INTERACTION AND ANXIETY IN A TASK-BASED COMPUTER-MEDIATED COMMUNICATION (CMC) CONTEXT

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Approval Date
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by

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DEDICATION

This thesis is dedicated to my husband, Javier, who has encouraged my dreams, supported my goals and loved me through this journey.
To listen well is as powerful a means of communication and influence as to talk well.

- John Marshall
ABSTRACT OF THE THESIS

Interaction and Anxiety in a Task-Based Computer-Mediated Communication (CMC) Context
by
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Master of Arts in Spanish
San Diego State University, 2013

The present task-based study contributes to the literature on Computer-Assisted Language Acquisition (CALL) by investigating second language (L2) learners’ interaction and anxiety while using three different modes of communication: video CMC (VCMC), written CMC (WCMC), and face-to-face (FTF). This investigation has two main goals: first, to explore possible differences in the number of words and turns produced by participants in the three modes while carrying out the tasks and second, to examine learners’ state anxiety in the different modalities. Seventy-nine learners from intact intermediate Spanish classes completed three jigsaw tasks in a counterbalanced research design. Participants met on separate occasions in order to carry out three tasks; one task was performed FTF, another using Skype video (i.e., VCMC) and the last using Skype chat (i.e., WCMC). Learners’ state anxiety was measured halfway through and upon completion of each task by means of a state anxiety questionnaire. Analyses of the transcripts of the conversations revealed that interaction was similar in terms of number of words and turns during FTF communication and VCMC but significantly lower during WCMC. Results also showed that reported state anxiety was significantly higher during VCMC and FTF than during WCMC. These results are discussed in the context of the relevant literature and their implications drawn for future implementation in the L2 classroom.

Keywords: task-based interaction, learners state anxiety, oral computer mediated communication (AudCMC), video computer mediated communication (VCMC), written computer mediated communication (WCMC), face-to-face communication (FTF)
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CHAPTER 1

INTRODUCTION

Research investigating language learning has imparted many theories that describe language acquisition and provided new insight for the advancement of teaching strategies (Ellis, 1997; Hall, 1997, 1999; Schulz, 1991; VanPatten & Cadierno, 1993). According to Demirezen (1988), there are five fundamental pillars of language learning (Table 1), which have impacted education in different ways.

Table 1. Theoretical Paradigms of Language Learning

<table>
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<tr>
<th>Paradigm</th>
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<tr>
<td>Mentalist</td>
<td>Claimed that every normal human being is born into a society with a specific ability to process language.</td>
</tr>
<tr>
<td>Behaviorist</td>
<td>Rested on the analyses of human behavior in observable stimulus-response interaction and the association between them.</td>
</tr>
<tr>
<td>Rationalism</td>
<td>Hypothesized that the brain is programmed to analyze experiences and to construct knowledge out of that experience.</td>
</tr>
<tr>
<td>Empiricist</td>
<td>Asserted that the mind is molded with information by experience, and accordingly, language is the symbolic representation of empirical facts.</td>
</tr>
<tr>
<td>Cognitive-code</td>
<td>Emphasized that language learning involved a conscious attempt to organize material while allowing for meaningful practice and use of language.</td>
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A review of these theories reveals two general positions on how learning takes place: nature vs. nurture. The debate over nature or nurture has always been controversial in the field of language learning; the former refers to an innate ability to acquire the language whereas the latter assumes that the environment inspires language development. Yet, while it is assumed that children have an innate capacity to acquire a language (Lenneberg, 1967), it is also assumed that other factors exist which contribute to the success or failure of language acquisition, first or second (Seliger, 1983). Regarding second language acquisition (SLA), which is what concerns us here, an interactionist view on second language (L2) learning has emerged in the last decades. This view, which has proven worthy of investigation in recent
research (Ellis, 1999; Long, 1996; Mackey, 1999), poses that L2 learning entails the interaction of internal factors involving the learner, such as motivation or working memory and external factors. As Seliger (1983) notes, learners must have access to a social environment in which language is used as a tool for communication and, additionally, L2 learners need to use the language as a tool for communicating with others. As a result of these investigations, interactionist views on L2 learning have gained more significance and attention in the SLA field in the twenty-first century.

Although interaction should be accomplished naturally, most students find it very challenging to interact in the L2; there are a range of variables at play. For example, Ellis (1994) found that various factors, including characteristics of learners, influence the process of L2 acquisition by either providing aid for and/or inhibiting. The concept of individual differences proposed that learners differ from one another in important ways when learning an L2 (P. Robinson, 2002). For example, individuals who are more motivated, more anxious or more willing to communicate will acquire the L2 differently than those less motivated, less anxious or less willing to communicate. Horwitz (2001) acknowledged anxiety as an emotive factor with the greatest potential to significantly affect the learning process, and recent research has demonstrated that anxiety can intervene with learners’ ability to notice feedback and therefore produce output (Sheen, 2008). Although the construct of anxiety has been investigated both, empirically and theoretically in the field of SLA (Arnold, 2007; Chamorro-Premuzic & Furnham, 2003; Cook, 1985; Dörnyei, 2005; Ellis, 2008; Kern, 1995; MacIntyre, 1995; Scovel, 1978), few notable exceptions (Baralt & Gurzynski-Weiss, 2011; MacIntyre & Gardner, 1994) have explored the possible effects state of anxiety on different modes of communication in the field of computer-assisted language learning (CALL). Most recently, Baralt and Gurzynski-Weiss (2011) examined the effects of state anxiety in a CMC context and contrary to expectations, these authors found that reported state anxiety was not significantly higher in the face-to-face (FTF) group when compared to a CMC group. In the present study, we will operationalize state anxiety as “a response to a wide range of stimulus situations that may be dangerous or threatening at a particular moment in time” (Baralt & Gurzynski-Weiss, 2011, p. 202).

Advances in Technology-Enhanced Language Learning (TELL) over the last several decades have contributed to the growth of programs that allow for people to effectively
communicate in real time both orally and in the written form; therefore, computer-mediated communication (CMC) has been widely researched in the CALL field since the late 80s. Early studies concerned themselves with written CMC (Abrams, 2003; Beauvois, 1997; R. Blake, 2000; Payne & Whitney, 2002; Rankin, 1997; B. Smith, 2003, 2004; K. L. Smith, 1990) and, at the turn of the first decade of the 21st century, investigations began to explore audio and video CMC (VCMC; Arnold, 2007; Yanguas, 2010, 2012).

Ho and McLeod (2008) investigated the influence of social factors in FTF communication and written CMC (WCMC) and found that CMC can alleviate the uncomfortable influences found in FTF interactions and also create an environment which promotes interaction. Although this hypothesis has yet to be tested in the SLA field, a multitude of studies that investigate CMC have demonstrated that the mode through which L2 learners interact can improve the language learning environment (Beauvois, 1998; Freiermuth, 1998; Kelm, 1992; Kern, 1995) and influence acquisition (R. Blake, 2000; Cao & Philp, 2006; B. Smith, 2003). Most recently, studies have explored differences in performance between FTF and oral CMC (OCMC) groups (Yanguas, 2012) and have examined possible differences in the ways learners negotiate for meaning between OCMC modes and traditional FTF communication (Yanguas, 2010). Regarding anxiety in CALL, just a handful of studies have looked into the effects of anxiety in the L2 learning process using CMC. Kern (1995) suggested that computer-mediated interaction could be an ideal medium for communication during L2 learning, specifically when used to reduce the negative effects of anxiety. As a great number of studies have shown anxiety to have a negative effect on language acquisition, incorporating interactive CMC into the classroom could provide an opportunity to diminish anxiety during interaction.

**STATEMENT OF THE PROBLEM/PURPOSE OF THE STUDY**

A few decades ago, the idea that computers would be readily available at home, work, and in the classroom was unimaginable. Yet technology continuously enters our daily routine though email, on-line newspapers, social networks, and cell phones. Most people never envisioned the possibility of communicating with the ease and convenience found in multimedia tools today, whether chatting with friends and neighbors or video conferencing with distant relatives. In the educational sphere, network technology has found its way into
the language classroom, allowing language learners to use the target language and interact with classmates learners elsewhere, and native speakers worldwide (Alvarez-Torres, 2001).

In today’s technological world, do learners still prefer traditional classroom methods of communication or does CMC allow for more comfort and interaction during L2 acquisition? Would the implementation of more modern methods of language communication (i.e., audio, video, and/or Chat) alleviate individual differences and/or encourage interaction during L2 learning? The focus of the present investigation is to compare traditional FTF communication with video and written CMC modes in hopes to explore some of these issues, which are yet to be researched in the field. As teaching resources become more proficient, the need for inquiry into the use of technological devices in the classroom and their possible effects on learners grows. Though there is a growing body of work published that explores CMC (see for example, Abrams, 2003; Chun & Plass, 1996; Garza, 1991; Grace, 1998b; Olivia & Pullastrini, 1995), there is a need to understand these effects on learners’ overall experiences.

Following the latest research in the CALL field (Arnold, 2007; Baralt & Gurzynski-Weiss, 2011; Kern, 1995; Rahimi & Yadollahi, 2011; B. Smith, 2003, 2004; Yanguas, 2010, 2012), the present study explores possible differences in interaction and anxiety among three different modes (FTF, VCMC, and WCMC) in L2 learner-L2 learner dyad. In particular, the following questions will guide this research project:

1. Are there any significant differences in the number of words and/or turns produced among participants in the three different groups (FTF, VCMC, and/or WCMC)?
2. Does carrying out a task in any of the three modalities (FTF, VCMC, and/or WCMC) significantly affect learners’ state anxiety?

**THEORETICAL Bases**

While some theories hold the belief that only one-way comprehensible input is fundamental for SLA (Krashen, 1994), others have taken an interactionist stance acknowledging the essential role of two-way communication (Ariza & Hancock, 2003; Baralt & Gurzynski-Weiss, 2011; R. Blake, 2000; Chun, 1994; Coniam & Wong, 2004; Pica, Kanagy, & Falodun, 1993; Yanguas, 2010). As these later studies, the theoretical bases for the present this study lie on the Interaction Hypothesis (Long, 1996), which was developed as researchers investigated ways in which input could be made comprehensible to L2 learners and the ways in which language production (output) could facilitate language learning.
(Shrum & Glisan, 2000). Long (1983) found that input could be made comprehensible by using familiar structures and vocabulary, using body language or other extralinguistic features along with speech and/or by changing the traditional interaction structure of the conversation. This approach takes into account both input and production, and maintains that the changes speakers make in L2 language during interaction or negotiation of meaning can promote language acquisition. The Interaction Hypothesis proposed that in order to acquire an L2 learners should not simply listen to input, but there must be active conversational participants who interact and negotiate for meaning, having equal rights in asking for clarification and adjusting what they say (Long, 1996). In other words, learners may have a real need to for interaction and negotiation of meaning in order to make incoming speech truly comprehensible.

Pica, Holliday, Lewis, and Morgenthaler (1989) defined negotiation as an exchange between learners as they work toward mutual comprehension. Moreover, language learners negotiate to avoid misunderstandings or to amend statements when conversational trouble occurs. Pica (1994) goes on to say that negotiation is defined as “modification and restructuring that occurs when learners and their interlocutors anticipate, perceive, or experience difficulties in message comprehensibility” (p. 495). Through negotiation of meaning between speakers, interactions are changed, and redirected, leading to greater comprehensibility. Thus the importance of negotiation cannot be overemphasized as learners summarize or ask for a repetition of the utterance to negotiation for meaning. In the classroom, this means partner interaction must seek clarification, check comprehension, and request confirmation that they have understood and/or are being understood by their interlocutor. According to Lightbown and Spada (1999), through negotiation learners are given the opportunity “to express and clarify their intentions, thoughts, opinions, etc., in a way which permits them to arrive at a mutual understanding” (p. 122). The Interaction Hypothesis emphasized that negotiation for meaning triggers interactional adjustments by the L2 learner, which facilitates acquisition by connecting input, learner’s abilities, and output.

Seliger (1983) tested the hypothesis that using the target language as a tool for social interaction affects the rate and the quality of L2 acquisition. The study found that learners who maintained high levels of interaction in the L2 progressed at a faster rate than learners who interacted little in the classroom. Accordingly, the interactionist perspective on L2
learning established that interaction in the L2 forms the basis for language development and facilitates L2 acquisition since it places strong emphasis on the negotiation of meaning that occurs between learners when they are trying to solve a communication problem (Long, 1996). Consequently, the Interaction Hypothesis argued that interactive contexts are optimal environments for L2 acquisition given that input, selective attention, and output are bound in a very productive manner through communication and negotiation of meaning (Yanguas, 2012). In a recent study, Gass and Mackey (2007) affirmed the importance of interaction by stating that learners receive information about the correctness, and more importantly, about the incorrectness of their utterances in context. This process allows students to learn from their mistakes and acquire L2 skills during the course of interaction in the target language. In other words, L2 acquisition is promoted mainly because when students recognize that they cannot produce a desired construction, attention is drawn to these deficits. Additionally, learners may notice new grammatical structures or lexical items in the course of interaction, which are then added to their communicative repertoire (Gass & Mackey, 2007).
CHAPTER 2

LITERATURE REVIEW

As the present study is particularly interested in learners’ interaction and state anxiety in three communicative modes (FTF and VCMC as well as WCMC), it is necessary to look into previous research conducted in relevant fields. First, we will explore studies that have investigated cooperative learning given that task-based instruction has been shown to promote interaction during L2 learning. Moreover, there will be a focus on interactive activities that have been applied to different modes of communication successfully. In turn, studies investigating anxiety in L2 learning will be reviewed so that the reader can gain an insight into what the state of this strand of research is today. Lastly, we will look at past studies that have investigated anxiety in CMC contexts and L2 learning.

COMMUNICATIVE LEARNING: PROMOTING INTERACTION

Over the past few decades, the term *communicative* has been excessively used; in general, it could be said that the emphasis lies on communicating in the target language. Research has shown that students who perform drill exercises tend to focus on the manipulation aspect of the activity and not on the communication itself (Brooks, 1990; Kinginger, 1990) whereas studies dealing with the nature of the classroom confirmed that interactive activities entail negotiation of meaning; such activities allow for students to perform a greater number of content clarification, confirmation checks, and comprehension checks (Doughty & Pica, 1986; Porter, 1986). Many educators today describe their methodology as communicative language teaching (Richards & Rodgers, 2001), using task-based group activities as a key instructional tool as it provides a means of integrating listening, speaking, reading, and often writing (Crookall & Thiyagarajali, 1997; Harmer, 1998; Jacobs, 1997). The approach known as cooperative learning has become of interest in the field of communicative language teaching, offering a widely range of classroom procedures for implementing task-based activities for pairs and groups and avoiding problematic communication (Figure 1) that lead to misapprehension and/or little to no
conversation. In addition, cooperative learning instruction has been used as a strategy for restructuring the traditional question-answer type of drill, enabling students to communicate with others by using the target language as a means to an end (J. Lee & VanPatten, 1995).

**Task-Based Communication**

Cooperative learning, which was developed in the United States, grew out of concern that traditional instruction was creating far too many dependent learners and failing to develop one of the most important things one will need in later life (i.e., the ability to cooperate with others).

Cooperative learning promotes prosocial behavior. Having children learn from one another creates powerful bonds between them and sends a message very different from that sent by a classroom in which each child is on his or her own—or, worse still, one in which the success of each is inversely related to the success of the others. . . . Cooperation is an essentially humanizing experience that predisposes participants to take a benevolent view of others. It allows them to transcend egocentric and objectifying postures and encourages trust, sensitivity, open communication, and prosocial activity. (Kohn, 1991, as cited in Vincent, 1999, p. 74)

The theoretical perspectives which have guided research on cooperative learning have put focus on the ability of social interaction to facilitate learning as it provides positive learning outcomes, stimulates perspective-taking ability, and cognitive development as well as aids
cooperative effort with extrinsic rewards. Trusting students to build their own understanding of the world through communication, cooperative learning put forward that mastering a subject comes from the phrasing and rephrasing that often occurs in interaction in a way that it is not possible if the material is simply received in the form the teacher or the text supplies it. Of particular benefit to foreign language study, cooperative learning activities have taught students how to ask questions and negotiate meaning, skills that had traditionally been neglected in the classroom (Honeycutt & Vernon, 1985). That is, the cooperative learning approach allows for increased comprehensible input among L2 learners through simple conversation and negotiation from peers. Overall, social interaction can potentially increase the amount of comprehensible input that the student receives and shares, but also provides a comfortable group setting where it is more likely that students will have an opportunity to converse to repair any comprehension breakdowns with interlocutors.

