THE EFFECTS OF WRITTEN SYNCHRONOUS COMPUTER-MEDIATED COMMUNICATION ON GRAMMATICAL ACCURACY IN SPANISH

by

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A thesis submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Master of Arts in Foreign Languages and Pedagogy

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ABSTRACT

This study seeks to investigate how synchronous computer-mediated communication (SCMC) compares to face-to-face (F2F) interaction as a tool to develop oral grammatical accuracy in L2. Twenty four American college students studying third semester Spanish participated in a comparative experiment during one class period. The objective was to express doubt and certainty using either the present indicative or the subjunctive according to context. In the output part of the lesson, students were paired to complete interactive tasks: the control group communicated face-to-face, whereas the experimental group used Google Talk. The experiment culminated in both groups participating in an oral debate with their partners. Students also completed multiple-choice pre- and post- tests evaluating their learning of the subjunctive, as well as a final self-assessment survey. Statistical analysis of the tests and transcripts revealed that both groups showed increase in grammatical accuracy in discrete and open-ended tasks. While no significant differences were found between groups in the discrete tasks, the experimental group produced a third more statements using the subjunctive, used the targeted structure more accurately, and used a greater variety of expressions to communicate doubt and certainty in the open-ended tasks. The final self-assessment survey revealed that students in the experimental group felt slightly better-prepared for the final oral debate. In addition, the majority of students in both groups showed positive attitudes towards the experiment, giving reasons related to the development of grammatical accuracy, more effective use of class time,
and a better fit to different learning styles. Pedagogical implications are discussed, along with suggestions for future research.
Chapter 1

REVIEW OF RELATED LITERATURE

Introduction

Grammatical accuracy is essential to achieve advanced levels of L2 proficiency (Canale & Swain, 1980; Gao, 2001; Wilkins, 1976). Grammatical competence, which is one of the components of Canale and Swain’s (2010) Communicative Competence Model, involves the knowledge of the language code. The more the learner advances in proficiency, the more important grammatical accuracy becomes (Díaz-Rico & Weed, 2010).

Even though the importance of grammatical accuracy is widely recognized, the role and place of grammar instruction has been under debate for decades (Lock, 1997; Thornbury, 1999; Nunan, 1994; Terrell, 1991; Richards, 2002). The beliefs about grammar instruction have ranged from explicit to implicit teaching, with approaches in between. By emphasizing meaningful interaction in authentic contexts (Richards, 2006), Communicative Language Teaching (CLT) seeks to promote Communicative Competence, which is the implicit knowledge that allows the learner to know “when, where and how to use language appropriately” (Hymes, 1972). While CLT serves as a major source of influence on language teaching around the world (Richards, 2006), its lack of emphasis on grammatical accuracy in learner language production has been criticized by several authors (Widdowson, 1990; Schmidt, 1991; Hammerly, 1991; Fotos, 1994).
In the last few decades, Computer-Assisted Language Learning (CALL) has been gaining recognition as a tool for developing communicative competence while at the same time addressing the aforementioned issues of grammatical accuracy (Jung, 2005; Kern, Ware, & Warschauer, 2004). Research suggests that the benefits of CALL include exposure to authentic language and culture (Blake, 2001; Lee, 2000; Sun, 2003), possibility of individualized learning (Garrett, 1991; Lee, 2000), as well as increase in student participation and learner autonomy (Levine, Ferenz, and Reves, 2000; Padron & Waxman, 1996; Warschauer, 1997). Additionally, CALL has been shown to help students improve their grammatical accuracy, whether with lower-level activities or more communicative ones (Pérez, 2003; Liou, Wang & Hung-Yeh, 1992).

At a time when education increasingly takes place online¹, studies comparing technology with non-technology-enhanced instruction are timely and relevant. By means of a group comparison design, the present study seeks to investigate whether synchronous computer-mediated communication (SCMC) technology can improve grammatical accuracy in oral communication in a foreign language, and if it has a different impact than traditional face-to-face (F2F) interaction.

**SCMC and Second Language Acquisition**

As previously stated, Computer-Assisted Language Learning has pedagogical benefits for foreign language development. CALL has evolved along with teaching approaches² and has since the 90s entered an integrative phase paved by advances in technology and the rise of the sociocognitive approach in language learning. This new

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¹ In 2008, approximately 29% of US college students were enrolled in an online course (Allen & Seaman, 2008).
² For a comprehensive explanation of the evolution of CALL see Warschauer (2004).
phase is associated with Network-Based Language Teaching (NBLT), language teaching that involves computer-mediated communication (CMC) in global or local networks as well as globally linked hypertext (Warschauer & Kern, 2000).

Computer-mediated communication refers to any human communication achieved through, or with the help of, computer technology (Thurlow, Lengel & Tomic, 2004). CMC can be asynchronous (ACMC) and take the form of e-mails, blogs or messages on an internet board, or it can be synchronous (SCMC) and take the form of online chats and instant messaging applications such as Google Talk and iChat. While text-based CMC is more commonly used in educational environments, audio and video-based CMC is expanding thanks to increasing hardware and bandwidth availability (Nguyen, 2008). CMC can be used inside and outside of the classroom and allows students to interact with a wide range of both native and non-native speakers of the target language.

Recent interest in SCMC is associated with its resemblance to both spoken communication and written discourse, which positions it in a middle-ground with significant potential value for SLA (Blake, 2009; Kern, 1995; Skyes, 2005; Smith, 2005). Several studies have shown that discourse generated by SCMC and F2F share many features such as short turns, immediacy, spontaneity and lack of complexity (Crystal, 2001; Sauro, 2004; Sotillo, 2000). However, a particular noteworthy difference is conversational speed, which means that learners have more time to attend to language output in CMC (Blake, 2009; Kern, 1995; Smith, 2005). Moreover, SCMC does not usually pressure students to fill pauses like F2F does, which can lead to more lexico-grammatical complexity (Sotillo, 2000). In addition, CMC is often
“goal-oriented”, which is more likely to generate a deep level of cognitive processing and thus facilitate the development of L2 (Salaberry, 2000).

In the last few decades, it has been suggested that SCMC has a number of pedagogical benefits for language learning. SCMC increases participation and negotiation of meaning (Beauvois, 1998; Kern, 1995; Pratt & Sullivan, 1996; Warschauer, 1996, 1997), reduces anxiety (Kern, 1995; Satar & Ozdener, 2008), and increases student-directed learning (Peterson, 1997; Warschauer, 1997; Abrams, 2001; Kern, 2000; Sotillo 2000). Furthermore, students using SCMC participate more equally in activities (Chun, 1995; Kern, 1995; Warschauer, 1996), use more strategies (Payne & Whitney, 2002) and show more positive attitudes towards language learning (Beauvois, 1992, 1998).

