Focus-on-form through collaborative scaffolding in expert-to-novice online interaction

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FOCUS-ON-FORM THROUGH COLLABORATIVE SCAFFOLDING IN EXPERT-TO-NOVICE ONLINE INTERACTION

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Synchronous Computer-mediated communication (CMC) creates affordable learning conditions to support both meaning-oriented communication and focus-on-form reflection that play an essential role in the development of language competence. This paper reports how corrective feedback was negotiated through expert-to-novice collaborative efforts and scaffolding with 30 subjects working on three different tasks—jigsaw, spot-the-differences and open-ended question. The findings reveal that text chats supported the focus-on-form procedure through collaborative engagement. Despite the fact that the experts were able to provide step-by-step scaffolding at the right moment to call learners' attention to non-target-like-forms that resulted in error corrections, they needed to be made aware of not over-intervening as students reported interference between the expert's goals and the learner's. To maintain intersubjectivity, the use of both L2 and L1 shaped the route taken by experts and learners alike to negotiate L2 forms for both syntactic and lexical errors. The study concluded that it was not easy to provide corrective feedback and to attend to linguistic errors in a timely fashion during the meaning-based interaction. The long-term effect of focus-on-form procedures on L2 development through CMC remain to be explored in future studies.

INTRODUCTION

Synchronous computer-mediated communication (CMC) has been increasingly incorporated into second language (L2) instruction to expand learners' exposure to the target language through real-time interaction. When learners engage in interaction, they receive input, feedback, and opportunities to produce modified output, all of which facilitate the development of learners' interlanguage (Long & Robinson, 1998; Swain & Lapkin, 1995). According to Schmidt (2001), conscious noticing of linguistic forms is necessary in order for learning to take place. Text-based CMC creates affordable learning conditions to support both meaning-oriented communication and form-focus reflection (Lee, 2002a; Meskill & Anthony, 2005; O'Rourke, 2005; Pellettieri, 2000; Sotillo, 2005; Ware & O'Dowd, 2008). The absence of nonverbal cues in text chats (e.g., facial expressions) affects the way corrective feedback is generated. The visual salience of written discourse and the self-paced setting in a text-based medium increase learners' opportunities to take notice of errors and make output modifications including self-repairs (Blake & Zyzik, 2003; Dussias, 2006; Lai & Zhao, 2006; Smith, 2008; Sotillo, 2000; Warschauer & Kern, 2000).

To date, the CMC studies grounded in Long's Interaction Hypothesis (1996) have focused on how negotiation of meaning elicits corrective feedback using various types of negotiation moves (e.g., clarification requests, recasts) to attain mutual comprehension (Lee, 2001, 2002b, 2006; Smith, 2003; Tudini, 2003). Despite the fact that a limited number of studies showed that CMC enhanced the development of grammatical competence through noticing errors in certain syntactical features (Dussias, 2006; Fiori, 2005; Salaberry, 2000), other reports revealed that lexical errors were the main triggers for negotiation of meaning, whereas syntactical errors were largely ignored (Blake & Zyzik, 2003; Lee, 2006; Sotillo, 2000; Smith, 2003). Lee (2002b) concluded that synchronous CMC encouraged fluency rather than accuracy. From a pedagogical point of view, grammatical accuracy and lexical growth should be equally important for the development of L2 language competence. How can we find an effective means to provide learners with meaningful interaction that goes beyond lexical problems to include negotiation of grammatical forms as well?

Using a sociocultural perspective[1] as the theoretical framework, this study explores how corrective feedback is negotiated through a joint social activity in which the experts provided moment-by-moment scaffolded help to engage learners in various types of error correction. The study involved 15 expert-to-novice pairs (N = 30) who carried out six two-way information exchange tasks in a chat room. The expert speakers were 15 advanced proficiency level students, whereas the novices were 15 students from a fourth-semester Intermediate Spanish class. Focus on form engagement assisted by the expert was examined. The extent to which the expert scaffolding afforded L2 learners the opportunity to notice linguistic problems that led to error correction, including self-repair, was explored.

Feedback Negotiation: Focus on Form and Collaborative Scaffolding

Researchers have claimed that input and interaction alone are not sufficient for L2 development. There is a general consensus that focus on form through corrective feedback within a communicative context contributes to language acquisition (Skehan, 2003). From the Vygotskyan sociocultural point of view, corrective feedback is embedded within a social context through which learners work collaboratively to solve linguistic problems (Nassaji & Swain, 2000). Collaborative dialogue centers on how learners assist one another in reconstructing linguistic forms rather than engaging in negotiation of meaning caused by a communication breakdown (Donato, 1994; Foster & Ohta, 2005; Lee, 2004b; Swain, 2001). Scaffolding occurs when an individual who has knowledge at a higher level provides guidance to assist a person who is less capable or knowledgeable. Expert assistance fosters the development of learners' interlanguage by activating their zone of proximal development (ZPD)—the distance between what they can achieve by themselves and what they can achieve with assistance from others. Lee (2004b) notes that scaffolding is a joint and reciprocal task that demands collaborative effort. To collaborate successfully, both the expert and the novice must maintain an intersubjectivity (a shared understanding among individuals who establish reciprocal and equal perspective to accomplish a joint activity through socially negotiated interaction) by means of which they establish common goals within a shared communicative context (Darhower, 2002; De Guerrero & Villamil, 2000).

According to Aljaafreh and Lantolf (1994), scaffolding should start with minimal help and then gradually offer more specific assistance as needed. Learners first rely on the assistance of experts to make error corrections (other-regulation) and eventually gain increased independence and become self-regulated, reconstructing their erroneous forms with little or no intervention (DiCamilla & Antón, 2004). It should be noted that learners' self-regulation in a given task does not necessarily imply that they can independently perform all types of tasks (Aljaafreh & Lantolf, 1994). During the scaffolding process, the nature of the task may affect the amount of feedback negotiation. For instance, spot-the-difference tasks require the use of precise lexical items and grammar points (e.g., description of specific objects or scenes in the picture) to reach a convergent outcome, whereas open-ended questions are less structured and contain unanticipated accounts that may lead to a variety of responses. From this perspective, open-ended questions may be conducive to feedback negotiation that prompts less on the form than on the meaning as the use of specific vocabulary may not be necessary to complete the task. Other contributing factors including learners' language proficiency and motives for language learning also influence the process of feedback negotiation (Lantolf, 2000; Lee, 2004b).

