

Analysis of Telecollaborative Exchanges among Secondary Education Students: Communication Strategies and Negotiation of Meaning

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ABSTRACT: This study presents the analysis of a corpus of 12 telecollaborative interactions, recorded on video, between British and Spanish secondary education students during a telecollaborative project funded by the European Commission. The main aim is to analyse negotiation of meaning in these telecollaboration exchanges which are perceived in the literature as a sign of meaningful interaction. It is essential to study instances of telecollaboration in order to identify the possible affordances in the acquisition of communicative and intercultural competences. Smith's (2005) Model of Computer-Mediated Negotiated Interaction based on Varonis and Gass (1985) is employed to analyse the video interactions between Spanish and English students to find how learners deal with linguistic mistakes or any other type of communication problem during synchronous peer interaction. The results show that students employ a wide variety of strategies to negotiate meaning, while avoiding overt correction unless it is absolutely necessary to avoid communication breaking down. Skilful use of corrective techniques and resolving communication problems was also observed. These strategies led to fluid interactions and efficient task completion. Students were seen to readily take the initiative when tackling negotiation of meaning and correction and were provided scaffolding, a task that is normally carried out by teachers in more traditional settings. **Keywords:** Foreign Language Learning (Spanish and English), Communication Strategies, Negotiation of Meaning, Secondary Education, Telecollaboration.

Análisis de intercambios “telecolaborativos” entre alumnos de educación secundaria: estrategias de comunicación y negociación del significado

RESUMEN: Este estudio presenta el análisis de un corpus de 12 interacciones telecolaborativas grabadas en video entre estudiantes británicos y españoles de educación secundaria durante un proyecto telecolaborativo financiado por la Comisión Europea. El principal objetivo es analizar la negociación de significado en estos intercambios, que son percibidos en la literatura como una señal significativa de interacción. Es esencial estudiar ocasiones de telecolaboración para identificar las posibles potencialidades en la adquisición de competencias comunicativas e interculturales. El modelo de Interacción Negociada Mediada por Ordenador de Smith (2005), basado en Varonis y Gass (1985), se emplea para analizar las interacciones por video entre los estudiantes españoles y británicos para observar cómo manejan errores lingüísticos u otro tipo de errores de comunicación durante interacciones sincrónicas entre iguales. Los resultados muestran que los alumnos emplean una amplia variedad de estrategias de negociación del significado, evitando correcciones explícitas a no ser que resulte absolutamente necesario con el fin de no interrumpir la comunicación. También se observó destreza en técnicas de corrección y de resolución de problemas de comunicación.

Estas estrategias indujeron interacciones fluidas y eficiencia en la finalización de tareas. Se percibió que los alumnos enseguida estaban preparados para tomar la iniciativa a la hora de afrontar la negociación de significado, corrección y recibieron apoyo, tareas que son normalmente llevadas a cabo por los profesores en ámbitos más tradicionales.

Palabras clave: Aprendizaje de una Lengua Extranjera (español e inglés), Estrategias de Comunicación, Negociación del Significado, Educación Secundaria, Telecolaboración.

1. INTRODUCTION

The implementation of video telecollaboration tasks in language learning classrooms has gained ground in the last few years as the advances in telecommunication technology have prompted teachers and researchers to explore the possibilities of virtual exchanges between peers from different countries within an institutional context. The hypothesis is that students involved in telecollaboration can improve their proficiency in a foreign language and acquire intercultural communicative skills. In this sense, in the most recent version of the Common European Framework (CEFR) (see CoE, 2018) particularly in relation to the area of Mediation, several aspects that are integral parts of telecollaboration are explicitly mentioned; namely, “facilitating collaborative interaction with peers”, “collaborating to construct meaning”, “managing interaction”, “facilitating a pluricultural space” and “acting as intermediary in informal situations”. Moreover, the “goal-oriented online transactions and collaboration”, which are typically found in telecollaborative activities, are reflected in the descriptors provided in this version of the CEFR.

The research reported here took place within the Telecollaboration for Intercultural Language Acquisition (TILA) project (531052-LLP-1-2012-1-NL-KA)¹. The main pedagogical aim of the project was to improve the quality of foreign language teaching and learning processes by means of meaningful telecollaboration among peers. The educational institutions in the TILA project included several secondary schools in the United Kingdom, France, Spain, Germany and the Netherlands and the following universities: University of Roehampton, Université de Paris 3, Universitat de València, Universität Tübingen, Universiteit Utrecht and Univerzita Palackého.

From a research perspective, in recent years several European projects have explored the use of telecollaboration in foreign language learning, but mostly at the tertiary level. The TILA project was designed, in part, to redress this situation. The study reported here centres on the tandems from the English and Spanish TILA partner schools involved in videoconferencing. A corpus was assembled consisting of the twelve viable² recordings made during these tandem interactions (see Annex 1). The research focus was on Negotiation of Meaning (NoM) (Varonis & Gass, 1985 and Smith, 2003/2005) as it constitutes an important indicator of the richness of the interaction that takes place between learners and very little research has been undertaken regarding NoM during online interaction. Research into NoM involves paying attention to the type of strategies employed to maintain the flow of communication (Long, 1983 and Clavel-Arroitia, 2008) and, in particular, those implemented once a problem, or trigger, occurs.

