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Does Medium – Teletandem vs Face-to-Face Make a Difference in Advanced L2 Spanish Learner's Oral Fluency?

O meio - Teletandem vs face a face faz alguma diferença na fluência oral de aprendizes avançados de Espanhol como L2?

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ABSTRACT

SLA researchers have advocated for the incorporation of Teletandem (a sub-strand of tele-collaboration) as an autonomous, collaborative, and virtual foreign language environment (see BENEDETTI, CONSOLO; VIEIRA-ABRAHÃO, 2010; TELLES, 2009) aimed to promote L2 communication and intercultural competence in L2 settings, and as an alternative to traditional Face-to-Face (FTF) exposure commonly used in L2 classrooms. While the majority of previous studies on Teletandem for L2 learning have mainly examined its benefits, focusing on the different approaches used by learners in this medium and proposing strategies on how to implement its context in higher education language programs (see CANDIDO, 2010; CAVALARI, 2010), a critical overview of Teletandem research reveals a paucity of empirically supported evidence for the benefits of Teletandem on L2 development. Specifically, no empirical comparisons have been conducted between this medium and traditional face-to-face (FTF) instruction in the L2 classroom. This paper addresses this issue and reports on an empirical investigation of the benefits of this medium when compared to FTF exposure in relation to L2 fluency.

Keywords: Teletandem, L2 development, Oral Fluency, Face-to-Face, Medium Type, Task-Type.

RESUMO

Pesquisadores de ASL têm advogado pela incorporação de Teletandem (uma subdivisão de telecolaboração) como um contexto de língua estrangeira autônomo, colaborativo e virtual (ver BENEDETTI; CONSOLO; VIEIRA-ABRAHÃO, 2010; TELLES, 2009) com foco na promoção da comunicação em L2 e na competência intercultural em cenários de L2, e como uma alternativa para a exposição tradicional face a face geralmente utilizada em salas de aulas de L2. Enquanto a maioria de estudos prévios sobre Teletandem para a aprendizagem de L2 examinaram principalmente seus benefícios, com foco nas diferentes abordagens utilizadas pelos aprendizes neste meio e propondo estratégias sobre como implementar esse contexto em programas de línguas no ensino superior (ver CANDIDO, 2010; CAVALARI, 2010), uma visão geral crítica de pesquisa em Teletandem revela uma escassez de evidências empiricamente amparadas sobre os benefícios do Teletandem no desenvolvimento

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da L2. Especificamente, nenhuma comparação empírica tem sido conduzida entre esse meio e o ensino tradicional face a face na sala de aula de L2. Este artigo aborda essa questão e apresenta uma pesquisa empírica sobre os benefícios desse meio quando comparado à exposição face a face em relação à fluência em L2.

Palavras-Chave: *Teletandem, Desenvolvimento em L2, Fluência oral, Face a face, Tipo de meio, Tipo de tarefa*

1. Introduction

During the past decade, new L2 language instruction alternatives have emerged incorporating technology-mediated learning and digital learning environments. Telecollaboration has grown in popularity due to today's societal needs and as a result of the autonomy and flexibility that this language modality offers language programs. Consequently, traditional face-to-face (FTF) instruction has been redefined, with educational institutions promoting more and more foreign language (FL) classroom instruction with computer-assisted language learning (CALL) and telecollaboration (LEE, 2016).

While the benefits of teletandem have been demonstrated in various areas of the FL learning experience (e.g., BRICK, 2011; STICKLER; EMKE, 2011; TELLES; FERREIRA, 2011), the vast majority of previous research has investigated this type of medium from a sociocultural theoretical point of view, ignoring its effects on L2 development. From a cognitive interactionist perspective, the study reported here explored the effects of teletandem on college learners of Spanish on their oral L2 fluency and examined potential developmental linguistic gains after being exposed to tandem interactions over an academic semester. It is hoped that the study will raise questions regarding teletandem's potential benefits or lack thereof and serves as basis for future SLA studies. This research aims to inform future theoretical and teaching practice in this line of research.