While the potential benefits of SCMC for language instruction are well-documented, research on whether SCMC fosters grammatical development has yielded mixed results. In a study conducted with Spanish college students, Pellettieri (2000) found that SCMC interactions generate more repair work than F2F, which suggests a correlation between SCMC and the development of grammatical competence. According to Pellettieri, the increase in grammatical competence was due to SCMC allowing more time to think and thus fostering a form-focused interaction. Similar results were found in Salaberry’s study of the development of past tense in Spanish (2000). Salaberry found that the first signs of morphosyntactic development were more clearly identified in SCMC than in F2F and he suggested that the written interactional mode made the aspectual distinctions more salient.

Meanwhile, a study by Blake (2000) evaluating the potential of CMC in the classroom concluded that the negotiations promoted by SCMC were mostly lexical and only a
few were focused on syntactic aspects of language. This result throws into doubt the issue of SCMC as a tool for grammatical development. Five years later, Fiori (2005, p. 593) conducted a comparative experiment in which he examined the role that consciousness raising (CR) plays in grammatical development in SCMC. In his study, the group that was focused on form and meaning had a greater grammatical performance than the group that focused exclusively on meaning. Fiori’s findings suggest that SCMC presents a potential for grammatical development particularly when combined with a specific focus on form. These mixed results caution us about the pedagogical limitations of SCMC for grammatical development and highlight the need for further research in this area.

**SCMC to Focus on Form**

The above discussion suggests that the pedagogical benefit of SCMC for language development lies largely in its potential to provide opportunities for learners to focus on form. Focus on form refers to learners and teachers addressing formal features of language that play a role in the meanings that are negotiated (Long, 1991; Doughty & Verela, 1998). This is contrasted with a focus on formS, which emphasizes formal aspects rather than meaningful activities (Carter & Nunan, 2001).

Proponents of form-focused instruction (FFI) in meaning-focused second language teaching see it as beneficial and even essential for developing implicit L2 knowledge (Ellis, 2001, 2008; Doughty & Williams, 1998; Fotos & Nassaji, 2007). As Spada and Lightbown (2008) state, FFI helps students make more efficient use of

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3 Methods of focusing on form are conscious reflection, noticing the gap, hypothesis formulation and testing, meta-talk recasting, and typographical (visual) input enhancement (Schmidt, 2001).
their exposure to the sounds, words, and sentences of their target language. However, others have argued that the effects of FFI on acquisition are superficial and have not been confirmed (Krashen, 1993, 2003; Sheen & O’Neill, 2005). This debate has given way to a growing consensus that focus on form is beneficial in meaning-focused instruction (such as the communicative approach) (Spada & Lightbown, 2008).

The growing consensus about FFI on meaning-focused teaching has sparked discussion on when and how it is more productive to focus on form. Recent publications suggest that focus on form is especially beneficial when the targeted form is problematic (Williams, 2005). Furthermore, older learners and learners with high literacy and high L2 proficiency levels seem to benefit more from FFI (Spada & Lightbown, 2008). In addition, it is important to keep in mind learners’ styles and preferences (Brown, 2007; Schulz, 2001).

SCMC shows characteristics which afford the learners more time to focus on form and attend to language output, thus easing the problem of processing time pressure in L2 learning (Blake, 2000; Kern, 1995; Skyes, 2005). One of these characteristics is slower conversational speed, allowing learners to have more processing time while communicating and providing them with more control of the situation (Smith, 2003). Another characteristic of SCMC is the lack of pressure to fill pauses which lowers the affective filter (Beauvois, 1997). Additionally, the reduced memory load in the chatroom has been found to be beneficial, especially for learners with lower phonological working memory capacities (Payne and Ross, 2005). These three characteristics help naturally connect the “focus on meaning with a focus on form” (Salaberry, 2000).
While some researchers support that SCMC is conducive to focus on form, others are skeptical about its potential. Kern (1998), Thomas and Reinders (2010), and Sotillo (2000) state that the fact that students may consider SCMC an informal mode of communication where fluency is a priority can take away from the potential to create complex utterances and focus on form. Smith (2005) tried to explain this phenomenon postulating that since the chat log is available at any time, coherence and thus complexity may not be necessary for communication. These claims put into question the potential of SCMC as a learning tool and suggest that its informality may not lead to the focus on form that is necessary to developing accuracy in L2.

**SCMC Transfer to Oral Communication**

Chun (1994) was the first to suggest that the discursive cohesiveness and types of interaction observed in SCMC might transfer to oral conversation. Numerous studies investigating this potential cross-modality transfer suggest that using SCMC can be beneficial for increasing oral achievement since it leads to students producing a higher quantity of language (Abrams, 2003; Kern, 1995; Warschauer, 1996) as well as more complex language (Kern, 1995; Payne & Whitney, 2002; Sykes, 2005; Warschauer, 1996).

Even though some studies support the transfer of skills between SCMC and oral communication, others have yielded mixed results. In Abrams’ comparative experiment (2003) SCMC was found to be more productive than ACMC and F2F in the amount of words and communication units the students used in class discussions, but not in the complexity of the language produced. In another study conducted by Kost (2004) no significant differences in the development of oral or written language
proficiency were found between the control group (F2F) and the experimental group (SCMC). These inconclusive findings point to the need for further research to confirm or disprove the effects of SCMC on oral development.

It is important to note that many existing studies on SCMC showed limitations. A constraint of most studies is that they examine the topic from a pedagogical or sociolinguistic approach in a holistic way (Xu, 2005), and very few focus on examining the students’ actual learning and acquisition of a certain grammatical feature or structure through SCMC and its transferability to oral proficiency (Salaberry, 2000; Xu, 2005). Furthermore, often times the description of the SCMC task is not clear in order to confirm or disprove that SCMC is associated with effectiveness of L2 learning (Lin, Huang & Liou, 2013). Future studies should aim to overcome these limitations in order to provide a clearer picture of the effects of SCMC on language development.

The Spanish Subjunctive

As previously stated, a shortcoming of studies evaluating the effects of SCMC in the development of grammatical accuracy in L2 is that many have failed to isolate one particular structure. The present study will focus on the Spanish subjunctive, specifically as it is used when expressing doubt and certainty. The subjunctive poses difficulties for learners of Spanish who are native English speakers (Stokes & Krashen, 1990; Terrell et al., 1987). Mikulski (2006) differentiates six reasons that cause these difficulties: the status of the subjunctive in English, phonetic similarities, similarities in orthography and inflection, patterns, comprehensibility, and syntactic complexity.
The subjunctive is a verbal mood that indicates a semantically modal value. The Spanish subjunctive has two tenses (present and past) and it appears in syntactic constructions that can be divided into three main categories: complement clauses, relative clauses, and adjunct clauses. In Spanish textbooks, the categories are presented as noun clauses, adjectival clauses, and adverbial clauses (Zayas-Bazán et al. 2006).

