Corrective Feedback in Second Language Face-to-face Versus Computer-mediated Interactions

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Abstract

This study explores the differences between face-to-face (FTF) interaction and text-synchronous computer-mediated communication (SCMC) regarding corrective feedback (CF). Eight native speakers (NSs) and eight second language learners were paired up and divided into two groups: instructed and uninstructed. Native speakers in the instructed group were asked to provide corrective feedback to help improve their partner's English skills and given a short training on providing corrective feedback. Adapting a counterbalanced design, the NS-learner dyads completed a jigsaw task in each communication mode. We analyzed the corrective feedback episodes in each mode to see which mode provided more opportunity for corrective feedback negotiation. Furthermore, participants' attitudes toward using each mode for corrective feedback negotiations was examined qualitatively. The findings revealed that the instructed group produced more CF episodes than the uninstructed group. Additionally, participants focused more on negotiation of meaning during FTF interactions, but they paid more attention to form during text-SCMC interactions. NSs' and learners' attitudes toward corrective feedback varied depending on the mode they used for interaction. The findings indicate that both FTF and text-SCMC interactions are beneficial for learners' second language development aligned with each communication mode affordances.

Keywords: *Face-to-Face Interaction, Text-Based Synchronous Computer-Mediated Communication, Corrective Feedback*

Introduction

Researchers in the field of second language acquisition (SLA) and teaching have long been interested in the role of corrective feedback (CF) in language learning (Ellis, Loewen, & Erlam,

2006). CF research, has mainly focused on immediate and/or delayed effects of CF, specifically the types of CF that facilitate learner repair in response to feedback (e.g., Carroll & Swain, 1993; Han, 2002; Lyster & Ranta, 1997), the overall effects of feedback (e.g., McDonough, 2005; Oliver & Mackey, 2003), and learner perceptions of feedback (e.g., Carpenter, Jeon, MacGregor, & MacKay, 2006; Han, 2001; Mackey, Gass, & McDonough, 2000).

Studies on CF have recently been extended to computer-mediated environments in order to compare and contrast the findings of face-to-face (FTF) CF research (e.g., Heift, 2004; Sauro, 2011) with those in the computer-mediated environments (e.g., Lowen & Erlam, 2006; Sagarra, 2007). An important difference between FTF and computer-mediated communication (CMC) is that CMCallows for synchronous and asynchronous exchange whereas FTF is only synchronous. Research shows that both FTF and CMC are beneficial for second language acquisition (SLA). Although several studies have compared the features of FTF and CMC interactions in SLA (e.g., Kim, 2014), there is a need to do more research to examine how different communication modes influence the effectiveness of corrective feedback and also to explore learner attitudes towards interaction in each mode (Rassaei, 2017; Yuksel & Inan, 2014).

Interaction Hypothesis

Long (2007) recognized the importance of CF in his Interaction Hypothesis (Long, 1996) and situated it within a context of what he calls *negotiated interaction*. He argued that during interaction, interlocutors negotiate l understanding by modifying and reformulating their language use. Sometimes, reformulations are triggered by corrective feedback by linking input, noticing of that input, and modified output by the learner. According to the Interaction Hypothesis (Long, 1996), CF interactions, triggered by either a communication breakdown or a linguistic problem can facilitate SLA through negotiations of meaning and form, (Ellis, 2015). Such negotiations may promote L2 development by creating opportunities for comprehensible input, pushed output, and conversational modifications (Long, 1996). From an interactionist perspective CF serves as the means to bring learners' attention to the target language which then can promote language learning.

Corrective Feedback and Second Language Development

As an effective instructional approach in L2 classrooms, peer CF is viewed as a means to facilitate interaction which then promotes learning (Chen, 2016). Although corrective feedback can contribute to L2 development, communication modesand corrective feedback features (e.g., CF type, CF provider) may impact its effectiveness for L2 learning (Sotillo, 2005). There are two types of corrective feedback: direct and indirect. Direct corrective feedback clearly indicates, corrects, and explains the learner's error made (Hosseini, 2012). On the other hand, indirect corrective feedback indicates that the learner's utterance contains an error and should be reformulated (Hosseini, 2012). Examples of indirect feedback are recasts, confirmation checks, and clarification requests; whereas metalinguistic feedback, explicit corrections, and elicitations are examples of direct feedback. Regardless of the communication mode, there are different

findings in terms of the effectiveness of corrective feedback types. Some studies found that indirect CF compared to direct CF contributed more to learners' L2 development in FTF (Perdomo, 2008) and text-SCMC interactions (Dekhinet, 2008; Edasawa & Kabata, 2007) because indirect feedback does not stop the flow of conversation, encourages output, and provides scaffolding to L2 learners. In contrast, other studies showed that, compared to indirect corrective feedback, direct corrective feedback raises more awareness of the linguistic problem in learners and encourages the incorporation of the feedback in their output, which facilitates L2 development in FTF (Sheen, 2010) and text-SCMC interactions (Chen & Eslami, 2013).

