# CHILD-TO-CHILD INTERACTION AND CORRECTIVE FEEDBACK IN A COMPUTER MEDIATED L2 CLASS

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## ABSTRACT

The current study examined the provision of corrective feedback and learner repair following feedback in the interactional context of child-to-child conversations, particularly computer mediated, in an elementary Spanish immersion class. The relationship among error types, feedback types, and immediate learner repair were also examined. A total of 46, fifth-grade children participated in the study. Using *Blackboard,* the instructor randomly paired students and created a "virtual group" for each pair. Each pair was asked to interact and complete a jigsaw task in the "virtual classroom." *Blackboard* recorded the pairs' interactions, which were later printed and coded for types of error (syntactic/lexical), types of negative feedback (explicit/recasts/negotiation) and immediate learner repairs. Findings indicate that learners did not provide explicit negative feedback. Learners provided implicit negative feedback (recasts and negotiation) while completing the jigsaw task in the virtual classroom. The majority of lexical errors and syntactic errors were corrected using negotiation. Over half of feedback moves led to immediate repair. Negotiation moves proved more effective at leading to immediate repair of errors than did recasts.

## INTRODUCTION

While second language acquisition (SLA) researchers agree that input plays an important role in second language acquisition (e.g., Gass, 1997), many debate the form that input needs to take (whether positive or negative) in order for second language acquisition to occur. Some researchers have maintained that positive evidence alone is sufficient for adult SLA (e.g., Krashen, 1977, 1994). Others consider positive evidence as insufficient for second language (L2) learning to occur, and propose a role for both positive and negative evidence (e.g., Hatch, 1978; Long, 1983, 1996; White, 1987). Positive evidence tells the learner that linguistic features in the input are possible in the target language (TL). As an example, consider that in English, pronouns and nouns can be deleted in sentences with conjoined verbs as in the following example:

1) The bird sang and flew back to its nest.

Upon first hearing a sentence such as the above, it is possible for a learner of English to infer that subject use in English is optional in sentences with conjoined verbs. In contrast to positive evidence, negative evidence provides information to learners about what is not possible in the TL (e.g., Lightbown & White, 1987; Long, 1996; White, 1990). As an example, consider the following:

2) Speaker 1: Yesterday I did spoke to my parents.
Speaker 2: Did speak?

In the example above, Speaker 1 receives feedback about the ungrammaticality of what was said. Of course, it is possible that Speaker 1 may not understand that it was intended as a correction and may think that Speaker 2 simply did not hear what was said and asked for clarification. Negative evidence can be provided preemptively or reactively (see Long & Robinson, 1998). Preemptive negative evidence is presented to learners before they attempt to produce language structures (e.g., by providing and explaining grammar rules), while reactive negative evidence is provided as a response to an ill-formed

utterance. Reactive negative evidence "highlights differences between the target language and a learner's output and as such is described as negative feedback (NF)" (Oliver, 2000, p. 120). In his updated version of the Interaction Hypothesis, Long (1996) argues that negotiation for meaning elicits NF, and that NF contains various types of reformulation and repetition in addition to input modifications that serve to make L2 target forms salient to learners. Thus, NF facilitates L2 development. As a reaction to a learner's erroneous utterance, NF can be explicit. An explicit correction supplies a correct TL form after the ill formed utterance and clearly indicates that what the learner has said is incorrect, as in "No that is not how you say X. You say it like Y."

NF can also include implicit indications that an utterance is not well formed. Recasts, for example, reformulate a learner's ill-formed utterance and can provide relevant information that is obligatory but is either missing or wrongly supplied in the learners' utterance (e.g., "My mother work<u>s</u> all day" as a recast of the incorrect "My mother work all day"). Researchers have argued that recasts as a discourse structure can provide implicit negative feedback, positive evidence (in that TL forms are provided), and enhanced salience through the juxtaposition of the original ill-formed utterance and the TL recast form (Leeman, 2000; Saxton, 1997; Saxton, Kulcsar, Marshall, & Rupra, 1998).

In contrast to explicit correction and recasts, negotiation of form (see Lyster, 1998a; Lyster & Ranta, 1997) does not provide learners with the correct TL form. Instead, it indicates to learners that they have produced an error and that the error requires repair. Negotiation can take several forms, for example, clarification requests are utterances made by the listener to clarify what the speaker said (e.g., "Pardon?", "What do you mean?"); elicitations are used to obtain correct forms from learners by asking questions (e.g., "How do we say that correctly?"); metalinguistic clues are comments, information or questions regarding the well-formedness of a learner's utterance but without providing the correct form (e.g., "Is that masculine or feminine?"); and repetition restates the learner's error(s).

Negative (corrective) feedback has also been identified as a focus-on-form procedure (see Long & Robinson, 1998). Long (1991) defines focus-on-form as "…overtly draw[ing] students' attention to linguistic elements as they arise incidentally in lessons whose overriding focus is on meaning or communication" (p. 46). The support for focus-on-form is based largely on three different claims about SLA. First, L2 learners acquire new linguistic structures while attending to those forms in contexts where the primary goal is the message and not the code (see Hatch, 1978). Second, L2 learners may experience difficulty in attending to and producing linguistic forms in communication because they possess a limited information-processing capacity (see VanPatten, 1990), and, as a result, L2 learners benefit from the opportunities that take place during communication to give specific attention to form (e.g., Long, Inagaki, & Ortega, 1998; Mackey & Philp, 1998). It seems then that focus-on-form can draw learners' attention to linguistic forms within the context of performing communicative activities, and such focus can occur in a variety of classroom activities, including when a learner provides corrective feedback in response to her conversational partner's L2 errors.