A type of complement clause in the subjunctive is the dubitative, which follows the logic that what is doubted is not certain. In these situations, the presence of a negation changes the mood of the verb in the relative clause. For example:

1. Creen que los zoológicos son buenos para los animales
Believe (3pl) that the zoos are good (pl) for the (pl) animals.
Translation: They think that zoos are good for the animals.

2. No creen que las jaulas sean demasiado pequeñas
Not think (3pl) that the (pl) cages are (3pl, subj) too small (pl).
Translation: They do not think that the cages are too small.

The exception is the verb *dudar* (to doubt), which follows the opposite pattern because of its inherent negative meaning. On the other hand, *no dudar* has an inherent positive meaning.

In many textbooks, the dubitative clause is explained stating that the subjunctive is used when in doubt, as opposed to the indicative that is used when certain (which relates to another common explanation that the difference between these two moods is the difference between subjectivity and objectivity). A list of
common expressions that require the use of the subjunctive versus the indicative moods usually follows.

<table>
<thead>
<tr>
<th>Creer que</th>
<th>Estar seguro(a) de que</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pensar que</td>
<td>Ser cierto/verdad/obvio/evidente que</td>
</tr>
<tr>
<td>Suponer que</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dudar que</th>
<th>No estar seguro(a) que</th>
</tr>
</thead>
<tbody>
<tr>
<td>No creer que</td>
<td>No ser cierto/verdad/obvio/evidente que</td>
</tr>
<tr>
<td>No pensar que</td>
<td></td>
</tr>
<tr>
<td>No suponer que</td>
<td></td>
</tr>
</tbody>
</table>


The subjunctive has very similar orthography to the indicative, which makes the vowels that represent it as a verbal inflection to likely be ambiguous to learners (for example: *baila* – 3rd person sing. indicative; *coma* – 1st or 3rd person sing. subjunctive) (Collentine, 2014). Since the Spanish subjunctive lacks perceptual saliency (Leow et al 2003), learners usually rely on lexical cues like the aforementioned expressions of doubt and certainty to interpret modality (Sanchez Naranjo, 2009). Collentine (2003) noted that learners of Spanish did not seem to notice subjunctive inflections in input. Furthermore, Lee (1987) and Leow (1995) found that learners did not notice the subjunctive even when the passage around it was morphosyntactically simplified, and Leow (2003) observed that making the form salient did not help students notice it either. Gallego (2010) and Correa (2011) have
proposed that metalinguistic knowledge of the subjunctive may be necessary for the development of the Spanish subjunctive.

In view of the documented benefits of SCMC in helping students focus on form and achieve higher levels of accuracy in L2, it would be interesting to explore its impact on the acquisition of a challenging (and difficult to notice) structure like the subjunctive. The present study therefore, seeks to investigate how SCMC compares to F2F interaction as a tool to develop oral grammatical accuracy, focusing on the Spanish subjunctive to express doubt and certainty. The results will benefit both foreign language students and instructors by providing information about the effects of different modes of communication and by offering suggestions as to which mode is more productive in enhancing students´ development of Spanish.
Chapter 2

THE PRESENT STUDY

Research Questions

The present study builds upon the previous work with the goal of better understanding the effects of SCMC versus F2F on foreign language development, specifically on the accuracy of a new grammatical structure. The following questions will be explored:

1. How does written SCMC compare to F2F in terms of its impact on the choice of the subjunctive or the indicative to express doubt and certainty according to context?

2. How does SCMC compare to F2F in terms of its impact on the frequency and accuracy of subjunctive use among learners of Spanish during oral tasks?

3. How does participating in a SCMC activity versus in a F2F activity impact students’ perceptions of their preparation for an oral task?

4. How do students perceive the use of SCMC technology in a FL course? What are their impressions of the experiment?

Methods and Procedures

A classroom experiment using a group comparison design was used to identify similarities and differences between the traditional F2F classroom setting and the SCMC environment. A group comparison design was chosen because the two groups
were exposed to a different learning condition that may result in different performance (Mertler, 2013, pp. 85-123). In order to explore the implications of using F2F versus SCMC in output activities and compare success rates among students learning the Spanish subjunctive, this study relied on quantitative research methods. The participants were 24 students (17 females and 7 males) between the age of 19 and 22 studying intermediate Spanish at the University of Delaware. This course is the third in a sequence of three taken to fulfill the foreign language requirement at this university. Students were informed of the experiment 2 weeks in advance and signed a consent form to participate as volunteers. The last four digits of the student identification number were used to guarantee the anonymity of the responses. In order to control the effect of self-selection, students were randomly assigned to either the control or the experimental group.

The experiment took place in the fall of 2013 during a regular class period, and lasted 50 minutes. The communicative objective of the class was expressing doubt and certainty, and the linguistic objective was the distinction between the present subjunctive and the indicative.

The experiment was conducted in six steps:

Step 1 (data collection 1): students completed a 5-item multiple choice pre-test (Appendix B: Pre- and Post- Tests).

Step 2 (introduction): The objective of the class was presented using the communicative approach, and it was followed by structured input and output activities from Exploraciones (pp. 422-424).

Step 3 (data collection 2): Half of the students (the control group) performed two output activities face to face as usual, and the other half (the experimental group)
performed the same activities using *Google Talk* (Gmail’s IM/chat) (10 minutes). Both groups worked in pairs. Data collection took place in the form of *Google Talk* chat transcripts and audio recordings using the open source audio editor *Audacity*.

Step 4 (data collection 3): Students from both groups performed the same oral culminating activity (“debate about zoos”) working in pairs. This activity was one of the assessments (5 minutes). The conversations were recorded using *Audacity* and then transcribed.

Step 5 (data collection 4): students completed a 5-item multiple choice post-test equivalent to the one used in Step 1.

Step 6 (data collection 5): The students filled-out a short survey regarding their perceived level of preparedness and performance in the culminating activity and their opinions on using or not using chats in their foreign language class.

Pre- and post-tests scores were statistically compared to determine the magnitude and significance of changes resulting from the different interactional modes. The chat and conversation transcripts were analyzed for overall quantity of target language production, as well as quantity and quality of production of the targeted form. Results from the final survey were also analyzed and used to see the difference in self-efficacy perceptions as well as students’ perceptions about the experiment.

**Limitations**

It is important to note the limitations of this study. First of all, the small sample size reduced the possibilities of finding differences between the two groups. Smaller samples can also be highly affected by outliers, which can lead to finding
effects that do not exist (type 1 errors) or not finding effects that do. A wide range of variability was found in the frequency counts of the pairs of students participating in the output activities. The wide range of variability happened in both groups and it is reflective of the uneven level of students’ ability in this type of foreign language requirement course.

