Investigating Communication Strategies in Face-to-Face and Synchronous Computer-Mediated Interactions Between Native English Speakers and Second Language Learners

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Abstract

Communication strategies interlocutors use to avoid or resolve potential problems in face-to-face (FTF) and computer-mediated interactions can facilitate English learners' second language acquisition (SLA) (Smith, 2003). Such strategies are beneficial because they encourage English learners to practice the second language (L2), learn vocabulary, and notice new grammatical structures (Long, 1996). Few studies have compared speakers' communication strategies in different modes and their effects on second language learning. This study addresses this gap by investigating how FTF and text-synchronous computer-mediated communication (SCMC) task-based interactions impact the use of communication strategies, and to what extent native speakers (NSs) and L2 English learners differ regarding frequency and types of communication strategies used in both modes. Twelve participants were randomly paired to form six NS-L2 learner dyads. They completed a jigsaw task in each mode. Grounded theory was used to compare both modes. Findings revealed that FTF interactions promoted more communication strategies than text-SCMC, and regarding the number of strategies, NSs produced fewer than L2 learners. NSs and L2 learners differed regarding how frequently they applied certain communication strategies. To facilitate SLA, the findings suggest that teachers should teach NSs and L2 English learners how to implement communication strategies and engage them in FTF and text-SCMC interactions to encourage the use of these strategies.

Keywords: face-to-face interaction, computer-mediated communication, second language acquisition, communication strategies

Introduction

Task-based face-to-face (FTF) interactions and text-synchronous-computer-mediated communication (SCMC) have both been shown to be beneficial to second language acquisition (SLA) (Ribeiro, 2018; Zeigler, 2016). In this article, text-SCMC is a type of online interaction in which the participants exchange text messages using the computer without seeing each other. In contrast, FTF interaction is a dialogue in which the participants interact with one another in person. Based on the Interaction Hypothesis (Long, 1996), task-based interactions can facilitate SLA by promoting comprehensible input (i.e., exposing language learners to new words and grammatical structures they can understand), modified output (i.e., encouraging learners to practice their second language using what they have learned), and noticing (i.e., drawing L2 learners' attention to linguistic aspects they need to improve). Task-based interactions also promote communication strategies, which are moves taken by interlocutors to make "an effort to create meaning and avoid potential problems in communication during completion of the tasks" (Smith, 2003, p. 36).

Several studies have investigated interactions in SLA (e.g., Ribeiro & Eslami, 2022; Sotillo, 2005). However, most of them are non-comparative studies, meaning they either focus on FTF interactions (e.g., Zhao & Ellis, 2022) or text-SCMC (e.g., Chen & Eslami, 2013). The few comparative studies that have investigated FTF versus text-SCMC interactions between the same group of participants have indicated mixed findings regarding which communication mode better facilitates second language (L2) development (e.g., Kim, 2014; Zeng, 2017). Moreover, despite the growing number of empirical studies on interactions in SLA, there is a scarcity of comparative studies that focus on communication strategies in FTF versus text-SCMC interactions, especially between native speakers (NSs) and L2 learners where the NSs are not instructors or researchers, making the interaction more authentic. In this case, researchers and instructors make the interactions less authentic because they are aware of the purpose of the task and might be evaluating L2 learners' language skills while interacting with them. As a result, they may impact L2 learners' performance.

It is important to investigate the use of communication strategies in different modes for three main reasons. First, they facilitate SLA through interactions by exposing English learners to new vocabulary and grammatical structures, helping them realize which linguistic aspects they need to improve, and providing them with opportunities to practice English. Second, communication strategies help L2 learners become autonomous by allowing them to convey their messages and overcome problems when facing communication breakdowns in and out of the classroom (Long, 1983; 1996). Furthermore, considering that teachers and learners have the choice of using both FTF and text-SCMC modes in the classroom, it is essential to better understand the communication strategies that each mode promotes and how they impact L2 development. Understanding how communication strategies impact L2 development through FTF versus text-SCMC interactions can help teachers effectively implement each mode to promote SLA. The current study addresses this gap by comparing FTF versus text-SCMC task-based interactions between NSs and English learners to investigate (a) how the nature of each communication mode impacts the NSs' and L2 learners' use of communication strategies and (b) to what extent NSs and L2 learners differ regarding frequency and types of communication strategies used in text-SCMC and FTF interactions.

The following section reviews studies that discussed communications strategies in both FTF and text-SCMC interactions involving L2 learners.

Literature Review

This section describes comparative studies that have investigated FTF versus text-SCMC interactions. Except for Kim's (2014) study, the studies discussed in this literature review did not focus on communication strategies. They focused on negotiation episodes in FTF and text-SCMC interactions between L2 English learners. However, they reported communication strategies the participants applied during interactions in both modes.

