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# Facilitating Motivation in a Virtual World Within a Second Language Acquisition Classroom

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Facilitating Motivation in a Virtual World Within a Second Language Acquisition  
Classroom

by

Andrew Warren Gump

A dissertation submitted in partial fulfillment  
of the requirements for the degree of  
Doctor of Philosophy in Curriculum and Instruction  
with a concentration in Instructional Technology  
Department of Secondary Education  
College of Education  
University of South Florida

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## **Dedication**

First and foremost, all credit and glory belongs to God, without whom I'm sure I wouldn't have had the strength and determination to get this far. I pray He uses this as a springboard and continues to guide me to do His will.

This research study is dedicated to my family and friends. It has been a lifelong dream to reach this milestone and without such great people in my life, this never would have been possible. To my parents, thank you for instilling in me the life lessons that helped me get this far. To my wife, Faith, a million thanks is not enough for all the support you've given me throughout this process. You've been there every step of the way and taken on more responsibilities than any one person should have to. To my children, Archer, Alyssabeth, and miracles yet to be, while you may be too young yet to realize it, you were an inspiration to me in some of my darkest moments. I pray this achievement may one day inspire you to reach your dreams. Never stop learning. Never stop growing.

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## Abstract

A mixed methods study was conducted to determine the effects of implementing a virtual world instructional component on online undergraduate students' motivation, anxiety, and attitude toward the target language. The purposive nonrandomized sample consisted of second-year Spanish language students ( $n = 29$ ) enrolled in a Southeast university in the United States. Using a quasi-experimental design, two groups were randomly assigned into an experimental group ( $n = 13$ ) and a control group ( $n = 16$ ). The experimental group utilized the virtual world *Second Life*, where they were able to interact with native Spanish speakers to complete seven free tasks related to course objectives. The Second Language Acquisition Survey, developed by the researcher, was administered to the control and experimental groups prior to and after the experimental group received the treatment. Independent  $t$ -tests were used to analyze the data. The findings indicated there were no statistical differences in the three dependent variables. An analysis of final course grades also did not find any statistical differences between the two groups. One-on-one interviews demonstrated initial positive influences felt by the treatment group, including positive perceptions of the virtual world and less anxiety when approaching in-world people to interact with in the target language. Additional interview responses combined with an instructor interview revealed the length of the treatment may be too long and started to interfere with higher priority responsibilities. Future studies should continue to explore the use of virtual worlds within second language acquisition classrooms for their ability to alleviate these three defined constructs of language acquisition.

## Chapter 1

### Introduction

Motivating students to learn is one of the greatest challenges educators encounter. Comments such as “Why do I need to learn this?” or “What is in this for me?” are commonly heard in today’s educational institutions. Students desire to know the personal benefit of what they are being taught. Students want to know how this information will help them achieve their goals. They are looking for their motivation. *Motivation* is defined as the internal force that drives individuals to function and reason the way they do (Eccles, Wigfield, & Schiefele, 1998). A student’s motivation is a significant factor that can influence learning (Hiddi & Harackiwez, 2000; Huett, 2006; Kim, 2004) and can be one of the most powerful determining factors related to a student’s success or failure in school (Hardré, Crowson, Debacker & White, 2007).

The lack of motivation is especially prevalent in required courses outside of the college students’ main interest (Huett, 2006). For example, low levels of student motivation are typically prevalent in Second Language Acquisition (SLA) courses where students may have no personal desire to learn the language, but must attend the classes and pass in order to graduate. Students’ lack of motivation can negatively impact their language acquisition. Motivation has been regarded as one of the most influential forces on a person’s ability to learn, or not learn, a foreign language (Dörnyei, 2003; Gardner, 1985; Gardner & Clement, 1990; Klein, 1986; Noels, 2003). For this reason, when educators design instruction, learner motivation should be a primary consideration (Ahern, Thomas, Tallent-Runnels, Lan, Cooper, Lu, & Arbaugh, 2006).

In today's technology centered world, one tool demonstrating potential in SLA classrooms is the use of a virtual world (VW). Virtual worlds provide educators a unique opportunity to place students in an immersive learning environment where learners can experience constructive learning activities (Dickey, 2005). The immersive experience afforded by this interactive medium provides opportunities that were not previously an option for educators. Virtual worlds provide opportunities to improve student performance, persistence, and motivation (Deutschmann, Panichi, & Molka-Danielsen, 2009).

A variety of researchers have conducted preliminary studies in the use of virtual worlds for educational purposes (Delarge, 2008; Dreher, Reiners, Dreher, & Dreher, 2009; Edirisingha, Nie, Pluciennik, & Young, 2009). The difficulty with the conducted research to date is its lack of measurable outcomes to substantiate claims. Hew and Cheung (2010) conducted a review of the current virtual world research and found only 6.5% were empirical research studies (the rest were opinion papers, conceptual papers, nonempirical descriptions of program implementations, literature reviews, or non-K-12 and higher education related). While the early discussions and descriptions are promising, the lack of solid empirical research on the effects of implementing a virtual world leaves a void that needs to be filled.

Incorporating virtual worlds into a curriculum provides educators the opportunity to change the experience, and ultimately the success, of a student. Virtual worlds offer the ability to break free from the established conceptions of education and allow people to have "radically different 'lived experiences' of educational systems," (Twining, 2009, p. 498). The radically different 'lived experiences' include access to learning environments and resources previously unavailable. This may have a dramatic effect in the learning of a second language where the learner does not have direct access to the foreign language they are learning. Virtual worlds, such

as Second Life, allow students to visit “foreign” lands and interact with native speakers. With such an opportunity literally at their fingertips, students may become more motivated to speak their target language. In an exploratory study using Active Worlds, a 3D virtual world, Peterson (2006) collected data in the form of 24 participants’ chat logs. The data were coded into categories independently by two researchers based on previous research findings. Peterson (2006) found that participants were able to communicate in the other language and complete a variety of tasks interacting with the target language.

While the value of virtual worlds in an SLA appears promising, the value of motivation in second language acquisition (L2) has been demonstrated and given emphasis by leading researchers such as Robert Gardner (1974, 1985, 1990), Wolfgang Klein (1986), and Zoltán Dörnyei (1998, 2003, 2006). Each researcher stressed the need for educational systems to focus on increasing student motivation by providing students with engaging and interesting experiences. Specifically, students should be provided experiences that will immerse them into a new language environment leading to more complete language acquisition. Learners without motivation can experience incomplete acquisition of a targeted language or fossilization (Klein, 1986). Klein (1986) describes fossilization as the point at which no further learning appears possible. The students do not expand their language acquisition through experience or instruction, and essentially their understanding of the language is “set in stone”, or fossilized. Given the importance of motivation in second language acquisition, instructional strategies to increase motivation are a must. Implementing virtual worlds into a second language-learning classroom provides the perfect opportunity to immerse students in engaging and interesting experiences, and possibly increase student motivation. Therefore, this study was designed to examine the implementation of a virtual world in an SLA class.

## **Statement of the Problem**

Relevant research problems and gaps are identified and presented as follows:

While many studies have been conducted on the feasibility and use of virtual worlds in education, and in particular second language acquisition, an extremely limited number have taken an empirical approach to studying their effectiveness. Virtual world usage has become a trend in education, but measurable outcomes and benefits are understudied. While the capabilities of virtual worlds used to enhance SLA have been widely discussed, virtual worlds' uses to enhance motivation have rarely been studied. This study first attempted to fill this void and establish a connection of virtual world usage and student motivation using quantifiable data. Secondly, the study examined additional benefits previous research demonstrated should improve SLA, in particular, the reduction of anxiety often associated with learning and speaking a new language. This is significant in the second language classroom as situational anxiety plays an important role in the second language classroom (Gardner, 1985). Additionally, the use of a virtual presence appears to help alleviate the negative impact of Klein's motivation dimension, social integration (Klein, 1986). Social integration accounts for the need to create a social or personal identity inside one's culture. If a person's desire to keep his or her identity is too strong, it may cause him or her to shrink back from becoming integrated into a new language community for fear of losing his or her social identity. Virtual worlds provide an opportunity for learners to develop new identities, which may actually enhance their confidence and ability to participate in the learning environment (Freeman & Bamford, 2004). Users generally take on another role, persona, or attitude in a virtual world that would negate this negative impact Klein suggests (Svensson, 2003). A change in attitude toward the target language through the use of

virtual worlds has been studied very little and thus was a criterion measure in this study. In short, it was imperative to conduct this study to gain a deeper understanding in these existing research gaps and provide a basis for future endeavors.

### **Rationale**

Without empirical research to support the application of virtual worlds in SLA classrooms, its benefits would be without merit. The use of virtual worlds is increasing, and support for their implementation is growing (Dickey, 2005; Evans, Mulvihill, & Brooks, 2008; Freeman & Bamford, 2004; Hew & Cheung, 2010; Oliver & Carr, 2009; Ryan, 2008; Wehner et al., 2011). The majority of current material consists of opinions and possible implementation/uses (Hew & Cheung, 2010). Therefore, it was necessary to examine the early virtual world and second language acquisition researchers from an empirical approach to make sense of what they have studied and learned.

Before stating a more complete case for the use of a virtual world in an SLA classroom, it is important to first understand the different learner characteristics that contribute to make for a successful SLA experience. Research demonstrates learners' motivation, anxiety, and attitudes toward the target language all play integral parts in language acquisition (Dörnyei, 1990, 1994, 1998, 2000, 2001, 2002; Gardner, 1979, 1985, 2001; Klein, 1986; Krashen, 1982, 1985, 1988, 2002, 2003). While there are many elements that influence SL learning, these three appear to be the most prevalent and within the manipulation realm of instructional design (Wehner et al., 2011).

Of the learner characteristics, motivation is often regarded as the most influential force (Dörnyei, 2003; Gardner, 1985; Gardner & Clement, 1990; Klein, 1986; Noels, 2003). The

desire to learn a new language is critical in accomplishing the task, and without it the language learning may become stagnant and unresponsive to instruction or exposure (Klein, 1986).

Leading experts such as Robert Gardner (1974, 1985, 1990), Wolfgang Klein (1986), and Zoltán Dörnyei (1998, 2003, 2006) discuss a reoccurring emphasis on motivation. The researchers continuously stress the importance of educational systems' need to design instructional practices that will increase student motivation by providing students with engaging and interesting experience. In particular, experiences that immerse students into a new language which can lead to more complete language acquisition.

Similarly, the anxiety a second language learner feels may impact their ability to learn the target language. The common feeling associated with anxiety is fear (Lader, 1975). Anxiety, or fear, may cause a student to shy away from opportunities to practice the target language and therefore grow in that language. While research into anxiety is difficult because of the many extraneous variables, two variables are commonly referred to as trait anxiety (an anemic state of some individuals to become anxious in any situation), and state anxiety (apprehension experienced at a particular moment in time, for example, having to speak in a foreign language in front of classmates) (Spielberger, 1983). Additionally, students' perception of their own communicative abilities may affect language acquisition. Adding more weight to this perception is that highly anxious students tend to underestimate their own competency level compared to less anxious students (MacIntyre, Noels, & Clement, 1997). For these reasons, it is recommended that SLA classrooms use strategies to enhance learning and reduce the anxiety felt by the student (MacIntyre & Noels, 1996). A treatment to alleviate the anxiety a learner feels may increase language learning and therefore should be strongly pursued.

Finally, attitude is a characteristic an instructional design treatment should focus on. Attitude is an integral part of Klein's (1986) language learning theory. This critical factor hinges on the students' feelings toward learning the new language. If students do not want to learn a new language, they simply will not (Gardner, 1985; Klein, 1986). Attitude is possibly the most noticeable in the classroom. "Attitudes exert a directive influence on behaviour since someone's attitude towards a target influences the overall pattern of the person's responses to the target. [...] Behavioural performance can then be predicted from people's intentions to perform the behaviour in question from their perceptions of control over the behaviour" (Zörneyi, 1998, p. 11). A student's performance in class can indicate to a teacher which student wants to learn and which one does not. While a student's attitude is up to the discretion of each individual student, it is the responsibility of the teacher and the design of the class to provide activities that are challenging yet accomplishable to give students an opportunity to feel more confident about their language abilities and therefore more apt to practice and participate.

Given the importance of motivation, anxiety, and attitude, any instructional design strategy to improve the SLA classroom must place emphasis on these areas. While this may seem like a daunting task for any instructional designer, the research into the implementation of virtual worlds leads this researcher to believe application and use of virtual worlds may be the perfect solution. The use of a web-based experience and technology typically translate into a temporary increase in learner motivation (Huett, 2006; Keller & Suzuki, 2004). The temporary increase in motivation may translate to long-term potential (Ryan & Deci, 2000, 2002). Additionally, virtual worlds give learners the opportunity to develop an online identity, which may enhance their confidence and ability to participate in the learning environment (Freeman & Bamford, 2004). Similarly, the use of avatars has been found to demonstrate social and psychological benefits that



may help reduce learner anxiety (Dickey, 2005; Evans, Mulvihill, & Brooks, 2008; Oliver & Carr, 2009, Ryan, 2008). Therefore, there is a demand of theory-based and empirical evidence-supported instructional strategies that educators can employ in the design and instruction of their SLA classrooms to improve students' motivation, anxiety, and learner attitudes toward the target language.

### **Purpose of the Study**

As opportunities to improve learning environments change with the development of Web 2.0 technologies, social networking, and virtual worlds, there is an increased need for instructional design methods that utilize these tools to meet the demand of the learners. It is imperative that the designs focus on the needs first, and then see if a technology exists to fill that need. This study utilized quantitative and qualitative data in a quasi-experimental mixed method design to measure if there is a difference in students' motivational intensity, level of anxiety, attitudes, and perceptions of students learning Spanish as a second language after using Second Life to complete assignments. Additionally, the study attempted to gather an understanding of the user experience and perceptions of using a virtual world to enhance language learning.

### **Theoretical Framework**

With this study, the researcher attempted to marry ideas and concepts that he believes spans across multiple disciplines, and therefore does not lend itself to one theoretical framework. Often researchers operate in a content specific and highly specialized area that does not always allow for the sharing of information between fields. In the instructional design field, the

researcher is in the unique position of understanding the importance of designing instruction while taking into consideration the challenges and affordances of technology and how it relates to multiple subjects. It was in this passionate space that while focusing on motivation and technology, the researcher chanced upon its relationship and possible benefit to second language acquisition. Further research demonstrated the importance of motivation to language acquisition and the challenges in anxiety, attitude, and immersion instructors often face. With these problems identified, the solution to alleviate these needs presented itself in early virtual world research.

The work of Dörnyei, Gardner, Klein, and Krashen provide a basis for the challenges language learners face (Dörnyei, 1990, 1994, 1998, 2000, 2001, 2002, 2006; Gardner, 1979, 1985, 2001; Klein, 1986; Krashen, 1982, 1985, 1988, 2002, 2003). As Dörnyei (2001) pointed out, the general consensus has become, at least when it pertains to learning, that student motivation is often described in varying degrees of intrinsic or extrinsic motivation. Rather than treating them as opposing forces in two polarized categories, self-determination theory (Deci & Ryan, 1985) proposes behaviors that can be placed on an internalization continuum (Deci & Ryan, 1985) based on the degree of regulation that is internalized from outside to inside an individual. On one side of this continuum is amotivation, where an individual experiences apathy. On the other side of the continuum is intrinsic motivation. Extrinsic motivation is somewhere in the middle. If motivation is thought of on a continuum that Ryan and Deci's (1985, 2000, 2002) self-determination theory (SDT) suggest, then by first gaining someone's attention, we can capture their external motivation and perhaps through the experience bring them to be internally motivated. In instructional design, Keller's ARCS model is the standard for

designing instruction with motivation as the central element and will serve to loosely guide this study. (Keller 1987a, 1987b, 1999).

### **Research Questions**

Specifically, the researcher attempted to answer the following questions regarding online undergraduate students enrolled in a required for degree completion second language (Spanish) class:

**Q1.** What, if any, difference is there in online undergraduate students' motivational intensity toward learning Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world?

**Q2.** What, if any, difference is there in online undergraduate students' level of anxiety toward using Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world?

**Q3.** What, if any, difference is there in online undergraduate students' attitude toward the Spanish culture between students using a virtual world to enhance their learning experience and students not using a virtual world?

**Q4.** How do online undergraduate students feel about using Second Life to learn Spanish?

**Q5.** How frequently do online undergraduate students believe they will continue to use Second Life to interact with native Spanish speakers after the class concludes?

**Q6.** How do online undergraduate students feel when using Spanish in a virtual world compared to the traditional online classroom?

**Q7.** How different do online undergraduate students feel their virtual persona/identity was than their face-to-face persona/identity?

**Q8.** What, if any, difference is there in the final grades of online undergraduate students between students using a virtual world to enhance their learning experience and students not using a virtual world?

### **Design of the Study**

This study took the form of a quasi-experimental, mixed method design using a pretest-posttest and a control group. The participants were undergraduate student volunteers from online third-semester Spanish courses. The experimental-group and control-group students were drawn from different class sections of the same course taught by the same instructor. The independent variable was the instructional method used: traditional instruction in the online classroom (control group) and the use of a virtual world, Second Life (experimental group).

This study examined three dependent variables: (a) students' motivational intensity toward learning Spanish; (b) students' level of anxiety toward using Spanish; and (c) students' attitude toward the Spanish culture. Data was gathered for these questions using the Spanish Language Acquisition Survey (SLAS) created by the researcher. Details on the development and reliability of this instrument can be found in Chapter 3. Statistical analysis was conducted using SPSS Statistics 21.0 software.

Additionally, this study attempted to identify the perceptions and experiences of the participants within the experimental group (research questions 4-7). The implementation of a virtual world where traditional online classroom instruction would occur is still a relatively new phenomenon and the more details educators have about the user experience the better it can be

utilized. To capture this information, the researcher conducted five one-on-one interviews with volunteer participants. The interviews were semi-structured in order to provide guidance and consistency while allowing the researcher affordances to investigate unpredictable responses in greater detail.

### **Significance of the Study**

Educational institutions, administrators, instructional designers, and instructors all have a vested interest in improving students' motivation to learn. Motivation, anxiety, and attitude play key roles in learning a second language and should be central considerations when designing instruction (Dörnyei, 2003; Gardner, 1985; Gardner & Clement, 1990; Klein, 1986; Noels, 2003). Characteristics of virtual worlds present opportunities to educators that may improve the student experience in the second language acquisition classroom and thereby increase learning (Dickey, 2005; Huett, 2006; Ryan & Deci, 2002). By increasing motivation, reducing the anxiety felt, and possibly increasing a positive attitude toward another culture, virtual worlds capitalize on the affordances of technology that the traditional classroom and the traditional online classroom cannot achieve. The findings of this study may be used as a springboard for development and implementation of virtual worlds in language learning courses. This study may also serve as a reference point for all language acquisition courses and other disciplines to improve student motivation, reduce the anxiety felt in the traditional online classroom, and improve learner attitudes toward the targeted curriculum.

## **Delimitations and Limitations**

This study attempted to reach a balance of internal validity and external validity (Ross & Morrison, 2004) by controlling some of the extraneous variables while keeping the study meaningful for real-life practice. The researcher was not able to randomly assign participants into treatment groups thus allowing extraneous factors among individuals to influence results. To minimize such variables and others that may confound the results of this study, a pretest instrument was used to help reduce error variance. Since the researcher did not disrupt the existing research setting and used already intact groups, the likelihood of the participants reacting to the effects of the experimental procedure was diminished, which improved the external validity of the design (Dimiter & Rumrill, 2003). However, the study was more sensitive to internal validity problems such as selection and maturation, selection and history, and selection and pretesting. Additionally, the study was limited to one school impacting the generalizability of the findings. The instrument used a Likert-type scale that cannot measure subtle differences in participants' responses.

The qualitative data may have been influenced by interviewer bias. Interviewer bias possibly influenced the interpretation of the interview results. While every conscious effort to minimize interviewer bias' influence was made, it should be acknowledged. Additionally, the use of external reviewers assisted in mitigating the influence of bias on the data. Finally, it was impossible to control the experiences participants in the experimental group may have while in the virtual world. With an incredibly vast number of locations to visit and the inability to control the in-world interactions, each user experience was unique. These experiences undoubtedly had an impact on the results, but given the realistic nature of the immersion into the culture and

research's emphasis on having such experiences, these differences and experiences were encouraged.

### **Definitions**

The following terms are defined for the purpose of this study.

*Avatar* is a virtual representation of a person.

*Extrinsic motivation* consists of external influences that encourage the learner to participate in an activity to attain personal goals (Cheng & Yeh, 2009; Margueratt, 2007; Schunk et al., 2008).

*Intrinsic motivation* is an internal factor where there is a willingness of the learner to take part in an activity for its own sake (Cheng & Yeh, 2009; Fazioli, 2009). Intrinsic motivation is often viewed as an internal motivation.

*Motivation* is the internal force that drives individuals to function and reason the way they do (Eccles et al., 1998).

*Second-language acquisition* is the process by which someone learns a second language.

*Traditional Online Classrooms* are classrooms that do not utilize Web 2.0 tools for instruction outside of their class content management system. Traditional websites allow passive viewing of content where a Web 2.0 site may allow users to interact and collaborate with one another. Examples of Web 2.0 include social networking sites, blogs, and video sharing sites (Krishnamurthy & Cormode, 2008).

*Virtual Worlds* were defined by Downey (2012) as follows: “massive, persistent, multi-dimensional graphical environments in which people establish a sense of presence (avatars), and come together in real time to form communities to interact – whether it be to play, socialize,

learn, etc.”

## Summary

This chapter introduced the problems SLA classrooms face in terms of motivation, anxiety, and attitude toward the target language. With the heavy emphasis SLA researchers place on these three constructs, (Dörnyei, 1990, 1994, 1998, 2000, 2001, 2002, 2006; Gardner, 1979, 1985, 2001; Klein, 1986; Krashen, 1982, 1985, 1988, 2002, 2003), any instructional design strategy implemented should attempt to alleviate these concerns. The implementation of virtual world appears to meet these needs. It has the potential to increase motivation (Ryan & Deci, 2000, 2002), reduce user anxiety (Dickey, 2005; Evans, Mulvihill, & Brooks, 2008; Oliver & Carr, 2009; Ryan, 2008), and improve students’ attitudes through the immersion into a foreign culture (Zörneyi, 1998, 2006).

In the next chapter, a review of the literature on the central constructs for this study will be presented. First, an overview of motivation will lead into a more specific view of the research in motivation in second language acquisition. Following this, the instructional strategies that focus on motivation will be discussed. An overview of virtual worlds will follow, including an in-depth look at the current research in education using virtual worlds broken down by discipline. A discussion on the current types of virtual worlds and the research findings regarding the use of avatars will conclude the chapter.



## **Chapter 2**

### **Review of the Literature**

This chapter will analyze and critique related literature, creating a framework for the proposed methodology to address the previously mentioned research problems. The search includes journal articles and books in both print and electronic format. A multitude of databases spanning multiple subject areas are included, such as the educational database ERIC, EdITLib, Academic Search Premier, and ProQuest Dissertations, because of the interdisciplinary nature of the study. During the review, primary sources were valued over secondary sources. Additionally, the quality and authority of the studies and journals were also considered.

As a result, this chapter consists of the following interrelated themes: First, this chapter introduces the concept of motivation. As a complex topic, the most widely accepted views and rigorous research are presented to set the stage for the study. This understanding is then compared with the view of motivation in second language acquisition. Third, it discusses instructional strategies in regards to motivation. Finally, virtual world research is presented in particular regards to the research dealing with virtual worlds and their attributes' suitability for education.

### **Motivation**

In order to understand how motivation can affect learning, we must first understand what motivation is. Motivation is defined as the internal force that drives individuals to function and

reason the way they do (Eccles et al., 1998). It is a complex construct that has been heavily studied yet not completely understood. A study by Vallerand (1997) found that over 800 studies dealing with this paradigm have been published. It is safe to assume that number has only grown. The research studies range from attempting to understand the way we behave to attempting to discover the driving force of our most personal desires. As Dörnyei (2001) pointed out, the general consensus has become, at least when it pertains to learning, that student motivation is often described in varying degrees of intrinsic or extrinsic motivation.

Intrinsic motivation is an internal factor where there is a willingness of the learner to take part in an activity for its own sake (Cheng & Yeh, 2009; Fazioli, 2009). Intrinsic motivation is often viewed as an internal motivation, where a person is motivated without outside influences to do a task. Often this motivation is thought of as innate or an inborn psychological need, similar to the physiological need for food and water (Connell et al., 2009). Individuals are said to be intrinsically motivated when they undertake a task for the feeling of joy, interest, and satisfaction they experience while engaged in that task.

Extrinsic motivation consists of external influences that encourage the learner to participate in an activity to attain personal goals (Cheng & Yeh, 2009; Margueratt, 2007; Schunk et al., 2008). Extrinsic factors include demands from authority, rule compliance, and fear of punishment (Connell et al., 2009). The grade one can earn from completing a task is an example of extrinsic motivation, while the completion of the task for the sake of learning is an example of intrinsic motivation.

As Dörnyei (2001) pointed out, one of the most common distinctions in motivational theories is that between extrinsic and intrinsic motivation. The distinction between intrinsic and extrinsic motivation is a central construct to the self-determination theory (SDT). Traditionally,

extrinsic motivation is considered a factor that could negatively affect intrinsic motivation (Kohn, 1991), but instead of treating them as opposing forces in two polarized categories, self-determination theory (Deci & Ryan, 1985) propose behaviors that can be placed on an internalization continuum (Deci & Ryan, 1985) based on the degree of regulation that is internalized from outside to inside an individual. On one side of this continuum is amotivation, where an individual experiences apathy. On the other side of the continuum is intrinsic motivation. Extrinsic motivation is somewhere in the middle. Behaviors that an individual would not do naturally are thought to be extrinsically motivated, but these behaviors may be integrated into the realm of self-determination (intrinsic motivation) over time. Deci and Ryan (1985, 2000, 2002) believe extrinsic motivations can become intrinsic motivations.

The SDT is one of the most comprehensive and well-tested theories on motivation. The main premises and constructs of SDT are outlined and discussed in Ryan and Deci (2000, 2002). SDT proposes three basic human needs that are crucial for the overall well-being and healthy development of human beings: competence, autonomy, and relatedness. Competence refers to perceiving one's effectiveness in exercising one's own skills; autonomy refers to perceiving one's self as the source of the action; and relatedness refers to a feeling of security and attachment to others. SDT maintains that humans behave in the most efficient and fulfilling manner when social and situational factors support the satisfaction of the three basic needs. In contrast, when situations do not support these needs, individuals show less motivation.

### **Motivation in Second Language Acquisition**

One of the earliest published and heavily cited researchers in the motivation of second language acquisition is Robert Gardner. Gardner first began developing his Socio-Educational

Model depicting the role of attitudes and motivation in second language learning in the 1960's and has continued to revise it given the research findings in the field (Gardner 1979, 1985, 2001). Gardner's model (1979) depicted four variables/phases: social milieu, individual differences, second language acquisition context, and outcomes. He believes these variables are interrelated when acquiring a second language. Social milieu includes an individual's cultural beliefs or environment. Individual differences include four subvariables: intelligence, language aptitude, motivation, and situational anxiety. Gardner states these are the four individual differences most influential in acquiring a second language. The third variable, second language acquisition context includes the setting where the language is being learned. The fourth variable, outcomes, includes linguistic skill and knowledge as well as nonlinguistic skills such as the learners' attitude toward the culture of the learned language. In 1985, Gardner expanded the individual differences variable/phase to introduce the concept of an integrative motive. The integrativeness is often viewed as the interest in the second language group and can be divided into three components: integrativeness, attitude toward the learning environment, and motive. In 2001 Gardner incorporated new findings and changed social milieu to external influences. This section now includes history and motivators. Gardner's model is very linear in that one section influences the next, which in turn influences the next. For example, a person's attitude influences their motivation. Their motivation then in turn will influence their outcome. Gardner's model does not go without criticisms. Oxford and Shearin (1994) and Dörnyei (1994) both criticize the Socio-Educational Model for not being practical and hence not easily applicable to the classroom.