Corrective feedback providers (e.g., native and nonnative English speaking peers, teachers) could also potentially affect the quantity and quality of corrective feedback and how interlocutors perceive the feedback (Shin, Lidster, Sabraw, & Yeager, 2016; Ware & O'Dowd, 2008). For instance, Ware and O'Dowd (2008) paired learners and native speakers of English and Spanish and divided them into two groups. They instructed one group to initiate peer feedback whenever an error occurred (i.e., tutoring) and the other group to provide corrective feedback only based on their own initiatives (i.e., partnering). Ware and O'Dowd found higher quality of corrective feedback and higher rate of feedback acceptance in the tutoring condition. According to the researchers, probably because the learners perceived the tutoring condition as a formal interaction whose focus was to improve their L2, instead of an informal interaction which could be perceived as mainly promoting interpersonal relationship with their interlocutors.

Few studies have compared the effect of corrective feedback in FTF versus SCMC when implementing similar language learning tasks with the same participants (e.g., Rassaei, 2017; Yuksel & Inan, 2014). Focusing on oral recast only, Rassaei (2017) investigated the effect of feedback provided during FTF and SCMC oral production tasks on L2 learning. Rassaei found that oral recast was equally beneficial for L2 development in FTF and SCMC interactions between learners and the teacher. Stimulated recall interviews indicated that L2 learners were able to notice recast corrections in both FTF and SCMC video-chat modes. Yuksel and Inan (2014), on the other hand, compared negotiations of meaning between L2 learners during jigsaw tasks in FTF and text-SCMC modes. Their findings indicated that FTF mode produced higher frequency and longer negotiation episodes, whereas text-SCMC mode generated greater noticing. Focusing on the acquisition of two Turkish morphemes, Yilmaz (2012) compared corrective feedback types in FTF versus text-SCMC interactions between the teacher and learners. She found that, regardless of the communication mode, the direct feedback group (i.e., explicit correction) outperformed the indirect feedback group (i.e., recast) in the oral production and comprehension tasks. According to Yilmaz, direct feedback facilitated noticing of the corrective feedback and allowed learners to make a comparison of the target and nontarget forms. In terms of the communication mode, regardless of the corrective feedback type, text-SCMC was more effective in promoting noticing and language use than FTF mode, specifically in oral production and recognition tasks. As Yilmaz pointed out, learners performed better in text-SCMC than in FTF mode because the text-SCMC allowed for greater processing time and rereading of the messages, which facilitated noticing of corrective feedback. CMC vs FTF environment may

promote noticing and negotiation in different ways. As stated by Lai and Zhao (2006), CMC may enhance learners' noticing of feedback, but this could depend on the type of feedback employed and some other factors. Researchers have raised questions about which feedback types are most effective for specific errors and whether CMC and FTF environments may differently promote noticing of feedback. To be able to explore these issues we need to understand how FTF interaction is similar or different from CMC interaction.

Text-based Synchronous Computer-mediated Communication
Synchronous computer-mediated communication (SCMC) allows L2 learners to engage in real-time oral or written interactions. Text-SCMC and FTF interactions share similarities as both modes involve real-time communication, short turns, and informal discourse (Yilmaz, 2012). However, FTF interactions are faster in pace, require the physical presence of the interlocutors with verbal and non-verbal cues, and involve immediate responses. In contrast, text-SCMC interactions provide access to the text, have time delay between turns, providerereadability of messages and greater processing time (Warschauer, 1996). Prior research on interaction and corrective feedback has shown the merits of text-SCMC in SLA (Lai & Zhao, 2006; Sotillo, 2005). First, learners are more likely to attend to text messages than spoken messages (Zeng, 2017). Second, text-SCMC provides a permanent visual record of writing and allows longer time for learners to construct and refine messages to enhance language production and complexity (Kim, 2014; Li, 2013). Compared with oral-SCMC, these features of text-SCMC could further facilitate interaction and enhance learners' noticing of linguistic issues (Lai & Zhao, 2006). Moreover, the slow pace of text-SCMC has shown to reduce anxiety triggered by time or psychological pressure during interaction (Warschauer, 1996). Therefore, text-SCMC provides valuable affordances for promoting L2 learning.