Some studies suggest that the FTF setting facilitates L2 development more than the text-SCMC setting because of the nature of FTF interactions. Compared to text-SCMC, FTF interactions encouraged the implementation of more communication strategies. For example, Ribeiro and Eslami (2022) analyzed interactions in English between three dyadic types: low-high proficiency learner, NS-low-proficiency learner, and NS-high-proficiency learner. The researchers found that participants used more than six times the number of communication strategies in FTF than in text-SCMC. The communication strategies used the most were confirmation checks and

requests for clarification. Ribeiro and Eslami found that L2 English learners tended to benefit more from interacting with NSs than with other English learners, especially in the FTF setting. The researchers explained that the linguistic gap between learners and NSs and the FTF mode's unique features, such as the use of paralinguistic clues (e.g., facial expression, intonation), encouraged the use of communication strategies. Hamano-Bunce (2011) also examined interactions between L2 English learners and discovered that they applied more communication strategies in the FTF than in the text-SCMC mode. Additionally, Hamano-Bunce found that FTF interactions led to more English learners' participation and collaboration, and resulted in more input, language production, pushed output, and corrective feedback. In another study, Kim (2014) investigated learner-learner interactions and found that L2 English learners used more communication strategies related to collaboration, such as co-construction of a sentence in the FTF mode than in text-SCMC. Kim also observed that English learners often employed the strategy of avoidance in the text-SCMC mode to avoid negotiation of meaning.

Yuksel and Inan (2014) found that the nature of FTF interactions impacted interactions within the learner-learner grouping type. Yuksel and Inan found that FTF interactions between L2 English learners encouraged more negotiations than interactions in text-SCMC. The researchers identified a higher number of confirmation and comprehension checks in FTF than in text-SCMC. The difference in the frequency of confirmation checks in FTF and text-SCMC was statistically significant. Moreover, Rouhshad et al. (2016) investigated FTF versus text-SCMC interactions between L2 English learners and found that the frequency of communication strategies in FTF was impacted by the communication mode. As Rouhshad et al. explained, there were probably fewer communication strategies in text-SCMC because of the extra processing time available for learners. Instead of negotiating meaning, L2 learners could reread messages they did not understand. Therefore, text-SCMC might have encouraged fewer confirmation and comprehension checks than FTF. L2 learners could move back and forth through the interactions when they needed to confirm or check for comprehension. Overall, the unique features of each mode may have impacted learners' behavior in terms of communication strategies. Since the FTF mode does not have visibility of text or accessibility to the previous text, it encouraged participants to apply more confirmation checks and requests for clarifications than they did in the text-SCMC mode (Hamano-Bunce, 2011; Ribeiro & Eslami, 2022). Text-SCMC allows L2 learners to pause and complete their sentences before they share them with their interlocutors; therefore, it is difficult to co-construct each other's sentences in that mode (Kim, 2014). Moreover, since the text-SCMC mode requires more time for L2 learners to express themselves, they tend to avoid negotiations of meaning, which involves communication strategies (Kim, 2014).

In contrast, other studies suggest that the text-SCMC setting facilitates L2 development more than the FTF setting because of the nature of text-SCMC interactions. Compared to FTF, text-SCMC interactions promoted more communication strategies and noticing than the FTF setting. For instance, Zeng (2017) found that, compared to FTF, text-SCMC interactions between L2 English learners encouraged a higher frequency of language-related episodes, involving different communication strategies. Zeng explained that the text-based nature of text-SCMC encouraged learners to pay closer attention to their own and their partner's language use. For example, the visual display of text-SCMC may have facilitated the visibility of language errors and allowed for reflection and more noticing of language use, promoting a higher frequency of communication strategies in text-SCMC than in FTF interactions. Yuksel and Inan (2014) also found that interactions between L2 English learners in the text-SCMC mode encouraged more clarification requests and led to more noticing of lexical and grammatical items than in the FTF

mode due to the unique features of text-SCMC. Moreover, Tam et al.'s (2010) study investigated interactions between low- and high-proficiency English learners in text-SCMC versus FTF setting. Researchers observed more confirmation checks from low-proficiency learners and more clarification requests from high-proficiency learners in text-SCMC than in FTF interactions. Text-SCMC allowed for varied syntactic and semantic modifications from both proficiency levels, which gave low-proficiency level L2 English learners more opportunities to use communication strategies and notice form (ibid.). In another study, Nguyen and White (2011) discovered that compared to FTF, the text-SCMC L2 English learner groups produced less language, but they were more motivated to participate and had more equal participation during task-based interactions. The text-SCMC groups used more communication strategies as they interacted, negotiated their discussion, and co-constructed knowledge than the FTF groups. Thus, the text-SCMC groups created a more learning-oriented, as opposed to a product-oriented experience. According to Nguyen and White, because of the lack of paralinguistic cues (e.g., facial expression, intonation), the ideas in text-SCMC "were examined, critically evaluated and synthesized to a greater degree than in the FTF mode" (p. 29), especially when L2 English learners engaged in communication strategies to come to an agreement.

In conclusion, the unique features of FTF and text-SCMC modes can impact the type and frequency of communication strategies used in interactions. Despite several comparative studies reporting such strategies when examining negotiation episodes in FTF versus text-SCMC interactions between L2 learners, few studies have specifically investigated the role of communication strategies in SLA. The number is even lower for comparative studies that investigated task-based interactions in both modes between L2 English learners and NSs where the NSs are not instructors or researchers. The current study addresses this gap by investigating the following research questions:

1. How does the nature of interactions in FTF and text-SCMC impact the NSs' and L2 learners' use of communication strategies?
2. To what extent do NSs and L2 learners differ in terms of frequency and types of communication strategies used in text-SCMC and FTF interactions?