Additionally Dörnyei (1990, 1994) argued that Gardner placed too much emphasis on the integrative and instrumental motives and ignores a list of variables with self-efficacy included

among them. Bandura (1982) defined self-efficacy as a perception of a person's judgment of his/her capabilities on a specific task. Self-efficacy is related to expectancy values whereby the greater the expectancy that a behavior can produce, the greater the motivation to perform the activity. According to Bandura (1989), self-efficacy is the most important expectancy that can't be learned. Self-efficacy related to the second language learning will then translate into a belief for the language learner that he or she can reach a certain level of second language mastery. The language learner will be more motivated toward learning the language if he or she believes in the value of the task and whether he or she can reach it. Tremblay and Gardner (1995) found self-efficacy to mediate the relationship between language attitude and motivational behavior. It would appear as if the language learner's attitude toward learning the language improves, so will too their sense of self-efficacy, which in turn will impact their motivation to learn the language.

Similarly, Vroom (1982) expectancy theory of motivation states that motivation is a combination of an individual's values and expectancies. This implies that an individual is more likely to engage in activities or pursue goals that the individual perceives to be personally satisfying and for which the individual has a higher expectancy for success. This theory focuses on three main components: expectancy, instrumentality, and valence. Expectancy relates to whether or not there is a positive correlation between effort and performance and that the more effort an individual exerts, the greater the expected performance. Instrumentality focuses on performance to outcome expectations, or whether or not good performance will result in the desired and positive outcome. Valence is the value an individual places on the task. The more value an individual places on a task or activity, the more motivated they become to complete it. The combination and interconnectedness of these three factors are encompassed in Vroom's expectancy theory of motivation.

Additionally, the paradigm of constructivist learning (Vygotsky, 1978), which perpetuates individuals construct their own understanding of the world around them, illustrates a view of learning around the 1980s. It is during this time that Wolfgang Klein (1986) published his six dimensions for second language acquisition. In his book, Klein attempts to bridge the gap between “spontaneous language acquisition”, i.e., learning a second language in a country that speaks that language and “guided language learning,” which generally occurs outside of a country that speaks the target language and that uses formal instruction or tutoring to learn. Klein’s (1986) six dimensions are (1) propensity (motivation), (2) language faculty, (3) access, which determines the process of language acquisition, (4) structure, (5) tempo, and (6) end state which characterize the type of process. The first three factors are the external factors that can be controlled and/or influenced by the instructor, students, or class environment. According to Klein, the most important dimension is what he refers to as “propensity”, or what most linguists classify as motivation. This motivation dimension can be broken down into three subgroups: social integration, communicative needs, and attitude (Klein, 1986).

The first subgroup of Klein’s motivation dimension, social integration, accounts for the need to create a social or personal identity inside one’s culture. According to Klein, this factor is worth noting more for its negative impact on language acquisition. If a person’s desire to keep his or her identity is too strong, it may cause him or her to shrink back from becoming integrated into a new language community for fear of losing this social identity. As Brown (1986) noted, second language learning is also second culture learning. Schumann (1978, 1986) was one of the first theorist to align acculturation to second language acquisition. He stated that acquiring a second language is part of the acculturation process, and the degree of language proficiency is determined by that magnitude by which the learner acculturates into the language group. He

stressed the importance of contact with the target language group and the sharing of social environments in order to acquire the target language. Schumann emphasized the importance of the relationship between social and psychological “distance.” For example, if a learner’s social and psychological distance is vast as seen in the attitudes toward the target language and its speakers and lacks integrative motivation, it is deemed that learners’ progress beyond the early stages in language development will be compromised.

The communicative needs subgroup of motivation refers to the reason the student is learning a language. Klein, (1986) believes this reason will determine how much of the language he or she will acquire. If the need is forced, such as mandatory to pass a required class, a student will learn only as much vocabulary, grammar, and pronunciation, etc. as he or she feels is necessary in order to be understood. If the need is more intrinsically motivated, the student may work hard to make their accent less noticeable in order to fully integrate into a culture (Klein, 1986).

The third subgroup of motivation is attitude. This a critical factor because if students decide they do not want to learn the new language, they will not (Gardner, 1985; Klein, 1986). According to Dörnyei, “attitudes exert a directive influence on behaviour since someone’s attitude towards a target influences the overall pattern of the person’s response to the target... Behavioural performance can then be predicted from people’s intentions to perform the behaviour in question from their perceptions of control over the behavior” (1998, p.11). While attitude is essentially a construct only the individual has a direct connection to, it is up to the teacher to make sure the classroom instruction and activities are interesting and relevant so a poor attitude is not compounded on, and in fact, may be improved.

Krashen has developed a wide-ranging second language acquisition theory over the years as well (1982, 1985, 1988, 2002, 2003). The two of Krashen's most renowned hypotheses are the acquisition-learning distinction hypothesis and the input hypothesis. The acquisition-learning distinction hypothesis (Krashen, 1976, 1985, 2002, 2003) claims there are two distinct and separate processes to develop second language competence: acquisition and learning. He defined "acquisition" as "a subconscious process identical in all important ways to the process children utilize in acquiring their first language" and "learning" as "a conscious process that results in knowing about the language" (Krashen, 1985). In this way, acquisition takes place in a natural communication context where people are not aware they are picking up the language, whereas learning takes place in a context where conscious attention is paid to the rules and error detection.

Similarly, Krashen's well-known input hypothesis (1985, 2002, 2003) is an effort to explain how language acquisition occurs. Krashen argued that learners acquire the second language when and only when they obtain "comprehensible input,  $i$ ," (when they understand messages). If their current L2 level is at stage  $i$ , they can progress to the next stage,  $i + 1$ , only if they receive comprehensible input that contains the  $i + 1$ . Critiques of these hypotheses state they are ambiguous, circular, contradictory, biased, or lacking in evidence.

Dörnyei has more recently introduced his L2 Motivational Self System (Dörnyei, 2005). The L2 Motivational Self System consist of three dimensions that impact the motivation of an L2 learner: the ideal L2 self, (the near perfect image the learner desires for themselves); the ought-to L2 self, (refers to the learner's image of attributes they ought to possess); and the L2 learning experience. All three dimensions play a role in the L2 learner's motivation in the classroom and should be considered when designing instruction (Dörnyei, 2005).



In order to gain a clearer understanding how important these dimensions are to language learning, Dörnyei (2005) conducted a repeated stratified national survey of the motivation of 13,391 middle school students in Hungary toward studying five target languages: English, German, French, Italian, and Russian. As one of the largest studies on L2 motivation ever, the findings have been published in a book (Dörnyei, Csizér, and Németh, 2006). Dörnyei (2005) found a consistent relationship between the key variables of integrativeness, instrumentality, attitudes toward the L2 speakers/community, and two criterion measures: language choice preference and the learners' intended learning effort. Of these key factors, integrativeness appeared to be the most important as it explained almost as much of the variance of the criterion measures as all the other components combined. The importance of integrativeness supports the work of Gardner (1985). Additionally, this study found that integrativeness was determined by two variables: instrumentality and attitudes toward L2 speakers/community. Integrativeness, instrumentality, and attitudes toward L2 speakers/community affected the contribution of all the other components to the criterion measures.

Dörnyei (1998, 2000, 2001, 2002, 2005) has also spent a considerable amount of research into the practical and application aspects of motivation in second language acquisition. Dörnyei and Otto understood that motivation is an extremely complex factor that in any individual can not only change from one class to another, but within one class period or even one instructional activity because motivation is a process that is constantly re-evaluated depending on the conditions (Dörnyei and Otto, 1998). For this reason, Dörnyei emphasized the use of motivational strategies in the second language classroom. Dörnyei (2001) defined motivational strategies as techniques that promote the individual's goal-related behavior. Dörnyei understood the multitude of theoretical models for motivation and motivational strategies, and along with

Otto in 1998 proposed one, Process Model of L2 motivation. Dörnyei stated there is a serious lack of research on the effects of specific motivational designs in carefully planned and controlled studies (Dörnyei, 2001).

### **Instructional Strategies**

Dörnyei and Otto's (1998) proposed a Process Model of L2 motivation with three stages. The stages are: (1) preaction phase during which goals are set and intentions are formed for further action, (2) actionable phase during which the action is taken is subject to various executive motivational influences, and (3) postactional stage during which each evaluation of the action is performed and the results of which influence future goal setting. Instructional designers will see the ADDIE Model represented within these three stages where analyze and design is stage 1, development and implementation is stage 2, and evaluation is stage 3. What is needed is a model that will incorporate the motivational factors needed to make more successful learning course as described earlier, the relevance to the learner, the confidence desired, and the satisfaction received from their learning.

One framework for looking at factors that can be addressed to make instruction motivating is the ARCS Model of Motivation (Keller, 1983, 1987, 1999). The ARCS Model of Motivation incorporates motivational elements into the instructional design process to stimulate and manage learner motivation (Huett, 2006, Keller, 1983, 1987, 1999). The model is a problem solving approach that structures instruction to motivate learners based on satisfaction and expectancy of success (Keller, 1987; Keller and Suzuki, 2004). Keller defines motivational design as “the process of arranging resources and procedures to bring about changes in motivation” (Keller, 2006, p. 3).

The ARCS Model consists of four dimensions of motivation: attention, relevance, confidence, and satisfaction (Keller, 1983, 1987, 1999) and has been described as the only complete instructional design model to accommodate motivation (Huet, 2008). The first dimension of motivation in the ARCS model is attention. Attention is the action of gaining the learners interest or arousing and sustaining their curiosity. The result of gaining the learner's attention is that the learner must now focus on the task in order to learn how to perform it well (Dick & Cary, 1996). Attention is likely the most critical of the four parts of the ARCS Model (Keller, 1987).

A number of strategies have been identified for addressing attention in instruction. One method for increasing attention is by presenting the material in a novel or engaging fashion; a manner which is not expected or not previously experienced by the learner (Cicco, 2007; Herich, 1999, Margueratt, 2007). The use of a web-based experience and technology typically translate into a temporary increase in learner motivation (Huett, 2006; Keller & Suzuki, 2004). To keep the learners attention, it is advised to vary the learners' interactions (Hodges, 2004). Variety is a key to increasing attention and motivation.

Strategies for increasing relevance include using examples and language that are familiar to the learning and providing value in what is available and asked of the learner. If a learner can see the value in their activities they can see the relevance in their actions, which will increase learner motivation (Keller, 1987). Keller (1987) and Daniels (2008) found that learners should be actively engaged and accept responsibility for their learning. In particular, adult learners tend to be motivated to learn information they deem relevant and useful (Duff and Quinn, 2006).

Confidence, the third dimension of motivation in the ARCS model, is defined by Keller (1987) as the learners beliefs that they have the ability to succeed and that they control their own

success. Addressing confidence helps learners understand their abilities to reach their objectives while removing the fear of failure (Fazioli, 2009). The resulting understanding is necessary to give learners a sense of self-efficacy (Keller, 1983; 1987). Confidence, or self-efficacy, could account for the learners' level of motivation (Huet, 2006). Expectancy for success is the individual's perceived likelihood of success and the extent of the learners' control of their success (Keller, 1983, 1987). The expectancy-value theory suggests that where value is attached to a task and the learner believes it is possible for them to complete the task, motivation increases as the value of the task and the expectation to succeed increases.

The fourth dimension of motivation in the ARCS Model is satisfaction. Satisfaction is achieved when learners gain a sense of achievement or accomplishment through the learning experience (Kebritchi, 2008; Keller 1983; 1987; Keller & Suzuki, 2004). Satisfaction can result from a combination of extrinsic rewards and intrinsic motivation (Keller, 1983; 1987). Extrinsic motivation is a result of the student's effort being recognized and the student potentially being rewarded for the effort (Scribner, 2008). An intrinsic aspect is seen as the learner gaining mastery using a skill (Dick & Cary, 1996). Natural satisfaction occurs when the learner realizes the new skills are immediately useful and beneficial (Keller, 1987).

The challenge when designing instruction for second language learners is finding a way to incorporate motivational strategies into instruction. In today's world, there are a great variety of instructional methods and media available to present information. While Keller's ARCS Model and Dörnyei and Otto's Process Model of L2 motivation present good strategies, a key consideration is selecting a media that motivates learners (Rodgers and Withrow-Thorton, 2005). The purpose of the media is to facilitate communication (Margueratt, 2007). Perhaps nowhere then is the correct selection of media more important than in a language-learning classroom.

From the presented research on motivation and second language acquisition I have alluded to the needs we require from media. The media should have a way to allow students to show their competence, autonomy, and relatedness (Ryan & Deci, 2000, 2002). At the same time, the media needs to allow learners to pay attention to cultural beliefs, interact with second language learning groups, and reduce anxiety (Gardner, 1974; 1985; 2001; Klein, 1986; Krashen, 2002; 2003). Additionally, the media needs to provide a relevant context for the learners that they will find motivating and satisfying (Dörnyei, 2006; Vroom, 1982). This appears to be a daunting task but one I propose to be filled by a virtual world.

### **Virtual Worlds**

The origins of virtual worlds resemble very little of the robust three-dimensional environments we think of today. In fact, before their evolution into scenic worlds, they had a simpler form of networked text-based environments (Boulos, Hethering, & Wheeler, 2007). While the early starts celebrated the communication of one platform to another, today's virtual worlds have the luxury of high-speed Internet connections and stimulating, often realistic graphic visualizations. These visualizations allow their creators and users to create vastness that appears limitless with immersive multidimensional environments in a variety of settings and venues in which to interact. For this reason, and the scope of this study, virtual worlds will be defined in accordance with the description given by Steve Downey (2012), "Virtual worlds are massive, persistent, multi-dimensional graphical environments in which people establish a sense of presence (avatars), and come together in real time to form communities to interact – whether it be to play, socialize, learn, etc." A key component to this definition is that virtual worlds are

persistent. The virtual worlds' activity persist even if a user is not actively engaged in the area – even offline.

During the evolution from text-based environments to the massive extremely visual environments of virtual worlds today, two categories of virtual worlds have emerged: purposeful (typically game focused) and general purpose (typically socially focused). The term virtual world is often linked with massively multiplayer online games (MMOGs) such as World of Warcraft and Everquest (Ducheneaut, Yee, Nickell, & Moore, 2006; Wagner and Ip, 2009). What differentiates the two categories are how the goals and activities of the users are defined and then acted upon. Within game-focused virtual worlds, the goals and activities have some user control (e.g., sequencing the order in which they are done), but tend to have a pre-defined structure. The user within these worlds is required to act within these predefined objectives to advance. As such, user in-world actions often function to meet a creator-defined purpose.

Counter to the purposeful worlds, general-purpose virtual worlds give more power, in terms of user goals and objectives, to the user. General-purpose virtual worlds are typically designed to facilitate socialization, support user creation of in-world objects, and even function as possible venues for commerce. Typically the open nature does not lend itself to predefined objectives or goals. It allows the users to choose their own actions within the limits of the world's rules of user behaviors. The open nature and increased focus on the social aspect of in-world interactions tend to provide a more suitable environment for educational purposes. For instance, the instruction does not have to compete with the objectives of the game, or require a certain level for the user to continue. Instead, the instruction can have its own goals. Second Life is a popular example of this type of immersive 3D virtual world.

## **Virtual Worlds and Education**

In order to understand how virtual worlds have been implemented in education, it is important to examine both general-purpose worlds and purposeful worlds as each has had an impact on educational research. Much of the published work on purposeful virtual worlds is based on earlier work in traditional video game research. Purposeful virtual worlds and traditional video game research have both met varying levels of success. In order to get a more complete understanding of the findings in regards to purposeful virtual worlds and video games, the research can be broken into four content areas: history, science, mathematics, and language learning. The subject area overviews will create a basis for my later conclusion and ultimately the reasoning for the proposed research.

### **Science**

Barab, Goldstone, and Zuiker (2009) and two related dissertations by Zuiker (2008) and Arrici (2009) utilized the science-based subzones of the 3D multiuser computer graphics environment *Quest Atlantis* ([www.questatlantis.org](http://www.questatlantis.org)). The subzones feature curriculum on performance-based transfer tasks in an interactive environment. The studies focused on middle school students (Grades 6-8) separated into two groups: those who experienced the treatment (*Quest Atlantis*) and those in the expository textbook and descriptive framing version of the class (traditional classroom). In each instance, researchers found the students in the treatment performed significantly better on related standardized test than did their peers in the control. While the results are very promising, the results should be reviewed with caution as each study design had limitations. Barab et al. (2009) utilized a 16-item posttest questionnaire to ascertain

quantitative data. Without a pretest, it is difficult to state the change recorded was elicited solely by the method. Zuiker (2008) and Arrici (2009) used similar methods with heavy emphasis on qualitative data. While qualitative research and data gathering techniques are widely accepted, their results cannot be generalized.

Harris's (2008) reviewed the implications of implementing *Web Earth Online* ([www.webearthonline.com](http://www.webearthonline.com)) to a sample of sixth-graders and received the opposite effect. *Web Earth Online* is a massive multiplayer 2D online game where users assume the life of an animal and scores are achieved on how well you interact with the environment to sustain that animal. With a sample of 159 students, both experimental and control groups demonstrated overall growth during the application of the game. However, participants in the experimental group tended to have statistically significant lower test scores than their peers in the control group (traditional version of the class led by the teacher or researcher). Harris suggested that while the video game environment appeared to provide less success than traditional forms of instruction with regard to traditional test performance, the engaging benefits of the games might make the effort worthwhile.

Harris's suggestion is supported by the findings of Annetta, Minogue, Holmes, and Cheng (2009). Computer-based *MEGA* games were played by 129 males and females ranging in age from 14 to 18 years old. The research found the students' engagement increased on a genetics unit but no statistical impact on achievement. Similarly, Wrzesien and Alcañiz Raya's (2010) reviewed a group of 48 middle-school students using a Spanish science-based game, *E-Junior*. Again, the research provided no statistically significant gains for achievement. In each instance the researchers believe science gaming yields benefits, at least with regards to student engagement, but the constraints associated with the study, such as classroom environment and



short time periods, made immediate correlation between game usage and academic success impossible to distinguish.

In an exhaustive search of video game usage for educational purposes, researchers Young, Slota, Cutter, Laette, Mullin, Lai, Simeoni, Tran, and Yukhymenko (2012) emphasized the majority of video game research in the science discipline has a few shortcomings. Among the list is the inclusion of only science-based activities and events, the isolation of science topics in the game worlds, and a general lack of coherence among concepts. Additionally, the researchers mention the difficulty and restraints in the use of games because of their preprogrammed constraints on the gaming rules. This, according to the researchers, “the types of experimentation being done are seldom user generated, nor do they address the earlier stages of problem solving, such as problem identification or problem definition (see Bransford & Stein’s, 1993, IDEAL problem solving model)” (Young et al., 2012, p. 72). Young et al. went on to echo the findings of the National Research Council (2011) report that science achievement cannot be conclusively linked to game use at this time.

### **Mathematics**

While the majority of educational games in the area of mathematics do not fall under my definition of virtual world, the research findings in this realm contain merit that should not be ignored. Research into gaming in mathematics is typically focused on specialized math games that are created within and for controlled studies. One such study conducted by Mayo (2009) found math video games increase standardized test scores from 7-40%. This included challenging math courses such as algebra and college-level numerical methods. With the control group receiving the lecture on the material and the experimental group students playing

*Dimenxian/Evolver*, Mayo found learning outcomes to increase by 7.2% ( $N = 193$ ). Mayo also recorded students playing games spending more time working on homework by a factor of two or more. Additionally, game playing students were able to create more detailed concept maps than their lecture peers.

Kebritchi (2008) found mixed results for the effects of implementing a mathematic video game in high school mathematics classes. Ten high school algebra and geometry teachers were assigned to either a treatment or control group. The teachers' combined 193 students in grades 9 and 10 were participants in the experiment with half playing a game, *DimensionM*. *DimensionM* is an immersive 3D video game world that engages students in learning and applying mathematics. Kebritchi (2008) reported that students in the treatment group showed significant improvement in math achievement compared to their traditional lecture peers. However there were no significant improvements in student motivation. Kebritchi tested students' prior mathematics knowledge, computer skills, and English skills and none appeared to be a significant contributor to the findings.

The mathematical educational gaming package, *ASTRA EAGLE*, was "designed to reinforce academic standards for [fifth grade] mathematics required by the Pennsylvania System of School Assessment" (Ke & Grabowski, 2007, p. 252). Ke and Grabowski (2007) divided a sample of 125 fifth-graders into three experimental groups: teams-games-tournament (cooperative learning), interpersonal competitive, and no game play. Ke and Grabowski discovered that both of the gaming groups demonstrated higher levels of achievement gains than their non-playing peers. Only the cooperative group showed significant gains toward mathematics. One unique finding to this study was that students with low socioeconomic status (SES) saw the greatest affective gains in cooperative context. In 2008, Ke (2008a) replicated the

study with an added individual gaming group ( $N=160$ ). Again, gaming groups saw greater achievement gains with the cooperative gaming group seeing the only significant affective gains. Once again the low SES students made the greatest gains. Unfortunately in two follow up studies, Ke (2008b, 2008c) found contradicting results in achievement gains. One reason for this may be the smaller sample sizes reported, ( $N=15$  in Ke, 2008b).

### **History**

History virtual worlds and video games offer users a unique opportunity to bring history to life. Worlds and games such as *Civilization IV* and *Age of Empires* put users in the shoes of someone living in various time periods and the problems and successes they would have had to deal with. Descriptive narratives combined with intense graphics and reenactments immerse users in way that is truly unique. It is without question these remarkable experiences that have lead several studies to report history-based worlds and video games as effective means of engaging students beyond the traditional classroom (Devlin-Scherer & Sardone, 2010; Watson, Mong, & Harris, 2011).

One such game franchise, *Civilization* is commonly referred to in the literature. *Civilization* is a turn-based game that has evolved into a massive multiplayer 3D online game (now it is 5<sup>th</sup> release). *Civilization* offers the ability for instructors and learners to modify parameters to recreate historical conflicts. Squire (2006) reviewed the *Civilization* series and believed the game to allow history students to put themselves in the shoes of an individual in a particular place in time, complete with specific environmental context that would utilize problem-based learning.

Squire, Giovanetto, Devane, and Durga (2005) paired students for collaborative play in history classroom environments. Students self-reported an increase in knowledge, maps, time lines, and historical terms. Specific data was not collected to support their claims. It is important to note that the instructor was required to have an experienced understanding of the games and how to facilitate the game play toward their achievement gains for *Civilizations* to be a success.

Moshirnia and Israel (2010) conducted one of the few empirical investigations into the uses of games in a history educational context. The researchers focused on 74 undergraduate students in a Solomon three-group design. Users were studied with their regard to mod the look and abilities of characters, change the displays and maps, and create new text descriptions for new question while retaining the normal quality of the game. The results showed no significant difference between the knowledge gained between the groups. The game-playing participants did not perform as well as their peers on recall of information from pop-up text. This suggests the game-playing participants did not pay as much attention to historical facts in the game text and cut scenes. This information suggests that adding historical information to gaming is not enough to foster learning. The researchers believe that the users' tendency to bypass information that is nonessential to completing game tasks hindered historical learning and believe more work on the concept is needed before games will become a viable option.

### **Language Learning**

Language learning and the language acquisition classroom may provide the best outlook for the use of virtual worlds and games for educational purposes. Instructors of language classrooms generally agree immersion in a culture where the language is used is one of the most powerful ways to learn a language. Young et al. (2012) reported that “leveraging video games to

teach language in varying forms may be the most effective use of educational computer gaming to date” (p. 74). Additionally, Young et al. (2012) found language-based gaming is viewed more positively by instructors than other disciplines making this content avenue one researchers should look into.

Din and Calao (2001) worked with kindergartners and implemented a treatment of educational video games into the classroom. The kindergartners who received the treatment showed an increase in language skill (in the form of reading) compared to their control group using a standard reading curriculum. Warren, Dondlinger, and Barab (2008) demonstrated similar findings in a sample of 44 fourth-graders using *Quest Atlantis* and visiting the zone *Anytown*. Statistically significant increases were recorded on language-arts-based standardized test achievement and statistically significant increases in motivation. To further substantiate these claims, the teachers reported statistically significant decreases in time spent explaining and re-explaining directions.

A well-documented case study by Zheng (2006) followed two Chinese students working for 10 weeks with two American students in *Quest Atlantis*. Zheng analyzed the chat logs from the students’ interactions and concluded that the Chinese students picked up grammar, usage, and vocabulary from their various interactions. Zheng cited examples included: finishing the sentences of nonnative speakers; explicitly correcting grammar; and providing feedback in other forms such as continuers and confirmations (Zhen, 2006).

Language learning gains were not always uniform across individuals or languages. This may be attributed to a list of complex situation interaction of the learner, the game, and the context. Robertson and Good (2003) implemented a game with 42 sixth and seventh-graders in Ireland. The research showed improvements in the element of writing (relationships) but not in

others (mood and personality). In an attempt to account for such variability in language learning through video game content, in particular massive multiplayer environments, Zheng, Young, Wanger, and Brewer (2009) focused on the interaction of players within the game. They stated users within the game are limited to their use of language because they need to communicate and negotiate the meaning of action within the game context. This hinders natural language context and therefore may hinder language learning. For this reason, Zheng, Young, Wanger, and Brewer (2009) recommend the use of virtual worlds without the virtual games predefined context and tasks for language learning.

Further evidence for the implementation of a virtual world, where social aspects overcome the goals of a game, can be demonstrated in the work of DeHaan (2008). DeHaan attempted to determine the effectiveness of video games in teaching English as a second language to students at a rural Japanese university. In DeHaan's study, students observed other students playing a virtual game. DeHaan (2008) found that university undergraduates who only observed the game play learned significantly more than the students who were actually playing the game. DeHaan and Kono (2010) replicated the findings and then added additional evidence when they found game observers learning more than twice as much vocabulary as the players of the video game (DeHanna, Reed, & Kuwada, 2010). Young et al. (2012) postulated this was a result of increased cognitive load on the player of the game. Observers were allowed to spend more attention on the interactions than the controls of the game. This suggests a virtual game's controls and world interactions can add an unnecessary burden on the user whereas a virtual world with simpler interactions may be more beneficial to learning. Additionally, language learning is inherently social and a social media or general-purpose virtual world's where language is not constricted may be more ideal.

## **Why Use General-Purpose Virtual Worlds in Education?**

General-purpose virtual world research for educational purposes often grounds itself in the constructivist paradigm of learning (Brooks, 2008; Carter, 2007; Dickey, 2005).

Constructivists believe that learners “construct understandings by interacting with information, tools, and materials, as well as collaborating with other learners, (Dickey, 2005). Virtual worlds such as Second Life allow for interaction while emphasizing the importance of the social facet of this paradigm. Thompson and Rodriguez (2004) believe placing learning activities in open environments such as virtual worlds give students engaging and gratifying opportunities to learn and socialize. Virtual worlds allow for rich social interactions, which are necessary in a constructivist-learning environment because they can foster increased opportunities for collaborative activities (Moka-Danielson, et al., 2007).