Cooperative learning activities can range from the simple think-pair-share tasks that encourage time on task and listening to each other to more complex stimulation, which can be used to develop a concept, master content, for discussion and group projects. Students work in pairs or small groups to help one another complete a given task, attain a goal, or learn subject matter. Each person in the group has a responsibility, and students depend on one another as they work to complete their task. “It is possible to create conditions leading to positive achievement outcomes by directly teaching students structured methods of working together with each other (especially in pairs) or teaching them learning strategies closely related to the instructional objectives” (Slavin, 1995, p. 45). However, the focus of cooperative learning involves more than just asking students to work with one another; rather, much consideration goes in to helping students make the experience the most interactive and successful as possible. Extensive research by D. D. Johnson and Johnson (1987) suggested that cooperative learning often promotes higher achievement, increases retention, and develops interpersonal skills (Figure 2). Additionally, interactive activities offers many other potential benefits beyond enhanced L2 acquisition, including the ability to stimulate creativity (D. D. Johnson, Johnson, & Holubec, 1988), increase self-esteem (D. W. Johnson, Johnson, & Stanne, 2000; Slavin, 1995) as well as foster higher responsibility (Shrum & Glisan, 2000).
Figure 2. Cooperative learning outcomes. 

There are several definitions of task in the L2 literature but Ellis (2003) asserts that tasks require students to function as language users, in more real-world communication whereas exercises require them to function as language learners in more artificial and intentional learning situations. Tasked-based activities are carried out as the result of processing or understanding language - they usually emphasize that communication is the expression or interpretation between two or more independent participants (J. Lee & VanPatten, 1995). Although many kinds of practical tasks have commonly been implemented in L2 cooperative learning classrooms (narrative, information-gap, opinion gap, decision making tasks), Pica et al. (1993) argued that the cooperative learning activities that promoted the most negotiation were jigsaw and information-gap tasks. Jigsaw tasks (Kagan, 1989) require L2 learners to work in groups where each member of the team assumes responsibility for a given portion of the lesson. On the other hand, information-gap activities (K. Johnson, 1979; Long, 1980; Walz, 1996) engage learners as one student has information that their partner needs. The need for interaction to complete said tasks sets a greater opportunity for students to learn how to ask for clarification, how to request information, and how to negotiate when faced with misunderstandings.
Despite their origins as task-based activities for the classroom, task-based activities have been immensely used as research tools and proven their success by their long-standing presence in professional references, classroom textbooks, and SLA research. Pica, Kang, and Sauro (2006) investigated the multiple roles and contributions of information-gap tasks for interaction research methodology as instruments for data collection and analysis and showed to be especially helpful for research on SLA in the classroom. As we will see in the following sections, studies have used tasks as research tools in both the anxiety strand of research in the SLA field and in research exploring CMC.

Interaction and TELL

According to Galbraith (1967), the term technological refers to “the systemic application of scientific or other organized knowledge to practical tasks” (p. 12). Gendron’s (1977) definition of technology provides another similar definition, “any systematized practical knowledge, based on experimentation and/or scientific theory, that enhances the capacity of society to produce goods and services, and which is embodied in productive skills, organization, or machinery” (p. 23). The wide-ranging term, TELL, together with CALL, CMLI and CMC, describes the use of technology to improve the flow or quality of the message between foreign/second language teachers, learners, and users (Shrum & Glisan, 2000). More specifically, Levy (1997) defined CALL as “the search for and study of applications of the computer in language teaching and learning” (p. 1). CALI is when the computer serves to facilitate or enhance communication between the learners and the source of authentic material and CMC refers to any form of communication between two or more individual people who interact and/or influence each other via the use of computers using social software. First used at Gallaudet University for communicative tasks amongst hearing-impaired students (Ortega, 1997), this modality was quickly extended to language learning contexts. In the SLA field, technology can facilitate the transfer from teacher-centered to learner-centered environment.

In the 1980s, the application of technology in the language classrooms included the use of films, radio, language labs with audio and videotapes, computers, and interactive video. Although teachers have maintained a healthy dose of skepticism (Cubillos, 1998), technology proved to be valuable in numerous circumstances; in particular, when used to
facilitate the acquisition of vocabulary (Chun & Plass, 1996; Grace, 1998a), support input-rich activities (Cononelos & Olivia, 1993; Garza, 1991), facilitate writing improvement in output activities (Olivia & Pallastrini, 1995), facilitate exploration of authentic language through email or the internet (Olivia & Pallastrini, 1995) as well as enhance student motivation (Masters-Wicks, Postelwate, & Lewental, 1996). Despite the proven effectiveness of TELL, Garrett (1991) pointed out that “technology is only a medium in which a variety of methods, approaches, and pedagogical philosophies may be implemented” (p. 75). Furthermore, the effectiveness of TELL cannot reside in the medium itself but only in how it is put to use. Thus, much research investigating “what kind software, integrated how, into what kind of syllabus, at what level of language learning, for what kind of language, is likely to be effective for what kind of specific learning processes” (Garrett, 1991, p. 75) is needed.

Computer-assisted learning has been a field of interest for SLA researchers and language instructors for nearly as long as computers have been accessible to the public, and the field has continued to grow as these devices become ever more universal (Alvarez-Torres, 2001). According to Warschauer (1996), the development of CALL can be divided into three distinct phases: behaviorist, communicative, and integrative. The original model, implemented in the 1960s, used the computer as a tutor (R. Taylor, 1980). Focusing on the Audio/lingual method, behaviorist CALL presented drills and non-judgmental feedback to learners (Moras, 2001). The communicative CALL, based on the communicative approach, became prominent in the 1970s and 80s and has used the computer as a tutor, as a stimulus, and as a tool. This approach has provided skill practice in a non-drill format through language games and by allowing students to have control and interaction (Healey & Johnson, 1995). Learners use programs that stimulate writing or discussions without the need of language material, rather, devices that enable understanding and use of the language (Brierley & Kemble, 1991; M. B. Taylor & Perez, 1989; R. Taylor, 1980). The most current approach was based on multimedia computers and the Internet (Warschauer, 1996). Technological advances have brought text, graphics, sound, animation, and video to be accessed on any computer. These tools make it possible for students to learn at their own pace, using a variety of media (Schank & Cleary, 1995).

Rahimi and Yadollahi (2011) noted that the study of CALL had been divided into many distinct segments. The two most important being: why to utilize CALL and how to
implement it in the classroom. No absolute reason has been given explicating why computer
assisted learning should be implement in the language classroom, yet, countless studies
(Alvarez-Torres, 2001; Arnold, 2007; Baralt & Gurzynski-Weiss, 2011; R. Blake, 2000; De
la Fuente, 2003; Ho & McLeod, 2008; Kern, 1995; MacIntyre & Gardner, 1994; Sheen,
2008; B. Smith, 2003, 2004; Sykes, 2005; Yanguas, 2010) have demonstrated that CALI can
facilitate L2 learning. Besides improving their grammatical skills, practicing more frequent
writing, and learning how to view and defend their own and others’ cultures, the students
learned how to manage language in order to sustain meaningful communication, and, in
addition, they learned what works prompt negative responses, and, how to select alternatives,
how to manage writing in order to elicit information (Shrum & Glisan, 2000). More
importantly, research has shown that students have positive attitudes about using computers

Though the question of how to utilize CALL is a broad one, research examining
CALI suggests that the design of programming can encourage the development of language
learning skills and results in more language learning (Masters-Wicks et al., 1996; G.
Robinson, 1989). Stevens (1989), a critic of behaviorist CALL, put forwarded that CALL
should be built on intrinsic motivation and should foster interactivity. In 1984, Underwood
offered a series of guidelines for the use of communicative CALL. Underwood’s model has
severed as a roadmap for a proper integration of CALL, rather than a step-by step guide for
how CALL should be designed and implemented (Warschauer, 1996). According to
Underwood (1984), in order to successfully integrate communicative CALL, language
teachers must; aim at acquisition practice rather than learning practice, aim to grammar
implicit rather than explicit, allow and encourage the student to generate original utterances
rather than merely manipulate prefabricated language, not judge and evaluate everything the
student does, avoid telling students they are wrong, not reward students with congratulatory
messages, not try to be cute in an attempt to personalize interaction with the leaner, use the
target language exclusively, be flexible, allow the student to explore the subject matter,
create an environment in which using the target language feels natural, will never try to do
something a book could do just as well, be fun (adapted from Underwood, 1984). Integrative
CALL offers many advantages (Singhal, 1997; Warschauer, 1997) and has been seen a
trendy and useful tool, enabling learner to be connected to the world through authentic
material. In spite of the benefits this approach presents to the SLA field, there are a number of obstacles to consider. As integrative CALL is fairly new, Warschauer and Whittaker (1997) suggest that in order to make effective use of new technologies, teachers must take a step back and focus on some basic pedagogical requirements. Warschauer and Whittaker proposed five guidelines designed to help teachers in implementing computer-networked activities in language acquisition: consider your goals, think integration, do not underestimate the complexity, provide necessary support, and involve student in decisions.

During the past couple decades, the fields of foreign language have seen a plethora of research studies documenting a wide variety of uses and benefits of text-based CMC (Abrams, 2003; Alvarez-Torres, 2001; Beauvois, 1997; R. Blake, 2000; Jenlink & Carr, 1996; Payne & Whitney, 2002; Rankin, 1997; R. C. Smith, 2000) a real-time conversation that takes place over the computer via the internet. For example, a chat room is a synchronicity space where students can have discussions with other class mates and/or write about topics they will later discuss in class. Chat rooms are advantages because learners can gain access to the conversation simply by typing at their computers and sending the message; they can see their work before they send it and make corrections; their keyboard skills are not critical to communication (Shrum & Glisan, 2000). Even though chat is written CMC, the modality shares many important characteristics with FTF oral communication (Abrams, 2003; Beauvois, 1997; Payne & Whitney, 2002; K. L. Smith, 1990), leading to the conclusion that written WCMC can be a valuable tool in helping learners acquire a foreign language (C. Blake, 2009; Herring, 1996). Pellettieri (2000) highlighted, “because synchronous [CMC] chatting bears a striking resemblance to oral interaction it seems logical to assume that language practice through [CMC] will reap some of the same benefits for second language development as practice through oral interaction” (p. 59). Additionally, the tone, vocabulary, and style of communication in WCMC are usually informal, like those of spoken speak. Rankin (1997) and Jenlink and Carr (1996) reported benefits of the kind of dialogic conversation that are appropriate to the goals of foreign language instruction. Recent analysis of written CMC has shown it to be very valuable in promoting communicative abilities (e.g., L. Lee, 2002; B. Smith, 2003), and reading skills (e.g., K. L. Smith, 1990), enhancing language negotiation and constructing meaning (R. Blake, 2000; Chung, Graves, Wesche, & Barfurth, 2005; Warschauer, 1997), developing skills such as turn-taking (Chun,
1994), as well as encouraging learners to produce linguistically more complex output (e.g., Chun, 1994; Coniam & Wong, 2004; Kern, 1995; Warschauer, 1996). Therefore, synchronous WCMC is hypothesized to be an ideal platform for students to rehearse in with acquisition as an end goal.

Within the context of the Interaction Hypothesis, R. Blake (2000) sought to demonstrate how WCMC programs could allow the SLA field to observe L2 interlanguages. The goal of the study was a threefold: (a) to document that written CMC discussions in Spanish would also produce language modifications such as those reported in the oral-based interactionist literature; (b) to characterize linguistically those modifications; and (c) to investigate whether Pica et al.’s (1993) predictions concerning the superiority of jigsaw and information-gap tasks also held for students involved in CMC. Students worked in dyads and attempted to solve a series of tasks that required cooperation with their partner to complete successfully. Pica et al. (1993) found that “these tasks appear to constitute ideal conditions for SLA, with the written CMC (WCMC) medium being no exception” (p. 133). R. Blake (2000) states that in the process of jigsaw and information-gap tasks, L2 learners become more aware their own L2 vocabulary development and their need for improvement in order to gain more lexical control. In addition, the study reports that performing tasks in a WCMC environment generates apperceived input, which can then be used to modify and improve learners’ vocabulary.

Negotiated interaction (B. Smith, 2003) and lexical acquisition (B. Smith, 2004) were investigated using synchronous CMC. First, B. Smith (2003) explored whether learners negotiate for meaning during task-based CMC, whether task type affected how learners negotiate for meaning during CMC, and (c) how this computer-mediated negotiation compares to those noted in the FTF literature. Online synchronous WCMC conversations from 14 learner dyads, who completed 2 jigsaw and 2 decision-making tasks formed the data base for this study. In the jigsaw task, the participants were to arrange a series of six pictures in the correct sequence and, in the decision/making task, learners were faced with a situation where a list of items needed to be culled to a list half its size. Results from this study proved that learners do negotiate meaning when problems in communication arisen during task-based CMC. More specifically, learners used local indicators of nonunderstanding and, partners responded to these indicators with rephrasals or elaboration. According to B. Smith
the results of this study were consistent with FTF and, additionally, confirmed previous CMC research (Pellettieri, 1999).

B. Smith (2004) tested the Interaction Hypothesis in a WCMC environment in an attempt to link learner-learner negotiated interaction and SLA in a synchronous computer-mediated environment. Dyads interacted with one another in WCMC mode while they attempted to complete jigsaw and decision-making tasks that were seeded with largely unknown target lexical items. The first research question asked if computer-mediated negotiated interaction eases learners’ ability to recognize and produce new lexical items. The data revealed that learners were only involved in negotiated interaction about one-third of all turns, thus, that excessive amounts of the overall discourse are not spent on negotiation. The second research question asked which type of interactionally modified input best facilitates learners’ ability to recognize and produce new lexical items. Based on the data, B. Smith (2004) asserted that negotiated interaction facilitated learners’ ability to recognize and produce new lexical items better than preemptive input. The third research question asked if any observed differences hold up over time. The results further indicated that there was no significant difference in the immediate receptive and delayed receptive posttest scores. Similarly, there was no significant difference between the immediate productive and delayed productive scores. The study offered proof that, in the written CMC modality, L2 learners often choose to negotiate unknown lexical items. Thus, B. Smith (2004) insisted that “the results of this study add to the growing evidence for a more direct link between negotiated interaction and SLA and provide initial evidence that negotiated interaction may facilitate acquisition in a computer-mediated environment” (p. 386).

It should be mentioned that CMC is not restricted to the chat, email and/or discussion boards, but is rather a diverse collection of tools and technologies that have been shown to influence and affect learners in very different ways (B. Smith, Alvarez-Torres, & Zhao, 2003). Although written CMC has been an important focal area for many L2 acquisition researchers since the 1990s, Oral CMC started to receive much attention at the turn of the century. The obvious issue is that while FTF oral communication is enhanced by such factors as environment, facial expressions, and gestures, its main tool by definition and practice is the use of verbal language to communicate. So while students may develop skills to aid them in communication using WCMC, they are still not being asked to cross the Rubicon
Dörnyei, 2005), or take that last step to actually verbalize their strand of L2 communication that they have already formulated in their minds. Therefore written CMC is perhaps not the best, nor is it the only, technological tool for fomenting L2 oral production skills.

The strength of the connection between synchronous CMC and pragmatic instruction were first studied by measuring the effect of three types of synchronous group discussions (WCMC, OCMC and traditional FTF communication) on the acquisition of the speech act in a target language. Specifically, Sykes (2005) analyzed role-play tasks that elicited invitation refusals in order to determine the impact that synchronous CMC has on pragmatic development. Each of the role-play situations (pre and post) were transcribed and coded in order to answer the proposed research questions. The study found that CMC is a valid manner in which pragmatic issues can be addressed in the foreign language classroom. Sykes states, “Despite the overall improvement and some of the similar behavior among the groups, the WC group outperformed the other two groups in terms of complexity and variety” (p. 420). While the OCMC group added more complex grounders as head acts and used a greater variety of strategies from pretest to posttest, the FTF group added a large number of supportive move strategies over time to soften their refusals. Nonetheless, the WCMC participants implemented both of these approaches. Sykes further explains, “without the tools oral communication often provides (e.g., intonation and body language), the WCMC group had to be more explicit in their communication” (p. 420). Nonetheless, OCMC should not be completely ruled out due to these findings. Since the oral chat environment was not optimal in this study (e.g., practice time), it could be possible that very different results should occur in forthcoming research.