Method

Participants

The participants in this study were 12 female students majoring in Education at a large university in the United States. It was not intentional that all the participants were female. Six of them were NSs, and six were L2 English learners. Despite attending the same university, the NSs and the L2 learners did not know each other. The NSs were American undergraduate students with the age range of 19 to 22. The learners were graduate students who spoke Chinese as their first language. They were not taking English language classes while pursuing their graduate degree. The learners ranged in age from 25 to 32 years old. When completing the background questionnaire, the L2 learners self-assessed their computer keyboard typing skills using a four-level scale, ranging from beginner to proficient. According to their self-assessment, all the participants had good computer keyboard typing skills. Also, they reported they had experience chatting online through text messages. 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.

Procedures

After obtaining participants' consent to participate in the study, data were collected in two sessions in study rooms at a university library. In the first session, the participants filled out the background questionnaire containing demographic questions, English or foreign language learning background and skills, computer keyboard typing abilities, and online chatting experiences. Then, the participants were randomly paired up to form six NS-L2 learner of English dyads. In the second session, each pair completed two jigsaw tasks (i.e., spot-the-differences), without knowing one another. A jigsaw task was selected because it encourages participants to collaborate to reach a single goal and provides L2 learners with opportunities to receive and request corrective feedback through communication strategies (Ribeiro & Jian, 2020). One task was performed in the FTF context and the other in the text-SCMC context. To complete the tasks, the participants were prompted to find the differences between the two pictures. In the FTF setting, they sat at a table facing each other. A file folder was placed between the participants to prevent them from seeing each other's pictures, while still being able to see each other's facial expressions. In the text-SCMC setting, the two participants of each pair were separated in different study rooms (i.e., the NS was in a room and the L2 learner was in another room). They used Skype text messaging, without audio functions, to complete the task. To control for communication mode and task order effect, a counterbalanced design was used, that is, half of the dyads completed the FTF task first, while the other half of the dyads completed the text-SCMC task first (e.g., Zeng, 2017). To stimulate language production and communication strategies within the dyads, there was no time limitation for the participants to complete the tasks. The researcher monitored them while performing the tasks to ensure they followed the task instructions. The FTF interactions were audio-recorded, and the text-SCMC chat logs were saved in a Word file.

Data Analysis

The data included the transcribed interactions in FTF mode and chat log files in written text-SCMC mode. The data analysis was informed by grounded theory (Glaser & Strauss, 1967). Grounded theory is a qualitative research method that involves "the discovery of theory from data" and provides "relevant predictions, explanations, interpretations and applications" (Glaser & Strauss, 1967, p. 1). This method aims to systematically analyze empirical data to understand and conceptualize what is going on in the area studied (Glaser & Strauss, 1967). Data analysis in grounded theory research involves constant comparative analysis to generate "conceptual categories or their properties from evidence; then the evidence from which the category emerged is used to illustrate the concept" (Glaser & Strauss, 1967, p. 23). This procedure can be adopted in a variety of ways. However, the researcher generally begins by analyzing an interview or transcript in a line-by-line style, keeping track of noteworthy observations. The researcher follows the same procedure with additional data, constantly comparing new to previous observations made. The researcher returns to the data multiple times and examines patterns between observations. Finally, categories are created to represent the patterns identified (Loewen & Plonsky, 2016).

Following these procedures, after carefully reading the first set of transcripts and text-SCMC chat logs, the researcher began developing a coding system, which indicated that text-SCMC and FTF interactions encouraged NSs and L2 English learners to implement different types of communication strategies to avoid or resolve communication breakdowns. While different types of communication strategies, such as framing, confirmation check, and clarification request, were observed in both modes during the initial reading of the transcripts and text-SCMC chat logs, co-construction of a sentence strategy was evident only in the FTF mode. The researcher kept the

initial communication strategies in mind while closely reading through the additional data to identify recurrent strategies. The recurrent communication strategies became categories of focus and were coded (see Table 3 for coding).

First, the researcher counted the number of words to determine the amount of language produced by each participant in FTF and text-SCMC settings. Then, the researcher identified the communication strategies from the transcripts and chat logs and counted the frequency of each strategy to determine patterns. Finally, similar to previous studies that compared FTF with text-SCMC mode, language production was controlled because it may impact participants' contribution to a task (e.g., Rouhshad et al., 2016). The number of words was controlled by calculating the ratio of communication strategies per 100 words in the FTF mode. The researcher applied the same procedure to the text-SCMC dataset. The number of words included all the words that the dyads produced during the time on task (i.e., the time the participants spent to complete the task).

The researcher coded all the data and another researcher in the field of SLA, who was trained in coding the data, coded 15 percent of text-SCMC chat logs and FTF interaction transcriptions. The percentage agreement between the two raters was 80 percent. Disagreements in coding results were discussed until a consensus was reached. Statistical tests were not used because of the small sample size (Slavin, 2007).