NF carries important pedagogical and theoretical implications for classroom SLA If research shows that classroom interactions make NF available to learners, in a form that is usable and used by learners, and thus facilitates L2 development, we can gain a better understanding of the relevance of classroom interactions between teacher-learners and between learners. Negative feedback could then be encouraged in language classrooms in teacher-student interactions and pair work. Despite the possible benefits of negative feedback, its role in SLA has been questioned. In order to play a role in language acquisition, it must meet several criteria: it has to exist, be useful, used by learners and necessary for acquisition to occur (Grimshaw & Pinker, 1989; Pinker, 1989). Beck and Eubank (1991) have echoed similar arguments for L2 acquisition and pose that the "universality" of NF must be documented. Thus, researchers argue that the impact of interaction and feedback in SLA must be examined in different social and instructional contexts. Hall (2000), for example, calls for sufficient research "to help us compare the scope and circumstances of contextual conditions … the myriad issues connected to classroom interaction and

additional language learning in all learning contexts require more examination" (pp. 296-297). Echoing Hall's argument, Breen (2001) proposes that if we perceive interaction and interactional features such as feedback "as the catalyst for language development," we must pay more attention to classroom contexts (p.136).[1]

Early studies on negative feedback demonstrated that feedback in the form of explicit correction is seldom available (e.g., Chaudron 1986, 1987; Chun, Day, Chenoweth, & Luppescu, 1982). It is possible that explicit correction is avoided because it may be perceived as abrupt and impolite. Recent SLA research has developed a noticeable interest in the role that implicit negative feedback, such as recasts and negotiation, plays in second language development (Ayoun, 2001; Doughty & Varela, 1998; Han, 2002; Leeman, 2003; Long, Inagaki, & Ortega, 1998; Mackey & Philp, 1998; Morris, 2002a; Muranoi, 2000; Nabei & Swain, 2002). Findings suggest that implicit negative feedback facilitates learners' L2 development. Because of the potential benefits of implicit negative feedback, research has attempted to examine whether it is available to learners in different interactional contexts (e.g., Braidi, 2002; Buckwalter, 2001; Chaudron, 1977, 1986, 1987; Doughty, 1994; Ellis, Basturkmen, & Loewen, 2001; Fanselow, 1977; Hamayan & Tucker, 1980; Lin & Hedgcock, 1996; Lyster, 1998a, 1998b; Lyster & Ranta, 1997; Mackey, Oliver, & Leeman, 2003; Moroishi, 2001; Morris, 2002b; Nystrom, 1983; Ohta, 2001; Oliver, 1995, 1998, 2000, 2002; Oscoz & Liskin-Gasparro, 2001; Panova & Lyster, 2002). These studies demonstrate that implicit negative feedback is frequently available and used by L2 learners. However, the majority of these studies have been carried out in adult contexts. Only a limited number have been carried out in the context of child-to-child conversations (e.g., Mackey et al., 2003; Oliver, 1995, 2000, 2002). Research on child-to-child interactions, either non-native-speaker/non-native-speaker interaction or native-speaker/non-native-speaker interaction, reveals that while children provide implicit negative feedback in the form of recasts and negotiations, negotiations are the most common form of feedback. With regard to repair, children in child-to-child conversations frequently incorporate the feedback in their subsequent L2 production, while the rate of repair is higher when the interlocutor is a non-native speaker. Although these findings are valuable, research has yet to examine whether results would be similar in the context of child-to-child conversations in Spanish immersion classrooms.

The context of second language learning in Spanish immersion classes in the United States is communicative, experiential, and thoroughly content-based (i.e., limited grammar instruction), where feedback is often avoided. In fact, Spanish immersion teachers have indicated that error correction is best avoided because it only leads to temporary changes in learners' language achievement and may cause learners to develop negative attitudes towards the study of the language (see Truscott, 1999). Feedback, however, provides learners with the language evidence on crucial and complex L2 morphosyntactic structures that they have yet to master in the L2 (Long, 1996). Thus, SLA research must examine whether children in Spanish immersion classes provide feedback in response to their peers' errors. This paper assumes that feedback can also be available to language learners through peer and group interactions, and that peer feedback fosters learners' increased awareness of language forms and, consequently, plays a role in their L2 development.