¹ <http://www.tilaproject.eu>

² Several recordings had to be discarded due to extremely poor video quality.

2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1. Telecollaboration and Negotiation of Meaning

Publications on telecollaboration have increased significantly in recent times, especially since the beginning of the century (Hewitt & Brett, 2007; Su, Bonk, Magjuka, Xiaojing, & Lee, 2005). The most oft-quoted and influential definition of the term is that offered by Belz (2003: 68) who defines it as:

the use of Internet communication tools by internationally dispersed students of language in institutionalized settings in order to promote the development of (a) foreign language (FL) linguistic competence and (b) intercultural competence.

Telecollaboration can involve real-time/synchronous communication through chats and audio or audio-visual conferencing or delayed/asynchronous communication that employs tools such as forums, blogs and emails. The focus in TILA was on the analysis of the opportunities for meaningful communication that synchronous telecollaboration offers students (Lee, 2001) and more specifically “the negotiation of meaning among participants, corrective feedback and interaction” (Clavel-Arroitia & Pennock-Speck, 2015: 75).

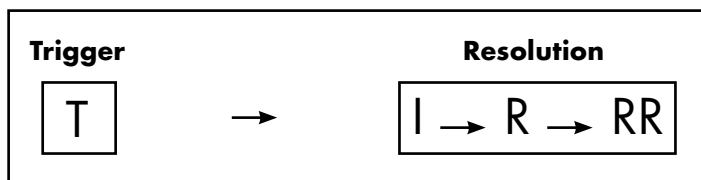
2.2. Negotiation of Meaning

Our analysis of NoM is embedded within an interactionist perspective on SLA (Ellis, 1999: 3), where interaction is defined as “the interpersonal activity that arises during face-to-face communication”. This perspective considers NoM to be very positive for language development (Smith, 2005). Gass (1997: 107) defines NoM as “communication in which participants’ attention is focused on resolving a communication problem”. According to Donato (1994), Gass, Mackey and Pica (1998) and Swain and Lapkin (1998), NoM in learner discourse enhances co-construction of meaning while facilitating learning by drawing attention to erroneous or inappropriate forms (Gass, 1997; Smith, 2003). This is achieved through various types of negative feedback such as reformulation, repetition and input modifications that help make L2 target forms more salient to learners (Morris, 2002). In other words, as Bower and Kawaguchi (2011: 44) put forward, NoM “has the potential to draw learner attention to non-targetlike aspects of language output”. Through NoM, students can also become aware of gaps in their knowledge of the L2 (Wilkinson, 2001) and this may result in modified or “pushed output” (Swain, 1985), that is, learners are somehow pressured to produce language that they had never used before in order to make themselves understood. Blake and Zizik (2003) claim that the benefits of NoM and pushed output are well documented in studies of interaction in synchronous computer-mediated contexts (see Pellettieri, 1999 and Smith, 2003).

2.3. Varonis and Gass Negotiation of Meaning Model

The most influential NoM model was devised by Varonis and Gass (1985). They (1985) state that in most conversations, discourse progresses in a linear fashion, which they call a horizontal line. However, from time to time some kind of difficulty or deviance from the norm may arise in the discourse and its progress may be halted. Varonis and Gass' (1985: 74) model is made up of four primes. The first prime is the trigger and constitutes the utterance of the speaker that "results in some indication of non-understanding on the part of the hearer" (Figure 1).

Figure 1: Proposed model for non-understandings (Varonis & Gass, 1985: 74)



A trigger may be ignored and the conversation may continue or its occurrence may result in the horizontal progression of the conversation being paused to allow for NoM. If the hearer reacts to the trigger, then the resolution, the second part of the model, comes into play. The resolution can be made up of the second, third and fourth primes. The second prime is the indicator (I): the hearer's response that effectively stops the horizontal progression. The third prime consists of the first speaker's response (R) to said indicator letting the hearer know that he/she acknowledges the non-understanding. The fourth prime, an optional element, consists of the reaction to the response (RR). Some of the strategies these subparts (I, R, RR) are made up of, which are analysed in more detail in the methodology section, are: repetition request, clarification request, reformulation, etc. (Long, 1983; Clavel-Arroitia, 2008).

2.4. Applying the Varonis and Gass model to telecollaboration

The Varonis and Gass (1985) model has been used in several studies on telecollaboration with little variation on the original (Blake, 2000; Blake & Zyzik, 2003; Kötter, 2003; Smith, 2003, 2005; van der Zwaard and Bannink, 2014; Clavel-Arroitia & Pennock-Speck, 2015). For instance, Blake (2000: 122) uses their schema "to show how chat programs can provide the SLA field with a convenient window through which to observe L2 interlanguage as it is unfolding". Blake and Zizik (2003), on their part, apply the schema to networked exchanges between Spanish Heritage speakers and L2 learners of that language. More recently, van der Zwaard and Bannink (2014) study chat and "video call" interactions in English between Dutch and Australian undergraduate students.