Another theoretical basis for the use of virtual worlds comes from Kolb’s (1984) experiential learning theory which positions students as the focus of the learning process with its drive for experiences over passive learning. According to this view the realistic experiences virtual worlds offer can afford students the creation of prime learning experiences. Additionally, virtual worlds can create experiences difficult for the student to experience in real life. Examples where virtual worlds’ excel include trips to authentic reproductions of distant times, lands, museums, historical sites, or dangerous places (such as inside a volcano) that would be cost prohibitive or impossible to visit otherwise (Jarmon, Traphagan, Mayrath, and Trivedi, 2009). The “learning through doing” approach “involves participating in an individualized sequence of presentational and ‘constructivist’ experiences that are delivered on demand in real-world problem context (Dede, 1996, pp. 5-6). For researchers who support the idea of learning by doing, and sometimes learning by doing wrong using a constructivist approach, (Dickey, 2005;

Ryan, 2008, Wagner, 2008), Second Life provides an avenue for experimenting in a safe environment. Virtual mistakes can remain in world, and not have the detrimental effect they would in real life settings.

Additionally, designers of instruction can use Second Life for role-playing and simulations, development of soft skills, virtual tours and field trips to places inaccessible in real-life such as architectural landmarks, and the building of virtual representations of fictional places (McKinney, et al., 2008, Ryan, 2008). One of the best examples of this potential is a project sponsored by Suffern Middle School in New York. In 2006, school library media specialist Peggy Sheehy developed a Teen Second Life area known as Ramapo Island to promote meaningful applications of technology in learning. Since then, her students have role-played the journey through Ellis Island, held a mock trial after reading *Of Mice and Men*, explored concepts of body image for a health class, and organized literature discussions “in-world” (Lamb and Johnson, 2009). Other examples include health related education, where learners are able to learn and enhance their psychomotor skills without risking real-life patients’ lives (Goertz-Koerner, 2003), participation in dangerous role-play situations (Cheal, 2007), and simulations of catastrophic consequences to actions, or inactions (Wagner, 2008).

### **Second Life in Education**

There are over 200 universities, research centers, and museums currently in Second Life (Schiller, 2009). Such presence has led to some unique understandings and opportunities. For example, there is a collaboration project underway between the Georgia State University of Atlanta, Georgia, United States of America and the Yantiai University of China. The research



has produced a substantial amount of data that initial analysis suggest that the social interactions within SL allow learners to communicate at large distances provides both the opportunity for the sharing of culture and language, (Wang, Song, Stone, & Yan, 2009).

Many researchers have begun pilot studies into the effective use of Second Life in education. Delarge (2008) researched a number of unique applications available in Second Life environment and found that the most compelling and unique applications were in the areas of education, training, and research. Dreher et al. (2009) also found preliminary evidence to support that virtual environments can be instrumental in providing the motivational and social environments for learners to succeed. While much of the research efforts in academia have mainly focused on navigation, architecture, and delivery of the virtual world environment technology with nominal amount of research into the social and motivational aspects of these environments, (Dreher et al., 2009). Edirisingha et al. (2009) found little research into the social aspects of virtual environments, the research suggest that Second Life does offer an environment where learners can interact and generate social relationships, along with the motivational forces due to these relationships. Schwienhorst (2002) found VR in general and text-based VR in particular can contribute toward language and linguistic awareness, while providing a more stress-reduced and egalitarian learning environment for collaboration and interaction between peers.

VR in general and text-based VR in particular can contribute toward language and linguistic awareness, while providing a more stress-reduced and egalitarian learning environment for collaboration and interaction between peers (Schwienhorst, 2002). Perhaps most encouraging research results for the current study is the findings of Lamb and Johnson (2009). The researchers found that through the use of Second Life, culture and language students can

immerse themselves in the culture and language they are studying by exploring and interacting with native speakers and discussing local customs. Unfortunately Lamb and Johnson did not study the motivational effects of the environment.

Though activities are being explored and designed for virtual worlds more than ever, the best practices for using Second Life in education are just now being found (Cheal, 2007). Second life presents opportunities for extended, active, immersive practice time, which may aid college-level language instructors in combating what Rafkin (2005) has called the “ceiling effect” in traditional university language curricula.

Sadler and Nurmukhamedov (2008) employed a pilot study on how task-based language learning might be usefully conducted in Second Life. The researchers based their findings on preintervention and postintervention questionnaires, participant journals and interviews, and task observations (task outcomes and process videos). Analyzing data from 10 undergraduate English as a second language students, and 23 master’s students in Teaching English to Speakers of Other language, Sadler and Nurmukhamedov concluded that task-based learning activities were effective in maintaining motivation and that the learners generally achieved task completion that included substantial interaction in the target language. While the study offers promising results for the current study, it did not compare the results to a control group.

Research into virtual world uses would not be complete without mentioning Massively Multiplayer Online Games (MMOGs). These games are commercially designed and avatar-based multiplayer virtual worlds within which thousands of people simultaneously interact, compete, and collaborate with one another. Examples include *World of Warcraft*, *Everquest*, and *Eve Online*. The virtual spaces in an MMOG are designed around goal-oriented objectives accomplished through activities that become increasingly difficult as one gains experience. Users

advance in the game and advance their character, (through improving skills and abilities), by completing the game's created challenges, collecting and making resources, and buying and selling goods and services in in-world economies. Outside educational research within these worlds is difficult because these games are created for a profit, and their controlling companies want to keep any advantage they may have designed. Additionally, the previous research demonstrated the goal-oriented nature combined with the restrictions of communication often offered through these games make them a poor candidate for educational research.

### **Use of Avatars**

An avatar is a virtual representation of a person. Many studies have found that the use of an avatar had both social and psychological benefits (Dickey, 2005; Evans, Mulvihill, & Brooks, 2008; Oliver and Carr, 2009, Ryan, 2008). Avatar representations help to create a sense of anonymity and reduce social status issues and pressures (Dickey, 2003; Ryan, 2008). This is important in the second language classroom as situational anxiety plays an important role in language acquisition (Gardner, 1985). If the use of an avatar can reduce anxiety in the classroom, the students will be able to focus on language acquisition.

Virtual worlds provide an opportunity for learners to develop their own identities, which may actually enhance their confidence and ability to participate in the learning environment (Freeman & Bamford, 2004). Users generally take on another role or persona in a virtual world (Svensson, 2003). Pfeil, Ang, and Zaphiris (2009) found the use of avatars allow users to be anonymous which in turn allowed for unrestricted communication of visual cues like gender, race, and ethnicity. In addition, they found the use of avatars decreased the burden of shyness.

The sense of anonymity can prove to be valuable to the development of learning communities within virtual worlds (Dickey, 2005). Dickey (2005) stated “the combination of the text chat tool, unique names, and avatars provides a sense of anonymity” (p. 445). Additionally, “unique names provide both trust and accountability necessary for a collaborative learning environment, whilst at the same time allowing users to adopt a new personae or roles that might not be available to them in a traditional learning environment” (p. 449). Oliver and Carr (2009) demonstrated that individuals felt the need to create an online identity and would do so through their relationships with their various online communities. This integration and need to create a new identity can help students in a foreign language classroom who feel uncomfortable in a face-to-face setting as well as those who are not willing to change their personal identities to integrate into the new culture. As Klein (1986) noted, the unwillingness to integrate into a new language’s culture can have negative impacts on language acquisition. Students in a foreign language classroom do not feel the same need to integrate socially into a culture as they would if they were immersed in that culture, and therefore they do not feel the need to re-evaluate their role in society. The new virtual environment, where students begin to interact with native speakers could lead students to find that necessity to use the target language and change their identity. The use of avatars allows students to meet informally to share their insights perhaps making the interaction more enjoyable (Evans, Mulvihill, & Brooks, 2008).

To date, the majority of virtual reality research has been noticeably neglected in computer assisted language learning and SLA research (Swchwiehorst, 2009). Hew and Cheung (2010) conducted research to “review past empirical research studies on the use of 3-D virtual worlds in education settings” (p. 34). The initial phase of the research scanned experimental, peer-reviewed papers from over 10,000 journals through February of 2008. The second phase

reviewed the cited articles within the first group of papers to establish a final list of 470 papers. Of these 470 papers, 455 were discarded because they were opinion papers, conceptual papers, nonempirical descriptions of program implementations, literature reviews, or non-K-12 and higher education related.

Hew and Cheung (2010) demonstrated the difficulty in finding quality educational research to build on in this field. Given the newness of the technology and the rigor of the scientific research process, this is to be expected. The groundwork that has been done provides future research with a good basis. As Schwienhorst (2009) found when he conducted a critical and reflective analysis of the tools and concepts within virtual worlds, learner autonomy and virtual worlds are in fact an ideal combination for language learning in three ways: first, by raising language and linguistic awareness; second, by supporting interaction and collaboration with peers and native speakers; and third, by providing an experimental, learner-centered learning environment (Schwienhorst, 2009).

### **Summary**

In this chapter, a review of the literature on the central constructs for this study was presented. First, an overview of motivation transitioned into a specific view of the research in motivation in second language acquisition. Following this, the instructional strategies that focus on motivation were discussed. An overview of virtual worlds followed, including an in-depth look at the current research in education using virtual worlds broken down by discipline. A discussion on the current types of virtual worlds and the research findings regarding the use of avatars concluded the chapter. The next chapter will cover the methods for the study, including a

review of the instrument creation. The research questions, study design, data collection and analysis will be discussed.

## **Chapter 3**

### **Method**

This chapter addresses the methods and procedures I employed to develop and conduct this study. This study utilized quantitative and qualitative data in a quasi-experimental mixed method design to measure if there is a difference in students' motivational intensity, level of anxiety, attitudes, final course grades, and perceptions of students learning Spanish as a second language after using Second Life to complete assignments. Preliminary studies have shown great potential in the use of virtual worlds to enhance language learning (Whener et al., 2010; Zheng, 2006), but supporting data remain inconclusive. Second Life provides an interactive environment and affordances not permissible in the typical classroom, online or traditional. Interaction with native language speakers as well as the comforting effects of a virtual representation of oneself (an avatar) all lend to the belief that a language acquisition classroom is a prime opportunity to implement the virtual technology.

### **Research Questions**

The central research questions for this proposed research project will be as follows:

**Q1.** What, if any, difference is there in online undergraduate students' motivational intensity toward learning Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world?

**Q2.** What, if any, difference is there in online undergraduate students' level of anxiety toward using Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world?

**Q3.** What, if any, difference is there in online undergraduate students' attitude toward the Spanish culture between students using a virtual world to enhance their learning experience and students not using a virtual world?

**Q4.** How do online undergraduate students feel about using Second Life to learn Spanish?

**Q5.** How frequently do online undergraduate students believe they will continue to use Second Life to interact with native Spanish speakers after the class concludes?

**Q6.** How do online undergraduate students feel when using Spanish in a virtual world compared to the traditional online classroom?

**Q7.** How different do online undergraduate students feel their virtual persona/identity was than their face-to-face persona/identity?

**Q8.** What, if any, difference is there in the final grades of online undergraduate students between students using a virtual world to enhance their learning experience and students not using a virtual world?

### **Quasi-experimental Design**

Experimental research aims to identify if a specific treatment influences an outcome (Creswell, 2003). By manipulating a treatment to one group and withholding it from another, the researcher can determine the effect by comparing how both groups scored on the outcome. True



experiments include the random assignment of participants to treatment conditions and are typically conducted in a controlled setting (Campbell & Stanley, 1963). This study utilized already existing groups (classes) in their authentic setting and therefore the design is quasi-experimental (nonrandomized).

### **Mixed Methods Research Design**

A mixed methods research design was employed for this study. Campbell and Fiske (1959) are often attributed as the founders of mixed methodology (Creswell, 2008; Hanson et al., 2005; Tashakkori & Teddlie, 2003; & Tashakkori & Teddlie, 2003). Johnson and Onwuegbuzie (2004) formally define mixed methods research as

the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study.

Philosophically, it moves past the paradigm wars by offering a logical and practical alternative (p. 17).

Creswell (2003) defines mixed methods as an approach:

In which the researcher tends to base knowledge claims on pragmatic grounds (e.g., consequence-oriented, problem-centered, and pluralistic). It employs strategies of inquiry that involve collecting data either simultaneously or sequentially to best understand research problems. The data collection also involves gathering both numeric information (e.g., on instruments) as well as text information (e.g., on interviews) so that the final database represents both quantitative and qualitative information (pp. 18 & 20).

Johnson and Onwuegbuzie (2004) assert there are two major types of mixed methods

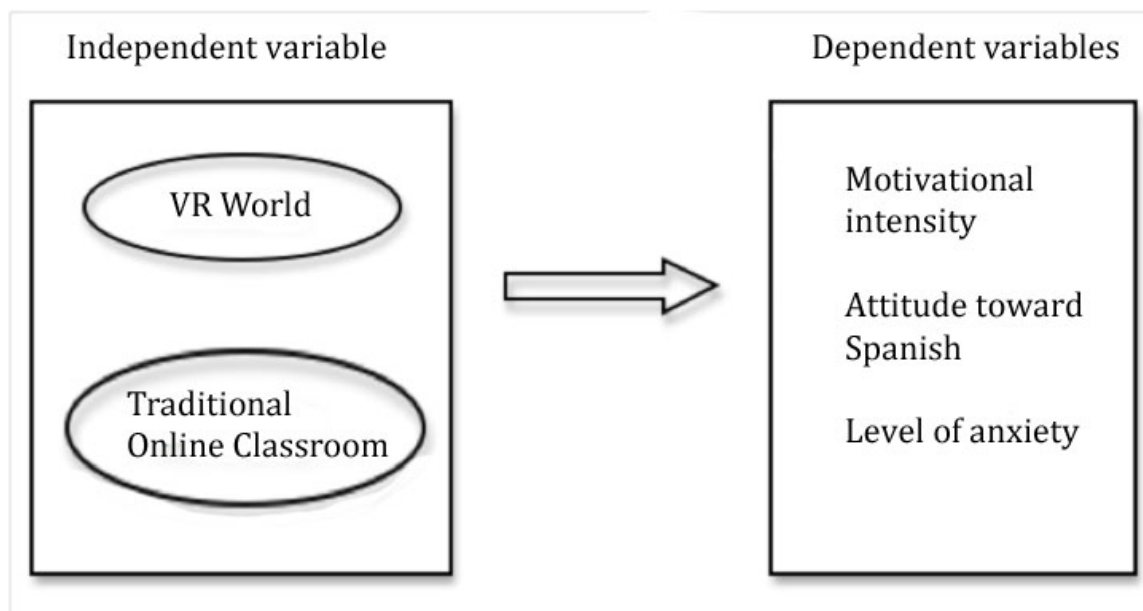
research: “*mixed-model* (mixing qualitative and quantitative approaches within or across the *stages* of the research process) and *mixed-method* (the inclusion of a quantitative *phase* and a qualitative *phase* in an overall research study)” (p. 20).

A mixed-methods approach can provide the best of both worlds: numerical data that can be, but not always, used for generalization and contextual information that can describe the environment and participants at the time of data collection. Johnson and Onwuegbuzie (2004) state that mixed method design “can answer a broader and more complete range of research questions because the researcher is not confined to a single method or approach” (p. 21). They go on to state, “the goal of mixed methods research is not to replace either of these approaches but rather to draw from the strengths and minimize the weaknesses of both in single research studies and across studies (Johnson & Onwuegbuzie, 2004).

The following sections depict the research design used in this study. In order to answer the above research questions, the research utilized a pretest-posttest control group quasi-experimental design with the instructional strategy (participation in a virtual world), as the independent variable and motivational intensity, level of anxiety, and attitude toward the Spanish language as the dependent variables. To decrease the potential extraneous variables that could affect the dependent variables, a pretest instrument was administered and participants’ scores adjusted for means and relevant statistics. This chapter will also describe the recruitment of participation, the sample size, the study materials, instruments, and the validation of these instruments. With these important sections presented, the study will also describe the administration of the instruments. Ethical considerations and a description of the statistical analysis approaches to evaluate statistical null hypotheses to assess the research questions will be presented.

## Research Design of the Study

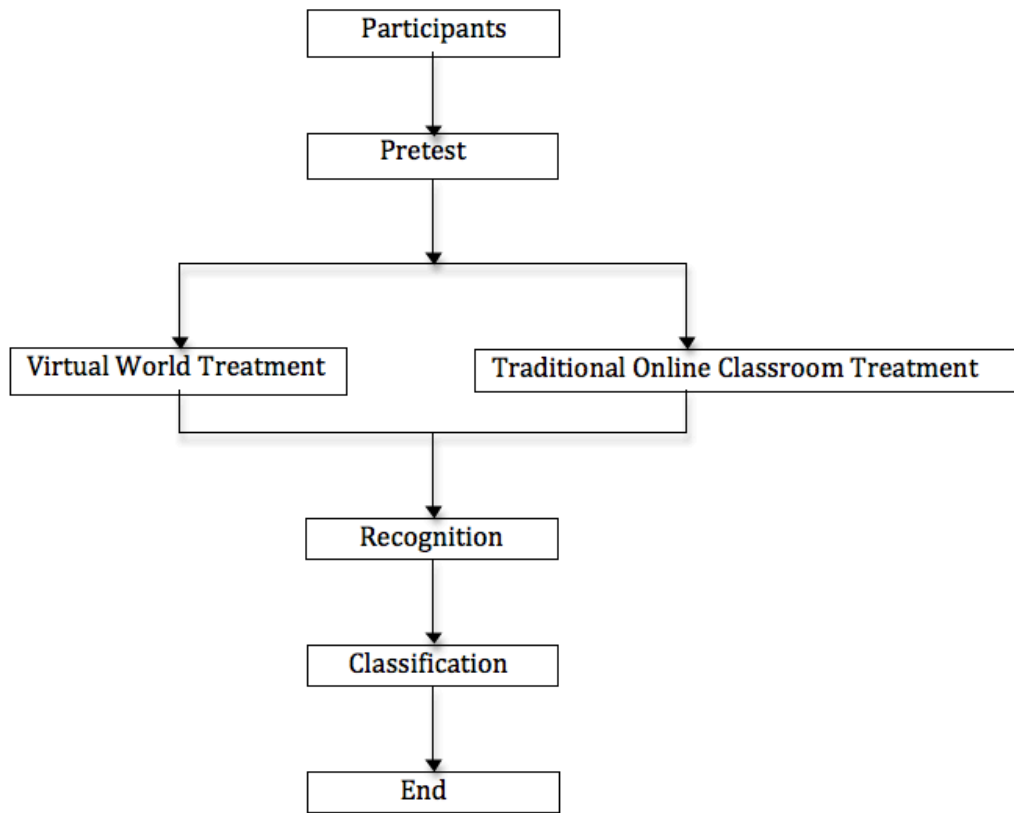
This study examined the effects of implementing a virtual world component in an online Spanish language classroom. In particular, the instructional method is the independent variable while the motivational intensity, level of anxiety, and attitude toward the Spanish language are the dependent variables (Figure 3.1).



*Figure 3.1* An overview of variables manipulated and observed in the study

The quasi-experimental study utilized a pretest-posttest control-group design illustrated in the diagram of research design (Figure 3.2). The study used nonrandomized control and treatment groups. Dimitrov and Rumrill (2003) state this design has practical advantages over randomized groups because it deals with intact groups and does not disrupt the existing research setting. They go on to say that this design “reduces the reactive effects of the experimental procedure and, therefore, improves the external validity of the design” (p. 160). The researcher

must take care as this design is more sensitive to internal validity problems, in particular those associated with selection, maturation, history, and pretesting (Dimitrov & Rumrill, 2003). Great care was taken during the analysis phase to statistically account for these differences.



*Figure 3.2* Diagram of research design of the pretest-posttest control group quasi-experimental study.

### **Treatment and Recruitment**

The researcher had worked closely with one instructor who saw the merit in virtual worlds for several semesters perfecting the treatment. The first iteration of the treatment involved a very hands-on approach by the instructor and the researcher. Twice a week for one hour, the teacher and the researcher met with a class in Second Life and explored Spanish locations. The researcher acted as a technical aid and helped address any technical issues the students encountered while the instructor interacted with students using Spanish. Additionally, both the

instructor and the researcher searched for locations to visit in Second Life linked to Spanish Culture (Guggenheim Museum for example). Initial discussions with students gave a positive impression, but the approach was extremely taxing on both the teacher and researcher's time. Further research revealed a practical solution. Sadler and Nurmukhamedov (2008) had shown great promise in task-based learning activities. The concept allowed for the learners to take control of their learning while being fully immersed in the environment. Additionally, this alleviated the intense involvement of the researcher and instructor throughout the process. Based on prior experience, a three-session training in Second Life was added to the beginning of the treatment. This training helped to avoid some of the technical difficulties and pitfalls previously encountered. These pilot studies are covered in greater detail in Wehner, Gump, and Downey (2011).

To recruit participants, the researcher first had to recruit instructors willing to use a virtual world in their classroom. The researcher talked with potential instructors and gave a demonstration of Second Life. As Prensky (2001) alluded to however, it can be very difficult to get people to adopt new technology, especially if they are of a generation that was not born with it available. After the presentation, the research had two instructors willing to participate. As the semester started, only one instructor's classes met the requirements for the study (third semester Spanish students). One class was randomly selected as the control, and the other class received the treatment.

The instructor for these two sections has been teaching Spanish at the collegiate level for four years. She was born in Canada and educated in the United States of America. She finished her doctorate of philosophy in Second Language Acquisition in May 2014. She considers herself extremely fluent in the Spanish language and has spent six months living in Barcelona, Spain.

She has also become fluent in Second Life, creating her own avatar and spending considerable hours within the virtual space (over 200 virtual hours logged).

Volunteer participants were then recruited from the two selected sections via email from the researcher prior to the implementation of the treatment. The email highlighted the volunteer nature and privacy of the study and the option to opt out. Additional information about the participation criteria, the content of study, study duration, and any possible benefits the participants might receive were included in the email. The instructor posted a message containing the same information to the class message board. Written consent was required to participate (see Appendix B). It was explained to the potential participants that the curriculum was chosen prior to the study and the study is only interested in their experience and perceptions and will not impact their grade in any way.

### **Participants and Sample Size**

The research was conducted in a Southeast university in the United States. The participants were second-year Spanish language students. In their first year at the university, they would have taken two semesters of Spanish courses. Participants were entering their third semester of Spanish instruction. This level of language learner was selected because of the level of language proficiency. In order to advance to this level of language learning, a fundamental understanding of grammar usage and knowledge of the target language would have been demonstrated. This ensured online communication with the target language was a possibility.

The proposed sample size of the study was more than 40 participants with 20 participants in each group. Considering factors outside of the control of the researcher such as attrition,

statistical outliers, and other possible consideration, the required sample size was considered a minimum and additional participants would be viewed favorably. Both sections started the semester favorably, with 28 participants in the control and 26 participants in the treatment group. At the time the pretest was administered, the attrition rate had brought these numbers down to 16 and 13 participants, respectively. While these numbers do not meet the proposed sample size, the researcher continued with the analysis and interviews for two main reasons: 1) With so little data available for the use of virtual worlds in the second language acquisition classroom in previous research studies, there may still be some important information to be gathered from this sample size; and 2) the high attrition rate merits further investigation.

### **Instrumentation**

The researcher developed the instrument used in this study, The Spanish Language Acquisition Survey (SLAS). The SLAS is a self-reported rating scale consisting of 46 items designed to capture the beliefs and perceptions of students. All items are related to students' personal experiences and attitudes about learning a second language and the environment in which they are learning it. The SLAS consists of four subscales: anxiety (ANX; Items 1-13), attitude (ATT; Items 14-23), motivation (MOT; Items 24-33), and community (COM; Items 34-46). Participants were requested to indicate whether they agreed on a particular item using a 6-point Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Scores are computed by using the mean of the points assigned to each of the 46 six-point items. The items are reversed-scored where appropriate to ensure the most favorable choice is always assigned the value of 6 and the least favorable choice is assigned a value of 1. Using participants' mean scores



allowed for some missing data and provided a larger sample of usable data.

With the proper recording of Items 1-13, a higher SLAS score represents a weaker feeling of anxiety. A sample item from this subscale is: “I get anxious when I have to speak in Spanish.” Items 1-13 were used to answer research question Q2: What, if any, difference is there in online undergraduate students’ level of anxiety toward using Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world?

With the proper recording of Items 14-23, a higher SLAS score represents a more positive attitude toward the target language. A sample item from this subscale is: “I really like the Spanish language.” Items 14-23 were used to answer research question Q3: What, if any, difference is there in online undergraduate students’ attitude toward the Spanish culture between students using a virtual world to enhance their learning experience and students not using a virtual world?

With the proper recording of Items 24-33, a higher SLAS score represents a stronger sense of motivation. A sample item from this subscale is: “If I have a problem understanding something in Spanish, I keep working until I understand it.” Items 24-33 were used to answer research question Q1: What, if any, difference is there in online undergraduate students’ motivational intensity toward learning Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world?

With the proper recording of Items 34-46, a higher SLAS score represents a stronger sense of community. A sample item is: “I want others in this class to do well.” While this score did not answer any direct research question, previous research (see Rovai, 2001, 2003, 2004) has demonstrated the importance of the sense of community among online students and therefore information on this construct may prove beneficial.

## SLAS Development Process

The researcher took the initiative of developing the instrument used within this study. Previous research (see Wehner, Gump, & Downey, 2011) demonstrated a general lack of properly developed instruments for the subject area. While the mentioned study used an adaptation of the Attitude/Motivation Test Battery (ATB) instrument originally created by R.C. Gardner (1985) that is often considered the standard for motivation and language learning, the instrument required alteration before it could be used. Besides issues with translation and different target populations, the ATB, by definition, is extremely extensive and considered too lengthy to be delivered twice for pretest-posttest use. If the instrument were to be shortened, the alteration would change the original validity found upon its creation (Creswell, 2003). For these reasons, a new instrument was found to be appropriate.

The development of the instrument occurred at a large university in the Southeast United States. Crocker and Algina's (1986) series of steps to show content validity were followed in the development of this instrument and the results indicate the SLAS possesses high content and construct validities. After a review of the research, four performance domains of interest were identified: students' motivational intensity, level of anxiety, attitude toward the target language, and sense of community. All four domains are directly related to language acquisition. The fourth domain, sense of community, while being linked to integrativeness of Dörnyei's (2005) L2 Motivational Self System, may also have ties to learning within a classroom, online or traditional. Rovai (2003) noted this is a domain of special interest in a classroom, particularly in a virtual classroom where the interactions of the participants is of high value. A student's sense of community within that classroom may have a direct effect on their motivation to perform within it. With the domains identified, items were constructed with a language suitable for use

with the target population. Refer to Table 3.1 for an indication of which theories and research lead to each performance domains.