**Computer Mediated Communication (CMC)**

The use of computers in second and foreign language classrooms has increased during the last ten years. In particular, language teachers have incorporated "chat" programs that allow learners to interact in virtual rooms without engaging in face-to-face contact. Although CMC can be used for L2 teaching, its role cannot be seen as "transparent" (see Haas & Neuwirth, 1994). In other words, it cannot be assumed that CMC will resemble and generate the same learning context as face-to-face interactions. Therefore, research must seek to understand and assess the norms of CMC. It is important to examine how this technology affects learner-learner interaction and the extent to which it may differ or be similar to face-to-face interaction. Thus far, research indicates that CMC elicits more learner participation (Beauvois, 1992; Kelm, 1992; Kern, 1995; Kim, 1998; Warschauer, 1996) and creates a less stressful environment for

language learning (Chun, 1998). However, research to date with regard to CMC has been limited, as only a handful of studies have examined the effect of CMC on learner-learner interaction (e.g., Blake, 2000; Darhower, 2002; Fernández-García & Martínez-Arbelaiz, 2002; Pellettieri, 1999; Smith, 2001, 2003). These studies reveal that when learners engage in CMC, most of the focus during negotiation is on lexical items and little attention is paid to linguistic form. While these findings are valuable, they may apply only to adult learners. It may be that the findings could vary according to the age of learners, whether adult or child. In addition, these studies have focused mostly on the overall incidence of negotiation, which may not provide an accurate picture of the learning opportunities that arise as a result of corrective feedback provided during CMC. Therefore, it is necessary that research on CMC examine whether implicit negative feedback is provided to learners in response to their non-target-like utterances, because such feedback is perceived to play a facilitative role in promoting L2 development.

**Current Study**

The current study joins the established efforts that have attempted to assess the existence and use of implicit negative feedback in child-to-child interactions, and the recent studies that have explored the benefits of negotiation in CMC. The goal is to examine the provision of corrective feedback and learner repair following feedback in the context of child-to-child conversations in an elementary Spanish immersion classroom during CMC. The relationship among error types, feedback types, and immediate learner repair will  also be examined examined. The questions motivating the current study are: Do Spanish immersion school children working in CMC provide implicit negative feedback in response to their peers' non target-like utterances? What types of learner errors lead to what types of implicit negative feedback? When Spanish immersion school children working in CMC receive implicit negative feedback from their peers, do they immediately repair the original ill-formed utterance? What types of implicit negative feedback lead to the immediate repair of what types of learner errors?

**METHOD**

**School and Classroom Context**

The current study was conducted in a private Spanish immersion school (K-5) located in the southeast region of the United States. The school was selected based on feasibility and the willingness of the staff to allow this study to be carried out. Children come from home backgrounds that represent a wide range of socioeconomic levels. The vast majority of the children attending the school come from monolingual English-speaking families.[2] The school is located in a Spanish speaking community in a metropolitan area where Spanish is considered a second language. Therefore, students who attend this school generally have opportunities to speak Spanish outside the school. The curriculum emphasizes thematic and cultural content over linguistic form. The pedagogical approach at the school is student-centered and grounded in the principles of whole language and communication (i.e., that there is an integral connection between language and culture and that culture learning is a major contributor to second language learning). The school curriculum and instruction, including reading and language arts, is in Spanish in kindergarten and first grade. English is introduced for the first time in second grade. Computer lab class is introduced in the fifth grade and is conducted in Spanish. Fifth grade is the end of elementary education at this school. All teachers in this school are bilingual (English-Spanish), either native speakers of English or Spanish.

The fifth grade level was selected for the current study because it was the only grade level to incorporate the use of computers in the curriculum. The particular class chosen for the study was computer lab class because it was the only course that utilized computers and technology enhanced instruction during class-time. Three sections of a fifth grade computer lab class participated in the study. At the time the study was conducted, students had been enrolled in the course for almost 6 months. The course met Monday through Friday for a period of 1 hour and 10 minutes each day and provided learners with opportunities to learn basic computer skills such as uploading and downloading documents, browsing the Internet,

creating Web sites, creating and engaging in online chat rooms, reading online magazines and newspapers, and playing computer games.

## Participants

A total of 46 fifth grade students (29 girls and 17 boys, mean age 10.6) enrolled in three separate computer lab classes. Almost all students were native, monolingual English-speaking students of non-Hispanic origin. One student was Korean, one Japanese, one was German, and two were French. There were no Spanish-heritage language speakers[3] in the classrooms examined. Although the school has no language placement test or language proficiency exam to determine learners' levels of language attainment, informal conversations with school teachers and the researcher's classroom observations suggest that the participants in this study had achieved an intermediate to high-intermediate level of language proficiency (i.e., extensive vocabulary allowing them to produce discourse related to daily activities, family, school, and child-associated activities such as games, and grammar limited to present and past tense forms).

One teacher participated in the study, and she was in charge of the three computer lab classes. The teacher had been teaching this grade level for two years and the class for one year. She is a native speaker of Spanish, born and raised in a Spanish-speaking country. Her native English-speaking peers at the school considered her to be highly proficient in English. The teacher always spoke Spanish to the students in and out of the classroom. At the time the study was conducted she was in the process of getting her State Teaching Certificate and was completing a Masters in Education at a nearby university.