Another limitation of this experiment was its length. The length was a limitation since studies have shown that it takes time for students to adjust to a new mode of instruction (Arvan & Musumeci, 2000; Sagarra & Zapata, 2008; Ushida, 2005). Even though SCMC is part of students’ everyday lives nowadays, chatting in a foreign language is not. It is therefore possible that the time span could have diminished the results. It would be ideal to conduct a longitudinal evaluation of students’ progress to see if there is a difference in their grammatical accuracy and communication skills from the beginning to the end of the semester.

It is also important to note that the results of the present study are limited to the use of SCMC versus F2F activities and measure L2 use and grammatical accuracy of students in a third semester Spanish class part of a university language requirement. The results are not intended to be generalized to other forms of technology, kinds of instruction, or other areas of L2 learning.

Future studies with larger sample and a longitudinal scope would provide a deeper insight on the instructional effects of F2F versus SCMC. First of all, a larger sample size would increase statistical power. Furthermore, longitudinal studies would account for students getting used to the new environment and offer insight into the long-term effects of different instructional modes. Finally, these studies would more
accurately showcase students’ attitudes towards the use of online chats in the foreign language classroom.
Chapter 3

RESULTS

Analysis of the Data

Performance on the Pre- and Post-Tests

The first step in the analysis was to determine the effect of the experiment on the performance of students on the pre- and post-tests. To begin the analysis, basic descriptive statistics were calculated to identify preliminary trends. These calculations are presented in Tables 1 and 2. Students in the control group correctly answered an average of 3.5 multiple-choice items out of five in the pre-test, and 4.08 in the post-test. Students in the experimental group correctly answered 3.25 on average at the beginning of the class, and 4.5 at the end. The similar mean in both pre-tests suggests that both groups were comparable. These figures indicate that both groups showed increase in the number of correct answers in the post-test.

Table 1: Descriptive statistics (control group)

<table>
<thead>
<tr>
<th>Pre-test results</th>
<th>Post-test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.5</td>
</tr>
<tr>
<td>Median</td>
<td>3.5</td>
</tr>
<tr>
<td>Mode</td>
<td>3.4</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Table 2: Descriptive statistics (experimental group)

<table>
<thead>
<tr>
<th></th>
<th>Pre-test results</th>
<th>Post-test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.25</td>
<td>4.5</td>
</tr>
<tr>
<td>Median</td>
<td>3</td>
<td>4.5</td>
</tr>
<tr>
<td>Mode</td>
<td>3</td>
<td>4.5</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>1.28</td>
<td>0.52</td>
</tr>
</tbody>
</table>

Even though both groups showed an increase in the number of correct answers in the post-test, Table 3 indicates that the experimental group showed a higher increase (17 more correct items total in the post-test) than the control group (7 more correct items total). In percentages, the experimental group had a 28.33% increase, and the control group an 11.66% increase, which indicates that the experimental group answered 16.67% more correct items in the post-test.

Table 3: Average gains in the two groups (5 items in both tests)

<table>
<thead>
<tr>
<th>Students</th>
<th>Control group</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>-1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>-1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>-2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Total gain:</td>
<td>7</td>
<td>17</td>
</tr>
</tbody>
</table>

A two-tailed t-test was conducted in order to determine whether the previous findings were statistically significant. The t-test resulted in a p value of 0.182454,
which was not smaller than the critical value of the t table for 0.05 significance at 22 degrees of freedom. This means that the null hypothesis could not be rejected; in other words, the difference was not found to be statistically significant.

*Output Activities and Final Debate*

The second step was to determine how written SCMC compared to F2F in the quantity of TL production as well as in the quantity and accuracy of the targeted structure. The oral and chat transcripts were analyzed to accomplish this goal.

As indicated in Table 4, the control group produced almost double the number of words and communication units (c-units) as the experimental group in the output activities. However, no significant differences were found in the number of words and c-units in the final debate.

Table 4: Number of words and c-units in the output activities and the final debate

<table>
<thead>
<tr>
<th></th>
<th>Control group (in pairs)</th>
<th>Experimental group (in pairs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Activities</td>
<td>Debate</td>
</tr>
<tr>
<td>Words</td>
<td>1764</td>
<td>807</td>
</tr>
<tr>
<td>C-units</td>
<td>299</td>
<td>129</td>
</tr>
</tbody>
</table>

Differences were also found in the number of times the communicative objective “Expressing Doubt and Certainty” using the targeted structures was used, with the experimental group showing 16% more use overall (Table 5). The experimental group also produced almost a third more statements using the subjunctive than the control group (31% increase), and the use of the subjunctive was considerably more accurate (43.48 % increase). It is important to note that the
structures were considered correct when students used the right mode even if there were errors not related to the pedagogical focus of the class (such as *ser* versus *estar*).

Table 5: Number of times students expressed doubt and certainty using the targeted forms

<table>
<thead>
<tr>
<th></th>
<th>Control group (in pairs)</th>
<th>Experimental group (in pairs)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Indicative</td>
<td>Subjunctive</td>
</tr>
<tr>
<td>Correct</td>
<td>37</td>
<td>13</td>
</tr>
<tr>
<td>Incorrect</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>52</strong></td>
<td><strong>20</strong></td>
</tr>
</tbody>
</table>

Another significant finding is the variety of expressions of doubt and certainty that students used. Table 6 provides the comprehensive list. Only 3 expressions were used to express certainty in the control group, whereas in the chats students used five (66.6% increase). To express doubt the control group used two expressions, whereas the experimental group used four (100% increase).

Table 6: Expressions used to express certainty and doubt

<table>
<thead>
<tr>
<th>Certainty</th>
<th>Experimental group</th>
<th>Uncertainty</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pienso que</td>
<td>Pienso que</td>
<td>Dudo que</td>
<td>Dudo que</td>
</tr>
<tr>
<td>Creo que</td>
<td>Creo que</td>
<td>No pienso que</td>
<td>No pienso que</td>
</tr>
<tr>
<td>Es obvio que</td>
<td>Es obvio que</td>
<td>No supongo que</td>
<td>No supongo que</td>
</tr>
<tr>
<td></td>
<td>Es cierto que</td>
<td></td>
<td>No es evidente que</td>
</tr>
<tr>
<td></td>
<td>Supongo que</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The use of the targeted forms in the final debate was similar to the overall use (see Table 7).
Table 7: Use of the targeted forms in the final debate about zoos

<table>
<thead>
<tr>
<th>Control group (in pairs)</th>
<th>Indicative</th>
<th>Subjunctive</th>
<th>Experimental group (in pairs)</th>
<th>Indicative</th>
<th>Subjunctive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td>20</td>
<td>7</td>
<td>17</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Incorrect</td>
<td>7</td>
<td>2</td>
<td>5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>27</td>
<td>9</td>
<td>23</td>
<td>12</td>
<td></td>
</tr>
</tbody>
</table>

Qualitative differences were also found related to the use of L1. Students in the experimental group produced all utterances in Spanish in the chats, and rarely used L1 in the final debate. This contrasts with the fact that those in the control group spoke English both in the activities and in the final debate. Most L1 interventions were found to be caused by gaps in the interlanguage, the dynamic linguistic system of someone learning a foreign language. When students did not know or were not sure how to say something in Spanish, they immediately asked their peer, and this interaction was in English. This frequent request for guidance and collaboration suggests intensive use of the monitor, which implies conscious learning and a concern with accurate use of the language. The control group also used L1 for making comments that ranged from topics such as the pictures in the slides, their level of tiredness, and to talk about the topic of the class with more advanced language than their Spanish level (eg: to talk about their experiences visiting zoos).