To evaluate effective scaffolding within the ZPD, Aljaafreh and Lantolf (1994) developed five transitional levels of scaffolding strategies to track learners from other-regulated to self-regulated performance within a given task. The five levels of strategy intervention have been implemented in recent synchronous CMC studies to assess learners' language development (Oskoz, 2005). Table 1 highlights the main points of each level. These five levels were adapted for the current study[2].

Table 1. Five-Level Collaborative Scaffolding (adapted from Aljaafreh & Lantolf, 1994)

Level 1: The learner is not aware of the errors or does not have the knowledge to correct them even with intervention. The expert is responsible for providing help by bringing attention to errors. The co-constructing process starts within the ZPD. The expert initiates the sentences, such as "Did you see any errors here?" after noticing several errors made by the learner.

Level 2: The learner notices the error but is not able to correct it. The assistance is provided to involve feedback negotiation. The learner begins to understand the information but still relies heavily on the expert to perform. For instance, after the learner fails to make the first attempt to correct the error, the expert provides more specific feedback, such as "Something is wrong in the first sentence."

Level 3: The learner notices and corrects the error only with the expert's help. The expert utilizes a specific strategy for intervention. The learner understands the help, reacts to the feedback and begins to advance toward the self-regulated stage. The expert uses sentences, such as "Good try but pay attention to the verb." or "Use the third person not the first person." to point out the linguistic problem.

Level 4: The learner notices the error and corrects it with a minimum of help. However, the learner has not yet fully progressed toward self-regulation. The learner still produces the non-target-like form and may need to confirm the correct form with the expert using sentences, such as "Is this correct?" or "Let me try it again."

Level 5: The learner notices and corrects errors without the expert's help (e.g., self-repair). The learner does not rely on the expert's scaffolding and becomes fully self-regulated.

In this study, these stages are examined through a microgenetic analysis[3] to observe moment-by-moment scaffolding to help the learner notice and correct the error (levels 1-3). Gradually, the assistance is removed from the learner (level 4) and the learner becomes self-regulated in error correction (level 5).

L2 research on the examination of feedback negotiation through collaborative dialogue is limited to the written or oral interaction within formal traditional classroom settings (Aljaafreh & Lantolf, 1994; Antón & DiCamilla, 1999; De Guerrero & Villamil, 2000; DiCamilla & Antón, 2004; Donato, 2000; Nassaji & Swain, 2000; Ohta, 2000). These studies analyze the manner in which L2 learners co-construct meaning and support each other to produce accurate linguistic forms. For instance, in her study of two Japanese learners' collaborative interaction, Ohta (2000) found that the more proficient learner was able to assist the less proficient learner in a form-focused procedure. Other studies report that learners use their native language (L1) as the mediating tool for the establishment of mutual engagement and support for a shared task (Antón & DiCamilla, 1999; Brooks, Donato & McGlone, 1997; DiCamilla & Antón, 1997). While the use of L1 should not be encouraged for L2 learning, it enables learners to comment on their own output as metatalk that facilitates cognitive processing (Swain & Lapkin, 2000; Thoms, Liao & Szustak, 2005). L1 use mediates the feedback negotiation process through which learners work collaboratively to solve linguistic problems and keep communication flowing. According to Lee (2006), the occurrence of L1 use is related to learners' language proficiency and personal learning style.

As mentioned previously, studies of CMC in the interactionist tradition center on the relationships among error types, feedback types, and immediate responses (Blake and Zyzik 2003; González-Lloret, 2003; Smith, 2003). The relationship between corrective feedback and attention to linguistic form in the CMC context has not been fully explored from a sociocultural perspective. Oskoz's (2005) CMC study shows that it is possible to use dynamic assessment techniques drawn from Aljaafreh and Lantolf's five-level scale of scaffolding to measure learners' developmental stages within the ZPD. Examining the

collaborative process rather than the immediate product offers a closer look at how feedback is negotiated and how learners' interlanguage is developed via CMC.

The purpose of the present study was to expand on Lee's (2004b) examination of native speaker – non-native speaker networked collaborative interaction. The analysis centered on a focus-on-form procedure attained through expert scaffolding, a process that may result in reconstructing learners' interlanguage. The micro-nature of interactions examined in this study attempted to answer three research questions:

1. Does collaborative interaction between expert and novice speakers of Spanish foster a focus-on-form procedure during synchronous CMC?

2. If so, how do expert speakers provide timely corrective feedback to draw learners' attention to L2 forms that lead to learner-generated corrections?

3. From the learners' perspectives, how does expert scaffolding affect the way corrective feedback is negotiated?

METHOD

Participants

This research project was conducted throughout the fall semester of 2006 involving 30 students of Spanish (22 females and 8 males) at a large public university in the northeastern United States. In order to create expert-novice partners, 15 native speakers of English who enrolled in a fourth-semester Spanish class were the target population for the novice speaker group[4]. The majority of these students (N =12) had studied Spanish for a minimum of three years in high school. They were placed in the fourth-semester Spanish course through a standardized placement test[5]. The remaining students had completed the previous three semesters of coursework at the university. The expert speaker group consisted of 15 students who scored at the Advanced level of proficiency based on the results of the Spanish Oral Proficiency Test—SOPT (Lee, 2000). Ten students were native speakers of English and five were native speakers of Spanish (Spain = 1, Mexico =1, Columbia = 2, Puerto Rico = 1). The majority of these students (N = 12) had studied abroad for a minimum of one semester; some were taking (N = 6) or had taken (N = 5) a graduate seminar in Spanish. Fifteen pairs were formed, each consisting of one expert speaker and one novice speaker. They were asked to carry out six two-way information exchange tasks by means of a chat room in *Blackboard*. All participants had used *Blackboard* for other classes on campus. They were familiar and comfortable with Internet technologies including chatting online. Therefore, no training was necessary prior to the study.

Tasks

Three types of two-way exchange tasks that elicited collaborative interaction were chosen for the current study (Table 2).