*Table 3.1: Table linking performance domains with language acquisition research and theories.*

<b>Performance Domain</b>	<b>Theory/Research</b>
Motivational intensity	<ul style="list-style-type: none"> <li>• Dörnyei &amp; Otto's (1998) Process Model of L2 motivation</li> <li>• Gardner's Socio-Educational Model (1979, 1985, 2001)</li> <li>• Klein's Six Dimensions for SLA (1986)</li> <li>• Of learner characteristics, motivation regarded as the most influential force (Dörnyei, 2003; Gardner, 1985; Gardner &amp; Clement, 1990; Noels, 2003).</li> </ul>
Level of anxiety	<ul style="list-style-type: none"> <li>• Gardner's Socio-Educational Model (1979, 1985): Situational anxiety plays an important role in the SLA classroom</li> <li>• Klein's Social integration (1986): negative affect of holding on to one's personal identity inside their culture</li> <li>• MacIntyre, Noels, &amp; Clement (1997): highly anxious students tend to underestimate their own competency level</li> </ul>
Attitude toward target language	<ul style="list-style-type: none"> <li>• Dörnyei (2005): L2 Motivational Self System</li> <li>• Klein's Six Dimensions (1986): Communicative needs subgroup refers to the reason, if the student is forced to learn, their attitude suffers and so does their learning.</li> <li>• Klein (1986) and Gardner (1985): If students do not want to learn a new language, they simply will not.</li> <li>• Zörneyi (1998) Behavioural performance can then be predicted from people's intentions to perform the behaviour in question from their perceptions of control over the behaviour" (Zörneyi, 1998, p. 11).</li> <li>• Schumann (1978, 1986): Acculturation</li> </ul>
Sense of community	<ul style="list-style-type: none"> <li>• Dörnyei's (2005) L2 Motivational Self System: integrativeness and attitudes toward L2 speakers/community</li> </ul>

After item creation, the SLAS was presented to a panel of four experts. Three experts specialized in teaching Spanish to native English-speaking students. The fourth expert

specialized in motivational theory. Their combined experience teaching at the collegiate level in their respective fields was 30 years. The experts were given a copy of the SLAS for review. Included instructions were to review each item for clarity, duplication, and then provide a rating for each individual item based on their knowledge and experience. Each expert independently rated the relevance of each SLAS item to measure its given domain using a four-point scale consisting of *totally relevant*, *reasonably relevant*, *barely relevant*, and *totally not relevant*. Reviewers were asked to clarify ratings of *barely* and *totally not relevant* for further analysis. Using this scale, the score for each item ranged from 3 (*totally relevant*) to 0 (*totally not relevant*). The mean score for each SLAS item was evaluated by the expert panel ranged from a high of 3.00 to a low of 2.00. The expert panel marked items they deemed as duplicates based on similar wording. Items receiving two or more marks as duplicates were reviewed and deleted if necessary. Additionally the instrument was given to 12 first semester Spanish language course students for review and evaluation. The students were instructed to review each item and mark items that they found were difficult or hard to understand. These measures resulted in the deletion of four repeated items, which produced the final 46-item survey.

### **SLAS Development Participants and Procedure**

Data to validate the instrument were obtained from seven sections of a second semester Spanish language course delivered in the spring of 2011. A total of 143 undergraduate students consisting of 82 (57%) females, 39 (27%) males, and 22 (15%) who did not identify their gender. All of the respondents were in their second semester of a Spanish language course with 72% of respondents 23 years of age or younger. All respondents completed the scales and demographic

characteristics in an online self-administered test with adequate time provided. The instrument was distributed through a university email system with a link to the instrument. Each respondent had to log into the university system with their unique identification in order to participate in the survey.

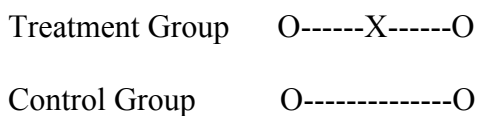
Cronbach's coefficient alpha was applied to SLAS scores obtained from 143 undergraduate university students enrolled in sections of first and second semester Spanish language course delivered in the spring of 2011. Resultant coefficients of internal consistency were .94 for the overall SLAS score, .90 for the anxiety subscale, .92 for the attitude subscale, .88 for the motivation subscale, and .93 for the community subscale. These findings imply that the scale and subscales have satisfactory reliabilities and that the SLAS has a satisfactory internal consistency given this data set.

### **Study Procedure**

The general steps of this study included: the researcher recruited one instructor with multiple sections of the same course to participate in the study; given the two unique course numbers, the researcher randomly selected one section of the same course to be the control and one section to be the treatment; informed consent documents were distributed and signed by volunteers; the pretest administered to both sections; orientation sessions regarding using Second Life as the virtual world delivered to the treatment (See Appendix D); participants kept and submitted seven journal entries during the instruction; a posttest and a demographic survey delivered; one-on-one interviews conducted; and the collection of students final course grades. The Second Life program lasted 10 weeks. Second Life was chosen for this study for the

following reasons: Second Life is available as a free download, limiting the initial cost of the study; the virtual worlds and regions in Second Life are already in existence (28,086 regions as of 12/27/2012; Shepherd, 2012); Second Life has a large number of registered residents (32,030,099 as of 12/26/2012; Shepherd, 2012). Additionally, as discovered in a previous research study (see Wehner et al., 2011), the scale of this particular virtual world makes it easy to encounter people and cultures from all over the world to participate in activities that will help facilitate conversation.

The design of the study is diagrammed as follows:



The use of a pretest and a posttest control-group design was suggested by Creswell (2003) when the study is designed to determine the effect of a treatment on a measured outcome. This design was chosen based on the impracticality of random assignment of individuals to treatment groups. The pretest helps to control for any differences in initial understandings between groups. In the diagram, an O represents the pretest and the posttest and the X represents the treatment, (use of Second Life). The pretest was given prior to the first orientation session. This was week five of the courses, after the add/drop date for the university. The posttest was administered after the final task was completed, in week 14 of the course. The delivery of the Spanish Language Acquisition Survey, (SLAS), was online. Participants were required to log into the university's secure online classroom to take each survey. Each survey acted as a unique instance and required each user to use his or her own unique username and password guaranteeing an independence of participants. Users progressed through the five screen survey, (one screen for each domain and one screen for demographic information), one screen at a time.

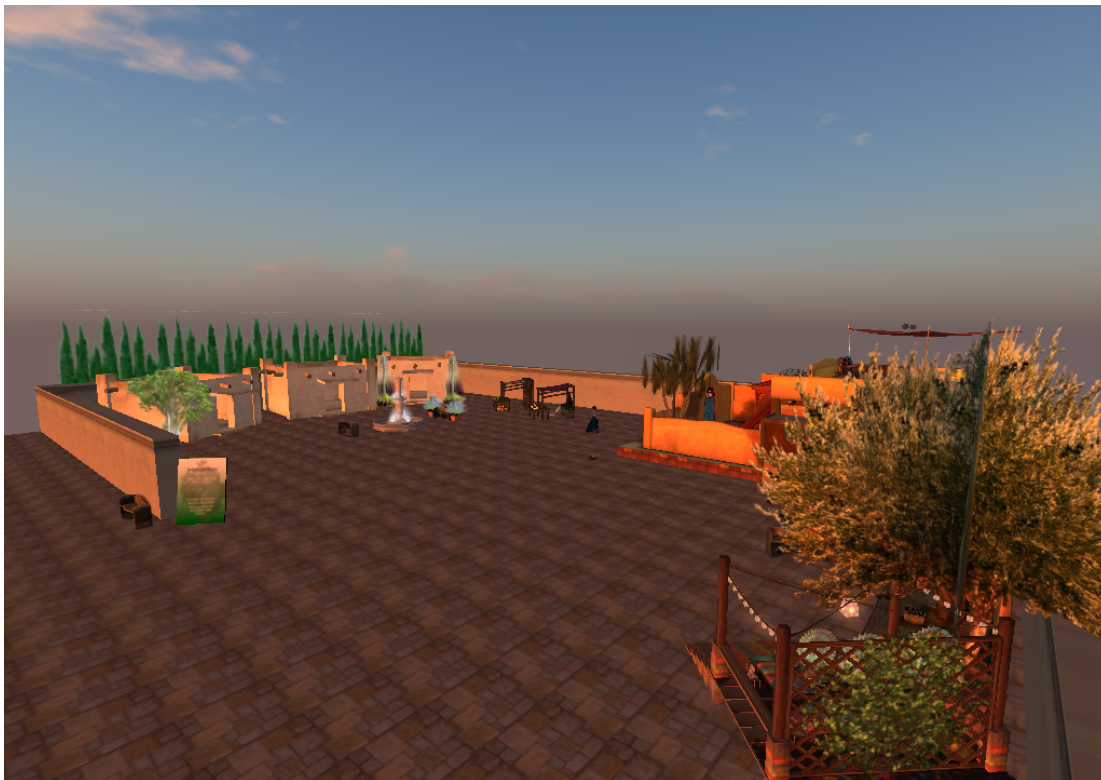
If a question was missed or an answer omitted, a warning message was delivered alerting the user to the missing data. The user was then allowed to go back and answer the missing item(s) or continue without answering. Once completed, the user's answers were saved and the user was not allowed to take the measure a second time. A student's unique identification number was associated with each survey allowing the researcher to match pretest and posttest to an individual without identifying that individual ensuring participant anonymity. Each participant's posttest-pretest difference score was calculated. An independent-measures *t*-test was performed to determine whether the use of Second Life (treatment) had any effect on student anxiety level, attitude toward the Spanish culture, motivation level, and sense of community. Results were confirmed using a repeated measures ANOVA (2 [group] x 2 [time]).

As previously mentioned, the treatment lasted 10 weeks. The control and treatment groups had each completed the same assignment using different mediums. The SL treatment allowed students to spend their time interacting with peers as well as other residents of SL. The control group was required to use other websites to complete their tasks. The participants were required to complete an orientation session as well as the same seven free tasks the control group completed, (discussed later), while maintaining their use of the target language, Spanish, in order to receive credit for the assignment.

For this study, a starting point within Second Life called the World Language Education Platform (see Figure 3.3) was created by the administrator of the university's virtual space. This space acted as a launching point for participant exploration. The platform included teleport boards of Spanish islands to explore, virtual space to meet and have conversations with other classmates, objects such as food carts to practice interacting with SL materials. This location was created as a starting point to assist students in their SL explorations. The teleport board locations

are in no way meant to act as restrictions for places to visit, but merely an example of places to help new users find islands heavy with Spanish culture found across the globe.

Participants in the treatment group were required to complete three online orientation synchronous sessions that introduced them to Second Life (see Appendix D for an outline of these sessions). The instructor recorded the attendance for each session to further encourage attendance. The first two sessions were additional synchronous time required by the treatment group, however this orientation time was found in the past to be critical. In particular, these sessions focused on moving, looking around the Three-Dimensional space, purchasing, avatar creation, communication, and opening objects. These are the necessary tasks that a learner must be able to perform in order to interact within the world. The first orientation session introduced movement and looking. This allowed the users to interact and move within regions.



*Figure 3.3: The World Language Education Platform in Second Life*



The second orientation covered personalizing their avatar. This is an important component because avatar creation is a part of how one integrates into the SL culture. Orientation three demonstrated how to find islands, teleport and join groups where participants could communicate with other speakers of the target language. Additionally, it was at this time that the instructor introduced both participant groups to the concept of a “free-task” in a synchronous session. The control group’s synchronous session did not have any information beyond the free task assignment details and requirements.

After completing the synchronous sessions, the participants were asked to complete seven free tasks. Free tasks are defined as tasks where the student is allowed to negotiate and choose the content of their task (Jauregi et al., 2011). The task must relate to the course objectives and to what is currently being studied in the course each week. With seven tasks and 10 weeks, it gave a little flexibility to the learner to choose their topics. After completing the task, the student must show how the task relates to the course objectives and topics and provide a journal entry detailing the task. All negotiations and rationale for choosing the task as well as any conversation during the task must be conducted in Spanish. Jauregi et al. (2011) state that the negotiation of the task is a part of the development of the learner’s linguistic skills. The journal included the following sections (written in Spanish):

*Table 3.2 Requirements for the free task journals of the control and treatment groups.*

<b>Control Group</b>	<b>Treatment Group</b>
1. The Goal of the assignment	1. The Goal of the assignment
2. Website/online location visited to complete the goal	2. The text chat-log where the students negotiated and achieved the goal.
3. Screenshot of Website used.	3. Photos taken in SL of the students achieving the goal
4. A very brief discussion of why the	4. A very brief discussion of why the

students think the goal helps with the course objectives and how the task relates to the current coursework.	students think the goal helps with the course objectives and how the task relates to the current coursework.
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*Table 3.2 (continued)*

<b>Control Group</b>	<b>Treatment Group</b>
5. A description of how the students achieved the goal; the processes, challenges and rewards.	5. A description of how the students achieved the goal; the processes, challenges and rewards.
6. Any recommendations for other students who would undertake the same goal.	6. Any recommendations for other students who would undertake the same goal.

Kolb and Kolb (2005) stated in their model of experiential learning that students should be asked to reflect upon the tasks they accomplish in order to learn from them. These six sections were developed with the model of experiential learning in mind. According to Kolb and Kolb (2005):

This process is portrayed as an idealized learning cycle or spiral where the learner ‘touches all the bases’ – experiencing, reflecting, thinking, and acting – in a recursive process that is responsive to the learning situation and what is being learned. These reflections are assimilated and distilled into abstract concepts from which new implications for action can be drawn. These implications can be actively tested and serve as guides in creating new experiences. (p. 194)

Therefore the journal reflections become an important part of helping the student move into more and more successful encounters with other SL users (treatment) and more successful web experiences (control).

It is important to note that the students’ journals are not graded on their perfected use of Spanish. Instead, students are graded on their ability to use Spanish throughout their interactions,

their ability to reflect and adapt their experiences to reach their learning goals, and how well they integrate their course instruction with their tasks.

After completion of the assignment, five volunteers agreed to conduct short in-world exit interviews. Treatment participants were informed of being contacted for interviews by the instructor first, and then the researcher sent an email to all participants asking for voluntary participation with the researcher's contact information (email and Second Life username). The choice to conduct the interviews in-world allowed the participant to remain anonymous. Additionally, the researcher hoped anonymity would help the participant answer all questions honestly. The conversations were conducted via Second Life's chat feature, allowing instantaneous logging of transcripts. A series of open-ended questions assisted in guiding the interaction while allowing for follow up questions as the need arises.

The open-ended questions to guide the in-world interviews were created using the guidelines outlined by Creswell (2008). Creswell (2008) suggest that good qualitative questions leave room for exploration and discovery while maintaining focus. They should not be so specific that the researcher gets "tunnel vision" and misses the true perception of the participant. The researcher created a series of 15 questions designed to focus, but not hinder, responses regarding research questions four through seven. These 15 questions were given to three experts, two professors of Spanish and a doctoral student in measurement and evaluation. The reviewers were asked to review the questions to make sure they met Creswell's guidelines of open yet focused. Additionally, the experts were asked if they felt the questions would assist the researcher in answering the research questions. After their review, the researcher met with each expert individually to discuss their interpretations. These discussions resulted in the elimination of one question and the combination of two related questions resulting in the 13-question

interview script (Appendix B). Creswell (2008) emphasizes that these questions are to be used as a guide and not limit the scope of the interview. The researcher is trying to get a sense of the participants' perspective and should allow the participants answers to direct the flow of the interview. With this mindset, the researcher has the freedom to follow up on information discussed and allow the participant to elaborate on their experience with greater detail and perhaps in a direction the researcher could not have predicted.

Furthermore, the researcher asked the instructor to keep a journal of any interesting occurrences she experienced during the process. The instructor and the researcher met three times for short 30-60 minute updates on the instructor's perspective of the progress of the study and to hear anything the instructor placed in the journal. These meetings occurred at weeks two, six, and 10 of the treatment. While this information was extraneous to the research questions, it was the hope of the researcher that the instructor's perspective may help guide the participant interviews regarding unforeseen circumstances that might not otherwise been revealed.

Unbeknown to the researcher during the planning of this stage, the journal and discussion helped shed light on the high attrition rate in the courses and helped substantiate this finding during the participant interviews. More on this finding is discussed in the next chapter.

Finally, after the course was concluded, the researcher conducted an in-depth telephone interview with the instructor. The interview was recorded to provide a more accurate description of the interview (Yin, 2009). The researcher created a series of 18 questions designed to focus, but not hinder, responses regarding research questions four through seven. The questions were designed to guide the interview and created using the guidelines outlined by Creswell (2008). These 18 questions were given to three experts, two professors of Spanish and a doctoral student in measurement and evaluation. The reviewers were asked to review the questions to make sure

they met Creswell's guidelines of open yet focused questions. Additionally, the experts were asked if they felt the questions would assist the researcher in answering the further understanding the research questions. After their review, the researcher met with each expert individually to discuss their interpretations. These discussions resulted in the elimination of two questions and the combining of three resulting in the final 15-question interview script (Appendix E). The interview questions were designed by the researcher to provide additional detail surrounding the research questions. The questions provided a structure and a format that allowed flexibility for the researcher to probe for additional depth and detail.

### **Ethical Considerations**

In compliance with the regulations and guidelines of human subject protections, after the researcher passed his proposal defense, an institutional review board (IRB) package was submitted based on the proposal. The application was approved and written approval was received from the IRB (Appendix G).

### **Limitations**

As with all exploratory research, the findings of this study are tentative but enough to provide an empirical basis for future studies. It is intended to act as a jumping off point for future research. The lack of significant empirical research previously conducted to guide this study may leave the researcher vulnerable to unforeseen circumstances. Great care and detail has gone into the design of this study to mitigate such occurrences, but every possible scenario cannot be

accounted for. Extremely high attrition rate, (near 50%), was unexpected and takes away from the power statistical analysis can achieve.

It is important to note that the procedure for participant selection was a convenience sample; therefore great care should be taken in generalizing to larger populations. The limitation of the sample size has impacted the results. A single instructor with multiple sections of the same course has the potential to be adequate for statistical analysis, but it will not accurately represent the entire population. Additionally, the use of only one instructor may impact the results. While both groups received instruction from the same person, the individual interactions between the students and the instructor could not be controlled and the teaching style of the instructor may have skewed the results one way. In an ideal world, multiple instructors and institutions would be used. Time constraints and limited volunteers prevented this from occurring. Multiple institutions would also ensure a more diverse student population. This idea also demonstrates the researcher's limited access to resources, which is a limitation to this study. A broader participation sample would be beneficial.

This study utilized self-reported data. Self-reported data can contain several potential sources of biased that should be noted. These include: a) selective memory; b) telescoping; c) attribution; and d) exaggeration. Selective memory may influence the results by the participant remembering or not remembering experiences or events that previously occurred. Telescoping occurs when the recall of events are thought to have occurred at one time when in actuality they occurred at another. Attribution refers to the act of a participant taking credit for the positive events and outcomes while assigning negative events and outcomes to external forces. Finally, exaggeration is when the participant embellishes events or makes them appear more significant than what is actually suggested from the other data.

Researcher bias could be a limitation on this study. While every attempt to minimize this bias has occurred (using independent researchers with the qualitative data, for example), it is important to note it does exist. Additionally, the instructor and participants' bias toward the use of a virtual world in the classroom might have played a role, although it is unclear as to whether it could be a positive or a negative impact. It is the hope that the data gathered might shed some insight into any preexisting bias. The instructor did volunteer to use Second Life in her classroom, so some bias may exist, even if it is a positive view of technology.

One limitation to this study was the virtual world itself. While this study mentions the experience within the world were unique for each user, and that is desired for a more real-world experience, it may also have a drastic effect on the results. The inability of the researcher to control online interactions will make future repeat studies unique to their experiences.

Finally, the researcher acknowledges his lack of fluency in Spanish as a possible limitation to this study. While fluency was not critical for this study to commence, it would have been beneficial.

### **Data Analysis Procedures**

To obtain results and respond to the research questions raised in this study, the researcher went through the following process: data coding, entry, observations, and initial computation procedures to prepare for statistical analysis after the data collection of the formal study. First, the raw data were coded and organized into datasets with the Excel program. The organized dataset was imported into the statistical program package SPSS for Mac for further analysis. The data were observed to ensure no violations have occurred to continue for analysis

(normality, independence of observations, and outliers). The data were also checked to ensure there were no missing answers. No missing scores were identified. The researcher attributed this to the treatment starting after the drop/add date for the course, willing volunteers, and warning messages if an item on the survey was left unanswered.

Statistically significance differences in the study were evaluated using statistical methods. Hypothesis testing in this study was conducted with the alpha level set at .05. Considering the multiple dependent variables, one independent variable, and a covariate (pretest) examined in the study, the researcher originally planned on testing the results using Multivariate Analysis of Covariance (MANCOVA) and Analysis of Covariance (ANCOVA) with SPSS. When the sample sizes proved to be smaller than anticipated, the researcher reevaluated the statistical procedures. The small data set does not lend itself well to multiple estimations within one statistical procedure, such as the MANCOVA. Similarly to how the researcher believes the technology should fit the need, he also believes the statistical procedures should fit the situation. For this reason, the researcher chose to primarily use a series of independent-measures *t*-test to analyze the results. Independent-samples *t*-test can determine whether the difference observed between these two groups is statistically significant with significant power and effect size given the sample (Cohen, 2003). Given the lack of quantifiable data in this area, clean and easy to understand results are desired. To further validate the *t*-test findings, a repeated measures ANOVA was conducted to determine if there were any differences in results. While the researcher acknowledges this procedure may be lacking in effect size and power if used to solely report the findings, the results could further substantiate the claims of the *t*-tests.

Figure 3.4 represents the steps taken to respond to the first, second, third, and eighth research questions and evaluate if and in which criterion measure the participants demonstrated a



difference. As figure 3.4 demonstrates, the first step in analysis was checking to make sure the study design allowed the data to meet three assumptions: a continuous dependent variable; an independent variable with two or more categorical, independent groups; and independence of observations. The second step involved the proper setup of data within SPSS. Third, SPSS was used to check for assumptions #4 and assumption #5: no outliers and normality. If outliers were found based on an inspection of a box-and-whisker plot, step four involved a decision on how to handle the outliers. Similarly, step five examined the normal distribution of each group and what to do in the event there was not normality. Step six included running the Independent-samples *t*-test procedure and test for homogeneity of variances. Finally, step seven included the analysis of the results and the calculation and report of an effect size given statistically significant results. These steps were performed on the data as follows: 1) pretest scores compared on criterion measures to find initial differences in groups using an independent-measures *t*-test; 2) a difference was calculate for each student by subtracting pretest scores from posttest scores, helping to account for differences in students prior to the treatment; 3) Difference means for the experimental and control groups were compared using an independent-measures *t*-test on the four criterion variables.

Additional data were collected in the form of one-on-one interviews with students who received the treatment. The interviews were conducted and transcribed through the online chat log feature within Second Life. Conducting the interviews in-world allowed the participants complete anonymity. Participants were recruited via email. Once the participants were identified, the researcher held virtual office hours in a designated location. Participants could interact with the researcher at any time during the virtual office hours. Meeting in this manner reinforced the anonymity of the participants as no participant had a set scheduled time to meet allowing them to

meet the researcher at their convenience using their unique avatar and username.

The researcher and two independent research assistants, current doctoral students with research experience, coded the data from the interviews using thematic analysis. Thematic analysis focuses on examining the themes within data (Braun & Clarke, 2006). It moves beyond counting phrases and attempts to identify ideas within the data. There are six phases in this process. In the first phase, the researcher became familiar with the data by first reading through it in its entirety and then re-reading it while paying special attention to any patterns that occur. In the second phase, the researcher generated the initial codes based on the pattern observed and by using coding categories suggested by the literature (Patton, 1991, p.402). The initial codes and categories transition into the third phase where they are combined to form over-arching themes. As anticipated, these themes focused on the research questions and independent variables: motivation, anxiety, and attitude, however they were not limited to these areas. The researcher continued on to phase 5 where he defined what each theme is.

After each theme was defined the researcher wrote a report of his conclusions. This information was shared with the two independent research assistants and used for the coding of the data. The team used this concise information to group the data into the codes independently using Microsoft Excel software. Inter-rater reliability rates were checked to confirm findings. Typically acceptable inter-rater reliability rates are between 50-90% (Marque & McCall, 2005). The inter-rater reliability for this data review was 87%. Organizing and displaying the data in this manner, the researcher first analyzed the data from the interviews, as separate cases, and only then considered the wider matter of the entire interview responses. This sequence of analytical steps would conform broadly to the recommendations of Glaser and Strauss (1967), who argued that an understanding of the individual cases is the best promise for theoretical

assertions that are grounded in contexts and real-world patterns.

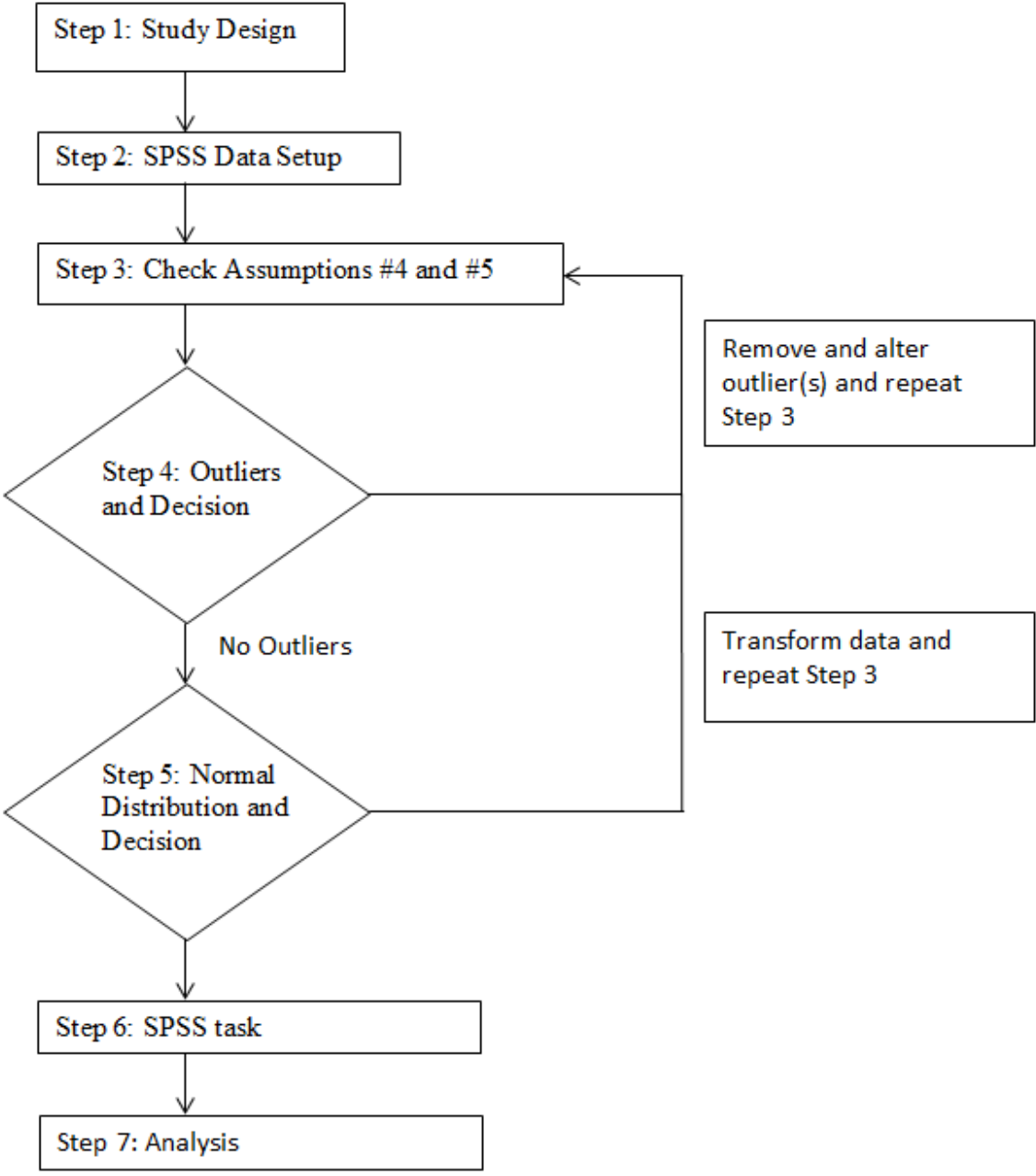


Figure 3.4 Diagram of overview of statistical analysis procedures

Finally, an additional statistical procedure, an independent-measures *t*-test, was conducted on the students' final course grades utilizing the same seven step procedure previously mentioned. This procedure will attempt to answer research question eight.

