Creswell, 1994). All of the students enrolled in the eight Spanish II classes at the target school were invited to participate in the study; all participants were randomly assigned to one of those classes prior to the study being undertaken. Four of the eight classes received traditional instruction from two different teachers, while four classes served as a treatment group receiving comprehensible input in the form of drawings in real time provided by the teacher-researcher. All students received the same two pre-assessments, a course content pretest, and a self-efficacy survey prior to the beginning of the instruction. The course

content test was a standardized and machine scored test. The self-efficacy survey was adapted from the Reader Self-Perception Scale 2 (Henk, Marinak, & Melnick, 2012).

Both the control and the treatment groups received instruction on the same course content after which students were required to complete posttests using the same two assessments.

Participants and Settings

The study took place in one high school in the Pacific Northwest accredited by AdvancED, a non-profit organization that accredits primary and secondary schools throughout the United States, and approved by the Oregon Department of Education. It is a private Catholic college-preparatory high school, serving Grade 9 to Grade 12, with approximately 1,300 students of which 72% are Catholics, and 34% are students of color. As a private school, yearly tuition is approximately \$15,000, and the school offers tuition assistance. For the 2017-2018 school year, 26% of students received financial assistance. The school does not offer merit-based aid or scholarships. All financial aid is allocated based on need determined through a third party.

Of the 96 faculty members, 6 counselors, and 6 administrators, 94% of them hold an advanced degree. Students of the school during 2017 obtained higher scores in both ACT and SAT standardized tests compared with the state and the national averages. Students in the target school, in 2017, wrote 594 Advanced Placement exams in 15 different subject areas representing 50% of students in Grade 11 and Grade 12, and of those, almost 90% obtained a college credit-worthy score of 3 or higher (on a scale of 1 to 5). Additionally, students in each grade level are required to

do service work (Christian Service). In order to receive a high school diploma, every student must complete a minimum of 65 hours of service during Grades 11 and 12.

Three female Spanish language teachers taught the eight Spanish II classes offered during the 2018-2019 school year. All of them have more than 10 years of teaching Spanish experience. Two of the instructors taught four sections (classes), implementing traditional instructional methods. One of these teachers is a native Spanish speaker who has taught elementary, middle, and high school for 15 years. The other teacher, who acquired Spanish as a second language in Spain has native-like capability, has taught Spanish II at the school for 10 years, and taught three of the four control group classes. The third teacher is also the researcher, a native Spanish speaker and an English as a second language learner. The researcher instructed all four classes included in the treatment group.

Students participating in the study were high school students enrolled in the second level of Spanish (Spanish II) and consisted 198 female and male native English-speaking students between the ages of 14 and 16 in Grade 9 and Grade 10. All of the participants have had some previous formal Spanish instruction. Students in Grade 9 may have participated in Spanish classes in middle school or may have taken a summer class. Students in Grade 10 had completed Spanish I at the school while in Grade 9. A breakdown of the students in each of the groups is depicted in Table 2.

Table 2

Number of Students in Each Group Based on Grade and Gender.

Students in Spanish Level II Classes	Control <i>n</i> = 99	Treatment <i>n</i> = 99
Grade 9		
Female	16	17
Male	20	9
Grade 10		
Female	26	37
Male	37	36

Procedures

As part of school accreditation, every five years teachers in each discipline are required to revisit and update the current curriculum. During the previous school year, teachers in the Modern Language Department developed a curriculum map to vertically align the topics, readings, grammar structures, and cultural units of all levels. This process is important to this work because teachers of each level worked together and agreed upon the book and units they included. The process ensured each teacher in the study covered specific topics, and that all the students moving to the next level have covered the same material.

Between September 10, 2018, and October 10, 2018 teachers covered one learning unit utilizing the book *Descubre I Lengua y Cultura del Mundo Hispánico* from the Vista Higher Learning Company as a resource text with each of the eight Spanish II classes. The unit includes vocabulary related to clothing and shopping, verb conjugation in the past tense, demonstrative adjectives, and direct objects as well

as the corresponding object pronouns. Each class met for approximately 55 minutes four times a week. All participants had access to the student edition of the digital textbook on their iPads provided by the school. All three teachers followed the scope and sequence of the book and collaborated throughout the unit to ensure coverage of the same material at the same time and in the same sequence.

The classes receiving treatment using comprehensible input in the form of drawings in real time met during Periods 1 (7:45-8:40), 2 (8:45 9:40), 3 (10:00-10:55) and 5 (12:35-1:30), while the classes receiving traditional instruction met during Periods 3, 4 (11:00 – 11:55) and 5 (12:35-1:30). Participants in both groups completed the same short standardized assessment of vocabulary and grammar and participated in the same activities.

New material including vocabulary, was introduced to students in both groups. Teachers in the control group employed traditional methods such as reading the new vocabulary words aloud as students follow along with the textbook which provided a list in both English and Spanish. Past tense conjugation was presented to students in a similar manner, following the textbook and with fill-in-the-blank worksheets. Students in the treatment group were introduced to new vocabulary through comprehensible input in the form of drawings in real time. As the teacher drew, and named the item, translation was discouraged. Presentation of vocabulary and past tense conjugation for the treatment group was discussed more in depth later in the chapter. Figure 4 displays a three-day lesson plan which compares the control group (traditional) and the treatment group (intervention) to show the similarities between the two groups except for the comprehensible input variable.

Traditional	Intervention
<p>Day 1</p> <ol style="list-style-type: none"> 1. Warm up by chatting with the class, using previously learned material. 2. Present the learning goals going over content material for the day. 3. Introduction of new material: vocabulary (utilizing the textbook) 4. Practice vocabulary (teacher says the word in English, students say the word in Spanish and vice versa) 5. Reflect on what was done during class. Time to answer questions and explain homework. 6. HOMEWORK: Study vocabulary with the book 	<p>Day 1</p> <ol style="list-style-type: none"> 1. Same as traditional. 2. Same as traditional. 3. Introduction of new material: vocabulary (In the form of real time drawings) 4. Practice vocabulary (teacher draws and projects a symbol for the vocabulary, students say the word in Spanish) 5. Same as traditional. 6. HOMEWORK: Study vocabulary with the book and from the class notes posted on the online learning system.
<p>Day 2</p> <ol style="list-style-type: none"> 1. Warm up by chatting with the class, using previously learned material. 2. Present the learning goals going over content material for the day. 3. Class activity: Online game-based quiz. 	<p>Day 2</p> <ol style="list-style-type: none"> 1. Same as traditional. 2. Same as traditional. 3. Same as traditional.
<p>Day 3</p> <ol style="list-style-type: none"> 1. Warm up by chatting with the class, using previously learned material. 2. Present the learning goals going over content material for the day. 3. Class activity: Whiteboards. Teacher says the word in English students write the word in Spanish on a whiteboard and show it to the teacher to check for accuracy. 5. Vocabulary assessment (teacher says vocabulary words in English, students write the corresponding word in the target language) 	<p>Day 3</p> <ol style="list-style-type: none"> 1. Same as traditional. 2. Same as traditional. 3. Same as traditional. 5. Same as traditional. 6. All notes are uploaded to Canvas

Figure 4. Lesson plan comparison.

Comprehensible Input Intervention

Replacing traditional language teaching methods including but not limited to grammar exercises, memorization of vocabulary lists, and practice pronunciation individually and in unison, the teacher for the intervention group introduced students to the new vocabulary with a conversation or story supported with comprehensible visual inputs in the form of drawings. For example, during the target unit about clothing, the teacher told students about the items of clothing she had in her closet while drawing those items in real time. The initial presentation of the drawings included the teacher's verbal questions on the topic to encourage communication and student participation. The drawings were presented in cartoonlike depictions following the Viconic Principles for visual images described in Chapter 2 (Arwood et al., 2009). The teacher used an iPad, Apple pencil, and the Microsoft OneNote computer program to present the drawings. With this program color can be incorporated into the drawings; however, most of the illustrations were done in black and white to ensure high contrast and simple depictions of the story. Students viewed the images on a large screen in front of the classroom as the teacher drew them. Putting yourself in the picture serves as an example for when students create their own stories.

The teacher put herself in the picture by drawing a cartoon figure with glasses and short hair; because the teacher had introduced herself the first day of school with this cartoon, all the students knew this drawing represented the instructor.

In this example, first the teacher said, in the target language, “this is my closet,” while drawing the closet with a few articles of clothing hanging in it (See Figure 5).



Figure 5. Teacher shows her closet.

The teacher kept herself in the picture and named objects using complete sentences, avoiding the use of individual words. For example, she said, “Yo tengo pantalones en mi armario, yo tengo pantalones largos y yo tengo pantalones cortos” (I have pants in my closet, I have long pants, and I have short pants) at which time she drew the pants and wrote the sentence in the speech-bubble (See Figure 6).



Figure 6. Teacher shows an item of clothing.

The teacher then asked the students, “¿Tienes tú pantalones largos o pantalones cortos? ¿Cuándo usas pantalones largos? ¿Cuándo usas pantalones cortos?” (Do you have long pants or short pants? When do you wear long pants? When do you wear short pants?). The teacher quickly referred to the seasons and weather, as this vocabulary was covered during Spanish I level. Connecting new information to previously learned information gives students multiple access points or various ways to anchor passed to new learning (Andresen, 1990). She may draw some of the students’ answers, for example, a sun next to short pants and a snowman next to long pants. The addition of the function of each item of clothing gives students deeper meaning maximizing understanding (see Figure 7).



Figure 7. Drawing from the interaction with students

The presentation continued with the introduction of more items of clothing. Additionally, the teacher added the names of colors as a review, as students had previously learned colors. The purpose of naming colors is to communicate in complete sentences expressing complete thoughts (see Figure 8).



Figure 8. Teacher shows t-shirts and introduces colors.

To provide students with elements that would allow them to convey information in a more detailed manner, the teacher also referred to the patterns in clothing (see Figure 9). As the teacher drew a dress with stripes, she invited students to name other patterns, such as flowers and polka dots, and incorporated their input

into the presentation, using previously drawn items. Additionally, the teacher discussed some events such as a party or all-school mass where many students will wear a dress (see Figure 9).



Figure 9. Teacher shows a dress and the striped print.

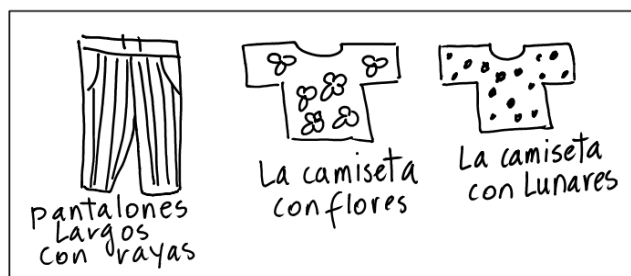


Figure 10. Drawings of patterns and repetition of the items.

As the class dialogue continued, the teacher introduced a negative statement (see Figure 11): “Yo no tengo corbatas en mi armario; yo no tengo corbatas ni con rayas ni con lunares” (I do not have ties in my closet; I do not have ties with stripes or with polka dots).



Figure 11. Teacher introduces a negative.

The teacher asked the students, “¿Quién tiene corbatas en su armario? ¿Quién tiene vestidos en su armario? ¿Qué no hay en tu armario?” (Who has ties in the closet? Who has dresses in the closet? What is not in your closet?). Because the conversation was fluid, one student said, “Yo no tengo un vestido en mi armario” (I do not have a dress in my closet). Another student said, “Yo no tengo comida en mi armario” (I do not have food in my closet). In that instance, the teacher honored the students’ comments, drew their contribution, adding their name to the illustration, and then placed emphasis on the vocabulary included in the unit (see Figure 12).



Figure 12. Drawings of students and their comments.

As the teacher told the story and named the vocabulary words in a dialogue type of communication, students in the intervention classes were encouraged to

contribute to the conversation. When students were reluctant to participate, the teacher asked specific questions to facilitate classroom dialogue. As previously shown in Figure 1, all other lesson components remained the same for the treatment group other than receiving comprehensible input.