Smith (2003/2005), argues that there are some differences between computer-mediated communication (henceforth CMC) and traditional classrooms that call for modifications to

the NoM model even though students who engage in NoM online proceed in ways that are, in many ways, similar to face-to-face negotiation. As Smith is interested in written telecollaboration, he adapts the model to allow for a delayed reaction to the trigger and adds two additional phases in the resolution part of the negotiation routine: confirmation (C) and reconfirmation (RC). Clavel-Arroitia and Pennock-Speck (2015), who focus on interactions in English and Spanish by German and Spanish secondary school students, add several strategies that occur in the resolution stage of Varonis and Gass (1985).

To sum up, apart from the minor modifications mentioned in the previous paragraph, there seems to be a general consensus on the adequacy of the Varonis and Gass Model in the analysis of interactions in telecollaboration.

3. SUBJECTS AND METHOD

The participants in the study were thirteen secondary-education students, six of which were Spanish and seven, British. They were arranged in five dyads and one triad (see Annex 1). Their respective schools (IES Clot del Moro and IES Joan Fuster in Valencia, Spain and Godolphin and Latymer in London, Great Britain) participated in the project and their teachers were trained in the tools and the methodology employed in the TILA project prior to the organization of the interactions. The online exchanges constituted the main phase of the three-phase task methodology designed to be carried out in both the Spanish and the British schools. During the pre-task phase the students became familiarized with the profile of the partner school and the students participating in the partnership. During the main task the students had to collaborate to carry out a task together using an online videoconferencing system (Big Blue Button) embedded in the project's Moodle platform. In the post-task phase the dyad or triad that had participated in the videoconference would report back to the whole class (for more information on the tasks see Annex 1).

The methodology employed in this study is based on a close examination of the recordings of twelve telecollaborative exchanges between Spanish and British students and their respective transcriptions. The analysis is both quantitative and qualitative. In the quantitative analysis of the data (see table 2 in results section) we calculate the number of episodes of NoM (starting with a trigger), corrected and uncorrected mistakes, resolved and unresolved communication problems, and the attempts to pre-empt a potential problem through the use of the strategies described above. Finally, the technical problems the students encounter and the scaffolding episodes, understood as the collaborative work carried out by students to keep the conversation going (Walsh, 2012) are identified. The basic unit of analysis, therefore, was the negotiation routine or episode understood as “an exchange that begins with an explicit indication of nonunderstanding and results in a temporary push down in the conversation away from the main line of discourse” (Smith, 2005: 44). These student-initiated negotiation episodes comprise a trigger, causing some difficulty in communication, an indicator of non-understanding and a response to this indicator.

The qualitative analysis, which makes up most of this article, offers a detailed insight into the complexity of the episodes initiated by the triggers and their resolution. It is based,

on one hand, on the analysis of the negotiation routines or episodes (Varonis & Gass, 1985 and Smith, 2003/2005) and, on the other, on the categorization of resolution strategies (Long, 1983 and Clavel-Arroitia, 2008). This required finely grained analysis based on iterative scrutiny of the transcriptions of the videos and viewing of the videos for triangulation (Flick 2002; Green & Wallat 1981).

As part of this research brief, the research questions are as follows:

1. a) What kinds of NoM occur during the 12 synchronous English and Spanish video sessions?
b) How do the amount and types of negotiations compare to the findings in previous research?
2. a) When a trigger occurs, what type of feedback is offered?
b) What is the rate of correction regarding linguistic mistakes as compared to other similar studies?

For the first step in the analysis, the writer of this article worked with an experienced language teacher to locate the triggers (T) in the data. The interrater reliability regarding this aspect was 91,4%. Once this was done, in those cases in which the trigger was attended to, we identified and classified the different strategies employed by the students in the different sub-stages of the resolution (R): indicator (R:I), response (R:R), reaction to the response (R:RR), confirmation (R:C) and reconfirmation (R:RC), following Smith (2005). For that purpose, longer interactional sequences, stretching over multiple turns and beyond the boundaries of the particular negotiation-of-meaning sequence were also taken into consideration to find evidence of (non)-understanding.

Finally, the categorization of the strategies in the resolution stage employed in the present study is based on Clavel-Arroitia's (2008) adaptation of Long's (1983) analysis of native/non-native conversation to accommodate online discourse. This included the addition of the multimodal category of "change of semiotic mode". In Table 1 below, the names of the categories, a short description and an example from the corpus are provided.

Table 1. Categorization of resolution strategies employed in the resolution stage