Results

The data analysis showed that the participants doubled the number of words produced in the FTF than in the text-SCMC interactions. In both modes, the L2 English learners produced more words than the NSs (see Table 1). In the FTF interactions, the six dyads produced an average of 1,789 words in 18 minutes, whereas in text-SCMC, they produced an average of 830 words in 38 minutes. The six NS-L2 learners dyads applied more than double the number of communication strategies in FTF than that in text-SCMC. The learners applied more strategies than the NSs in both modes.

Table 1. Descriptive Statistics on Words Produced, Communication Strategies, and Time on Task in FTF and Text-SCMC

	FTF			Text-SCMC		
	NSs	**L2 learners**	**Total**	**NSs**	**L2 learners**	**Total**
Words produced	5,209	5,527	10,736	2,270	2,707	4,977
Mean	868.00	921.17	1,789.33	378.33	451.17	829.50
SD	257.13	289.43	494.00	151.91	237.31	373.79
Communication strategies	152	180	332	46	69	115
Mean	25.33	30	55.33	7.67	11.5	19.17
SD	12.31	7.56	19.28	5.28	7.77	12.34
Time on task			110			229

Mean	18.33	38.17
SD	6.74	16.83

After controlling for language production, results showed that participants produced more communication strategies in FTF than in text-SCMC (see Table 2). The L2 English learners generated a higher ratio of strategies than the NSs in both modes.

Table 2. Ratio of Communication Strategies Per 100 Words

	FTF	**Text-SCMC**
Dyads	3.09	2.31
NSs	2.92	2.03
L2 learners	3.26	2.55

Nine different communication strategies were identified in the task-based interactions, as defined in Table 3.

Table 3. Types and Definitions of Communication Strategies

	Code	**Communication Strategy**	**Definition**
1.	CR	Clarification request	asking for clarification because the speaker needs more information to understand what was said
2.	CfC	Confirmation check	wanting to confirm information received
3.	CpC	Comprehension check	trying to avoid a conversation breakdown by ensuring the speaker's utterance is understood by the interlocutor
4.	SC	Self-correction	correcting the speaker's own linguistic aspects
5.	UAPW	Use of all-purpose words	using a general word instead of a specific word (e.g., thing)
6.	C	Circumlocution	trying to use a specific word by describing or exemplifying it
7.	F	Approximation	using an alternative term that expresses the meaning of the target word as closely as possible
8.	A	Framing	attempting to clearly mark the end of discussing a topic and the beginning of a new one

9.	CCS	Co-construction of a sentence	interrupting the interlocutor to complete the speaker's sentence

Note. The coding scheme was adopted from Kim (2014), Long (1983), and Smith (2003).

Below are examples of each strategy identified in the data analysis.

Communication Strategies

Clarification Request

The data analysis demonstrated that FTF interactions fostered more opportunities for clarification requests than text-SCMC (51, 15.36% vs. 11, 9.57%). The L2 English learners applied clarification requests more often than the NSs in both communication modes (FTF = 29, 16.11% vs. 22, 14.47%; text-SCMC = 6, 8.7% vs. 5, 10.87%). In the example below, the NS asks for clarification because she needs more information to find out if the pattern of the colors of the hat mentioned in line 4 is a difference between the pictures. In line 5, she requests clarification by asking, "By pink and white do you mean like stripes or just like on top?" The L2 English learner clarifies that the colors only appear on the top and they move on with their interaction.

1 NS: And they are taking a picture of a boy or girl with orange and yellow jacket?
2 L2 learner: Yes.
3 NS: And the skateboard is pink.
4 L2 learner: Yes. Uh… and this little girl or boy wear a hat and it's pink and white.
5 NS: **By pink and white, do you mean like stripes or just like on top?**
6 L2 learner: Just on the top I can see the white.
7 NS: And she has two little ponytails.
8 L2 learner: Yeah, yeah. (Extract from dyad 4, FTF)

Confirmation Check

L2 English learners and NSs used confirmation check to confirm they understood what their interlocutors previously said. FTF interactions promoted confirmation checks six times more than text-SCMC (89, 26.81% vs. 14, 12.17%). In both modes, the L2 English learners utilized twice as many confirmation checks than the NSs (FTF = 62, 34.44% vs. 27, 17.76%; text-SCMC = 10, 14.49% vs. 4, 8.7%). As the example below shows, in line 1, the NS shares that she sees four carriers in her picture. After talking about where they were located, in line 6 the L2 English learner asks, "There are four, you said?" to confirm the number of carriers that her partner had mentioned before.

1 NS: And I see four different carriers to ride in. They're kind of reddish.
2 L2 learner: Where is that in the picture?
3 NS: In the top. Very top of the picture.
4 L2 learner: Uh-huh.
5 NS: Top middle.
6 L2 learner: **There are four, you said?**
7 NS: Uh-huh. Two of them have people.
8 L2 learner: Yeah.

9 NS: And two of mine don't.
10 L2 learner: Uh-huh. Same.
11 NS: Okay. (Extract from dyad 2, FTF)

Comprehension Check

L2 English learners and NSs used confirmation checks to elicit confirmation that they understood their interlocutors' utterances. In contrast, L2 English learners and NSs applied comprehension checks to ensure their interlocutors understood their utterances. There were very few instances of comprehension checks (4, 1.2%) and all of them were in the FTF setting. Both NSs and L2 English learners implemented this communication strategy (2, 1.32% vs. 2, 1.11%). In the following example, the NS uses a comprehension check to avoid a conversation breakdown. She asks, "You know the Christmas tree that's on the right side? Corner?" She wants to make sure her partner understands *Christmas tree* and where it is located before asking about a boy who is near it. After the L2 English learner provides a positive answer, the NS continues with her question.