The school uses Canvas as a learning management system. Canvas allowed students to access information such as homework, upcoming tests, and grades. The teachers created a module for the unit and all the drawings, stories and explanations of new material was uploaded to Canvas. Students had access to all of the teacher's notes throughout the unit of instruction.

Instruments

Two instruments were used to collect quantitative data: (a) a pretest/posttest to measure content knowledge of lesson 6 of the textbook *Descubre 1* from the publishing company Vista Higher Learning and (b) the Spanish Self-Efficacy Survey (SSES) to measure student self-efficacy, adapted from the Reader Self-Perception Scale 2 (Henk, Marinak, & Melnick, 2012).

Vista Higher Learning. Based in Boston, Massachusetts, Vista higher learning is an independent, specialized, and privately owned publishing company founded in 2000. The company has developed educational materials that integrate text, technology, and media to provide a variety of authentic materials. The company has developed the material following the American Council on the Teaching of Foreign Languages' (ACTFL) guidelines and standards. Moreover, the company worked with instructors and teachers from the United States and Canada who have, over the years, provided practitioner feedback for all their materials. For the textbook

Descubre 1 the company had four in-house reviewers as well as 100 peer reviewers coming from colleges and Universities from 22 of the 50 American states.

Pretest/Posttest. The Pretest and Posttest covered the content taught by all three instructors using the Spanish Unit of the *Descubre 1* textbook resource (see Appendix A). The teachers minimally modified the content and assessment of the commercially prepared unit designed by Vista Higher Learning assessed by this standardized instrument to meet the target school's language department's pre-established curriculum. The modified pretest and posttest included vocabulary and grammar (verb conjugation in the past, direct objects, and pronouns) and was identical for participants in the control and treatment groups.

The test was determined to have content validity based on the peer review proves utilized by the publishers and the experience of three teachers instructors for this study who have used this resource for several years prior to the study. Figure 13 is an example of three types of questions included in the test including fill-in-the-blank, multiple choice, and short response questions. All participants had one class period (55 minutes) to answer 46 multiple choice questions worth 46 points. The total possible for the combined assessment was 46 points. It is a machine scored standardized test requiring all students to answer the same questions and bubble in their answers on the answer sheet provided.

Completar. Fill in the blanks with the present tense form of **SABER** or **CONOCER**

a. sé	b. sabes	c. sabe	d. sabemos	e. saben
ab. conozco	ac. conoces	ad. conoce	ae. conocemos	bc. conocen

- Yo no _____ a qué hora abre el almacén
- Tú _____ un mercado muy barato.
- Luisa _____ nadar muy bien.

Seleccionar. Select the correct Direct object pronoun.

- Alicia compró una camiseta.
a. las b. me c. la d. lo
- Mis amigos llevan los pantalones largos.
a. las b. los c. me d. lo

Matching. Match the sentences that form logical pairs. (1 pt. each)

6. Pepe y Juanita van a esquiar a las montañas	a. llevan gafas de sol y trajes de baño
7. Pepe y Juanita van a la playa	b. él lleva una corbata y ella lleva un vestido
8. Pepe y Juanita van a un restaurante elegante	c. llevan suéteres, chaquetas y guantes

Figure 13. Sample test questions.

Student Self-Efficacy Survey. The literature review provided limited examples of surveys that would be appropriate for the research questions guiding on efficacy this study. However, the Reader Self-Perception Scale 2 (RSPS2) was suitable for the study (Henk et al., 2012). The instrument was devised to measure how adolescents in Grades 7 through 10 feel about themselves as readers. Additionally, the survey is based on Bandura's theory of perceived self-efficacy and measures the four basic factors students consider when evaluating their ability: Progress, Observation Comparison, Social Feedback and Physiological States.

Validation of the instrument. The RSPS2 was piloted on 488 students, revised and then administered to 2, 542 students in the target grades. Reliability

analyses showed scale alphas ranging from 0.87 to 0.95. This result indicated that the coefficient for each scale exceeded the 0.70 threshold required for an effective tool.

The modification to the RSPS2 needed for this study was to replace *reading* for *Spanish* or *learning Spanish*. The Spanish Self-Efficacy Survey had the same number of items as the reader survey and measured the same scales: Progress, Observation Comparison, Social Feedback, and Physioloical States.

Responses to the questionnaire are from 1 to 5 on a Likert scale (Appendix A). The maximun score varied by category. Figure 14 provides examples of the SSES statements.

Spanish Self-Efficacy Survey				
PR 3. I can handle more challenging Spanish material than I could before.				
Strongly disagree	Agree	Neutral	Agree	Strongly agree
OC 15. I learn Spanish faster than other students.				
Strongly disagree	Agree	Neutral	Agree	Strongly agree
SF 4. Other students think that I am good at Spanish.				
Strongly disagree	Agree	Neutral	Agree	Strongly agree
PS 44. Deep down I like Spanish.				
Strongly disagree	Agree	Neutral	Agree	Strongly agree

Figure 14. Survey sample questions.

Ethical Considerations

Prior to the start of the study, permission from the Institutional Review Board (IRB) was granted. Parental consent forms granting permission for students to participate in the study were distributed, collected, and securely stored to maintain participants' privacy. All students were given the same assessments to determine academic performance. The school gives each teacher professional freedom to select the activities that best work for their classes and the formative assessment to be used during the instructional cycle. However, the three teachers participating in the study agreed to use the same activities and formative assessments to maximize the integrity of the study. A longstanding policy within the Modern Language Department at the

target school assures that teachers of the same level administer the same Unit Tests and Semester Exams. The intervention implemented to conduct the study is considered a different teaching style compared with typical teaching methods used within the department. Moreover, the teacher-researcher had the full support of the administrative team and the Language Department to find the answers to the overarching questions regarding the effectiveness of teaching using Viconic principles for drawings in real time, referred to in this work as comprehensible input.

The researcher maintained confidentiality regarding student names, and only the researcher had access to the SSES answers including both the pre and posttest scores. The other two teachers only had access to their own students' pretest and posttest results on the academic achievement instrument.

Role of the Researcher

It is important to disclose any relevant information regarding the background and potential biases of the researcher that may influence the result of the study. In this section, I provide information to be upfront about my role as the researcher for this study.

The researcher is a native Spanish speaker who learned English as a second language as an adult after immigrating to the United States. The researcher has over 20 years of experience teaching adults and children in middle school and high school. The researcher completed the Neuroeducation certificate offered at the University of Portland in 2016. As a second language learner, the researcher knows firsthand the challenges and the rewards that learning a language other than your mother tongue

presents. The researcher, given her training in the used of Viconic images as comprehensible input, taught all four classes in the intervention group.

Data Analysis

Two measurements were used to gather quantitative data: The Self-Efficacy Survey and the Spanish II Unit 6 academic test which were administered to all participants before and after the intervention. A pretest was implemented to minimize the threat of extraneous or confounding variables (B. Johnson & Christensen, 2017) that are out of the researcher's control such as students' previous Spanish classes, familiarity with the textbook, or extra help outside the classroom. Both pretest and posttest instruments were identical and students' mean scores were compared before and after treatment. Data for the academic test, in addition to raw scores by group, were disaggregated by gender and grade level to provide another layer of information.

Descriptive statistics provided percentages and means to allow for the comparison of changes in students' Self-Efficacy toward learning Spanish. Additionally, the data were evaluated with a two-way Analysis of Covariance (ANCOVA). Given that the study included pretest and posttest scores from two different groups (traditional and treatment) the ANCOVA model was appropriate. By choosing an ANCOVA model, the researcher measured students' gains across the two groups while also accounting for other factors, especially the pretest that serves as a covariant. Figure 15 shows the relationship between the research questions, the data collection, and the analysis of the pertinent data.

Research Question	Data Collection	Data Analysis
Does comprehensible visual input, in the form of real time drawings, affects students' self-efficacy toward learning Spanish as a second language?	Self-efficacy Survey 5 point Likert-type scale (Strongly disagree –disagree- neutral- agree- Strongly agree) 47 statements divided into four scales. (Progress, Observational Comparison, Social Feedback, Physiological States)	47 statements Values 1-5 Minimum and mazimum score differ by scale. Progress (16 questions) Minimum 16 Maximum 80 Obsevational Comparison (9 statements) Minimum 9 Maximum 45 Social Feedback (9 statements) Minimum 9 Maximum 45 Physiological States (12 statements) Minimum 12 Maximum 60 <i>t</i> -test and Analysis of covariance ANCOVA
Are there differences in test performance between students receiving comprehensible visual input compared to the test performance of students receiving traditional instruction?	Identical Pretest and Posttest -46 standardized questions multiple choice, fill-in-the-blank matching 46 Total possible points	<i>t</i> -test and Analysis of covariance ANCOVA

Figure 15. Research questions, data collection, and analysis

Summary

The purpose of this quantitative study was to determine the effects of comprehensible input in the form of real time drawings on Spanish academic achievement and attitude towards learning Spanish. High school students in Grade 9

and 10 from a private Catholic college preparatory school in the Pacific Northwest participated in this quasi-experimental study. This quantitative study used pretest and posttest data collection on a Spanish Self-Efficacy Survey and a commercially available standardized achievement test to address the research questions. The data were entered into SPSS. A two-way Analysis of Covariance (ANCOVA) was employed to determine the effectiveness and statistical significance of the intervention.

Chapter 4: Results

The purpose of this study was to examine the effects of comprehensible visual input in the form of real time drawings on students' self-efficacy toward learning Spanish as a second language in a classroom environment. Participants included students in Grade 9 and Grade 10. The Grade 10's were enrolled in their second year of Spanish. The study also compared student academic test scores in classes receiving comprehensible visual input instruction with academic test scores of students in classes utilizing traditional instruction to determine how those results may relate to perceived self-efficacy of the students.

The results of this study will be described in terms of the data addressing the two research questions. Across both research questions, there were 216 students enrolled in Spanish II classes eligible at the start of the study. Of these students, 198 participants provided informed consent and were included in the study. From the treatment group eight students were not included as they did not provide the appropriate parental consent for participation, and three students left the school while the study was taking place. From the control group, 10 participants were not included; six students did not obtain parental consent, two students were not present at the time of the test, one student did not accurately complete the evaluation, and one student left the school.

For the sample ($n = 198$), 111 (56%) participants were males and 87 (44%) were female. Sixty-one participants (31%) were in Grade 9 and 137 (69%) were enrolled in Grade 10. The control group was composed of 45 (45%) male and 54

(55%) female students; of those in the control group 35 (35%) were in Grade 9 and 64 (65%) in Grade 10. Twenty- six (26%) students in Grade 9 and 73 (74%) students in Grade 10 composed the treatment group. Although both the treatment group ($n = 99$) and the control group ($n = 99$) had the same number of students, the Grade 9 control group had a slightly larger population of participants over the Grade 9 treatment group. The treatment group had a slightly larger population of students in Grade 10. The treatment group showed a greater percentage of male participants than the control group (58% versus 45% respectively). Table 3 compares descriptive statistics for the treatment and control groups on gender and grade level.