## Data Collection Procedures

The activities employed in the current study were used by the classroom teacher as typical activities planned for students to engage in interactional sequences with their peers while engaged in CMC. The researcher was not the instructor for the course. The teacher provided all directions. Following classroom protocol, all directions were provided in Spanish. Immediately after class began, learners were randomly placed at different computer terminals. Using Blackboard (Version 5), the instructor randomly paired students and created a "virtual group" or chat room for each pair (see description of software). Students did not know where their partners were sitting or who their partners were.[4] Each pair was asked to interact and complete a jigsaw activity in the "virtual classroom." The teacher chose a jigsaw because it is believed that communicative activities that require information to be supplied by both learners to achieve a common goal are most likely to generate opportunities for learners to receive and produce comprehensible input, feedback and language modification (Pica, Kanagy, & Falodun, 1993). All pairs worked on the same jigsaw, a set of pictures (*N*=15) numbered 1 through 15 that represented *La rutina de Esteban* (Esteban's routine). Each dyad member got half the pictures (one student received pictures numbered 1, 3, 5, 7, 9, 11, 13, and 15, and the other received 2, 4, 6, 8, 10, 12, and 14). The pictures were not available online but provided to students in hardcopy. Participants were asked to work together and, according to the pictures they had available, to produce in 25 minutes one collaborative essay that represented "Esteban's routine."[5] Blackboard recorded the pairs' interaction (synchronous and text-based CMC) while completing the jigsaw activity, and each pair's interactional sequence was later printed and coded for types of error, types of feedback and immediate repairs (see Data Analyses section). The time restriction established for the jigsaw (25 minutes) was consistent with the teacher's lesson plan and curriculum design, which employs activities that need to be completed within 25 minutes. No modeling or training session was held because students in these classes had already completed similar jigsaws and were comfortable working via CMC.

## The Computer Program

Blackboard is a software platform that delivers a course management system and creates a customized institution-wide portal and online communities. Each course offered by an institution is hosted on a

Website. The instructor assigned to a course Web site oversees the course through the Instructor Control Panel. While the instructor has control over the course Web site, the administrator sets overrides that restrict or require content areas and tools. A course Web site consists of a navigation path, a button bar, and a content frame. The navigation path allows users to return to any page accessed between the main course page and the current page (see Appendix A for a frame sample). The button bar links users to the available content areas and tools. The content frame displays Web pages accessed through the buttons or navigation path. All course administration is done through the Instructor Control Panel. This area is only available to users who have been designated as "professor," "instructor," or "teaching assistant" (see Appendix B for frame sample). One of the Instructor's features is the "virtual classroom." The virtual classroom, or the chat room, allows the instructor and students to participate in real-time lessons and discussions and also view archives of previous classroom sessions. It can be used to hold online classroom discussions, TA sessions, and office hour type question/answer forums. All communication and interaction is carried out through (synchronous) typed text. The system has the capacity to welcome guest speakers and subject matter experts who can address the class (see Appendix C for a sample template).

## Data Analysis

To answer the questions posed in this study, the interactions were coded for learner errors, learner corrective feedback used in response to errors, and learners' repairs. In addition, the errors were examined in relation to three main feedback types and in relation to learner repair. The researcher and one additional coder independently coded the data.

The current study examined the errors that learners produced while completing the jigsaw and during CMC. The errors coded were (a) syntactic errors (e.g., lack of or use of articles, determiners, prepositions, pronouns, errors with subject/verb agreement, gender, verb morphology, pluralization, and word order); (b) lexical errors (e.g., inaccurate, imprecise or inappropriate choices of lexical items and non-target derivations of nouns, verbs, adverbs and adjectives); (c) unsolicited uses of L1 (e.g., instances when learners used English when Spanish would have been more appropriate and expected). Interrater reliability for error type was high ($r = .96$).

Three categories were used to assess corrective feedback: explicit correction, recasts, and negotiation of form. Interrater reliability for corrective feedback type was high ($I = .91$). Explicit correction directly and clearly indicates that what the learner has said is incorrect (translation of the example and comments are on the right):

| | | |
|---|---|---|
| S1: | *Comer mucho todos los días.* | I to eat (wrong form) every day. |
| S2: | Don't say *comer*. Say *como*. | Don't say to eat (wrong form). Say I eat (correct form). |

Recasts are immediate implicit reformulation of an ill-formed utterance and reformulate all or part of the utterance as a recasts of the incorrect:

| | | |
|---|---|---|
| S1: | *Él lavar...* | He washes... (wrong form) |
| S2: | *Él lava...* | He washes... (correct form) |

Negotiation of form provides learners with signals that facilitate peer and self-repair rather than mere rephrasing of their utterances. Negotiations differ from explicit correction and recasts in that negotiations do not provide learners with a correct form. Signals to learners can be given in the form of clarification requests (include statements such as *What did you say?*), metalinguistic clues (comments, questions, or information regarding the well formedness of the learner's utterance without providing the correct form such as *Is it masculine?*), elicitation (obtains correct forms from learners by asking questions such as *How do we say that in Spanish?,* or by asking students to reformulate their utterance), and repetition (the

learner's error is repeated). Once learners received feedback from their peers, their immediate responses to feedback were coded as repair or not repair. Interrater reliability for response to feedback was high ($r$ = .98). Repairs do not necessarily constitute that a learner has developed the form corrected. However, they allow learners to produce modified output and possibly notice the TL form, which creates conditions that may facilitate development (Swain, 1985, 1995). The following example represents an instance of repair:

| | | |
|---|---|---|
| S1: | *Ella correr en el parque.* | She to run (wrong form) in the park. |
| S2: | *Ella corre en el parque.* | She runs (right form) in the park. |
| S1: | Oh…yeah *corre.* | Oh…yeah runs (right form). |

## RESULTS

The analysis yielded a total of 135 errors, each initiated by a student turn, containing at least one error coded as syntactic, lexical, or L1. Table 1 presents the distribution of error types in the database. The majority of errors (64%) were syntactic, whereas 33% were lexical, and 3% were L1 uses. A chi-square test shows that the differences were statistically significant, $X2$ (2, $N$ = 135) = 76.6, $p$ = .0001.