To date, few studies have investigated the occurrence and effectiveness of different types of CF in different modes using the same task and same participants. Furthermore, given the increase in the development of online language classes, additional research is needed that asserts the generalizability previous findings (e.g. Zhao, 2006) to the CMC environment and that examines whether modality differentially mediates provision and effectiveness of CF. In light of the gaps in the literature, the research questions motivating the current study were as follows:

1. How do instructed and uninstructed groups of NS-L2 learner dyads differ in terms of frequency and types of corrective feedback used during FTF and text-SCMC interactions?
2. What are the participants' attitudes toward corrective feedback in FTF and text-SCMC interactions?

Method
Participants
Convenient sampling was used and eight NSs and eight advanced English learners participated in this study. The NSs were American preservice teachers and the learners were graduate students

in ESL education at a large university in the United States. The participants, four males and 12 females, ranged in age from 19 to 32. According to self-reported computer literacy, all the participants had good computer keyboard typing skills and were experienced in online text-chatting. The L2 learners' first language varied. Two of them spoke Persian as a first language, four spoke Mandarin, one spoke Turkish, and one spoke Bengali. Based on the language requirements for the university entrance, the learners had acquired a minimum score of 80 (out of 120) on the TOEFL internet-based testing.

Research Design
After consenting to be part of this study, the participants filled out a background questionnaire containing demographic questions, English or foreign language learning background and skills, computer keyboard typing abilities, and online chatting experiences. Adapting a counterbalanced design (see Table 1), eight NS-L2 learner dyads were randomly paired up and asked to complete two jigsaw tasks (i.e., spot-the-differences). One task was performed in the FTF context and the other one in the text-SCMC context. A jigsaw task was selected because it encourages participants to collaborate with each other to reach a single goal and provides learners with opportunities to receive and request corrective feedback (Zeng, 2017).

Table 1
Counterbalanced Design

Groups	Dyads	Contexts of Task 1	Contexts of Task 2
A	1, 3	FTF	Text-SCMC
A	2, 4	Text-SCMC	FTF
B	5, 8	FTF	Text-SCMC
B	6, 7	Text-SCMC	FTF

Note: FTF, face-to-face; SCMC, synchronous computer-mediated communication.

The eight dyads were equally divided into groups A and B. In group A, the NSs were trained and asked to provide corrective feedback to learners to improve their partners' English skills during the interactions. In group B, the NSs were not trained or asked to provide corrective feedback to the learners. Immediately after performing the tasks, the NSs answered to questions related to their attitude in providing CF to learners explicit or implicitly in each mode. To get a more in-depth understanding, L2 learners were interviewed about their attitudes toward corrective feedback through FTF and text-SCMC interactions. The FTF interactions and interviews were audio-recorded and transcribed. The SCMC chat logs were saved and compiled in a Word document for further analysis.

Data Analysis
The data analysis followed four steps. First, the CF episodes were identified. CF episodes are defined as "occasions where there was attention to linguistic form (i.e., grammar, vocabulary,

spelling, discourse, or pronunciation)" (Ellis, Basturkmen, &Loewen, 2001, p. 294). Second, the error correction episodes were categorized by types of negotiation (meaning or form), initiators (NS or L2 learner), corrective feedback types (direct or indirect), and learners' responses to feedback (uptake, no uptake, or successful uptake). Third, the total number of opportunities for corrective feedback was identified. Finally, participants' responses to the interview and questionnaire were analyzed using content analysis to identify "information that [could] elucidate a trend, exemplify any variation in the data, or provide insights into results that turn out to be different from what was predicted" (Mackey & Gass, 2016, p. 356). Using the coding criteria in Table 2, the first author coded all the data and another researcher studying in the field of SLA coded 20% of the data. There intercoder reliability (agreement) was 83%. Disagreements were resolved through discussions.