In today’s world, it is safe to say that a majority of university students own personal computers and are familiar with a range of oral chat technology (Skype, Google voice chat and Facebook video calling). As oral CMC becomes more familiar and user friendly, learners have been able to more fully utilize its potential, even in the language classroom. In his study, Yanguas (2010) pointed out that it is about time that interaction between L2 learners if reevaluated. The study found that learners’ oral CMC interaction patterns were opposite to those presented in WCMC interaction and very close to the patterns in FTF communication. Furthermore, both audio OCMC (AudCMC) and video OCMC (VCMC) share turn adjacency conventions with FTF communication, which is contrary to WCMC turn-taking convention.
Moreover, OCMC does not only foster the use of oral production skills in a way that written CMC cannot, it also shares some of the benefits of written CMC, such as anonymity and the leveling of the social playing field (Ho & McLeod, 2008). As a consequence, it could be argued that if technology is to be used in the L2 classroom to practice and develop the oral skills needed to be successful in communicating in the L2, it should be done through OCMC (Yanguas, 2012). However, since only a handful of studies have explored this type of communication (Jepson, 2005; L. Lee, 2007; Sykes, 2005; Yanguas, 2010, 2012) several questions remain regarding OCMC as a medium of L2 oral practice and its application in the classroom.

** Anxiety in SLA 

Anxiety is a multifaceted concept that has been defined as “the subjective feeling of tension, apprehension, nervousness, and worry associated with an arousal of the autonomic nervous system” (Spielberger, 1983, p. 1). Although it is easy to understand that all humans endure anxiety, it is necessary to acknowledge that people experience different levels of anxiety in different contexts and situations. Teachers and language learners have long maintained the idea that anxiety affects language learning (Horwitz, 2001; MacIntyre, 1995) and empirical findings have recognized that language anxiety is a unique kind of anxiety that is different than any other type of apprehension (Ellis, 2008). In the past decades, anxiety has become an individual difference of great interest in the SLA field (Chamorro-Premuzic & Furnham, 2003; Dörnyei, 2005; Ellis, 2008) and has proven to have great potential to influence L2 learners (Horwitz, 2001).

**Measuring Anxiety**

There are three wide-ranging ways of measuring anxiety in research: first, physiological assessments, second, participants’ self-reports of their internal feelings and reactions, and last, through behavioral observation (Casado & Dereshiwsy, 2001; Daly, 1991; Zheng, 2008). According to Zheng (2008), participants’ self-reports are by far the most common way of examining the anxiety phenomenon in educational research. The use of self-reported feedback in the language classroom has also been successful and proven to have positive implications of students’ motivation, accountability and learning. A multitude of empirical research indicates the presence of increased productivity and autonomy, higher
motivation, less frustration, and higher retention rates among learners when development-oriented self-assessment is utilized (Dickinson, 1987; Ellis, 1994; Gardner & MacIntyre, 1991; McNamara & Deane, 1995; O’Malley & Pierce, 1996; Oscarson, 1989). Pohlmann and Beggs (1974) examined the relationship between self-reported and pre-post measures of academic growth and found self-assessments to be strong predictors of learners’ motivations and satisfaction and a moderate predictor of self-efficacy. Similarly, Sitzmann, Ely, Brown, and Bauer (2010) found self-assessment’s strongest correlations were with motivation and satisfaction and the relationship between self-assessment and cognitive learning was moderate. As incorporating self-assessment into classroom learning has allowed students as well as teachers to acknowledge assessment as a mutual responsibility, not as the sole responsibility of the teacher (Oscarson, 1989), this constructive notion could also be advantageous in research.

Within the scope of self-reports, the most commonly utilized tools of investigation in the field of language learning have been diary studies (e.g., Bailey, 1983; Cohen & Norst, 1989) and correlational analyses of questionnaire data (e.g., Horwitz, Horwitz, & Cope, 1986; Oh, 1992; Young, 1990).

One benefit of qualitative research, such as diary studies, is the rich data uncovered. Unlike quantitative data, qualitative methods are often able to shed light on the how and why certain results are obtained, an important element of research when the goal is to investigate the complex, multi-faceted nature of learner affective factors. (Baralt & Gurzynski-Weiss, 2011, p. 203)

A questionnaire is generally a series of written questions for which the respondents has to provide the answers (Bell, 1999) from which to gather quantitative information. Attention has to be paid when creating a questionnaire in order to motivate the respondents to give accurate and complete information and acquire the necessary details; for example, dichotomous questionnaire can serve for questions with two possible opposing outcomes, for example Yes and No whereas open-ended questions are used to explore a substantive are have the advantage of offering a wide range of responses while not influencing the outcome of the question by pre-determining possible responses. Despite the potential limitations of questionnaires, Yoko Saito (n.d.) found that they are used as an evaluation criterion across a wide range of disciplines, including psychology, education and foreign language acquisition. Moreover, quantitative methods have historically been favored when researching language
anxiety, with questionnaires in particular serving as the most popular research instrument used in foreign language anxiety studies.

Generally recognized as a turning point in the study of anxiety and language learning, Horwitz et al. (1986) addressed the issue of conceptualizing and measuring anxiety by designing the renowned Foreign Language Classroom Anxiety Scale (FLCAS). Often credited with introducing the construct of foreign language anxiety (FLA), Horwitz et al. (1986) discussed the “ego-threatening nature of language learning” (Horwitz, 2010, p. 158) and the need to identify the type of anxiety measured. Furthermore, this study provided a detailed report of the methodology used to produce the FLCAS using a beginner language class. By understanding the methodological basis for the construction of the FLCAS, researchers can make an informed determination about whether the FLCAS is an appropriate tool for use with students in different contexts or whether it needs to be adapted. Horwitz et al. (1986) investigated the development, reliability and validation of the FLCAS and the study affirmed that language anxiety is an independent situation/specific anxiety. MacIntyre and Gardner (1994) devised a more fine-grained instrument, based on a model by Tobias (1986), in order to measure anxiety during language processing. Using scales developed for three different stages of learning, the study attempted to zoom in and isolate how learner’s felt during input, processing, and output. The study empirically demonstrated that anxiety does differ according to the stage at which the learner is processing language: the study showed anxiety to be associated with poorer performance at the input, processing, and output stages of language learning with the strongest relationship at the processing and output stages.

**Previous Research on Anxiety**

The relationship between anxiety and language acquisition has become of profound interest to scholars in the field of education, language learning and SLA in the past several decades (Bailey, 1983; Chastain, 1975; Cohen & Norst, 1989; Dulay & Burt, 1977; Gardner, 1985; Horwitz, 1986; Horwitz, Tallon, & Luo, 2009; Kleinmann, 1977; MacIntyre, 1995; MacIntyre & Gardner, 1994; Saito & Samimy, 1996; Scovel, 1978; Sparks & Ganschow, 1991; Steinberg & Horwitz, 1986; Young, 1999). Horwitz (2010) compiled a synopsis of significant research in foreign and L2 learning anxiety which have endowed the language teaching profession’s with the development of understanding of anxiety reactions in response
to L2 learning and use. Scovel (1978) rightly noted that anxiety is “not a simple, unitary construct that can be comfortably quantified into high or low amounts” (p. 137). Horwitz (2010) notes that within the selection of studies, considered modestly by citation frequency, six distinct categories of investigation were classified. Early articles addressed the nature of FLA as contrasted with or related to other anxiety types (N), and investigated the effects of FLA (E), especially on language achievement. Presently, articles analyzed the sources of FLA and its stability or variation under different instructional or socio-cultural conditions (S), reviewed the relationship of FLA with other learner factors (LF), examined anxieties in response to specific aspects of language learning such as listening, reading, or writing (LRW) and explored instructional strategies (IS) to reduce FLA. Additionally, due to the important implications FLA has for language learning, Horwitz (2010) found that “a number of the citations address more than one theme” (p. 154). It is important to note that other interesting first-time examinations of FLA, not yet classified, have emerged and could benefit from comparison and discussion.

Research on anxiety has identified three different approaches to its study (MacIntyre & Gardner, 1991): trait anxiety, state anxiety, and situation-specific anxiety, commonly referred to as FLA. According to Ellis (2008), trait and state anxiety are often considered interchangeable, but trait anxiety pertains to a person’s general tendency to have anxiety while state anxiety a temporary unpleasant emotional state. More specifically, trait anxiety is thought to be a more permanent predisposition to be anxious (Scovel, 1978) where as state anxiety refers to a response to a particular anxiety-provoking stimulus that fades when the intimidation disappears (Spielberger, 1983; Tanveer, 2007). Horwitz et al. (1986) were the first to treat situation-specific anxiety as a separate and distinct phenomenon particular to foreign language learning and defined FLA as “a distinct complex of self-perceptions, beliefs, feelings, and behaviors related to classroom language learning arising from the uniqueness of the (foreign) language learning process” (p. 128). This third type of anxiety is distinct from trait anxiety and state anxiety because it is a recurring anxiety prompted by specific set of conditions, such as communication, tests, and negative evaluation (Horwitz et al., 1986). Based on the distinctions of different anxiety types, this study focused on state anxiety as it pertains to a transient anxiety during specific L2 learning conditions.
As anxiety is a complex construct, it is not surprising that early studies that investigated FLA came up against difficulties in regard to identifying anxiety and interpreting effects. Four decades ago, Guiora, Beit-Hallahmi, Brannon, Dull, and Scovel (1972) reported that students who ingest moderate amounts of alcohol achieved better pronunciation scores than students who ingested higher amounts of alcohol or no alcohol at all. Horwitz (2010) considered that although Guiora et al. used the ingestion of alcohol as a proxy for a hypothesized change in ego state and increased empathy, it is more likely that moderate alcohol consumption relaxed the participants and thereby contribute to better pronunciation. Chastain (1975) intended to measure affective and ability factors in SLA but found positive, negative, as well as non-significant correlations between anxiety and L2 achievements in various languages. Scovel (1978) argued that since the early studies employed different anxiety measures, such as test anxiety or facilitating-debilitating anxiety, it was understandable that they found different relationships between anxiety and language learning. This study has served as an example of scholars misunderstanding of the relationship between anxiety and L2 achievement (Horwitz, 2010). Kleinmann (1977) was one of the first to adequately define anxiety and chose an appropriate anxiety construct to investigate avoidance behavior in adult L2 acquisition; however, problems persisted due to vague interpretations and imprecise deductions of results. The article acknowledged that although learners tended to avoid English structures consistent with contrastive analysis predictions, learners with more facilitating anxiety had a lower tendency toward this avoidance and reasoned that affective factors play a role in L2 acquisition. Horwitz (2010) believed the results were, unfortunately, interrupted to mean that language students must be made a little more anxious so that they will work harder. Scovel analyzed previous studies, which examined the effects of anxiety on L2 learning, and found that researchers had not been measuring specific types of anxiety (e.g., state anxiety). The study put forward that inconsistent results in earlier investigations were due to the lack of precision or certainty and sought for precision in the measuring of anxiety. After Scovel, most anxiety researchers began to define the type of anxiety under investigation (Horwitz, 2010).

Understandably, language teachers would like to know the sources of language anxiety so that classes may be organized in a manner that minimizes student anxiety reactions; unfortunately, the answers are not clear-cut (Horwitz, 2001). Cohen and Norst
(1989) considered the sources of FLA and investigated fear, dependence and loss of self-esteem in an early study of affective barriers in L2 learning. Cohen and Norst revealed that the distressing experiences of some language learners and stated that “there is something fundamentally different about the performance aspect of language learning, and the fear it engenders. . . . We hypothesize that language and self/identify are so closely bound . . . that a perceived attack on one is an attack on the other” (p. 76). The study was among the first to explore the different causes of anxiety in the language learning field but many have since taken interest in investigating the relationship between various factors and anxiety. Students’ perspectives on anxiety were taken into account in an investigation by Young (1990) that surveyed over 200 students. The study found that positive teacher factors were associated with lower anxiety and, additionally, students in this analysis reported a general preference to small group rather whole class oral activities. Nonetheless, Koch and Terrell (1991) surveyed student reactions to the Natural Approach and found that although peer-work and personal discussions were regarded to be less anxiety-provoking than others, there was great variability in the responses, and none of the activities were judged comfortable by all students. Price (1991) interviewed self-identified anxious learners who reported debilitating anxiety caused by instructors who criticized their pronunciation or focused on classroom performance rather than learning. The learners’ compelling accounts of negative language learning experiences highlight the suffering and vulnerability that some language learners endure, however, according to Price, most anxious language learners have more moderate levels of anxiety, and the reactions of extremely anxious learners like these should not be taken as representative of all anxiety reactions.

As the relationship between anxiety and other factors provided mixed and confusing results, Young (1991) analyzed sixteen studies examining how anxiety interfered with language learning and performance. The results revealed inconsistent results both within and across studies; the researcher stated that “research in the area of anxiety as it relates to second or foreign language learning and performance was scattered and inconclusive” (pp. 438-439). Even so, the article provided an influential framework for categorizing and researching causes of FLA: (a) personal and interpersonal anxieties, (b) learner beliefs about language learning, (c) instructor beliefs about language teaching, (d) instructor-learner interactions, (e) classroom procedures, and, (f) language testing. Lastly, Young (1991) points out that
although L2 learners experience unnecessary levels of anxiety (manifested in students quite differently depending on ethnic background, prior language experience, learner personality, and classroom circumstances), it is the duty of language teachers to create an atmosphere in the classroom for effective language learning and an attitude in the learners that reflects genuine interest and motivation to learn the language.

Though it was intuitive for educators that anxiety had an effect on learning and/or production of a L2 (Horwitz, 2001; MacIntyre, 1995), numerous studies have examined anxieties in response to specific aspects of language learning such as reading, writing, speaking and/or listening. As the four primary skills of language acquisition, it is has been fundamentally important to investigate the possible ways in which anxiety impacts their growth and success. In Young’s (1990) investigation on students’ perspectives on anxiety and speaking, a four-page questionnaire was developed to identify different types of in-class activities the researcher perceived as having potential to evoke anxiety; the questionnaire consisted of three sections. The goal of the first sections was to examine activities observed as interacting with language activity: pair work, preparedness, motivation. Significance appeared when students must get up in front of the class, even when the students do not have to speak. Learners had the same reaction to writing their work on the board as to speaking in front of the class. The second section of the questionnaire asked students to rate their anxiety level in the face of twenty different in-class activities using a five point Likert scale. According to Young (1991), the list of neither exhaustive nor reflective of any particular foreign language skill or teaching method. Although four of the five activities reported as moderately anxious (see Figure 3) were speaking-oriented activities, Young (1991) noted the cluster of activities had one particularly notable feature in common—a high student exposure. The last sections of the questionnaire asked students to specify instructors’ behaviors and characteristics that reduced anxiety. The questionnaire revealed that instructors assist in decreasing student anxiety by reducing negative consequences implementing activities in which the students do not have to communicate directly to the class (e.g., students are not put on the spot, can volunteer answers, are asked to work in groups or pairs) as well as maintaining friendly, relaxed, patient and above all, a good sense of humor. Although it is easy to detect that students experience higher level of discomfort and anxiety
Table III

<table>
<thead>
<tr>
<th>Anxiety Level</th>
<th>Mean</th>
<th>Activity</th>
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<tbody>
<tr>
<td>Moderately Relaxed</td>
<td>4.54</td>
<td>1. Read silently in class.</td>
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<td></td>
<td>4.38</td>
<td>2. Repeat as a class after the instructor.</td>
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<tr>
<td></td>
<td>4.05</td>
<td>3. Write a composition at home.</td>
</tr>
<tr>
<td>Neither Anxious Nor Relaxed</td>
<td>3.94</td>
<td>4. Do exercises in the book.</td>
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<td></td>
<td>3.90</td>
<td>5. Work in groups of 3 or 4.</td>
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<td></td>
<td>3.69</td>
<td>6. Work on projects (i.e., newspapers, filmstrips, photo albums).</td>
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<tr>
<td></td>
<td>3.33</td>
<td>7. Compete in class games by teams.</td>
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<td></td>
<td>3.33</td>
<td>8. Repeat individually after the instructor.</td>
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<td></td>
<td>3.11</td>
<td>9. Open discussion based on volunteer participation.</td>
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<td></td>
<td>3.50</td>
<td>10. Interview each other in pairs.</td>
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<tr>
<td></td>
<td>3.50</td>
<td>11. Work in groups of two and prepare a skit.</td>
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<td></td>
<td>3.26</td>
<td>12. Read orally in class.</td>
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<tr>
<td></td>
<td>3.13</td>
<td>13. Listen to questions and write answers to the questions.</td>
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<tr>
<td></td>
<td>3.07</td>
<td>14. Speak individually with the instructor in his/her office.</td>
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<tr>
<td></td>
<td>3.02</td>
<td>15. Write a composition in class.</td>
</tr>
<tr>
<td>Moderately Anxious</td>
<td>2.83</td>
<td>17. Write your work on the board.</td>
</tr>
<tr>
<td></td>
<td>2.47</td>
<td>18. Present a prepared dialog in front of the class.</td>
</tr>
<tr>
<td></td>
<td>2.26</td>
<td>19. Make an oral presentation or skit in front of the class.</td>
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<tr>
<td></td>
<td>2.23</td>
<td>20. Speak in front of the class.</td>
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<tr>
<td></td>
<td>2.12</td>
<td>21. Role play a situation spontaneously in front of the class.</td>
</tr>
</tbody>
</table>


when they speak in the target language, Young (1991) accredits the real anxiety to performing in front to others.