Table 1. Number and Percentage of Errors by Error Typs

| | | |
|---|---|---|
| **Syntactic** | 87 | 64% |
| **Lexical** | 44 | 33% |
| **L1** | 4 | 3% |
| **Total** | 135 | 100% |

Of the 135 errors, 76 were followed by corrective feedback. Table 2 reveals the distribution of corrective feedback across the different error types. The majority of feedback moves followed lexical errors: 58% of all feedback followed lexical errors, 40% followed syntactic errors and 2% followed uses of L1. These differences were statistically significant, $X2$ (2, $N$ = 76) = 30.8, $p$ = .0001.

Table 2. Number and Percentage of Feedback Moves per Error Type

| | | |
|---|---|---|
| **Lexical** | 163 | 58% |
| **Syntactic** | 114 | 40% |
| **L1** | 5 | 2% |
| **Total** | 282 | 100% |

Fifty-six percent of learners' errors received corrective feedback from their peers. Table 3 reveals the rate at which each error type received corrective feedback: 100% for L1 uses, 97% for lexical errors, and 33% for syntactic errors. Therefore, the rate at which L1 uses and lexical errors were corrected was higher than the rate at which syntactic errors were repaired.

Table 3. Rate of Feedback per Error Type

| | | |
|---|---|---|
| **L1** | 4/5 | 100% |
| **Lexical** | 43/44 | 97% |
| **Syntactic** | 29/87 | 33% |
| **Total** | 76/135 | 56% |

The feedback moves were distributed across three feedback types as follows: recasts, negotiation, and explicit correction. Of the 76 feedback moves, 72 (95%) were negotiations, 4 (5%) were recasts, and none were explicit corrections. Thus, negotiations were more likely to follow learner errors. A comparison of the distribution of these feedback types across different error types appears in Table 4. Negotiations were more likely than recasts to follow lexical errors (98%), syntactic errors (93%), and L1 uses (75%).[6]

Table 4. Distribution of Errors Receiving Feedback Across Feedback Types and Error Types

|  | **Lexical** | **Syntactic** | **L1** | **Total** |
|---|---|---|---|---|
| **Recasts** | 1 (2%) | 2 (7%) | 1 (25%) | 4 (5%) |
| **Negotiation** | 42 (98%) | 27 (93%) | 3 (75%) | 72 (95%) |
| **Total** | 43 | 29 | 4 | 76 |

Of the 76 feedback moves, 52 led to learner repair within the error treatment sequence. Of the 52 errors repaired, 37 (71%) were lexical, 13 (25%) were syntactic, and 2 (4%) were L1 uses. These differences were statistically significant, $X2$ ($N$ = 52) = 36.9, $p$ = .0001. Thus, the majority of the errors repaired were lexical. Table 5 provides the rate at which each error type was repaired. The overall rate of repair was high (68%). The highest rate of repair was for lexical errors: Of the 43 lexical errors with feedback, 86% were repaired. The next highest rate of repair was for L1 uses (50%): Of the four errors with feedback, two were repaired. Only 45% of the syntactic errors with feedback were repaired. All repairs resulted from negotiations. Recasts did not lead to repairs.

Table 5. Rate of Repairs of Errors with Feedback

| **Lexical** | 37/43 | 86% |
|---|---|---|
| **L1** | 2/5 | 50% |
| **Syntactic** | 13/29 | 45% |
| **Total** | 52/76 | 68% |

The following excerpt illustrates learners' overall pattern of error correction and repair while engaged in CMC[7]:

| Turn | 26 | Jorge: | *Y dime las que tienes.* | And tell me which ones you have |
|---|---|---|---|---|
| | 27 | Carlos: | *Pues que tengo que mirar.* <wait>[8] | So I have to look |
| | 28 | Jorge: | *Ya pues* <wait> . | (OK) |
| | 29 | Carlos: | *Le veo que parece que eschucha las canciones o algo por como igual…y …es…*<wait>. | I see that it seems that he listens to songs or something like that…and it is… |
| | 30 | Jorge: | Where are you? You alive? <wait> ☺. | |
| | 31 | Carlos: | Sorry! Sorry! I am back like yeah I could not figure it out! LOL! *Escucha las canciones con un radio amarillo y tiene unos headphones de los que no tiene los cables de por encima y que te ponen el pelo todo mal como sabes…* | Listens to songs with a yellow radio and he has one of those headphones that does not have cables over your head and do not get your hair looking bad you know |
| | 32 | Jorge: | *¿huh?? ¿los headphones?* | |
| | 33 | Carlos: | LOL! *Los audio los de los de esos los de que se me olvida… …audífonos… ¿ya sabes no?* | LOL! The sound [incorrect/incomplete word] the the the ... I forget... ... headphones ... You know what I mean, right? |
| | 34 | Jorge: | ☺ *Que me vuelves loco…*BRB! | You drive me crazy...BRB! |
| | 35 | Carlos: | <wait> | |
| | 36 | Jorge: | *¿Y lo otro que necesitamos??* | And what else do we need? |

| 37 | Carlos: | *¡Que creo tienes la actividad que sigue y yo no la tengo…menciona* <sigh> *and decribe las que hay contigo!!!* | I think that you have the following activity and I don't have it … mention and describe the ones you have. |