2. Review of the literature:

2.1 Teletandem in computer assisted language learning (CALL)

Incorporating intercultural communication has become a key element of language teaching practice (e.g., TELLES, 2015). Akiyama (2017) has defined Telecollaboration (TC) as an "arrangement that can facilitate intercultural exchange, and make native speaker voices a central part of the language learning experience" (O'ROURKE, 2007, p. 42). This learning setting has also been referred to as "institutionalized, electronically mediated intercultural communication under the guidance of a language cultural expert (i.e. a teacher) for the purposes of foreign language learning and the development of intercultural competence" (BELZ, 2003, p. 2).

One popular type of telecollaborative interaction is teletandem. Vassallo and Telles (2006) described teletandem as a context that incorporates a virtual, reciprocal, collaborative and autonomous perspective to language learning (TELLES; VASSALLO, 2006). It involves regular sessions of collaborative bilingual interactions in which pairs of speakers learn each other's L1, or more dominant language, for pedagogical purposes (BRAMMERTS, 1996; LEWIS; WALKER, 2003). Typically, L2 or FL learners' learning process is guided by the help of a language instructor, a native speaker, or a more advanced competent L2 learner (TELLES, 2015).

2.2 Teletandem from a cognitive theoretical perspective

The vast majority of teletandem studies in FL learning find its roots on Vygotsky's sociocultural theory (LANTOLF, 2000; VYGOTSKY, 1978), which considers social interaction as a fundamental basis of learning (LEE, 2016). Based on this theory, some studies have suggested that tandem instruction enhances the learning process of the target language and promotes awareness of the target culture (BRICK, 2011; STICKLER; EMKE, 2011). For instance, Stickler and Emke (2011) found that participants of teletandem view the online communication as a cultural environment.

Many empirical teletandem studies have focused on interaction variables, such as intercultural discourse (TELLES, 2015), interactional leadership (LEONE, 2012), teacher trainees' behavior (DEVELOTTE; GUICHON; VICENT, 2010), learner's independence (GARCIA, 2012), the positive role and contribution of Teletandem for educational and collaborative purposes across countries (ELLIS; ABREU-ELLIS; BATEMAN; TABOR, 2011; TELLES; FERREIRA, 2011); the teacher and learner's role in teletandem (COLEMAN, 2010), oral production and anxiety (CRAIG; KIM, 2012) or other factors pertaining the learner, such as perceptions, reactions or language identity. Importantly, the vast majority of this previous literature has employed qualitative or more descriptive methodologies (BOWER; KAWAGUCHI, 2011; KABATA; EDASAWA, 2011) to examine teletandem interactions.

Under a cognitive interactionist approach, teletandem language learning research has attempted to shed light on learners' language development (BOWER; KAWAGUCHI, 2011; KABATA; EDASAWA, 2011; KÖTTER, 2003). These studies followed Long's interaction hypothesis, which claimed that interaction and negotiation for meaning promote L2 learning because they link input modification, internal learner abilities and output in productive ways (LEE, 2016). When negotiating meaning in a teletandem setting, learners ask and are provided with corrective feedback from their interlocutors. For instance, in his tandem corpus, Kötter (2003) observed that L2 learners used many clarification requests, reformulation and elaboration of their partner's ideas.

Other prior studies in this research area have focused on corrective feedback (e.g., LEE, 2011; O'ROURKE, 2005; SAURO, 2013; SOTILLO, 2009; VINAGRE; MUÑOZ, 2011; WARE; O'DOWD, 2008) negotiation for meaning (BOWER; KAWAGUCHI, 2011; KÖTTER, 2003; O'ROURKE, 2005), tasks that elicit negotiated interaction (HAUCK; YOUNGS, 2008) or morphological development (DUSSIAS, 2006).

2.3 Defining and conceptualizing fluency

The construct of fluency has been widely investigated by SLA researchers and is considered as an indicator of the speakers' command in the second language (L2) (e.g. FOSTER, 2020; SEGALOWITZ, 2010). However, in a growing multicultural and multilingual world, functioning in more than one language is essential to keeping up with today's societal needs.

Previous SLA literature (e.g. LENNON, 2000; SEGALOWITZ, 2010) has referred to the L2 fluency gap as the reason why people are not able to use their L2 with the same level of skills as they do in their L1. However, the multiple definitions used in the literature and the lack of an accepted model that explains L2 fluency has generated a debate among SLA researchers, posing difficulties in conceptualizing the construct (SEGALOWITZ, 2016).