According to the Young (1999), the issue with earlier research was that the relationship between anxiety and language performance did not take into account an variety of variables (e.g., language setting, anxiety definitions, anxiety measures, age of subjects, language skill, and research design. Young (1999) continued to investigate affect in foreign
language and L2 learning and in 1999 composed a practical guide to creating a low-anxiety classroom atmosphere with the aim of finding a balance among theory, research and classroom applications. Horwitz (2001) stated Young’s volume to be “particularly useful in that it addresses all aspects of language learning-listening, speaking, reading, writing, and culture and offers many specific suggestions for reducing anxiety during many common language class activities” (p. 123). In 2001, Horwitz followed suit and examined the literature on language anxiety and achievement. The study found that FLA has been almost entirely associated with the oral aspects of language use (e.g., Daly, 1991; Horwitz et al., 1986; Price, 1991) as difficulty in speaking in class is the most frequently cited concern of anxious foreign language students. Nonetheless, researchers (Oh, 1990; Saito, Garza, & Horwitz, 1999; Sellers, 2000) have found anxiety in relation to reading and writing as well.

Most recently, Sheen (2008) examined the effects of anxiety on learners’ perceptions of recasts provided in the classroom environment as well as the relationship between anxiety and modified output. More specifically, the study investigated whether classroom language anxiety affected students’ ability to improve accuracy in their use of L2 articles when provided with corrective feedback in the form of recasts and whether language anxiety influenced the extent to which learners modify output following recasts. Sheen was among the first to link language learning anxiety with the process of language learning and teaching in a quasi-experimental design. Learners were divided into two groups, high anxiety and low anxiety learners (as measured by a questionnaire) and carried out a narrative task while the instructor provided recasts on erroneous uses of articles to individual learners, “with the whole class attending” (p. 848). All groups completed a pretest, and immediate and delayed posttests. First, the study investigated whether language anxiety influenced the effect that recasts have on improving the grammatical accuracy of learners’ use of English articles and the findings revealed that the low-anxiety recast group scored significantly higher than the high-anxiety recast group and the low-anxiety control group on both the speeded dictation and writing posttests but not on the error-correction task. The analyses revealed a significant Time × Group, that is, the low-anxiety recast group scored significantly higher than the high-anxiety recast group and the low-anxiety control group on both the speeded dictation and writing posttests. With regard to whether anxiety is related to modified output and learner repair, the study found low-anxiety learners modified their utterances significantly more (21
out of 59 recasts) than the high-anxiety learners (9 out of 48 recasts) after a recast had been provided. Likewise, low-anxiety learners also repaired their errors to a greater extent than the high-anxiety group. As it has been empirically proven that the interaction, recasts, and modification of output facilitate SLA (Doughty & Varela, 1998; Mackey, 1999; Mackey & Philp, 1998; McDonough, 2005; McDonough & Mackey, 2006). Therefore, it is logical to ask how researchers and teachers might design tasks where anxiety can be diminished (Baralt & Gurzynski-Weiss, 2011).

Research has established that FLA exists, and more importantly, it has shown that FLA not only represents an uncomfortable experience for learners, but can also have negative effects on the learning process. Although a wealth of researchers have explored instructional strategies to reduce FLA (Arnold, 1999; Cohen & Norst, 1989; Gregersen & Horwitz, 2002; Horwitz, 1986, 1996; Horwitz & Young, 1991; Koch & Terrell, 1991; Price, 1991; Saito & Samimy, 1996; Steinberg & Horwitz, 1986; Young, 1990, 1991, 1999), modern advances call for further investigation. Furthermore, while past approaches have been designed to make learners more comfortable when speaking the a foreign language, technology has also shown promise in reducing anxiety and communication apprehension by providing an entirely different modality of interaction that seems to lower inhibition.

**Anxiety During CALL**

Increased attention has been being given to language learners and their perspectives, language anxieties, motivations, learning styles and learning strategies (Young, 1999). In recent years, researchers have hypothesized about possible explanations for the linguistic benefits of CALL as many have held the belief that computer-based interaction creates a low stress, low anxiety setting, which enables learners to partake in classroom discussion (Bump, 1990; Roed, 2003; Warschauer, 1996). Accordingly, studies (Beauvois, 1998; Freiermuth, 1998; Kelm, 1992; Warschauer, 1996) have pointed out that CMC might help alleviate foreign language apprehension because it provides an unusual social and communicative space, where many foreign language learners feel less inhibited. More specifically, it has been suggested that CMC may an ideal medium for communication and practice, as it does not pose the same social demands that communication in the FTF modality does (Ho & McLeod, 2008; Kern, 1995). Furthermore, learners have extra processing time to respond and
formulate their answers in the CMC modality, processing time that they do not have in FTF (Baralt & Gurzynski-Weiss, 2011). Such beliefs have been strongly supported by student feedback (Beauvois, 1998; Freiermuth, 1998; González-Bueno & Pérez, 2000; Kern, 1995; L. Lee, 2002; Pérez, 2003).

At the outset of investigating the relationship between anxiety and computer assisted learning, pioneers MacIntyre and Gardner (1994) looked into the effects of state anxiety during computerized vocabulary learning. The study was designed in the tradition of experimental psychology to examine whether anxiety affected vocabulary acquisition. The objective was to examine the immediate effects of anxiety arousal on the stages of subsequent use of vocabulary items and to track such effects over time. MacIntyre and Gardner (1994) devised a fine-grained instrument to measure anxiety, focusing on the three different stages of language learning described by Tobias (1986): input, processing, and output. The researchers used a video camera to record learners during various points of a computerized learning task to arouse anxiety as it had proven to provoke anxiety in previous studies (Cook, 1985; Cotton, Baron, & Borkovec, 1980; Plant & Ryan, 1985). For the purpose of MacIntyre and Gardner (1994), the video camera was introduce at different times to all but one group of subjects (the control group); the other three groups were exposed to the camera prior to the input, processing, or output stage of learning respectively. The study found significant increases in state anxiety, and that in each group, the highest anxiety rating was obtained immediately after introducing the camera, and performance at each of the stages was found to be significantly lower for the group of learners who most recently had anxiety aroused. Furthermore, MacIntyre and Gardner (1994) suggested that anxiety arousal at earlier stage processing creates cognitive deficits that can only be conquered when the learner has the opportunity to recover the missing material. More specifically, the students needs the ability to return to the input and/or processing stages as anxiety reduction alone would not guarantee the recovery of material not previously learned.

Kern (1995) compared two sessions of teacher-led class discussions, one in the classroom (FTF mode) and one online (CMC mode via Daedalus InterChange). The study was the first researcher to compare anxiety in the FTF and CMC modalities; however, anxiety was not directly measured. The goal of his study was firstly, to compare student production in both modalities, and secondly, to elicit insight on learner and teacher
perceptions about the value of networked computers as a tool for class-based discussions using a 21 item questionnaire. Kern found that CMC led to twice as many turns and four times more production than in the FTF mode, and additionally, class discussions were much more student-centered in the CMC mode. Analysis of the questionnaires revealed that 93% of students and 55% of teachers reported the integration of computer-based discussion as positive. Moreover, according to the questionnaire responses, a number of learners felt freer to communicate due to a more casual atmosphere. In his conclusion, Kern reported that there was some indication that the InterChange environment reduced communication anxiety. The study put forward that students who were often reluctant to participate in oral discussions participated more actively in InterChange discussions. As none of the items on Kern’s questionnaires aimed specifically to measure the construct of anxiety, Kern’s association of learner comments with this observation is subjective. Despite the fact that Kern’s study is often referred to as support for CMC’s potential to reduce learner anxiety, the conclusion should be interpreted with caution as the questionnaire did not measure learner anxiety as caused by in-class or online group discussion.

At the turn of the century, Arnold (2007) indicated that CMC can lower foreign language learners’ anxiety levels following the investigation between CMC and communication apprehension. In this preliminary study, students completed a discussion using FTF, synchronous or asynchronous CMC as well as a pretest and posttest questionnaire adapted from Horwitz et al.’s (1986) FLCAS. While the learners in the FTF control group discussed the assigned topic orally and the synchronous group used the course manager software Blackboard as a platform for the discussions in class, the asynchronous treatment was given seven days to complete the discussions outside of class time. The study compared students’ language communication apprehension levels whilst engaging in regular oral, synchronous CMC and asynchronous CMC as well as significant differences in communication apprehension changes in these communicative environments. A repeated-measures ANOVA revealed groups did not differ significantly: the control and treatments groups displayed similar degrees of communication apprehension (Figure 4). Additionally, this study provided multiple perspectives on students’ feelings regarding L2 oral communication. “Both, student self-reports as well as pretest and posttest communication apprehension scores, suggest that regular student-centered discussions can trigger a
permanent reduction in communication apprehension” (Arnold, 2007, p. 482). Therefore, it was suggested that the FTF and computer mediate discussions alike provided ample practice and positive communication experiences for learners to become more comfortable in foreign language speaking situation.

Though previous research had investigated the possible effects of anxiety during CALL, Ho and McLeod (2008) used an experiment embedded within a web-based survey to examine the influence of FTF and written CMC as well as the socialpsychological factors on individuals’ willingness to express opinions. All students responded to questionnaire before being randomly assigned to one of two experimental conditions (in the FTF mode or the CMC mode) with a highly polarized and morally loaded topic. The fivefold study posited:

1. individuals who were asked to speak out in the FTF setting would be less likely to express their opinions than those in the CMC setting;
2. fear of isolation would be negatively associated with willingness to speak out;
3. current and future opinion congruency would be positively associated with willingness to speak out;
4. communication apprehension would be negatively associated with willingness to speak out;
5. the CMC scenario would moderate the effect of fear of isolation, current and future opinion congruency as well as communication apprehension on willingness to speak out such that the strength of the relationship would be reduced comparable to the FTF scenario.
First, a $t$ test contrasting the two modalities supported hypothesis 1, revealing that respondents in the FTF condition expressed significantly lower levels of inclination to express their own opinion than did respondents in the CMC condition. Second, the results of a hierarchical regression model also lent support to hypothesis 2, proposing that as the level of fear of isolation increased, willingness to express opinion decreased. Hypothesis 3 resulted was only partially sustained; current opinion congruency was found to be unrelated to the dependent variable but perceptions of congruency between own opinion and future opinion climate were found to be significantly related to willingness to express one’s own opinion. Next, the analysis sustained hypothesis 4 seeing that as the level of communication apprehension increased, respondents were less likely to express their own opinion. Lastly, hypothesis 5 was supported in part. Specifically, the impact of fear of isolation on opinion expression was moderated by computer-mediated discussion though no significance was found in interactions between condition and current opinion congruency, condition and future opinion congruency, and condition and communication apprehension. According to Ho and McLeod, analysis provided support for the hypotheses regarding the influence of contextual and social-psychological factors on willingness to express opinion as students were more reluctant to express opinions in the FTF setting than in the CMC mode. Overall, findings suggest that CMC may avoid some of the dysfunctional social-psychological influences found in FTF interactions and can create an environment which promotes public deliberation.

In their goal to compare learners’ state anxiety during task-based interaction in computer-mediated and FTF communication, Baralt and Gurzynski-Weiss (2011) found MacIntyre and Gardner’s (1994) results to lend high construct validity to their three-fold instrument. Thus, the “foreign language state anxiety questionnaire” (FLSAQ) was designed loosely based on MacIntyre and Gardner (1994) and Horwitz et al.’s (1986) FLCAS. More specifically, the study implement a FLSAQ to measure anxiety halfway through and immediately following a cooperative learning task in FTF and written CMC in order to investigate the mediating effects of modality on learner anxiety during interaction. Intermediate language learners carried out a two information-gap tasks that were considered to be within the realm of their capabilities and comparable to what they had practiced in their regular class, in a discussion with their teacher. The FLSAQ revealed that anxiety levels were very similar halfway through and immediately following an interactive task in both
modalities, which revealed the FTF and the written CMC modalities to be comparable in
their effects on theirs’ state anxiety (Figure 5). Similar to Arnold (2007), the cooperative
learning tasks in Baralt and Gurzynski-Weiss allowed for the level of communication
apprehension to steady and showed ability to encourage negotiation of meaning in the
different mode of communication.

![Figure 5. Average anxiety levels by mode. Source: Baralt, M., & Gurzynski-Weiss, L. (2011). Comparing learners’ state anxiety during task-based interaction in computer-mediated and face-to-face communication. Language Teaching Research, 15(2), 201-229.](image)

Although the study was guided by the possible differences in learners’ state anxiety in the FTF and written CMC modes, Baralt and Gurzynski-Weiss (2011) analyzed the background and task preference questionnaires to gather information about the students. The goal was to obtain feedback regarding computer and CMC use and allow Baralt and Gurzynski-Weiss to gain insight into learners’ opinions and perceptions about carrying out interactive tasks in the modalities. The qualitative data showed that learners held similar attitudes towards the two modalities, and had both positive and negative perceptions about the FTF and the CMC modes (Figure 6).

Baralt and Gurzynski-Weiss (2011) revealed adjectives such as social, good practice, natural, engaged and challenging were used to describe the positive features of FTF interaction while interesting, learning experience, informal, active and efficient were used to describe CMC. Both modalities were seen as fun, enjoyable and comfortable. Furthermore,

many learners relied on tone and pitch to get meaning across in the FTF modality and valued the social ambience. Specifically, various students‘ interaction with FTF was easier than CMC because of the facial expressions and pauses. “One participant wrote that he liked ‘the comfort of another person’ in completing the task FTF. Another participant felt that the corrections ‘forced me to learn’ in the FTF modality” (Baralt & Gurzynski-Weiss, 2011, p. 215). Nonetheless, participants‘ stated feeling more relaxed, having time to produce output in the in CMC and experiencing less pressure.