1 NS: Mm… okay…um… **You know the Christmas tree that's on the right side? Corner?**
2 L2 learner: Yeah.
3 NS: Near it, is there a boy with a blue jacket and has a green and yellow skiing board?
4 L2 learner: Yeah. (Extract from dyad 4, FTF)

Self-correction

Self-correction was used more than twice in the text-SCMC mode than in the FTF mode (10, 8.7% vs. 4, 1.2%). The L2 English learners implemented more self-correction than the NSs in both modes, especially in text-SCMC (SCMC = 7, 10.14% vs. 3, 6.52%; FTF = 4, 2.22% vs. 0, 0%). The NSs did not apply self-correction during FTF interactions. The example below shows the L2 English learner from dyad 4 correcting herself in the text-SCMC setting. Soon after typing "children" in her question, she realizes that she used the wrong word since she is referring to the singular form of the word children. Then, she corrects herself by typing "child, sorry."

1 L2 learner: Can you see a **children** on the left side of the swing?
2 L2 learner: **child**, sorry.
3 NS: Yes, the child is sliding down a slide. (Extract from dyad 4, text-SCMC)

Use of All-purpose Words

The use of all-purpose word strategy was observed in both communication modes (FTF = 15, 4.52%; text-SCMC = 13, 11.3%). The NSs applied this strategy more than the L2 English learners, especially in the text-SCMC setting (text-SCMC = 11, 23.91% vs. 2, 2.9%; FTF = 9, 5.92% vs. 6, 3.33%). In the example below, the NS wants to know if the object that she sees on the table is the same one that the L2 English learner has in her picture. Instead of using a specific word to refer to the object, the NS uses "thing," a general word (line 4).

1 NS: is there anything on the table?
2 L2 learner: Yes, on the table, a bottle is easy to be recognized in front of the small people. There are several other things I cannot recognize, maybe just food.

3 NS: okay there is only one **thing** on the table in mine so that is difference number six. (Extract from dyad 1, text-SCMC)

Circumlocution

Circumlocution was observed more in the FTF than in the text-SCMC setting (38, 11.45% vs. 24, 20.87%). The L2 English learners used this strategy three times more than the NSs in both modes (FTF = 29, 16.11% vs. 9, 5.92%; text-SCMC = 18, 26.09% vs. 6, 13.04%). As the example below shows, although the L2 English learner does not know the word *ski lift*, she tries to use a specific word to refer to it. She uses *air car* as a way to describe a ski lift. Then, the NS provides her with the specific word by saying, "Yeah. It looks like a ski lift." In line 3, the L2 learner indicates that she noticed the new word by asking, "A ski lift?" as she tries to figure out if that is actually the object in the picture.

1 L2 learner: So, in the top of the picture, the middle top of the picture, is there any **air air car**?
2 NS: Yeah. It looks like a ski lift.
3 L2 learner: A ski lift?
4 NS: I think. (Extract from dyad 1, FTF)

Approximation

The circumlocution and approximation strategies were used when the L2 learners most likely did not know specific words in English. The circumlocution strategy involved providing a description or example of the unknown word, while the approximation strategy involved giving a synonym or alternative term to replace the unknown word.

The approximation strategy occurred only in the FTF setting (9, 2.71%) and was used only by the NSs (9, 5.92%). In the following example, the NS from dyad 1 indicates that she is not sure if her partner understands the word *rail*. Therefore, she uses the word *bar* to describe the object in the picture as an alternative term to express the meaning of the target word, *rail*.

1 NS: But in front of him, it looks like there is like a rail, **like a bar**, in front of him. Is there anything in front of him? … It's like yellow.
2 L2 learner: Yeah. (Extract from dyad 1, FTF)

Framing

The framing strategy was applied in the FTF setting twice as much as in the text-SCMC one (92, 27.71% vs. 43, 37.39%). While the NSs used framing more often than the L2 English learners in the FTF mode (51, 33.55% vs. 41, 22.78%), the learners used it more often than the NSs in the text-SCMC mode (26, 37.68% vs. 17, 36.96%). In the example below, the NS applied framing to clearly mark the beginning of a new topic: a man in the picture. Before asking her question, she says, "The three people in the front: the girl, woman, and man" as a strategy to make sure her partner knows which man she will refer to in the question.

1 NS: **The three people in the front: the girl, woman, and man,** does he have a beard?
2 L2 learner: Yes.
3 NS: Okay. (Extract from dyad 5, FTF)

Co-construction of a Sentence

Co-construction of a sentence was applied only in the FTF setting (30, 9.04%). Both NSs and L2 English learners co-constructed sentences, but the NSs used this strategy three times more than the learners (23, 15.13% vs. 7, 3.89%). The example below shows the NS from dyad 5 co-constructing her partner's sentence. In line 2, the L2 English learner indicates that she wants to clarify the location of the skier about whom the NS had asked a question. Soon after the L2 learner says, "You meant in…," the NS interrupts her to complete her sentence by saying "the snowboard outside." The NS provided her partner with the information she needed before she even asked the question.