In turn 31 in the excerpt above, Carlos produces the English equivalent of *audífonos,* headphones. Immediately in turn 32, it appears that Jorge does not understand what Carlos says or at least wants Carlos to utter the item using Spanish. Jorge, thus, engages in a negotiation: *...los headphones*? Immediately in turn 33, Carlos produces a repair and utters the Spanish form *audífonos*. By turn 36, the pair moves on to attempt to complete the task.[9]

## DISCUSSION

The findings permit the following responses to the four questions posed earlier in the study. Do Spanish immersion school children working in CMC provide implicit negative feedback in response to their peers' non target-like utterances? Yes, over 50% of errors received implicit negative feedback in the form of recasts and negotiations. What types of learners' errors lead to what types of implicit negative feedback? The majority of lexical, syntactic, and L1 errors invited negotiations. When Spanish immersion school children working in CMC receive implicit negative feedback from their peers, do they immediately repair the original ill-formed utterance? Yes, learners repaired over 60% of errors that received feedback. What types of implicit negative feedback lead to the immediate repair of what types of learners' errors? All repairs followed negotiation.

When the children in this study engaged in CMC, they provided feedback in response to their peers' L2 errors. The results support the findings of previous face-to-face, child-to-child interaction studies that suggest that implicit negative feedback is available to learners within the error treatment sequence. It has been argued that children are risk takers and are comfortable in correcting their peers' error (see Dekeyser, 2000; Singleton, 1995) which may explain why the rate of feedback was high. While all L1 uses and the majority of lexical errors were corrected, the rate of syntactic error correction was low. Why were all L1 uses repaired? At the school where data were gathered, the staff, the curriculum, and the teachers do not tolerate the use of English (except of course in the English class) during class-time or in school surroundings. Children are encouraged to constantly use Spanish, the L2. Thus, the children may have just been following school protocol in tolerating their peers' L1 uses. That lexical errors were corrected at higher rates that syntactic errors should not come as a surprise, as the methodologies encouraged at the school concentrate more on lexical growth over grammatical accuracy. In addition, these Spanish immersion students have not had any formal instruction of Spanish grammar and, therefore, many lack a solid syntactic base to correct linguistic form.

With regard to the type of feedback, there were no corrections in the form of explicit feedback. Although learners provided feedback in the form of recasts and negotiations, the most common form of feedback was negotiation. The same results have been obtained in studies that examined face-to-face, child-to-child interactions (e.g., Mackey et al., 2003; Oliver, 1995, 2000, 2002). It is possible that children negotiated their peers' errors instead of using recasts because recasts require a solid linguistic knowledge and communicative competence, which these children are still in the process of developing.

Over sixty percent of learners' errors that received feedback were repaired. Studies that examined face-to-face, child-to-child interactions have also reported that children frequently repair their errors immediately following feedback (Mackey et al., 2003; Oliver, 1995, 2000, 2002). It is possible that the rate of repair was high because, as indicated earlier, children are considered "risk takers," and thus may not be afraid to take chances when producing or modifying their L2. Following feedback, children repaired the majority of lexical errors and most of the L1 uses. Children repaired less than half of the syntactic errors. It is possible that syntactic errors are more difficult to process than lexical errors because processing and

accessing the rules of grammar is far more complex than retrieving lexical items. In addition, students are not used to focusing on form, as the school curriculum encourages content over linguistic form.

Findings indicate that all repairs followed negotiations. Recasts failed to promote any learner repair. It appears that negotiations are more likely to promote repairs because, in contrast to recasts, they may (through clarification requests, metalinguistic clues, elicitation, and repetition) incite learners to notice that they have produced a non-target-like utterance and to reprocess it. Repairs may be important, as they allow learners to practice the structures and to produce output (Swain, 1985, 1995) which may create conditions needed for language acquisition. However, even when learners fail to repair their non target-like structures after receiving feedback it does not necessarily mean that the feedback provided is ineffective in promoting acquisition. It helps to remember that feedback, such as recasts, can do more than simply signal an ungrammatical utterance. Recasts can also promote L2 development by making the target language form salient and by providing positive evidence (e.g., Leeman, 2003; Saxton, 1997). In fact, Morris (2002a) and Mackey and Philp (1998) have also shown that recasts may be beneficial for short-term interlanguage development even when they are not immediately incorporated by learners. What learners may have to do for acquisition to take place is to notice the feedback and accurately perceive it as intended; it may not be necessary for them to produce an immediate repair.