There were also differences in the resources used by students in each group. While students in the control group used each other as resources and asked their instructor questions while doing the activities, students in the experimental group used the dictionary and book and were focused on their screen. The aforementioned use of resources shows independent learning in the experimental group and collaborative
learning in the control group. On the few occasions that students in the experimental group asked each other for help they accompanied the question with an emoticon to add nonverbal communication cues to the online chat conversation. When their peers answered their questions or corrected them in the chat they did so by using “creo que” and another emoticon of a smile or wink in an effort to be cordial. In addition, emoticons were used when starting the conversation (e.g., *Hola!* 😊) and to illustrate the animals they were talking about.

*Students’ Perceptions*

The last step was to analyze the final survey to determine how participating in a SCMC versus a F2F activity impacted students’ perceptions of their preparation for the final debate, in addition to discovering their impressions of the use of SCMC in a FL course. As Table 8 shows, the average of students’ self-assessments of their preparation and performance ranged between 3 and 4 (on a scale of 1 to 5, where 5 was the highest). In both groups, the average rating for preparation was higher than the average rating for performance, and none of the students selected 5 for performance. The preparation rating was slightly higher for the experimental group, which could suggest that SCMC leads to higher levels of self-efficacy. However, no difference between the two groups was found in the performance rating.

Table 8: Average students’ self-perceptions of their preparation and performance (based on a scale from 1 to 5)

<table>
<thead>
<tr>
<th></th>
<th>Control group</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation</td>
<td>3.5</td>
<td>3.91</td>
</tr>
<tr>
<td>Performance</td>
<td>3.33</td>
<td>3.41</td>
</tr>
</tbody>
</table>
The last question of the survey asked whether students would like to participate in online chats (for the first time for the control group, and again for the experimental group) in the future. The results of this analysis are presented in Table 9.

In the control group, 75% of the students said they would like to be part of an online chat activity. In the experimental group, 66.6% of the students said they would like to do it again. These percentages indicate that the majority of students in both groups showed positive attitudes towards the use of chats in the foreign language classroom.

Table 9: Answers to the questions asking whether students in the control group would like to use chats in Spanish class in the future and whether students in the experimental group would like to participate in chat activities again

<table>
<thead>
<tr>
<th></th>
<th>Control group</th>
<th>Experimental group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>12</td>
</tr>
</tbody>
</table>

Reasons for students’ observations on the use of online chats in the foreign language classroom were related to the development of accuracy, effective use of class time, and different learning styles. Some students expressing positive perceptions of online chats commented on SCMC allowing them to focus on form and that being beneficial for retaining information and performing well on foreign language tests:

“It was easier to see the question and it gave more time to familiarize with sentence structure, grammar + vocab to make more of a chance of a correct answer.”

“I think it would help me to have more time to focus on grammar and spelling and that is important for the test”
Other students expressed their preference for online chats explaining that writing fit their learning style better:

“I feel more comfortable writing. It is hard to formulate my thought aloud, especially when i feel like someone is evaluating me.”

Finally, some students commented on the benefits of SCMC for promoting interaction and a fun atmosphere in the foreign language classroom:

“It fostered interaction between my classmates and helped me to retain the information”

“Fue muy divertida y diferente.”

Even though most students expressed positive perceptions of online chats, there were a few that expressed negative opinions about it, giving reasons related to their learning style and their preference for spending class time speaking instead of writing. These students expressed that:

“I like talking more than writing”

“It's easier to discuss with someone in person rather than over a chat.”

“Because I only get to practice my conversational Spanish when I’m in class.”

In addition, one student in the experimental group commented on the potentially problematic aspect of technology not working properly. This speaks for the limitations of SCMC in the classroom and is connected with the aforementioned issue of students needing time to adjust to a new learning environment. In the words of one of the students:

“I didn’t think it was helpful. Technical difficulties can occur often and I think working orally is better for class.”
**Discussion of the Results**

This study builds upon previous work with the aim to better understand the effects of SCMC versus F2F on foreign language development, specifically on the use and accuracy of the Spanish subjunctive to express doubt and certainty.

Research question 1 focused on how written SCMC compares to F2F in terms of its impact on the choice of the subjunctive or the indicative to express doubt and certainty according to context. The analysis of the results of the pre- and post-tests revealed that both groups showed increases in the number of correct answers. While the experimental group exhibited a higher increase in grammatical accuracy in the discrete tasks, the difference between the two groups was not found to be statistically significant. This may be due to a number of different reasons: a) both environments being conductive to L2 learning; b) limitations of the study, especially to those related to small sample size and learners getting used to the new online environment; c) the testing instrument not being precise enough, or d) students answering the post-test quickly in order to get out of class.

The outcome of this part of the study brings to light the need for further research on the use of SCMC to learn grammar in the classroom. As gains following SCMC interaction were higher than those following F2F, but were not statistically significant, future studies should aim to support or challenge such claims. One way of increasing the accuracy of the results would be using more precise testing instruments. Another way of improving the design of the study would be to take into account any prior knowledge of the targeted structure that students had before the
classroom session, in order to differentiate between the gain from instruction and the gain related to previous experiences.

Research question 2 aimed to explore how SCMC compared to F2F for the purpose of acquiring and accurately using the subjunctive in an oral debate. Overall, the outcome was that oral proficiency development was higher in the experimental group. Students in this group showed a higher use of the communicative objective, more variety of the expressions attached to it (expressing doubt and certainty), as well as a higher and more accurate use of the present subjunctive. This can be attributed to the fact that a particularly noteworthy difference between SCMC and F2F is conversational speed, which affords learners more time to attend to L2 form in language output in CMC (Blake, 2009; Kern, 1995; Smith, 2005). Another significant finding was the almost exclusive use of L2 in the instant messages, a key component of the communicative approach. It is also important to note that even though instant messaging exhibited less verbal density than the F2F equivalent in the preparation activities, both groups showed comparable verbal density in the final debate. This disputes previous claims about SCMC leading to students producing a higher quantity of language (Abrams, 2003; Kern, 1995; Warschauer, 1996).