Table 2. Topic, Task Type, and Description of Task

Topic	Task type	*Description of Task
Chat #1: Movie making Chat #2: Buying a pet	Jigsaw	Information gap; convergent; one closed outcome
Chat #3: Bus ride Chat #4: Luisa's messy room	Spot-the-differences	Goal-oriented; convergent; one closed outcome
Chat #5: Role of technology Chat #6: Immigrants in the United States	Open-ended question	Opinion exchange; divergent; multiple outcomes

*Description of each task is based on Pica, Kanagy, and Falodum (1993)

Information gap (jigsaw) and goal-oriented (spot-the-differences) activities are closed tasks with one possible outcome. These two-way exchanges promote negotiation of meaning and form because learners need to exchange information in order to complete the task (Skehan, 2003). For instance, one of the goal-oriented activities was for the participants to work together to identify 15 differences between two drawings of Luisa's messy room. It is likely that specific lexical items or grammar points would be required to achieve mutual comprehension. In contrast, open-ended questions allow free responses that may not necessarily require precise information to complete the task. Task type influences the amount of corrective feedback received from the expert during synchronous CMC.

Procedures

As part of the course requirement, students were required to participate in six chats using the "Virtual Classroom" of *Blackboard*. Chat activities were course assignments outlined in the syllabus. To support form-focus reflection during meaning-oriented communication, the expert speakers were instructed to apply the five-level scaffolding procedure (Table 1) to provide feedback as needed. A brief two-hour training session familiarized the experts with the five-level scaffolding. When linguistic problems arose, the expert speakers were instructed to intervene by providing assistance to draw learners' attention to focus on form. While no specific aspects of grammatical features were targeted for this study, the experts were asked to pay attention to concordance (e.g., noun and adjective agreement), the copulas *ser* and *estar*, and morphosyntax (e.g., verb conjugations and tenses) because these are common linguistic problems[6] at the intermediate level. The novice speakers (intermediate level at the research institution) were told that their expert partners would assist them in error correction when necessary.

All participants were encouraged to focus on the topic, share ideas with each other, and allow their partners to contribute as much as possible. Each task lasted approximately 45 minutes. Exchanges were automatically saved in *Blackboard*'s archives and were retrieved later for data analysis. In addition, the novice members wrote a reflective log to report their overall observations on online feedback negotiations and error corrections upon the completion of this project. The following instructions were provided to guide their writing:

1. Describe your overall experience of online exchanges with your partner.

2. Explain how your partner provided feedback to you and whether you found error correction beneficial for your learning of Spanish.

3. Tell me the moments during the online exchanges you felt were particularly helpful or confused.

4. Write additional comments on your view of expert feedback and error correction.

Data Analysis

According to Darhower (2002) data reduction is necessary to maintain consistent and systematic data analysis. Reduction is achieved by selection of relevant episodes. Therefore, chat logs were selected from the second, fourth, and sixth chat sessions; they included three tasks, one of each task type: one jigsaw, one spot-the-differences, and one open-ended question. These episodes[7] were chosen because they illustrated a fair amount of attention to linguistic forms during expert-to-novice feedback negotiation. The microgenetic analysis allows for selected chat logs to be organized into collaborative episodes. These episodes contained linguistic problems that provided a record of the observation of moment-by-moment scaffolding within the ZPD. Students' reflective essays were used to assist the interpretation of chat data and to make additional observations to support the findings.

FINDINGS AND DISCUSSION

The findings showed that the experts assisted their partners linguistically and cognitively in the process of feedback negotiation. In many instances, corrective feedback displayed visually on a computer screen

facilitated error corrections in the use of temporal and aspectual morphosyntax: the use of *pido* 'I ask for' versus *pedí* 'I asked for' and *caminé*, 'I walked' versus *caminó* 'he walked.' The type of linguistic scaffolding, however, affected the way corrective feedback was negotiated through a focus-on-form procedure. As the result of feedback negotiation, the novice students were able to self-repair their errors[8] and incorporate correct forms into their follow-up turns[9] (Table 3).

Table 3. Frequency of Self-Repair Moves and Follow-Up Turns in Each Task Type

Task Type	Self-Repair Moves	Follow-Up Turns
Chat #2: Jigsaw	44 (38%)	18 (45%)
Chat #4: Spot-the-differences	23 (20%)	7 (18%)
Chat #6: Open-ended question	48 (42%)	15 (37%)
Total	115 (100%)	40 (100%)

The results suggest that the task type affected the amount of self-repair generated by the novice speakers. Open-ended question resulted in the highest rate of self-repairs (42%), whereas spot-the-differences received the lowest rate (20%). Unlike open-ended questions, spot-the-differences tasks require L2 learners to use specific lexical items to express meaning. It is likely that learners would solve semantic problems that cause communication breakdowns before they attended to syntactic errors. Cognitively, it may not be possible for the novices to pay attention to the meaning and the form simultaneously. Thus, they might not have the opportunity to attend to form and make error corrections during the meaning-oriented exchange.

35% of self-repair moves were incorporated into the follow-up turns (Table 4). It is interesting to note that the jigsaw task generated the highest frequency of follow-up turns (41%), whereas spot-the-differences (30%) and open-ended question (31%) resulted in a similar rate of follow- up turns.

Table 4. Rate of Follow-Up Turns per Self-Repair Move in Each Task Type

Task Type	Rate
Chat #2: Jigsaw	18/44 (41%)
Chat #4: Spot-the-differences	7/23 (30%)
Chat #6: Open-ended question	15/48 (31%)
Total	40/115 (35%)

The focus-on-form is more salient in CMC than in face-to-face interaction as the learner reads the correct written text on the screen. Moreover, written discourse can easily be retrieved by the use of the vertical scroll bar. The fact that the novices were told that they would engage in error correction may have affected the high rate of self-repair moves. While this study makes no claim on the long-term effect of feedback negotiation via expert scaffolding for L2 development, the data suggests that corrective feedback provided by the expert had a positive effect on drawing learners' attention to form that led to self-repair. These results corroborate those found in the CMC study conducted by Lai and Zhao (2006) and Lee (2006).

A close-up data analysis of selective episodes as well as information gathered from the participants' reflective essays provided confirmation of the hypothesis that synchronous CMC supported the focus-on-form procedure through collaborative engagement in expert-to-novice exchange. To facilitate the discussion, Table 5 illustrates the episodes that correspond to the topic and the task type.

