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Article

A Video-Conferencing English–Spanish eTandem Exchange: Negotiated Interaction and Acquisition

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Abstract

This study analyzed eTandem video-conferencing exchanges between five pairs of university students of English as a foreign language (EFL) and Spanish as a foreign language (SFL). The exchanges, which involved discussion of seven tasks, took place on a weekly basis. Drawing on an interactionist perspective (Ellis et al., 2001a; Loewen, 2005), the study explored the impact of incidental noticing on subsequent language learning. Data were collected from two sources: transcripts of all the video-conferencing sessions and immediate and delayed post-tests. Drawing on Loewen's (2005) framework of analysis, the transcripts revealed that students generated a total of 915 focus-on-form episodes (FFEs). As measured by the post-tests, participants recalled over half of the targeted FFE linguistic items. In contrast to previous studies (Loewen, 2005; Shekary & Tahririan, 2006), where successful uptake was a predictor for L2 learning, the present study revealed that the only significant predictor was deferred timing. More generally, the present study supports the claim that eTandem video-conferencing is a useful activity for promoting L2 acquisition.

KEYWORDS: eTANDEM; VIDEO-CONFERENCING; NEGOTIATION OF MEANING; INCIDENTAL FOCUS ON FORM; SLA.

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Introduction

Virtual exchange or telecollaboration refers to the use of online communication tools to enable language learners in geographically distant locations to connect for the purpose of developing linguistic and intercultural competence (O'Dowd, 2015). Although configurations vary (Akiyama & Cunningham, 2017), in a tandem approach to language learning, "two learners of different native languages work together in order to learn their partner's language and also to learn more about his or her background" (Brammerts, 1996, p. 121). Tandem language learning (TLL) is characterized by two main principles: reciprocity and autonomy (Little & Brammerts, 1996). Reciprocity refers to the fact that partners give each other equal time, but also that they are engaged in mutually helping each other to learn their respective target languages. Autonomy implies that learners take responsibility for the exchange and ultimately for their language learning.

Although originally conceived of as face-to-face experiences, online tandem exchanges, referred to as eTandems or teletandems, have become increasingly common. In line with technological developments, most of the research has involved email (Priego, 2011; Vinagre & Muñoz, 2011), chat (Bower & Kawaguchi, 2011; Giguère & Parks, 2018), or mixed email/chat (Yang & Yi, 2017) exchanges. Over the past few years, however, an increasing number of studies have focused on eTandem video-conferencing from varied perspectives: learner perceptions (El-Hariri, 2016; Tian & Wang, 2010; Yang, 2018), motivation (Flick, 2013), social dynamics (Janssen Sánchez, 2015), oral proficiency (Akiyama & Saito, 2016; Guillén, 2014), cultural learning (Zakir et al., 2016), and multimodality (Arellano-Soto & Parks, in press). Very few studies have, however, focused on negotiated interaction during TLL video-conferencing exchanges, especially in terms of how such interaction contributes to language development. As Cappellini (2016) notes, "it remains crucial to test the extent to which the learning potential of scaffolding side sequences [i.e., negotiation of meaning episodes] results in the actual linguistic acquisition" (p. 17). The aim of the present study is to address this gap in the research.

Theoretical Framework: Interactionist Perspective

For the present study, the TLL exchanges were analyzed by drawing on the interactionist perspective of language learning. This perspective, which has been prevalent in second language research since the 1980s, aims to understand how language learning takes place during social interaction, as interlocutors work to clarify meaning or form through a process of negotiation. As noted by

Long (1996), negotiation of meaning triggers interactional adjustments which can facilitate subsequent language development:

> [I]t is proposed that environmental contributions to acquisition are mediated by selective attention and the learner's developing L2 processing capacity, and that these resources are brought together most usefully, although not exclusively, during *negotiation for meaning*. Negative feedback obtained during negotiation work or elsewhere may be facilitative of L2 development, at least for vocabulary, morphology, and language-specific syntax, and essential for learning certain specifiable L1-L2 contrasts. (p. 414).

According to Ellis and colleagues (2001a), incidental focus on form involves focusing on diverse linguistic structures as they arise spontaneously during meaning-focused activities. Although the term *form* is often referred to as grammar, it can also be directed to phonology, vocabulary, grammar, or discourse, since at such times participants treat the forms as objects whose meanings can be learned. In other words, *focus on form* refers not just to a form, but also to the meaning(s) that a form construes. A focus-on-form episode (FFE) is operationalized as "the discourse from the point where the attention to linguistic form starts to the point where it ends, due to a change in topic back to message or sometimes another focus on form" (p. 294). Although negotiated interaction may be facilitative of L2 development, testing is required to determine that acquisition has occurred; namely, that the targeted forms have become integrated into long-term memory. An issue which has emerged in this regard pertains to the role of uptake (see the Review of the Literature below). As defined by Ellis and colleagues (2001a), uptake is an optional move which occurs "as a reaction to some preceding move in which another participant (usually the teacher) either explicitly or implicitly provides information about a linguistic feature" (p. 286). It is categorized as *successful uptake* if the learner incorporates the linguistic information into production, or unsuccessful if the learner does not.