Table 2
Coding Criteria

Coding Categories	Description
Opportunities	The total number of opportunities for corrective feedback
Corrective feedback episodes	Actual instances of corrective feedback episodes
Negotiations	
Negotiation of meaning	The total number of negotiation episodes triggered by communicative difficulties
Negotiation of form	The total number of negotiation episodes triggered by non-communicative difficulties, including grammar, vocabulary and pronunciation
Initiators	
NS initiated	Corrective feedback episodes initiated by an NS interlocutor
Learner initiated	Corrective feedback episodes initiated by a learner interlocutor
Corrective Feedback Types	
Direct corrective feedback	Corrective feedback provided or explained explicitly by an interlocutor, including explicit correction, elicitation, and metalinguistic explanation
Indirect corrective feedback	Corrective feedback provided or explained implicitly by an interlocutor, including recast, repetition, clarification request and confirmation check
Response to Feedback	
Uptake	An instance when a learner responded to corrective feedback, including acknowledgement, immediate and delayed responses
No uptake	An instance when a learner did not respond to corrective feedback and continued the interaction
Successful uptake	An instance when a learner responded to corrective feedback using the correct form, including correct immediate and delayed responses

Data Coding Examples
The following examples represent how we coded the FTF and text-SCMC interactions using the coding criteria illustrated in Table 2.

Error correction episode 1 (FTF)
> Learner: Yes. It has, again, another **section**…
> NS: Like a **chain**?
> Learner: …like a **chain**. Yes.

Error correction episode 1 illustrates a negotiation of meaning that occurred in a FTF interaction. By using the word "section" to describe a bracelet, the learner triggered a temporary communication breakdown. As a result, the NS initiated an error correction episode by providing an indirect corrective feedback. The NS used a confirmation check ("Like a chain?") to indicate that the word "chain" should be used in that context, instead of "section." The learner responded to the feedback received by implementing a successful uptake; that is, she incorporated the corrective feedback into her later production ("…like a chain").

Error correction episode 2 (text-SCMC)
> Learner: **Do** your picture have a shovel?
> […]
> NS: Instead of "do your picture have a shovel," we tend to say "**Does** your picture have a shovel?"
> Learner: OK, I got it.

Extracted from a text-SCMC interaction, the second error correction episode shows that the NS initiated the episode to correct the learner's incorrect use of the auxiliary verb "do." A few turns later, the NS provided a direct corrective feedback using an explicit error correction ("Instead of 'do your picture have a shovel,' we tend to say, '**Does** your picture have a shovel?'"). The learner's response move was identified as an uptake because he acknowledged the corrective feedback by saying "OK, I got it." The episode is considered as negotiation of form because it focused on a language form.

Error correction episode 3 (FTF)
> Learner: I mean, something near the gloves. Like the… **which finger it is**?
> NS: Is it the index finger? **The pointer finger**?
> Learner: Near **the pointer finger**.

Taking place in a FTF environment, error correction episode 3 indicates that the learner initiated the episode by asking a question about a word she did not know in English ("which finger it is?"). The NS used confirmation checks to provide indirect CF as he provided the

learner with the appropriate word to use. The learner had a successful uptake, incorporating the feedback into her language production. Triggered by a temporary conversation breakdown, this error correction episode was classified as a negotiation of meaning.

Findings
Frequency and Features of Corrective Feedback
The first research question asked how the instructed and uninstructed groups of NS-L2 dyads differed in terms of frequency and features of corrective feedback during FTF and text-SCMC interactions. Based on our analysis of the participants' interactions, we identified the amount of language production, opportunities for corrective feedback, negotiation types, error correction episode initiators, corrective feedback types, and learners' responses to feedback.

Together, the participants produced more words in FTF (n = 15,780) than in the text-SCMC interactions (n = 6,809). In both modes, the NSs produced more words (FTF = 8,235; SCMC = 3,677) than the L2 learners (FTF = 7,545; SCMC = 3,132). Overall, the NSs had 132 opportunities for corrective feedback as they collaborated with L2 learners on the jigsaw tasks in the FTF and text-SCMC contexts; however, the NSs only used 45 (34%) opportunities to provide corrective feedback to the learners. Out of the 132 opportunities, the NSs from group A missed 34 (26%) opportunities to provide feedback, while the NSs from group B missed 53 (40%) opportunities. Regardless of the communication mode, overall, the majority of the unaddressed errors were related to grammatical issues (group A n = 30, 88%; group B n = 45, 85%). As Table 3 shows, in both modes, group A had more error correction episodes than group B.

Table 3
Opportunities for Corrective Feedback

	FTF interactions		Text-SCMC interactions	
	Group A	Group B	Group A	Group B
Missed opportunities	23 (68%)	25 (74%)	11 (42%)	28 (74%)
Actual CF episodes	11 (32%)	9 (26%)	15 (58%)	10 (26%)
Total	34 (100%)	34 (100%)	26 (100%)	38 (100%)

Note: Each group contained four dyads. Different from the NSs in group B, the NSs in group A were instructed to help L2 learners improve their English skills. CF: corrective feedback.