Most SLA scholars have understood oral fluency by applying the conceptual metaphor of "language in motion" due to the commonly used theme underlying the meaning of the term (KAPONEN; RIGGENBACH, 2000, p. 7). Kaponen and Riggenbach (2000) have highlighted the historical origins of this word by reporting common uses of the term in various FLs: the English word *fluently*; the German words *fliessent* and *flüssig* (literally meaning running and flowingly); the Russian word *beglo* (runningly), the French term *aisance* (ease); and *sujuvasti* in Finnish (translated as "in a flowing or liquid manner") (p. 6). Segalowitz (2010) has argued these uses bear the idea of "fluidity" and "movement-like" in common, which most oral fluency conceptualizations share (p. 3) (e.g. GUILLOT, 1999; KORMOS, 2006; RIGGENBACH, 2000; SEGALOWITZ, 2010, 2016).

However, the concept's multidimensional nature has led previous SLA studies to understand fluency according to different aspects of speech (e.g. GARCÍA-AMAYA, 2012; SEGALOWITZ, 2010, 2016), as broadly as the ability to express oneself in the L2 with the same skills as in the L1, and as narrowly as the capacity to produce: accurate speech with few grammatical errors, ample and varied vocabulary use, language complexity, or native-like pronunciation and accent patterns (SEGALOWITZ, 2010; TOWELL, 2002). These differences have posed a challenge to reaching a general agreement as to what constitutes fluency, requiring scientific research to be more precise about what is meant by oral fluency.

A decade ago, Segalowitz (2010) advocated for a cognitive perspective to the construct, arguing that fluency can be defined as "an observable characteristic of real-time behavior property of speech that reflects the execution of the neurological and muscular mechanisms, and reflects both cognitive and emotional states of the mind" (p. 7).

The scholar further distinguished between three types of fluency: cognitive fluency, utterance fluency and perceptual fluency. Baker-Smemoe, Dewey, Bown, Martinsen (2014) and Segalowitz (2010) referred to cognitive fluency as the mental process occurring simultaneously with the uttering of the output. Specifically, it is the speaker's ability to mobilize his/her cognitive resources, plan and execute the L2 in an efficient manner. Perceptual phenomena relate to the L1 speakers' subjective perception of non-native speakers' cognitive abilities to sound like native speakers. Finally, utterance fluency is described by the authors as the physical production and measurable characteristics of speech as a product, often being called temporal phenomena. The latter has, by far, received the most attention in SLA studies, researchers typically using a combination of multiple measures of speech rate, hesitational phenomena and pausing. For comparability reasons with previous literature, the current study focused on utterance fluency—the features of speech that can be quantitatively measured—to conceptualize and operationalize oral fluency.

2.4 L2 utterance fluency

Previous SLA researchers (e.g., BYGATE, 2001; ELLIS, 2009; SEGALOWITZ, 2010; TAVAKOLI; SKEHAN, 2005) have narrowed the concept of utterance fluency, suggesting this construct can be understood according to three subcategories: speed, breakdown and repair fluency. While the first is commonly used to describe "the rate at which the speech is delivered" (TAVAKOLI; SKEHAN, 2005, p. 708), the second has been connected to hesitations and pauses; and the third type to the frequency of corrections, self-repairs, false starts and repetitions. Additionally, breakdown and repair fluency both have to do with disruptions encountered in the flow of speech.

Over the past decades, the positive effects of study abroad (SA) learning contexts have been demonstrated on several aspects of L2 learning, oral fluency being one receiving more gains and most widely investigated (e.g., FREED, SEGALOWITZ; DEWEY, 2004; MORA; VALLS-FERRER, 2012; O'BRIEN; SEGALOWITZ; FREED; COLLENTINE, 2007; SEGALOWITZ; FREED, 2004). In this context, previous SLA literature has further agreed that contextual variables—a learning environment that provides intensive exposure to authentic input—promote development of oral fluency in learners' L2 use (e.g., FREED, SEGALOWITZ; DEWEY, 2004; GARCÍA-AMAYA, 2012; SEGALOWITZ; FREED, 2004).