Table 5. Topic, Task Type, and Corresponding Episode

Topic	Task Type	Corresponding Episode
Chat #2: Buying a pet	Jigsaw	Episode 5, Episode 6, Episode 8
Chat #4: Luisa's messy room	Spot-the-differences	Episode 3, Episode 4, Episode 9
Chat #6: Immigrants in the United States	Open-ended question	Episode 1, Episode 2, Episode 7

As can be seen in Table 6, nine Episodes in three types of tasks prompted various types of expert scaffolding that led to the acceptance or the rejection of feedback negotiation by the novice speakers.

Table 6. Task Type, Corresponding Episode, and Scaffolding Strategies

Task type	Corresponding Episode	Feedback Negotiation from Indirect to Direct Scaffolding
Jigsaw	Episode 5	Use of L1 for lexical problem
Jigsaw	Episode 6	Use of L2 for step-by-step scaffolding on grammar
Jigsaw	Episode 8	Direct scaffolding on grammar; unsuccessful feedback negotiation on form
Spot-the-differences	Episode 3	Use of L1 for grammar explanation
Spot-the-differences	Episode 4	Use of L1 for grammar explanation
Spot-the-differences	Episode 9	Initial scaffolding; unsuccessful feedback negotiation on form
Open-ended question	Episode 1	Use of L2 for scaffolding on grammar error
Open-ended question	Episode 2	Use of L2 for scaffolding on grammar error
Open-ended question	Episode 7	Use of L2 for lexical problem

7 of the 9 Episodes show the collaborative engagement of feedback negotiation across three types of tasks. Only 2 Episodes (Episodes 8 and 9) did not generate feedback negotiation. The results reveal that the open-ended question resulted in the use of the target language (L2) for feedback negotiation on both lexical and grammar problems, whereas the spot-the-differences prompted the use of L1 for grammar explanations. The little evidence available seems to suggest that open-ended questions promoted L2 use in the scaffolding process. Lee (2006) remarks that it is fairly difficult to explain an advanced grammatical concept in the target language. Therefore, the use of L1 is a good choice to solve linguistic problems and to keep the flow of conversation going, as shown in Episode 4.

The following discussion highlights the amount of scaffolding, the use of L1, the role of the expert that affected how the learners socially co-constructed L2 knowledge with their expert partners during synchronous CMC. To facilitate the data interpretation, throughout the episodes, words in boldface indicate the words in the wrong verb forms targeted for corrective feedback. Italicized words enclosed in brackets are explanations provided by the researcher.

Corrective Feedback via Expert Scaffolding[10]

Feedback negotiation was made through collaborative scaffolding between the expert and the novice. Episode 1 below demonstrates how the student (Grant = G) self-repaired the syntactical error from *esquí* to *esquié* 'skied' (line 4) immediately after receiving the confirmation check (line 3) from his expert partner (Amanda = A). All episodes are provided as they occurred with the students. No typographical or other errors have been fixed.

Episode 1[11]

1. G: me gusta a esquiar. (I like to ski.)

2. G: **esquí** solamente tres veces en montanas. (I only skied three times on mountains.)

3. A: ¿esquí? (skied?) [*Confirmation check to indicate the wrong form*]

4. G: Esquiar, yo esquié. si, esquié. Lo siento. Cuando esquié, usar, usé mi snowboard. ¿Como se dice "snowboard"? (To ski. I skied. yes, I skied. I'm sorry. When I skied, to use, I used my snowboard. How do you say "snowboard"?) [*Use of metatalk to solve linguistic problem*]

5. A: Snowboard. Así se dice en español. A mí me gusta esquiar también. (Snowboard. This is how you say it in Spanish. I like to ski too.)

6. A: Muy bien. ¿Qué haces para proteger el medio ambiente? (Very good. What do you do to protect the natural environment?)

After receiving initial corrective feedback from Amanda, Grant was able to make the error correction without further assistance from Amanda (line 4). The confirmation check used by Amanda in line 3 made Grant notice the feedback that drew his attention to a specific linguistic form. It is possible that the word *esquí* displayed on the screen may have reduced the cognitive burden on Grant and further caught his attention to notice the gap between his incorrect verb form *esquí* (line 2) and the target form *esquié* (line 4). The scaffolding provided by Amanda occurred at the right moment to push Grant to stretch his ZPD and solve his own linguistic problem by the use of metatalk that engaged him in mental work to arrive at the correct form *esquié*. The finding corroborates the results of Lee's CMC (2004b) study that demonstrated that scaffolding from the experts in native-to-nonnative speaker collaborative interaction assisted students in reconstructing L2 forms, a process that involved both linguistic and cognitive skills.

The evidence presented in Episode 2 below further reveals how Amanda and Grant worked collaboratively in a process of reconstruction of a L2 form.

Episode 2

1. A: ¿Qué opina de los inmigrantes en este país? (What do you think about the immigrants in this country?)

2. G: Muchos son Mexicanos. En mi puebla ellos trabajan a Dunkin Donuts. No **son** contentos. (Many are Mexicans. In my town they work at Dunkin Donuts. They are not happy.)

3. A: De acuerdo. Algo no está bien en los verbos. (I agree. Something is not right in the verbs) [*Use of hint*]

4. G: No se. Mi gramatica es mal. (I don't know. My grammar is bad). [*Need for further assistance*]

5. A: Fijese en los verbos 'ser' (Look at the verbs 'ser') [*Prompt to L2 Form*]

6. G: Hay dos. Cual? (There are two. Which one?) [*Ask for more help*]

7. A: el segundo verbo (the second one) [*Specific help to point out the problem*]

8. G: estan? Ellos no estan contentos. (they are? They are not happy.)

9. A: Ahora si está bien. (Now, yes now it is right).

In the above episode, Amanda's step-by-step scaffolding using different levels of feedback strategies highlights the collaborative interaction in which Amanda gradually increased the amount of assistance to guide Grant accordingly. After receiving the initial scaffolding from Amanda (line 3), Grant admitted his inability to identify the error (line 2). In line 4, Amanda increased her assistance by asking Grant to pay attention to the verb *ser* (line 5) but she did not yet point out the exact error. By asking Amanda a specific

question *Cual?* 'Which one?' (line 6), it is clear that Grant continued to need further direction. Finally, after Amanda directly pointed out the location of the error (line 7), Grant made the error correction despite the fact that he was not fully confident. He asked the question *estan*? 'they are?' in line 8 to confirm his attempt. In his reflective essay, Grant praised the scaffolding techniques that Amanda used to help him make error corrections. In particular, he viewed Amanda as a non-threatening figure with whom he felt comfortable expressing his thoughts. Grant also admitted that he needed more help from Amanda. He remarked, "I really enjoyed working with Amanda who is not a teacher but someone who knows more than I do to help me out when I got stuck."