Table 4 presents frequencies and percentages of negotiation episodes (i.e., negotiation of meaning or form) where the error correction occurred. In both groups, error correction episodes related to meaning was more prevalent in FTF (group A n = 8, 73%; group B n = 6, 67%) than in text-SCMC interactions (group A n = 4, 27%; group B n = 2, 20%). On the other hand, error correction episodes related to form was greater in text-SCMC (group A n = 11, 73%; group B n = 8, 80%) than in FTF interactions (group A n = 3, 27%; group B n = 3, 33%).

Table 4
Negotiation Episodes Where Corrective Feedback Episodes Occurred

Negotiation Episodes	FTF interactions		Text-SCMC interactions	
	Group A	Group B	Group A	Group B
Negotiations of meaning	8 (73%)	6 (67%)	4 (27%)	2 (20%)
Negotiations of form	3 (27%)	3 (33%)	11(73%)	8 (80%)
Total	11(100%)	9 (100%)	15 (100%)	10 (100%)

As illustrated in Table 5, with respect to who initiated the error correction episodes, although the L2 learners were not asked to request corrective feedback, the learners from both groups initiated most of the error correction episodes in the FTF mode (group A $n = 6$, 55%; group B $n = 5$, 56%). However, the NSs initiated most of the error correction episodes in the text-SCMC mode (group A $n = 13$, 87%; group B $n = 10$, 100%).

Table 5
Corrective Feedback Initiators

CF Initiators	FTF interactions		Text-SCMC interactions	
	Group A	Group B	Group A	Group B
NSs	5 (45%)	4 (44%)	13 (87%)	10 (100%)
L2 learners	6 (55%)	5 (56%)	2 (13%)	-
Total	11 (100%)	9 (100%)	15 (100%)	10 (100%)

Note: CF: corrective feedback

Regardless of the communication mode, most of the corrective feedback that the NSs provided to the learners was indirect (FTF group A $n = 5$, 100%, group B $n = 4$, 100%; SCMC group A $n = 9$, 69%, group B $n = 10$, 100%). There were no occurrences of direct feedback in FTF interactions. Moreover, the NSs from group B did not provide any direct feedback to the learners in either FTF or text-SCMC interactions (see Table 6).

Table 6
Corrective Feedback Types

CF Types	FTF interactions		Text-SCMC interactions	
	Group A	Group B	Group A	Group B
Indirect	5 (100%)	4 (100%)	9 (69%)	10 (100%)
Direct	-	-	4 (31%)	-
Total	5 (100%)	4 (100%)	13 (100%)	10 (100%)

Note: CF: corrective feedback

Learners' responses to corrective feedback also varied between groups (see Table 7). For group A, the frequencies of successful uptake in FTF ($n = 4$, 36%) and SCMC ($n = 5$, 33%) modes were roughly similar. However, for group B, the frequency of successful uptake was higher in the FTF ($n = 6$, 67%) than in the SCMC mode ($n = 1$, 10%). In terms of no uptake, group A and, especially, group B had a greater frequency of no uptake in the text-SCMC (group A $n = 4$, 27%; group B $n = 8$, 80%) than in the FTF mode (group A $n = 2$, 18%; group B $n = 1$, 11%).

Table 7
L2 Learners' Responses to Corrective Feedback

Learners' Responses to CF	FTF interactions		Text-SCMC interactions	
	Group A	Group B	Group A	Group B
Uptake	5 (45%)	2 (22%)	6 (40%)	1 (10%)
No uptake	2 (18%)	1 (11%)	4 (27%)	8 (80%)
Successful uptake	4 (36%)	6 (67%)	5 (33%)	1 (10%)
Total	11 (100%)	9 (100%)	15 (100%)	10 (100%)

Note: CF: corrective feedback

Participants' Attitudes toward Corrective Feedback
The second research question inquired about the participants' attitudes toward corrective feedback in FTF and text-SCMC interactions. To answer this question, we conducted a content analysis of the responses to the questionnaire items and interview data. The findings are reported below.