One participant wrote, “I could type out what I was thinking and then go back to see if it made sense.” Another wrote, “I could think about and revise what I sent, I could scroll up to double check past mistakes” and also that the task was “more direct and to the point” in the CMC modality. (Baralt & Gurzynski-Weiss, 2011, p. 215)

On the other hand, all 25 participants sensed pressure when having answer instantaneously during FTF communication. A student described the situation as frustrating because talking FTF caused the learner to stumble for words while another pointed out a lack of processing time. A noticeable difference between FTF and CMC was the ability to review the conversation, especially when the learner could not understand (the teacher). A student asserted that “had it been chat, I would have scrolled back up so I could learn and use the new word” (Baralt & Gurzynski-Weiss, 2011, p. 215). According to the students, it was obvious (to their teacher) that they were having a difficult time when they paused; as a result,
the learner underwent more stress. Negative features pertaining to the experience completing the task FTF were confusing, fast, embarrassing, awkward and broken. As for the negative features of CMC, most of the students pointed out the lack of personal connection, visual cues and a less personal dealing. More specifically, “it was harder to point out miscommunications because it was strictly words” (Baralt & Gurzynski-Weiss, 2011, p. 215) and negotiation of meaning became arduous. Overall, participants described the CMC was grammatical, intimidating, impersonal, detached and tedious. Additionally, rather than trying to be understood, a student described feeling less forced to address or correct mistakes in the CMC modality as much as she was in the FTF modality (Figure 7). Students spend the greater part of the conversation thinking of how to describe (items in the scene), causing much embarrassment and an unpleasant conversation.


As the study established the FTF and the written CMC modalities to have a similar effect on language learners’ state anxiety through the FLSAQ, the student feedback about carrying out interactive tasks in the modalities suggests the use of FTF interaction and CMC may address the needs and preferences of certain students. That is, specific modes of communication should be utilized “taking into account the learners’ individual differences and subsequently motivating pedagogical decisions” (Baralt & Gurzynski-Weiss, 2011, p. 21). Nevertheless, it should be noted that some learners commented that their teacher could
type much faster than they on their questionnaires. The researchers also point out that the instructor, with more experience typing in Spanish, was a considerably faster at typing than the students and it is unknown her typing abilities affected interaction. Whether the fact that the learners were paired with their instructor was an impacting variable on students’ anxiety and/or perceptions during this study or not has not been unexplored; however, learners’ apprehension and attitudes towards the different modes of communication have been shown to vary according to interlocutor.
CHAPTER 3

METHODOLOGY

Seventy-nine San Diego State University (SDSU) intermediate-Spanish students (18 years of age or older) gave consent to participate in this study (Appendix A), which sought to investigate the difference in the number of words and/or turns produced among participants while carrying out a task in the three modes and, in addition, the possible effects of learners’ state anxiety on task performance in the different modalities. The methodology used in this study will be explained in four sections: participants, materials, procedures and data analysis.

PARTICIPANTS

Three standard intermediate Spanish classes from a major Southern California university participated in this study. As intermediate-Spanish students in the Spanish department at SDSU are regularly assessed in speaking, reading, writing, and listening as part of this department’s communicative language program, they were considered the ideal candidates to engage in the written and oral communication tasks used in this study. In addition, all the students in the Spanish program were encouraged to utilize the University’s Language Acquisition Resource Center (LARC) for additional communicative practice. The students that took part in this study often engaged in oral and written activities both in the classroom and in the LARC lab.

All students who participated in the activities were eligible to for the study; participants were disqualified only if they had major technical difficulties that impeded communication during a task. Of those who were included in the study, there were thirty-two male and forty-seven female participants, as shown on the questionnaire. Seven students were freshman, eleven were sophomores, nineteen were juniors, and twenty-three were seniors; the remaining participants did not specify their year. Only one participant was not a native speaker of English and indicated Vietnamese as his native language on the background questionnaire. Fourteen of the participants had previous experience learning a foreign language while the remainder of the students had no other L2 experience besides Spanish.
Students’ areas of study included, but were not limited to, Communications, Economics, English, Nursing and Psychology although a couple students had yet to declare a major. More than half of the participants reported enrolling in the Intermediate-Spanish class due to the language requirement; several other reasons were revealed on the questionnaire: 19 enrolled for a career, 15 indicated fun as a factor, 13 wanted to improve a relationship and seven needed the class in order to study abroad.

The majority of participants showed familiarity with computers as well as prior experience with CMC, reporting an average of 16 hours on the computer weekly. In addition, 50 participants stated being comfortable or enjoying using a computer to communicate and only six participants reported low computer comfort indicating not enjoying or hating CMC on the background questionnaire. Another important observation that merits acknowledgement is learners’ self-assessment of Spanish language abilities: participants’ average perception of their Spanish skills was higher than average.

**MATERIALS**

The three jigsaw tasks took place at the LARC lab at SDSU. This lab is equipped with the necessary equipment for students to interact both FTF and through CMC and to record their conversations. As stated above, tasks were completed using three different modes of communication, FTF, VCMC, and WCMC. Additionally, five questionnaires were administered at different points during the study: two versions of the FLSAQ, a background questionnaire, task preference questionnaire, and a self-assessment questionnaire.

**Experimental Tasks**

As participants in this study were enrolled in Spanish classes in a communicative language program, they had been frequently exposed to and had worked with cooperative learning and interactive activities. Since tasks that are enjoyable have been shown to increase students’ motivation, and therefore theoretically, lower anxiety and promote interaction (Freiermuth & Jarrell, 2006), our aim was to give participants three similar tasks, each of which provided an interesting topic and allow for a range of L2 competencies and any level of contribution desired. For these reasons, three jigsaw tasks were designed for the study adapted from Yanguas (2010): Task 1: Apartments, Neighborhoods and Cities (Appendix B); Task 2: Families and personality (Appendix C); Task 3: Interest and Hobbies (Appendix D).
For each task, students were placed in pairs as Student A and Student B. They were then administered a preferences requirement sheet and a list of options according to the task. In the FTF mode, both Student A and Student B sat side-by-side while discussing different activities and deciding on the three weekday activities and a weekend plan that was most suitable for both students without going over a 500 dollar budget. In the Oral CMC mode, the members of the pairs were seated apart; participants used Skype to discuss different apartment options in order to reach a compromise that worked best for both Student A and Student B. Partners were able to make improvements to the home and plan to buy items for the apartment in order to satisfy at least four criteria for each of their necessities. In the written CMC mode, students used chat in order to discuss different family options with a partner. Each member of the pair had a specific personality and many living preferences, which were shared in order to arrive at the best living arrangement.

It is important to note that all participants successfully completed the task in each mode. That is, partners were able to make compromises and reach an agreement while satisfying the requirements in each task-based interaction.

**Background Questionnaire and Task Preference Questionnaire**

The background questionnaire (Appendix E) and the task preference questionnaire (Appendix F) used in this study were adapted from Baralt and Gurzynski-Weiss (2011) and were chosen so that results could be comparable. Moreover, these authors argue that the background and task preference questionnaire should be used to provide a more holistic picture than that provided by the quantitative analyses alone.

The background questionnaire was used to elicit basic relevant information about the participants’ educational background; learners had to indicate their year of study, major, gender, native language, other languages studied, and reasons for which they are taking Spanish. In addition, students were briefly questioned about their computer abilities and time spent using the computer per week (including word processing, email, instant messaging, and social networking). The task preference questionnaire tapped into learners’ opinions and perceptions about the three different modalities (FTF, VCMC or WCMC). For example, participants were asked to indicate on a on a five-point Likert scale their agreement with statements such as “I preferred completing the task via messenger” or “Was it easier
completing the task via Skype.” Participants were also asked to provide three adjectives to describe each mode and were asked to articulate the easiest and most difficult aspects of completing a task in each mode.

**Self-Assessment of Spanish Language Abilities**

The self-assessment of Spanish language abilities (Appendix G) developed for this study was adapted from Cubillos, Chieffo, and Fan (2008) and was designed to measure learners’ self-assessment prior to participation in the study. Specifically, thirteen questions were asked with the goal of measuring students’ self-perception of their abilities in Spanish interaction. A five-point Likert scale was used to evaluate learners’ language abilities; questions were posed negatively (e.g., “When I speak Spanish, no one understands me”) as well as positively (e.g., “When I speak Spanish, I try to speak like a native”) following Dörnyei (2005).

To test the effectiveness of the questionnaires’ ability to measure linguistic comprehension, the construct validity of the questionnaires was measured. Cronbach’s alpha analyses were run in order to test the internal validity of the questionnaires. Results showed high reliability (\( \alpha = .81 \)) indicating that participants’ answers to the items on the questionnaire could be predicted from their answers to the other items. It was therefore concluded that the questionnaires do appropriately measure linguistic comprehension as conceived in this study, and that descriptive statistics were appropriate.

**FLSAQ (During and After the Tasks)**

The FLSAQ from Baralt and Gurzynski-Weiss (2011) designed to measure learners’ state anxiety as caused by task-based interaction in either the CMC or FTF modality. Given the diverse nature of state anxiety, which refers to the way in which a learner feels at a particular moment in response to a situation, it was necessary to measure learners’ anxiety throughout the process of the task. Two FLSAQ were used, one “during” questionnaire (Appendix H) was administered halfway through the task while the “after” questionnaire (Appendix I) was given upon completion of the task. The during and after FLSAQ differed in that the during questionnaire referred to the present time (e.g., “This task does not make me feel anxious”), while the after referred to the past (e.g., “I felt like I didn’t have enough time to think before I had to respond”).
Students were given approximately two minutes to complete each FLSAQ and a total of 15 items were presented on both questionnaires; a five-point Likert scale (from “strongly agree” to “strongly disagree”) was used in the questionnaires. All items presented on the FLSAQ focused on learners’ state anxiety during the task. The questionnaires included both positively (e.g., “I felt rushed during the task”) and negatively worded statements (e.g., “This task was fun and enjoyable”) in order to control for any bias introduced by the positive or negative nature of the statement.

**PROCEDURE**

Participants were introduced to the researcher who presented the study to the classes and handled all matters during the three sessions. Learners interacted with the same female researcher and the classroom teacher in all three sessions. Participants met three times as part of their regular class syllabus and participated in three interaction groups in a counterbalanced research design (Table 2) to control for sequence effects. There was a time limit of 25 minutes allotted for each of the three tasks; the researchers decided upon the time limit after piloting similar tasks in Spanish Intermediate classrooms where most dyads finished within this time frame.

**Table 2. Schedule of Task and Modes**

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<th>Session 1</th>
<th>Session 2</th>
<th>Session 3</th>
</tr>
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<tbody>
<tr>
<td>Class A</td>
<td>Family – FTF</td>
<td>Apartment – VCMC</td>
<td>Activities – WCMC</td>
</tr>
<tr>
<td>Class B</td>
<td>Apartment – VCMC</td>
<td>Activities – WCMC</td>
<td>Family – FTF</td>
</tr>
<tr>
<td>Class C</td>
<td>Activities – WCMC</td>
<td>Family – FTF</td>
<td>Apartment – VCMC</td>
</tr>
</tbody>
</table>

All three sessions took place in the LARC multimedia computer lab; each student sat in an individual desk with computers equipped with Skype video (for the VCMC group), messenger chatting (for the WCMC group) and the ability to record conversations in all groups. Students used the multi-media equipped computers to communicate with other students in the class and complete the tasks. Partners of VCMC and WCMC were seated far apart from each other in the computer lab while partners for the FTF control group were seated together and their chairs were set up to face each other. It had been decided that dyads would be used for this study due to the fact that pair work promotes maximum participation and gives both students more speaking time.
Participants were told the broad scope of the study and time was taken to answer questions although unnecessary detail about the study and research questions were omitted as to avoid affecting the participants’ performance. Each potential participant was given an informed consent letter and given time to review it. It was emphasized that the inclusion of their data in the study was optional and their data would be excluded from the results if they wished it to be for any reason. After the introduction to each session (one hour each), students were asked to review a PowerPoint tutorial. In addition, in the first session students were asked to complete the background questionnaire and the self-assessment questionnaire. In all three sessions, learners were given two minutes as warm-up time to assure their Skype connection. Upon reviewing the activity posted (jigsaw task), students initiated conversations with their partner in order to complete the designated tasks using different modes of communication; learners were asked to talk about their ideas and elaborate on their arguments in as much detail as possible. In all three sessions, participants were asked to complete the anxiety questionnaire halfway through the task and after the task in order to measure their anxiety during and immediately after the task. In session 3, after doing the designated task, participants were also asked to complete the task preference questionnaire.

**DATA ANALYSIS**

Conversations in the WCMC mode were the longest; approximately 30 conversations went over 20 minutes whereas the shortest conversation was just under ten minutes. In the VCMC mode, conversations ranged from 4 minutes to 17 minutes. Finally, in the FTF mode, conversations were between 3 minutes and 14 minutes long. The number of words and/or turns produced among participants was measured per minute due to the variability of time-on-task between each mode. Similarly, Baralt and Gurzynski-Weiss (2011) also tested whether time-on-task impacted learner state anxiety levels and found that time-on-task did not significantly influence learners’ state anxiety in the different modes.

Oral CMC and FTF conversations were fully transcribed and, subsequently, analyzed for number of words and number of turns per minute for each learner. As suggested by Yanguas (2010), words used in an attempt to communicate and negotiate meaning in the L2 as well as correct and incorrect vocabulary were included in the count. No repeated words in L2, and no spoken words in L1 nor fillers (such as *um, uh, yes*, and *so*) were counted. The
number of words by each interlocutor was carefully counted by hand. Rather than counting
each line of text as a turn, turns were manually counted each time there was an exchange of
words from one learner to the other (B. Smith, 2003) as long as there was a completed
utterance or statement of any length by a learner. This approach was taken because of the
difficulty of accurately distinguishing when a learner intended a new line to be a genuinely
new turn or when the new line simply reflected a highly individualized technique of
keyboarding (B. Smith, 2003). Some single turns were paused because the learner was
interrupted (see Appendix J: Excerpt 1, Participant B, Turn 2) or because the learner
continued to communicate after a short pause (see Appendix K: Excerpt 2, Participant 1,
Turn 1). Turns that contained no L2 utterances were not counted but rather, considered
interruptions even so, if an utterance contained a partial L2 word it was considered to be a
turn.

Excerpt 1 is a sample passage from a transcribed conversation that illustrates how
words and turns were counted. For participant A, turn 1 was counted as five words, turn 2
was counted as seven words, turn 3 was counted as four words and turn 4 was counted as 17
words. For participant B, turn 1 was counted as 19 words, turn 2 was counted as seven
words, turn 3 was counted as three words, and, finally, turn 4 was counted as four words.
Excerpt 2 is a sample passage that illustrates how words and turns were counted from a
WCMC conversation. For participant A, turn 1 was counted as nine words, turn 2 was
counted as ten words, turn 3 was counted as 14 words, and turn 4 was counted as eleven
words. For participant B, turn 1 was counted as six words, turn 2 was counted as six words,
and turn 3 was counted as 13 words.

Similar to Baralt and Gurzynski-Weiss (2011), the FLSAQ scores were calculated
for each participant for each of the six questionnaires they filled out (i.e., state anxiety during
FTF interaction, state anxiety after FTF interaction, state anxiety during VCMC interaction,
state anxiety after VCMC interaction, state anxiety during WCMC interaction, state anxiety
after WCMC interaction). The 15 statements from the state anxiety questionnaires were
coded for level of anxiety on scale of 1-5, producing a maximum score of 75 (highly
relaxed/low anxiety) and a minimum possible score of 15 (slightly relaxed/high anxiety) for
each questionnaire. Positive statements (e.g., “This task does not make me anxious”) were
given an anxiety score of 5 for “strongly agree” 4 for “agree,” 3 for “neutral,” 2 for
“disagree” and 1 for “strongly disagree,” whereas negatively worded statements (e.g., “I felt rushed during the task”) were scored in the opposite way, with a score of 1 for “strongly agree,” and an anxiety score of 5 for “strongly disagree.”
CHAPTER 4

RESULTS

As explained in previous sections, the main goals of the present study were twofold: on the one hand, to explore possible differences in interaction and, on the other hand, to investigate state anxiety during and after task-based communication in three different groups of L2 learner dyads: FTF, VCMC and WCMC. In this section, the findings that resulted from the analysis carried out will be presented according to the research questions posed in order to fully address each aspect of this study. Additionally, a descriptive analysis of the task preference questionnaire will be offered to gain further insight into learners’ interaction and anxiety during the different modes of communication.

RESEARCH QUESTION 1

Research Question 1: Are there any differences in the number of words and/or turns produced among participants in the groups?