Another strand of SLA research has examined how oral fluency is affected differently between the L1 and the L2 (e.g., DERWING; MUNRO; THOMSON, 2009; MORA; VALLS-FERRER, 2012; VALLS-FERRER, 2011), in what Segalowitz (2010) defined as the intrapersonal or *within-individual* fluency gap. Derwing, Munro, Thomson (2009) explored the relationship between L1 and L2 fluency to determine whether this construct is governed by an underlying trait. Both temporal features and fluency ratings of speakers' L1 language oral production were compared to learners' L2 production measures. Data was gathered in three languages—Russian, Ukrainian, and Mandarin—and analyzed over time employing a picture narration task. Researchers looked at speech rate, lexical and non-lexical filled pauses, hesitations, self-corrections, self-repetitions, and false starts. Results showed that the temporal phenomena were highly correlated to perceptual fluency, as judged by listeners at three points in time. Additionally, the study found that the strongest predictor for L2 fluency ratings was pruned syllables, the same temporal variable that best explained L1 fluency.

Utterance fluency has also been examined to determine overall L2 proficiency. A recent study, Baker-Smemoe, Dewey, Bown, Martinsen (2014) investigated the relationship between overall L2 proficiency and utterance fluency on 86 learners in five different languages. Data was gathered from 126 pre- and post-test OPI speech samples, and the level of participants ranged from novice-mid to superior. The measures employed included speech rate, total number of hesitations, number and length of pauses, number and length of runs, and number of false starts. Researchers reported that the greatest differences among proficiency levels were found in 2 out of 7 measures of speed fluency: syllables per second and run length. The study concluded that utterance fluency allows us to distinguish more precise differences in learners' L2 level of proficiency.

2.5 Task-based literature and L2 fluency

Another strand of research concerned with fluency is task-based literature. Task-based research has argued that L2 tasks are not neutral in the way they elicit language, and, consequently, impact L2 performance (e.g., BYGATE, 2001; ELLIS, 2009; TARONE, 1985; TAVAKOLI; SKEHAN, 2005).

Researchers have used a variety of pedagogic tasks to reflect real-life functional demands and discourse features of the target language (HU, 2018). As Hu (2018) argues, these functional demands generally reflect target tasks encountered in the real world, such as giving instructions/directions (e.g., FOSTER; SKEHAN, 1996; SANGARUN, 2005); interviewing people (e.g., BYGATE, 2001; TARONE, 1985); or making decisions (e.g., FOSTER; SKEHAN, 1996; SKEHAN; FOSTER, 2005), among other demands. A significant number of studies have compared in what ways different tasks affect oral performance (e.g., BYGATE, 2001; ELLIS, 2009; FOSTER; SKEHAN, 1996; TARONE, 1985;

TARONE; PARRISH, 1988). Narratives or story-telling tasks (usually based on pictures or a series of comic strips) have been regarded as the most frequently used tasks in previous TBLT research (e.g., BYGATE, 2001; DONATE, 2021; ELLIS; YUAN, 2005; ORTEGA, 1999; ROBINSON, 1995; SASAYAMA, 2016; TAVAKOLI; FOSTER, 2008; YUAN; ELLIS, 2003).

Scholars have further agreed that tasks that include features requiring learners to pay "more attention to language forms" usually also "impose greater communicative pressure or demand textual cohesiveness, tending to result in greater accuracy in certain grammatical forms" (TARONE, 1985, as cited in HU, 2018, p. 144). On the other hand, it has been argued (e.g., FOSTER; SKEHAN, 1996; MEHNERT, 1998) that tasks with "a clearer structure" that "involve learners to express more personal or familiar information" have led to improved performance in both accuracy and fluency, albeit at the expense of complexity (HU, 2018, p. 144).

One study (BYGATE, 2001) compared narrative and interview tasks on CAF production measures and found that learners produced more fluently in the narrative tasks over the interview tasks, but the latter elicited more complex language forms. The author attributed this effect to the more personal nature of the task requiring learners to interact with their interlocutor in a way that demands more "online processing" (p. 38) and the development of more complex structures. Derwing, Rossiter, Munro, Thomson (2004) investigated perceived L2 fluency employing raters in a variety of tasks. The researchers concluded that more freedom in the choice of lexis, content and syntax during task performance seems to allow learners more freedom and, as a result, produce more fluent speech (as perceived by raters).