Native speakers. The analysis of the NSs' answers to the open-ended questionnaire revealed three main findings. First, the NSs reported that they were able to engage in successful communication with L2 learners in English. For example, the NS from dyad 1 stated, "I did not try to improve her skills because for the most part we were able to communicate very well."
Second, the NSs believed that they improved the L2 learners' English skills in different ways. The reported approaches differed between the NSs in the instructed (group A) and uninstructed (group B) groups. The NSs from group A indicated that their partners might have improved their English because the NSs provided corrective feedback and encouraged the learners to produce output. For example, a NS from group A stated the following:

> During the SCMC task I tried to improve my interlocutor's English skills by modeling the correct grammatical structure or spelling or phrasing when I saw a mistake. I believe this allowed the learner to notice [the] mistakes on [her] own without having to explicitly telling [her]. (Group A NS from dyad 7)

In contrast, the NSs from group B mentioned that the L2 learners improved their English skills because the NSs used different communication strategies. Some of the strategies that the

NSs reported using were: providing input, modeling, and allowing waiting time. For instance, n NS from group B expressed:

> I didn't come into the FTF task with the active goal of improving her English skills, but I tried to use synonyms or descriptions instead of just one word, and I tried to eliminate unnecessary phrases (sort of, kind of, etc.). I also tried to keep my voice relaxed. I didn't want her to get nervous or feel rushed, so I tried to make sure that I didn't talk too fast because I tend to talk fast when I am excited or enjoy doing something, like figuring out a puzzle. (Group B NS from dyad 4)

The third finding from the NSs' responses was that all of them agreed that the L2 learners might have improved their English skills by interacting with them. However, the reason for learners' English improvement differed between instructed NSs (group A) and uninstructed NSs (group B). The NSs from group A reported that they contributed to the learners' English development by modeling the language and correcting linguistic errors. For example, an NS from group A shared the following about the text-SCMC interaction:

> Similarly [to FTF interaction], whenever I would see an error of grammar, I would rewrite up to the point of where a mistake was made and correct from that part and continue on with their thoughts or my own thoughts. (Group A NS from dyad 3)

On the other hand, the NSs from group B believed that the act of practicing the L2 might have led to learners' English improvement. For example, a NS from group B stated, "I don't think that I taught her any new words/concepts, but practice is always a good way to improve" (Group B NS from dyad 4).

L2 learners. L2 learners' interviews revealed two main findings regarding L2 learning through task-based interactions. First, the learners' noticing of corrective feedback varied depending on to which group they were assigned. The learners from group A (instructed) appreciated and noticed the corrective feedback they received, whereas the learners from group B (uninstructed) did not notice that corrective feedback was provided. For example, a learner from group A stated, "He [the NS] corrected me in FTF and SCMC." In contrast, when asked if she received any corrections during the interactions, a learner from group B answered, "Not correction. But, if she [the NS] had a confusion or if I had a confusion, we just went for clarification instead of correcting things."

Second, regardless of the L2 learners noticing corrective feedback or not, they reported learning vocabulary and grammatical aspects by paying attention to the input received and imitating the NSs' language use. For example, a learner shared the following referring to text-SCMC:

> The structure was new to me and I wanted to say the same thing maybe after 10 lines of our communication. So, I just scrolled up and copied her structure. I didn't actually copy and paste. I looked at it and then started writing it. (Group B learner from dyad 6)
> Moreover, the learners found the interactions to be beneficial because they had the chance to practice English and get exposed to new input.

A learner expressed the following:

> I really do think that having a chance to communicate with a native speaker is always beneficial for a second language learner, like me. It gives the learner an opportunity to communicate as well as exposure to the target language. (Group B learner from dyad 8)

In summary, the findings of this study revealed that regardless of the communication mode, the NSs did not necessarily took advantage of most of the opportunities for error correction during the interactions. However, asking NSs to provide corrective feedback and to help learners improve their English skills increased the frequency of corrective feedback and learners' awareness of corrective feedback. It was also observed that the communication mode was related to the focus of the feedback. Regarding the corrective feedback type, the NSs from both groups provided more indirect than direct corrective feedback to the L2 learners. Although the frequency of corrective feedback and successful uptake was limited, the L2 learners reported learning vocabulary and grammatical aspects through the interactions.

Discussion
This study investigated corrective feedback in FTF and text-SCMC interactions between NSs and L2 learners. The six NS-L2 learner dyads were divided into group A and group B. The NSs from group A were instructed to provide corrective feedback to learners to help improve their partners' English skills, whereas the NSs from group B did not receive any specific instruction in terms of corrective feedback. Our study examined how instructed and uninstructed groups of NS-L2 learner dyads differ in terms of frequency and features of corrective feedback in FTF and text-SCMC interactions. Furthermore, we examined the participants' attitudes toward corrective feedback in FTF and text-SCMC interactions.