Both Episode 1 and Episode 2 provided evidence of mechanisms of effective collaborative scaffolding within the ZPD during the feedback negotiation process. In many cases, the experts began with the minimum scaffolding (level 1) using sentences like "Do you see something wrong in the sentence?" and gradually increased the help when the partners failed to notice the non-target-like form using proper hints, such as "Pay attention to the gender and the number." (level 3). With proper assistance on the part of the experts, learners may over time increase their awareness of incorrect forms, make self-repairs, and in other ways improve their language accuracy. The outcomes of studies that focus on specific linguistic forms involving learners at a certain level of language proficiency would undoubtedly contribute to our understanding of the effectiveness of collaborative scaffolding with the ZPD.

Use of L1

Successful scaffolding relies on collaborative efforts on the part of both parties. The data yielded a total of 13 instances of the use of L1 for both lexical and syntactical explanations. The findings indicated that the L1 deployed as a mediating tool facilitated the feedback negotiation process through which both experts and novices searched for effective strategies to achieve the mutual goal of task completion. The L1 was used to explain complex grammatical structures, such as the use of the aspectual problem (Episode 3) as well as the subjunctive structure (Episode 4). Episode 3 highlights how the expert (Melissa = M) helped the novice (Hannah = H) understand the difference between the two temporal aspects of the preterit and the imperfect.

Episode 3

1. H: **Fueron** las diez cuando Luisa **llegaba** a la casa. (It was ten o'clock when Luisa was arriving at the house.)

2. M: Hmm… algo no está bien en su oración. (Hmm… something is not right in your sentence.) *[Use of indirect hint]*

3. H: Pienso que no uso los verbos bien. (I think I don't use the verbs well.) *[Noticing of problem but needs more help]*

4. M: Si, ¿puede corregirlos? (Yes, can you correct them?) *[To encourage self-repair]*

5. H: Should I use "llegó" instead of "llegaba"? It should be "she arrived" not "she was arriving" *[L1 to re-orient herself]*

6. M: Correcto. ¿Qué tal el primer verbo? (Correct. How about the first verb?) *[To draw attention to a specific form]*

7. H: Creo que está bien pero no se. (I think it is right but I don't know.) *[Need for more help]*

8. M: Remember that the imperfect is used to describe a scene including the use of time in the past. *[Use of L1 to explain L2 grammar rule]*

9. H: But it is a specific time; ten o'clock.

10. M: In Spanish the imperfect is used to describe the time in the past.

11. H: O.K. Eran las diez. I have to remember this rule. (O.K. It was ten o'clock.) *[Self-repair]*

The above example illustrates that both the expert and the novice used the L1 to solve linguistic problems. The occurrence of the use of L1 might be related to learners' language proficiency. Another example of the use of L1 can be seen in Episode 4. The expert (Julia = J) employed the L1 to help her partner (Kris = K) understand the advanced grammar point, keep him on task, stimulate his curiosity, and further support his cognitive processing to maintain the shared communicative context.

Episode 4

1. K: Espero que la nina **recibe** regalos. (I hope the child receives gifts.)

2. J: Recibe? [*Confirmation check to provide hint*]

3. K: si la nina recibe regalos. Should it be in the past tense, recibio? (yes the child receives gifts. … she received?) [*L1 for self-orientation*]

4. J: Your first verb is "esperar" so you need to say "espero que reciba regalos" "Recibir" should be in the subjunctive form. [*Use of L1 as scaffolding to explain L2 grammar*]

5. K: Can that mean "I hope that she has received the money"? Recibir in the past tense. [*L1 for negotiation of L2 form*]

6. J: O.K. then it should be "Espero que ella haya recibido …" (O.K. then it should be "I hope that she has received …")

7. K: Que es "haya"? (What is "haya"?)

8. J: The present subjunctive of "haber" like haya, hayas, haya, hayamos, etc. You use "haber + ado/ido" like "haya recibido" means that I have received. [*L1 for further explanation of L2 form*]

9. K: O.K. Gracias. Es muy dificil. Necesito estudiar mas el subjunctive. (O.K. Thanks. It is very difficult. I need to study the subjunctive more.)

The above episode shows how Julia exposed Kris to the subjunctive structure through the use of the L1 to facilitate an on-the-spot explanation of L2 grammar. She immediately used L1 rather than L2 to provide direct help to Kris (line 4). Upon receiving the help, Kris remained curious about the subjunctive structure asking for further assistance from Julia (lines 5, 7). Julia's linguistic scaffolding used confirmation check (line 2) and L1 with examples in L2 (lines 4, 8) which allowed both parties to move the task along, maintain the feedback negotiation, and focus the learner's attention on the use of a non-target-like form. In his reflective log, Kris maintained that Julia's scaffolding was useful and effective in helping him better understand the subjunctive structure despite the fact that they used the L1 to negotiate.

In addition to syntactic problems, the results revealed that the L1 was also used to solve lexical problems because intermediate students have insufficient L2 lexical knowledge and they are often confused by the similarities of two words. In most cases, the L1 was used to explain the semantic distinction between two lexical items, such as *preguntar* 'to ask a question' versus *pedir* 'to ask for something', *derecho* 'straight or right' versus *derecha* 'right-hand side', *pintura* 'painting' versus *dibujo* 'picture or drawing'. Episode 5 illustrates how the expert Vanessa (V) used the L1 to help Cara (C) notice her inappropriate use of a lexical item.

Episode 5

1. C: En mi **pintura** tengo un perro y dos lamps. No se como se dice lamp. (In my painting I have a dog and two lamps. I don't know how to say lamp.)