Table 3

Participant Demographic

Demographic Variable	Treatment Group % ($n = 99$)	Control Group % ($n = 99$)	Full Sample % ($n = 198$)
Gender (Percentage)			
Male	45.5	57.6	56.1
Female	54.5	42.4	43.9
Grade (Percentage)			
Grade 9	26.3	35.3	30.8
Grade 10	73.7	64.7	69.2

Research Question 1: Impacts of Comprehensible Input on Students' Self-Efficacy

This section presents the findings for Research Question 1: *How does comprehensible visual input, in the form of real time drawings during class instruction, affect students' self-efficacy toward learning Spanish as a second language?* This question was addressed by a 47-item survey administered before and

after the intervention by all participants enrolled in Spanish II at the designated institution. The Spanish Self-Efficacy Survey (SSES) included one general item and 46 specific items grouped into four scales (Progress, Observational Comparison, Social Feedback, and Physiological States). As the general item (Statement #25) did not contribute much to the original instrument, it was excluded from the original survey (Henk et al., 2012). For this study, the same general item which states, “I think I am a good Spanish student” was excluded from this study to be consistent with the original survey. The remaining items incorporate elements of Spanish second language acquisition such as word recognition, word analysis, fluency, and comprehension. Students were instructed to read each statement and rate how much they agreed or disagreed with it. Ratings were made using a 5-point Likert scale (in which 1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree). Because the number of items changes according to each scale being analyzed (PR = 16; OC = 9; SF = 9; PS = 12), the maximum possible scores also differ for each scale (PR = 80; OC = 45; SF = 45; PS = 60). To compare the treatment and the control group, pre-scores were subtracted from post scores to find the gain score. Data from the SSES will be presented in the following manner: first an analysis of internal reliability, followed by the analysis and results for each of the four scales, and then finally an item by item analysis for each scale.

Before analyzing the SSES scores in aggregate and by scale, it was important to first analyze the internal consistency and reliability of the survey using Cronbach’s alpha. This analysis is used to identify “the extent to which all the variables that make up the scale are measuring the same thing” (Muijs, 2011, p. 217). All items within

each scale were analyzed. The results of applying Cronbach's alpha per category are presented in Table 4. Results for all categories showed high reliability ($\alpha > 0.70$).

Table 4

Internal Reliability Analysis Results for Each Category of the Self-Efficacy Survey

Category	Number of Items	Cronbach's alpha (α)
Progress	16	.81
Observational Comparison	9	.91
Social Feedback	9	.84
Physiological States	12	.87

After determining instrument reliability for this sample, ANCOVAs were performed to examine the impact of comprehensible input on self-efficacy scores and scale scores after accounting for the effect of the covariant, pretest scores. Although these groups were determined to be similar when they started via independent sample *t*-tests, which revealed no statistically significant differences at pretest, ANCOVAs were the most accurate option to account for the effect of the pretest score on the posttest score. Results of the ANCOVAs are presented in Table 5. These results suggest that the covariant, the pretest, significantly ($p > .05$) influenced the dependent variable outcome for all four scales, which was expected. However, after accounting for the pretest covariate, there appeared to be no significant effect of the independent variable, comprehensible input (teaching with drawings), on any of the four scales ($p > .05$)

Table 5

Results of ANCOVA for Each of the Four Scales

Scale	Pretest		Posttest		Change		<i>p</i>
	<i>M (SD)</i>	% (<i>SD</i>)	<i>M (SD)</i>	% (<i>SD</i>)	<i>M</i>	%	
Progress							.808
Control	61.68 (8.12)	77.10 (10.15)	63.52 (8.42)	79.40 (10.53)	1.84	2.30	
Treatment	62.84 (8.44)	78.56 (10.55)	63.54 (8.06)	79.43 (10.07)	0.70	0.87	
Observational comparison							.167
Control	27.51 (6.13)	61.14 (13.62)	28.54 (6.44)	63.43 (14.33)	1.03	2.29	
Treatment	27.83 (6.17)	61.86 (13.72)	29.59 (5.85)	65.76 (13.01)	1.86	3.90	
Social Feedback							.218
Control	31.44 (4.22)	69.87 (9.39)	32.39 (4.70)	71.98 (10.44)	0.95	2.11	
Treatment	31.82 (3.74)	70.72 (8.32)	32.18 (4.28)	71.51 (9.53)	0.36	0.79	
Physiological States							.559
Control	42.31 (7.12)	70.52 (11.87)	42.11 (8.37)	70.18 (13.96)	-0.20	-0.34	
Treatment	43.84 (7.54)	73.08 (12.58)	43.81 (7.78)	73.03 (12.97)	-0.03	-0.05	

Note. Sample sizes were 99 for both the treatment and the control groups.

Progress Scale. The 16 statements in the Progress scale asked students to rate each statement comparing their perceived past and present progress in learning Spanish vocabulary, grammar, understanding, and academic performance. Statements PR2, PR 7, PR 38, and PR 39 asked students to rate their current way of learning Spanish compared with past Spanish learning experiences. Statements PR 3, PR 9, PR

19, PR 33, and PR 35 asked students to rate their ability to tackle difficult and challenging Spanish material. Statement PR 18, PR 41, and PR 45 asked students to rate their understanding of new and challenging Spanish material. Statement 87PR 21, PR 31, and PR 47 asked students to rate their Spanish understanding of new vocabulary. Statement PR 24 asked specifically about improvement on assignments and tests.

Means for each statement at pre and post treatment are presented in Table 6; this table compares the mean results for the control and treatment groups on all of the statements pertinent to this scale. The difference was not statistically significant between the two groups for the post-survey ($p > .05$). ANCOVA results showed that in the treatment group the students' ratings of the 16 statements of the Progress scale did not differ in a statistically significant manner from the students' ratings in the control group.

Table 6
Means for Responses to Individual Statements in the Progress Scale

		Pretest	Posttest	Pretest	Posttest	Control <i>M</i> Change	Treatment <i>M</i> Change	<i>M</i> Difference
		Control (<i>n</i> = 99)		Treatment (<i>n</i> = 99)				
		<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>			
PR 2	I am learning Spanish better now than I was before.	4.05	4.10	4.13	4.13	0.05	0.00	-0.05
PR 3	I can handle more challenging Spanish material than I could before.	3.81	4.08	3.77	4.10	0.27	0.33	0.06
PR 7	When I am learning Spanish, I don't have to try as hard to understand as I used to do.	3.34	3.32	3.49	3.51	-0.02	0.02	0.04
PR 9	I am getting better at Spanish.	4.24	4.23	4.23	4.24	-0.01	0.01	0.02
PR 18	I understand Spanish better than I could before.	3.96	4.21	4.10	4.13	0.25	0.03	-0.22
PR 19	I can understand difficult Spanish material better than before.	3.89	4.14	4.13	3.97	0.25	-0.16	-0.41
PR 21	When I am in Spanish class, I recognize more words than before.	4.06	4.12	4.07	4.10	0.06	0.03	-0.03
PR 24	I have improved on Spanish assignments and tests.	3.76	3.81	3.86	3.93	0.05	0.07	0.02
PR 31	I can figure out new Spanish words better than I could before.	3.81	4.02	3.86	3.98	0.21	0.12	-0.09
PR 33	I can understand Spanish grammar better than I could before.	3.89	4.08	4.01	4.15	0.19	0.14	-0.05
PR 35	When learning Spanish, I need less help than I used to.	3.60	3.55	3.62	3.75	-0.05	0.13	0.18
PR 38	I learn Spanish faster than I could before.	3.70	3.86	3.70	3.87	0.16	0.17	0.01
PR 39	Learning Spanish is easier for me than it used to be.	3.69	3.79	3.76	3.82	0.10	0.06	-0.04
PR 41	My understanding of difficult Spanish material has improved.	3.87	4.03	3.86	4.01	0.16	0.15	-0.01
PR 45	I can comprehend Spanish better than before.	3.95	4.07	3.96	3.97	0.12	0.01	-0.11
PR 47	Spanish vocabulary words are easier for me to understand now.	3.96	4.07	3.98	4.04	0.11	0.06	-0.05

The percentage of agree and strongly agree responses for the Progress scale was calculated for both groups by adding the percentages of students who responded with a 5 (strongly agree) and 4 (agree) on the Likert scale. The percentage change between pre and post intervention was calculated as well as the difference between the two groups. Table 7 shows the results of these calculations. There are no negative differences greater than 5% between the changes in scores from pre to post intervention for treatment or the control group. However, there are positive differences between the gains in scores from pre to post intervention for the treatment versus the control group greater than 5% on statements PR 3, PR 7, and PR 35.

Consistent with the Mean calculation for this scale, the difference in the percentage of agree and strongly agree scores between the two groups was not statistically significant. The treatment group recorded 5% higher on the Progress statement PR 3 *I can handle more challenging Spanish material than I could before*, 7% higher on statement PR 7 *When I am learning Spanish, I don't have to try as hard to understand as I used to do*, and 16% higher on statement PR 34 *When learning Spanish, I need less help than I used to*.

For the majority of items, the treatment group rated the statements lower compared to the responses provided by the control group before the intervention, though all results were due to chance. The percentage of agree and strongly agree at post treatment for the treatment group showed gains on all of the items with the exception of item PR 24 *I have improved on Spanish assignments and tests*, which dropped from 79% to 75%, a negative 4%. The control group scored lower after the intervention on three statements PR 7 *When I am learning Spanish, I don't have to try*

as hard to understand as I used to do, PR 24 I have improved on Spanish assignments and tests, and PR 35 When learning Spanish, I need less help than I used to. Although the difference in several items is negative, this is not an indication of lack of growth, since all results were due to chance.

Table 7

Progress Scale Percentage Agree and Percentage Difference Between the Two Groups

Item #	Progress Scale	Pre-test		Post-test		Pre-test		Post-test	
		Control (n = 99)		Treatment (n = 99)		Control		Treatment	
		% Agree	% Agree	% Agree	% Agree	% Agree change	% Agree change	% Agree difference	
PR 2	I am learning Spanish better now than I was before.	76	81	78	81	5	3	-2	
PR 3	I can handle more challenging Spanish material than I could before.	74	86	68	85	12	17	5	
PR 7	When I am learning Spanish, I don't have to try as hard to understand as I used to do.	56	53	52	56	-3	4	7	
PR 9	I am getting better at Spanish.	90	92	92	92	2	0	-2	
PR 18	I understand Spanish better than I could before.	85	91	84	90	6	6	0	
PR 19	I can understand difficult Spanish material better than before.	78	86	75	80	8	5	-3	
PR 21	When I am in Spanish class, I recognize more words than before.	86	90	83	89	4	6	2	
PR 24	I have improved on Spanish assignments and tests.	75	73	79	75	-2	-4	-2	
PR 31	I can figure out new Spanish words better than I could before.	78	85	75	81	7	6	-1	
PR 33	I can understand Spanish grammar better than I could before.	82	87	76	80	5	4	-1	
PR 35	When learning Spanish, I need less help than I used to.	65	64	59	74	-1	15	16	
PR 38	I learn Spanish faster than I could before.	68	80	66	74	12	8	-4	
PR 39	Learning Spanish is easier for me than it used to be.	67	77	66	72	10	6	-4	
PR 41	My understanding of difficult Spanish material has improved.	81	87	74	80	6	6	0	
PR 45	I can comprehend Spanish better than before.	87	88	80	81	1	1	0	
PR 47	Spanish vocabulary words are easier for me to understand now.	86	89	84	85	3	1	-2	

Observation Comparison Scale. The nine statements in the Observational Comparison scale asked students to think about how their performance matches with those of classmates. Statements OC 5, OC 13, and OC43 asked students to rate their perceived current needs, comprehension, and confidence in learning Spanish compared with previous Spanish learning experiences. Statements OC 10, OC 27, and OC 37, asked students to rate their perceived ability to figure out, as well as their understanding and knowledge of, new Spanish vocabulary. Statements OC 12, OC 15, and OC 20 asked students to rate their perceived Spanish learning compared to other students in the class. The means for each statement pre and post intervention for both groups are presented in Table 8.

Results of the *t*-test show that the difference in mean gain scores for the Observational Comparison scales was not statistically significant ($p > .05$), even though both groups showed gains on all the statements. In statements OC 5, OC10, OC 12, OC 13, OC 37, and OC 43, the gains obtained by the treatment groups were larger than the gains obtained by the control group. On the other hand, the control group recorded larger gains on statements OC 15, OC20, and OC 27.