This study's findings revealed that regardless of the communication mode, the NSs provided a limited number of CF to the learners: only 34% of the opportunities resulted in actual error correction episodes. This result is aligned with previous research that shows NSs provided few CF to L2 learners (e.g., Bower & Kawaguchi, 2011, Edasawa&Kabata, 2007; Sotillo, 2005). For example, Bower and Kawaguchi (2011) investigated negotiations of meaning and corrective feedback in eTandem interactions through text-SCMC and identified a low number of corrective feedback instances. As reported in prior studies (Bower & Kawaguchi, 2011; Sotillo, 2005), such findings could be related to affective factors in which NSs may not feel comfortable providing corrective feedback to learners or to politeness related issues believing it is inappropriate to correct learners' language use. Learners' high English proficiency level in our study might also have led to the low frequency of corrective feedback.

Based on the NSs' responses to the questionnaire, the learners were able to communicate well in English. Therefore, the NSs did not feel they had to correct learners' errors which did not impede communication. Furthermore, most of the missed opportunities for corrective feedback involved grammatical errors, which suggests that language accuracy was probably not the NSs' main concern during the interactions with L2 learners. Similar to Edasawa and Kabata's (2007) and Sotillo's (2005) findings, the NSs in this study seemed to focus on getting their message

across in order to complete the tasks. Thus, when grammatical errors did not hinder communication and information exchange, the NSs did not see a need to provide corrective feedback on grammatical related issues.

Another important finding of our study was that, in both communication modes, instructing the NSs to help L2 learners improve their English skills increased the frequency of corrective feedback. Compared to the uninstructed NSs (group B), the instructed NSs (group A) used more opportunities to provide CF to the learners. Learners from group A reported noticing the corrective feedback provided to them, whereas the learners from group B did not. As Min (2006) stated, effective corrective feedback provided by peers, both NSs and learners, is more likely to occur when proper instruction is provided. Such instructional effect on the quantity and quality of corrective feedback has also been reported in other studies (Dekhinet, 2008; Donaldson & Kotter, 1999). Thus, it appears that instruction facilitates and promotes provision of CF.

The findings of this study also indicated that the communication mode was associated with the focus of the CF. When providing CF, the NSs focused more on meaning in FTF interactions and on form in text-SCMC interactions. We noticed that during FTF interactions, more error corrections on meaning occurred when communication breakdowns happened. On the other hand, the participants made more error corrections on form during text-SCMC interactions. It appears that more attention was paid to the flow of communication when the participants engaged in FTF interactions, whereas the participants focused on both meaning and linguistic issues during text-SCMC interactions. This finding echoes the results of Rouhshad, Wigglesworth, and Storch (2016), study of learner-learner task-based FTF and text-SCMC interactions. Prior research indicates that the fact that the participants focused more on meaning in FTF interactions and on form in text-SCMC interactions is explained by the nature of the communication modes (Lai & Zhao, 2006). Text-SCMC allows for longer processing time, self-editing, and greater saliency of errors (Lai & Zhao, 2006). In contrast, the FTF mode has a faster pace and messages are not textually visible (Yuksel&Inan, 2014). As a result, text-SCMC interactions would be more likely to facilitate noticing of linguistic issues than the FTF mode. This finding acknowledges the merits of text-SCMC in promoting noticing (Kim, 2014; Li, 2013; Zeng, 2017) and further confirms its potential for L2 learning.

In terms of the corrective feedback types, the NSs from both groups provided more indirect corrective feedback than direct feedback. The NSs could have provided indirect feedback during interactions even without being consciously aware of it because of the implicit nature of indirect feedback. For example, confirmation check, clarification request, and comprehension checks could be naturally embedded in the conversation. Different from the uninstructed NSs (group B), the instructed NSs (group A) reported that they purposefully provided both indirect and direct corrective feedback to the learners.

Another difference between the two groups was that only the instructed NSs initiated direct feedback. Sotillo (2005) also found a low number of direct corrective feedback (8%) provided to learners in her study in SCMC interactions between NSs and L2 learners. Some researchers (Foster &Ohta, 2005; Liu, 2017; Sotillo, 2005) have argued that the NSs may provide less direct

than indirect feedback due to politeness reasons, such as avoiding interruption of the conversation flow or feeling uncomfortable to explicitly correct their partners. Moreover, having highly proficient learners in our study could also have caused low quantity of feedback. Similarly, Liu (2017) noticed less form-focused negotiation episodes within the higher proficiency learner and NS dyads than in the dyads with lower proficiency learners.

Finally, although the frequency of corrective feedback and successful uptake was less than 40% of the possible cases in this study, the L2 learners reported development in their vocabulary and grammatical aspects, which confirms of the potential facilitative role of interaction for L2 development. Additionally, our findings support the Interaction Hypothesis (Long, 1996) and indicate that interactions between NSs and L2 learners in both FTF and text-SCMC environments encouraged learners to engage in negotiations of form and meaning and facilitated L2 development through corrective feedback, comprehensible input, pushed output, and noticing.