## **Chapter 4**

### **Results**

The purpose of this study was to investigate the effect of implementing a virtual world, Second Life, into a Spanish Language Acquisition classroom. The research was conducted in a Southeast university in the United States. The participants were second-year Spanish language students. Participants were entering their third semester of Spanish instruction. This level of language learner was selected because of the level of language proficiency. In order to advance to this level of language learning, a fundamental understanding of grammar usage and knowledge of the target language would have been demonstrated.

#### **Description of the Study Participants**

The conducted study utilized two sections of the same third-semester Spanish language course in the spring of 2014. The experimental group used a virtual world, Second Life, to perform assignment free tasks while interacting with native Spanish speakers. The control group performed the same assignment with websites in lieu of a virtual world. Both sections started the semester favorably, with 28 participants in the control and 26 participants in the treatment group.

At the time the pretest was administered, the attrition rate had brought these numbers down to 16 and 13 participants, respectively. While these numbers are not as healthy as the original course enrollments, the researcher continued with the analysis and interviews for two main reasons: 1) With so little data available for the use of virtual worlds in the second language acquisition classroom, there may still be some important information to be gathered from this sample size; 2) the high attrition rate merits further investigation. Furthermore, the results of this study may help teachers and administrators to make informed decisions about the use of virtual worlds, specifically Second Life, in their schools and second language acquisition classrooms.

There were a total of 29 participants in this study. Table 3.1 shows the demographics of the sample. The control group consisted of one class section of 16 students. The experimental group consisted of one class section of 13 students. The study did not have any students who did not take either the pretest or the posttest, resulting in all data included in the sample.

*Table 4.1: Demographic Information of Sample*

	Sample	Control	Experimental
<b>Gender</b>			
Male	13 (45%)	10 (63%)	3 (23%)
Female	16 (55%)	6 (37%)	10 (77%)
<b>Ethnicity</b>			
White	26 (90%)	14 (88%)	12 (92%)
African American	3 (10%)	2 (12%)	1 (8%)
<b>Age</b>			
18-20	11 (38%)	5 (31%)	6 (46%)
21-23	12 (41%)	6 (38%)	6 (46%)
>25	6 (21%)	5 (31%)	1 (8%)
<b>Yearly Income</b>			
< \$10,000	23 (79%)	12 (75%)	11 (84%)
\$20,001-30,000	3 (10%)	2 (13%)	1 (8%)
\$30,001-45,000	1 (3%)	1 (6%)	0 (0%)
>\$45,000	2 (8%)	1 (6%)	1 (8%)

## **Data Collection Instruments**

The data collection instrument used for this study was the SLAS, which served as both the pretest and posttest for the study. Additional data were collected through student submitted assignments (journals), final course grades, and one-on-one virtual interviews. The assignment that served as the treatment was used by both the experimental and control group participants, but required a different medium, Second Life, for the experimental group. As a result, the instructions for the assignment varied for each group accordingly.

The SLAS (Appendix A) which served as the pretest and posttest contained 46 items. Information about the initial development of the instrument can be found in chapter 3. Cronbach's coefficient alpha was applied to SLAS scores obtained from 29 undergraduate university students enrolled in sections third semester Spanish language course delivered in the spring of 2014 for both the pretest data and posttest data. Resultant coefficients of internal consistency for the pretest data were .92 for the overall SLAS score, .94 for the anxiety subscale, .80 for the attitude subscale, .88 for the motivation subscale, and .88 for the community subscale. These findings imply that the scale and subscales have satisfactory reliabilities and that the SLAS has a satisfactory internal consistency given this data set.

Resultant coefficients of internal consistency for the posttest data were .90 for the overall SLAS score, .91 for the anxiety subscale, .84 for the attitude subscale, .78 for the motivation subscale, and .89 for the community subscale. These findings imply that the scale and subscales have satisfactory reliabilities and that the SLAS has a satisfactory internal consistency given this data set.

All Cronbach's alpha numbers indicate a high level of internal consistency for the scales. Higher values of Cronbach's alpha are typically viewed more favorably. A good level of internal consistency differs depending on what source you refer to, although all recommended values are .7 or higher (DeVillis, 2003; Kline, 2005). All recorded values met this recommendation. A review of this information can be found in Table 4.2.

*Table 4.2: Cronbach's coefficient alphas*

Scale	Development	Pretest	Posttest
Overall	.94	.92	.90
Anxiety	.90	.94	.91
Attitude	.92	.80	.84
Motivation	.88	.88	.78
Community	.93	.88	.89

### **Overview of Statistical Procedures**

The data from all 29 participants were analyzed using SPSS, version 21. Means and standard deviations were calculated for the difference scores for the experimental group and the control group on each criterion measure. These values are discussed independently along with the results from the independent-measures *t*-test used to compare the experimental group to the control group.

Before analysis on the data to answer the research questions could begin, the researcher wanted to know if there were any statistically significant differences in the two groups, control and treatment on the criterion or dependent variables. As previously mentioned, there were 16 participants in the control group and 13 participants in the treatment group. An independent-samples *t*-test was run on the summed item scores to determine if there were differences in

anxiety level between the control and treatment groups. There were no outliers in the data, as assessed by inspection of a boxplot. Anxiety scores for each treatment group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ( $p = .213$ ). The level of anxiety was slightly higher in the control group ( $M = 44.56$ ,  $SD = 9.30$ ) than the treatment group ( $M = 43.85$ ,  $SD = 12.22$ ). The control group's mean anxiety score was 0.72 ( $SE = 3.99$ ) higher than the treatment group. However, there was no statistically significant difference in mean anxiety score between the control and treatment,  $t(27) = 0.18$ ,  $p = 0.86$ .

An independent-samples  $t$ -test was run to determine if there were differences in attitude toward the target culture between the control and treatment groups. There were no outliers in the data, as assessed by inspection of a boxplot. Attitude toward the target culture scores for each treatment group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ( $p = .063$ ). The level of attitude toward the target culture was slightly lower in the control group ( $M = 47.00$ ,  $SD = 5.18$ ) than the treatment group ( $M = 48.85$ ,  $SD = 7.64$ ). The control group's mean attitude toward the target culture score was 1.85 ( $SE = 2.39$ ) lower than the treatment group. However, there was no statistically significant difference in mean attitude toward the target culture score between the control and treatment,  $t(27) = -0.77$ ,  $p = .45$ .

An independent-samples  $t$ -test was run to determine if there were differences in the level of motivation between the control and treatment groups. There were no outliers in the data, as assessed by inspection of a boxplot. Level of motivation scores for each treatment group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ( $p = .77$ ). The level of



motivation was slightly higher in the control group ( $M = 39.94$ ,  $SD = 5.66$ ) than the treatment group ( $M = 38.92$ ,  $SD = 5.04$ ). The control group's mean level of motivation score was 1.01 ( $SE = 2.01$ ) higher than the treatment group. However, there was no statistically significant difference in mean level of motivation score between the control and treatment,  $t(27) = 0.50$ ,  $p = 0.62$ .

An independent-samples  $t$ -test was run to determine if there were differences in the sense of community between the control and treatment groups. There were no outliers in the data, as assessed by inspection of a boxplot. Sense of community scores for each treatment group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ( $p = .429$ ). The sense of community was slightly higher in the control group ( $M = 45.25$ ,  $SD = 12.96$ ) than the treatment group ( $M = 44.48$ ,  $SD = 10.72$ ). The control group's mean sense of community score was 0.40 ( $SE = 4.49$ ) higher than the treatment group. However, there was no statistically significant difference in mean sense of community score between the control and treatment,  $t(27) = 0.90$ ,  $p = .93$ .

These analyses demonstrate that there was no statistically significant difference on the pretest scores on the dependent variables of level of anxiety, attitude toward the target culture, level of motivation, and sense of community between the control and treatment groups. Given the use of pre-established groups, this information will prove to strengthen the importance of any statistically significant difference in further analysis. An overview of these findings can be found in Table 4.3.

*Table 4.3* Differences between groups on the pretest for the sample

Group	Mean Summed Score	Standard deviation	<i>t</i> score	<i>df</i>	Significance
<b>Anxiety</b> (Max score: 78)					
Control	44.56	9.30	0.18	27	.86
Experiment	43.85	12.22			
<b>Motivation</b> (Max Score: 60)					
Control	39.94	5.66	0.50	27	.62
Experiment	38.92	5.04			
<b>Attitude</b> (Max Score: 60)					
Control	47.00	5.18	-0.77	27	.45
Experiment	48.85	7.64			
<b>Community</b> (Max Score: 78)					
Control	45.25	12.96	0.90	27	.93
Experiment	44.48	10.72			

### **Findings for Research Question 1**

Research Question 1: What, if any, difference is there in online undergraduate students' motivational intensity toward learning Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world? The independent variable was the treatment the students received, and the dependent variable was the students' motivational intensity as measured by the difference between posttest scores and pretest scores. The control group completed the free tasks assignment using web sites found on the Internet to complete their assignment while the experimental group used the virtual world Second Life during the same unit of study. The null hypothesis was that there is no significant difference in online

undergraduate students' motivational intensity toward learning Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world. There were 16 participants in the control group and 13 participants in the treatment group.

An independent-samples *t*-test was run to determine if there were differences in the motivation between the control and treatment groups. There were no outliers in the data, as assessed by inspection of a boxplot. Motivation scores for each treatment group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ( $p = .840$ ). The difference in the level of motivation between the posttest and pretest was higher in the treatment group ( $M = 1.23$ ,  $SD = 6.56$ ) than the control group ( $M = -0.31$ ,  $SD = 1.01$ ). The control group's mean motivation score was 1.54 ( $SE = 1.66$ ) lower than the treatment group. However, there was no statistically significant difference in mean motivation score between the control and treatment,  $t(27) = -0.93$ ,  $p = 0.36$ . The researcher had no choice but to fail to reject the null hypothesis and reject the alternative null hypothesis that there is a significant difference in online undergraduate students' motivational intensity toward learning Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world. Means, standard deviations, and *t* scores for each criterion measure can be found in Table 4.3.

Additionally, a repeated measures ANOVA was run to determine if there were differences in the motivation between the control and treatment groups over the course of the 10 week treatment. There were no outliers in the data, as assessed by inspection of a boxplot. The unadjusted motivation scores were normally distributed at each time point, as assessed by Shapiro-Wilk's test ( $p > .05$ ). Motivation levels decreased slightly in the control group from the pretest ( $M = 44.56$ ,  $SD = 7.84$ ) to the posttest ( $M = 43.87$ ,  $SD = 7.87$ ). A slight increase in the

motivation levels were present in the treatment group from the pretest ( $M = 38.92$ ,  $SD = 5.04$ ) to the posttest ( $M = 40.15$ ,  $SD = 6.90$ ). Mauchly's test of sphericity indicated that the assumption of sphericity had been violated,  $X^2(1) = .00$ ,  $p < .001$ . This confirms the assumption of sphericity is difficult not to violate (Weinfurt, 2000). Additionally, Mauchly's test of sphericity is considered a poor method to detect violations of sphericity with it often failing to detect sphericity in small samples (Kesselman et al., 1980). Furthermore, Maxwell and Delaney (2004) recommended that the unadjusted test is never used stating in part that the extreme sensitivity of the repeated measures ANOVA to departures from sphericity. Maxwell and Delaney recommending ignoring the results of the Mauchly's test of sphericity and simply interpreting the results of using a Greenhouse-Geisser correction regardless. Given the results received from this data, Maxwell and Delaney's recommendation was used for this and all similar instances. The treatment intervention did not demonstrate statistically significant changes in motivation level over time,  $F(1.00, 27.00) = 5.432$ ,  $p = .458$ , partial  $\eta^2 = .021$ . This confirms the results found in the independent-samples  $t$ -test.

Research Question 2: What, if any, difference is there in online undergraduate students' level of anxiety toward using Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world? The independent variable was the treatment the students received, and the dependent variable is the students' level of anxiety as measured by the difference between posttest scores and pretest scores. The control group completed the free tasks assignment using web sites found on the Internet to complete their assignment while the experimental group used the virtual world Second Life during the same unit of study. The null hypothesis was that there is no significant difference in online

undergraduate students' level of anxiety toward using Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world.

An independent-samples *t*-test was run to determine if there were differences in the anxiety between the control and treatment groups. There were no outliers in the data, as assessed by inspection of a boxplot. Anxiety scores for each treatment group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ). The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances ( $p < .05$ ). The difference in the level of anxiety between the post test and pretest was higher in the control group ( $M = 0.50$ ,  $SD = 2.25$ ) than the treatment group ( $M = -2.00$ ,  $SD = 10.33$ ). The control group's mean anxiety score was 0.26 ( $SE = 0.11$ ) higher than the treatment group. However, there was no statistically significant difference in mean anxiety score between the control and treatment,  $t(27) = 0.86$ ,  $p = 0.41$ . The researcher had no choice but to fail to reject the null hypothesis and reject the alternative hypothesis of there is a significant difference in online undergraduate students' level of anxiety toward using Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world. Means, standard deviations, and *t* scores for each criterion measure can be found in Table 4.3.

Additionally, a repeated measures ANOVA was run to determine if there were differences in the level of anxiety between the control and treatment groups over the course of the 10 week treatment. There were no outliers in the data, as assessed by inspection of a boxplot. The unadjusted level of anxiety scores were normally distributed at each time point, as assessed by Shapiro-Wilk's test ( $p > .05$ ). Anxiety levels remained nearly the same in in the control group from the pretest ( $M = 58.19$ ,  $SD = 8.82$ ) to the posttest ( $M = 58.00$ ,  $SD = 6.75$ ). A slight decrease in the anxiety levels were present in the treatment group from the pretest ( $M = 43.85$ ,  $SD =$

12.22) to the posttest ( $M = 41.85$ ,  $SD = 10.45$ ). Mauchly's test of sphericity indicated that the assumption of sphericity had been violated,  $X^2(1) = .00$ ,  $p < .001$ . The treatment intervention did not demonstrate statistically significant changes in anxiety level over time,  $F(1.00, 27.00) = 17.161$ ,  $p = .404$ , partial  $\eta^2 = .026$ . This confirms the results found in the independent-samples  $t$ -test.

Research Question 3: What, if any, difference is there in online undergraduate students' attitude toward the Spanish culture between students using a virtual world to enhance their learning experience and students not using a virtual world? The independent variable was the treatment the students received, and the dependent variable is the students' motivational intensity as measured by the difference between posttest scores and pretest scores. The control group completed the free tasks assignment using web sites found on the Internet to complete their assignment while the experimental group used the virtual world Second Life during the same unit of study. The null hypothesis was that there is no significant difference in online undergraduate students' attitude toward the Spanish culture between students using a virtual world to enhance their learning experience and students not using a virtual world.

An independent-samples  $t$ -test was run to determine if there were differences in the attitude between the control and treatment groups. There were no outliers in the data, as assessed by inspection of a boxplot. Attitude scores for each treatment group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ( $p = .562$ ). The difference in the level of attitude between the post test and pretest was higher in the control group ( $M = -0.25$ ,  $SD = 0.68$ ) than the treatment group ( $M = -1.23$ ,  $SD = 8.14$ ). The control group's mean attitude score was 0.98 ( $SE = 2.03$ ) higher than the treatment group. However, there was no statistically significant difference

in mean attitude score between the control and treatment,  $t(27) = 0.48, p = 0.63$ . The researcher had no choice but to fail to reject the null hypothesis and reject the alternative hypothesis that there is a significant difference in online undergraduate students' attitude toward the Spanish culture between students using a virtual world to enhance their learning experience and students not using a virtual world. Means, standard deviations, and  $t$  scores for each criterion measure can be found in Table 4.3.

Additionally, a repeated measures ANOVA was run to determine if there were differences in the attitude toward the target language between the control and treatment groups over the course of the 10 week treatment. There were no outliers in the data, as assessed by inspection of a boxplot. The unadjusted attitude scores were normally distributed at each time point, as assessed by Shapiro-Wilk's test ( $p > .05$ ). Attitude levels remained nearly the same in the control group from the pretest ( $M = 41.95, SD = 6.93$ ) to the posttest ( $M = 41.65, SD = 6.67$ ). A slight decrease in the attitude levels were present in the treatment group from the pretest ( $M = 48.85, SD = 7.64$ ) to the posttest ( $M = 47.15, SD = 6.53$ ). Mauchly's test of sphericity indicated that the assumption of sphericity had been violated,  $X^2(1) = .00, p < .001$ . The treatment intervention did not demonstrate statistically significant changes in attitude level over time,  $F(1.00, 27.00) = 10.271, p = .462, \text{partial } \eta^2 = .020$ . This confirms the results found in the independent-samples  $t$ -test.

Research Question 8: What, if any, difference is there in the final grades of online undergraduate students between students using a virtual world to enhance their learning experience and students not using a virtual world? The independent variable was the treatment the students received, and the dependent variable is the students' motivational intensity as measured by the difference between posttest scores and pretest scores. The control group

completed the free tasks assignment using web sites found on the Internet to complete their assignment while the experimental group used the virtual world Second Life during the same unit of study. The null hypothesis was that there is no significant difference in online undergraduate students' final grades between students using a virtual world to enhance their learning experience and students not using a virtual world.

An independent-samples *t*-test was run to determine if there were differences in the final grades between the control and treatment groups. There were no outliers in the data, as assessed by inspection of a boxplot. Final grade scores for each treatment group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ( $p = .301$ ). The difference in final grades were higher in the treatment group ( $M = 83.81, SD = 7.00$ ) than the control group ( $M = 80.81, SD = 9.16$ ). The control group's mean final grade score was 3.00 ( $SE = 3.04$ ) lower than the treatment group. There was no statistically significant difference in mean final grade scores between the control and treatment,  $t(27) = -0.99, p = .33$ . The researcher had no choice but to fail to reject the null hypothesis and reject the alternative hypothesis that there is a significant difference in online undergraduate students' final grades between students using a virtual world to enhance their learning experience and students not using a virtual world. Means, standard deviations, and *t* scores for each criterion measure can be found in Table 4.3.

Other Findings: While not a research question, the researcher also collected data on the sense of community within the control and treatment groups. The independent variable was the treatment the students received, and the dependent variable is the students' sense of community as measured by the difference between posttest scores and pretest scores. The control group completed the free tasks assignment using web sites found on the Internet to complete their



assignment while the experimental group used the virtual world Second Life during the same unit of study. An independent-samples *t*-test was run to determine if there were differences in the sense of community between the control and treatment groups. There were no outliers in the data, as assessed by inspection of a boxplot. Sense of community scores for each treatment group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ), and there was homogeneity of variances, as assessed by Levene's test for equality of variances ( $p = .705$ ). The difference in the level of sense of community between the post test and pretest was higher in the control group ( $M = 0.25, SD = 0.52$ ) than the treatment group ( $M = -18.69, SD = 9.55$ ). The control group's mean sense of community score was 18.44 ( $SE = 2.38$ ) higher than the treatment group. There was statistically significant difference in mean sense of community score between the control and treatment,  $t(27) = 7.05, p < .005, d = 0.76$ . While the sense of community was an additional criterion the researcher included based on online group interactions, it should not go without notice that the sense of community was statistically significant lower in the treatment group compared to the control. This data observation is discussed further in the qualitative data analysis where the researcher believes the one-on-one interviews may provide a further glimpse of students' perspectives on this matter.

Additionally, a repeated measures ANOVA was run to determine if there were differences in the sense of community between the control and treatment groups over the course of the 10 week treatment. There were no outliers in the data, as assessed by inspection of a boxplot. The unadjusted sense of community scores were normally distributed at each time point, as assessed by Shapiro-Wilk's test ( $p > .05$ ). Sense of community levels decreased slightly in the control group from the pretest ( $M = 45.25, SD = 12.96$ ) to the posttest ( $M = 43.98, SD = 12.87$ ). A decrease in the sense of community levels were present in the treatment group from the pretest

( $M = 44.85$ ,  $SD = 10.75$ ) to the posttest ( $M = 26.41$ ,  $SD = 11.80$ ). Mauchly's test of sphericity indicated that the assumption of sphericity had been violated,  $X^2(1) = .00$ ,  $p < .001$ . The treatment intervention did demonstrate statistically significant changes in sense of community level over time,  $F(1.00, 27.00) = 61.581$ ,  $p < .001$ , partial  $\eta^2 = .70$ . This confirms the results found in the independent-samples  $t$ -test.

*Table 4.4* Difference Scores and  $t$ -test difference scores for the sample

Group	Mean difference	Standard deviation	$t$ score	$df$	Significance
<b>Anxiety</b>					
Control	0.50	2.25	0.86	27	.41
Experiment	-2.00	10.33			
<b>Attitude</b>					
Control	-0.25	0.68	0.48	27	.63
Experiment	-1.23	8.14			
<b>Motivation</b>					
Control	-0.31	1.01	-0.93	27	.36
Experiment	1.23	6.56			
<b>Community</b>					
Control	0.25	0.52	7.05	27	<0.005*
Experiment	-18.44	9.55			

*Note: \* signifies statistically significant*

### **Additional Analysis**

After reviewing the demographics, the researcher was interested in determining if gender had an effect on the outcomes. With 45% of the sample male and 55% of the sample female, further analysis was conducted to determine if gender impacted the results.

There were 13 male participants and 16 female participants in the study. An independent-samples  $t$ -test was run to determine if there were differences in the motivation between the male

participants and female participants. There were no outliers in the data, as assessed by inspection of a boxplot. Motivation scores for each gender were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ). The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances ( $p = .001$ ). The difference in the level of motivation between the posttest and pretest was higher in the female participants ( $M = 0.82$ ,  $SD = 7.53$ ) than the male participants ( $M = -0.51$ ,  $SD = 1.56$ ). The males group's mean motivation score was 1.24 ( $SE = 2.50$ ) lower than the females group. However, there was no statistically significant difference in mean motivation score between the male participants and female participants,  $t(27) = 0.48$ ,  $p = 0.68$ .

An independent-samples  $t$ -test was run to determine if there were differences in the anxiety level between the male participants and female participants. There were no outliers in the data, as assessed by inspection of a boxplot. Anxiety scores for each gender group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ). The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances ( $p = .006$ ). The difference in the level of anxiety between the post test and pretest was lower in the female group ( $M = -2.34$ ,  $SD = 9.38$ ) than the male group ( $M = 0.65$ ,  $SD = 2.28$ ). The male group's mean anxiety level score was 2.95 ( $SE = 2.85$ ) higher than the female group. However, there was no statistically significant difference in mean anxiety score between the male participants and female participants,  $t(27) = 0.96$ ,  $p = 0.41$ .

An independent-samples  $t$ -test was run to determine if there were differences in the attitude level between the male participants and female participants. There were no outliers in the data, as assessed by inspection of a boxplot. Attitude scores for each group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ). The assumption of homogeneity of

variances was violated, as assessed by Levene's test for equality of variances ( $p = .001$ ). The difference in attitude level between the post test and pretest was lower in the female group ( $M = -2.47$ ,  $SD = 9.54$ ) than the male group ( $M = -0.23$ ,  $SD = 0.47$ ). The male group's mean attitude score was 2.29 ( $SE = 3.17$ ) higher than the female group. However, there was no statistically significant difference in mean attitude score between the male participants and female participants,  $t(27) = -0.78$ ,  $p = 0.51$ .

An independent-samples  $t$ -test was run to determine if there were differences in the sense of community scores between the male participants and female participants. There were no outliers in the data, as assessed by inspection of a boxplot. Sense of community scores for each group were normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ). The assumption of homogeneity of variances was violated, as assessed by Levene's test for equality of variances ( $p = .003$ ). The difference in sense of community scores between the post test and pretest was lower in the female group ( $M = -18.15$ ,  $SD = 9.79$ ) than the male group ( $M = 0.02$ ,  $SD = 0.51$ ). The male group's mean sense of community score was 19.56 ( $SE = 3.24$ ) higher than the female group. There was statistically significant difference in mean sense of community score between the control and treatment,  $t(27) = -6.38$ ,  $p < 0.005$ ,  $d = 0.75$ .

These findings are consistent with the original data analysis and while the differences in gender numbers between the two groups were evident, the data demonstrates the differences in gender between the two groups did not impact the results in a statistically significant manner.

## **Findings**

In summary, the results of the data analyses led to the following findings:

1. There was no significant difference in online undergraduate students' motivational intensity toward learning Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world.
2. There was no significant difference in online undergraduate students' level of anxiety toward using Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world.
3. There was no significant difference in online undergraduate students' attitude toward the Spanish culture between students using a virtual world to enhance their learning experience and students not using a virtual world.
4. There was no significant difference in online undergraduate students' final grades of undergraduate students between students using a virtual world to enhance their learning experience and students not using a virtual world.
5. There was statistically significant difference in mean sense of community score between the control and treatment groups of online undergraduate students using a virtual world to enhance their learning experience and students not using a virtual world with the control groups score significantly higher.

### **Treatment Interviews**

Additional data were collected in the form of one-on-one interviews with students. Participants were recruited via email. Once the participants were identified, the researcher held virtual office hours within Second Life in a designated location for the treatment group. The treatment group's participation was completely anonymous as the interviews were conducted in-

world. Participants could interact with the researcher at any time during the virtual office hours. Meeting in this manner reinforced the anonymity of the participants as no participant had a set scheduled time to meet allowing them to meet the researcher at their convenience using their unique avatar and username. The interviews conducted and transcribed through the online chat log feature within Second Life.

The researcher and two independent research assistants, current doctoral students with research experience, coded the data from the interviews using thematic analysis. Thematic analysis focuses on examining the themes within data (Braun & Clarke, 2006). Thematic analysis moves beyond counting phrases and attempts to identify ideas within the data. The process consists of six phases. In the first phase, the researcher became familiar with the data by first reading through it in its entirety and then re-reading it while paying special attention to any patterns that occur. In the second phase, the researcher generated the initial codes based on the pattern observed and by using coding categories suggested by the literature (Patton, 1991, p. 402). The initial codes and categories transition into the third phase where they are combined to for over-arching themes. As anticipated, these themes focused on the research questions 4-7 and dependent variables: motivation, anxiety, and attitude, however they were not limited to these areas. The researcher continued on to phase 5 where he defined what each theme is. After each theme is defined the researcher wrote a report of his conclusions. This information was shared with the two independent research assistants and used for the coding of the data. The team used this concise information to group the data into the codes independently using Microsoft Excel software. Inter-rater reliability rates were checked to confirm findings. Inter-rater reliability rates were calculated by dividing the total number of matching statements found by the reviewers by the total number of possible statements. Typically acceptable inter-rater reliability rates are

between 50-90% (Marque & McCall, 2005). The inter-rater reliability for this data review was 87%. Organizing and displaying the data in this manner, the researcher first analyzed the data from the interviews, as separate cases, and only then considered the wider matter of the entire interview responses. This sequence of analytical steps would conform broadly to the recommendations of Glaser and Strauss (1967), who argued that an understanding of the individual cases is the best promise for theoretical assertions that are grounded in contexts and real-world patterns.