The interactionist perspective originally developed within cognitive-based theories, where the objective was to understand how comprehensible input was related to language acquisition (Long, 1996). However, from a sociocultural perspective drawing on the work of Vygotsky, language itself is viewed as a psychological tool which mediates cognition. With this in mind, Swain and Lapkin (1998) proposed the term collaborative dialogue or language-related episode (LRE) to refer to those instances when interlocutors give attention to linguistic form. Within studies based on an interactionist perspective, both FFEs and LREs are thus used to refer to such instances (Smith, 2005). For a discussion of the relevance of the interactionist perspective for sociocultural theory, see Pekarek Doehler (2000), as well as a number of interactionist studies

which have made reference to this theory (e.g., Akiyama, 2014; Shekary & Tahririan, 2006; Ware & O'Dowd, 2008).

Review of the Literature

Within second language learning, the role of negotiated interaction has been a major focus of research for several decades in both face-to-face (Ellis et al., 2001a; Long, 1996; Varonis & Gass, 1985) and computer-mediated communication (Blake, 2000; Pellettieri, 2000) contexts. However, those studies which have attempted to provide evidence of a link between negotiated interaction and acquisition are much more limited (Ellis et al., 2001a, 2001b; Loewen, 2005; Williams, 2001). To our knowledge, no video-conferencing studies have addressed this issue to date. We, therefore, focus on those synchronous chat studies of relevance, specifically those by Smith (2004, 2005), Shekary and Tahririan (2006), and Eslami and Kung (2016). Following this, research on video-conferencing and negotiated interaction is reviewed.

Negotiated Interaction and Acquisition: Evidence from Synchronous Chat Studies

A study by Smith (2004) involving 24 intermediate English as a second language (ESL) university students investigated the degree to which targeted lexical items would be remembered during a chat activity. Preemptive targeted lexical items referred to those items for which explanations were provided by a student without the partner having requested them. Individualized post-tests based on the items negotiated by each participant revealed that unknown lexical items which had been negotiated were retained significantly better than those involving preemptive input. A follow-up study (Smith, 2005) revealed that uptake did not emerge as a predictor of language learning. To account for this, Smith evoked Laufer and Hulstijn's (2001) notion of involvement load, which maintains that learning is dependent on three factors—need, search, and evaluation.

Shekary and Tahririan (2006), in a study involving 16 Persian-speaking EFL university students, also provided evidence of a link between negotiated interaction and acquisition as measured by post-tests. More specifically, 70.3% of the targeted items were recalled on the immediate post-tests, and 56.7% on the delayed post-tests. However, in contrast to Smith's (2005) study, successful uptake was determined to be the best predictor of language learning, although deferred timing emerged as a weak variable. Similarly, Eslami and Kung (2016) also demonstrated evidence of the learning potential of negotiated interaction. For this study, 16 pre-service English teachers from the United

States and 44 EFL students from Taiwan were paired up to form 16 native-speaker/non-native speaker (NS-NNS) dyads and 14 non-native speaker (NNS-NNS) dyads. Individualized post-tests showed that the Taiwanese participants remembered 67.7% of the targeted items on the immediate post-test and 65.7% on the delayed post-test.

Video-Conferencing and Negotiated Interaction

Although there is increased interest in research involving video-conferencing, those studies which explore negotiated interaction are limited and the focus varies (Yanguas & Bergin, 2018). Studies by Jepson (2005), Yanguas (2010), Yanguas and Bergin (2018), and van der Zwaard and Bannink (2014) draw attention to the fact that different modalities, namely, audio, video or face-to-face, can impact the quantity and type of negotiation routines. A study by Bueno-Alastuey (2013) showed that dyad type affected both the quantity and type of LREs. More specifically, significant differences in this regard were shown between dyads composed of Spanish-speaking EFL learners paired with partners of different L1s—either NNSs or NSs of the target language—than those involving NNSs of the same L1. Although the NNS-NNS different L1 dyads also outperformed the dyads with L1-American NSs on certain measures, it is of note that the pairings involved advanced Turkish NNSs who were pre-service EFL teachers. In this study, feedback aimed at vocabulary and pronunciation was more frequent than that involving grammar.