> 1 NS: In the back, is there a skier in yellow? Underneath the slopes?
> 2 L2 learner: **You meant in…**
> 3 NS: **the snowboard outside.**
> 4 L2 learner: You mean in front of this house or beside the house.
> 5 NS: Beside.
> 6 L2 learner: No. (Extract from dyad 5, FTF)

While all nine strategies occurred in the FTF context, only six of them occurred in text-SCMC. In the text-SCMC context, the participants did not use comprehension check, approximation, or co-construction of a sentence. The three mostly used communication strategies in the FTF mode were framing, confirmation check, and clarification request; whereas in the text-SCMC mode, they were framing, circumlocution, and confirmation check (see Table 4).

Table 4. Communication Strategies Identified in FTF and Text-SCMC

	Communication Strategies	FTF		Text-SCMC	
		n	%	*n*	%
1.	Clarification request	51	15.36	11	9.57
2.	Confirmation check	89	26.81	14	12.17
3.	Comprehension check	4	1.20	0	0.00
4.	Self-correction	4	1.20	10	8.70
5.	Use of all-purpose words	15	4.52	13	11.30
6.	Circumlocution	38	11.45	24	20.87
7.	Framing	92	27.71	43	37.39
8.	Approximation	9	2.71	0	0.00
9.	Co-construction of a sentence	30	9.04	0	0.00
	Total	332	100	115	100

In the FTF setting, the strategies that both NSs and L2 English learners mostly applied were framing, confirmation check, and clarification request (see Table 5). The NSs and L2 learners

also often implemented co-construction of a sentence and circumlocution, respectively. In the text-SCMC setting, the strategies that both NSs and L2 learners mostly applied were framing and circumlocution. Moreover, the NSs and L2 learners frequently implemented use of all-purpose words and confirmation check, respectively.

Table 5. Communication Strategies Used by NSs and L2 Learners in FTF and Text-SCMC

	Communication Strategies	FTF				Text-SCMC			
		NSs	%	L2 Learner	%	NSs	%	L2 Learner	%
1.	Clarification request	22	14.47	29	16.11	5	10.87	6	8.70
2.	Confirmation check	27	17.76	62	34.44	4	8.70	10	14.49
3.	Comprehension check	2	1.32	2	1.11	0	0.00	0	0.00
4.	Self-correction	0	0.00	4	2.22	3	6.52	7	10.14
5.	Use of all-purpose words	9	5.92	6	3.33	11	23.91	2	2.90
6.	Circumlocution	9	5.92	29	16.11	6	13.04	18	26.09
7.	Framing	51	33.55	41	22.78	17	36.96	26	37.68
8.	Approximation	9	5.92	0	0.00	0	0.00	0	0.00
9.	Co-construction of a sentence	23	15.13	7	3.89	0	0.00	0	0.00
	Total	152	100	180	100	46	100	69	100

Discussion

This study investigated communication strategies in FTF and text-SCMC task-based interactions between NSs and L2 English learners. It revealed three main findings regarding how the nature of FTF and text-SCMC interactions impacts the use of communication strategies and to what extent NSs and L2 learners differ in terms of the frequency and types of communication strategies used in both modes.

The first important finding of this study was that FTF mode promoted more communication strategies than text-SCMC mode. Other studies had similar findings (e.g., Fitze & McGarrell, 2008). The unique features of the FTF mode might have encouraged the participants to apply more communication strategies in that mode than in text-SCMC. For example, FTF is faster-paced and lacks text visibility. Such features might have encouraged the participants to use more clarification requests (51 vs. 11), confirmation checks (89 vs. 14), and framing (92 vs. 43) strategies in FTF than in text-SCMC. On the other hand, the text-SCMC mode is slower-paced and allows visibility of text. Therefore, the participants may have used fewer confirmation checks, clarification requests, and framing in text-SCMC because they could reread the text to find the information they needed. Moreover, since text-SCMC is a slower-paced mode, the participants may have used those communication strategies less frequently to avoid negotiations, which are more time-consuming when applied through text messages.

Other unique features of the FTF mode that might have encouraged more communication strategies are less processing time and paralinguistic cues (e.g., facial expressions). Such features might explain why co-construction of a sentence, approximation, and comprehension check strategies only occurred in FTF. Since FTF interactions are faster-paced and involve immediate responses, the interlocutors had less processing time, which may have led them to pause in the middle of their sentences to think about word choices and the information they needed to share. The pauses might have encouraged them to co-construct each other's sentences. On the other hand, text-SCMC is slower-paced and does not involve immediate responses. Therefore, the interlocutors had more processing time and expressed themselves using complete sentences. The approximation strategy was only applied in the FTF mode, possibly because it allows interlocutors to see each other's facial expressions. As a result, the NSs might have used that strategy when L2 English learners' facial expressions suggested that they did not understand the input received. Furthermore, the participants probably did not use comprehension checks in text-SCMC to avoid negotiations and save time. As mentioned above, text-SCMC is slower-paced; therefore, it takes more time to check one's comprehension in this mode than in the FTF mode.