### **Treatment Interview Participants**

A total of five one-on-one virtual interviews were conducted using the interview script found in Appendix B. Four of the five participants were female and all participants identified themselves as being Caucasian. One female was 21 years of age and the remainder of the participants were in the 18-20 years age group. All participants indicated their yearly income was less than \$10,000/year.

### **Treatment Interview Results**

The analysis of all the interview transcripts revealed ten dominate themes which the researcher made into codes. For a review of these codes, see Table 4.5.

*Table 4.5: Overview of Transcript Codes*

<b>Code name</b>	<b>Description</b>	<b>Example</b>
Anxiety	The expressed unpleasant state or feelings an individual experiences over an event	“I was extremely nervous to approach someone at first.”
Assignment Difficulty	Comments regarding the degree of struggle an individual had	“I enjoyed the freedom to choose my free task topic, but

	with the assignment	sometimes that freedom seemed like a burden.”
Attitude	An individual’s perspective toward the assignment, Second Life, or the Spanish culture	“I wanted to interact with a native Spanish speaker.”

Table 4.5 (Continued)

<b>Code name</b>	<b>Description</b>	<b>Example</b>
Avatar	Comments regarding the virtual representation of a person	“I liked to change my appearance every time I logged into Second Life.”
Communication	Comments including the tools, methods, location, and dialog associated with in-world interactions	“The chat feature allowed me to interact with a person from Barcelona!”
Confidence	A feeling of certainty of oneself, often viewed as the opposite of anxiety	“I knew I would be able to talk in Spanish about art.”
Language Acquisition	Any statements that refers to the process by which an individual is learning a second language	“I found myself trying to mimic her speech.”
Motivation	Comments referencing the reason why a person is functioning a certain way or the reason behind their actions	“I was only talking to him because of the assignment. As soon as I had what I needed I left.”
Navigation	Any statement referring to the movement within the virtual world	“I found teleporting to the different islands rather easy...”
Virtual World	Comments referencing Second Life	“Second Life is the first virtual world I’ve ever used.”

With three independent reviewers coding the five interviews using these codes, 93%



( $n=205$ ) of all the comments were able to fit into these codes. Further analysis revealed five predominate themes: 1) Assignment Difficulty, (“I often had a difficult time narrowing my task for the assignment.”); 2) Virtual World, (“I enjoyed exploring the different islands.”); 3) Communication, (“When I talked to someone and told them about my assignment, they were always willing to help.”); 4) Avatar, (“I made my avatar look like Indiana Jones, because I felt like an explorer.”); 5) Anxiety/Confidence, (“I did not feel comfortable approaching others...”). To report the results, the researcher felt the codes Anxiety and Confidence were so closely related they should be combined. In future references, negative comments in this category refer to a high level of anxiety while positive references refer to a high level of confidence. These predominate themes counted for approximately 77% of all responses. See Table 4.5 for a further breakdown of each code.

As the most prevalent themes are influenced by the interview script, the importance of this reviews shows insight to help answer research questions 4-7. A closer inspection of the most prevalent themes reveals that the virtual world, communication, avatar, and anxiety/confident themes were viewed positively. At 61% positive comments, the virtual world theme demonstrates a good overall perception of the participants in using Second Life. Similarly with the communication theme having a 56% positive response, it would initially appear the communication the participants had within the virtual world was a positive experience. The use of avatars with 58% positive comments and 56% positive comments for confidence/anxiety also demonstrate an initial positive perception of Second Life’s use in the course. However, the assignment difficulty had 54% negative comments leading the researcher to see a possible issue with the way Second Life was utilized. This breakdown only provides a wide view of the interviews and to further understand these results and answer the research questions the

individual interviews needed to be inspected further. See table 4.6 for more detail on each theme's breakdown.

*Table 4.6 Coding of the five most common categories from the treatment one-on-one interviews*

Theme	Neutral Comment	Positive Comment	Negative Comment	Total Comment	Percent Total Comments (n=205)
Assignment Difficulty	8	10	21	39	19.00%
Virtual World	5	23	10	38	18.53%
Communication	7	19	8	34	16.59%
Avatar	8	18	5	31	15.12%
Anxiety/Confidence	1	9	6	16	7.80%

### **Assignment Difficulty**

Assignment difficulty was the most common theme in the interview transcripts. The researcher defined assignment difficulty as “Comments regarding the degree of struggle an individual had with the assignment.” This code theme accounted for 19% for all comments from the one-on-one interviews with the majority of the comments (54%) being negative. One interviewee wrote,

“I think Second Life has a lot to offer, but I did not like the free tasks. I mean, this course was hard. There was a LOT of work in order to get a good grade, more than in my other classes. To add to all of that, I had to essentially come up with my own assignments here. Isn't that the teacher's job? Maybe it's just me, but I would rather be told what to do. I did not like the assignment one bit.”

Conversely, a comment from another student shows a different perspective on the assignment:

“The free tasks were nice. I liked having my freedom to explore things I found interesting. For example, I like art, so for one task I spent time in an art gallery and it had pictures – (actual pictures!) of famous works of art. I thought that was really cool.”

The researcher believes these statements represent the interviews as a whole and show a difference in opinions of the role the student plays within their own education. The majority of the negative comments were from individuals who desired to be told their objective and did not want that burden to fall upon themselves.

### **Virtual World**

The second highest percentage theme found in the transcripts of the one-on-one interviews was the virtual world theme. The virtual world theme was defined as “Comments referencing Second Life.” Comments fitting this description accounted for 18.53% of the transcript comments with 61% positive. One student commented,

“Second Life is a lot of fun. I enjoy teleporting across the globe to places I’ll probably never get to visit in real life. Some of the detail in these places is amazing! I also liked that I could find others to play with and sometimes talk to in Spanish.”

Another student said,

“Second Life would frustrate me. Sometimes it felt impossible to find someone who could speak Spanish. All I wanted to do was talk to someone to complete one of my tasks but I couldn’t find anyone. It made me really mad.”

These statements reveal that the online students may have enjoyed the virtual world itself, but showed an element that is outside of the teacher’s control. That element is the ability to provide

native Spanish speakers. The teacher cannot guarantee there will be a Spanish user in any certain area at any certain time and this, as demonstrated, could create negative emotions in students.

### **Communication**

The third highest percentage theme found in the one-on-one interview transcripts was communication. The researcher defined communication as “Comments including the tools, methods, location, and dialog associated with in-world interactions.” The majority of the comments on communication were positive, with 56% of the total responses falling within this group. These findings suggest that the students’ online interactions were generally positive. A review of the interview transcripts supports this notion. One student commented,

“My first talk with a Spanish speaker was very positive. I let them know up front my Spanish may not be very good and that I was in Second Life for a class project. They seemed to like the idea and even helped fix some of my grammar.”

Not all students had such an experience. As one student notes,

“The first person I tried to talk to at first ignored me. I thought I might be doing something wrong. When I tried again, he just told me to leave him alone. I thought the manner in which he told me was rather rude.”

As the researcher alluded to previously, the interactions cannot be controlled in this online environment. As these comments demonstrate, those interactions can greatly influence the perception of the virtual world’s usage.

### **Avatar**

The fourth highest percentage theme recorded from the interview transcripts related to the avatar. The avatar theme was defined as “Comments regarding the virtual representation of a

person.” Comments fitting this description accounted for approximately 15% of all posts with 58% of the comments being positive. One online student discussed his avatar as follows:

“I was surprised by how much I liked customizing my avatar. I could do almost anything I could imagine. After playing around, I eventually decided on a look of what I think my best appearance could be. I’m overweight, but my avatar didn’t have to be, and I liked that.”

Conversely, one user mentioned not enjoying the appearance of another user’s avatar,

“One guy I talked to had an avatar that was a truck. Who does that? I mean, like, who really wants to talk to a truck? I didn’t.”

The positive comments appear to support earlier research demonstrating the positive benefits of using an avatar (see Dickey, 2005; Evans, Mulvihill, & Brooks, 2008; Oliver & Carr, 2009; Ryan, 2008). The ability to create your personal appearance however you so desire appears appealing and remains a consistent theme. All five of the interviewees mentioned their positive perception with creating and customizing their own avatar.

### **Anxiety/Confidence**

The fifth highest percentage recorded theme was a combination of two original theme categories. The anxiety theme was defined as “The expressed unpleasant state or feelings an individual experiences over an event.” The confidence theme was defined as “A feeling of certainty of oneself, often viewed as the opposite of anxiety.” As seen in these definitions, anxiety and confidence can be found on the opposite sides of the same scale. If a person is high in confidence, he or she would appear to have very little anxiety. Comments fitting these descriptions accounted for 7.8% of the reviewed responses. The reviews concluded with 56% positive comments for this combined theme leading to a finding of more confident responses.

One interviewee noted that she felt “more than capable of talking to complete virtual strangers in Spanish,” and another added, “I don’t hesitate to approach other avatars and try my Spanish.” These statements both indicate a level of confidence the students had in approaching others and using Spanish within Second Life. Conversely, one interviewee showed a level of anxiety when they noted that they felt “nervous when I tried to talk in Spanish to others.”

### **Control Interviews**

In an effort to have a full perspective on the perceptions and views of all participants in this study, the researcher conducted interviews with participants in the control group. Initially it was unknown if this data would provide more insight and comparisons to the treatment interviews, but in the interest of being thorough the interviews were conducted. Data were collected in the form of one-on-one interviews with students. Participants were recruited via email. Once the participants were identified, contact was made by phone for the control group. Participation was completely voluntary. The researcher made every attempt to keep any identifying information out of the interview context. This included informing the interviewees of the researcher’s desire for their anonymity, including never recording the participants name on either the interviewer’s notes or future transcript logs. The interviews were conducted over the phone and recorded. The interviews were then transcribed for data analysis. The researcher and two independent research assistants, current doctoral students with research experience, coded the data from the interviews using thematic analysis as previously described.

### Control Interview Participants

A total of two one-on-one virtual interviews were conducted using the interview script found in Appendix C. Both participants were male and both identified themselves as being Caucasian. Both males were 21 years of age. All participants indicated their yearly income was less than \$10,000/year.

### Control Interview Results

The analysis of all the interview transcripts revealed five dominate themes which the researcher made into codes. For a review of these codes, see Table 4.7.

*Table 4.7: Overview of Transcript Codes*

<b>Code name</b>	<b>Description</b>	<b>Example</b>
Assignment Difficulty	Comments regarding the degree of struggle an individual had with the assignment	“I found it hard to keep coming up with my own ideas.”
Attitude	An individual’s perspective toward the assignment or the Spanish culture	“This assignment was stupid. It felt like busy work.”
Language Acquisition	Any statements that refers to the process by which an individual is learning a second language	“I didn’t see where this was helping me learn Spanish.”
Motivation	Comments referencing the reason why a person is functioning a certain way or the reason behind their actions	“If it wasn’t for the assignment, I never would have searched for these sites.”

Navigation	Any statement referring to the browsing movement within the Internet.	“I found finding websites to help me complete the assignment pretty easy.”
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With three independent reviewers coding the two interviews using these codes, 89% ( $n=71$ ) of all the comments were able to fit into these codes. Further analysis revealed an order of frequency: 1) Assignment Difficulty (“I think the assignment lasted too long and that made it tough to come up with a fresh idea each week.”); 2) Attitude (“I don’t care because I don’t need to know anything about Spanish art.”); 3) Navigation (“I found a lot of websites to visit just by searching in Google, but finding good ones could be tricky.” 4) Language Acquisition (“This assignment didn’t help me speak better Spanish.”); and 5) Motivation (“I found it hard to keep wanting to search for something new every week. It just grew old and I didn’t feel like doing it.”).

The most prevalent themes are influenced by the interview script. The view of those themes however is entirely directed by the participants. A closer inspection of these five themes reveals a rather negative view of the web-based assignment. At 83% negative comments, the web-based assignment provides a strong contrast to the 61% positive comments received in the treatment group. This demonstrates a poor overall perception of the participants in the control group. Granted, a small sample size may skew the results. Nevertheless, with assignment difficulty having 61% negative comments; attitude with 88% negative comments, motivation at 88% negative comments, and language acquisition having 80% negative comments, it is clear the two participants did not have a good opinion of the web-based assignment. The only positive category, navigation, had a 64% positive comment rating signifying the participants did not have a difficult time finding information on the web. A more complete breakdown of the comments can be found in Table 4.8.



*Table 4.8 Coding of the five most common categories from the control one-on-one interviews*

Theme	Neutral Comment	Positive Comment	Negative Comment	Total Comment	Percent Total Comments ( <i>n</i> =71)
Assignment Difficulty	8	1	14	23	32.39%
Attitude	2	0	14	16	22.53%
Navigation	1	8	5	14	19.72%
Language Acquisition	1	1	8	10	14.08%
Motivation	1	0	7	8	11.27%

### **Assignment Difficulty**

Assignment difficulty was the most common theme in the control participants' interview transcripts. The researcher defined assignment difficulty as "Comments regarding the degree of struggle an individual had with the assignment." This code theme accounted for nearly 32% for all comments from the one-on-one control group interviews with the majority of the comments (61%) being negative. One interviewee stated,

"I think the assignment lasted too long and that made it tough to come up with a fresh idea each week. It was hard sometimes thinking of something new to do."

Conversely, another comment showed a different perspective on the assignment stating, "I liked that I was able to choose my topics." The researcher believes these statements represent the interviews as a whole and show a similar difference of opinions demonstrated within the treatment group.

## **Attitude**

The second highest percentage theme found in the transcripts of the one-on-one traditional online classroom interviews was the attitude theme. The attitude theme was defined as comments referring to “an individual’s perspective toward the assignment or the Spanish culture.” Comments fitting this description accounted for over 22.5% of the transcript comments with 87.5% negative. One student commented, “I hated the assignment. I don’t care about art, let alone Spanish art.” Another stated, “I don’t want to know about Spanish holidays or traditions so having to look them up on my own made it worse.” These statements reveal a rather negative attitude toward the assignment and the Spanish culture. While these findings cannot be generalized to the entire treatment, it is clear the two participants were not fond of the web assignment, and perhaps the class itself.

## **Navigation**

The third highest percentage theme found in the transcripts of the one-on-one traditional online classroom interviews was navigation. The research defined navigation as “any statement referring to the browsing movement within the Internet.” The majority of the comments on navigation were positive, with 57% of the total responses falling within this group. These findings suggest the students’ online navigations were generally positive and finding websites to complete their tasks was not too difficult. A review of the interview transcripts supports this notion. One student commented, “I didn’t have any trouble using Google to find the information I needed...” As the researcher alluded to during the purposed study, the online searches and interactions could not be controlled and perceptions of participants would be impacted by their

ability to navigate the Internet. Both interviewees commented positively about the ease of finding information online, proving participants had sufficient skills for using the web to acquire information.

### **Language Acquisition**

The fourth highest percentage theme recorded from the interview transcripts was language acquisition. The language acquisition theme was defined as, “Any statements that refers to the process by which an individual is learning a second language.” Comments fitting this description accounted for approximately 14% of all comments with 80% being negative. Participants consistently made the reoccurring themed comments such as, “This didn’t help me speak better Spanish.” It was very clear to the researcher during the interview as well as during data analysis that the two participants did not believe this assignment helped them learn the Spanish language in any greater detail.

### **Motivation**

The fifth highest percentage recorded them was motivation. Motivation was defined as, “Comments referencing the reason why a person is functioning a certain way or the reason behind their actions.” Comments fitting this description accounted for approximately 11% of all comments with 87.5% being negative. One participant from the control group said,

“After the second week, I didn’t want to do the assignment anymore. I was bored. It just gets old after a while, you know? I didn’t like doing it. If it wasn’t for the grade, I would have stopped doing it all together.”

A review of the negative comments showed 71% were in regard to the assignment length and the participants' motivation declining over time. While the instructional intent of the assignment was to give students a greater variety to drive their own learning, this data suggests too much time may have been given.

### **Research Questions Answered by Interviews**

As a part of the mixed methods study, the one-on-one interviews were designed to answer four research questions. Given the data reported previously, the researcher answers the research questions as follows:

Research Question 4: How do online undergraduate students feel about using Second Life to learn Spanish? As the previous review of the interview content demonstrated, the general view regarding Second Life's usage in the Spanish classroom was positive. The first interview question was designed to specifically address this research question. Four of the five interviewees responded that they liked using Second Life, in particular to interact with native Spanish speakers. Three of the four mentioned how it helped make the course relevant to them because they got to speak with native Spanish speakers whom they didn't have access to otherwise. All four also mentioned that they liked to be able to practice their Spanish with an expert who wouldn't grade them. One student felt the additional burden of learning to use and navigate through Second Life added even more to her plate stating that the course was "already extremely intensive and had too many assignments." This may point to a greater problem with the course as a whole than the use of Second Life. After reviewing all accounts, it would appear there is a general positive feeling in regards to using Second Life in the Spanish classroom.

Research Question 5: How frequently do online undergraduate students believe they will continue to use Second Life to interact with native Spanish speakers after the class concludes? The researcher designed question 9 of the interview guide to address this research question: How often do you think you will continue to use Second Life to interact with native Spanish speakers after you finish the class? The answers varied among participants. Interviewees 1 and 4 believed they would log on at least biweekly. Interviewees 2, 3, and 5 stated they would not use it on a regular basis and after this class they are no longer going to work on learning Spanish. These three interviewees indicated they were only taking the course as a requirement. Coincidentally, interviewees 1 and 4 planned to continue on in their formal Spanish training. This divides shows Second Life was not enough of a motivator in this sample to keep students' interested in Spanish beyond school requirements.

Research Question 6: How do online undergraduate students feel when using Spanish in a virtual world compared to the traditional online classroom? The interviews produced a variety of responses to this research question. As an analysis of the comments demonstrated, there was a slightly positive response within the anxiety and confidence themes with nine comments being positive and 6 being negative. All nine of the comments referred to the sense that it was easier to approach someone to speak Spanish with than in real life or the classroom. The negative comments however were unanimous in a high anxiety of "messing up" or "making mistakes" in front of a native Spanish speaker. While these results appear to be a little contradictory, what the research believes is happen here is more confidence in the virtual space the students occupied, (willingness to approach a stranger because it is more socially acceptable virtually), while still experiencing similar anxiety felt in person within the perfection of their spoken word. The

confidence to speak Spanish may not have improved within Second Life, but the responses do indicate a confidence in interactions in general.

Research Question 7: How different do online undergraduate students feel their virtual persona/identity was than their face-to-face persona/identity? The interview questions that guided the one-on-one interviews had two questions that were designed to help answer this research question. Four of the five interviewees responded that they, for the most part, created an avatar that accurately represented themselves physically. Two of these four did mention that they “might have trimmed off a few pounds.” Physical appearances remained as similar to their real life versions as they could create in-world. One student claimed he at first made an avatar radically different from himself, changing nearly every physical feature from hair and skin color to height and weight. He then went on to say he would change his appearance almost every time he logged in until he discovered he could change his avatar into different characters/images. Once he discovered he could be a truck, he remained a truck for the rest of his Second Life experience. Given most of the participants’ avatar appearance remained similar to their physical appearance, the researcher then went on to determine if they acted in a similar manner to their real-life counterparts. All five interviewees responded that they believed they acted in a similar manner to how they act in real life. One participant went on to state, “Just because I am in a virtual space, does not mean my character traits or morals change.” All participants echoed similar responses. Upon further questioning, three participants did reveal they were less afraid to speak to new people. An interviewee stated that, “I felt it was easier to just walk up and start a conversation in Spanish with anyone – like it was not just acceptable, but encouraged in Second Life.” While this may not be the unanimous breakthrough the researcher was hoping for, it does

demonstrate that the majority of the participants did find it easier to interact with others in Second Life.

This chapter contains a presentation of the results from a quasi-experimental mixed method design to measure if there is a difference in students' motivational intensity, level of anxiety, attitudes, final course grades, and perceptions of students learning Spanish as a second language after using Second Life to complete assignments. No significant differences were observed between the control and treatment mean scores on either the preset or the posttest for the students' motivational intensity, level of anxiety, attitudes, or final course grades. There was statistical significance between the control and treatment group in the sense of community criterion. The perceptions of the students interviewed lean favorably toward using Second Life, however the intensity of the assignment should be reconsidered. Chapter 5 presents the discussion and implications. Chapter 6 presents the study conclusions and recommendations for practice and future research. Chapter 6 concludes with the researcher's final thoughts.

### **Instructor Meetings**

During the semester the instructor kept a hand written journal account of the events of the semester. The instructor would discuss these items with the researcher during their three meetings scheduled intermittently as their schedule allowed. These meetings occurred at the following points during the treatment: at the two week mark, six week mark, and at the conclusion of the treatment. The researcher requested that the instructor note any observations or interactions that occurred as a result of the treatment. The initial goal of these meetings was to

provide some insight for the one-on-one interviews. Additionally, the meetings assisted in shedding some light on other factors outside of the treatment.

### **Meeting 1**

In the first meeting, the instructor listed three high priority items to discuss: attrition, assignment clarity, and Second Life comments. High priority items were defined as items that may have a direct impact on the study. The first priority item, attrition, was important for the instructor to discuss because of the rather high percentage of students who dropped the course since the first day. The researcher inquired further into the instructor's perception of why the attrition rate was so high. The instructor responded,

“I think the students thought that because this course is online, it would be easy. In fact, I know of a few that dropped it because the workload was more than they expected. I don't know what they were thinking. Yes, this is an online course, but it is still worth three college credits, so they still need to do three credits worth of work. I will not make the course easy just because it is online.”

The researcher pressed this idea further wondering if there was a difference between the attrition rates between the treatment and the control groups. The response from the instructor was that the attrition rate was consistent between the groups, 43% for the control and 50% for the treatment. To further substantiate this claim, she reminded the researcher that the final drop date was before the treatment started. Any influence on students' decisions to drop the course were made before the treatment ever began.

The second priority item was assignment clarity. The instructor noted she had responded to 10 inquiries asking for further clarification on the free tasks assignment. She noted that six of the inquiries were from the control group, and four from the treatment. She felt this need for



further description was because she thought “the students are not accustomed to having so much freedom in their learning experience.” She continued to reiterate this fact stating, “I think a few students just wanted me to tell them exactly what they should do, but that is not the point of a free task.” The researcher believes this demonstrates an anxiousness of the students to take control of their learning. This may stem from a lack of previous experience to this teaching style.

The third priority item the instructor presented was Second Life comments. The instructor felt these were important to discuss because of the understanding seen from the perception of the students. During the introductory sessions, the instructor heard numerous positive comments about the virtual world. The instructor noted, “I heard a lot of comments about how ‘cool’ this experience was and how much they liked the idea of interacting with native Spanish speakers.” While she was unable to record direct quotes, she said the overall impressions she got from the group was very positive.

## **Meeting 2**

The second meeting with the instructor did not yield any high priority items. The general report the researcher received was that both groups were progressing well overall. The control group appeared to be having an easy time finding websites that related to the content. There were no reports of difficulty finding islands within Second Life from the treatment group. Students were submitting assignments at nearly identical rates and there were no red flags from either group. As far as the instructor was concerned, everything was progressing very well, especially in relation to the experiment.

### **Meeting 3**

The third meeting with the instructor did not yield any high priority items. Overall, the instructor believed both groups completed the assignments in a successful manner. She did not receive any direct complaints from the students about either treatment. When pressed if there was a significant difference in the assignments turned in, the instructor stated,

“I know they used different mediums, but the only big difference I can see is the Second Life group’s interactions with other avatars. Obviously the control couldn’t do this. The language the two groups used was rather consistent across the board, and topics similar in nature. I guess that is to be expected though since the topics had to be based on what we were covering each week.”

It appeared to the researcher from this conversation that both the treatment and control groups were able to successfully complete the assignment. It was also interesting to note the instructor did not see a difference in the language used between the two groups. While language proficiency was not a variable studied, it is interesting to see an expert’s opinion on the products each group produced.

### **Instructor Interview**

After the grades had been turned in for the semester, the researcher met again with the instructor in hopes of gaining a deeper understanding of the treatment. As previously mentioned, the interview occurred over the phone. The interview was recorded and transcribed for analysis. After it was transcribed, the transcription was sent back to the instructor for a review to insure correctness.

The first guiding interview questions were designed to elicit the instructor's perspective on using Second Life within her classroom. The overall response was positive with the instructor stating,

“I thought it (Second Life) was a great way to give students some practice with their language, real feedback on how they are doing and a chance to meet people from other countries without having the risks involved with speaking to someone face to face. There was more anonymity, therefore the students could be more brave when using the language.”

However, the use of Second Life within the SLA classroom is not without its challenges. The biggest challenge the instructor faced was with the technology itself. The instructor commented,

“Even though this generation of learners has been labeled “digital natives” there were many who knew very little about technology beyond sending emails and using Facebook. They had a difficult time grasping concepts of moving through the space, interacting with the space and using the chat channels and features to have conversations. Additionally, the Second Life platform is still relatively unstable and requires a great deal of power from the students' hardware, where many did not have as they rely mostly on basic computers or tablets to do their standard work. I tried to compensate for this by having labs available for the students to go to at any time to complete their assignments, but they did not like the extra effort they then had to put into the assignment. Issues with lag in the program, or the program freezing and kicking them out also caused frustration for several students.”

Although the instructor did run into some challenges, she still believed there was education value in using Second Life in her classroom. She mentioned it is, “an amazing way for students to connect with foreign speakers.” The instructor went on to say that Second Life is,

“a great tool if it is used correctly. Unfortunately we are still figuring out how that is. There needs to be more work looking at how to use it most effectively in order to mitigate some of the stresses and anxieties that the platform itself causes.”

The instructor did present a mixed reaction when asked if she would recommend other instructors use Second Life in their classroom. In her mind, the decision pivots on the

instructor's comfort with the technology. If an instructor does not possess the technological skills and know how to use Second Life comfortably on their own, she would recommend they not use the virtual world. She justifies this view based on her experience and notes that it requires a certain level of skill to deal with the issues that arise from the students. The instructor is often the first source of information students refer to when they have issues. However, if the instructor is comfortable with Second Life, she exclaimed, "I would definitely recommend working with it."

The instructor's perception of the students' response to the Second Life assignment appeared to change over time. Initially, the instructor believes the students view Second Life favorably, even being excited to use the virtual world and talk to others. As the semester progresses, some students maintain that enthusiasm, but many, "got a lot more negative, primarily due to technological issues they had." The instructor cited the use of basic computers or tablets that did not meet the minimum requirements of Second Life to run as the primary cause of these issues. She went on to say, "The technology issues can really make or break a student's experience."

Additionally, the instructor believes students' attitudes and motivational intensity both change as the semester progresses. The instructor believes that as semester progresses and the students get more and more work, their Spanish work usually gets pushed aside as,

"very few students in this level are Spanish majors or focusing on Spanish. Their motivation to study Spanish and do the work it requires lessens through the semester as the demand from their other classes increases."

The instructor believes there is a link between the importance, or priorities of the student and their motivation to study Spanish. She believes that as the demand of a students' other courses increases, the students decreases the time they spend on their Spanish course.

## Chapter 5

### Discussion and Implications

In an effort to understand the impact of implementing a virtual world component in an online Spanish language classroom, this study employed quantitative and qualitative data gathering techniques and analysis. The quasi-experimental study utilized a pretest-posttest control-group design. The study used nonrandomized control and treatment groups. Great care was taken during the analysis phase to statistically account for differences between groups. Using task-based learning activities, the students completed seven free tasks. These activities allowed for the learners to take control of their learning. In particular, the instructional method is the independent variable while the motivational intensity, level of anxiety, and attitude toward the Spanish language are the dependent variables.