Overall, the findings align with the research that supports SCMC as a tool to advance grammar negotiation and output accuracy (Abrams 2003; Pellettieri 2000; Salaberry 2000) and produces more complex language (Kern, 1995; Payne & Whitney, 2002; Sykes, 2005; Warschauer, 1996). Moreover, the results suggest that SCMC is superior to F2F with it comes to oral development, which is a consistent finding with previous studies (Kern, 2000; Payne & Whitney 2002; Payne & Ross, 2005) and lends further support to the idea that SCMC is suitable to be used as a
preliminary step towards F2F interaction. By allowing students more practice of new forms and skills, SCMC may help prepare them for the next level of foreign language proficiency. This advantage of using new forms in the target language is important since it prevents fossilization, a common issue among Spanish college students in the US attempting to reach the Advanced-Low level in the ACTFL proficiency guidelines.  

Research question 3 explored how participating in a SCMC versus a F2F activity impacted students’ perceptions of their preparation for the culminating task. This is related to the concept of self-efficacy introduced by psychologist Albert Bandura in 1977 who refers to self-beliefs that enable individuals to exercise control over their thoughts, feelings, and actions. Self-efficacy has also been discussed in relation to learners’ affective factors having a debilitating effect on anxiety and strengthening motivation (Kitano, 2001; MacIntyre, Baker, Clément, and Donovan, 2002). Language learning is one of the many areas in which the influence of self-efficacy has been studied, with research findings showing that it can influence academic behaviors and is a powerful predictor of foreign language achievement (Dörnyei, 1994; Mills, Pajares, & Herron, 2007). In his study about the impact of individualized tutoring sessions on students’ self-efficacy, Matthews (2010) found that learners with higher self-efficacy levels showed greater persistence in the face of difficulty, more effort, and better use of learning strategies. From a pedagogical point

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4 In recent years, agencies such as NCATE (National Council for Accreditation of Teacher Education) are increasingly requiring candidates to reach at least the Advanced-Low level of proficiency in the ACTFL scale in order to obtain teacher certification. However, numbers show that less than half of the students majoring in foreign languages in the US reach this proficiency level upon graduation (Swender, 2003).
of view, assessing self-efficacy is useful to evaluate the influence of a new pedagogical approach or intervention on students’ self-efficacy (pre versus post) and students’ perceived competence in the course objectives (Mills, 2007).

The analysis of students’ reported perceptions of their preparation and performance yielded no significant differences between the two groups. The averages ranged between 3 and 4 (on a scale of 1 to 5, where 5 was the highest) and there was no wide range of variability. In both groups, the average for preparation was higher than the average for performance, and none of the students selected 5 for performance. While the preparation rating was slightly higher for the experimental group, no difference between the two groups was found in the performance rating. The preparation rate could suggest that SCMC could lead to higher levels of self-efficacy in the experimental group, but the difference was not statistically significant, so further studies are needed to advance or disprove this preliminary claim. The similar results in both groups could be due to both modes of communication producing similar outcomes in this area, due to individual differences, to students not being comfortable giving themselves a grade that is too high or too low, or it could just be the product of students filling the survey out quickly in order to get out of class. Future studies should incorporate a survey at the beginning to measure how perceptions change as a result of the experiment; longer studies should research this topic longitudinally.

Research question 4 aimed to find students’ impressions of the use of SCMC technology in a FL course. Students’ impressions of instructional modes are relevant since they affect two of the most critical factors for language learning: attitude and
motivation (Dörnyei, 2001). Motivation is held as both a condition for, and a result of, effective instruction (Winne & Marx, 1989). This means that it plays an important role in successful technology-enhanced instruction and, if used effectively, the CALL environment can boost students' motivation to learn a foreign language (Ushida, 2005). The majority of students in both groups showed positive attitudes towards the use of chats in their Spanish classroom. Their answers can be grouped in three categories: 1. SCMC was perceived to lead to more accuracy, since they felt they had more time to construct their utterances; 2. perceived use of productive class time, be it doing something they can’t do outside (talking in L2) or using it to improve their accuracy (instant messaging); 3. learner variables and preferences (verbally oriented students preferred F2F, whereas their visually oriented counterparts leaned towards SCMC. This is related to the topic of individual differences, which can be increasingly addressed with technology. A growing number of universities offer possibilities for distance and blended learning (courses that combine online with traditional face to face instruction) (Alonso, 2006) and publishing companies like McGraw-Hill are putting adaptive learning as a priority for the near future (Empson, 2013).
Chapter 4

CONCLUSIONS

This study explored the effects of using instant messaging versus face to face communication on foreign language accuracy and use, and also compared participants’ preferences concerning the two modes. Twenty four American college students volunteered to participate in a comparative experiment during one of their Spanish classes. The objective was to express doubt and certainty using the indicative or the subjunctive. After the objective was presented and students completed input activities, students were paired and divided in two groups for the output interactive activities: the control group used oral communication and the experimental group used the online chat Google Talk. The class culminated with dyads from both groups taking part in an oral debate about zoos. All participants also completed multiple-choice pre- and post- tests, as well as a final self-assessment survey.

The data analysis revealed a number of significant findings:

1. Both the control and the experimental groups showed an increase in correct items in the multiple-choice tests, which indicates that both environments facilitate the learning in the subjunctive in Spanish.

2. Students using SCMC to prepare for the oral debate were advantaged in their proficiency development over those only interacting only face to face: they produced a third more statements using the subjunctive, used the targeted structure more accurately, and used a greater variety of expressions to
communicate doubt and certainty. In addition, the experimental group only used L2 in the online chats and rarely used L1 in the final debate. This contrasts with a higher use of L1 by the control group.

3. The majority of students showed positive attitudes to the use of instant messaging in the foreign language classroom.

4. Individual differences seemed to be main the reason why students preferred SCMC or F2F, which speaks to the effectiveness of personalized language learning versus a one-size-fits all approach.

While the constraints of time and sample size must be taken into account, the findings of this study lend further support to the notion that instant messaging provides a productive tool to develop L2 accuracy and oral proficiency (Kitade, 2000; Payne & Ross, 2005). SCMC seems to be a positive environment to expose students to more complex topics, since it affords them more time to focus on form. As a result, they communicate in a more conscious way. This suggests that instant messaging has potential to help students move one step up in their proficiency and avoid fossilization.