Tavakoli and Skehan (2005) manipulated testing conditions (planning time before the task) via picture description tasks and found that task structure and pre-task strategic planning positively and significantly affected oral fluency (e.g., TAVAKOLI; SKEHAN, 2005). They concluded that the more structured a task is, the more fluent the language. The researchers explained that this is due to a lesser "degree of transformation of the elements of the task is required," and "the information that is the basis for the task" is more easily accessible and available to the learner (p. 270).

In her research, Hu (2018) investigated the effects of task-type and task-type repetition, among other variables, on Chinese EFL learners' L2 oral production. To operationalize task-type, the researcher employed a picture-description task and a map task. Results showed a significant effect for task-type repetition on both accuracy and fluency measures. While the picture-description task elicited significantly more complex language, learners' speech showed greater degree of breakdown-fluency on the map task over the picture-description task. The researcher argued that the limited conceptual and communicative demands of the map task probably led learners to store chunked multiword phrases for easy retrieval (KORMOS, 2006) and as a way to consume less processing capacity. Supporting Hu's findings,

Gatbonton and Segalowitz (2005) claimed that the use of repetition tasks in a communicative-oriented setting aids proceduralization and automatization of formulaic speech, which also promotes more fluent language.

3. Statement of the problem

The literature reviewed above showed inconclusive and controversial findings with regard to which learning conditions and factors intervene in the L2 development of oral fluency, often revealing a trade-off effect between fluency and other areas of L2 oral performance, such as complexity or accuracy. Evidence also exists of the impact of certain learning environments (e.g., FREED; SEGALOWITZ; DEWEY, 2004; SEGALOWITZ; FREED, 2004; SEGALOWITZ; FREED; COLLENTINE; LAFFORD; LAZAR; DÍAZ-CAMPOS, 2004; MORA; VALLS-FERRER, 2012; O'BRIEN; SEGALOWITZ; FREE; COLLENTINE, 2007), and task conditions (e.g., GATBONTON; SEGALOWITZ, 2005; YUAN; ELLIS, 2003; ELLIS, 2005) on L2 fluency development. More specifically, a variety of factors, such as the speakers' proficiency level, L1 structural characteristics, the non-straightforward relationship between L1 and L2 fluency (DERWING; MUNRO; THOMSON, 2009), cognitive processes, (such as working memory capacity), the degree of exposure to the L2 (including type of instruction), and the type of task learners perform appear to differentially impact learners' fluency development and to differing extents.

On the other hand, quantification of temporal phenomena has been deemed important for SLA research since it is closely related to overall L2 oral development (GARCÍA-AMAYA, 2009) and reflects the speaker's cognitive fluency (SEGALOWITZ, 2010).

Even though SLA literature has attempted to examine how a wide variety of factors affect fluency development in various learning contexts, we do not know much about how instruction via teletandem affects certain areas of oral performance as compared to face-to-face instruction. One area of research that is worth exploring is the relationship between type of medium—teletandem versus traditional face-to-face exposure—and L2 oral fluency performance as a predictor of overall proficiency. Teletandem and face-to-face types of exposure could have different effects on the learner's L2 oral fluency. At present, the vast majority of previous literature has investigated teletandem from a socio-cultural perspective. However, SLA scholars have emphasized the idea that Computer-Assisted Language Learning (CALL) would certainly benefit from a dialogue between socially and cognitive-oriented perspectives (CEREZO; MORENO; LEOW, 2015). Thus, an investigation that explores the relationship between medium and utterance fluency considering potential linguistic gains over a period of time would improve our understanding in the telecollaboration area of research. In addition, reasons for considering the conjoint

effects of type of task combined with medium have been argued by previous literature (e.g., TAVAKOLI; SKEHAN, 2005).

4. The study

The present study looked at the relationship between medium—teletandem versus face to face—and oral fluency to shed light on whether certain types of learners may benefit from a particular type of medium, as opposed to others, in this area of speech production. To the best of my knowledge, no studies to date have considered how the particular characteristics of medium type may be connected to L2 fluency development in advanced L2 learners of Spanish. As a secondary goal, following Skehan's (1996) and Robinson's (2001) assumption that structure, cognitive complexity and difficulty are strong predictors of L2 oral performance, this study explored how a spontaneous speech elicitation task versus a picture description task may affect the overall temporal features of L2 speech differently. This relationship was addressed both within and between individuals over time in both teletandem and face-to-face modalities to see if major differences existed.