As pertains specifically to TLL, a study by Akiyama (2014) involving 12 English-Japanese dyads showed that the targeted linguistic items varied as a function of whether the FFEs were preemptive or reactive. For Japanese learners, preemptive FFEs were significantly higher during the onomatopoeia task (words that imitate natural sounds) than during the noun task. By contrast, during reactive FFEs, Japanese NSs corrected more phonological errors and used more recasts.

Cappellini's (2013) study investigated scaffolding sequences during video-conferencing TLL exchanges involving students from France and China. Of the four participating dyads, only one succeeded in recording all five targeted sessions. Using these data as his corpus (approximately 6.5 hours), Cappellini identified five types of scaffolding sequences: lexical, syntactical, evaluation, explanatory, and crossed (the latter referring to a mix of scaffolding sequences in both Chinese and French). Of a total of 110 scaffolding sequences, more than half (57%) involved negotiation of lexical items. A related study by Cappellini (2016) showed that scaffolding sequences usually occurred in an expert-novice relationship, and mainly involved lexical and explanatory acquisition sequences.

To sum up, the above video-conferencing studies variously demonstrate that learners involved in such exchanges engage in negotiated interaction. However, even though such negotiation suggests a potential for language learning, no study to date has provided evidence for acquisition as in face-to-face or synchronous chat studies.

Tandem Language Learning: Pedagogical Considerations and Negotiated Interaction

Within TLL, the principles of reciprocity and autonomy emphasize mutual support and help with the target language by native speakers. However, research involving telecollaboration exchanges, including those designated as TLL, reveal that merely reminding partners to correct may not be effective (Schwienhorst, 2000; Ware & O'Dowd, 2008). To counteract this, researchers emphasize the importance of training, in order to ensure that participants understand TLL principles as well as what strategies (e.g., reformulation) can be used to give feedback (Ramos & Carvalho, 2018; Ware & O'Dowd, 2008). In addition to initial training, ongoing support is also recommended. To understand why feedback may not be readily given or might differ according to cultural groups or individuals, a number of reasons have been evoked. These include students' interpretation of the task as requiring a focus on communication or rapport building (Schwienhorst, 2000), the importance accorded to grammar instruction in previous educational experiences (Bower & Kawaguchi, 2011; Giguère & Parks, 2018; Ware & O'Dowd, 2008), and students' attitudes toward learning the target language (Giguère & Parks, 2018). Another factor brought to light pertains to politeness norms (Bueno-Alastuey, 2013; Sotillo, 2005). In Sotillo's study, student teachers who were NNSs provided more corrective feedback to ESL learners than those who were American NSs. Sotillo suggested that "NS partners were following politeness forms of American culture that discourage the correction of regional or foreign language use patterns" (p. 486). To better explore participant attitudes, the present study will also investigate how the learners viewed giving feedback to their partners.

In order to contribute to the limited research on video-conferencing computer-mediated communication, the present study investigated the potential for acquisition of negotiated interaction during a TLL exchange involving English as a foreign language (EFL) and Spanish as a foreign language (SFL) learners. Drawing notably on Shekary and Tahririan's (2006) study, the following research questions were formulated.

1. Do participants notice the gap in their interlanguage (i.e., produce FFEs) during negotiation of meaning in the context of TLL video-conferencing tasks for (a) EFL and (b) SFL?
2. What effect does incidental noticing have on subsequent language learning?
3. What characteristics of FFEs best predict L2 learning in this video-conferencing context?
4. How do participants view giving feedback to their partners during the tandem exchange?

Methodology

Institutional Contexts and Participants

This study involved five EFL students from a university located in Mexico City and five SFL students from a large university located in the American mid-west. All participants volunteered for the study and were at an intermediate range of language proficiency. Students in the American university were taking an intermediate Spanish course and were given credit for their participation in lieu of lab sessions. Participants from the Mexican university were self-access students from the language resource center, who were allowed to participate in the TLL research project in lieu of other activities. The participants, eight females and two males, were aged between 18 and 26. All were undergraduates registered in various fields of study, although none pertained to linguistics or language teaching. None had previously participated in a TLL exchange. As revealed by a background questionnaire, all students were motivated to learn their target language for a variety of reasons (see Table 1). Students viewed the TLL exchange as an opportunity for language and/or cultural learning, as reflected in the following comments.

> I want to be able to have weekly contact with a native. In the classroom we do not have much opportunity to speak creatively, mostly use of memorized phrases or organized topics to speak on. The focus is grammar more than speaking and listening. I am excited to improve my cultural knowledge as well as my listening and speaking abilities.

> I love the language [Spanish] and I love speaking it and interacting with people from other countries who have different traditions and cultures.

> Because I consider it interesting to interact with a native speaker of the English language, and to practice my English in this way. [Translated from Spanish.]