These results are significant and timely given the large growth of institutions offering computer-assisted courses (blended or distance) (Alonso, 2006) and the increase in enrollments in such courses (more than 1.9 million in 2003) (Allen & Seaman, 2005). Some universities are using technology to cut down costs in their foreign language departments (Arnone, 2002), and others are praising its practicality to avoid the constraints of time and space of traditional instruction (Ushida, 2005). These facts suggest that it is likely that computer-assisted courses will continue to
grow. In this context, preparation and a knowledge of the outcomes of different modes of foreign language instruction is key.

Furthermore, the use of SCMC in foreign language learning is consistent with its growth in real world scenarios. Whether for work, school or leisure, people use e-mails, chats and online forums in their everyday lives. As Warschauer and Kern (2000) pointed out, the fact that computer-mediated communication has become an integral part of society makes it appropriate to incorporate on-line communication activities to the language learning experience.

The results of this experiment, the increasing use of technology in education and the central role of CMC in society at large provide reasons for incorporating online chats in the foreign language classroom. Nevertheless, future studies with a larger sample size and a longitudinal scope are needed to further support or to dispute the claims regarding SCMC as a tool to develop L2 proficiency and accuracy. Furthermore, as technology use in the classroom and research around it evolves, it is essential to keep in mind that instructional design and activities should follow and achieve specific pedagogical objectives, and that technology should always be used with a specific purpose in the foreign language classroom (Salaberry, 2000). Exploring the effects of online chats in more detail could help to gain understanding of how to enhance the development of grammatical accuracy in particular and communicative competence as a whole in the foreign language classroom.
REFERENCES


Appendix A

IRB LETTER

DATE: September 30, 2013

TO: Elisa Téllez
FROM: University of Delaware IRB

STUDY TITLE: [512386-1] The Effects of Written SCMC on Grammatical Accuracy in Oral Communication in L2

SUBMISSION TYPE: New Project
ACTION: APPROVED
APPROVAL DATE: September 30, 2013
EXPIRATION DATE: September 29, 2014
REVIEW TYPE: Expedited Review
REVIEW CATEGORY: Expedited review category # 6,7

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years.
Based on the risks, this project requires Continuing Review by this office on an annual basis. Please use the appropriate renewal forms for this procedure.

If you have any questions, please contact Nicole Farnese-McFarlane at (302) 831-1119 or nicolefm@udel.edu. Please include your study title and reference number in all correspondence with this office.
Appendix B
INFORMED CONSENT FORM

University of Delaware
Informed Consent Form

Title of Project: The Effects of Written SCMC on Grammatical Accuracy in Oral Communication in L2

Principal Investigator (s): Elisa Téllez

Advisor: Dr. Jorge Cubillos

You are being asked to participate in a research study. This form tells you about the study including its purpose, what you will do if you decide to participate, and any risks and benefits of being in the study. Please read the information below and ask the research team questions about anything we have not made clear before you decide whether to participate. Your participation is voluntary and you can refuse to participate or withdraw at any time without penalty or loss of benefits to which you are otherwise entitled. If you decide to participate, you will be asked to sign this form and a copy will be given to you to keep for your reference.

WHAT IS THE PURPOSE OF THIS STUDY?

The purpose of this study is to learn more about the use of technology, internet text chats in particular, in the foreign language classroom. The goal is to analyze to what extent using chats is more or less productive than oral conversations when the goal is to improve accuracy.

This study is part of a thesis project.

You are being asked to take part in this study because you are a college student learning Spanish as a Foreign Language. A total of 26 participants are expected in the study.
WHAT WILL YOU BE ASKED TO DO?
The experiment will take place on October 2013 during one of your SPAN 107 classes at the University of Delaware and will take all 50 minutes. The communicative objective of the class will be “Expressing Doubt and Certainty”, the grammatical objective will be the present subjunctive.

The experiment will be conducted in six steps:
Step 1: You will fill out a 5-item multiple-choice activity.
Step 2: The objective of the class will be presented as usual, then you will be doing activities from Exploraciones (pp. 422-424), the textbook used in this course.
Step 3: You will be placed randomly in group 1 or 2. Both groups will work in pairs. If you are in group 1, you will perform an activity using internet text chat. If you are in group 2 you will perform an equivalent activity as an oral face-to-face conversation as usual. Data collection will take place in the form of chat transcripts and audio recordings.
Step 4: You will engage in an oral face-to-face “Debate about zoos” working with the same partner as in Step 3. The conversations will be audio recorded and then transcribed.
Step 5: You will fill-out a 5-item multiple-choice activity equivalent to the one in Step 1.
Step 6: You will fill-out a short survey regarding your perceived level of readiness and performance in the “Debate about zoos”.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?
There are no known risks if you decide to participate in this study.

WHAT ARE THE POTENTIAL BENEFITS?
You will not benefit directly from taking part in this research. However the knowledge gained from this study may contribute to our understanding of the impact of using technology in the form of internet text chats in the foreign language classroom.
HOW WILL CONFIDENTIALITY BE MAINTAINED?

We will make every effort to keep all research records that identify you confidential to the extent permitted by law. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared, no individual information shall be disclosed nor will it be possible to identify you or your answers.

Information obtained from you during this study will be kept confidential. You will use the last 4 digits of your student ID number to identify yourself. The researcher will not be able to identify you directly with these numbers and will only use them to correlate data from various assessments for this study only. The researcher involved in the study is eligible to view the research records. Results of the study will be made available to you upon request once the study is complete.

Data will be safely saved and only the researchers approved for this project will have access to it. Your responses will be audio recorded and transcribed, and there won’t be any information added to the document that can link the written or digital information to you. Also, digital audio files will be deleted after the information has been transcribed. Three years after the study is concluded all information will be destroyed, including paper data records, which will be shredded. Research reports will be grouped without identifiers, so that no personal or individual information will be shared.

Your research records may be viewed by the University of Delaware Institutional Review Board, but the confidentiality of your records will be protected to the extent permitted by law.

WILL THERE BE ANY COSTS RELATED TO THE RESEARCH?

There are no costs for you to participate in this study.

WILL THERE BE ANY COMPENSATION FOR PARTICIPATION?

There won’t be any compensation for participating in this study.

DO YOU HAVE TO TAKE PART IN THIS STUDY?
Taking part in this research study is entirely voluntary. You do not have to participate in this research. If you choose to take part, you have the right to stop at any time. If you decide not to participate or if you decide to stop taking part in the research at a later date, there will be no penalty or loss of benefits to which you are otherwise entitled. Your refusal will not influence current or future relationships with the University of Delaware.

As a student, if you decide not to take part in this research, your choice will have no effect on your academic status or your grade in the class.

**WHO SHOULD YOU CALL IF YOU HAVE QUESTIONS OR CONCERNS?**

If you have any questions about this study, please contact the Principal Investigator, Elisa Téllez at 202 6440621.

If you have any questions or concerns about your rights as a research participant, you may contact the University of Delaware Institutional Review Board at 302-831-2137.