Conclusion

Building upon previous research on interaction, this study investigated the frequency and features of corrective feedback in FTF and text-SCMC interactions between NSs and L2 learners in instructed and uninstructed groups. The instructed NSs in group A were instructed and asked to provide corrective feedback to learners to facilitate their L2 partners' English skills, whereas the NSs in group B were not instructed to do so. We found that despite the low frequency of corrective feedback in both groups, the NSs who received instructions provided higher frequency of corrective feedback in both FTF and text-SCMC modes. Moreover, the focus of the feedback was associated with the communication mode, with more attention on meaning in the FTF communication mode and on form in the text-SCMC mode. In addition, due to its implicit nature, indirect corrective feedback was more prevalent than direct corrective feedback.

Teaching Strategies

Our findings suggest that it is important for teachers and learners to be aware of the role of corrective feedback in FTF and text-SCMC interactions and its benefits to SLA. Based on this study's findings, we recommend teachers to consider the following aspects in their teaching practices.

- Make NSs and learners aware of the importance of corrective feedback in SLA and train them on providing effective direct and indirect feedback to enhance learners' English development.
- Encourage L2 learners to engage in interactions in and out of the classrooms. Such interactions can promote corrective feedback, which may provide learners with comprehensible input and pushed output opportunities.
- Encourage L2 learners to initiate error correction episodes in order to enhance noticing and L2 development.

Teachers should teach L2 learners about the (a) role of corrective feedback in SLA and (b) different types of corrective feedback (i.e., direct and indirect). Then, teachers use language

learning tasks (e.g., jigsaw, decision-making, information gap) where L2 learners interact with NSs or peers in the text-SCMC or FTF context (teachers are recommended to audio-record FTF interactions). In pairing up L2 learners with peers, teachers should arrange more proficient learners to interact with less proficient ones. The difference between their proficiency levels will most likely lead to negotiations in their interactions, which can promote corrective feedback. As a result, corrective feedback can provide learners with opportunities to (a) be exposed to more comprehensible input, (b) pay attention to meaning and form, and (c) practice more English language use.

As a follow-up, teachers should provide L2 learners with their FTF audio recording or print out of their text-based CMC interactions, ask them to identify the instances where they received corrective feedback, and categorize those instances as direct or indirect corrective feedback. Finally, teachers should ask learners to write a reflection on how the corrective feedback they received impacted their English learning.

By combining explicit instruction, language learning tasks, and reflection on corrective feedback, teachers can bring fun to their classrooms and familiarize learners with the nuts and bolts of improving English skills through interactions. Moreover, the application of these teaching strategies can boost learners' self-confidence in taking risks using English in real-life social contexts.

Limitations and Future Direction

Although the findings of our study support the potential of interaction for facilitating SLA, it has some limitations. First, this study did not counterbalance the sets of pictures used in FTF (fashion accessory pictures) or text-SCMC (vegetable stand pictures) mode. The pictures used in the text-SCMC mode might have required vocabulary that was more familiar to L2 learners, which could have contributed to the reduced number of negotiations in SCMC when compared to FTF interactions. We suggest future research to consider counterbalancing for picture sequence effect.

Second, we did not assess learners' L2 development as a result of the task-based interactions. We only reported on the learners' perspectives on their L2 improvement. Suggested by previous research, in addition to analysis of the interaction scripts, constructing and administering tailor-made posttests could have presented a more accurate assessment of learners' L2 development (Kung & Eslami, 2015). In addition to tailor-made posttests, future studies should also consider using the stimulated recall tool with the learners to better understand the role of corrective feedback in interactions and how it affects L2 development.

Despite the limitations, this study is significant because it sheds light on important future trends. As we discussed in this chapter, corrective feedback is an essential resource of L2 development and it can be provided by a NS or a learner through not only FTF but also text-CMC interactions. However, it is important to mention that technological advances have made corrective feedback also available through features such as spell and grammar checks. In addition to alerting L2 learners to spelling and grammatical errors, these features also provide

definitions and correct learners' linguistic errors. This advancement in technology can contribute to L2 development as it provides learners with input. However, these technological advances can only be beneficial to SLA if teachers and learners know how to effectively use them. Having in mind that technology is an essential tool in language learning and teaching strategies, a future trend is to investigate how teachers and learners can effectively apply corrective feedback provided by technology in order to facilitate SLA.

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