The current study aimed to provide insight on the pedagogical implications of teletandem. To offer a fuller understanding of how the two modalities can be used more effectively to promote learners' oral fluency development, the following research questions were posed:

RQ1. Is medium—teletandem versus face-to-face—related to L2 Spanish learners' development of oral fluency over a semester?

RQ2. Is type of task—spontaneous speech elicitation task versus picture elicitation task—related to L2 Spanish learner's development of oral fluency in teletandem versus face-to-face medium?

5. Measures of oral fluency

5.1 Speed fluency

Following previous literature (e.g., BAKER-SMEMOE; DEWEY, BOWN, MARTINSEN, 2014; FREED; SEGALOWITZ; DEWEY, 2004; SEGALOWITZ, 2010; SEGALOWITZ; FREED, 2004), different indicators of utterance oral fluency exist and have been examined: speed, breakdown and repair fluency. Specifically, this paper will be concerned with speed and repair fluency.

Regarding speed fluency, since in Spanish, words usually present a substantial variation in number of syllables per word, both words and syllables were selected as the main unit of analysis and for a more fine-tuned insight into the learners' potential gains in their oral production.

To be consistent with previous literature, speech rate as (pruned) syllables per second was incorporated as this measure has been considered one the most popular measures used for utterance

fluency (e.g., CUCCHIARINI; STRIK; BOVES, 2000; DE JONG; SCHOONEN; HULSTIJN, 2009; DERWING; ROSSITER; MUNRO; THOMSON, 2004, 2009; TAVAKOLI; SKEHAN, 2005). For a more comprehensive understanding of the construct, a combination between productivity and speech rate measures were included to operationalize temporal phenomena:

- Total number of words (e.g., FREED, SEGALOWITZ; DEWEY, 2004; SEGALOWITZ; FREED, 2004; SEGALOWITZ, 2010)
- Total number of syllables (e.g., TEMPLE, 1992)
- Words/minute (e.g., SEGALOWITZ; FREED, 2004)
- Words/second (e.g., BINNENPOORTE; CUCCHIARINI; BOVIS; STRIK, 2005)
- Syllables/minute (e.g., LLANES; MUÑOZ, 2009)
- Syllables/second (e.g., TEMPLE, 1992; HILTON, 2009; TROFIMOVICH; BAKER, 2006; GARCÍA-AMAYA, 2009)
- Pruned syllables per second (e.g., ROSSITER, 2009)
- Number of runs/turns (e.g., GINTHER; DIMOVA; YANG, 2010).
- Mean length of run in syllables (e.g. GINTHER; DIMOVA; YANG, 2010)

5.2 Repair use in task-based literature

Speakers use error corrections and appropriate repair strategies when facing communication breakdowns and as an attempt to modify the initial communication signal (e.g., MEADAN; HALLE; WATKINS; CHADSEY, 2006). Skehan (2003) referred to repair fluency as self-corrections, repetitions and reformulations, and argued that the type of speech elicitation task and the level of task difficulty could be predicting factors of these features in learners' speech performance.

A study (KOVAC; VIDOVIC, 2010) investigated self-repairs in the Croatian language by examining 8 hours of recorded speech from 101 L2 learners and looking for different categories of self-repairs and self-repair/error ratios. The study employed five different speech tasks: a story narration task, a room description task, a comparable room description task that included different furniture arrangement, a utterance formulation based on pictures and a story-telling based on a sequence of pictures. The authors found that speakers use lexical and phonological repairs much more often than morphological and syntactic errors, suggesting a higher sensitivity to content words.

De Jong, Schoonen and Hulstijn (2009) examined English and Turkish L2 learners of Dutch using 8 picture description tasks. L1 data was collected to serve as a baseline for comparison with the L2. Fluency findings on repair showed weak L1-L2 correlations for repetitions and corrections. However, a

task effect was found in which participants performed differently under different task conditions, the L1-L2 comparison on repairs showing a significant effect size. The study concluded that learners were sensitive to task complexity and task type in their L2 fluency performance.

Task-based research further argued that pre-task strategic planning time and inherently structured story lines further promote better temporal and repair fluency (e.g., MEHNERT, 1998; ORTEGA, 2005; ELLIS, 2005).