2. V: Lámpara = lamp. Do you mean dibujo not pintura? *[L1 for clarification check]*

3. C: Is dibujo picture? [*L1 for confirmation check*]

4. V: Correcto. Pintura = painting pero dibujo = drawing or picture.

5. C: O.K. dibujo. Que tienes en tu dibujo? (O.K. drawing. What do you have in your drawing?) [*Repetition of correct form*]

The example illustrates how both parties used the L1 for a clarification check (line 2) and a confirmation check (line 3) to solve a lexical problem. Lexical correction demands learners' knowledge beyond their current level (Donato, 1994; Lee, 2006). The expert opted to use the L1 to explain the semantic difference between *pintura* 'painting' and *dibujo* 'drawing or picture' (line 4). Cara was able to incorporate the correct form into her follow-up turn (line 5). Cara's comment given in her essay further confirms the observations: "It would be impossible for Vanessa to help me without using English because of insufficient knowledge of lexical items. I thought that was the best option she had at the moment." In this case, the lexical error did not impede mutual comprehension. Rather, the expert drew the novice's attention to lexical inappropriateness. In spite of the fact that Vanessa was instructed to provide feedback on grammar errors, she might have felt obligated to make lexical correction and considered it as part of language accuracy.

L1 shaped the route taken by experts and novices alike to negotiate L2 forms for both syntactic and lexical errors. It is possible that the nature of the problem-solving task (i.e., jigsaw) pushed learners to focus on particular forms because they needed to describe drawings in a sequence, using specific L2 words or structures. More importantly, L1 allowed both parties to maintain their intersubjectivity, which involved both social and cognitive functions of interaction (Antón & DiCamilla, 1999; Darhower, 2002; Thoms, Liao & Szustak, 2005). The question remains whether the amount of L1 decreases as learners advance within their ZPD. The long-term effect of L1 on feedback negotiation in relation to learners' performance through the ZPD is an issue worthy of further research.

From Other-Regulation to Self-Regulation within the ZPD

The ultimate goal of collaborative scaffolding is for learners to become independent enough to make error corrections on their own. Furthermore, effective feedback should allow learners to "move into the zone of the next development" (Williams & Burden, 1997, p. 136). Episode 6 from the third week and Episode 7 from the seventh week illustrate how Mike (M) made the improvement from other-regulation to self-regulation performance in the use of the preterit verb forms with the assistance of Kerry (K) during online collaborative interaction.

Episode 6

1. M: Sí, es un mess[12]. El perro **rompo** los lampos. La madre era furioso y **decida** sacar el perro de la casa. (Yes. It is a mess. The dog breaks the lamps. The mother was furious and she decides to take the dog out of the house.)

2. K: Qué lío! Obviamente la mamá no estaba contenta. O.K. Algo no está bien en tus oraciones. (What a mess! Obviously the mother was not happy. O.K. Something is not right in your sentences). [*Hint to draw the attention to form*]

3. M: Es "rompo"? (Is it "rompo"?) [*Attempt to locate the error*]

4. K: Si. ¿Qué tipo del verbo es? (Yes. What type of the verb is it?) [*Narrowing down to specific type of verb form*]

5. M: Romper. Is it "rompo" for the dog? [*Use of L1*]

6. K: No. Es –er no –ar. Piénselo otra vez. (No. It is –er not –ar. Think about it again.) [*Metalinguistic hint to prompt error correction*]

7. M: Mis verbos en el pasado son mal. Es 'rompi'? (My verbs in the past are bad. Is it I broke?) [*Second attempt to identify the error*]

8. K: Rompí es para 'yo' ¿Cuál es la forma correcta para 'el perro'? (Rompí is for 'I' Which form is correct for 'the dog'?)

9. M: No sé. Los verbos son difícil. (I don't know. Verbs are difficult.)

10. K: De acuerdo. Primero, vamos a repasar las conjugaciones. Son í, iste, ió, imos, ieron. Entonces, es recibió. Ahora puede corregir el verbo 'decida'? (I agree. First, let's review the conjugations. They are í, iste, ió, imos, ieron. So, it is recibió. Now can you correct the verb 'decida'?) [*Provision of a verb model with explanation*]

11. M: Rompio, rompio. Decidir, decidio. Esta bien? (He broke, he broke. To decide, she decided. Is it O.K.?) [*metatalk*]

12. K: Sí. 'Decidió' es correcto. Seguimos el cuento. Me toca? (Yes. 'Decidió' is correct. We'll continue the story. Is it my turn?)

As shown in the above episode, Mike experienced difficulty in using the correct verb forms in the preterit. It is only with Kerry's help that he was able to correct his error. Kerry's scaffolding provided support needed to draw Mike's attention to the verb and help him become aware of what he could do on his own and what he could do with assistance. By the seventh week, Mike performed at the self-regulated stage by using both verbs "recibieron" (line 2) and "decidió" correctly (line 3) without Kerry's intervention as shown in Episode 7.

Episode 7

1. K: Muchos inmigrantes vinieron a este país a buscar trabajos. (Many immigrants came to this country to look for jobs.)

2. M: Si. Pienso es muy triste. Ellos recibieron mal trabajos. (Si. I think it is very sad. They received bad jobs.)

3. M: El papa de mi amigo es Mexicano. El decidio venir aqui porque puede **hacer** mas dinero. (My friend's father is Mexican. He decided to come here because he can make more money.)

4. K: Es 'hacer dinero' correcto? (Is 'to make money' correct?) [*Hint to draw attention to form*]

5. M: Se que hay otra palabra pero no se. (I know there is another word but I don't know.) [*Noticing of error but needs help to make correction*]

6. K: Es mejor usar 'ganar' (It is better to use 'to earn') [*Direct assistance*]

The findings confirm the crucial role of the expert in the feedback negotiation process (Lee, 2004b; Swain, 2000). In Episode 6, it is evident that Kerry's supportive role in collaborative scaffolding guided Mike at the right level of help from minimum to maximum (lines 4, 6, 8, 10). The use of both L1 (line 5) and metatalk (line 11) are facilitative of the dialogic interaction of Mike's error correction. After several attempts, Mike gave up and admitted that he did not know the answer (lines 3, 5, 7). Mike may have felt frustrated by not being able to detect his own errors. Kerry offered affective support by saying "I agree" and "Let's review the conjugations" (line10). The collaborative effort on her part as mediator influenced Mike's performance. Kerry was able to provide more direct help to Mike, whereby the explanation of the verb forms and the correct form *decidió* were provided (line 10). At the end, metatalk helped Mike make the connection between form and function (line 11). Kerry was able to provide just enough scaffolding to guide Mike in eliciting the correct verb form in his follow-up response.