Table 1
Participants' Reasons for Learning the Target Language

Participants*	University studies	Future career	Travel	Friendship	Other
Bethany-E	Somewhat important	Important	Important	Somewhat important	
Brynn-E	Very important	Not important	Important	Very important	Very important (church service)
Heather-E	Important	Important			Important**
Lanae-E	Very important	Important	Very important	Important	
Marissa-E	Somewhat important	Somewhat important	Important	Important	
Brenda-S	Very important	Very important	Very important	Very important	
Carlos-S	Very important	Very important	Important	Important	Important (culture)
Israel-S	Very important	Very important	Important	Important	
Roxana-S	Important	Very important	Important	Somewhat important	Somewhat important**
Yuritzi-S	Important	Very important	Very important	Very important	

* E = English speaker; S = Spanish speaker
** unknown

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Tasks

Seven tasks were created for the project, which were discussed on a weekly basis (30 minutes in English, 30 minutes in Spanish). The tasks were designed to enable students to share personal experiences (e.g., university studies, Easter/Christmas, social issues, a visit to your city) or use their imaginations to collaboratively construct stories or accounts of news events. As recommended by El-Hariri (2016), they allowed for a lot of latitude in terms of what exactly to talk about. Students alternated which language to start off with from one week to the next.

Data Collection Procedures

As shown in Table 2, the research project took place over a 12-week period. Prior to the start of the tandem exchanges, the first researcher met with the participants individually in their respective universities, in order to explain TLL principles and discuss how to give feedback to partners. Participants were also given practice in using the WebEx platform selected for the exchange. In addition to webcams, this platform featured document sharing, chat, a whiteboard with a toolbox, and the recording and archiving of sessions.

Except for a few instances when participants were at home, the exchanges were carried out in individual rooms at their university resource centers. During the exchanges, the first researcher was present online (with his webcam off) to ensure that the videoconferences were being recorded and to help with technical difficulties (e.g., loss of sound). The researcher never intervened in the discussions. Two post-tests were administered by the researcher via the WebEx

Table 2
Data Collection Schedule

Week	Activity	Researcher's role
1	Training SFL participants	Familiarize participants with TLL principles; explain feedback strategies; introduce to WebEx platform and provide practice; administer background questionnaire
2	Training EFL participants	
3–9	Video-conferencing sessions	Ensure recording of the video-conferencing sessions; identify FFEs; create post-test items
10	Immediate post-test End-of-project interviews	Administer via WebEx platform (individually)
11		Tabulate scores for immediate post-tests
12	Delayed post-test	Administer via platform (individually)/ tabulate scores

platform on an individual basis at the resource centers of the participants' universities. All post-test responses, either written or oral (i.e., pronunciation questions), were recorded. The immediate post-test, as well as the end-of-project interviews, took place within one week following the final video-conferencing exchange, and the delayed post-test two weeks thereafter.

Data Analysis

In order to investigate the research questions, a mixed methods approach (Creswell & Plano Clark, 2011) was employed, using quantitative and qualitative data. Data for the study came from three sources: the recorded video-conferencing sessions, the two post-tests, and the end-of-project interviews. To prepare for the analyses, all 35 video-conferencing sessions for the five dyads (i.e., 43.5 hours) were transcribed. Transcription conventions, adapted from Jefferson (1984), took multimodality into account. The use of qualitative data refers to the analysis of the FFE characteristics (see next section) and parts of the end-of-project interviews, which dealt with students' views on giving feedback. The use of quantitative data involves the statistics related to this FFE analysis and the post-tests. Table 3 provides an overview of the research questions, the data sources, and the analysis procedures.

Table 3
Overview of Research Questions, Data Sources, and Data Analysis Procedures

Research question	Data sources	Data analysis
1. Noticing the gap	Video-conferencing transcripts	Identification of FFEs (Ellis et al., 2001a; Loewen, 2005). Descriptive statistics; *t*-tests
2. Effect of incidental noticing on subsequent language learning	Individualized immediate and delayed post-tests based on items negotiated during FFEs (Loewen, 2005).	Tabulation of results for immediate and delayed post-tests
3. Characteristics of FFEs that best predict L2 learning	Coded FFE characteristics; results of post-tests	GEE* regression analyses
4. Participants' views on giving feedback	End-of-project interviews	Identifying/categorizing participants' views

* GEE = generalized estimating equation

Coding of Focus-on-Form Episodes

For this study, an FFE was defined as "the discourse from the point where the attention to linguistic form starts to the point where it ends, due to a change in topic back to message or sometimes another focus on form" (Ellis et al., 2001a, p. 294). The coding of the FFEs proceeded in two steps: (1) identification of the

Table 4
Characteristics of FFEs (Adapted from Loewen, 2005)