Table 8

Means for Responses to Individual Statements in the Observation Comparison Scale

Item #	Observation Comparison Scale	Pretest	Posttest	Pretest	Posttest	Control <i>M</i> Change	Treatment <i>M</i> Change	<i>M</i> Difference
		Control (<i>n</i> = 99)		Treatment (<i>n</i> = 99)				
		<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>			
OC 5	I need less help than other students in Spanish.	3.22	3.28	3.25	3.49	0.06	0.24	0.18
OC 10	When I am in Spanish class, I can figure out words better than other students.	3.04	3.1	3.06	3.24	0.06	0.18	0.12
OC 12	I learn Spanish better than other students in my class.	3.08	3.18	3.05	3.20	0.10	0.15	0.05
OC 13	My Spanish comprehension level is higher than other students.	3.04	3.09	2.98	3.17	0.05	0.19	0.14
OC 15	I learn Spanish faster than other students	3.01	3.12	3.15	3.23	0.11	0.08	-0.03
OC 20	When I learn Spanish I can handle difficult concepts better than my classmates.	3.05	3.26	3.17	3.34	0.21	0.17	-0.04
OC 27	My understanding of important Spanish vocabulary words is better than other students.	3.13	3.56	3.11	3.26	0.43	0.15	-0.28
OC 37	I seem to know the meaning of more Spanish words than other students.	3.01	3.17	2.95	3.29	0.16	0.34	0.18
OC 43	I am more confident in my Spanish ability than other students.	2.94	3.14	3.09	3.35	0.20	0.26	0.06

A percentage agree and strongly agree for the Observational Comparison scale was calculated for both groups by adding the percentages of students who responded with a 5 (strongly agree) and 4 (agree) on the Likert scale. The percentage change between the pretest and posttest was calculated as well as the difference between the two groups. Table 9 shows the results of the calculation.

Both groups show chance gains in all of the statements with the exception of OC 27 *My understanding of important Spanish vocabulary words is better than other students*. On this statement, the control group decreased from 39% agree at pre intervention to 38% at post intervention. Although students in both the treatment and control groups show chance gains on the statement OC 5 *I need less help than other students in Spanish class*, the control group gained 10% while the treatment group gained 19%. Moreover, on statement OC 10 *When I am in Spanish class, I can figure out words better than other students*, OC 13 *My Spanish comprehension level is higher than other students*, and OC 37 *I seem to know the meaning of more Spanish words than other students* the treatment group showed higher gains compared to the control group. Overall, students in the treatment group indicated higher percentages at post treatment in all of the statements on this scale, though all responses were due to chance.

Table 9

Observational Comparison Scale Percentage Agree and Percentage Difference Between the two Groups

Item #	Observation Comparison Scale	Pretest		Posttest		Control %	Treatment %	% Agree Difference
		Control (n = 99)		Treatment (n = 99)				
		% Agree	% Agree	% Agree	% Agree			
OC 5	I need less help than other students in Spanish class	41	51	39	58	10	19	9
OC 10	When I am in Spanish class, I can figure out words better than other students.	33	37	27	40	4	13	9
OC 12	I learn Spanish better than other students in my class.	30	39	24	34	9	9	0
OC 13	My Spanish comprehension level is higher than other students.	38	40	25	37	2	13	11
OC 15	I learn Spanish faster than other students.	30	37	36	37	7	1	-6
OC 20	When I learn Spanish I can handle difficult concepts better than my classmates.	32	43	30	43	11	13	2
OC 27	My understanding of important Spanish vocabulary words is better than other students.	39	38	31	36	-1	5	6
OC 37	I seem to know the meaning of more Spanish words than other students.	34	38	26	44	4	18	14
OC 43	I am more confident in my Spanish ability than other students.	24	34	31	42	10	11	1

Social Feedback Scale. The Social Feedback scale consisted of 9 statements that required students to rate the feedback they received from their peers, statements SF 4, SF 8, and SF 29; from their teacher, SF 11, SF 16, SF 36, SF 40, and SF 46; and also from their family, statement SF 28. The means for each statement at pre and post intervention are presented in Table 10.

Participant responses from both groups, control and treatment, dropped on statement SF 28 *People in my family like that I am learning Spanish*. Both groups showed a gain in means in all of the remaining statements. However, on statement SF 36 *I can tell my teacher likes my Spanish*, students in the treatment groups showed no change in score at pre and post intervention.

There is no evidence that the changes on the Social Feedback scale were due to the intervention as statistical significance was not found.

Table 10

Means for Responses to Individual Statements in the Social Feedback Scale.

Item #	Social feedback Scale	Pretest		Posttest		Control <i>M</i> Change	Treatment <i>M</i> Change	<i>M</i> Difference
		Control (<i>n</i> = 99)		Treatment (<i>n</i> = 99)				
		<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>			
SF 4	Other students think that I am good at Spanish.	3.18	3.38	3.25	3.39	0.20	0.14	-0.06
SF 8	My classmates like the way I pronounce Spanish words.	3.03	3.17	3.17	3.24	0.14	0.07	-0.07
SF 11	My teacher thinks I am a good Spanish Student.	3.40	3.57	3.46	3.57	0.17	0.11	-0.06
SF 16	My teacher thinks that I try my best in Spanish.	3.74	3.82	3.77	3.8	0.08	0.03	-0.05
SF 28	People in my family like that I am learning Spanish.	4.28	4.24	4.29	4.11	-0.04	-0.18	-0.14
SF 29	My classmates think that my Spanish is pretty good.	3.34	3.55	3.44	3.56	0.21	0.12	-0.09
SF 36	I can tell that my teacher likes my Spanish pronunciation.	3.05	3.18	3.14	3.14	0.13	0.00	-0.13
SF 40	My teacher think that I do a good job in Spanish class.	3.63	3.67	3.61	3.65	0.04	0.04	0.00
SF 46	My teachers think that my Spanish is fine.	3.76	3.83	3.66	3.68	0.07	0.02	-0.05

A percentage of agree and strongly agree for the Social Feedback scale was calculated for both groups by adding the percentages of students who responded with a 5 (strongly agree) and 4 (agree) on the Likert scale. The percentage change between the pre and post treatment was calculated as well as the difference between the two groups. Table 11 shows the results of the calculation for the responses, which may be due to chance.

Both groups scored lower at post treatment on statement SF 28 *People in my family like that I am learning Spanish*. The control groups dropped 1% from pre to post intervention, while the treatment group showed a larger decrease of 5%. Students in both groups showed gains from pre to post treatment in all other statements. However, the treatment group gains were not as high as those of the control group. On statement SF 40 *My teacher thinks that I do a good job in Spanish class*, a gain of 8% was reported by both groups. While the control group showed an increase of 4% on the statement SF 46 *My teacher thinks that my Spanish is fine* the students in the treatment group reported the same score at pre and post intervention

Results of the *t*-test and ANCOVA showed that the difference in mean gain scores for the Social Feedback scale between the two groups was not statistically significant; all responses may be due to chance.

Table 11

Social Feedback Scale Percentage Agree and Percentage Difference between the Two Groups

Item #	Social feedback Scale	Pretest	Posttest	Pretest	Posttest	Control	Treatment	% Agree change	% Agree change	% Agree Difference
		Control (n = 99)		Treatment (n = 99)						
		% Agree	% Agree	% Agree	% Agree					
SF 4	Other students think that I am good at Spanish.	36	47	43	49	11	6	-5		
SF 8	My classmates like the way I pronounce Spanish words.	20	29	26	30	9	4	-5		
SF 11	My teacher thinks I am a good Spanish Student.	40	59	46	54	19	8	-11		
SF 16	My teacher thinks that I try my best in Spanish.	65	76	65	71	11	6	-5		
SF 28	People in my family like that I am learning Spanish.	85	84	87	82	-1	-5	-4		
SF 29	My classmates think that my Spanish is pretty good.	44	60	46	58	16	12	-4		
SF 36	I can tell that my teacher likes my Spanish pronunciation.	20	31	21	24	11	3	-8		
SF 40	My teacher thinks that I do a good job in Spanish class.	58	66	54	62	8	8	0		
SF 46	My teachers thinks that my Spanish is fine.	72	76	63	63	4	0	-4		

Physiological States Scale. The Physiological States scale included 12 statements. These 12 items inquire about how learning Spanish makes students feel internally. The means for each statement in this scale is presented in Table 12.

On statements PS 1 *learning Spanish is a pleasant activity for me*, PS 34 *Spanish makes me happy inside*, and PS 44 *Deep down, I like Spanish*, students in the control group rated lower from pre to post intervention by 0.06, 0.12, and 0.09 respectively, while the treatment group show gains across all of these three statements from pre to post intervention. Both the treatment and the control groups scored lower on the following three statements: PS 22 *I enjoy how I feel when I am learning Spanish in class*, PS 26 *I feel good inside when I learn Spanish*, and PS 30 *Learning Spanish makes me feel good* from pre to post treatment. The decrease from the treatment group is smaller than the decrease reported by the control group in all three statements. Additionally the control group scored lower on statements PS 22 *I enjoy how I feel when I am learning Spanish in class*, and PS 34 *Spanish makes me feel happy inside* from pre to post intervention. Again, all responses could be due to chance.

Table 12

Mean for Responses to individual Statements in the Physiological States Scale

Item #	Physiological States Scale	Pretest		Posttest		Control <i>M</i> Change	Treatment <i>M</i> Change	<i>M</i> Difference
		Control (<i>n</i> = 99)		Treatment (<i>n</i> = 99)				
		<i>M</i>	<i>M</i>	<i>M</i>	<i>M</i>			
PS 1	Learning Spanish is a pleasant activity for me.	3.63	3.57	3.73	3.84	-0.06	0.11	0.17
PS 6	I feel comfortable in Spanish class	3.78	3.79	3.97	3.98	0.01	0.01	0.00
PS 14	I feel calm when I am in my Spanish class.	3.60	3.68	3.66	3.72	0.08	0.06	-0.02
PS 17	Learning Spanish tends to make me clam.	3.09	3.40	3.08	3.23	0.31	0.15	-0.16
PS 22	I enjoy how I feel when I am learning Spanish in class.	3.54	3.44	3.72	3.69	-0.10	-0.03	0.07
PS 23	I feel proud inside when I think about how well I learn Spanish.	3.56	3.70	3.83	3.76	0.14	-0.07	-0.21
PS 26	I feel good inside when I learn Spanish.	3.72	3.49	3.71	3.65	-0.23	-0.06	0.17
PS 30	Learning Spanish makes me feel good.	3.68	3.58	3.71	3.66	-0.10	-0.05	0.05
PS 32	I think learning Spanish can be relaxing.	3.24	3.31	3.4	3.44	0.07	0.04	-0.03
PS 34	Spanish makes me feel happy inside.	3.27	3.15	3.38	3.40	-0.12	0.02	0.14
PS 42	I feel good about my ability in Spanish.	3.39	3.52	3.64	3.68	0.13	0.04	-0.09
PS 44	Deep down, I like Spanish.	3.75	3.66	3.82	3.84	-0.09	0.02	0.11

A percentage of agree and strongly agree for the Physiological States subscale was calculated for both groups by adding the percentages of students who responded with a 5 (strongly agree) and 4 (agree) on the Likert scale. The percentage change between the pretest and posttest was calculated as well as the difference between the two groups. Table 13 shows the results of the calculation.

The treatment group showed gains of 5% from pre to post treatment, while the control group showed a decrease of 2% on statement PS 1. Both groups show the same gains of 10% on statement PS 14 *I feel calm when I am in my Spanish class*. None of these values were statistically significant and could be due to chance.