Although there are published studies regarding the use of virtual worlds in education, there are very few empirical studies on its implementation. Fewer still are the amount of quantitatively driven studies on virtual world implementation's effect on the SLA classroom. With research demonstrating learners' motivation, anxiety, and attitudes toward the target language all play integral parts in language acquisition (Dörnyei, 1990, 1994, 1998, 2000, 2001, 2002; Gardner, 1979, 1985, 2001; Klein, 1986; Krashen, 1982, 1985, 1988, 2002, 2003), a treatment such as the implementation of a virtual world that could improve these areas seemed prudent.

A virtual world component to the SLA classroom appeared on the surface to provide a way to increase motivation, reduce anxiety, and improve students' attitudes toward the target population. As with any new web-based technology, its initial use tends to translate into a temporary increase in learner motivation (Huett, 2006; Keller & Suzuki, 2004). The temporary increase in motivation could translate to long-term potential (Ryan & Deci, 2000, 2002). Virtual worlds provide for learners the opportunity to develop an online identity, which may enhance their confidence and ability to participate in the learning environment (Freeman & Bamford, 2004). Similarly, the use of avatars has been found to demonstrate social and psychological benefits that may help reduce learner anxiety (Dickey, 2005; Evans, Mulvihill, & Brooks, 2008; Oliver & Carr, 2009, Ryan, 2008).

In order to explore the relationship between students experiencing a virtual world and those using traditional online means, data were collected through various means. In an attempt to quantitatively measure students' motivation, anxiety level, and attitude toward the target language, students completed the SLAS instrument. The students' final course grades were also collected to determine if a difference between the treatment and the control existed. Finally, one-on-one interviews were conducted with students and the instructor to gain further understanding of the implications of the treatment.

This chapter will discuss the outcomes of the study, and review the implications associated with the eight research questions providing foundation to this study. Research questions were analyzed using two methods: quantitative and qualitative. Question 1-3 and question 8 were examined primarily through quantitative methods. Research questions 4-7 were examined using qualitative methods.

## **Analysis of Research Questions**

Research Question 1: What, if any, difference is there in online undergraduate students' motivational intensity toward learning Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world? Of all the learner characteristics within an L2 classroom, motivation is regarded as the most influential force (Dörnyei, 2003; Gardner, 1985; Gardner & Clement, 1990; Noels, 2003). The results of this study indicate there was no statistically significant difference in mean motivation score between the control and treatment groups. Small sample sizes and attrition undoubtedly influenced the results. The results may also be explained by a variety of factors including outside forces taking a higher priority in regards to an individual's time and efforts, length of the treatment, and inconsistent online experiences. In the instructor interview after the study was concluded, the instructor mentioned that because most of the students are not Spanish majors, their other coursework tends to take a priority over their Spanish class. Her observation may account for a portion of the original course attrition and the lack of statistical significance found in the sample. The instructor's observation may also show motivational forces outside the control of this study.

Additionally, the timing of the treatment and data collection may have impacted the results. The data on motivation were collected before and after the treatment with ten weeks between the data collection points. If student motivation is on a continuum that Ryan and Deci (1985, 2000, 2002) suggest, perhaps the length of time allows student motivation to fluctuate without a long-lasting effect that could be recorded by the instrument. However, this is not to say that an effect did not happen during the treatment. During one interview for example, the participant mentioned being "excited by the possibility of speaking to native Spanish speakers." This shows an initial positive perception of using virtual worlds and is consistent with previous

research that reported that the use of new web-based technology tends to translate into a temporary increase in learner motivation (Huett, 2006; Keller & Suzuki, 2004). However, as the interview went on, the participant demonstrated a negative personal assessment of student motivation as the treatment progressed stating, “I grew tired of the assignment so I would log in, get what I needed, and get out.” This comment demonstrated a negative external motivation where the excitement of the technology had worn off and the requirements of the assignment took over. While this does shed some light on an individual’s motivation, one individual’s perspective cannot be generalized to the sample.

While preliminary research demonstrated positive outcomes (Dreher et al., 2009; Edirisingha et al., 2009), the findings of this study could not substantiate their claims. The difference in the level of motivation between the posttest and pretest initially appears higher in the treatment group ( $M = 1.23$ ,  $SD = 6.56$ ) than the control group ( $M = -0.31$ ,  $SD = 1.01$ ). However, the results are not statistically significant.

Research Question 2: What, if any, difference is there in online undergraduate students’ level of anxiety toward using Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world? Many studies have found that the use of an avatar had both social and psychological benefits (Dickey, 2005; Evans, Mulvihill, & Brooks, 2008; Oliver and Carr, 2009, Ryan, 2008). Additionally, research demonstrated avatar representations can help to create a sense of anonymity and reduce social status issues and pressures (Dickey, 2003; Ryan, 2008). The quantitative data collected in this study do not support these claims. This study found no significant difference in online undergraduate students’ level of anxiety toward using Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world. This may be a result of



external forces outside the control of this study or other means of anxiety creation beyond being physically present while speaking the second language.

During the analysis of the one-on-one interviews, a more positive perception was demonstrated. Participants noted they thought it was easier to approach someone with whom to speak Spanish. One participant declared, “I don’t hesitate to approach other avatars.” With the majority of the treatment interviews’ anxiety comments being positive, (56%), the previous research claims regarding the benefits of using avatars is supported (Dickey, 2005; Evans, Mulvihill, & Brooks, 2008; Oliver & Carr, 2009, Ryan, 2008). Participants also mentioned they were still anxious about their grammar usage and vocabulary knowledge. One interviewee proclaimed, “I was nervous when I tried to talk in Spanish to others.” Perhaps Second Life did alleviate some of the anxiety students felt, but it did not eliminate all forms. For example, the anxiety an individual faces when approaching an individual may be alleviated, but the social pressures of using the language correctly may still remain, (further elaboration discussed within the analysis of Research Question 6). The difference in the level of anxiety between the post test and pretest initially appears higher in the control group ( $M = 0.50$ ,  $SD = 2.25$ ) than the treatment group ( $M = -2.00$ ,  $SD = 10.33$ ), however, there was no statistically significant difference.

Research Question 3: What, if any, difference is there in online undergraduate students’ attitude toward the Spanish culture between students using a virtual world to enhance their learning experience and students not using a virtual world? Dörnyei (2005), Klein (1986), and Gardner (1985) all refer to a student’s attitude toward learning a language having a direct response on their learning ability. The research stated that if a student’s attitude suffers, so does their learning. With no prior quantifiable data to compare to, this research study found there is no significant difference in online undergraduate students’ attitude toward the Spanish culture

between students using a virtual world to enhance their learning experience and students not using a virtual world. This may be explained by a variety of factors including outside forces taking a higher priority, inconsistent online experiences, and trouble with the technology itself. The one-on-one interviews demonstrated a negative attitude toward the Spanish culture from the control group, but a more positive view in the treatment group. The instructor believed the initial attitudes of the students were improved with the treatment, but over time this experience diminished, at least in part, to troubles with the technical aspects of the virtual world. This notion is reinforced when the difference in the level of attitude between the post test and pretest is reviewed. The scores in the control group initially appear higher, ( $M = -0.25$ ,  $SD = 0.68$ ) than the treatment group, ( $M = -1.23$ ,  $SD = 8.14$ ). The control group's mean attitude score was 0.98 ( $SE = 2.03$ ) higher than the treatment group. However, there was no statistically significant difference between the two groups.

Research Question 8: What, if any, difference is there in the final grades of online undergraduate students between students using a virtual world to enhance their learning experience and students not using a virtual world? Previous research such as Din and Calao (2001) showed an increase in language skill (in the form of reading) compared to their control group. Warren, Dondlinger, and Barab (2008) demonstrated statistically significant increases on language-arts-based standardized test achievement when implementing virtual worlds in SLA classrooms. The results of this study do not support these initial reports and found that there is no significant difference in online undergraduate students' final grades between students using a virtual world to enhance their learning experience and students not using a virtual world. This may be explained by a variety of factors, but perhaps most importantly by the fact that the treatment did not specifically align to assessment instruments. While the participants were given

a grade for their work in the treatment, specific learning outcomes from the treatment were not measured. With the open possibilities of free tasks (students had the ability to choose their learning path), specific assessment items related to the experiences within the treatment were not created and therefore possibly underrepresented in the final grades. The difference in final grades initially appear higher in the treatment group ( $M = 83.81$ ,  $SD = 7.00$ ) than the control group ( $M = 80.81$ ,  $SD = 9.16$ ), but there was no statistically significant difference.

Research Question 4: How do online undergraduate students feel about using Second Life to learn Spanish? As the previous review of the interview content demonstrated, the general view regarding Second Life's usage in the Spanish classroom was positive. Four of the five treatment interviewees responded that they liked using Second Life, in particular to interact with native Spanish speakers. One interviewee acknowledged, "I liked how I was able to talk to someone who grew up in Spain!" Three of the four mentioned how it helped make the course relevant to them because they got to speak with native Spanish speakers whom they didn't have access to otherwise. One individual confessed that he "liked having access to someone who knows Spanish, because I don't know anyone who does." All four also mentioned that they liked to be able to practice their Spanish with an expert who wouldn't grade them. One interviewee even admitted, "I was practicing with someone who really knows how Spanish is spoken and can help me improve." One student felt the additional burden of learning to use and navigate through Second Life added even more to her plate stating that the course was "already extremely intensive and had too many assignments." This may point to a greater problem with the course as a whole than the use of Second Life. With interviewees giving 61% positive virtual world comments, it would appear there is a general positive feeling in regards to using Second Life in the Spanish classroom.

Research Question 5: How frequently do online undergraduate students believe they will continue to use Second Life to interact with native Spanish speakers after the class concludes? The researcher designed question nine of the interview guide to address this research question: How often do you think you will continue to use Second Life to interact with native Spanish speakers after you finish the class? The answers varied among participants. Interviewees 1 and 4 believed they would log on at least biweekly. Interviewees 2, 3, and 5 stated they would not use it on a regular basis and after this class they are no longer going to work on learning Spanish. These three interviewees indicated they were only taking the course as a requirement. Coincidentally, interviewees 1 and 4 planned to continue on in their formal Spanish training. This divide shows Second Life was not enough of a motivator in the interviewees to keep students' interested in Spanish beyond school requirements.

Research Question 6: How do online undergraduate students feel when using Spanish in a virtual world compared to the traditional online classroom? The interviews produced a variety of responses to this research question. As an analysis of the comments demonstrated, there was a slightly positive response within the anxiety and confidence themes with nine comments being positive and six being negative. All nine of the comments referred to the sense that it was easier to approach someone to speak Spanish with in Second Life than in real life or the classroom. The negative comments however were unanimous in a high anxiety of "messaging up" or "making mistakes" in front of a native Spanish speaker. While these results appear to be a little contradictory, what the researcher believes is happen here is more confidence in the virtual space the students occupied, (willingness to approach a stranger because it is more socially acceptable virtually), while still experiencing similar anxiety felt in person within the perfection of their

spoken word. The confidence to speak Spanish may not have improved within Second Life, but the responses do indicate a confidence in interactions in general.

Research Question 7: How different do online undergraduate students feel their virtual persona/identity was than their face-to-face persona/identity? The interview questions that guided the one-on-one interviews had two questions that were designed to help answer this research question. Four of the five interviewees responded that they, for the most part, created an avatar that accurately represented them physically. Two of these four did mention that they “might have trimmed off a few pounds.” Physical appearances remained as similar to their real life versions as they could create in-world. One student claimed he at first, made an avatar radically different from himself, changing nearly every physical feature from hair and skin color to height and weight. He then went on to say he would change his appearance almost every time he logged in, “I would change my appearance almost every time I logged in, my hair, clothes, you name it I liked to change it.” This occurred until the participant discovered he could change his avatar into different characters/images. Once he discovered he could be a truck, he remained a truck for the rest of his Second Life experience stating, “I don’t know what it was, but I just like the idea I was driving around.”

Given most of the participants’ avatar appearance remained similar to their physical appearance, the researcher then went on to determine if they acted in a similar manner to their real-life counterparts. All five interviewees responded that they believed they acted in a similar manner to how they act in real life. One participant went on to state, “Just because I am in a virtual space, does not mean my character traits or morals change.” All participants echoed similar responses. Upon further questioning, three participants did reveal they were less afraid to speak to new people. An interviewee stated that, “I felt it was easier to just walk up and start a

conversation in Spanish with anyone – like it was not just acceptable, but encouraged in Second Life.” While this may not be the unanimous breakthrough the researcher was hoping for, it does demonstrate that the majority of the participants did find it easier to interact with others in Second Life.

### **Implications**

In the process of collecting and analyzing the data produced in this study, several broad-based implications that could be applied in future research, policy, and practice became clear. There are also additional suggestions for educators and instructional designers of future SLA classrooms.

The overwhelming accepted body of research in the SLA classroom stresses the importance of focusing on students’ motivational needs. Dörnyei (2003), Gardner, (1985), Gardner and Clement (1990), and Noels (2003) stress motivation should be a primary consideration when designing instruction for the SLA classroom. Additionally, Gardner’s Socio-Educational Model (1979, 1985) and Klein’s Social integration (1986) stress the important negative effect a learner’s anxiety can have on their language acquisition. Finally, Dörnyei’s (2005) L2 Motivational Self System and Klein’s Six Dimensions (1986) stress the importance of the learner’s attitude toward the target language and its effect on learning. The early research showed great promise in the areas of motivation (Dreher et al., 2009; Edirisingha et al., 2009), benefits of avatar use on anxiety (Dickey, 2005; Evans, Mulvihill, & Brooks, 2008; Oliver & Carr, 2009, Ryan, 2008), and increases on achievement (Din & Calao, 2001; Warren,

Dondlinger, & Barab, 2008). Virtual worlds appear to be one avenue with the potential to meet the learner needs and more research and design are highly recommended.

Future researchers, educators, and instructional designers should seek quality instructional treatments that take advantage of the affordances virtual worlds provide. While the current study failed to produce statistically significant quantitative results, the qualitative analysis provided students positive perceptions of Second Life use within the classroom. Initial qualitative data demonstrated a general positive trend in motivation and reduced anxiety in regards to approaching others and interacting with the target language.

Additional research is also encouraged to evaluate the statistically significant differences found in previous research. While researchers such as Dreher et al., (2009) and Edirisingha et al. (2009) found positive effects of virtual worlds on SLA students, the data collected here did not support their claim. Similarly, the avatar benefits mentioned by Dickey (2005), Evans, Mulvihill, and Brooks (2008), and Oliver and Carr, (2009) were not replicated.

Perhaps the area that could be improved on in future research is limiting the scope or timetable of the treatment. Prolonged exposure that overlaps what students perceive as more pressing or higher priority tasks may hurt the very results virtual worlds are trying to influence. Bringing the treatment to an earlier time period in the semester may alleviate some personal conflict felt by the students. Additionally, a study that closely examines the priorities of students taking foreign language classes as electives and that impact on motivation, anxiety, and attitudes is also strongly encouraged. Further conclusions and recommendations can be found in Chapter 6.

## **Limitations**

There are a variety of limitations to this study. These include the high attrition rate and the rather homogeneous sample.

### **High Attrition Rate**

While the researcher made several provisions in an attempt to recruit as many instructors as possible, and thusly a larger sample size, a 50% attrition rate was not expected. Carr (2000) estimated online attrition to be 10% - 20% higher than for traditional on-campus education. One study by Diaz (2002) even went as far to put the attrition rate between 20 - 50%. These numbers vary greatly by institution and through speaking with other instructors at the university, typical dropout rates are far below 20%. Even so, the high attrition rate was a limitation to this study. Higher participation numbers would have been more favorable.

### **Similarities in Sample Population**

With the respondents of this study being nearly identical in race, age, and income, it becomes increasingly difficult to generalize these findings to other populations. The researcher encourages strong caution to future researchers attempting to generalize these findings. More research is needed with a greater disparity in sample demographics in order to make the findings more generalizable to the entire population. Given this, it is impossible to tell how the homogeneity of this sample influenced the results. A more heterogeneous sample may produce more favorable results. In addition, a heterogeneous sample would create a greater sense of reliability when generalizing findings to a broader population.



### **Sample Represents Only Students Who Persist**

When examining the implications of the results of this study, individuals should remember that the findings are limited to those students who made it past the add/drop date of the course, or those that persisted in the course. The factors that motivate the students studied here do not represent the students who did not make it past the drop/add deadline. Additionally, since this study is focusing on motivation, the individuals who did not stay would probably have completely different motivational levels than those that did which may have skewed the results one way. Without these students, it is impossible to tell.

## **Chapter 6**

### **Conclusions and Recommendations**

The purpose of this chapter is to present the study conclusions and recommendations. The conclusions and recommendations are based on the analysis of data from third-semester online undergraduate students in a Spanish language classroom's performance on the Spanish Language Acquisition Survey (SLAS) used as both a pretest and posttest and one-on-one interviews. The chapter is organized into the following sections: study summary, presentation of findings, conclusions, recommendations for practice and research, and the researcher's final thoughts.

#### **Study Summary**

This study examined the effects of implementing a virtual world component in an online Spanish language classroom. In particular, the instructional method is the independent variable while the motivational intensity, level of anxiety, and attitude toward the Spanish language are the dependent variables.

The quasi-experimental study utilized a pretest-posttest control-group design. The study used nonrandomized control and treatment groups. Great care was taken during the analysis phase to statistically account for these differences. Using task-based learning activities, the students completed seven free tasks. The concept allowed for the learners to take control of their learning.

Volunteer participants were recruited from the two selected sections via email from the researcher prior to the implementation of the treatment. Both sections started the semester favorably, with 28 participants in the control and 26 participants in the treatment group. At the time the pretest was administered, the attrition rate had brought these numbers down to 16 and 13 participants respectively. The treatment lasted 10 weeks. After these 10 weeks the posttest was delivered. After final grades were submitted, five individuals volunteered to do one-on-one interviews.

## **Findings**

Results from the data analyses and interviews led to the following findings:

1. In response to Research Question 1, the data revealed there was no significant difference in online undergraduate students' motivational intensity toward learning Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world.
2. In response to Research Question 2, the data revealed there was no significant difference in online undergraduate students' level of anxiety toward using Spanish between students using a virtual world to enhance their learning experience and students not using a virtual world.
3. In response to Research Question 3, the data revealed there was no significant difference in online undergraduate students' attitude toward the Spanish culture between students using a virtual world to enhance their learning experience and students not using a virtual world.

4. In response to Research Question 4, the interview responses revealed a general positive response to using Second Life to learn Spanish.
5. In response to Research Question 5, the interviews indicated the majority of students would not be using Second Life to interact with native Spanish speakers after the class. The two individuals who plan on furthering their formal Spanish learning do plan on continuing their Second Life use in order to continue to interact with native speakers.
6. In response to Research Question 6, the interviews suggested mixed feelings toward using Spanish in a virtual world compared to the traditional classroom. Participants were less afraid to approach in-world individuals, but still reported anxiety about speaking in Spanish with them for fear of speaking incorrectly. While the anxiety over speaking Spanish was still present, it did not stop participants from trying.
7. In response to Research Question 7, the interviews indicated participants' virtual persona/identity remained similar to their face-to face persona/identity.
8. In response to Research Question 8, the data revealed there was no significant difference in online undergraduate students' final grades of undergraduate students between students using a virtual world to enhance their learning experience and students not using a virtual world.
9. There was statistically significant difference in mean sense of community score between the control and treatment groups of online undergraduate students using a virtual world to enhance their learning experience and students not using a virtual world with the control groups score significantly higher.

## Conclusions

This study yielded two major conclusions that were derived from the analyses of data from the pretest and posttest scores and the one-on-one interviews.

*Conclusion 1:* While no statistically significant difference was observed between the treatment and control groups in regards to student motivational intensity, level of anxiety, attitude toward learning Spanish, or final course grades, the overall perception of the students from the one-on-one interviews favored the use of Second Life in the Spanish classroom.

*Conclusion 2:* Online undergraduate students using a virtual world to enhance their learning experience had statistically significant lower mean scores in regards to their sense of community than online undergraduate students not using a virtual world to enhance their learning experience.

The findings of this study echo early research into using virtual worlds in education. Previous researchers have focused on student achievement (Anneta et al., 2009; Raya, 2010) and knowledge gained (Moshirnia & Israel, 2010) with no statistically significant results. Harris (2008) found overall growth in both control and experimental groups; however the experimental group tended to have statistically significant lower tests scores. Given the results, Harris still suggested the overall engaging benefits of the virtual experience might make the effort worthwhile. This sentiment is supported by the overall positive response discovered within the interview data collected. While statistical significance was not found, the general perception of the participants within the group receiving the Second Life treatment demonstrated there was some merit to its inclusion within the course. Supporting the claim of Zheng (2006) that virtual world participants were able to pick up on grammar, usage, and vocabulary from their online interactions, participants in this study reported that they were able to work on their grammar with

native language speakers. This informal learning appears to be a benefit of using a virtual world in the SLA classroom. Granted, it is the opinion of this researcher the method of virtual world usage in the SLA classroom warrants more refinement. Additional suggestions to this refinement can be found in the recommendations.

This investigation aimed to add to the knowledge base on SLA and the implementation of virtual worlds to enhance the learner experience in online undergraduate students. The promising results by Din and Calao (2001) in achievement and motivation, combined with the encouraging remarks by researchers such as Young et al. (2012) and Moka-Danielson et al. (2007), the researcher developed the SLAS instrument to measure undergraduate students' motivational intensity, level of anxiety, attitude toward the target culture, and sense of community. The results from a control and experiment groups indicated no statistical significant difference between the treatment groups on motivational intensity, level of anxiety, and attitude toward the target culture. The results did indicate that the treatment group's mean posttest sense of community score was significantly lower than the control group. While this appears important, one must remember the sense of community can be influenced by more than just the experience with the virtual world. Correspondence with other students via email, discussion boards and other mediums outside of Second Life, as well as the interactions with the instructor can all influence the results (Rovai, 2003). A direct link to the use of a virtual world cannot be established with the students' sense of community and extreme care should be taken when interpreting these results.

Additionally, it should be mentioned that both groups experienced a high level of attrition. At first, the researcher was worried that the use of Second Life was the root cause. Given that both the treatment and the control groups had nearly identical attrition rates, the use

of Second Life was not deemed the cause. Further investigation by the researcher may shed some light into the high attrition rates. During conversations with the instructor of the two sections, the researcher attempted to understand the reason for this high attrition rate. When the instructor first informed the researcher that she was having a high amount of drop outs, the researcher asked her to speculate on the cause. While she mentioned that a few for the online courses is customary, she believed the root cause was a difference of perspectives or expectations of the course. Having also taught the same course face-to-face, the instructor believed the online course's students should learn just as much as the traditional classroom. She stated,

“Just because the course is online, does not mean I make it an easy course or one students can get a free pass in. If a student is expected to do ‘X’ amount of hours of work outside of a traditional class to support their in-class work, then the online student should expect to complete an equal amount. An online class does not mean an easy ‘A’.”

This view led to some additional probing questions during the one-on-one student interviews. All five participants stated the course required a lot of their time, not just to complete the course materials, but just studying the language in general. Three participants thought the course was too tough and there needed to be fewer assignments and the workload as a whole should be lessened. While this information supports the instructor's claim of not being an easy course, it should not be assumed the workload is the only cause for attrition. Perhaps the students' perspectives have been altered by easier courses in their past, or perhaps the subject – Second Language Acquisition – is difficult and requires extra effort compared to a traditional core course that the students are not used to. Given the amount of factors that could impact this perspective, further investigation into the expectations of online students and the requirements of online courses per subject would prove beneficial.

## Recommendations

*Recommendation 1:* Instructors and school personnel should take great care when considering the implementation of a virtual world component as a means of enhancing the SLA classroom. Additional implementation methods should be tested.

The use of virtual worlds in the SLA classroom continues to have a mostly positive perception among students, while statistical data remains inconclusive. The current study demonstrated mostly favorable views of student participants with their in-world experiences, matching the results of earlier research (Young et al., 2012; Moka-Danielson et al., 2007). It is important to note participant views were not entirely positive and great care should be taken to improve on the implementation of a virtual world component that enhances the findings of this study. The information gathered within the one-on-one interviews suggest supporting claims to Zheng's (2006) observation of informal learning regarding grammar, vocabulary, and context usage of the second language and warrant further investigation.

The one-on-one interviews and quantitative data also suggested some areas to improve on future iterations of this research. With statistically significant data showing a negative change in treatment participants' sense of community, perhaps the virtual islands of *Second Life* created more isolation from the class as a whole. Future iterations should consider implementing a small group component to the virtual world experience. This may allow the groups to grow and explore together and perhaps reverse the demonstrated effect. Additionally, the researcher believes the implementation of a virtual world could be improved if it would be possible to prearrange native Spanish speakers to be present for participants. This would grant the students greater



opportunities for interaction. A virtual “exchange student” program with a willing class with native speakers would appear highly beneficial for both groups. This prearranged group meetings would alleviate some of the difficulties participants in this study found when trying to find willing native Spanish speakers.

Additionally, while previous research praised the freedom of free tasks, perhaps some guidelines for interactions should be considered. One possible implementation would be to scaffold the students’ activities so there is more guidance in the beginning and the students gradually gain more freedom. This approach may reduce some of the pressure and anxiety students who are not used to being in control of their learning encounter. Finally, the creation and implementation of general interaction guidelines may prove beneficial. One guideline that may prove beneficial, at least to some members of this study, is to ensure student avatars remain humanoid. This guidance, while it may seem trivial, may work to further encourage interaction, rather than having adults try to interact with objects, such as a truck.

*Recommendation 2:* Repeated studies with larger, more heterogeneous samples are warranted.

As previously mentioned, the participation size was a limiting factor to this study, especially where generalizability is concerned. Additionally, while unbeknown to the researcher at the onset, the participation sample was rather homogeneous. This lack of differences among the sample participants also hurts the generalizability of this study. A study investigating a larger sample size would improve the merit of the results. A study including a larger range of ability levels may also prove beneficial.

*Recommendation 3:* An additional focus on language performance should be considered, including the observation and any and all effects of informal language learning that occurs in-world.

The researcher conducting this study openly admitted to not being an expert in the target language. Given this, he could not observe and understand any in-world informal language learning and judge students' language proficiency and any possible change therein. While such an observation may present challenges, such as the presence of an observer can change the subjects' behavior, it is recommended for future study.

*Recommendation 4:* While the assignment used within this study was tested and proven, a review of the timeframe it is delivered within may be warranted.

The researcher is unaware of any direct effect the length of the assignment (10 weeks) had on the participants, but believes a shorter timeframe may produce greater results. One-on-one interviews alluded to a difficult course load and perhaps a shorter timeframe would alleviate the concern. Additionally, shortening the number of free tasks the students are required to complete may present a more positive atmosphere with less stress about having to create so many objectives for the assignments and more focus on enjoying the virtual culture.

*Recommendation 5:* Given the demands of students' time for other, possibly higher priority courses increase as the semester progresses, a review of when a treatment is delivered may be warranted.

Based on the perception of the instructor within this study, students who are taking Spanish courses to fulfill a requirement for another major may place the Spanish coursework at a lower priority level than their other studies. As such, as the workload of the other courses increases through the semester, time and perhaps motivation to work on the Spanish course

dwindles. Perhaps a treatment earlier in the semester could increase student motivation sooner and create a more lasting effect.