Characteristic	Definition	Categories
Type	Instigation	*Reactive*: error correction *Preemptive*: query raised by the less expert (NNS) participant
Linguistic focus	Linguistic target	*Grammar—Vocabulary—Pronunciation*
Source	Apparent reason for instigation	*Code*: inaccurate use of linguistic item with no apparent miscommunication *Message:* problem understanding meaning
Complexity	Length	*Simple*: only one response move *Complex*: more than one response move
Directness	Explicitness of the feedback	*Indirect*: implicit (e.g., recast) *Direct*: explicit (e.g., metalingual explanation)
Emphasis	Complexity + directness	*Light*: indirect and simple *Heavy:* direct, complex, or both
Timing	Response timing	*Immediate*: turn following the trigger *Deferred:* more than one turn following the trigger
Response	Type of feedback provided by the more expert (NS) participant	*Provide*: more expert (NS) participant gives information about a language form either by use of a recast or an inform *Elicit*: more expert (NS) participant attempts to draw out from less expert (NNS) participant a language form or information about a language form
Uptake	Less expert (NNS) participant's response to feedback	*Uptake*: less expert (NNS) participant produces response *No uptake*: less expert (NNS) does not respond
Successful uptake	Quality of less expert (NNS) participant's response	*Successful uptake*: less expert (NNS) participant incorporates linguistic information into production *Unsuccessful uptake*: less expert (NNS) participant does not incorporate linguistic information into production

FFEs in the transcripts and (2) coding of each FFE based on the characteristics of FFEs adapted from Loewen (2005), as shown in Table 4. To make it clear which target language was being focused on, participants were identified as *less expert (NNS) participant* and *more expert (NS) participant*. Due to their ambiguity, acknowledgments were also included in the unsuccessful category of uptake, as recommended by Ellis and associates (2001a) and Shekary and Tahririan (2006). As discussed in Loewen (2004), elicit moves for complex FFEs may initially be involved prior to a *provide*. In such instances, only the final response move was coded.

There follows an example of how one FFE was analyzed and coded. The relevant characteristics are presented in bold type (Table 5). As shown in episode 1 below, Yuritzi-S makes a linguistic error in turn 1 by omitting the preposition *of* in the phrase *amount cars* (trigger). In turn 2, Heather-E reacts to the error (rising intonation) and provides the correct form of the phrase via a recast (*amount of cars*). As shown in Table 5, the type of FFE is coded as reactive, the linguistic focus is grammar, and the source is the code, as the omission of the preposition does not pose a problem with understanding the message. Complexity is coded as simple, as there is only one response move (turn 2). As the response involves a recast, it is coded as indirect. Emphasis is light, as the targeted item has been previously coded as indirect and simple. Timing is immediate, as Heather-E addresses the linguistic problem in turn 2 immediately following the trigger. Uptake is successful, as Yuritzi-S incorporates the feedback into turn 3.

Episode 1 Topic: Global Warming

Yuritzi-S is identifying what she considers to be the biggest problem.

1. Yuritzi-S: yeah, amount cars
2. Heather-E: amount of cars?
3. Yuritzi-S: eh ((pause)) yeah amount of cars, eh…

In order to determine the reliability of the FFE analyses, 10% of the English FFEs were coded by an English native speaker, and 10% of the Spanish FFEs by a Spanish native speaker. Each FFE was given a possible score of 10 points (one for each characteristic). Comparison of the coding by the two raters with the first researcher revealed agreement rates of 87% for the SFL items and 86% for the EFL items.

Table 5
FFE Analysis of Episode 1

Type	**Reactive**		Preemptive	
Linguistic focus	**Grammar**		Vocabulary	Pronunciation
Source	**Code**		Message	
Complexity	**Simple**		Complex	
Directness	Direct		**Indirect**	
Emphasis	**Light**		Heavy	
Timing	**Immediate**		Deferred	
Response	**Provision**		Elicitation	
	Inform	**Recast**		
Uptake	**Uptake**		No uptake	
Successful uptake	**Successful**		Unsuccessful	

Post-Tests

As this study involved incidental focus on form, learning was operationalized through post-tests based on the linguistic items negotiated by individual participants (Loewen, 2005; Shekary & Tahririan, 2006). Since the tests themselves served to focus attention on the linguistic forms, it was not feasible to use the same linguistic items for both post-tests. In consequence, half of the negotiated items served to create the immediate post-tests, and the other half was reserved for the delayed post-tests. Drawing on Loewen (2005), the tests included four sections: suppliance, correction, translation, and pronunciation. Suppliance test items targeted vocabulary and required participants to provide the meaning of a specific word. Correction test items, usually involving grammar, required participants to correct an error. Translation test items required the translation of vocabulary items that had been translated during the video-conferencing sessions. Pronunciation items were displayed in written form, and participants were required to pronounce them aloud. To score the responses, two points were awarded for a correct response, one point if cueing had been provided by the researcher (assisted correct), and zero points if the answer was incorrect.