Table 13

Physiological States Scale Percentage Agree and Percentage Difference between the Two Groups

Item #	Physiological States Scale	Control (n = 99)		Treatment (n = 99)		Control % change	Treatment % change	% Agree Difference
		% Agree	% Agree	% Agree	% Agree			
PS 1	Learning Spanish is a pleasant activity for me.	68	66	69	74	-2	5	7
PS 6	I feel comfortable in Spanish class.	70	77	77	81	7	4	-3
PS 14	I feel calm when I am in my Spanish class.	61	71	71	81	10	10	0
PS 17	Learning Spanish tends to make me feel calm.	36	34	34	38	-2	4	6
PS 22	I enjoy how I feel when I am learning Spanish in class.	55	54	64	61	-1	-3	-2
PS 23	I feel proud inside when I think about how well I learn Spanish.	55	65	57	68	10	11	1
PS 26	I feel good inside when I learn Spanish.	66	55	65	62	-11	-3	8
PS 30	Learning Spanish makes me feel good.	60	64	63	63	4	0	-4
PS 32	I think learning Spanish can be relaxing	42	46	49	48	4	-1	-5
PS 34	Spanish makes me feel happy inside.	40	35	41	44	-5	3	8
PS 42	I feel good about my ability in Spanish.	56	60	63	65	4	2	-2
PS 44	Deep down, I like Spanish.	65	63	69	70	-2	1	3

Research Question 2: Effect of Comprehensible Input on Students' Test Performance

The second part of this chapter presents the findings for Research Question 2: *Are there differences in test performance between students receiving comprehensible visual input intervention versus the test performance of students receiving traditional instruction?* To address this question, students the control group ($n = 99$) and the treatment group ($n = 99$) completed an academic standardized test based on the material presented during the teaching unit. This section provides the analysis of the results.

The tool to assess student progress was developed by Vista Higher Learning an independent, privately owned publishing company that specialized in language learning materials. The tool was minimally modified by the three teachers participating in the study to align the assessment, to meet the target school's language department's pre-established curriculum, and to meet the academic needs of students in the entire sample ($n = 198$). The modification converted the instrument into a standardized assessment that was scored with a machine to minimize subjectivity and human error. The test consisted of 46 questions using the following test item formats: five matching vocabulary questions, five fill-in-the-blank questions with the proper conjugation of the verbs *saber y conocer*, five fill-in-the-blank with the appropriate *preterite tense* of the verb (past form of the verb), six matching pictures and descriptions, nine fill-in-the-blank with new vocabulary words provided in a word bank to complete a dialogue, six reading comprehension questions, five multiple

choice questions on *direct object pronouns*, and five multiple choice questions on *indirect object pronouns*.

Descriptive statistics (mean, standard deviation, growth, and significance) are provided in Table 10 for the entire sample and separately for the treatment and control subgroups based on pretest and posttest results. The data were fairly normally distributed, with the mean, median, and mode nearly identical for all subgroups; therefore, only the mean is reported in Table 14. Student growth was calculated by subtracting the mean scores at posttest from the mean scores at pretest. This result is also shown in Table 14. An independent sample *t*-test showed that although the students in the treatment group performed slightly better, there was no statistical significance between the two groups for the posttest exam ($p > .05$) as summarized in Table 10. ANCOVA results showed that the student scores of the treatment group did not differ in a statistically significant manner from the student scores of the control group on posttest results when controlling for pretest scores.

An analysis of covariance (ANCOVA), accounting for the pretest as a covariate, was conducted to analyze the impact of comprehensible input on posttest scores. Although there was a statistically significant effect of pretest scores on posttest scores ($p < .001$), there was not a statistically significant effect of the treatment.

*Table 14**Mean, Standard Deviation, Growth, and Significance of Pretest and Posttest Results*

Student Group	<i>n</i>	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>	Growth <i>M</i>	<i>F</i>
Entire Sample	198	26.80 (7.02)	38.50 (5.29)	11.70	1.373
Control	99	27.10 (6.52)	38.32 (5.69)	11.22	
Treatment	99	26.24 (7.75)	38.64 (4.86)	12.41	

Shown in Table 14 are the aggregate scores for the entire sample as well as the breakdown for the control and treatment groups. When comparing the control and treatment groups for academic achievement, the control group performed better than students in the treatment group on the pretest exam, the reason may be that the control group had higher numbers of students in Grade 9. Students who enroll in the second year of a language during the first year of high school have taken classes in that language before. After both groups received instruction in the unit at hand, the treatment group slightly outperformed the control group on the posttest. On the posttest, both groups showed gains in academic performance. However, the treatment group's mean growth was 12.41, while the control group's mean growth was 11.22, resulting in a mean growth difference of 1.19 favorable to the treatment group.

When analyzing the data, it became apparent that disaggregating the data by grade level and gender was necessary in order to provide more specific and detailed information about the effects of the comprehensible input (teaching with images). Table 15 shows the results when analyzing the data by grade level.

Table 15

Growth by Grade Level on Test by Control and Treatment Groups

	<i>n</i>	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>	Growth <i>M</i>	<i>F</i>
Grade level					0.588
Control					
Grade 9	35	29.17 (6.64)	40.00 (4.09)	10.83	
Grade 10	64	25.96 (6.22)	37.40 (6.24)	11.44	
Treatment					
Grade 9	26	32.69 (5.58)	41.76 (3.77)	8.80	
Grade 10	73	23.93 (6.76)	37.53 (4.74)	13.60	

Students in the control group in Grade 9 presented a mean growth larger than the students in the treatment group in the same grade level. Conversely, students in the treatment group in Grade 10 experienced a larger growth compared to students of the control group in the same grade level. However, the difference in growth was not statistically significant.

Table 15 shows the results when analyzing the achievement pre and post data on the academic achievement tool by gender. Students in the treatment group for both genders showed more growth between pretest and posttest than students of both genders in the control group. Female students in the treatment group performed slightly better than the female students in the control group. Male students in the treatment group showed a bigger increase in growth than their counterparts in the control group. The differences for both, male and female, however, were not statistically significant.

Table 16

Growth by Gender on Test by Control and Treatment Groups

	<i>n</i>	Pretest <i>M (SD)</i>	Posttest <i>M (SD)</i>	Growth <i>M</i>	<i>F</i>
Gender					0.558
Control					
Females	42	29.00 (5.24)	40.04 (4.21)	11.04	
Males	57	25.70 (7.05)	37.05 (6.31)	11.35	
Treatment					
Females	45	28.20 (7.33)	39.79 (4.13)	11.59	
Males	54	23.86 (7.65)	37.26 (5.36)	13.40	

Across all the analyses the data show that the groups were similar at the start of the study, although students in Grade 10, and both female and male students in the treatment group achieved higher growth than female and male students in the control group. It is important to note that none of the differences proved to be statistically significant.

Summary

The purpose of this quantitative study was to examine the effects of comprehensible visual input in the form of real time drawings on students' self-efficacy toward learning Spanish as a second language. This study also aimed to compare academic performance in the second year of Spanish by comparing students' test scores in classes receiving comprehensible visual input instruction with the test scores of students in classes utilizing traditional second language instruction techniques. In this chapter, the qualitative data analyses were reported. The present chapter included participant demographics, an in-depth description of the Spanish

Self-Efficacy Survey, along with the analysis presented by scale. In addition, this chapter contained the quantitative data and analysis of the academic pre and posttest for all participants and then was disaggregated by grade level and gender. None of the findings were statistically significant. In the case of comprehensible visual inputs impacting levels of efficacy for Spanish language acquisition and achievement in Spanish language learning, the null hypothesis was confirmed. Chapter 5 will offer a discussion of the significance and implications of these findings and will also provide implications for future research.

Chapter 5: Discussion

Learning a second language takes time and effort; for this reason, many students erroneously believe that it is impossible to learn a second language in a school setting (Friedman, 2015). However, many bilinguals have received their language training in school (Waldman, 1994). Considering my positionality as a native Spanish speaker who learned English as an adult, and as a Spanish teacher, I embarked on this study in search for new and effective ways to facilitate the acquisition of Spanish as a second language knowing that becoming bilingual will greatly benefit students in the classes I teach.

Participants for the study were 198 Spanish II students in a private Catholic college-preparatory high school in the Pacific Northwest. They were divided into two groups: a control group and a treatment group. The treatment group received instruction with visual input in the form of drawings and notes from the class that were uploaded to the school learning management system (Canvas), while the control group received traditional instruction without the drawings and without the notes.

Krashen's Comprehensible Input theory, Bandura's Social Cognitive theory, and Arwood's Neuro-Semantic Language Learning theory are the theoretical underpinnings of the intervention applied in this study. This quantitative study examined the effects of comprehensible visual input in the form of real-time drawings on students' self-efficacy toward learning Spanish as a second language in a classroom environment while in Grades 9 and 10 and compared students' academic test scores in classes receiving comprehensible visual input instruction with the academic test scores

of students in classes utilizing traditional second language instruction techniques to see if the intervention appeared to have any effect on student achievement.

The Comprehensible Input theory (Krashen, 1992) states that students learn a second language through input that is one step above their current ability. This type of comprehensible input increases acquisition. The acquisition motivates the learner to use the language in conversation (output), and conversation elicits more comprehensible input. This cycle of language acquisition is crucial for students' progress and success (Krashen, 1992). Keeping in mind that input should be interesting and relevant (Graab, 2014), the impact of comprehensible input in the form of real-time drawings was studied utilizing Arwood's theory stating that visual representations allow students to see the words and the grammatical structure of the Spanish language while the drawings support communication.

The idea of using real-time drawings for this study originated from Arwood's Neuro-Semantic Language Learning theory and the Viconic Language Method (Arwood, 2011). The principle of this method is to allow students to form concepts through visual representations provided by the teacher and later created by the students themselves. Since every student brings prior experiences to the classroom, drawing becomes a common language that facilitates the acquisition of the second language. Visual images such as pictures are a powerful tool in the classroom. Images capture students' attention and spark students' interest in learning (Medina, 2008; Wright & Sherman, 1999). The purpose of studying the effect of real-time drawings was to capture students' attention and to take advantage of their previous experiences. One may not know what a *Manzana* is, but many people know what



is. The common language is the drawing (comprehensible input). The name in any language is just a label that can be switched as needed for communication.

While comprehensible input is key to learning a language there is an important component to learning, self-efficacy. Bandura (1977) explains that self-efficacy is people's belief in their capacity to exercise behaviors to produce a certain outcome. Self-efficacy is important in education (Lent, Brown, & Larkin, 1986), and it is particularly important in the field of second language learning where motivation has been shown to be a crucial factor (Aichhorn & Puck, 2017; Clement, Dörnei, & Noels, 1994). Although there is a connection between self-efficacy and motivation, research on self-efficacy in the second language classroom and particularly in Spanish as a second language is limited. With the present study, the researcher attempted to add to the literature that connects an understanding of self-efficacy as it affects and is affected by second language instruction.

This study investigated whether there is a connection between comprehensible input instruction in Spanish as a second language classrooms and levels of student self-efficacy in second language acquisition. Further, the study examined if comprehensible input instruction had any impact on Grades 9 and 10 students' academic performance.

This final chapter addresses the findings of the study as they relate to the two research questions, and my interpretation of the data collected on both the Spanish Self-Efficacy Survey and the academic performance test. Additionally, there is

discussion of pedagogical implications, generally, implications specific to second language instruction, and the limitations of the study with specific reference to teacher effect. The chapter concludes with recommendations for further research that I believe may build upon the study's results and may provide a clearer picture of how self-efficacy and student success in second language instruction may be related via comprehensible input.

Research Question one: Self-Efficacy

The first research question was *How does comprehensible visual input, in the form of real-time drawings during class instruction affect Grade 9 and Grade 10 students' self-efficacy towards learning Spanish as a Second Language?*

As an experienced second language teacher, and as an indication of my assumptions going into the study, I expected to see a significant increase in students' self-efficacy in the treatment group after completing the intervention. Additionally, I hypothesized positive changes in the way students felt about their Spanish language performance as measured in the self-efficacy Progress scale, and changes in student perceptions of their Spanish ability against students in the control group as measured in the Observations Comparison scale. I also anticipated positive changes in how students felt based on the feedback they received from parents, teachers, and peers as measured in the Social Feedback scale, and how students' progress made them feel as second language learners as measured in the Physiological States scale. The data, however, did not report statistically significant change on any of the scales from the Spanish Self-Efficacy Survey. In effect, the null hypothesis was confirmed. This lack of statistical significance suggests results may be due to chance. That said, I believe

there are some responses to individual items within individual scales worth discussing in the belief that they raise enough interest to make the case for further study.