Your signature below indicates that you are agreeing to take part in this research study. You have been informed about the study’s purpose, procedures, possible risks and benefits. You have been given the opportunity to ask questions about the research and those questions have been answered. You will be given a copy of this consent form to keep.

By signing this consent form, you indicate that you voluntarily agree to participate in this study.

_________________________________  ________________
Signature of Participant                                                            Date

_________________________________
Printed Name of Participant
Pre-test

María y Marcos son estudiantes de biología en la Universidad de Valencia en España. Les gustan mucho los animales, por eso deciden pasar el sábado en el zoológico. Sin embargo, tienen opiniones diferentes. Marca la opción correcta en su diálogo:

**María:** ¡Me encanta venir al zoo! Es bonito ver los animales y creo que el zoo ayuda / ayude a educar a la gente.

**Marcos:** A mí también me encanta el zoo, pero dudo que los animales son / sean felices aquí; ¿no crees?

**María:** ¿Por qué piensas eso? Es obvio que tienen / tengan todo lo que necesitan: comida, un hogar, los mejores médicos veterinarios…

**Marcos:** Sí, pero las jaulas son muy pequeñas, no estoy seguro de que puedan / puedan ser felices aquí.

**María:** Yo no pienso que los animales están / estén tristes aquí. Además, el zoológico protege animales en peligro de extinción, como esta jirafa.

**Marcos:** ¿Las jirafas están en peligro de extinción? Voy a comprobarlo en google.
Post-test

Marcos y María van a casa de María después de una mañana de clases en la universidad. Después de comer tienen una discusión acerca del reciclaje.

Marca la opción correcta en el diálogo:

Marcos: María, ¿por qué no reciclas el papel en tu casa? Es obvio que reciclar ayuda / ayude a proteger el medio ambiente.

María: Supongo que es / sea bueno reciclar, pero no pienso que mis esfuerzos pueden / puedan cambiar la situación del planeta, es un problema muy grande. Además, no tengo tiempo.

Marcos: Excusas, excusas. No es verdad que necesitas / necesites mucho tiempo para reciclar. Dudo que no tengas / tienes unos segundos para separar papeles y botellas cada día. Es muy fácil.

María: De acuerdo, empezaré a reciclar papel y botellas. ¿Estás contento ahora?

Appendix D

TEXTBOOK ACTIVITIES

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12.31 ¿Qué animal es? Lee las oraciones y decide a cuál de los animales se refiere cada una.

el águila  el oso polar  la serpiente
el toro  la tortuga  la vaca

1. Creo que vive en el desierto.
2. Es obvio que produce leche.
3. Dudo que sea muy rápida.
4. No creo que le gusten las temperaturas muy altas.
5. No es cierto que le moleste el color rojo.
6. Pienso que es el símbolo de los Estados Unidos.

12.32 Oraciones incompletas Completa las oraciones con la frase apropiada. ¡OJO!

Algunas oraciones necesitan el subjuntivo y otras no.

1. Creo que el caballo...
   a. es un animal fuerte.  b. sea un animal fuerte.
2. Dudo que la tortuga...
   a. corre rápido.  b. corra rápido.
3. Supongo que las gallinas...
   a. tienen miedo del zorro.  b. tengan miedo del zorro.
4. Estoy seguro que el camello...
   a. no necesita agua.  b. no necesite agua.
5. No pienso que la oveja...
   a. come carne.  b. coma carne.
6. No es cierto que los pingüinos...
   a. saben volar (to fly).  b. sepan volar.
7. No creo que el elefante...
   a. salta.  b. salte.
8. Es obvio que el cocodrilo...
   a. no puede sacar la lengua (tongue).  b. no pueda sacar la lengua.


12.34 **En clase** Compléta el siguiente párrafo con la forma apropiada del verbo entre paréntesis. ¡OJO! Algunos verbos requieren el subjuntivo y otros el indicativo.

Miguel: Profesor, ¿es verdad que (1.) **hay** (haber) muchos animales en peligro de extinción?

Profesor: Sí, es cierto. Es obvio que muchas personas no (2.) **piensan** (pensar) en el medio ambiente y no creen que sus acciones (3.) **affectan** (affectar) el mundo mucho. Yo creo que todos (4.) **debemos** (deber) hacer nuestra parte.

Miguel: Dudo que yo (5.) **pueda** (poder) cambiar las cosas (make a difference).

Profesor: No creo que (6.) **sepa** (saber) todo lo que puedes hacer. Es cierto que tú (7.) **eres** (ser) nada más una persona, pero hay muchas organizaciones que buscan voluntarios.

12.33 **En el reino de los animales** En parejas, decidan si son ciertas las siguientes oraciones. Luego usen las expresiones de duda para expresarle sus creencias (beliefs) a la clase. ¡OJO! Usa el subjuntivo solo si tienes duda.

 Modelo La cebra es blanca y negra.

*Es obvio que la cebra es blanca y negra.*

El pez puede vivir fuera del agua.

*No creo que el pez pueda vivir fuera del agua.*

2. Se escucha a un león rugir (to roar)
   a cinco millas.
3. La boa vive en África.
4. Una tortuga puede vivir más de cien años.
5. A los gorilas les gusta tomar una siesta por la tarde.
12.36 **En mi opinión** En grupos de tres, expresen sus opiniones sobre los siguientes temas usando el subjuntivo o el indicativo con las expresiones (no) creer, (no) dudar, (no) pensar, (no) suponer, (no) estar seguro que y (no) ser cierto/evidente/verdad/obvio que.

**Modelo** La crueldad con los animales

Creo que el abuso de los animales es un crimen.
Dudo que las personas crueles con los animales sean buenos padres.

1. ser vegetariano 5. la corrida de toros
2. la caza 6. los zoológicos
3. la extinción de algunos animales 7. el problema de los gatos y perros callejeros (stray)
4. usar pieles de animales 8. las peleas de gallos o de perros
Appendix E
FINAL SURVEY

Student Identification Number:

**Final survey for group 1**

Please, fill out the following survey, where 1 is “very low” and 5 “very high”.

1. How would you rate your preparation for the “Debate about zoos”?
   1   2   3   4   5

2. How would you rate your performance in the “Debate about zoos”?
   1   2   3   4   5

3. Would you like to use internet chats in your Spanish class again?  Yes / No
   Why?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
Final survey for group 2

Please, fill out the following survey, where 1 is “very low” and 5 “very high”.

1. How would you rate your preparation for the “Debate about zoos”?
   
   1  2  3  4  5

2. How would you rate your performance in the “Debate about zoos”?
   
   1  2  3  4  5

3. Would you have liked to be part of the group that used internet chats in class today? Yes / No
   Why?
   
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________
   ______________________________________________________________
Appendix F

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Jane Park
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