Predictive Strength of FFE Characteristics

The third research question addressed the predictive strength of the FFE characteristics (i.e., the independent variables) for subsequent language learning. To

do so, a generalized estimating equation (GEE) analysis was conducted using the post-test results. A GEE approach was chosen, as it favors the distribution of cases in clusters by the participants (see the Results section for details).

Results

Research Question 1: Noticing the Gap

The first research question investigated whether the participants noticed the gap in their interlanguage (i.e., produced FFEs) during the negotiation of meaning in the context of video-conferencing tasks. As shown in Table 6, a total of 915 FFEs were produced by the five dyads, specifically 339 (37%) during the EFL exchanges and 576 (63%) during the SFL exchanges. An independent sample *t*-test at the .05 level showed that significantly more FFEs were produced during the exchanges in Spanish ($p < .022$). An analysis of variance (ANOVA) of the combined EFL and SFL FFE data revealed no significant differences for the number of FFEs produced for each task, $F(6, 84) = 1.491$, $p \geq .05$. As reciprocity is an important tenet in TLL, analyses were conducted to determine if the time allocated to the EFL and SFL parts of the exchanges were equal. Five *t*-tests (one for each dyad) revealed no significant differences in terms of time for any of the five dyads ($p > .05$). For the EFL part of the exchange, the number of FFEs per minute produced by each dyad ranged from .48 to .14 (.19 on average), and for the SFL part .54 to .33 (.44 on average). Of the 915 FFEs, 65% (597) were preemptive and 35% (318) reactive. In addition, 68% (623) were complex and 85% (773) were heavy. With respect to linguistic focus, 58% (534) involved vocabulary compared to 38% (351) for grammar and 3% (30) for pronunciation.

Table 6
Number of EFL and SFL FFEs in Relation to the Seven Tasks

	Task 1	Task 2	Task 3	Task 4	Task 5	Task 6	Task 7	Total	%
EFL	50	41	64	53	55	46	30	339	37%
SFL	52	83	89	116	67	129	40	576	63%
Total	102	124	153	169	122	175	70	915	
%	11.14	13.55	16.72	18.46	13.33	19.12	7.65		100%

Table 7
Test Results for Immediate and Delayed Post-tests

	Immediate post-test (*n* = 326)		Delayed post-test (*n* = 284)		Total	
Test response	***n***	**%**	***n***	**%**	***n***	**%**
Correct	175	53.7 %	145	51.1 %	320	52.4 %
Assisted correct	40	12.3 %	32	11.3 %	72	11.8 %
Combined	215	66%	177	62.4%	392	64.2%

Research Question 2: Incidental Noticing

To prepare the individualized tests, FFEs identified in the video-conferencing sessions had to be transcribed verbatim under a great deal of time pressure. As in Swain and Lapkin's (1998) study, transcription had to be limited to "the clearest and most obvious examples" (p. 326). Of the 915 FFEs ultimately identified for this study, 610 (66.6%) were used for the post-tests, specifically 326 FFEs (35.6%) for the immediate post-test and 284 (31%) for the delayed post-test. As the number of FFEs produced by the five dyads differed, the number of FFEs subsequently tested for each participant also varied. As shown in Table 7, 53.7 % of responses were scored as correct for the immediate post-tests and 51.1% for the delayed post-tests. When the correct and assisted correct responses were combined, the percentage of items recalled increased to 66% for the immediate post-tests and 62.4% for the delayed post-tests. A chi-square analysis revealed no statistically significant differences for the immediate and delayed post-test scores, $\chi^2(1, n = 610) = .869$, $p \geq .05$. The post-test results thus indicate that incidental noticing is indeed associated with subsequent language learning.

Research Question 3: Predictors of Language Learning

To address the predictive strength of the FFE characteristics (i.e., the independent variables) for subsequent language learning, a generalized estimating equation (GEE) analysis was conducted using the post-test results (Table 8). In order to provide an adequate number of entries/cases for this analysis ($n = 610$), the results from the immediate post-test ($n = 326$) were combined with the results of the delayed post-test ($n = 284$). A GEE approach favors the distribution of cases in clusters by the participants. In other words, there were 610 FFEs to be tested among the 10 participants. These 610 cases were not independent of each other (as if they had been generated by 610 individuals), as on average