CATEGORY	EXPLANATION	EXAMPLE FROM DATA
Comprehension check	expressions like “right?”, “ok?” or “do you understand?” that clearly show an effort on the part of one of the students to anticipate and prevent a break-down in communication	<ESP1> Bueno, mira, ah, ok. Do you understand my, my question?
Clarification request	elicitation of clarification, normally in the form of reformulation or repetition, of the other student’s preceding utterance	<ESP4> Yo vivo en Valencia cerca del mar. <ENG4> ¿Cerca del qué? <ESP4> Del mar.
Repetition request	when a peer asks another to repeat the ill-formed utterance or the part of the utterance that he/she has missed	<ENG4> Wait, otra vez
Repetition	when one of the participants repeats the part of the utterance that he/she believes is incorrect, or the part of the utterance that may not have been heard clearly	<ESP4> Porque mi ciudad es pequeña. Entonces no hay barrios. Y no hay muchos jóvenes <ENG4> Uhhh ¿qué? <ESP4> No hay muchos jóvenes
Reformulation	when one of the participants repeats the ill-formed part of the utterance or the part that may not have been heard clearly, but using different words	<ESP4> Lo que más me gusta en mi ciudad es la plaza. <ENG4> ¿Qué? <ESP4> Lo que más me gusta en mi ciudad es el centro.
Acceptance	when a student acknowledges the other student’s correction (peer-feedback) or reformulation, repetition, etc.	<ENG6> Eh, eh, de ... science fiction ¿ficción de ciencia? <ESP6> Sí, ciencia ficción. <ENG6> Ciencia ficción
Confirmation	when a student confirms that he/she has understood or acknowledged the other student’s acceptance	<ESP9> Uhhh, uh sorry? <ENG12> Do you, do you have the costs? Uhhh <ESP9> I think forty euros. Uh, each activity. <ENG12> Each activity. Okay.
Asking a peer	when a student asks another student to come up with a solution for a communication problem or the meaning of a word	<ENG4> What do you want to study? <ESP4> Wait! Com es diu química?
Asking the teacher	when the student asks the teacher to offer a solution for a communication problem or the meaning of a word	<ENG11> ¿Hay... Um... hay... Cuántos... Hay... Please... Miss Jones? how do you say ‘how many’, ‘how many’?
Topic shift	when a student changes the topic if it is perceived to be causing communication problems or it constitutes a digression	<ENG12> Yeah. Uh yeah, just go. That sounds really exciting. Uhhh sorry, so, so, sorry are you writing down seven hundred and eighty, isn’t it?
Peer correction	when a student reformulates the ill-formed utterance of another student	<ESP1> Anjni, do you listening me? O sea, do you listen me? <ENG1> Yeah, yeah I can hear you.
Self correction	when a student self-corrects, sometimes after a prompt from another student	<ENG4> Sí, uhhh, el fin de semana pasada... pasado? sí pero, fue, fue, fue muy bueno
Code switching	when a student switches codes due to a comprehension problem	<ENG6> la biología...pero mi colegio, mi colegio, me puede estudiar la ecología... I would have had to study ecology.

4. RESULTS AND DISCUSSION

In table 2, which shows the general quantitative results of this study, each row corresponds to one of the sessions, i.e., videos. Column one includes the name of each triad/dyad and the numbers in parentheses in the same cell refer to the sessions the dyads/triads participated in. Column two refers to the number of negotiation episodes where a mistake or a communication problem occurred. Column three, four, five and six correspond to the number of communication problems and the mistakes that were corrected and the number of communication problems and mistakes left uncorrected respectively. The difference between resolved/unresolved communication problems and corrected/uncorrected mistakes is that the former might refer to a misunderstanding relating to content whereas the latter contain linguistic mistakes. Column seven, anticipated problems, corresponds to the potential triggers resolved by students through the use of tactics, or strategies employed to pre-empt potential communication problems. Column eight shows the number of technical problems, normally related to sound or image. Finally, column nine corresponds to scaffolding episodes (Walsh, 2012).

Table 2. General quantitative results

	Epis- odes	Resolved com- mun-i- cation problems	Unresolved commu- nication problems	Uncor- r-ected mistakes	Corrected mistakes	Antici-pated problems	Tech-nical problems	Scaf- fold-ing
Dyad 1 (1st)	14	3	1	6	8	2	0	0
Dyad 2 (1st)	28	9	1	15	6	0	0	0
Dyad 3 (1st)	1	0	0	0	1	0	0	0
Dyad 3 (2nd)	20	7	0	7	6	2	0	0
Dyad 3 (3rd)	36	11	0	15	8	1	0	2
Dyad 4 (1st)	3	2	0	0	1	0	0	0
Dyad 4 (2nd)	36	12	1	20	7	4	1	0
Dyad 4 (3rd)	22	7	1	12	2	2	0	0
Dyad 4 (4th)	8	5	1	2	0	0	0	0
Triad 1 (1st)	36	12	1	18	9	0	1	2
Triad 1 (2nd)	28	12	0	14	18	0	0	2
Dyad 5 (1st)	23	9	0	12	6	0	1	1

Overall, 93.7% of communication problems are successfully resolved by students. The success rate is very high in all the dyads/triads which points to the fact that students are successful in solving communication problems.

Regarding corrected versus non-corrected mistakes, the general results show that in the twelve exchanges none of the 121 *uncorrected* errors appear to constitute communication problems for the students. Explicit correction, moreover, is rarely employed (37.3% vs. 62.7%), as the students seem to be able to understand each other well enough to go on with the interaction and therefore most of the mistakes, mostly involving pronunciation, do not lead to a breakdown in communication or comprehension problems –horizontal progression is not halted (Varonis & Gass, 1985). In the cases where students do feel it is necessary to deal with a trigger, these are generally resolved using resolution techniques such as clarification request, repetition, reformulation, peer feedback, etc.