Progress Scale. This scale had 12 statements regarding students' perceived progress in the Spanish language class. On the statement PR 3 *I can handle more challenging Spanish material than I could before* 68% of students in the treatment group agreed or strongly agreed prior to the intervention, and 85% of students agree or strongly agree with the statement following the intervention. This result is an increase of 17% and is a 5% larger gain than the control group that moved from 73% agreeing on the pretest to 81% agreeing at posttest, for a total increase of 12%. While perhaps not statistically significant, this represents 42%, or five more students in the treatment group indicating they can handle more challenging material following the intervention. Further study into who these students are may reveal a different level of impact from CVI on particular student contexts or demographic criteria. For example, if all five of the students who felt their efficacy increased for challenging activities were male, it may prompt further study into the effects of CVI on male students specifically.

When students feel that they can tackle more difficult material their self-efficacy increases (Bandura, 1989; Bouffard-Bouchard, 1990). There was a decrease in statement PR 24 *I have improved on Spanish assignments and tests* for both the control and the treatment groups. Since student perception of their performance on assignments and tests was lower in both groups, the reasons for the decrease cannot be clearly attributed to the methods of instruction. A possible explanation may be that the study was conducted at the beginning of the school year when new material was introduced. Students' answers on statement PR 35 *When learning Spanish I need less*

help than I used to was surprising. I was surprised by the reply from both groups, especially the control group which decreased by 1%. A decrease of 1% is not a drastic change, however, but when this is compared to the treatment group where the difference moved from 59% pre-intervention to 74% agreeing post-intervention, showing an overall increase of 15% (See Figure 16). While the difference was not statistically significant, it led me to believe that the implementation of comprehensible input in the form of real-time drawings and the notes uploaded to the school learning management system may have had an effect on student efficacy, allowing students a higher level of freedom, independence, and empowerment. Given the act of asking for help is dependent on teacher-student relationships, teacher effect may also have impacted student responses to this item on the posttest.

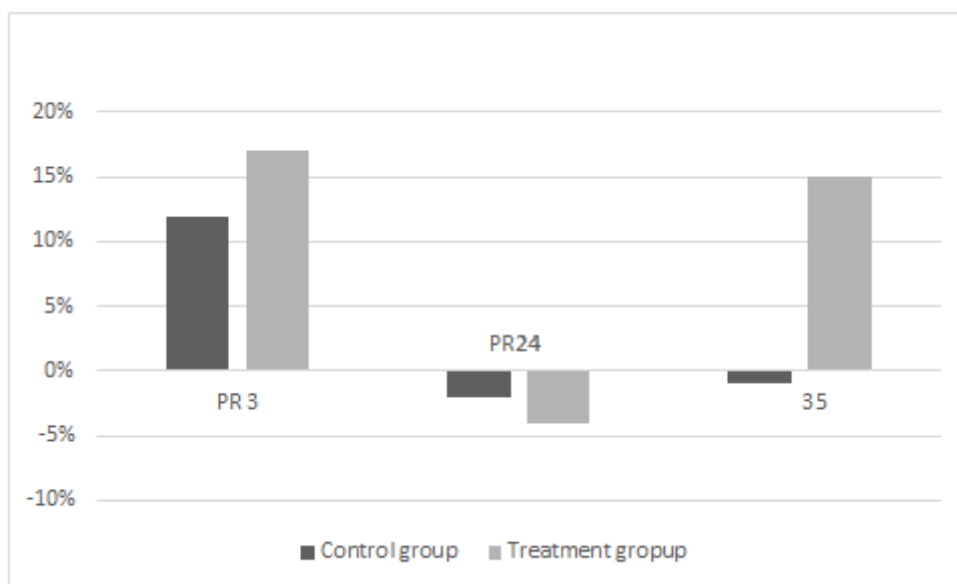


Figure 16 . Percentage change after treatment on statements PR 3, PR 24, and PR 35

Given students were randomly assigned to classes prior to the study and understanding that contextual variables could vary for each class of students, I believe that a change in any direction, although not statistically significant, may be worth exploring.

Observation Comparison Scale. This scale asked students to compare their perceived performance with the performance of other students in the class. The percentage of participants who agreed or strongly agreed for the treatment group increased from pretest to posttest in almost all of the statements indicating that students feel their performance is better than that of others. See Figure 17. As students' sense of achievement increases, self-efficacy also increases, producing higher interest and dedication on the part of students. Self-efficacy and academic achievement are believed to be closely related (Bandura, 1977), even though this relationship was not evident in the results of the study.

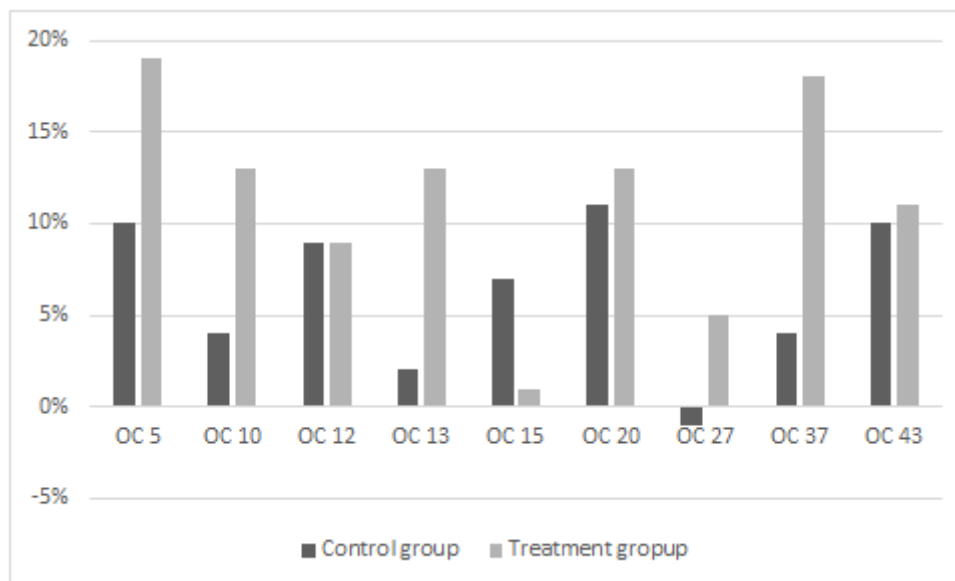


Figure 17. Percentage change after treatment on all of the Observation Comparison statements.

The higher percentage increase for the treatment group may be interpreted as if the intervention had an effect on the way students see themselves in comparison to their peers. While the control group showed gains in almost all the statements in the Observation Comparison scale, they also showed a decline on OC 27 *My understanding of important Spanish vocabulary words is better than other students*. It is not known why they felt their ability to master vocabulary in Spanish decreased from pretest to posttest, however since the treatment group showed a 5% gain on OC 27, the possibility exists that the gain was due to the CVI intervention and, similarly to a previous statement, the context of that 5% may reveal the need for further study into possible impact of CVI on a very specific demographic.

Social Feedback Scale. This scale asked students to think about the input they receive from others. The results indicate that the input they receive from others, teachers, parents, and classmates, is positive. It is important to note that this study was conducted at the start of the school year, from September 10 to October 10 when the majority of students, especially those in Grade 9 who are new to the school, are just beginning to get to know each other. It is important that students feel safe and valued within the learning environment before they are willing to appear vulnerable in front of their peers in situations involving social interactions as it is through social interactions that meaning is acquired (Vygotsky, 1962). The increase in percentage indicates that they feel encouraged by their peers, teachers, and parents. The results lead me to believe that students and teachers in both groups offered appropriate and encouraging feedback early on and throughout the intervention; however, this does also contribute to the limiting factor of teacher effect to be discussed later in the

chapter. Figure 18 shows the percentage change for both groups from pre to post intervention on statements in the Social Feedback scale.

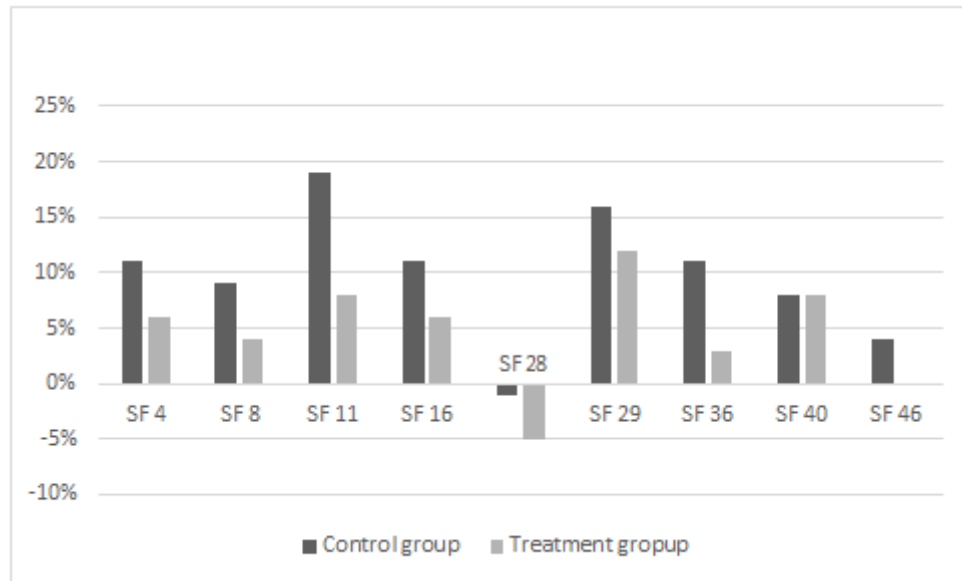


Figure 18. Percentage change after treatment on all of the Social Feedback statements.

For this scale, the control group again shows more gains than the treatment group, but this is not an indication that the treatment group did not improve. Both groups decreased on statement SF 28 *People in my family like that I am learning Spanish*. It is impossible for me to explain the change, since this statement relates to feedback given to students outside the school. While the reason for the dwindling support is unknown, further research could uncover whether it plays a part in students' individual levels of self-efficacy. On statement SF 40 *My teacher thinks that I do a good job in Spanish class*, both groups showed the same growth of 8%; since there were three teachers involved in the study, the equal increase indicated that teachers

offered systematically and encouraging feedback to students, though one must acknowledge the effect of chance on the responses.

Physiological States Scale. This scale asked students to think about how learning Spanish makes them feel inside. Figure 19 shows the percentage difference from pre- to post-intervention for both groups. Statements PS 22 *I enjoy how I feel when I am learning Spanish in class* and PS 26 *I feel good inside when I learn Spanish* asked students to rate how they felt while learning Spanish. Both groups showed negative progress on these statements indicating that students from both groups do not enjoy learning Spanish. Although the negative difference is not significant, this is an area for further exploration. The literature is consistent in stating that how students feel affects self-efficacy.

Moreover, students form motivational beliefs that are subject-matter specific (Bong, 2004). The way students feel about a subject will determine their interest in future learning. Self-efficacy influences motivation, perseverance, learning, and achievement (Lent et al., 1986). Perseverance is key in the acquisition of a second language; for this reason, the way students feel while learning may influence their decision to continue, or not, taking classes in the subject.

Students' answer for statement PS 34 *Spanish makes me feel happy inside* and statement PS 44 *Deep down, I like Spanish* indicated a difference between the two groups. The control group showed a decrease of 5% and a decrease of 2% respectively while the treatment group showed increased scores of 3% and 1% on both statements.