Table 8
GEE Analysis: Tests of Model Effects

	Type III		
Source	**Wald chi-square**	*df*	**Significance**
(Intercept)	15.548	1	0.000
Type	0.788	1	0.375
LingFocus	3.845	2	0.146
Source	0.655	1	0.418
Complexity	2.080	1	0.149
Directness	0.017	1	0.895
Emphasis	0.199	1	0.656
Timing	5.224	1	0.022
Response	–	–	–
RecastInform	0.265	1	0.607
Uptake	2.243	1	0.134

there were 10 clusters of approximately 61 FFEs associated with each of the 10 participants. Since the GEE analysis requires binomial distribution, assisted correct scores were recoded as correct (as they showed learning of the target items to some degree). Thus, incorrect scores were assigned a value of 0, and correct (and assisted correct) scores were assigned a value of 1. As revealed by Table 8, uptake was not a significant predictor for L2 learning. The only significant predictor was timing (significance = .022), specifically deferred timing.

Research Question 4: How Participants Viewed Giving Feedback

All 10 participants confirmed that they found the tandem exchange useful. They stressed the fact that it gave them practice with native speakers. All participants also confirmed that they found it useful to get feedback. However, the Mexican and American students differed in terms of how they responded to the question aimed at giving feedback. With respect to the Mexican students, four out of five confirmed that they found it easy to give feedback. Roxana, for example, emphasized that what helped her was that she always felt confident when talking to her partner (*siempre me dia mucha confianza platicar con ella*). Yuritzi also mentioned feeling at ease conversing with her partner. In terms of giving feedback, she mentioned that what made it easy was that she only had

to reformulate erroneous utterances. Brenda stressed that it was easy because she was correcting in her language, Spanish. However, when queried about whether correcting could make her feel uncomfortable, she rejected this due to the fact that her partner seemed at ease with the feedback. One student, Carlos, initially found giving feedback a little difficult; however, when he figured out he could do so in the chat box, the process became easier. By contrast, four of the five American students characterized giving feedback as difficult and expressed discomfort with interrupting their partners to do so. In this regard, Byrnn confided, "I mean you feel uncomfortable, like you never like to correct someone." For her part, Marissa stated, "sometimes it was hard when I had to interrupt." To deal with the problem of giving feedback to her partner, Heather would "let her speak," then when she had finished would go back and correct. One student, Beth, said it was easy to give feedback. Although she attributed this to her being able to do so in English, the interview did not adequately probe in order to determine whether she felt comfortable with this. It should be noted, however, that Beth (with Brynn) had the lowest number of FFEs with regard to giving feedback to their partners.

Discussion

In the following discussion, the data from research question 4 will be used to clarify certain results.

Research Question 1: Noticing the Gap

In line with previous studies (Akiyama, 2014; Bueno-Alastuey, 2013; Cappellini, 2013; Yanguas & Bergin, 2018), the present study demonstrates the ability of participants involved in video-conferencing exchanges to provide focus-on-form feedback conducive to the development of oral interaction with regard to vocabulary, grammar, and pronunciation. As also demonstrated in most previous studies in the focus-on-form literature (e.g., Cappellini, 2013; Ellis et al., 2001a; Pelletieri, 2000; Yanguas & Bergin, 2018), feedback on lexical items predominated. In accordance with the TLL principles of reciprocity and autonomy, the participants were involved in mutually helping each other to learn their respective target languages, as reflected by the number of FFEs produced (915) and the rate per minute (.19 per minute for the EFL part and .44 for the SFL part). Several factors can explain this success. First, as shown by the initial background questionnaire, participants were motivated to learn their respective languages. The end-of-project interviews also indicated that they had appreciated the TLL activity and enjoyed interacting with their partners. Second, as recommended (Ramos & Carvalho, 2018; Ware & O'Dowd, 2008),

initial training to sensitize them to TLL principles and strategies for giving feedback had prepared them for the exchange. Third, tasks, which could be adapted to their personal interests (El-Hariri, 2016), may have enhanced the motivation to negotiate for meaning as problems arose. Nevertheless, despite this substantive engagement, significantly more FFEs were produced during the Spanish part of the exchange than the English part. As revealed by the post-test interviews, the American students, in contrast to the Mexican students, were more reticent in intervening and providing feedback to their partners. More specifically, four of the five Americans expressed discomfort with having to interrupt their partners. Such reticence could possibly be due to politeness norms, which appear to be more prevalent among Americans (Bueno-Alastuey, 2013; Sotillo, 2005). Thus, one might surmise that even though the initial training was effective, additional follow-up (Ramos & Carvalho, 2018; Ware & O'Dowd, 2008) would have been needed to further encourage feedback.