In examples 1 and 2, ESP8 offers explicit feedback where confirmation requests, repetition requests or other strategies might have prompted self-correction on the part of ENG8:

Example 1:

<ENG8> ¿Hay... uhmm ... hay... cuántos... hay... <she looks confused>
please ... <She asks her teacher> Miss Jones²? How do you say 'how many',
'how many'? <T>

<ESP8> <interrupts her to answer her question> ¿Cuántos? <I: feedback>

<ENG8> ¿Cuántos? <R:R: acceptance>

Example 2:

<ENG8> Ah ... no ayudo mucho pero, uhmm ... <ESP laughs and eng smiles>
hacer mi ... <looks puzzled> <T: mistake>

<ESP8> ¿Hacer la cama? <I: feedback>

<ENG8> La cama <R:R: acceptance>

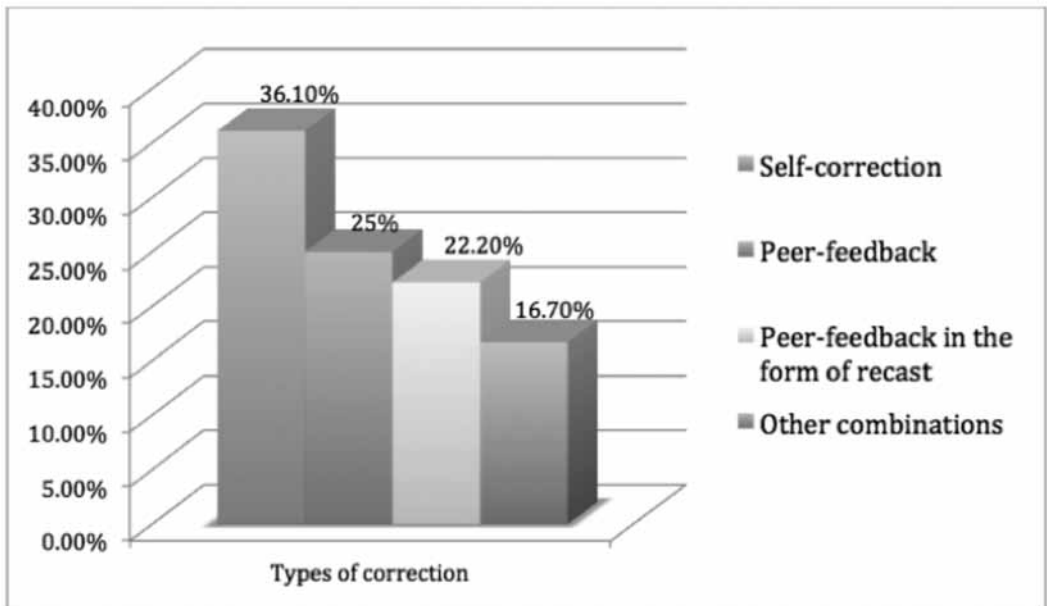
As already noted, overt error correction, which effectively cuts short NoM, is not common. Students in our data employ a wide range of strategies that allow for more NoM. The diversity and combinations of strategies employed after a trigger occurs, forming part of the response stage of the negotiation routine or episode, indicate that the students in our study are sensitive to context and co-text. The following ad-hoc strategies are the most common in the interactions under scrutiny here:

- repetition request + reformulation + use of chat + asking a friend + acceptance
- repetition request + repetition + reformulation
- comprehension check + confirmation + topic shift
- clarification request + translation + repetition
- clarification request + repetition + confirmation + repetition + comprehension check + confirmation + acceptance
- clarification request + use of chat + explanation + acceptance + confirmation + confirmation

Most of the strategies employed by the students are not exclusive to second language talk (Seo & Koshik, 2010); rather they rely on techniques they probably already use in their mother tongue which they extrapolate to the L2 (see examples 6, 7 and 8). Obvious exceptions to this hypothesis are languaging and translation such as in examples 16 and 17 below.

Self-correction (figure 2) is one of the most productive corrective techniques (Van Hest, 1996; Kormos, 2000; Rieger, 2003; Clavel-Arroita, 2008). The students in this corpus employ this type of correction pervasively:

Figure 2: Results for corrective techniques



In example 3, we can observe how the British student self-corrects her L2 mistake but still looks for confirmation from her Spanish counterpart when she says “¿sí?”:

Example 3:

<ESP4> Tambien he ido, también he estado en Brighton <She types: “Brighton”>.

<ENG4> ¿Brighton? <ESP4 nods> Ah sí, a costa, <T: mistake> en la costa
<R:I: self-correction>, ¿sí? <R/R: confirmation check>

<ESP4> En la costa<R:RR: confirmation> <she nods>

According to the literature (Lyster, 1998; Schegloff, 2000; Nicholas, Lightbown &

Spada, 2001; Morris & Tarone, 2003; Clavel-Arroitia 2008), peer-feedback and recast are two other corrective techniques that frequently prompt acceptance. Panova and Lyster (2002) indicate that corrective techniques that promote negotiation of form result in the highest rates of uptake and these are precisely the techniques employed by TILA students. Instances of peer-feedback and recast are seen in examples 4 and 5 respectively –peer feedback in example 4 occurs between the two English students while peer feedback in example 5 occurs between an English student and her Spanish counterpart:

Example 4:

<ENG10> No puedo **escucharte**. <T: mistake>
 <ENG11> **No wait that's listen** <to ESP7> No puede **o...oi...oír**. <R:I: peer-correction>

Example 5:

<ENG11> Um... Me gustaría vivir eh... **a Paris** <she pronounces 'Paris' in English> <T: mistake: preposition> <T: mistake: pronunciation>
 <ESP8> <Interrupts her> Ah, **en Paris** <R:I: she pronounces 'Paris' in Spanish> <R:I: recast: preposition> <R:I: recast: pronunciation>

A frequent combination in our corpus is clarification request followed by other strategies. In example 6, we have clarification request + repetition + confirmation and in example 7, clarification request + reformulation + acceptance. The latter can be accompanied by gestures:

Example 6:

<ESP6> *Yo vivo en Valencia* <ENG4 nods and says: "uhum">, **cerca del mar**. <T>
 <ENG4> *¿Cerca del qué?* <R:I: clarification request>
 <ESP6> *Del mar*. <R:R: repetition>
 <ENG4> *Ah sí*. <R:RR: confirmation> <She smiles and gestures to show her approval>

Example 7:

<ESP8> *I listen to that group*. <T>
 <ENG8> *You listen to what?* <R:I: clarification request>
 <ESP8> *The group that Nadia said*. <R:R: reformulation> <She points to the screen with her pen>
 <ENG10> *Oh!! Woo!* <R:RR: acceptance>

Even though explicit episodes of scaffolding are infrequent in the corpus, scaffolding, understood as the collaborative work to keep the conversation running, is present throughout

all the interactions as in example 8 that includes a combination of verbal and non-verbal communication and example 9 that involves two students of the same nationality:

Example 8:

<ENG8> Te gusta la ... *la city*, <Moves her hand in a circle> <to ENG10>
How do you say city? <T>
<ESP8> La ciudad. <R:I: scaffolding>

Example 9:

<ENG10> Barcelona es mi favorita porque hay la playa y la ciudad, y erm la... What's the street called y...¿cómo se llama la calle más grande? <T: communication problem.>
<ENG8> Ah, La Rambla. <R:I: scaffolding>

Tolerance for ambiguity, another strategy, can take the form of topic shift (examples 10 and 11). No topic shifts are challenged in our corpus, even in those cases, like example 10, when ESP7 clearly states that she and ENG6 should be talking about their homes:

Example 10:

<ESP7> Pues sí... *tenemos que hablar de nuestras casas.* <T: comprehension problem>
<ENG6> *Lo siento, ummm, no...* <R:I: clarification request>
<ESP7> [*Tenemos.*] *Nosotras, tenemos que hablar de nuestras casas.* <R:R: repetition + expansion>
<ENG6> <Moves back> *Ahhhhh, right eh Paula, ¿qué te gusta sobre tu ciudad?* <T:RR: TOPIC SHIFT>
<ESP7> <R:C: tolerance for ambiguity> *No sé. Me gusta ...*

Example 11:

<ENG4> *en Inglaterra solo.* <T>
<ESP6> *En casa solo.* <R:I: comprehension check>
<ENG4> *Sí,* <R:R: confirmation> *solo en esta casa desde que...*
<ESP6> *¿Me puedes describir tu habitación?* <R:RR: topic shift>

Results for the treatment of communication problems that do not involve an explicit language mistake are almost always solved efficiently. The communication problem in example 12 is due to the difficulty ESP1 has in understanding a non-English name:

Example 12:

<ENG1> *My name is Anjni.* <T>
 <ESP1> *Please, can you repeat?* <He points at his ear> <R:I: repetition request + gestures to aid communication problem>
 <ENG1> *Uhhh, My name is Anjni.* <R:R: repetition>

The subjects in our corpus definitely prefer face-to-face interaction and only turn to the chat when their attempts at communication are not successful. The chat was only employed on seven occasions in all and not by all the dyads/triad. An example of resorting to the chat to solve a communication problem is the following:

Example 13:

<ESP6> *¿Tú vives en Londres?*
 <ENG4> *Sí.*
 <ESP6> *En la capital?*
 <ENG4> *Sí.*
 <ESP6> *Yo he ido cuatro veces.* <T: comprehension problem>
 <ENG4> *Uhhh?* <Gets closer to screen> <R:I: clarification request>
 <ESP6> *Yo he estado en Londres cuatro veces* <R:R: reformulation>
 <ENG4> *Wait ... no puedo...entender* <R:RR: clarification request>
 <ESP types in chat> *“Yo he estado en Londres cuatro veces”* <R:R: repeats in chat>
 <ENG4> *Ah!* <R/RR: acceptance> *¡Qué bien! Y ¿qué has visto en Londres?*

Regarding anticipated problems, they are not found in large numbers. Some take the form of self-deprecation as in example 14, in which ESP1 anticipates the problems his self-confessed lack of proficiency in English may cause while praising his Spanish classmate's English:

Example 14:

<ESP1> *A ver ... es que ... espera. Anjni, Anjni. One question ... o sea. My English is very bad. OK? My English it's zero, zero ... is zero. Celestina sí sabe.*

When students encounter technical problems, they are generally very patient, which could be interpreted either as proof of their interest in successfully completing the task or of their enthusiasm for the exchange itself. Given the demonstrations of contentment when the problem is solved (see final moves in example 15), the latter seems to be a more satisfactory explanation:

Example 15:

<ESP8> *Can you hear me?*

<ENG8> Yeah, a little bit, quite quiet.
 <ESP8> Ok.
 <They wait for a whole minute while the Spanish teacher attempts to solve the problem>
 <ESP8> Can you hear me now?
 <ENG10 and ENG8 together> Yeah! <their intonation shows that they are glad the problem is solved and they can finally talk> <ENG8 gives a thumbs up>
 <ENG10> Mucho mejor! <They all laugh together>

Finally, it is important to highlight that code switching, involving whole phrases, to overcome a communication problem, rarely occurs; in fact, it is only featured in two of the interactions:

Example 16:

<ENG6> [...] *pero mi colegio, mi colegio, me puede estudiar la ecología...*
I would have had to study ecology. <R:I: code switching>

Example 17:

<ENG6> *Sorry, uhmm ...* <She seems to be thinking> *oh, yeah, What's it like having a turtle?!* <T>
 <ESP7> *What?* <R:I: clarification request>
 <ENG6> *¿Cómo es tener un turtle?* <R:R: code switching>

Example 16 illustrates how one of the English students falls back on her native language, apparently because she does not know the required structure in Spanish. Example 17, on the other hand, shows how the British student resorts to the L2 in answer to ESP6's request for clarification. It might be possible that the English student is aware of just how different "what's it like?" is to the Spanish phrase *¿cómo es?*, which can be translated literally as: "how is?". Example 17 could be counted as an instance of code-switching used as a clarification strategy. Here it includes a case of what Larsen-Freeman and Cameron (2008) call languaging, that is, when a student cannot find a word in the target language and uses one from his/her L1 –see "turtle".

Turning now to the discussion of the results, regarding research question 1 (a) "What kinds of negotiations of meaning occur during the 12 synchronous English and Spanish video sessions?" b) "How do the amount and types of negotiations compare to the findings in previous research?", students employ a variety of strategies to negotiate meaning and they do so in similar ways to those described in previous research (Smith, 2003/2005; Sotillo, 2000). We found, like Smith (2003/2005), that learners often employ NoM when a problem in communication arises in the context of task-based CMC. Furthermore, we discovered, as Sotillo (2000) suggests, that participants seem to negotiate meaning when they are discussing topics of interest.

In answer to research question 2 (a) “What type of feedback is offered?” b) “What is the rate of correction regarding linguistic mistakes?”), the results show that even though correction was not employed in all the cases where a mistake occurred (in fact, only 37.30% of the mistakes were corrected), students coped with communication problems during the interaction very successfully since 93.70% of them were resolved. This suggests that when students are given tasks and left to their own devices, the onus is on communication rather than correction. When corrective strategies were found, the results show that, similarly to previous research findings (Van Hest, 1996; Kormos, 2000; Rieger, 2003; Clavel-Arroitia, 2008), self-correction was the most frequent corrective technique, followed by peer-feedback and implicit peer-feedback in the form of recast.

Our results, showing the wide range of strategies employed by students, seem to point to the fact that reformulations of an incorrect utterance can serve to draw the learner’s attention to the troublesome part of the utterance and help to trigger learner-internal mechanisms that can subsequently lead to immediate output change (Gass, Mackey and Pica, 1998). We agree with Sotillo (2000) in that it is in this context where synchronous discussions potentially create ideal learning environments since they promote intense social interaction and foster textual meaning construction and negotiation. The large number of diverse strategies seems to indicate that the students in our study might not follow an established pattern acquired by observing teachers. They employ varied, often ad-hoc strategies to carry out the NoM. It is true that the type of task, both in terms of the topic and its aim, has a major influence on these exchanges and dictates their nature. In this respect, Gass and Varonis (1985) showed that the amount of talk produced in NNS-NNS conversations depends on the task that students are required to do. This affects their interaction and their NoM and allows them to use a wide variety of communication strategies in quite a similar way to how they would in a natural conversation.

It is important to highlight that teacher interventions were scant in the exchanges under scrutiny thus giving the students the opportunity to take centre-stage. Teachers only appear on camera, or are addressed, 31 times. Of those appearances, they speak on just seven occasions in all. Therefore, students are clearly in charge of the conversation; they are the ones that change the topic and they take the decision to correct their counterparts or not –but normally only do so when it is essential to keep the interaction going. It can be concluded that, in contrast to a normal classroom context, where scaffolding is normally provided by the teacher, students are responsible for this task in telecollaboration.

Regarding repair practices, students seem to deal with mistakes very pragmatically and do not overtly correct their classmates unless a mistake arises that affects either the flow of communication or the accomplishment of the task. The subjects in this study are particularly competent when dealing with pedagogical repair both in cases of other-initiated repair by a peer, or in cases of self-correction. Their pedagogical repair strategies target specific comprehension and production problems and in some cases they address non-linguistic problems (normally technical in our corpus) in what can be considered realistic communicative situations.

In accordance with Köter (2003) and Sotillo (2005), our data can not offer definite conclusions about the effects of the learners’ engagement in NoM on the development regarding

their respective L2 competence, however, they do demonstrate that online interactions abound with conversational moves (of the type found in examples 6 and 7) that promote linguistic awareness since they draw learners' attention to gaps in their L2 command and also often trigger a discussion about the possible cause for inaccuracies in their output.