## CONCLUSIONS

The significance of this study lies in demonstrating that interaction via CMC provides opportunities for learners to write and "chat" (in a synchronous text-based format) about language, provide feedback and use the feedback, elements that are considered to be crucial for L2 development.[10] When these Spanish immersion school children engaged in CMC, they corrected many of their peers' errors, and, following feedback, learners produced repairs of the errors corrected. The majority of errors were corrected using negotiations, which proved to be more effective at leading to immediate repair of errors than did recasts. Overall, these findings demonstrate that the pattern of error correction and repair following feedback resembles that of face-to-face interactions (see Mackey et al., 2003; Oliver, 1995, 2000, 2002).

But did CMC play a particular role in the provision and use of feedback? It is possible that the incidence of feedback and learner repair following feedback was high because, as Kern (1995) argues, interaction which is implemented in a synchronous electronic environment generates high rates of students participation and language production, offers more time to develop and refine comments, and allows for more collaboration between participants. However, synchronous CMC blocks interpersonal cues and reduces much of the nonlinguistic aspects of face to face interaction that may facilitate communication and understanding (Walther, Anderson, & Park, 1994). Thus, CMC may take away the support that face-to-face cues provide, focusing the burden of communication on written messages. As a result, the use of persistent indicators, such as providing feedback and immediately responding to feedback, may have occurred to establish the intended utterance and avoid a communication breakdown between participants. These explanations are, however, speculative at the moment and must be viewed with caution. To fully determine how CMC shaped these learners' provision and use of feedback, we must also examine how these learners correct their peers' errors and how they respond to feedback in the context of face-to-face interactions. The results should be compared to those in this study. The overall findings may reveal specific interactional features that may or may not be particular to context.

The current study takes on the position that new technologies and their application to L2 classrooms, must be looked upon with caution. Much work needs to be conducted in order to examine how these new technologies and their applicability to language classrooms affect the learning context. Researchers and educators must continue to ask, for example, how technology improves the quality and process of L2 learning. In the field of CMC very little work has been done to particularly examine the identification of the pedagogical objectives that this type of technology-based teaching is intended to fulfill and to explore the demands that CMC activities place on learners (Salaberry, 2001). Without a doubt, communication

settings substantiated in CMC still require a substantial amount of investigation before reliable pedagogical guidelines are developed.

The current study does not argue that all child-to-child interactions via CMC will yield the same results. Additional studies should examine the provision and use of feedback in Spanish immersion schools, evaluating other levels and classes, and comparing CMC to face-to-face conversations. The lack of pre- and post-tests measures make it impossible to determine the effects of feedback and repair following feedback on L2 development. One must also be cautious when interpreting the results, as socio-cultural factors may have played a role in the interactions and feedback patterns represented in this study. For example, learners' preference for negotiation over recasts may not necessarily be attributed to the CMC or the classroom itself but to other variables such as learners' conversational and learning styles and strategies. Perhaps the participants in this study were courteous students who have been taught to negotiate their peers' errors instead of correcting those errors using explicit feedback. Additional studies are needed to determine what social and cultural aspects may predict the pattern of error correction and repair. Another question that remains speculative and future research should address is why learners demonstrated a lack of awareness of grammatical inaccuracy.

**NOTES**

1. These claims also support Tarone's position (see Tarone & Liu, 1995) arguing that the study of L2 use in its social context is essential to the study of SLA.

2. The exact demographics of the school are not known because the school administration chose not to disclose that information. Only the students who participated in the study could, and only if they chose to, disclose their ethnic-racial-language background. The limitations placed on the research by the school administration and the Institutional Review Board/Human Subjects Committee were done to safeguard the children who volunteered to participate in the study.

3. The term is used to refer to a student who is raised in a home where Spanish was spoken and who is to some degree bilingual in English and Spanish.

4. Once the activity began, the teacher could not control whether students would eventually recognize their partners, as many students immediately shared their identity.

5. The reason participants were asked to write an essay was to give a purpose for the jigsaw task. The essay that the students produced was collected and the students received feedback from the teacher, as is customary when learners hand-in any written work.

6. Statistical analyses were not conducted for the data in Table 4 because the number or items and frequencies in some of the cells are low.

7. The names of participants have been changed to protect their identity. The Internal Review Board/Human Subjects Committee allowed only the researcher (and coders) access to the original dialogues with names.

8. <Wait> indicates one waits or the other person should hold/wait; LOL means laugh-out loud; BRB means be right back.

9. As stated earlier, the purpose of the current study was to examine the overall pattern of error correction and repair following feedback. The current study did not attempt to evaluate discourse techniques, CMC strategies, language use, or general interactional patterns. Future research should examine these interactional patterns and determine, for example, children's use of language (whether English or Spanish) when engaged in CMC, and the interactional features (e.g., LOL ["laugh out load"] and happy faces ☺ ) that communicate emotion and help learners compensate for the lack of face-to-face contact.

10. The terms "chat" or "chatting" are commonly used when individuals engage in online conversations such as "instant messaging."