Research Question 2: Incidental Learning

Although individualized post-tests have shown that FFEs are related to L2 acquisition in face-to-face (Loewen, 2005; Williams, 2001) and chat contexts (Eslami & Kung, 2016; Shekary & Tahririan, 2006; Smith, 2005), the present study is the first to do so in the context of a video-conferencing eTandem exchange. As revealed by the post-tests, retention rates for items negotiated by individual participants were fairly high (53.7% and 51.1% for the immediate and delayed post-tests for correct responses and 66% and 62.4% with assistance). Results from the present study are somewhat lower than the retention rates reported by Eslami and Kung (2016) and Shekary and Tahririan (2006). This difference may possibly be due to the medium of the exchange. As noted by Shekary and Tahririan, the text-based medium can act as an "intellectual amplifier" (p. 567), thus providing participants with greater opportunity to notice the gap and become aware of correct usage.

Research Question 3: Predictors of Language Learning

In contrast to past studies in both face-to-face and chat contexts (Loewen, 2005; Shekary & Tahririan, 2006), this study did not support uptake as a predictor of language learning. Although in the study by Shekary and Tahririan (2006) timing was noted as a weak predictor, in the present study deferred timing, not uptake, emerged as a successful predictor. In contrast to immediate timing, where the response immediately follows the trigger, with deferred timing instances of negotiated interaction are prolonged. As the feedback in deferred timing comes near the end of the FFE, the response may be more salient in the minds of learners, since it is the last thing they hear (or see in the case of chat)

during the negotiation. In accordance with Smith (2005), we suggest that this more in-depth processing of linguistic information, as it pertains to learning, can be explained by reference to Laufer and Hulstjin's (2001) involvement load model, based on factors related to need, search, and evaluation.

According to this model, need is propelled by a desire to complete the task. When induced by an external agent, such as the teacher, it is moderate. However, when induced by the learner, it is the strongest. As suggested by both the background questions and the end-of-project interviews, participants were motivated to learn their respective target languages. In accordance with El-Hariri (2016), the tasks at hand were designed to allow for a great deal of latitude, which enabled students to discuss topics they were personally interested in. Of note in this regard is that of the 915 FFEs, 597 (i.e., 65%) were preemptive in nature. This suggests that there was a high need for search, as the NNS participants of the dyads took the initiative to ask their NS peers for help with linguistic items. This finding thus contrasts with Smith's (2004) study, where the preemptive input was not followed by the dyad partner's engagement with it. However, it is to be recalled that the focus of this study was on targeted lexical items, which participants (much like teachers) explained in anticipation of their interlocutor's need.

Also of note in the present study is that 68% of the 915 FFEs (i.e., 623) were complex in nature, with more than one response move. This suggests that participants persisted in their attempts at negotiation, in order to arrive at a satisfactory outcome before bringing the episode to a close. In addition, 85% of the 915 FFEs (i.e., 773) were heavy (a combination of directness and complexity). In terms of the way the negotiation process was enacted, a further point pertains to the role of multimodality. As revealed in an analysis of the FFEs in this study (Arellano-Soto & Parks, in press), over half of the episodes involved the use of chat leading up to the response move and/or during the response move. As previously noted (Shekary & Tahririan 2006), due to its written quality, chat can act as an intellectual amplifier, thus facilitating noticing the gap and increased awareness of correct usage. Although deferred timing emerged as a predictor of language learning, the preceding discussion of both the characteristics of the FFEs as well as aspects of multimodality provide a more nuanced account as to the dynamics of focus on form and how it is enacted during FFE episodes involving a virtual exchange.

Limitations of the Study

Participants of this study appeared motivated to learn their respective target languages. However, as orientation to learning mediates engagement (Giguère & Parks, 2018; Janssen Sánchez, 2015; Parks et al., 2005), different results could

emerge for a larger number of participants with more varied goals and motivations. Another challenge encountered in carrying out this study pertains to the post-tests. A longer delay for the delayed post-test as well as a merging of post- and delayed post-test data for the GEE analysis could have affected the outcome.

Conclusion

This study explored negotiated interaction during eTandem video-conferencing exchanges between EFL and SFL university students. Although synchronous chat studies (Eslami & Kung, 2016; Shekary & Tahririan, 2006; Smith, 2004, 2005) have shown a relationship between negotiation and subsequent language learning, the present study appears to be the first to do so within the context of a video-conferencing eTandem exchange. In contrast to studies which have shown uptake to be a predictor of language learning (Shekary & Tahririan, 2006), the present study revealed deferred timing as a predictor. It is recommended that future studies pay closer attention to the way participants use the feedback they receive, including downloaded chat transcripts and archived recordings. Finally, in contrast to most TLL studies (including this one), more attention (Giguère & Parks, 2018; Ware & O'Dowd, 2008) needs to be given to integrating TLL into coursework and exploring how follow-up tasks can serve to further enhance retention rates of negotiated items.

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