In order to answer this research question, two one-way ANOVA analyses were carried out. Before running the analysis of variance, the histogram of the number of words spoken (Figure 8) and the histogram of number of turns (Figure 9) taken were evaluated. The histogram of the number of words did not show a normal curve and an outlier (64.82 words/minute) in the FTF mode was removed. The histogram of the number of turns revealed two outliers (13.11 turns/minute in the FTF mode and 10.43 turns/minute in the WCMC mode), which were also removed. All outliers were more than three standard deviations from the mean on the normal distribution curve. The calculated averages of participants’ words and turns taken in FTF as well as in the oral and the written CMC modality are reported in Table 3.

The first one-way ANOVA (Table 4) was conducted to compare the effect of mode on the number of spoken words in three conditions (FTF, VCMC, WCMC). Results showed a significant effect of the number of words spoken for mode for the three conditions, $F(2, 127) = 77.52, p < .001$. A post hoc test revealed that the significant difference in the number
Figure 8. Number of words/minute with outlier (left) and without outlier (right).

Figure 9. Number of turns/minute with outliers (left) and without outliers (right).

Table 3. Average Words/Minute and Turns/Minute According to Modality

<table>
<thead>
<tr>
<th></th>
<th>Words</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Low</td>
<td>High</td>
<td>Mean</td>
<td>SD</td>
<td>Low</td>
</tr>
<tr>
<td>FTF</td>
<td>20.64</td>
<td>7.37</td>
<td>7.58</td>
<td>34.79</td>
<td>3.79</td>
<td>1.17</td>
<td>2.35</td>
</tr>
<tr>
<td>VCMC</td>
<td>22.38</td>
<td>7.43</td>
<td>12.29</td>
<td>38.30</td>
<td>4.22</td>
<td>1.08</td>
<td>2.25</td>
</tr>
<tr>
<td>WCMC</td>
<td>7.02</td>
<td>4.29</td>
<td>2.45</td>
<td>19.00</td>
<td>2.75</td>
<td>1.97</td>
<td>.75</td>
</tr>
</tbody>
</table>
of words/minute shown above for mode was due to a difference in the number of words interchanged between the FTF group and the WCMC and also between the VCMC and the WCMC as displayed in Table 5. These results seem to suggest that modality may have an effect on the number of words produced by learners. In particular, it appears that L2 learners produce significantly more language when communicating orally.

Table 4. One-Way ANOVA Analyses for Words/Minute

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Mode</td>
<td>6402.021</td>
<td>2</td>
<td>3201.011</td>
<td>77.524</td>
</tr>
<tr>
<td>Within Mode</td>
<td>5243.904</td>
<td>127</td>
<td>41.291</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11645.926</td>
<td>129</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A second one-way ANOVA was computed with the number of turns/minute taken by participants to determine whether mode had a significant effect on the number of turns taken. Results (Table 6) showed a significant effect for mode for the three conditions, $F(2,127) = 11.51, p < .001$.

Table 6. One-Way ANOVA Analyses for Turns/Minute

<table>
<thead>
<tr>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Mode</td>
<td>51.292</td>
<td>2</td>
<td>25.649</td>
<td>11.505</td>
</tr>
<tr>
<td>Within Mode</td>
<td>283.087</td>
<td>127</td>
<td>2.229</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>334.380</td>
<td>129</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A post hoc analysis (Table 7) was used to identify where the significant difference was found among the modes: significant differences existed between the FTF group and the WCMC as well as between the VCMC and the WCMC group. Taken together, these results
Table 7. Multiple Comparisons

<table>
<thead>
<tr>
<th>level</th>
<th>level</th>
<th>Mean Difference</th>
<th>Std. Error</th>
<th>Sig.</th>
<th>95% Confidence Interval</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>FTF</td>
<td>VCMC</td>
<td>-.42629</td>
<td>.32985</td>
<td>.596</td>
<td>-1.2265</td>
</tr>
<tr>
<td>VCMC</td>
<td>WCMC</td>
<td>1.47179*</td>
<td>.31963</td>
<td>.000</td>
<td>.6963</td>
</tr>
<tr>
<td>WCMC</td>
<td>FTF</td>
<td>-1.04551*</td>
<td>.31545</td>
<td>.004</td>
<td>-1.8108</td>
</tr>
</tbody>
</table>

appear to suggest that modality may also have an effect on the number of times learners partake of the conversation. Specifically, the findings suggest that when L2 learners interact orally, they take more turns. There was no difference in words or turns between the FTF and VCMC modalities.

**Research Question 2**

Research Question 2: Does carrying out a task in three modalities have an effect on learners’ state anxiety?

Given that many students were unable to attend all three sessions during the present research, multiple imputations were carried out with the state anxiety scores: for anxiety during the task, twenty-seven values were imputed for the FTF mode, twenty-eight for the VCMC mode and twenty-nine for the WCMC mode; similarly, for anxiety after the task, twenty-seven values were imputed for the FTF, twenty-nine values for the VCMC mode and thirty-one for the WCMC mode. It is important to note that imputed values from an imputation model are not intended to create guesses as to what a particular missing value might be; rather, this modeling is intended to create an imputed data set which maintains the overall variability in the population while preserving relationship with other variables (Wayman, 2003). Furthermore, multiple imputation analyses have proven to be robust and provide adequate results in the presence of high rates of missing data.

Histograms of combined during task and after task state anxiety scores in the FTF, VCMC as well as WCMC modalities (Figure 10) were analyzed and all showed a normal distribution curve. As can be seen in Table 8, anxiety level means were very similar halfway through the task for FTF and VCMC and state anxiety in these oral modalities decreased after completing the tasks. Comfort levels in the WCMC mode were initially higher than the
Figure 10. State anxiety for FTF, VCMC and WCMC.

Table 8. Average Reported State Anxiety Scores According to Modality and Time

<table>
<thead>
<tr>
<th></th>
<th>During</th>
<th></th>
<th>After</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>FTF</td>
<td>49.50</td>
<td>9.69</td>
<td>51.22</td>
<td>9.35</td>
</tr>
<tr>
<td>VCMC</td>
<td>49.64</td>
<td>10.98</td>
<td>51.76</td>
<td>10.62</td>
</tr>
<tr>
<td>WCMC</td>
<td>54.45</td>
<td>8.67</td>
<td>56.08</td>
<td>8.55</td>
</tr>
</tbody>
</table>

FTF and VCMC anxiety levels, and also increased after the task. A repeated measures ANOVA was run in order to assess possible significant differences in state anxiety among participants in the different groups during and after the task. Mode (FTF, VCMC, WCMC) was entered as the between-subject variable and Time as the within-subject variable.

The analysis of variance yielded the following main effects: first, a significant difference was found for mode: $F(1,78) = 12.435, p = .001$ (Means: FTF= 50.36, SD = 9.51; VCMC= 50.70, SD = 10.80; WCMC= 55.27, SD = 8.61). Second, a further significant difference was found for time, $F(1,78) = 30.768, p < .001$. In other words, a significant difference between during and after the task scores for all three modes. The means scores for during and after the task for all three groups show a decrease in anxiety from during to after the task. Finally, as shown in Table 9, no significant effect was found for the interaction between Time and Group.

In order to further answer this research question and ascertain whether carrying out a task in different modalities significantly affect learners’ state anxiety, three paired sample t-test were conducted (Table 10) with combined state anxiety scores as dependent variables.
Table 9. Repeated Measures ANOVA

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task</td>
<td>1900.036</td>
<td>1</td>
<td>1900.036</td>
<td>12.435</td>
<td>.001</td>
</tr>
<tr>
<td>Time</td>
<td>394.750</td>
<td>1</td>
<td>394.750</td>
<td>30.768</td>
<td>.000</td>
</tr>
<tr>
<td>Task * Time</td>
<td>.169</td>
<td>1</td>
<td>.169</td>
<td>.021</td>
<td>.886</td>
</tr>
</tbody>
</table>

Table 10. Paired Sample Test

<table>
<thead>
<tr>
<th></th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTF - VCMC</td>
<td>-.236</td>
<td>78</td>
<td>.814</td>
</tr>
<tr>
<td>FTF - WCMC</td>
<td>-3.526</td>
<td>78</td>
<td>.001</td>
</tr>
<tr>
<td>VCMC - WCMC</td>
<td>-3.234</td>
<td>78</td>
<td>.002</td>
</tr>
</tbody>
</table>

and mode as independent variable (FTF vs. VCMC; FTF vs. WCMC; VCMC vs. WCMC). There was a significant difference, \( t(78) = -3.526, p = .001 \), in anxiety scores for the FTF (\( M = 100.72, SD = 18.32 \)) and WCMC (\( M = 110.53, SD = 16.70 \)) conditions. Similarly, results of this analysis showed a significant difference, \( t(78) = -3.234, p = .002 \), in anxiety scores for the VCMC (\( M = 101.40, SD = 21.12 \)) and WCMC (\( M = 110.53, SD = 16.70 \)) conditions.

In other words, these results suggest that participants in the FTF and VCMC group had significantly more anxiety than participants in the WCMC group. This statistically significant difference was not found between the FTF and VCMC group, though student reported slightly lower anxiety in the VCMC group. Specifically, the results show that anxiety increases when learners interact in oral communication rather than written CMC. Table 9 shows the descriptive statistics for the analysis carried out.

**RESULTS FROM BACKGROUND AND TASK PREFERENCE QUESTIONNAIRE**

Data from the background and task preference questionnaire revealed two interesting and noteworthy facts regarding learners experience with computers. First, the majority of students stated being familiar with computers and felt comfortable using a computer to communicate. Specifically, students reported spending an average of three hours on email, more than one hour of chatting through Instant Messenger, five hours on Social Networks
sites and approximately an additional hour and a half on the computer per week. Second, students appeared to prefer the WCMC modality for L2 communication (Table 11).

Table 11. Participants’ Reaction to Task Preference Questionnaire

<table>
<thead>
<tr>
<th></th>
<th>FTF</th>
<th>VCMC</th>
<th>WCMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy</td>
<td>27</td>
<td>27</td>
<td>33</td>
</tr>
<tr>
<td>Not Easy</td>
<td>15</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Neither</td>
<td>9</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Preferred</td>
<td>21</td>
<td>17</td>
<td>32</td>
</tr>
<tr>
<td>Didn’t Prefer</td>
<td>16</td>
<td>23</td>
<td>13</td>
</tr>
<tr>
<td>Neither</td>
<td>14</td>
<td>11</td>
<td>6</td>
</tr>
<tr>
<td>Learn</td>
<td>19</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>Didn’t Learn</td>
<td>13</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>Neither</td>
<td>19</td>
<td>17</td>
<td>13</td>
</tr>
</tbody>
</table>

To summarize the qualitative comments on the task preference questionnaire, learners found the WCMC modality to be the easiest and most preferred task. Learners stated having the same feeling of learning in the three modes.
CHAPTER 5

DISCUSSION AND LIMITATIONS

This study sought to investigate whether there are any significant differences in the number of words and/or turns produced among learners in the FTF, oral CMC and/or written CMC modes and also, if state anxiety is differentially mediated by the three modalities. Thus far, scarce research has empirically compared interaction (Yanguas, 2010, 2012) and anxiety (Arnold, 2007; Baralt & Gurzynski-Weiss, 2011) between the FTF and CMC modalities in SLA. Although it has been widely assumed that computer-mediated interaction could be an ideal medium for communication during L2 learning, specifically when used to reduce the negative effects of anxiety (Kern, 1995), it is necessary to consider the opposing arguments regarding the effects of modality advanced recent years.

Yanguas’ (2010) study found that learners’ interaction patterns in VCMC were very close to the patterns in FTF communication but opposite to those presented in WCMC interaction. Furthermore, Yanguas’ (2012) research explored differences in performance during a decision-making task between FTF and oral CMC (OCMC) groups. He showed that students in the OCMC group took significantly more turns than participants in the FTF group. This statistically significant difference was not found for number of words, though the VCMC group did produce more words than the FTF group. In Arnold’s (2007) preliminary study, students completed a discussion using FTF, synchronous and asynchronous CMC in order to investigate foreign language classroom anxiety. Nonetheless, the three groups displayed similar degrees of communication apprehension. Most recently, Baralt and Gurzynski-Weiss (2011) put into practice a FLSAQ to measure anxiety halfway throughout information-gap tasks in FTF and written CMC in order to investigate the effects of modality on learner anxiety. Similar to Arnold (2007), the results revealed the FTF and the written CMC modalities to be comparable in their effects on learner state anxiety. Report their findings, don’t include their tables. Additionally, Baralt and Gurzynski-Weiss analyzed student’s questionnaire feedback and concluded that learners held similar attitudes about the
FTF and the written CMC modes. Thus, overall, studies have shown that both modalities lead to interaction and are similarly comparable in their effect on learners’ state anxiety.

A descriptive analysis of word and turn counts in the present study revealed that L2 learners produce significantly more language and take more turns when communicating orally (FTF and VCMC) rather than written CMC (Figure 11). These results partially support the findings in previous interaction studies. Although interaction patterns were comparable in Yanguas (2010), the present study revealed more words spoken as well as turns taken in the oral modes than Yanguas (2012). It should be noted that Yanguas’ (2012) study utilized audio rather than video during oral CMC.

![Figure 11. Words produced and turns taken according to mode.](image)

Interestingly, however, despite students increase in interaction during oral communication, students appeared to be more anxious when interacting in oral communication and more comfortable in written communication (Figure 12). This analysis of the results contradicts the arguments posed by Baralt and Gurzynski-Weiss (2011) regarding anxiety in the oral CMC and WCMC mode. First and foremost, Baralt and Gurzynski-Weiss investigated anxiety during a task-based activity while learners interacted one-on-one with their language teacher whereas the present investigation studied learner-dyad interaction and anxiety.

Several interpretations of why the FTF and oral CMC modality resulted in higher interaction can be proposed. In oral communication, the main tool for practice is verbal language. Students are obligated to work toward mutual comprehension through spoken negotiation. More specially, learners negotiate for meaning to avoid misunderstandings and
amend statements by seeking clarification, checking comprehension, and requesting confirmation when conversational trouble occurs with the interlocutor. Therefore, negotiation triggers interactional adjustments by the L2 learner and oral communication may not only promote language production but also facilitates L2 acquisition. Furthermore, WCMC requires learners to write and read instead of actually verbalizing and listening during L2 interaction. Learners depend strictly on written language for understanding and communication and as a consequence, there is less need for interaction because rather than negotiating for meaning during miscommunication, students look over the conversation to seek clarification and check comprehension. The length of time on the activity can potentially explain the relationship between interaction and mode. Task time ranged between 3-17 minutes long in the oral modes whereas many conversations were over 20 minutes in the written mode. Students who negotiated verbally for meaning interacted more and, thus, reached a compromise more quickly. Those who communicated through written language focused on written communication and spent more time rereading to gain understanding. As students concentrated less on social interaction, more time was required to find a middle ground and complete the task.

Regarding anxiety levels, there are a couple of possible explanations as to why learners in the written CMC groups were less anxious than participants in either of the oral forms of communication. Firstly, the significant increase in anxiety during the FTF and VCMC suggest that oral communication might provide a more anxious environment. While FTF oral communication and VCMC entail the use of facial expressions and, possibly, body
language, WCMC provides a much-concealed learning space. Ho and McLeod (2008) found that CMC can alleviate the uncomfortable influences as well as help avoid some of the dysfunctional social-psychological influences found during first language FTF interaction; a similar interpretation can be made about anxiety during oral interaction versus written communication. Secondly, despite the fact that technology enters our daily routine though many multimedia devices, the foremost means of communication for students are written (e.g., email, text messages and social networks). Not surprisingly, participants reported being familiar with computer usage, especially chatting online. What is more, the WCMC modality was found to be the easiest and most preferred activity throughout the present study (Figure 13). Seeing that learners are more familiar with written forms of interaction, it is to be expected that participants experienced less anxiety during written CMC than in oral CMC.