Role of the Expert Speaker

Despite the fact that CMC allows L2 learners to express themselves without feeling as intense a pressure as they would in a live classroom (Lee, 2005), the expert plays a crucial role during the collaborative engagement. Episode 8 shows how the expert (Marie=M) provided direct assistance to a weak student (Andrew=A) in his error corrections.

Episode 8

1. M: En mi dibujo veo que los criminales entraron la casa y robaron muchas cosas. (In my drawing I see that criminals entered the house and stole many things).

2. A: Si, ellos **salgan** de la ventana. La mujer **tome** un bolsa grande y el hombre **lleve** dinero con un gun. Como se dice gun? (Yes, they leave from the window. The woman takes a big bag and the man carries the money with a gun. How do you say gun?)

3. M: Veo los problemas en los verbos. Primero, salir es –ir no –ar. Los verbos deben estar en el pasado. Salieron. (I see the problems in the verbs. First, salir is –ir not –ar. The verbs should be in the past. They left.) *[Direct assistance with explanation]*

4. M: Ahora puedes corregir los verbos? (Now can you correct the verbs?)

5. A: O.K. Salieron. Tomar es tomio. (O.K. They left. To take is took.)

6. M: Tomar no es –ir. Es –ar. Yo tomé, tú tomaste y él tomó. (To take is not –ir. It is –ar. I took, you took and he took.) [*Scaffolding with explanation*]

7. A: No se. Tomo y llevo[13]. Esta bien? (I don't know. I take and I bring, right?)

8. M: Debes poner los acentos en 'o' (You should put the accent marks on 'o')

9. A: No se los acentos. No me gusta verbos. Que mas tienes? (I don't know the accents. I don't like verbs. What else do you have?)

10. A: Como se dice "gun" en español? (How do you say "gun" in Spanish?)

11. M: Pistola. (Gun.)

It is evident that Marie's intervention did not provide Andrew with affordable opportunities to detect his own errors because the corrective feedback was not negotiated between Marie (the expert) and Andrew (the novice). Although Andrew made an attempt to figure out the correct form of *tomar* on his own after repeating *salieron* in line 5, he did not correct the error. Only after he received help from Marie in line 6, he wrote *tomo* and *llevo* without accent marks[14] in line 7. In this case, it is difficult to determine whether explicit feedback provided by the expert peer led to the error correction that promoted learning. Expert scaffolding did not seem to motivate Andrew to pursue further understanding of the verb forms as he responded to Marie "I don't know … I don't like verbs. What else do you have?" in line 9. Andrew appeared to be more interested in a lexical item rather than in making corrections of syntactical errors as he asked for help twice for the unfamiliar word for"gun" from Marie (line 2 and 10).

This finding indicates that Marie and Andrew did not maintain intersubjectivity. While Marie's intention was to assist Andrew in the error correction process, Andrew viewed the task as an opportunity for meaning exchange. Disappointed, Andrew wrote in his reflective essay: "I did not like the way Marie corrected my mistakes. We were chatting not learning Spanish grammar." Andrew's comments further revealed that it was not easy to attend to linguistic errors in a timely fashion during the meaning-based interaction. He further remarked: "I don't think it is a good idea to correct someone's mistakes during the conversation." It is logical that learners solve semantic problems before they attend to syntactic errors

because lexical items are meaning-oriented and have more communicative value than syntactic forms (VanPatten, 1996).

On a few occasions, students appeared to be more interested in making meaning (communication) rather than form (grammar) as illustrated in Episode 9, carried out by the novice Tina (T) and the expert Lori (L):

Episode 9

1. T: La casa **es** muy sucio. Hay muchos papeles en el floor. El perro duerme en la cama. (The house is very dirty. There are many papers on the floor. The dog is sleeping on the bed.)

2. L: O.K. Algo no está bien en la primera oración. (O.K. Something is not right in the first sentence.) *[Hint to indicate linguistic problem]*

3. T: Que ves en tu pintura? Hay animales? (What do you have in your painting? Are there animals?) *[No response to feedback]*

4. L: Primero, puedes corregir el verbo incorrecto? (First, can you correct the wrong verb?) [*Draw attention to form*]

5. T: Que verbo? No me gusta gramatica. Hablamos la historia, si? (What verb? I don't like grammar. Let's talk about the story, o.k.?)

Despite the fact that Tina acknowledged Lori's intervention (lines 2, 5), the scaffolding did not motivate her to resolve her linguistic problem. It is evident that both parties did not maintain intersubjectivity due to unwillingness on Tina's part. Instead, she suggested that they continue the story (line 6). It is possible that Tina did not know the answer to the expert's question. Therefore, feedback was outside of her ZPD. Further, Tina stated in her reflective log that making error corrections during the CMC was not a good idea because it interrupted her thoughts and the flow of conversation. The findings suggest that the negotiation of intersubjectivity to reestablish new common goals is an important step toward the continuation of focus-on-form. Furthermore, it is challenging for L2 learners at the intermediate level to focus on meaning and form simultaneously.

SUMMARY AND CONCLUSION

The findings showed that CMC provided favorable conditions for feedback negotiation between the expert-to-novice pairs and also focused learners' attention on their linguistic errors. Without access to verbal cues, CMC feedback negotiation made great demands on the experts as they sought to provide more guided assistance. The findings revealed that in general, the experts were able to provide step-by-step scaffolding at key moments to call learners' attention to focus on non-target-like-forms that resulted in error corrections. Moreover, the visually displayed written discourse made both the error and the feedback highly salient and pushed learners to focus on form and to use their cognitive skills and metalinguistic awareness to solve language problems (Lee, 2004b; Meskill & Anthony, 2005; O'Rourke, 2005). Both lexical and syntactic items were negotiated through collaborative scaffolding within a social context. In some cases, the evidence showed that the students were able to self-repair their errors and further incorporate correct forms into their follow-up turns. However, the long-term effect of focus-on-form procedure on L2 development through CMC still remains to be explored in future studies.