This study's second important finding was that the NSs produced fewer communication strategies than the L2 English learners in both modes. Compared to the learners, the NSs produced eight percent fewer communication strategies in the FTF mode and 20 percent fewer in the text-SCMC mode. After controlling for the number of words, the NSs applied fewer communication strategies than the learners. This finding differs from Fitze and McGarrell's (2008) results, which found that the NS, who was the learners' teacher, produced more communication strategies than the learners. The researchers suggested that the role of the NS as a teacher explained their findings. As a teacher, the NS used more strategies to encourage learners to participate, clarify learners' assertions, request clarification, and provide feedback. The difference between Fitze and McGarrell's and this study's findings could be related to the relationship between the interlocutors. Since the participants in this study did not have a teacher-learner relationship, the NSs may not have felt the need to apply more than the necessary communication strategies to complete the task. As reported in prior studies that investigated NS-L2 learner interactions and indicated similar results as this study (e.g., Edasawa & Kabata, 2007; Sotillo, 2005), the NSs produced fewer communication strategies because they were probably not concerned about language accuracy or helping the English learners improve their L2. Instead, the NSs were most likely focused on getting their message across to complete the task.

Finally, this study's findings demonstrated that while framing was the strategy often implemented in both communication modes, NSs and English learners mainly differed in terms of how frequently they applied the following strategies: co-construction of a sentence, use of all-purpose words, circumlocution, and confirmation check. The NSs often applied co-construction of a sentence and use of all-purpose words in FTF and text-SCMC, respectively. In FTF, the NSs used co-construction of a sentence about 11 percent more often than the L2 learners (23 vs. 7). The NSs might have used co-construction of a sentence more often than the English learners because, similar to Kim's (2014) findings, the learners' paralinguistic cues (e.g., facial expressions), pauses, production of false starts, and repetitions of words might have indicated that they needed assistance to express themselves. Co-construction of a sentence can be advantageous or disadvantageous to SLA. On one hand, the NSs may have exposed the L2 learners to new vocabulary and sentence structures by providing input through co-construction of a sentence. On the other hand, by completing the learners' utterances, the NSs might have taken away the learners' opportunities for output. Both input and output are essential elements for L2 development through interactions;

while input exposes learners to potential new vocabulary and grammatical structures, output encourages them to practice their L2 (Ribeiro, 2018).

As for use of all-purpose words, the NSs applied this strategy about three percent (9 vs. 6) and 21 percent (11 vs. 2) more often than the L2 English learners in FTF and in text-SCMC, respectively. By using all-purpose words, the NSs replaced specific words with general ones, such as *something* and *stuff*. The NSs might have applied this strategy to avoid negotiations, which could be time-consuming. Moreover, considering that being exposed to all-purpose words might prevent learners from increasing their L2 vocabulary, the application of that strategy suggests that the NSs were focused on completing the tasks instead of contributing to the learners' L2 development.

The L2 English learners applied circumlocution about ten percent (29 vs. 9) and 13 percent (18 vs. 6) more often than the NSs in the FTF and text-SCMC settings, respectively. The fact that the learners frequently implemented circumlocution indicates that despite not knowing the specific words they needed during the interactions, they took the opportunities to practice their L2 as they described unknown words to convey their messages. As Swain (1985) points out, comprehensible input is not enough for learners to develop an L2. They also need opportunities to apply productive skills (i.e., speaking and writing) to practice L2, pay attention to L2 language structures, and test hypotheses[1]. By using circumlocution in both modes of communication, the learners, therefore, contributed to their own L2 development.

The L2 English learners also differed from the NSs regarding the implementation of confirmation checks. The learners applied more confirmation checks than the NSs, especially in the FTF setting, almost 17 percent more (62 vs. 27). Fernandez-Garcia and Arbelaiz (2003) also found that, compared to NSs, L2 learners of Spanish used more confirmation checks in FTF than in text-SCMC. As Fernandez-Garcia and Arbelaiz explained, the learners probably applied confirmation checks more than the NSs, especially in FTF, because the fast pace of the FTF mode and the lack of familiarity with the NS's pronunciation may not have allowed them to perceive some linguistic aspects used by their partner.

Overall, the differences between the NSs and the L2 English learners regarding frequency and types of communication strategies suggest that the NSs potentially contributed to the learners' L2 development in a limited way. The NSs could have contributed more if they had taken advantage of the opportunities to either apply more effective communication strategies or avoid them, if appropriate. For instance, they could have applied more clarification requests to encourage negotiation of meaning and used more circumlocution to expose the learners to new input in both communication modes. Also, they could have used fewer co-construction of a sentence to encourage the learners to produce more output in the FTF setting. The NSs seemed not to make an effort to facilitate their partners' SLA. It was probably because the NSs were not language instructors in this context and, therefore, were not required to assist L2 learners in developing their English. The NSs' primary motivation was to communicate to complete the tasks. In contrast, the L2 learners were actively involved in the tasks and tried to practice and improve their English while interacting with NSs. For example, they rarely applied use of all-purpose words and implemented circumlocution several times in both modes.