*Recommendation 6:* Given that a person's motivation intensity, anxiety levels, and attitude toward a target language are not static, future studies with more measurements throughout the life of the treatment are warranted.

While this study did not find any statistically significant results regarding these three constructs, the qualitative data were more revealing. The one-on-one interviews cast a more positive light on the use of virtual worlds in the SLA classroom and should not be ignored. Perhaps additionally points of measurement would allow a researcher to identify peak performance timeframes and allow for a more robust and directed intervention method. While this study was several iterations in the making, the lessons learned may benefit future endeavors.

### **Final Thoughts**

Upon completion of this study, two thoughts emerge. First, as educators we need to be constantly aware of our students' needs and strive to design instruction to meet them. While the researcher continues to believe virtual worlds have a great deal to offer the SLA classroom, they may not be the answer students need. Instructors are strongly encouraged to step outside of their comfort zone and try new things. New technology may not hold the answer, but it shouldn't prevent researchers and teachers from asking the questions either. Instructional treatments should be tried continuously in an attempt to improve on student motivation and attitude toward the target culture while decreasing their anxiety. It is only when we stop trying to improve the lives of our students that we truly fail.

Second, in reviewing the process and results of this study, I wish I could have recruited more teachers and thereby more participants. While getting educators to adopt new technology is challenging, increased numbers would have improved the generalizability of the findings and allowed for more robust statistical analysis. I believe future researchers should strive for greater numbers, perhaps by expanding the class inclusion criteria to fewer prior semesters of language learning.

Finally, I will admit to being surprised by the statistical analysis results. The research appeared to draw such a clear roadmap of the pitfalls of language learning and virtual world appeared to meet this need so directly I had overly optimistic hopes for the findings. Research results however, are not built on hope but on facts. Statistical significance may not have been found on my main constructs, but maybe that was not the point of this research. To paraphrase Thomas Edison, "I have not failed; I have just found a way that doesn't work." True failure, would be to give up on the quest to motivate student learning.

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## **Appendix A: Spanish Language Acquisition Survey**

Each question below is rated on a 6-point Likert-type scale of 1 – strongly disagree to 6 – strongly agree.

### **Anxiety**

1. I am confident speaking Spanish.
2. I am confident reading Spanish.
3. I am confident writing in Spanish.
4. I am nervous when I speak Spanish.
5. I am worried because other students in my class seem to speak Spanish better than I do.
6. I get anxious when I have to speak in Spanish.
7. I am worried about how my Spanish sounds.
8. I am confident in my Spanish.
9. I get nervous if I have to speak Spanish to someone I just met.
10. I am comfortable using Spanish outside of class.
11. I feel uncomfortable reading Spanish.
12. I feel uncomfortable writing in Spanish.
13. I am relaxed when I speak Spanish to others.

### **Attitude**

14. I want to know more about Spanish culture.
15. The more Spanish culture I know, the more I want to be fluent in Spanish.
16. I want to learn more about the Spanish culture.
17. I think native Spanish-speakers are very friendly.
18. I really like the Spanish language.
19. I do not enjoy learning Spanish.
20. I hate Spanish class.
21. I will never use Spanish outside of class.
22. After my Spanish class, I will continue to study Spanish.
23. Learning Spanish is a waste of my time.

### **Motivation**

24. I work on my Spanish almost every day.
25. I work hard to learn Spanish.
26. If I have a problem understanding something in Spanish, I keep working until I understand it.

27. If I get something wrong in my Spanish class, I find out why I missed it so I can correct it in the future.
28. I review my graded assignments carefully.
29. I complete all reading assignments.
30. I research things I would like to know about Spanish on my own.
31. I study my Spanish even when there is not a test or assignment due.
32. I never work on my Spanish.
33. If I don't understand something in Spanish, I ignore it.

### **Sense of Community**

34. I feel connected to others in this class.
35. I feel I can rely on others in this course.
36. I trust my classmates.
37. I trust my instructor.
38. I feel my classmates help each other.
39. I believe students in this course care about each other.
40. I want others in this class to do well.
41. I feel other students would help me if I needed it.
42. Everyone in the class works well together.
43. I feel safe to express myself in this course.
44. The students in this class do not work well together.
45. I do not trust others in this class.
46. I feel alone in this class.



## **Appendix B: Treatment Interview Script/Guiding Questions**

Introduction and statement of purpose. Reiterate there are no right or wrong answers here. I am just looking for your honest feelings and perceptions.

Confirm that they used Second Life within their Spanish course.

Question 1: How did using Second Life to learn Spanish make you feel?

Question 2: What did you like about using Second Life?

Question 3: What did you dislike about using Second Life?

Question 4: Would you recommend using Second Life to future Spanish students? Why or why not?

Question 5: How did using Second Life benefit your language learning?

Question 6: How did using Second Life hinder your language learning?

Question 7: Are there any advantages to using Second Life to learn Spanish?

Question 8: Are there any disadvantages to using Second Life to learn Spanish?

Question 9: How often do you think you will continue to use Second Life to interact with native Spanish speakers after you finish the class?

Question 10: How do the difficulties in using Spanish compare in real life versus the virtual world?

Question 11: How comfortable are you speaking Spanish in the classroom? In Second Life?

Does one make you more nervous than the other? If so, please explain.

Question 12: To use Second Life, you had the opportunity to create an avatar. Did your avatar accurately represent you? How was your physical appearance different/similar to your avatar?

Question 13: Compare the way you acted with your avatar to how you believe you would act in similar situations in real life. Were you the same person? Please elaborate.

### **Appendix C: Control Interview Script/Guiding Questions**

Introduction and statement of purpose. Reiterate there are no right or wrong answers here. I am just looking for your honest feelings and perceptions.

Confirm that they used websites to complete their assignments and not Second Life within their Spanish course.

Question 1: How did using websites to learn Spanish make you feel?

Question 2: What did you like about using websites?

Question 3: What did you dislike about using websites?

Question 4: Would you recommend using websites to future Spanish students? Why or why not?

Question 5: How did using websites benefit your language learning?

Question 6: How did using websites hinder your language learning?

Question 7: Are there any advantages to using websites to learn Spanish?

Question 8: Are there any disadvantages to using websites to learn Spanish?

Question 9: How comfortable are you speaking Spanish in the classroom?

## **Appendix D: Second Life Orientation Session Outlines**

### **Session 1:**

- Introduction to Second Life
- What is Second Life?
- Creating an account
- Avatar creation
- Moving and looking around in a Three-Dimensional Space
- Bookmarking locations
- Teleportation
- Communication
- Opening Objects

### **Session 2:**

- Recap movement and communication
- Personalizing an avatar
- Clothes
- Character
- Where to find free accessories
- How to purchase items

### **Session 3:**

- Review of movement, communication, and avatar personalization
- Demonstration of how to create a free task
- Demonstration on how to find islands, teleportation, and joining groups

## **Appendix E: Instructor Interview Script/Guiding Questions**

Introduction and statement of purpose. Reiterate there are no right or wrong answers here. I am just looking for your honest feelings and perceptions.

1. Before you began teaching using Second Life, what was your opinion on introducing it into your classroom?
2. What are the biggest challenges you faced introducing Second Life into your classroom?
3. As the semester begins, how do students respond to the Second Life assignment?  
3b. Do you try and influence their opinions in any way? If so, how?
4. As the semester progresses, how do you feel the students' opinions about the assignment change? How do you feel their opinions of Second Life change?
5. As the semester progresses, how do you feel the students' attitude level changes? How do you feel their motivational intensity changes?
6. Overall, how do you feel about your experience using Second Life as an educational tool?
7. Would you recommend other instructors to use it? Please explain your decision.
8. What educational value do you perceive in using Second Life in the Spanish classroom?
9. Having taught several traditional courses and courses with the Second Life component, how do you feel about the use of Second Life in a Spanish classroom?
10. How do your students' motivational intensity change when they use Second Life compared to traditional instruction? Can you elaborate, perhaps using an example?
11. How do you feel your students' anxiety changes when they use Second Life compared to traditional instruction? Can you elaborate, perhaps using an example?
12. How do you feel your students' attitude changes when they use Second Life compared to traditional instruction? Can you elaborate, perhaps using an example?
13. Is there anything you would change about how Second Life was implemented in your classroom?

## **Appendix F: Course Syllabus**

### **Intermediate Spanish**

The activities for this course require a computer and internet connection that will allow you to participate freely in a virtual world. Reliable computers are available in labs on campus if necessary.

Students who feel they have registered for a Spanish class that is inappropriate to their proficiency level should contact the instructor. Every attempt will be made to accommodate qualified students with disabilities. If you are a student with a documented disability, please contact the instructor at the beginning of the semester to discuss the necessary accommodations, and/or contact the Disabilities Services Office at (XXX) XXX-XXXX.

### **Course Objectives**

Intermediate Spanish integrates the principles and premises of the national Standards for Foreign Language learning (communication, Culture, connection, Comparisons, Communities) and the ACTFL (American Council on the Teaching of Foreign Languages) proficiency guidelines. The goal is to develop proficiency in Spanish that supports and integrates meaningful communication.

This course has been designed to help grow both writing and speech skills through the integration of a large scale writing project and online speaking activities. Some of the course learning objectives are:

1. to continue reviewing and strengthening the fundamentals of Spanish grammar already acquired during the first year(s).
2. to expand the knowledge of grammatical forms and structures in order to improve oral and written skills.
3. to boost the conversational skills of students through paired and group communicative activities and interactions with native speakers in an online virtual world.
4. to widen students' knowledge of Hispanic culture in order to give a better understanding of intercultural similarities and differences, to help them interact with Hispanic citizens, and to make them aware of the inappropriateness of national stereotypes.
5. to develop students' comprehension skills by listening activities and exercises online and by exploring Hispanic music, video, television, and culture.
6. to improve writing skills by means of exercises and compositions.

General Education Category Goal Area 8 (Global Perspectives) This goal area will be assessed throughout all activities in the class in which students will be asked to:

1. Demonstrate knowledge of cultural, social, religious, and linguistic differences.
2. Analyze specific international problems illustrating cultural, economic, artistic, humanistic, social, and political differences that affect their solution.
3. Identify, describe and analyze social and/or cultural phenomena that influence the contemporary and historical relations among nations and peoples. (i.e. immigration policies and practices that influence demographic and economic shifts)
4. Identify, describe and analyze the actions of others (or the result of political, social movements, decisions, events) that have or could affect the global community and suggest how those actions might be altered to affect a different outcome (i.e. how would a change in immigration policy effect relations among countries).

### **Materials**

1. Enlaces. Nivel Intermedio, Curso Intensivo. By José A. Blanco and C. Cecilia Tocaimaza-Hatch
2. Access code to the Enlaces SuperSite, WebSAM, and VText for Enlaces, which includes access to the eBook, and the Enlaces WebSAM.
3. Spanish-English Dictionary and access to wordreference.com (free) for looking up words
4. Facebook account for class Facebook and Intercambios group.

### **Some Notes About Online Learning**

Please note that by taking an online class you are agreeing to take greater responsibility for your learning experience. I have designed the class to flow as easy and to be as self explanatory as possible, but you are responsible for taking advantage of the instructions and information that I give you. You are responsible for the following:

1. Checking the Learning Management System and Enlaces Supersite/WebSAM every day for updates, changes and general course information
2. Reading every word of the syllabus and the assignment descriptions, outlines and supplementary materials so that you know how to do your work and what I expect from you on each assignment (this is how you get information from me about what my expectations are for you and what you are required to do. In an online class, if you don't read the materials you do not get the information.)
3. Organizing your own time and completing your exercises well enough in advance so that technology issues are not a problem.
4. Self directing your own study by using the materials provided in the book and online. I have structured the Learning Management System class to rely heavily on the Checklist. If you look at the Checklist for each week you will know exactly what items you need to accomplish that week. (See the section in this syllabus on Checklists for more information).
5. Meeting your conversation small groups regularly and being responsible and accountable to the others in your group.
6. Using your resourcefulness to complete activities and get information. If you are required to do research for something, use the internet to your full advantage to help you complete them. Just make sure you give credit where credit is due through citation, and do not use online translators (that is academic dishonesty).

7. Contacting me if there are any issues in advance of assignment due dates and before small issues become big ones, or if you need clarifications about an assignment or responsibility.
8. Knowing how to use the Learning Management System and learning how to use the Supersite and Second Life. I am not a technology administrator or expert, if you have issues with the technology you must first contact those who know how the systems work. If it is something that I need to be involved in to help correct, they will let you know and you can contact me and we will work on it together.

### **Technology**

In order to facilitate the language learning process in an online course we will be making use of a variety of technologies. You are required to have reliable access to a good internet connection and access to a computer with good speed, processing power and graphics (netbooks and ipads/tablets will not be enough). If you do not have these things, you will be required to do some of your work in the computer labs at school.

In addition to the online book materials, you will a Second Life account ([www.secondlife.com](http://www.secondlife.com)) and either a Skype ([www.skype.com](http://www.skype.com)) or Google account ([www.google.com](http://www.google.com)) for online office hours or meetings. All of these can be set up online and are free. Optional online programs or accounts include Pinterest or YouTube.

#### **Second Life (required)**

One of our major assignments for the semester requires the use of Second Life a free, online, virtual world. This virtual world has a number of features including realtime voice chat to allow you to communicate in a group using voice as well as offers many islands where you can find Spanish speakers with whom you can converse (there will be many assignments asking you to communicate with other Spanish-speakers and they may be hard to find). There are also many cultural places to visit and you will be asked to find and interact with native speakers that you will have access to online.

To register visit [www.secondlife.com](http://www.secondlife.com) and follow the steps for registration and download the SL viewer. You will be asked to choose an avatar that you will use as your representation in the space. You are free to and should change and design your avatar however you please (see the Second Life folder on the Learning Management System for information on how to use Second Life). Once you register, type “World Languages Platform Harambee” into the location bar (topcenter of your screen just like your web browser. Click on the link and select “teleport” this will bring you to our home base in Second Life. Once there you are free to explore. There are links on our home base that will bring you to a variety of different island destinations where you can meet people and explore.

#### **Skype or Google Hangouts (required)**

Skype and Google Hangouts can also be used to communicate with your classmates and the Venezuelan students with whom we will be working this semester. You will want to make sure that everyone in your Conversation Small Group has access to the same system.

Skype: If you already have a Skype account please go to the Skype discussion board on the Learning Management System and enter your user name. This way members of the class can



contact you. If you do not have an account, go to [www.skype.com](http://www.skype.com), create an account and download the program.

Skype allows both video and audio calls, however, in the free version, video calls cannot be used with groups.

Google Hangouts: If you already have a gmail account you have access to Google Hangouts. Google hangouts allows group video chat (unlike Skype) as well as voice. If you do not have a Gmail account you will have to create one in order to use Google Hangouts. Go to [www.gmail.com](http://www.gmail.com) to create an account.

#### Software/Hardware (required)

You are required to have good working speakers and a working microphone for this class. Many activities that you will be doing online will need to have recordings done online that require these items. You cannot complete this course without these devices. Word processing or book development software will be beneficial for the large scale book project we will be doing in this class. You may use any software you are comfortable with, but ultimately you will turn everything in in PDF form. You may use: Microsoft Word, Pages for Mac, Adobe Indesign, or any other book or comic making software. You must have the ability in the software you choose to be creative, add photos, image or drawings and create a ebook formatted document for easy reading. You may be asked throughout the semester to have or obtain access to other software, programs or websites such as DropBox, YouTube, or anything else you may need to complete your activities and course successfully.

#### Course Format

This course will be conducted entirely online, although you may be required to attend several synchronous (group) sessions. Remember! As mentioned earlier, online learning is primarily self-directed and you have greater responsibilities in directing your own learning experience. As students in an online class, you will have the following expectations:

Communication: As much as possible, this will be an immersion classroom. While we do not technically meet in a classroom, you will still be required to communicate with each other and the instructor entirely in Spanish whenever and wherever you meet (online or in-person). With the exception of the course syllabus and project outlines, all communications online or otherwise will be in Spanish. All written/oral projects will be completed in Spanish. All student-student and student/instructor interaction will be respectful and courteous and, unless English is requested (*¿Me permite hablar en inglés? ¿Puedo usar inglés?*), all interaction should be conducted in Spanish (email, chat, paired activities, group activities, projects, etc.)

Time commitment: Students are expected to dedicate between 8-12 hours per week to the class and assignments (In a traditional classroom this is 4 in-class hours + 4-8 outside of class hours). Research in second language acquisition strongly supports 1) immersion in the language, 2) task-based classrooms and 3) studying language in small increments on a daily basis. It is in your best interest to work a bit each day on homework and in reviewing and completing course activities.

Checking in: You are expected to check into the Learning Management System and the MySpanishLab.com everyday to make sure you don't miss any communications or assignments

from me. Not seeing an announcement or assignment in time will not be accepted as an excuse for late work.

**Task-based textbook:** We use a text book that is task-based. This places less emphasis on grammar and more on communication and learning by doing. All grammar explanations are already in your text-book and online and there will be little other explanation. If you have questions about any grammar explanations or activities, please contact your professor via email prior to the due date of the assignment.

**Task-based activities:** In that same light, all activities in this course, with the exception of some online grammar activities, have been designed around tasks and communications instead of vocabulary and grammar. You will be required in every activity to fully integrate and manipulate the information you are given in the text book to the best of your abilities and use the language in real situations and contexts.

**Cheating:** Don't use translators to do your work for you. You may use [www.wordreference.com](http://www.wordreference.com) to look up words, but translating a sentence or paragraph and presenting it as your own is academic dishonesty. Academic misconduct of any sort is not tolerated and will result in a reward of a 0 for that assignment and may result in university action against the offending student.

**Late Work:** Late work will not be accepted at any time for any reason, including technology malfunctions. Technology malfunctions are inevitable and will come up, but part of your agreement when taking an online course is that you have a reliable computer and internet connection, and that you will organize your time wisely and appropriately to complete tasks enough in advance so that technology will not be an issue. You should be completing your assignments early enough in advance that if something goes wrong you will have time for the problem to be resolved prior to the due date. There will be no exceptions to this rule at any time for any reason.

**Instructor's Role:** My role in this online format is to facilitate learning, answer questions and encourage your success. I am available at any time for independent consultation via Skype, GChat or email (see first page of syllabus). During the week, I try my best to answer emails within 24-48 hours. On weekends, I may not be able to answer that quickly and you should plan your assignments accordingly. In order to make myself more available and accessible to you, I will be conducting online office hours in Second Life at different times and days during the week. I will be online for 1 hour 2 days per week and will announce the dates and times at the beginning of each week. If my office hours (in-person or online) do not work for you, you are welcome to schedule an appointment with me on Monday's in-person or online at any time during the week.

### **Course Evaluation**

Grading for this course is done on a point system based on a 100% scale. The grades break down in the following manner:

\*Note: Your instructor DOES NOT round grades. You must earn the minimum point value to obtain the appropriate letter grade.

Assignment categories will have the following percentage distribution:

Semester Project: Book of short stories or poetry = 20%

Conversation Small Groups = 10%

WebSAM (Quizzes/Exams/Speaking Tasks & online workbook) = 20%

Quizzes (10%)

Activities (10%)

Final Exam (5%)

Second Life Lab = 25%

Grading Scale

A = 94-100	B+ = 87-89.9	C+ = 77-79.9	D+ = 67-69.9
A- = 90-93.9	B = 83-86.9	C = 73-76.9	D = 63-66.9
	B- = 80-82.9	C- = 70-72.9	D- = 60-62.9
			F = 59.9 & below

Assignments are discussed below. More detailed descriptions of all assignments and their requirements are available in our Learning Management System course site. Grading rubrics are available online or at the end of the syllabus for your reference.

#### Assignments

\*More detailed descriptions of the requirements for all assignments can be found on our Learning Management System course site.

Semester Project: Book of short stories or poetry (20%)

The Semester Project will be one of our two primary assignments this semester. Almost everything we do in this class will in some way prepare you to create your ebook. This will be an extensive project that will require time, preparation, ingenuity and a little bit of technical know-how. As an individual, you will be responsible for creating an illustrated ebook book of short stories or poetry that thoroughly integrates all of our knowledge of Spanish language, literature and your own personal voice. The Enlaces book is designed around literature, and will therefore provide you will many examples of works from different Hispanic cultures that you may use to influence your creativity. These stories can be a collection of whatever topics interest you, but should follow a general theme and flow together in as a collection. Final ebooks will be about 10 pages in length (there should be writing on at least 10 pages, they may be longer if you want to be creative with images and design). You have free creative license with this project to make it whatever you want, but there will be some minor formatting and organization methods that everyone should follow to be consistent. Specific details are found in the description of the Semester Project on LEARNING MANAGEMENT SYSTEM. We will be working on this all semester through a process of peer and professor reviews that will utilize your Conversation Small Groups. You will have many opportunities to turn in work, edit, resubmit and make a creative project. The work for the project will also be divided up over the entire semester and will be worked on piece by piece so it will not be too overwhelming.

Second Life (SL) Lab (25%)

This semester you will be involved in an extensive communication project involving the virtual world Second Life ([www.secondlife.com](http://www.secondlife.com)). As I already explained earlier in the syllabus (See Second Life under course requirements), you will be asked to great an avatar and then engage with native Spanish speakers in the virtual world. There is a lot over information you will need to

go through to get this project started, so we will spend some time getting your avatars set up and learning to use the virtual environment. If you do not have experience with video games or virtual environments, you may need a little extra time and help getting set up and prepared. Use all of the resources I will provide to help you learn about this space. You must have access to a reliable computer and internet for this project. There are labs on campus that have been equipped with the Second Life viewer and they are listed on the assignment description for Second Life and on LEARNING MANAGEMENT SYSTEM. The SL Lab is broken down into 7 open activities where you will design goals in your conversation small groups and then fulfill them by interacting with native Spanish speakers online. For at least 3 of these activities you must at least attempt to use the voice chat feature to converse with people in Spanish and write about your experience. The goal of this project is to provide you with the opportunity to meet new people, cross cultural boundaries and learn about a different cultures. Along with having fun and getting to know each other, we will specifically be exploring, analyzing and discussing the concepts from Goal Area 8 including (but not limited to): cultural, social, religious, linguistic, economic, artistic, humanistic and political differences, how we can work together in spite of those differences and how we can affect global change.

#### Conversation Small Groups (10%)

At the beginning of the semester you will all form groups of 2-4 using our private Facebook group. These groups will become your conversation small groups and will be your group for the entire semester. Conversation small groups may work on group assignments, WebSAM, Second Life, semester projects, peer conversations/interviews and other tasks that may be given throughout the semester that require groups (YOU MAY NOT WORK IN GROUPS ON TESTS AND QUIZZES). Conversation small groups are required to meet 1 time per week, either in-person or online (HINT - you can meet on Second Life and combine your activities to free up time!), for at least 1 hour for discussion and group work. All meetings must be conducted in Spanish. After each meeting, each member will write up a their own individual summary and discussion of what went on during the meeting and how you felt about that meeting. A specific list of topics to address and instructions is located in the assignment description on LEARNING MANAGEMENT SYSTEM. Each member of the group will also fill out the Peer Evaluation Form (see assignment description) for each member of the group one time per chapter (every 2 group meetings). The peer evaluation is meant to serve as a way for group members to have a voice in how other members of the group participated and helped each other in the learning experience. This will include attendance, maintaining conversation in Spanish, helpfulness to others. This is my way to monitor participation and to make sure that everyone is being held accountable for their activities. There will be 6 peer evaluations, each with up to 10 points for a total of 60 points of your grade. Evaluations will be averaged together and converted to a number out of 10. These are completely anonymous and the grades will not be posted until the very end of the semester so that there will not be any conflicts between group members. When working as a group, remember that you are each responsible for making sure everyone pulls their own weight and contributes. The remaining 20 points will be a participation grade. 1 group member each week will provide a list of group members in attendance that week. Each week will count towards your grade. It is your responsibility as a group to make sure that everyone can make as many meetings as possible. If you cannot meet all together, you may split off into groups of 2, but everyone must meet with at least 1 other person from their group every week. How can you

meet online? You can use Google Hangouts or Second Life (you must be able to communicate using voice to meet online).

### WebSAM

#### Quizzes, Exams, Activities (20%)

There will be one quiz, one blog, and one peer conversation (oral performance) task each chapter and a final exam at the end of the semester. Quizzes (6 = 10%) will be conducted on the Supersite. There will be one for each chapter and times and due dates will be listed on the website. Quizzes must be completed entirely on your own; you may not have help from others.

**Final Exam (5%)** The Final exam will also be conducted using the Supersite. Links and due dates will be provided online closer to the end of the semester. The final exam must be completed entirely on your own; you may not have help from others.

#### Activities (10%)

\*\*\*You must obtain access to the Supersite and WebSAM website either through purchasing the code or the textbook by the end of the 2<sup>nd</sup> week of class. Failure to do so will result in grade reductions\*\*\*

Our Course ID is: TBA

Regular assignments from each chapter will be assigned using the online workbook on Supersite called WebSAM. I will assign those that I feel will benefit you the most when working on other assignments and projects to help you practice your grammar and learn new vocabulary and sentence structures. All assigned activities are indicated on the course calendar on Supersite and only assigned activities will be graded, although you may do others as additional practice if you desire (THIS IS HIGHLY RECOMMENDED ACTUALLY).

Exercises are due by 5:00pm on their respective due dates. No late work will be graded – NO EXCEPTIONS. These assignments may take a while so you will want to work on them a little bit everyday as part of your daily practice routine.

**Speaking Tasks** - In addition to written activities, oral activities will also be conducted using the peer conversation feature on the Supersite. Links and due dates will be listed on the online website. These are all partner tasks and can be conducted amongst the group members of your conversation small groups.

**Supersite Set-up:** When you first log in and add our class, please go to your profile (top-right of screen) and adjust your settings. Please also select your screen language to be in Spanish so we can maintain the immersion classroom.

### **Completing Assignments**

Many of the assignments we will be working on will overlap and can be used to fulfill the criteria for a number of tasks in this class. They are designed this way so that everything you do in this class works towards the optimum goal of producing extensive oral and written communications in Spanish. Assignments that may overlap include: the Semester Project, Conversational Small Groups, and Second Life. (Quizzes, tests, exams and online workbook exercises will provide you the grammar base you need to complete the other assignments and participate online, but will not be able to count for points for other class assignments). All

written assignments should be submitted using Word or PDF file formats, double-spaced, and be written in Times New Roman 12-point font.

The calendar shows material and assignments for an entire week at a time. All assignments are due on Fridays by 5:00pm and no late work will be accepted. You are able to work at your own pace throughout the week, but please be careful when managing your time. It will be impossible to complete all assignments in one day so do not wait until the last minute. A successful language learner (and anyone who wants to pass this class) will spend small amounts of time everyday reading the book, working on activities and taking quizzes.

## Appendix G: IRB Approval



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### IRB Study Approved

To: Andrew Gump  
RE: Facilitating Motivation in a Virtual World Within a Second Language Acquisition  
PI: Andrew Gump  
Link: Pro00014834

You are receiving this notification because the above listed study has received Approval by the IRB. For more information, and to access your Approval Letter, navigate to the project workspace by clicking the Link above.

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*To ensure a timely response, please direct correspondence to **Research Integrity & Compliance** either through your project's workspace or the contact information below.*

**University of South Florida**  
Research Integrity & Compliance, USF Research & Innovation  
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