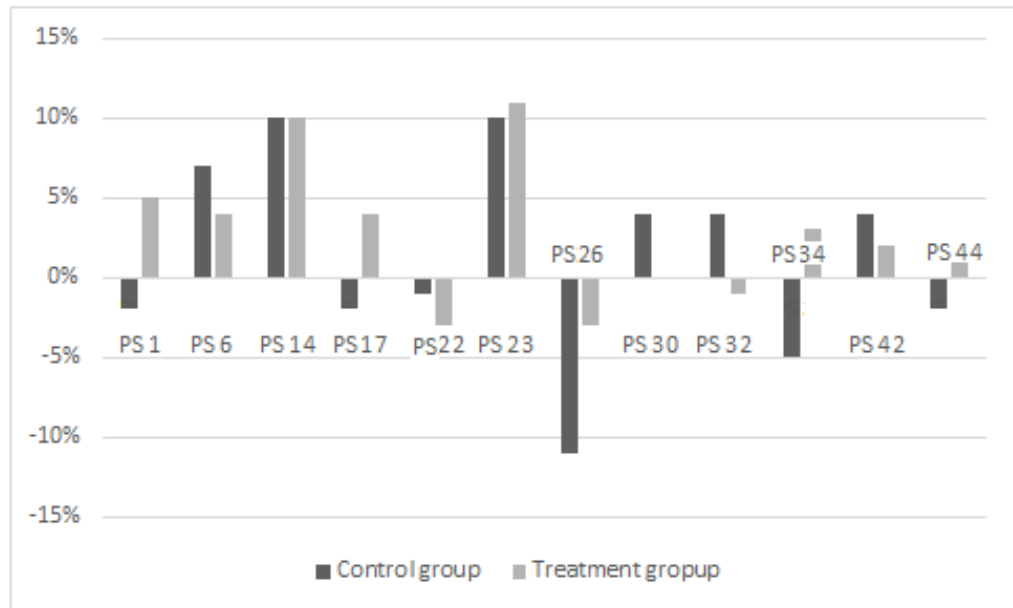


Figure 19. Percentage change after treatment on all of the Physiological States statements

Looking closely at statements PS 1 *Learning Spanish is a pleasant activity for me*, and PS 17 *Learning Spanish tends to make me feel calm*, one can see that the treatment group showed growth, or a positive change, from pre to post treatment, suggesting that students in the treatment group feel less stress about learning Spanish. Although this change was not statistically significant, this growth may or may not be attributed to the intervention. Having a common language, the drawing, gave students what Krashen (1992) calls the $i + 1$ premise, input that is one step above the current student understanding. Self-motivation is a direct outcome of self-efficacy (Bandura & Locke, 2003), and it occurs naturally in an environment free from stress (Krashen, 1995).

Research Question Two: Academic performance

The second research question is Are there differences in test performance between students receiving compressible visual input intervention versus the test performance of students receiving traditional instruction?

Students were given an adapted textbook-prepared test assessing the content outcomes for the target unit before the treatment and the same standardized test following the treatment and completion of the unit instruction. The treatment group scored slightly lower on aggregate at pretest and slightly higher at posttest. Figure 20 shows the percentage average for both groups at pre and posttest.

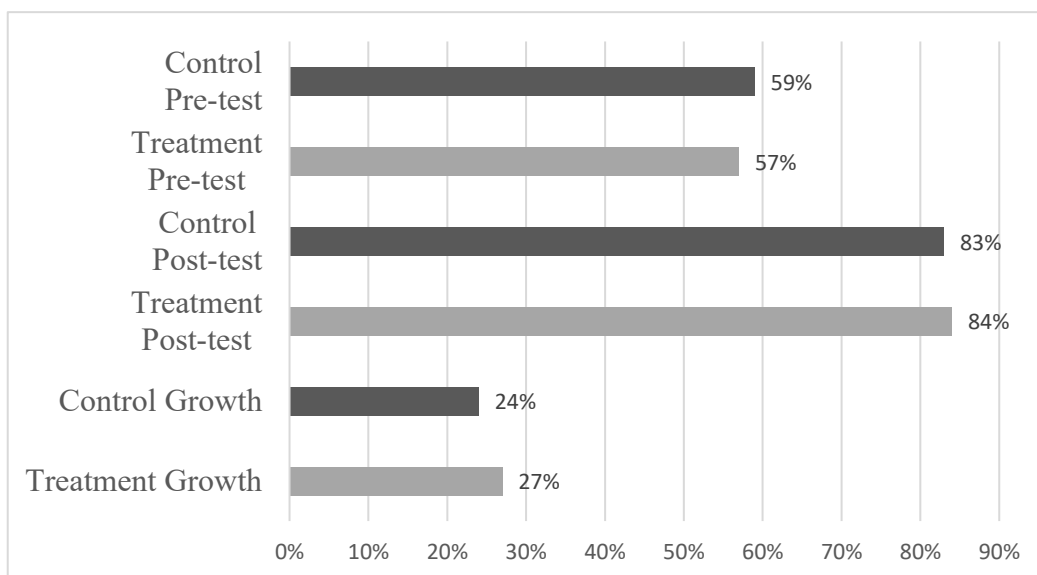


Figure 20. Percentage and growth average for both groups at pretest and posttest.

At pretest, the control group had an average of 59%, and at posttest, the average was 83% indicating a growth of 24%. The treatment group growth was 27% from an average of 57% at pretest to an average for 84% at posttest. The difference between pre and posttest results, while not statistically significant, did represent a

difference that is important to examine, because students' grades improved, and any improvement increases self-efficacy which, in turn may increase performance since self-efficacy and academic achievement are closely correlated (Bandura, 1977; Hsieh & Kang, 2010).

The aforementioned difference compelled me to look at the test results of individual students. I decided to count, from both groups, scores showing an improvement of 50% and higher as this is a substantial growth. Ten students in the treatment group showed gains between 50% and 63%. One student from the control group improved by more than 50%.

Although these results were impressive there was not a statistically significant difference between the treatment and control group's improvement. This improvement cannot solidly be attributed to the intervention; however, the increase in the treatment group could suggest that other factors, including the visual input, were effective (Kouyoumdjian, 2012), and the information presented with pictures contributed to increased recall (Medina, 2008). Moreover, the use of Viconic Language Methods helped the majority of students, including those with special learning needs (Arwood & Kaulitz, 2007; Arwood et al., 2009; Bakhurst & Shanker, 2001).

The test scores with an increase of at least 50% belong to 10 students in the treatment group, five of them male and five female. From the control group, one female student showed gains of at least 50%. Intrigued by the fact that six female students, five from the treatment group, and one from the control group made the most

gains at posttest, data were disaggregated by gender to compare not only the control with the treatment group but also to compare the results by gender as a subgroup.

The data analysis indicated that the female students in the control group outperformed female students in the treatment group by a small margin, but male students in the treatment group outperformed not only the male students in the control group but also female students in both groups. The male students in the treatment group made the most gains of all the students with an average increase of 29%. While this percentage is not statistically significant, the difference may be a topic for further study to explore whether CVI directly influences the academic achievement of male students. Table 17 shows the average percentage for each group at pre and posttest and the growth percentage average disaggregated by gender.

Table 17

Percentage at Pretest and Posttest and Percentage Growth by Gender

	<i>n</i>	Pretest % Average	Posttest % Average	Growth % Average
Gender				
Control				
Females	42	63	87	24
Males	57	57	81	24
Treatment				
Females	54	61	87	26
Males	45	52	81	29

After finding out that males in the treatment group made the most improvement, I wanted to look at student performance by grade level. Table 18 shows the percentage by grade level.

Table 18

Percentage at Pretest and Posttest and Percentage Growth by Grade Level

	<i>n</i>	Pretest Average %	Posttest Average %	Growth Average %
Grade level				
Control				
Grade 9	36	62	87	25
Grade 10	63	56	70	23
Treatment				
Grade 9	26	71	91	20
Grade 10	73	52	82	30

Students in Grade 9 from both groups scored higher at pretest and posttest than their counterparts in Grade 10. Students in Grade 9 enrolled in Spanish II classes had taken Spanish classes while in middle school. That previous experience with the language has given students in Grade 9 an advantage. The unexpected outcome of this analysis was the gain Grade 10 students experienced from the treatment group; they improved from pretest to posttest by an average of 30%. This subgroup showed the most gains of all other subgroups, although they were still not statistically significant.

I started this study with the research hypothesis that the intervention of using comprehensible visual input in the form of real-time drawings would increase the academic performance in Spanish for students learning Spanish as a second language in high school and increase each student's level of efficacy for learning a second language. There were not statistically significant findings on either the self-efficacy scales or academic test performance for the target units. There were, however, a number of data points that raised significant questions for further study that may

explain the lack of significance found in this work and more closely resemble the connections between self-efficacy and achievement highlighted in the literature.

Avenues for further research

The findings of this study appear not to confirm findings from other research stating that using visual aids during instruction is beneficial as they capture students' attention, promote students' interest in learning and increase recall (Medina, 2008; Wright & Sherman, 1999) although there were gains reported in achievement. Attributing the gains solely to the intervention applied here was not possible due to many other potential confounding factors. Additionally, the findings in this work did not confirm nor refute Arwood and Kaulitz's (2007) assertion that visual representations in the form of drawings maximize understanding, and benefit students with special learning needs, yet some data points pointed to possible benefits for some sub-groups and contextual groupings within the participant population. A deeper analysis of the self-efficacy item responses and perhaps a comparison by gender, grade, and treatment with disaggregation of the academic test sections would provide greater insights.

When students encounter positive experiences in the classroom, they are more likely to succeed, and success increases students' belief in their ability to learn new material (Bandura, 1995). This cycle of success leading to increased efficacy which in turn can lead to more success is a key element in instructional pedagogy (Lent et al., 1986).

I suspect that a similar study of the effects of CVI may render different results if replicated in a different environment with a more diverse student body. For

example, a public school that offers services and accommodations to students with special needs, may produce more generalizable results as the population of a public school is more representative of the general population.

Future research in the area of second language instruction is needed to investigate not only the potential impacts of self-efficacy on academic performance, the effects of CVI on levels of efficacy, but also the effects of CVI and self-efficacy on student retention of language learning as a key element of second language acquisition. A longitudinal study measuring degrees of retention may provide additional understanding as to why students instructed with real-time drawings in the target unit for this study showed no statistically significant increases in self-efficacy for language learning or academic achievement that was higher than peers receiving traditional instruction. Moreover, replication of this study with a younger population may render a different result; as it was stated in the literature review there are critical periods for the acquisition of language.

This study highlights the need to continue to study the way second languages are taught in schools today. Mashhadi and Jamalifar (2015) found a significant difference in the performance of students who were taught new vocabulary through visual aids versus textual instruction. That is, according to the researchers, students in the visual group outperformed students in the textual group. It is confounding that my study did not confirm these result since about “95% of individuals think with a visual learning system” (Arwood, 2017 p. 25). These students learn by making pictures in their heads. This study is one piece of the puzzle, yet in many ways makes the puzzle

larger. More research is needed to connect second language teaching practices to student learning.

Finally, the present study does not explain why students feel the way they do about learning Spanish. A qualitative study into the contributing factors for student assumptions and preconceived attitudes and dispositions towards language learning may produce a more holistic picture of why students feel the way they do about taking Spanish in school. Sometimes in-depth personal interviews tell rich and authentic stories that are not always captured by the quantitative analysis performed in the present study.

Limitations

First, the scope of the study was limited to a Catholic college-preparatory school in the Pacific Northwest, and therefore the population of the school may not be representative of the general population of the area. Participants in this study were a convenience sample in a college preparatory school, thus, making this study a quasi-experiment rather than a true experimental design. To increase reliability, this study would need to be replicated in different settings, preferably in other schools where the participants are also randomly assigned to general Spanish classes. Although this study included students of both genders in Grades 9 and 10, it only included students enrolled in Spanish II classes, and for this reason, generalizing the effects of the intervention beyond the participant group or similar groups where the many other contextual factors are also similar may be difficult.

Additionally, students in Grade 9 enrolled in Spanish II had prior experience with the language, either learned at home or in their previous school. This constituted

a limitation since the researcher had no control over the level or degree of their Spanish knowledge or how their attitudes and dispositions towards second language instruction had been formed in these other schools or family contexts.

The purpose of this study was to investigate student acquisition of a second language and to explore the effects of comprehensible visual input in the form of drawings on students' self-efficacy and academic performance. Any help students may have received outside the classroom from friends, family members, or tutors during a unit of instruction is a limitation of the study as it represents a factor which may potentially influence results.