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[1] Hypotheses testing means learners use their L2 to find out if they are using words or grammatical aspects correctly. The feedback L2 learners receive from interlocutors informs if their hypotheses are correct or need to be refined.

Conclusion

This study investigated how FTF and text-SCMC task-based interactions impact the use of communication strategies and to what extent NSs and L2 English learners differ regarding frequency and types of communication strategies used in both modes. The study revealed three main findings: (a) task-based FTF and text-SCMC interactions between NSs and L2 learners promoted communication strategies, especially in the former mode, (b) the NSs produced fewer communication strategies than the learners in both modes, and (c) the NSs and the L2 learners differed in terms of how frequently they applied certain communication strategies (e.g., circumlocution). The difference in the frequency and types of communication strategies between NSs and L2 learners showed that the NSs focused on completing the tasks without necessarily contributing to learners' L2 development. However, the learners focused on practicing their English and attempting to improve it as they performed the tasks with the NSs.

These findings lead to three important pedagogical implications. First, language teachers should engage students in FTF and text-SCMC interactions because both modes encourage NSs and L2 English learners to use communication strategies. Teachers should especially promote FTF task-based interactions since this mode tends to lead to more communication strategies, such as approximation and comprehension check. These strategies can facilitate SLA by providing L2 learners with comprehensible input and promoting output. Comprehensible input is essential for language acquisition because it introduces L2 learners to new words and grammatical structures in English in a way they can understand (Long, 1996). In addition to understanding the input they receive, L2 learners must produce output (Swain, 1985). In other words, they need to use English in interactions. When producing output, L2 learners have opportunities to practice English, use new words and grammatical structures, and pay attention to linguistic aspects they need to improve.

In addition to teaching in second language classrooms, teachers may also instruct L2 learners in K-12 mainstream classrooms, where NS students are present, too. In this teaching environment, L2 learners are taught both core-subject content and English language simultaneously. Given this context, a second pedagogical implication is that teachers should promote NS-L2 learner task-based interactions in the classroom. However, because students have a learner-learner relationship, teachers should consider raising NS students' awareness so that they can contribute to the learners' L2 development by using or avoiding particular communication strategies. For example, NSs should understand that by avoiding co-construction of a sentence, when appropriate, they encourage L2 English learners to produce output. Such awareness can encourage NSs to produce more effective strategies than if they were unaware of the positive impact they can have on their L2 learner peers' English development. Teachers who only teach L2 learners can pair them up to form low-high proficiency English level pairs and encourage learners to apply the most beneficial communication strategies.

Forming NS-L2 English learner and high-low proficiency L2 English learner pairs can create pressure for NSs and high-proficiency L2 learners, as they might feel like they are taking on a "teacher" role during the interactions. To alleviate this pressure, it is important for teachers to underline that interacting with low-proficiency L2 learners can also be advantageous for NSs and high-proficiency L2 learners. They can improve their understanding of English or declarative knowledge. "Declarative knowledge consists of what the learner explicitly knows, as knowing that grammar rule that you need to add an 's' to a noun to form the plural in English" (Hummel, 2014, p. 76). NSs and high-proficiency L2 learners can demonstrate declarative knowledge by assisting

their partners with linguistic aspects when necessary, such as providing a word definition or explanation for the use of a grammatical structure. If they are unable to assist their partners, it indicates areas in which they need to improve their declarative knowledge.

Lastly, teachers should provide explicit instruction to NSs and L2 English learners about the importance of communication strategies in SLA and how to apply them in FTF and text-SCMC interactions. For instance, teachers can pair NSs and L2 English learners to perform a task in the FTF setting. The task instructions should explicitly include the use of communication strategies, and the teachers should provide a list of these strategies to both NSs and L2 learners. Additionally, teachers can have NSs and L2 learners perform the task in the text-SCMC setting. After completing the task, teachers can give them a printout of their text-SCMC interactions and ask them to identify the communication strategies they applied. Regardless of the communication mode used, teachers can then have NSs and L2 learners write a reflection on how the strategies they applied may have helped with the development of L2 English skills. By combining explicit instruction, task-based interactions, and reflection on utilized communication strategies, teachers can equip their students with the tools they need to become better and more self-sufficient L2 learners. Furthermore, teachers can boost L2 learners' confidence in developing their L2 through real-life social interactions.

Although these research findings support SLA using communication strategies in FTF and text-SCMC task-based interactions, this study has some limitations. One limitation is that it included a small number of dyads. Therefore, caution is needed in generalizing from a small sample to a wider population. Moreover, the findings were limited by a particular type of collaborative task, and the L2 learners had a high level of English proficiency. To achieve a deeper understanding of how communication strategies impact SLA through FTF and text-SCMC interactions, further studies need to include a greater number of dyads, involve L2 learners of a lower level of English proficiency, and consider engaging participants in different types of tasks (e.g., decision making). Furthermore, future studies should include stimulated recall to better understand the impact of communication strategies in L2 development through interactions.

This study is significant because it contributes to the existing literature on how language teachers can promote task-based interactions to facilitate SLA. It sheds light on how learners can use communication strategies to improve their L2 and how NSs can contribute to learners' L2 development through FTF and text-SCMC interactions.

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