## APPENDIX A
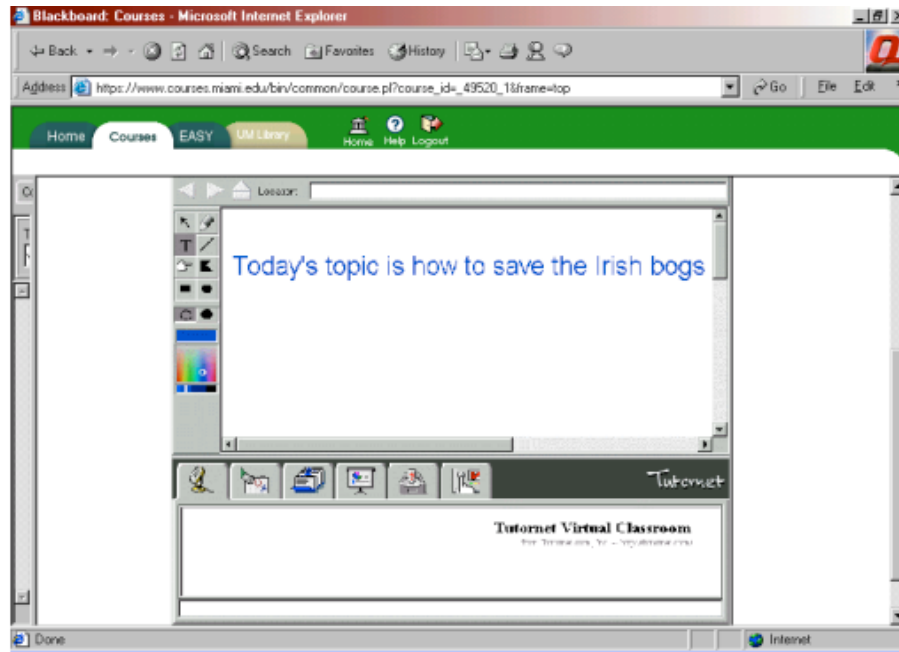## Sample Template -- Blackboard Welcome Page
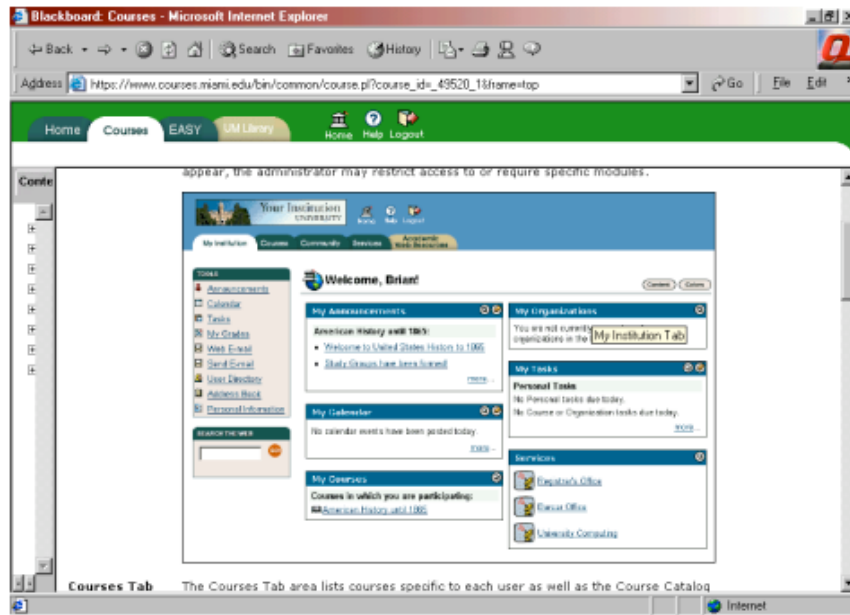


## APPENDIX B
## Sample Template 2 -- Blackboard Control Panel
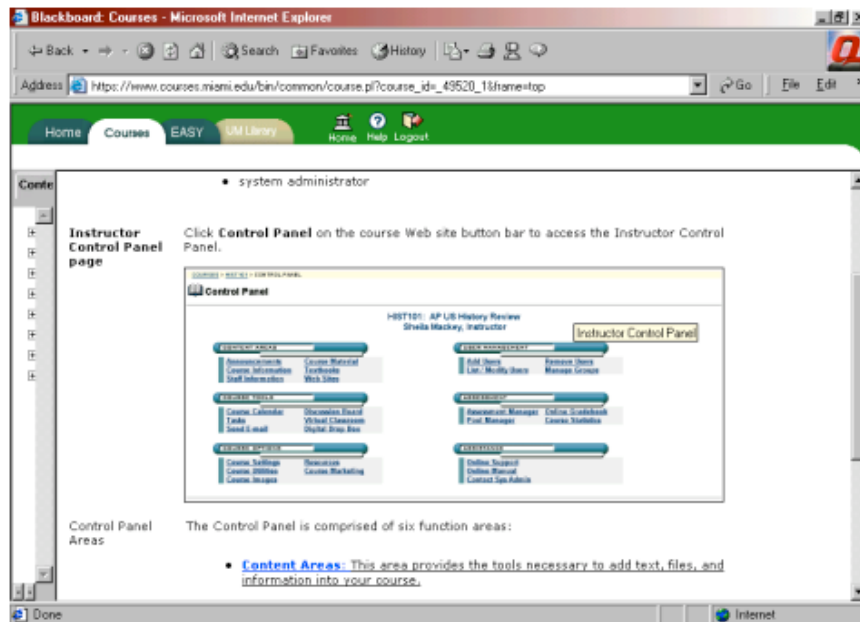
**APPENDIX C**
**Sample Template 2 -- Blackboard Virtual Classroom / Chat Room**



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