The length and timing of the study also presented a limitation. The study was conducted over a five week period at the start of the school year and only covered one unit of instruction. Conducting the study at the beginning of the school year constituted a limitation as students did not have enough time to get to know their teachers, one another, and the methodology utilized in the study.

Although the Spanish Self-Efficacy Survey had strong construct validity, meaning that the data gathered were reliable, it was, however, essentially a self-reporting tool. The assumption was that participants reported honestly. However, self-reporting added subjectivity to the study, because each participant completed the survey based on their assumptions and attitudes and dispositions toward second language learning.

Teacher effect constitutes an important limitation. Teachers' high immediacy (teacher ability to engage students through nonverbal behaviors such as eye contact, smiles, and head nods) and teacher credibility positively affect students' motivation

(Pogue & AhYun, 2006). In this study, there were three teachers participating. The immediacy of each teacher could not be measured, so it was not possible to gauge the potential impact of teacher immediacy on the results. Moreover, Hattie (2003, p. 4) stated that there is a difference between experienced teachers and expert or excellent teachers and said that although an experienced teacher may have a positive impact on student learning, “excellence in teaching is the single most powerful influence on achievement.” Expert teachers have a positive effect on test scores and on students’ self-efficacy (Blazar & Kraft, 2017). Additionally, effective teachers are found to increase students’ enthusiasm and enjoyment and create a pleasant and low anxiety learning environment (Dewaele, Witney, Saito, & Dewaele, 2018). This limitation extends particularly to the scales of Social Feedback and Physiological States in this study which looked at the way students feel in the classroom while learning Spanish as a second language. The importance of creating low anxiety learning spaces is also consistent with Krashen’s (1982) statement of the importance of creating a low stress classroom.

Although precautions were taken to make this study as accurate as possible, including alignment of curriculum, common assessments, and common timelines for instruction, each of the teachers involved in the study may have had a particular effect on students’ self-efficacy towards learning Spanish, which in turn may have affected student achievement levels on the standardized assessment. All three teachers are experienced teachers, however, the researchers did not measure nor seek a determination of individual teacher effectiveness prior to the study.

Conclusion

This study provided information about the use of real-time drawings to teach Spanish as a second language to high school students. The ability to communicate in a language other than the mother tongue provides valuable benefits. Incorporating new ways to capture students' attention, increase interest in learning, and improve self-efficacy is important for all educators. Keeping in mind that our students will become adults competing in a globalized world, we are obligated to provide them with the best opportunities to achieve success. The results of this study were not statistically significant. However, further studies may yield different results and perhaps a qualitative study may provide an avenue for students to provide a narrative explanation of their experience.

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Appendix A
Standardized Unit test

Nombre:

Fecha:

Período:

Unidad 6

1. Pepe y Juanita. Match the sentences that form logical pairs.

- | | |
|---|---|
| 1. Pepe y Juanita van a la piscina | a. llevan pantalones cortos y zapatos de tenis y tienen una pelota. |
| 2. Pepe y Juanita van a jugar al baloncesto | b. llevan impermeables y botas |
| 3. Pepe y Juanita van a esquiar a las montañas | c. él lleva una corbata y ella lleva un vestido |
| 4. Pepe y Juanita van a salir pero está lloviendo | d. llevan gafas de sol y trajes de baño |
| 5. Pepe y Juanita van a un restaurante muy elegante | e. llevan suéteres, chaquetas y guantes |

2. Completar. Fill in the blanks with the present tense form of **SABER** or **CONOCER**

a. sé	b. sabes	c. sabe	d. sabemos	e. saben
ab. conozco	ac. conoces	ad. conoce	ae. conocemos	bc. conocen

6. Yo no _____ a qué hora abre el almacén
7. Tú _____ un mercado muy barato.
8. Luisa _____ nadar muy bien.
9. Nosotros _____ a la vendedora de zapatos de tenis
10. Juan y José _____ conducir.

3. Ya pasó. Fill in the blanks with the Preterite form of the verb.

11. Ellos _____ el mercado.

- a. buscan b. buscaron c. buscaban d. buscó

12. El dependiente _____ una camisa.

- a. venden b. vendía c. vendió d. vendí

13. Nosotros _____ la tarea.

- a. escribimos b. escribió c. escribe d. escribíamos

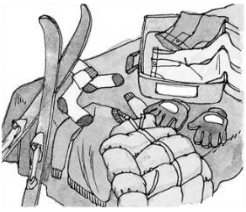





14. ¿Tú _____ en efectivo por la ropa.

- a. pagué b. pagabas c. pagó d. pagaste

15. Juan _____ ayer de su viaje a la playa.

- a. llegó b. llega c. llegaba d. llegamos

4. Escoger. Match the pictures and descriptions.

 <p>16</p>	 <p>17</p>	 <p>18</p>
 <p>19</p>	 <p>20</p>	 <p>21</p>

- a. Hay trajes de baño sobre la cama.
- b. Pepe y Juanita hablan con el dependiente.
- c. Julia compra un vestido a las 4:00 de la tarde.
- d. Alicia pagó con dinero en efectivo al dependiente.
- e. Hay mucha ropa en la tienda.
- ab. Mi familia va la montaña a esquiar durante el invierno.

7. Juanita va al almacén. Fill in the blanks with words from the box.

a. bolsa	b. efectivo	c. número	d. rebaja	e. traje
ab. caras	ac. esta	ad. ofrecer	ae. tenis	

VENDEDOR Buenas tardes.

JUANITA Hola, ¿me puede ayudar?

VENDEDOR Sí ¿Qué le puedo (22) _____ ?

JUANITA Voy de vacaciones a la playa y necesito un par de sandalias. No pueden ser muy (23) _____ porque no tengo mucho dinero.

VENDEDOR Muy bien. Yo creo que usted necesita también unos zapatos de (24) _____, son _____ más cómodos y si paga en (25) _____ le hacemos una (26) _____

JUANITA ¡Qué bien!

VENDEDOR ¿Qué (27) _____ calza?

JUANITA Calzo el 7. También quiero comprar un (28) _____ de baño, unas gafas de sol y una (29) _____ anaranjada.

VENDEDOR Mire. Tenemos (30) _____ bolsa anaranjada y es muy elegante.

JUANITA Gracias por su ayuda, y por la rebaja.

8. Lectura. Read the description of the store, then answer the questions.

El almacén Azul vende ropa casual de hombre y de mujer. Tiene una gran variedad (*variety*) de colores y tallas. Los bluejean cuestan de \$30 a \$50. Las vendedoras están listas si los clientes necesitan ayuda (*help*). Estas muchachas estudian diseño de modas. A mí me gusta mucho este almacén. Tiene muy buenos precios y una gran selección.

31. ¿Qué tipo de ropa vende el almacén Azul?
- a. ropa elegante b. ropa casual c. ropa deportiva
32. ¿De qué tiene una gran variedad el almacén?
- a. de colores y tallas b. de precios c. de bluejean
33. ¿Cuánto cuestan los bluejean en el almacén?
- a. de \$30 a \$40 b. de \$20 a \$50 c. de \$30 a \$50
34. Si los clientes necesitan ayuda ¿cómo están las vendedoras?
- a. listas b. aburridas c. enamoradas
35. ¿Qué estudian las muchachas que trabajan en el almacén?
- a. contabilidad b. diseño de modas c. matemáticas
36. ¿Por qué le gusta este almacén a María?
- a. Los precios son fijos b. Puede regatear c. Tiene una gran selección.

5. Seleccionar. Select the correct Direct Object Pronoun.

37. Alicia compró una camiseta.

- a. las b. me c. la d. lo

38. Mis amigos llevan los pantalones largos.

- a. las b. los c. me d. lo

39. Nosotros buscamos a los dependientes.

- a. la b. nos c. lo d. los

40. Juana ofrece las corbatas.

- a. los b. te c. las d. no

41. Yo escribí las cartas para los clientes.

- a. los b. me c. lo d. las

6. Seleccionar. Select the correct Indirect Object Pronoun

42. Mario presta dinero (*to you, pl.*)

- a. me b. te c. les d. nos

43. Ellos escribieron mensajes electrónicos. (*to me*)

- a. nos b. me c. la d. los

44. Juana vende una cartera. (*to him*)

- a. me b. nos c. te d. le

45. La vendedora dice dónde comprar la chaqueta (*to us*)

- a. le b. les c. nos d. me

46. Lola da los calcetines (*to you, fam. sign.*)

- a. nos b. me c. les d. te

- (PS) 6. I feel comfortable in Spanish class. **SA A U D SD**
- (PR) 7. When I am learning Spanish, I don't have to try as hard
to understand as I used to do. **SA A U D SD**
- (SF) 8. My classmates like the way I pronounce Spanish words. **SA A U D SD**
- (PR) 9. I am getting better at Spanish. **SA A U D SD**
- (OC) 10. When I am in Spanish class, I can figure out words better
than other students. **SA A U D SD**
- (SF) 11. My teacher thinks I am a good Spanish Student. **SA A U D SD**
- (OC) 12. I learn Spanish better than other students in my class. **SA A U D SD**
- (OC) 13. My Spanish comprehension level is higher
than other students. **SA A U D SD**
- (PS) 14. I feel calm when I am in my Spanish class. **SA A U D SD**
- (OC) 15. I learn Spanish faster than other students. **SA A U D SD**
- (SF) 16. My teacher thinks that I try my best in Spanish. **SA A U D SD**
- (PS) 17. Learning Spanish tends to make me feel calm. **SA A U D SD**
- (PR) 18. I understand Spanish better than I could before. **SA A U D SD**
- (PR) 19. I can understand difficult Spanish material
better than before. **SA A U D SD**
- (OC) 20. When I learn Spanish, I can handle difficult concepts
better than my classmates. **SA A U D SD**

- (PR) 21. When I am in Spanish class, I recognize
more words than before. SA A U D SD
- (PS) 22. I enjoy how I feel when I am learning Spanish in class. SA A U D SD
- (PS) 23. I feel proud inside when I think about
how well I learn Spanish. SA A U D SD
- (PR) 24. I have improved on Spanish assignments and tests. SA A U D SD
- (GN) 25. I think I am a good Spanish student. SA A U D SD
- (PS) 26. I feel good inside when I learn Spanish. SA A U D SD
- (OC) 27. My understanding of important Spanish
vocabulary words is better than other students. SA A U D SD
- (SF) 28. People in my family like that I am learning Spanish. SA A U D SD
- (SF) 29. My classmates think that my Spanish is pretty good. SA A U D SD
- (PS) 30. Learning Spanish makes me feel good. SA A U D SD
- (PR) 31. I can figure out new Spanish words better
than I could before. SA A U D SD
- (PS) 32. I think learning Spanish can be relaxing. SA A U D SD
- (PR) 33. I can understand Spanish grammar better
than I could before. SA A U D SD
- (PS) 34. Spanish makes me feel happy inside. SA A U D SD
- (PR) 35. When learning Spanish, I need less help than I used to. SA A U D SD
- (SF) 36. I can tell that my teacher likes my Spanish pronunciation. SA A U D SD

- (OC) 37. I seem to know the meaning of more Spanish words
than other students. SA A U D SD
- (PR) 38. I learn Spanish faster than I could before. SA A U D SD
- (PR) 39. Learning Spanish is easier for me than it used to be. SA A U D SD
- (SF) 40. My teacher thinks that I do a good job
in Spanish class. SA A U D SD
- (PR) 41. My understanding of difficult Spanish materials
has improved. SA A U D SD
- (PS) 42. I feel good about my ability in Spanish. SA A U D SD
- (OC) 43. I am more confident in my Spanish ability
than other students. SA A U D SD
- (PS) 44. Deep down, I like Spanish. SA A U D SD
- (PR) 45. I can comprehend Spanish better than before. SA A U D SD
- (SF) 46. My teacher thinks that my Spanish is fine. SA A U D SD
- (PR) 47. Spanish vocabulary words are easier for me
to understand now. SA A U D SD