As far as the relationship between interaction and anxiety in the three modes is concerned, the present results are very interesting. While most participants wrote in their questionnaire responses that WCMC caused less discomfort and the data from the state anxiety questionnaires did correlate with this opinion, the level of interaction was lowest in this mode. A possible interpretation of these results could be that feeling more at ease does not imply a greater quantity of language produced. Although many studies (Cheng, Horwitz, & Schallert, 1999; Horwitz, 1987, 2001; Horwitz et al., 1986; Krashen, 1982, 1985) have argued that anxiety is debilitating; that is, anxiety contributes directly to learners’ poor linguistic performance, other investigations have found more optimistic results. For example,
Sparks and Ganschow (1991) found anxiety does not affect learners’ success in learning a foreign language because L2 achievement is dependent solely on the learner’s skills and underlying cognitive abilities. According to this position, an affective variable like language anxiety does not directly influence language learning. Additionally, some researchers have argued that anxiety can facilitate language learning and pose a beneficial effect of anxiety on learning outcomes. Early research (Chastain, 1975) demonstrated that anxiety results in higher motivation and more effort and, hence, better learning outcomes. More recently, Spielman and Radnofsky (2001) provided insights into how certain kinds of language anxiety can lead to a positive learning experience. Likewise, it is plausible to conclude, based on the current findings, that students interact more orally, despite of emotional state and/or perceived feelings of tension and apprehension. Thus, it could be argued that anxiety can have a facilitating effect on learners’ success in learning a foreign language.

This study suggests that the modality used to implement tasks might facilitate learning for distinct students as well as address different learning goals. Primarily, taking into account learners’ individual differences, WCMC and oral communication tasks can be implemented according to student diverse needs and preferences. Despite the common belief that creating a low anxiety classroom atmosphere (e.g., Krashen & Terrell, 1983; Lozanov & Gateva, 1988; Young, 1990, 1999) facilitates language learning, some learners prefer the auxiliary arousal. For those who are less comfortable communicating on the spot, WCMC may provide a favorable environment due to the increased processing time and ability to review the conversation. At the same time, a student may prefer to use oral CMC for interaction in order to stay motivated, make use of gestures or improve speaking and listening comprehension. Language instructors can orientate the mode of communication according to the aim of the lesson. For example, WCMC may be used in order to enhance spelling and reading skills but surely, written CMC is not the best technological tool for fomenting L2 oral production skills (Dörnyei, 2005). Correspondingly, oral CMC is beneficial for speaking and listening practice. According to Yanguas (2012), if technology is to be used in the L2 classroom to practice and develop the communication skills needed to successfully interact in the L2, it should be done through oral CMC, or, similarly, FTF.

This study is not without limitations. These results should be tested with other cooperative learning tasks so that further conclusions can be drawn, especially since previous
investigations have revealed varying conclusions due to the type of task implemented. Additionally, the investigation focused exclusively on intermediate students and maintained a limited experimental group. As Rahimi and Yadollahi (2011) have noted, computer-mediated learning has different potential effects and benefits for learners depending on their L2 proficiency levels. The present study selected an intermediate language class for the investigation as it had been speculated that CMC may demand a large cognitive load and, also, may be an anxiety-inducer for beginner L2 students. Thus, the results from this study may not be applicable to students at other levels of L2 study. Lastly, students who participated in this investigation were from a university where technology is often applied to classroom learning and required for the course. The overall computer comfort level may be a relevant factor that might have had a consequence in the results shown here.
CHAPTER 6

CONCLUSION AND RECOMMENDATIONS

The current study sought to test two hypothesis; first, that interaction if higher during CMC and, secondly, that anxiety is lower in a CMC environment. The premise of this study was based on the differences between FTF communication, VCMC and WCMC.

Results demonstrated that students interact similarly in FTF and VCMC but much less in WCMC. Additionally, the findings revealed students to be more comfortable communicating in the WCMC mode than in the FTF or VCMC modalities. However, unlike the common-made assumption in the literature, this study showed that, although most participants stated that WCMC caused less anxiety and the data from the FLSAQ coincided with their perceptions, the level of interaction was lowest in this mode. Very interestingly, however, they tended to participate more (i.e., results showed a significant difference in the number of words spoken and turns taken) when using oral communication even though they felt more anxious. Finally, this study has shown a significant relationship between state anxiety as measured here, and language performance in the three modalities (Figure 14).

![Figure 14. Inversely proportional relationship between comfort and interaction.](image)
Still, more research is needed that evaluates both similarities and differences during task-based interaction in FTF and CMC and how these modalities mediate learner affective variables. Further research in these fields is necessary in order to benefit from the incorporation of CMC technology in the language learning classroom.

Several important pedagogical implications can be drawn from the present study’s results. Most importantly, it could be argued that, since learners seem to interact in L2 less when comfort increases, anxiety can operate as an affective factor that facilitates L2 learning in the classroom. Therefore, when choosing a mode of communication for L2 practice, instructors should focus on learners’ individual difference as well as the goal of the task.

In the future, a more diverse group of participants (i.e., beginners and advanced students) would help gain insight as to whether anxiety is facilitating throughout the language learning process. Similarly, testing a wide range of task-based activities would shed light on the benefits and/or disadvantage of such cooperative learning activities on interaction and anxiety during FTF, VCMC and WCMC. For example, using information-gap or gap-fill, especially those involving authentic materials, could reveal important differences in the outcome. Also, the present study only used the FLSAQ to gain insight on learners’ anxiety and comfort levels. Employing an introspective methodology could reveal more on how anxiety is affected by the FTF, oral CMC and WCMC modes from the learner’s perspective. Such a study would also be interesting, as it, like MacIntyre and Gardner (1994), could attempt to tie anxiety with learners’ input, processing and output in the FTF, oral CMC and WCMC modalities. Lastly, the present study explored the potential benefits of video CMC; however, audio CMC was not utilized during interaction. Future studies could greatly inform the field by exploring the potential benefits of video CMC as compared to audio CMC and FTF as well as written CMC.
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APPENDIX A

INFORMED CONSENT AGREEMENT
### Identification of project/title
Anxiety in a Task-based Computer-Mediated Communication (CMC) Context

### Statement of Age of Subject
You state that you are over 18 years of age and wish to voluntarily participate in a research study being conducted by Dr. Íñigo Yanguas and Gabriela Navarro in the Department of Spanish and Portuguese at San Diego State.

### Purpose
The purpose of this study is to investigate the relationship between anxiety and in computer-mediated communication (using Skype) and language acquisition in learners of Spanish at college level. Students who are over 18 years of age and who are enrolled in Spanish 201 are eligible to participate in this study.

### Procedures
The procedure involves three sessions, in which you will be asked to complete designated tasks with a partner using different modes of communication. All three sessions will take place at San Diego State Universities Language Acquisition Resource Center in the Multimedia computer lab (EBA410). Each student will sit in an individual desk which offer multimedia PC and Macintosh computers equipped with Skype video, messenger chatting and the ability to record face-to-face communication. Students will use the multi-media equipped computers to communicate with other students in the class and complete the tasks.

In session 1, before doing the designated task, you will be asked to take a background questionnaire. In session 2, before doing the designated task, you will be asked to take a self-evaluation survey. In session 3, after doing the designated task, the participant will be asked to take a task preference questionnaire. In all three sessions (50 minutes), the participant will be asked to take an anxiety questionnaire during and after the task.

### Tasks
Each activity will be part of the Spanish class and it works on skills you are practicing in this class and also as an aid to review for the test. You will be asked to participate in three activities using different modes; Messenger, Skype and Face-to-Face.

In the messenger mode, you will have to use chat in order to discuss different family options with a partner. You and a partner will each have specific personalities and living preferences, which you must share in order to arrive at the best living arrangement.

In the Skype mode, you will use Skype to discuss the different apartment options and try to arrive at a compromise that works for both of you. You will be able to make improvements to the home and plan to buy items for the apartment in order to satisfy at least four criteria for each of your necessities. In the face-to-face mode, you will be sitting next to each other when discussing the different activities and deciding on the three weekday activities and a weekend plan that is most suitable for both students without going over the 500 dollar budget.

### Confidentiality
All information collected in this study is anonymous. You will be identified only with the computer number you use. Your name will not be linked with your responses. Your name will not be used in any published materials or presentation.
### Risks
You may feel uncomfortable answering some of the questions during the sessions. You may also feel uncomfortable working with a partner. You do not have to answer any question you do not want to. You may discontinue participation temporarily or permanently.

### Benefits
Participation in this study will not benefit you personally. This study may help enrich the field of Second Language Acquisition, in particular the teaching and learning of Spanish in the US.

### Costs
You will not be paid to participate in this study. There is no cost to you for participation in this study.

### Voluntary Nature of Participation
Participation is voluntary. Your choice of whether to participate or not will not influence your future relations with SDSU. Participation will not affect your grade in class or relationship with any professors in the Spanish department. If you decide to participate you may choose to withdraw your consent and to stop your participation at any time without penalty or loss of benefits to which you are allowed.

### Contact Information of Investigators and Institutional Review Board.
If you have any questions about the research now, please ask. If you have questions later about the research, you may contact:

Íñigo Yanguas, PhD
Associate Professor of Spanish
Department of Spanish and Portuguese
San Diego State University
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Gabriela Irma Navarro
Graduate Student
Department of Spanish and Portuguese
San Diego State University
irmanavarro@gmail.com

If you have questions about your rights as a research subject or wish to report a research-related injury please contact:

IRB Administrative Office
Division of Research Administration and Technology Services
Graduate and Research Affairs
5500 Campanile Drive, MC 1643
San Diego State University
San Diego, CA 92182-1643 @
Voice: (619) 594-6622
Campus Location: Administration Building - Room 222

Date:
APPENDIX B

ORAL COMPUTER-MEDIATED COMMUNICATION TASK
Estudiante A
- Me gusta estar al aire libre y tener parques a mi alrededor.
- Necesitamos tener una oficina en casa.
- Debemos tener una habitación para las visitas.
- Es necesario que la casa tenga mucha luz y piscina.
- Necesita tener garaje.
- No necesito una habitación muy grande si tenemos un salón grande.
- Solo necesitamos tener un baño.
- Quiero colgar cuadros, tener persianas y decoraciones.
- No quiero pagar más de 800 euros al mes.

Estudiante B
- Quiero una casa con muchas habitaciones y un salón grande.
- Me gustan los pisos antiguos con escaleras de caracol.
- Quiero que este en el centro de Barcelona.
- Quiero un balcón.
- Necesito que tenga muebles en todas las habitaciones y el salón.
- No quiero comprar sábanas ni cortinas.
- Necesitamos al menos dos baños.
- Es necesario que tenga aire acondicionado, calefacción, y lavadora.
- Tiene que permitir animales.
1. **Precio 725 Euros con todos los gastos incluidos - Zona verde y mucha gente**
Piso en las afueras de Barcelona con jardín y piscina de cuatro habitaciones. La casa es perfecta para compartir con una familia pequeña. La casa tiene dos plantas, está muy bien decorada pero es un poco antigua. La casa tiene lavadora, pero no tiene aire acondicionado ni calefacción. La casa tiene sábanas, cortinas y plantas por el salón y todos los electrodomésticos necesarios para los compañeros de piso y visita. ¡Se puede incluir garaje por 100 euros más al mes!

2. **Precio: 850 – Euros - Zona cerca de un parque, muy tranquila**
Es un piso en un edificio antiguo con escaleras de caracol pero está reformado y tiene todo lo necesario dentro de la casa. 2 habitaciones, 2 baños, cocina grande y salón. Habitaciones pequeñas, están decoradas y tienen almohadas, cortinas, espejos, persianas, sábanas y pinturas colgadas en las paredes. Aparte del precio de la habitación, cada mes es necesario pagar los gastos de luz, gas, agua, teléfono e internet, que suelen ser de 30 euros.

3. **Precio: 950 Euros - Piso con mucha privacidad**
Ático con mucha luz, tres habitaciones grandes, 3 baños y gastos incluidos. El piso está en la mejor zona de Barcelona (el centro de la ciudad) y tiene un balcón enorme. Las habitaciones son grandes, con sábanas, almohadadas y decoraciones. Toda la casa tiene aire acondicionado, calefacción, lavadora y secadora. El salón es grande con chimenea y la cocina tiene todos los electrodomésticos. ¡Es una gran oportunidad para cualquier familia!

4. **Precio: 700 Euros - Edificio en centro de ciudad**
Casa pequeña con 2 habitaciones a cinco minutos del parque más famoso de Barcelona. Perfecto para compartir. Ascensor, calefacción, aire acondicionado, secadora, Internet, y TV en el salón. La cocina tiene todo lo necesario para cualquier persona que le guste cocinar. Se permiten gatos y perros. Se necesita pagar 100 euros al firmar el contrato para comprar algunas cosas, 50 euros para comprar cosas para el salón más 30 euros el mes para los gastos. Garaje 45 euros más por mes.

5. **600 Euros más gastos – Apartamento pequeño muy barato**
Apartamento con una habitación muy grande, y otra más pequeña ideal para una oficina, dos baños, cocina renovada, espaciosa y totalmente equipada. El salón cuenta con mucha luz ya que tiene un balcón y tiene todos los muebles. Una habitación tiene dos camas con sábanas nuevas, almohadas, cortinas modernas además de espejos y decoraciones. El salón necesita algunas reparaciones pero el dueño está dispuesto a renovar más.

6. **Casa privada con piscina - Precio: 880 euros con todos los gastos incluidos**
Casa moderna con cuatro habitaciones, dos baños cocina y salón pequeño. Es un piso muy luminoso con salón completamente equipado. La casa tiene pocas decoraciones pero el dueño puede comprar pinturas y cortinas. Zona muy tranquila, rodeada de parques y al lado del centro de Barcelona. Hay un parque privado con un estanque pequeño que tiene una cerca. La casa tiene calefacción central, teléfono e Internet pero se necesita reparar la lavadora. La cocina se renovará a lo largo del año. Garaje gratuito en el edificio.
APPENDIX C

WRITTEN COMPUTER-MEDIATED COMMUNICATION TASK
Estudiante A
- Eres estudiante de Relaciones Públicas, eres muy social y muy active.
- Te encanta el fútbol, ir de camping y sabes jugar al póquer.
- A ti y a tu novio les encanta Lionel Messi y son fanáticos del equipo de fútbol de Barcelona y de Los Ángeles.
- Mientras estás en San Diego, quieres conocer la cultura Americana, especialmente los restaurantes y los centros comerciales.
- En tu país hace mucho frío y mientras estás en San Diego necesitas aprovechar y disfrutar del mar.
- Te encanta esquiar y quieres conocer las montañas de California.
- No quieres visitar museos.
- Quieres ver algún partido y visitar parques para estar fuera al aire libre.