Finally, the use of recasts by our students is especially noticeable, confirming the results in the literature (Sotillo, 2005 and Braidi, 2002). The same can be said of the employment of self-correction, in accordance with Smith (2003), which, as Sotillo (2005) highlights, is significant since self-repair is expected to appear in NS-NS interaction, but seldom appears in contexts where interactants are not fully skilled (Schegloff, Jefferson, & Sacks, 1977).

5. CONCLUSION

The interactionist approach to the analysis of the corpus adopted in this article, based on Smith's (2005) expanded model of NoM of Varonis and Gass (1985), proved to be a useful tool to carry out the analysis of NoM among native and non-native students in the context of task-based CMC. It highlights the often sophisticated efforts of students to resolve the potential problems signalled by triggers while allowing the analyst to see systematic patterns in the data that might otherwise be missed, such as the instances of recast involving different semiotic modes in examples 5 and 6.

Using the modified model, we discovered that the subjects involved in telecollaborative tandems in this study employ a series of NoM strategies which, in turn, are an essential part of rich peer interactions. The results of this study are consistent with CMC research (Pellettieri, 1999; Smith, 2003) in that responses to indicators (I) consisted mainly of reformulations.

The many communication strategies we have observed in this study, such as feedback, comprehension checks and clarification requests make telecollaboration more akin to face-to-face communication than controlled activities or even the more communicative activities found in traditional classes. The contention here is that the interactions that take place in telecollaboration are probably the nearest one can get to real interaction between peers who are physically contiguous. It would be very difficult to prove this by comparing studies on telecollaboration with those on sojourns by students in other countries as there is a lack of data on actual interaction between host and visiting students during study abroad; most of the studies rely on post-sojourn test results and self-evaluation. Moreover, it would be difficult to compare telecollaborative interactions that might last two or three hours with sojourns that last up to a year. Nevertheless, the fact that telecollaborative interactions are rich in NoM highlights their potential. Finally, another argument in favour of using telecollaboration as a pedagogical tool in language learning is that nowadays many "real" face-to-face interactions are carried out online thus blurring the dividing line between virtual and proximal face-to-face interaction. Future research will have to establish if the findings here can be extrapolated to other contexts and if a more detailed coding of the triggers, tagging each type of error, for instance, would be helpful for the analysis.

Finally, the limitations of the study should be noted here, namely the small size of the corpus due, partly, to technical problems. A larger corpus would generate more data on

negotiation episodes that in turn would offer a clearer view and it would have also been interesting to have the same number of sessions for all the dyads/triads in order to carry out a comparison of the strategies used by the different participants.

6. ACKNOWLEDGEMENTS

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APPENDIX: EXAMPLE POSTER. CREATED USING THE “POSTER MY WALL” APPLICATION

Sources used for the poster

Definitions (from top to bottom):

Definition of “astrophysics”: Wikipedia (accessed 30-9-16).

Definition of “plasma”: Wiktionary (accessed 30-9-16).

Definition of “superheating”: Wikipedia (accessed 30-9-16).

Definition of “hohlraum”: Wikipedia (accessed 30-9-16).

Pictures (from top to bottom):

Picture 1: Picture included in the original Poster my wall template.

Picture 2: Picture included in the original Poster my wall template.

Picture 3: By Spiel496 (talk) - I created this work entirely by myself, using Inkscape., Public Domain, <https://en.wikipedia.org/w/index.php?curid=21883498> (accessed via Wikipedia 30-9-16).

Picture 4: Nif hohlraum.jpg (accessed via Wikipedia 30-9-16) (https://en.wikipedia.org/wiki/Hohlraum#/media/File:Nif_hohlraum.jpg).

Appendix 1

Dyad/ Triad	Main participants	Schools	Task	Length of Video
Dyad 1	(ESP1) / (ENG1)	IES Clot del Moro, Sagunt/ Godolphin and Latymer School, London	Introductions	1: 14.45
Dyad 2	(ESP4) / (ENG2)	IES Clot del Moro, Sagunt/ Godolphin and Latymer School, London	Christmas and New Year	2: 23.23
Dyad 3	(ESP6) / (ENG4)	IES Joan Fuster, Sueca/ Godolphin and Latymer School, London	Introductions	3: 06.43
	(ESP6) / (ENG4)		Introductions (cont.)	4: 16.52
	(ESP6) / (ENG4)		Introductions (cont.)	5: 13.50
Dyad 4	(ESP7) / (ENG6)	IES Joan Fuster, Sueca/ Godolphin and Latymer School, London	Introductions	6: 06.15
	(ESP7) / (ENG6)		Introductions (cont.)	7: 29.37
	(ESP7) / (ENG6)		Introductions (cont.)	8: 18.15
	(ESP7) / (ENG6)		Introductions (cont.)	9: 17.13
Triad 1	(ESP8) / (ENG8) - (ENG10)	IES Joan Fuster, Sueca/ Godolphin and Latymer School, London	Introductions	10: 26.42
	(ESP8) / (ENG8)		Introductions (cont.)	11: 16.26
Dyad 5	(ESP9) (ENG11)	IES Joan Fuster, Sueca/ Godolphin and Latymer School, London	Planning a hol- iday	12: 26.20
	Total			3 hours 36 min. 21 sec.

Description of the tasks: <http://www.tilaproject.eu/moodle/course/view.php?id=85>