During the feedback negotiation, L1 was used to reduce the learners' cognitive burden, to keep the flow of feedback negotiation, and to bring learners' attention to form within a shared communicative context. In most cases, sufficient scaffolding by the experts that stretched learners' ZPD to focus on linguistic forms was complemented and facilitated by the text displayed on the computer screen. As a result, the expert scaffolding allowed students to resolve linguistic problems including syntactic and lexical items. More important, through collaborative scaffolding, students gained confidence in correcting their

linguistic errors from dependent performance (other-regulation) where they received the most explicit feedback to independent performance (self-regulation) where almost no collaborative help was needed.

In the co-construction context, the role of the expert, however, affected the ways that the students responded to their corrective feedback. Some of the learners expressed their discomfort and discontent with the way their expert partners intervened during the communicatively oriented interaction. Despite the fact that some students agreed on the importance of using the target language correctly, they did not view focus-on-form feedback scaffolding effective. Some of the students preferred to use the session as an opportunity for communication rather than a chance to fix errors in grammar. Some seemed to be more interested in gaining lexical knowledge than learning correct forms as is shown in Episode 8. On the other hand, the students viewed online interaction as less stressful, allowing them more time to reflect on linguistic forms (Lee, 2004a; 2006; Sotillo, 2005). Moreover, the students were less reluctant to indicate their linguistic problems and were frank about the need for help from the expert partners as is shown in Episode 2 (Grant's comments). The experts played a double role as both teachers and peers during the feedback negotiation process. The fact that students viewed them less as authority figures and more as facilitators helped them resolve their linguistic problems in a timely fashion (Episode 2). This aligns with the findings reported by Lee (2004b) that the role of the expert is to monitor, not to lead the discussion.

From a pedagogical point of view, the study leads to the following observations concerning preparation for online interaction involving feedback negotiation.

1. Students should be advised to focus on form when the opportunity arises.

2. Appropriate training for effective scaffolding is necessary to maximize the potential impact of corrective feedback via CMC.

3. It is important for instructors to create appropriate awareness-raising activities through which focus-on-form is guaranteed while meaning-oriented interaction is shared during the CMC.

4. The use of L1 as mediating tool may be necessary for cognitively demanding tasks, as shown in Episode 3 and 4. While the L2 is used as the primary means of communication, the L1 for metalinguistic and metatask talk should not be a major concern for language educators (Antón, DiCamilla & Lantolf, 2003).

5. Instructors need to offer additional opportunities to encourage students to reflect on their linguistic problems, such as asynchronous CMC via e-mails or discussion boards.

Although the findings provide language professionals with new insights into the role of corrective feedback, additional studies are needed to determine its effect via expert scaffolding by comparing the differences between focus-on-form and. focus-on-meaning conditions in CMC. Different settings, such as face-to-face interaction and CMC, within different levels of learners' language proficiency should be studied to permit comparison of the efficacy of one setting with the other. Another area clearly deserving investigation is to compare the differences in the expert-to-novice feedback negotiation process using two instructional conditions: one that focuses on meaning exchange, and the other one that involves negotiation of both meaning and form.

In conclusion, the study suggests that text-based CMC has the potential to expand learners' communicative-focus interaction to focus-on-form. The goal is to incorporate focus-on-form without sacrificing lexical growth and vice versa. Synchronous CMC supports focus-on-form through expert-to-novice collaborative engagement. Effective feedback negotiation affords learners the opportunity to advance within their ZPD from other-regulated to self-regulated performance. Without an understanding of how feedback functions, it would be difficult for language professionals to incorporate focus-on-form procedures into a network-based instructional setting.

NOTES

1. From a sociocultural point of view, language learning cannot be viewed as an immediate product of the individual; rather, it is the process by which learners engage in co-constructing their L2 knowledge. Through social engagement, both the expert and the learner work collaboratively to solve linguistic problems.

2. Aljaafreh and Lantolf's 5-level scale of feedback strategies was adapted by Ohta (2000) for her study of two Japanese learners' collaborative interaction and their potential developmental stages.

3. Microgenetic analysis guided by the sociocultural theory allows the researcher to closely observe processes of change in a collaborative task in short periods of time. The observed instances are analyzed to justify the findings of the study (Lantolf, 2000).

4. It should be noted that although the students were in the fourth-semester intermediate Spanish course, it does not mean that they had attained language skills at the Intermediate level on the ACTFL (American Council on the Teaching of Foreign Languages) proficiency scale prior to the study.

5. S-CAPE (Spanish Computerized Adaptive Placement Exam) developed at Brigham Young University was used to assist in placing students into appropriate lower-division Spanish courses at the researcher's institution.

6. It should be noted that during the focus-on-form procedure not all linguistic errors were to be corrected by the experts including pronouns, articles, and prepositions.

7. Nine episodes introduced as examples were drawn from the data sets as evidence to support and justify the findings.

8. Self-repair is defined as the correction made by the novice speakers during the collaborative scaffolding. The majority of the self-corrections were made after receiving initial help from the expert using the confirmation check (see Episode 1). In some cases, linguistic feedback was negotiated through several turns (see Episode 2) based on the five levels of collaborative scaffolding (see Table 1).

9. Follow-up turns were defined as the use of the correct forms that appeared after the self-repairs were made. They demonstrated learners' self-regulated performances within a given context (see Episodes 6 and 7).

10. Given the fact that the experts were briefly trained to use the 5-stage scaffolding procedure and did not have a list of feedback techniques that corresponded with specific stages, some expert speakers did not provide step-by-step feedback to their novice partners. While the current study makes no claim on the consistency of using the 5-stage scaffolding procedure, the findings provided evidence of the effectiveness of expert scaffolding for error corrections.

11. This pair of students shared their experiences with the natural environment before they discussed the immigration issues.

12. The learner used the English word *mess* to express the meaning.

13. The missing accent mark on the second vowel "o" for both verbs *tomo* and *llevo* change their meanings from the present tense to the past tense (e.g., *tomo* 'I take' vs. *tomó* 'I took').

14. Despite the fact that this version of *Blackboard* supports use of foreign language characters, the majority of the students did not use the accents throughout the chat sessions.

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