Estudiante B
- Has recibido una beca para visitar San Diego para mejorar tu inglés y quieres practicar lo máximo posible.
- Eres profesora de niños y te gusta vivir una vida muy tranquila.
- No puedes pasar un fin de semana de fiesta porque tienes que estudiar.
- En tu tiempo libre, te gusta hacer artesanía, jugar a las cartas y a las damas, leer muchos libros y trabajar en el jardín.
- Llevas una vida sana haciendo jogging, practicando ciclismo y levantado pesas.
- Te encantan los animales.
- No te gustan los deportes y no quieres ver partidos mientras estás en San Diego.
- Quieres ir al museo de marina de guerra porque te encantan los barcos y la marina.
<table>
<thead>
<tr>
<th><strong>Lunes</strong></th>
<th><strong>Martes</strong></th>
<th><strong>Miércoles</strong></th>
<th><strong>Jueves</strong></th>
<th><strong>Viernes</strong></th>
<th><strong>Sábado</strong></th>
<th><strong>Domingo</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Excursión al parque Balboa Park 2 pm</td>
<td>Jugar Partido de Básketbol 9am &amp; 2pm</td>
<td>Miércoles de Mezcla Ven a comer y a conocer compañeros!</td>
<td>Rebajas Ir de compras en centro comercial de UTC 9am &amp; 2pm</td>
<td>Película, conversación y comida 9:15am &amp; 1:15pm</td>
<td>Viaje a Big Bear Fin de semana perfecto para esquiar! 2 días, 1 noche $250/persona</td>
<td>Museo de Arte contemporáneo 9:00 am &amp; 2:00 pm</td>
</tr>
<tr>
<td>$5/persona</td>
<td>gratis</td>
<td>$12/persona</td>
<td>-----</td>
<td>$15/persona</td>
<td>$12/persona</td>
<td>-----</td>
</tr>
<tr>
<td>Cena con vistas a la playa de La Jolla 5:00 pm</td>
<td>Ver Partido de baloncesto de SDSU 6:00 pm</td>
<td>Miércoles de Mezcla Ven a comer y a conocer compañeros!</td>
<td>Sube a bordo del Ferry para visitar la isla de Coronado 2:00 pm</td>
<td>Campeonato de Fútbol entre estudiantes Ven a jugar, comer y a pasarlo bien. gratis</td>
<td>Viage a la ciudad de la fiesta! Las Vegas 2 días, 1 noche $225/persona</td>
<td>Viaje de aventura al Gran Cañón 2 días, 1 noche</td>
</tr>
<tr>
<td>$20/persona</td>
<td>$15/persona</td>
<td>$12/persona !</td>
<td>$15/persona</td>
<td>-----</td>
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</tr>
<tr>
<td>Vista al Museo USS Midway 9:00 am &amp; 12:00 pm</td>
<td>Ven a jugar a la raqueta 7:00 pm</td>
<td>Miércoles de Mezcla Ven a comer y a conocer compañeros!</td>
<td>Clase de artesanía Van a tejer, pintar y hacer pasarlo bien! 11am &amp; 3pm</td>
<td>Intercambio de idiomas con alumnos de SDSU 4:00 pm</td>
<td>Fin de semana en San Francisco 3 días, 2 noche $200/persona</td>
<td>¡Ven a conocer el mundo acuático! Sea World</td>
</tr>
<tr>
<td>$12/persona</td>
<td>-----</td>
<td>gratis</td>
<td>-----</td>
<td>$8/persona</td>
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APPENDIX D

FACE-TO-FACE TASK
**Estudiante A**

- Tiene 20 años, estudia Relaciones Internacionales y vive con sus padres y hermanos en casa.
- Tiene una familia muy numerosa y siempre cuida a sus hermanos pequeños.
- Es muy educada, simpática, chistosa y alegre
- Quiere vivir con una familia joven o con personas de su edad.
- No quiere vivir con personas jubiladas.
- Se describe como una persona organizada, limpia y responsable.
- Le encanta cocinar.
- Ha trabajado como profesora de Inglés en muchas escuelas de niños.
- Tiene experiencia trabajando con personas con discapacidades.

**Estudiante B**

- Tiene 32 años y estudia Derecho.
- Trabaja en una residencia de ancianos.
- Es muy trabajador y le gusta ayudar con la casa.
- Quiere tener una familia numerosa porque le encantan los niños.
- Tiene experiencia traduciendo para empresas.
- Mientras está en Costa Rica, quiere hablar con su familia sobre la cultura, el arte, la literatura y otros intereses.
- Se considera extrovertido, generoso y serio.
- Quiere vivir con una familia grande.
- No puede vivir con mucha gente que habla inglés.
Pareja joven busca ayuda con recién nacido
Rosana tiene 35 años, está casada y está embarazada. Rosana y su marido son profesores de inglés. Ahora, Rosana está en casa todo el día porque pronto tendrá una niña. Necesita un profesor para sus estudiantes. Le interesa el cine, la moda, la TV, las culturas extranjeras, hablar con los amigos, las lenguas, viajar y música. Rosana es agradable, honesta y un poco tímida. Ignacio, el marido de Rosana, tiene 33 años. A Ignacio le interesa la ópera, viajar, las lenguas, hablar con los amigos, la jardinería, las actividades al aire libre, las culturas extranjeras, la TV, el cine, fotografía, la música y el teatro. Es un hombre muy dinámico! Esta familia es amable y va a necesitar mucha ayuda!

Pareja con dos niños
Álvaro y Cristina tienen 56 años y ambos hablan español. Álvaro tiene una empresa, es muy trabajador y está orgulloso de su negocio. Álvaro puede ser serio y grosero pero es muy buena persona. Busca un traductor de inglés para su empresa. Cristina no trabaja y siempre está en casa con los niños. Le interesan las culturas extranjeras, las lenguas, la literatura pero pasa la mayoría de su tiempo cuidando de su familia. Álvaro y Cristina tienen dos hijos, Jorge y Alicia. Jorge tiene 14 años. Habla francés y español y quiere aprender inglés. Con esta familia los huéspedes pueden estar seguros de una experiencia alegre y llena de sorpresas.

Casa de estudiantes extranjeros necesitan tutores

Familia busca ayuda para un pariente con discapacidades
Susana tiene 60 años y está separada. Susana trabaja en un hospital pero está en casa varios días a la semana. Ella necesita a alguien en casa para preparar la comida, organizar la casa, estar con su sobrino y ayudar a su hijo con el inglés. Susana es muy simpática y generosa con los voluntarios. Ella siempre logra que los huéspedes estén muy cómodos. Carlos, el sobrino de Susana, tiene 38 años y vive con ella. Carlos está en casa varios días a la semana porque es discapacitado. Pablo, el hijo de Susana, tiene 24 años, es estudiante y estudia Medicina. Pablo no está en casa varios días a la semana porque pasa mucho tiempo con su novia. Susana y Carlos piensan que Beatriz es encantadora y será una gran nuera. Con esta familia lo más importante es ayudar a todos estar felices!

Pareja joven quiere aprender Inglés
María tiene 32 años. María es muy alegre, chistosa y extrovertida. José, el esposo de María, tiene 34 años. José es estudiante y pasa mucho tiempo en casa. María y José se interesan por el teatro, la música, la lectura, los deportes, y el cine. Quieren alguien en casa que ayude a limpiar y preparar las comidas. Roberto, un pariente de la pareja, pasa algunos días de la semana en casa. Roberto tiene 25 años y está divorciado. María, José y Roberto son muy responsables pero están muy ocupados. Con esta generosa pareja, los huéspedes se sentirán muy cómodos.

Abuela con adolescentes necesita profesor de Inglés
Carmen tiene 69 años y está jubilada. Carmen pasa en casa todo el día. Se interesa por la jardinería, cocinar, y por culturas extranjeras. Carmen es la abuela de Ana y Alberto, quienes todavía viven en casa. Ana tiene 16 años y quiere aprender inglés. Ana es una chica educada, agradable y simpática. Pasa la mayor parte del tiempo en la escuela. Alberto, el hermano de Ana, tiene 14 años y piensa que Ana es muy pesada. Javier también quiere aprender inglés. Javier está en el colegio la mayor parte del tiempo. ¿Le interesa hablar con los amigos, los deportes, y la música? ¡Con Carmen, Ana y Alberto los huéspedes pueden estar con una familia con mucho amor!
APPENDIX E

BACKGROUND INFORMATION

QUESTIONNAIRE
Please complete the following questionnaire and let the researchers know when you are finished.

A. Biographical and Background Information

(1) Student Number: _________________________
(2) Native language: _________________________
(3) What year in school are you? _________________________
(4) What is/are your current major(s)/minor(s): _______________________________
(5) What other languages have you studied and for how many semesters?
   Language: ____________________ Number of semesters: ___________________
   Language: ____________________ Number of semesters: ___________________
(6) Why are you taking Spanish? Please circle all reasons that apply.
   a) Career: _______________________________
   b) Fun
   c) Speak with friend/significant other
   d) Requirement
   e) Study abroad
   f) Other: _______________________________

B. Computer Use

(1) Are you comfortable using a computer to communicate with others (i.e., chat, e-mail, etc.)?
   a) I’m very comfortable
   b) I’m comfortable
   c) I’m not comfortable
   d) I’m very uncomfortable
(2) Do you enjoy using a computer to communicate with others (i.e., chat, e-mail, etc.)?
   a) I love it
   b) I like it fine
   c) Not so much
   d) I hate it
(3) Please indicate how much time you do each computer activity per week.
   a) E-mail ________ hrs/wk
   b) Instant messenger _______ hrs/wk
   c) Social networking (Facebook, MySpace, etc.) _______ hrs/wk
   d) Word processing _______ hrs/wk
   e) Other: _________________ _______ hrs/wk

b) Instant messenger _______ hrs/wk
   c) Social networking (Facebook, MySpace, etc.) _______ hrs/wk
   d) Word processing _______ hrs/wk
   e) Other: _________________ _______ hrs/wk
APPENDIX F

TASK PREFERENCES QUESTIONNAIRE
1. What were the **best and worst aspects** of completing the task **via messenger**?  
   Please explain in detail.

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

2. What were the **best and worst aspects** of completing the task **via Skype**?  
   Please explain in detail.

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

3. What were the **best and worst aspects** of completing the task **face-to-face**?  
   Please explain in detail.

___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________
___________________________________________________________________________

4. Please choose three adjectives to describe your experience completing the task **via messenger**:
   a) ____________________  
   b) ____________________  
   c) ____________________

5. Please choose three adjectives to describe your experience completing the task **via Skype**:
   a) ____________________  
   b) ____________________  
   c) ____________________

6. Please choose three adjectives to describe your experience completing the task **face-to-face**:
   a) ____________________  
   b) ____________________  
   c) ____________________
Instructions: Please circle if you strongly agree (SA), agree (A), neither agree nor disagree (N), disagree (D), or strongly disagree (SD) with each statement.

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<tbody>
<tr>
<td>7. Was it <strong>easier</strong> completing the task via messenger.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>8. Was it <strong>easier</strong> completing the task via Skype.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>9. Was it <strong>easier</strong> completing the task face-to-face.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>10. I preferred completing the task via messenger.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>11. I preferred completing the task via Skype.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>12. I preferred completing the task face-to-face.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>13. I feel I <strong>learned</strong> more in the chat mode.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>14. I feel I <strong>learned</strong> more in the Skype mode.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>15. I feel I <strong>learned</strong> more face-to-face.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>16. I feel my <strong>learning</strong> was not affected by the mode of communication.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
</tbody>
</table>

*Please return the completed questionnaire to the researchers.*

*Thank you for your participation*
APPENDIX G

SELF-ASSESSMENT OF SPANISH
LANGUAGE ABILITIES
Instructions: Please circle if you strongly agree (SA), agree (A), neither agree nor disagree (N), disagree (D), or strongly disagree (SD) with each statement.

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</thead>
<tbody>
<tr>
<td>1. When I hear Spanish, I try to understand.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>2. When I hear Spanish, I listen passively.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>3. When I speak Spanish, no one understands me</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>4. When I speak Spanish, I am understood, but it’s not perfect.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>5. When I speak Spanish, I don’t care about my accent.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>6. When I speak Spanish, I try to speak like a native.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>7. When I am speaking Spanish and I don’t know a word I want to say, I say it in English.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>8. When I am speaking Spanish and I don’t know a word I want to say, I try to explain it.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
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Please circle the best choice for you:

<p>| | | | | | |</p>
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<tbody>
<tr>
<td>9. When I hear Spanish, I usually understand Mostly all Some A little Don’t understand</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10. When I think about being in a Spanish speaking environment, I feel Excited Happy Normal Uncomfortable Nervous</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>11. Considering my experience learning Spanish, my listening skills are; Advanced High Intermediate Low Minimal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. When I interact in Spanish, I usually feel; Confident Fine Normal Nervous Frustrated</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Interaction in Spanish is; Fantastic Good Normal Difficult Frustrating</td>
<td></td>
<td></td>
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</tbody>
</table>
APPENDIX H

DURING FOREIGN LANGUAGE STATE
ANXIETY QUESTIONNAIRE
Instructions: Please circle if you strongly agree (SA), agree (A), neither agree nor disagree (N),
disagree (D), or strongly disagree (SD) with each statement.

1. am not bothered by my partner communicating quickly.
   | SA | A | N | D | SD |

2. I feel more anxious in class than completing this task.
   | SA | A | N | D | SD |

3. I get flustered when my partner communicated things I do not understand.
   | SA | A | N | D | SD |

4. I feel like I don’t have enough time to think before I have to respond.
   | SA | A | N | D | SD |

5. I feel rushed during the task.
   | SA | A | N | D | SD |

6. I feel confident in my ability to quickly learn new things in Spanish.
   | SA | A | N | D | SD |

7. I feel tense having to communicate with my partner.
   | SA | A | N | D | SD |

8. This task does not make me anxious.
   | SA | A | N | D | SD |

9. I am relaxed and comfortable completing the task.
   | SA | A | N | D | SD |

10. This task makes me less anxious than I feel in class.
    | SA | A | N | D | SD |

11. I feel like I have enough time to complete the task.
    | SA | A | N | D | SD |

12. This task is fun and enjoyable.
    | SA | A | N | D | SD |

13. It does not bother me when I do not understand everything my partner says.
    | SA | A | N | D | SD |

14. I am enjoying communicating with my partner during this task.
    | SA | A | N | D | SD |

15. This task is stressful for me.
    | SA | A | N | D | SD |
APPENDIX I

AFTER FOREIGN LANGUAGE STATE ANXIETY QUESTIONNAIRE
Instructions: Please circle if you strongly agree (SA), agree (A), neither agree nor disagree (N), disagree (D), or strongly disagree (SD) with each statement.

<table>
<thead>
<tr>
<th>1. I was not bothered by my partner communicating quickly.</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. I felt more anxious in class than completing this task.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>3. I got flustered when my partner communicated things I did not understand.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>4. I felt like I didn’t have enough time to think before I had to respond.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>5. I felt rushed during the task.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>6. I felt confident in my ability to quickly learn new things in Spanish.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>7. I felt tense having to communicate with my partner.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>8. This task did not make me anxious.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>9. I was relaxed and comfortable completing the task.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>10. This task made me less anxious than I feel in class.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>11. I feel like I had enough time to complete the task.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>12. This task was fun and enjoyable.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>13. It did not bother me when I did not understand everything my partner said.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>14. I enjoyed communicating with my partner during this task.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>15. This task was stressful for me.</td>
<td>SA</td>
<td>A</td>
<td>N</td>
<td>D</td>
<td>SD</td>
</tr>
</tbody>
</table>
APPENDIX J

EXCERPT 1: TRANSCRIBED CONVERSATION
Excerpt 1:

1 A: ¿Qué tipo apartamento tú quieras?
   [What type of apartment you want?]

1 B: Um, me quiero un apartamento (pause) con una oficina, y (pause) mucha luz y una piscine (pause) y (pause) es necesita tener un garaje.
   [Um, I want an apartment (pause) with (pause) and office, and (pause) a lot of light and a pool (pause) and (pause) it’s necesary to have a garaje.]

2 A: Bueno, apartamento número cuatro tiene un garaje.
   [Well, apartment number four has a garaje]

2 B: Si…
   [Yes…]

0 A: um
   [um]

2 B: Pero, pero, pero no tiene una piscine. (pause) Ok.
   [But, but, but it doesn’t have a pool. (pause) Ok.]

3 A: No (pause). No tiene un (pause) piscina.
   [No (pause) it doesn’t have a (pause) pool.]

3 B: ¿Qué tipo (pause) apartamento?
   [What type (pause) apartment?]

4 A: Um, quiero un balcón y (pause) me gustan los pisos antiguos con escaleras de caracol. Y tiene que permitir animals.
   [Um, I want a balcony and, (pause) I like classic apartments with spiral stair cases. And it has to allow animals.]

4 B: Oh (pause) si (pause) si. Um. Apart…número tres.
   [Oh (pause) yes (pause) yes. Um. Apart … number three.]
APPENDIX K

EXCERPT 2: TRANSCRIBED CONVERSATION
Excerpt 2:

1 A: Muy bien.
   [very good.]

   A: Que es la personalidad de tu persona?
   [What is your person’s personality.]

1 B: Tiene vente anos, yo educada, simpatico.
   [Is 20 years old, I educated, friendly.]

2 A: Tengo 32 anos. soy extrovertido, generoso, y serio.
   [I am 32 years old, I am extroverted, generous and serious.]

2 A: Que haces?
   [What do you do?]

2 B: No quiro vivir con personas jubiladas.
   [I don’t want to live with retired people.]

3 A: Si, no puedo vivir con mucha gente que habla ingles.
   [Yes, I can’t live with a lot of people that speak English]

   A: Familia uno o cinco?
   [Family one or five?]

3 B: Yo quire vivir con una familia joven o con personas de su edad.
   [I want to live with a young family or people my age.]

4 A: Familia tres?
   [Family three?]

   A: Quieres número uno "pareja joven" o "familia busca".
   [Do you want family one “Young couple” or “family seeks”.]