In an attempt to further explain the construct of speaker's cognitive fluency (e.g. SEGALOWITZ, 2010), the present study examined whether an increase of the learner's self-repairs leads to a trade-off effect producing a higher proportion of errors, or whether there is simply no relationship between self-repairs and the learner's attempt to fix the language produced. Following Skehan (2003), Freed, Segalowitz and Dewey (2004), Kovac and Vodivic (2010), a variety of self-repair measures were considered to examine utterance fluency:

- **Repaired syllables per total syllables:** The total number of repaired syllables divided by the total number of syllables.
  Example of a repaired syllable: *El chico y la padre…el padre* (the boy and the$_{fem}$ father…the$_{masc}$ mother).
- **Partial repairs:** Repairs for which a specific syllable was not repaired, but where the participant hesitated when finishing a word, as if trying to find the right option.
  Example: *la rana sal… saltó* (the frog jump… jumped)**.**
- **Type of repair** (FREED; SEGALOWITZ; DEWEY, 2004; KOVAC; VIDOVIC, 2010): Types of repair were classified in four different subcategories.
- *Lexical:* Fueron al parque el martes…el lunes (They went to the part on Tuesday…on Monday).
- *Morphological*: se dio cuenta de que el…de que *la* madre (realized that the$_{masc}$ …the $_{fem}$ mother).
- *Phonological*: él fue al busque…al bosque (he went to the search…to the forest).
- *Syntactic*: así que salen…los hermanos salen de la casa (then leave $_{3+plu}$ the two brothers leave the house).

6. Method

6.1 Participants

The study's participants were 33 English native speakers enrolled in their fifth semester of an L2 Spanish non-intensive program at a northeastern US university. Participants were placed in this proficiency level according to an institutional placement test and the language program consisted of a total

of six Spanish courses. Learners met three times per week for 50-minute period sessions. Participants were randomly assigned to a teletandem (n=17) medium type group and a FTF (n=16) condition. The methodology followed at the language course was communicative and designed to review and expand basic structures of Spanish, develop topic specific vocabulary, improve oral and written skills and gain familiarity on the history and cultures of the Spanish-speaking countries (LEE, 2016). Regular classroom tasks included collaborative activities and debates, online blogging, oral presentations on historical, political, and social issues, and cross-cultural and cross-societal comparisons on areas such as colonization and independence, dictatorships and democracies, political systems, environment, science and technology, poverty, violence, and cultural products.

6.2 Research Design

Researchers established two main experimental conditions to which participants were assigned, teletandem and FTF medium types of L2 instruction. A factorial mixed design was employed, with one of the independent variables 'Task-type' being a within-subjects repeated factor and type of medium (teletandem vs FTF) being the between-subject factor. As dependent variables, the aforementioned various L2 utterance and self-repair fluency measures were used in a pre-test post-test design. Thus, 'Time' was established as the second within-subject's factor.

6.3 Materials

Researchers used two oral production assessment tasks: a picture description and a spontaneous speech sample task. The former required participants to describe a short comic strip, and the latter required them to answer an open-ended content question aligned with course syllabus. The spontaneous task presented specific topics learners were introduced to in class. Participants responded to the prompts based on their knowledge of the topics, which dealt with cultural and historical background relevant to the Hispanic world. Importantly, for this task type a list of suggested items was provided to guide learners' production, meaning no scaffolding was present (versus the picture description task). Previous literature (TAVAKOLI; SKEHAN, 2005) argued that inherently structured storylines led to better temporal and repair fluency, allowing for greater control on the linguistic forms and content elicited (SEGALOWITZ, 2010). In other words, focusing on specific content and linguistic forms allows researchers to manipulate the level of difficulty in a L2 task and, arguably, this results allows learners to respond more fluently. Conversely, an open-ended task typically elicits more spontaneous speech, but allows for little control over the language structures learners produce, introducing unwanted sources of variability into the data (TAVAKOLI; SKEHAN, 2005). Overall, the assessment materials included a listening comprehension

and the two oral production tasks. Instructions were provided prior to task performance and participants had two minutes of preparation before starting to speak.

6.4 Data collection and analytical procedures

Participants in the teletandem condition took part in the study in a computer lab, where they interacted with their Mexican L1 counterparts, Spanish-speaking learners of English. The experiment consisted of 8 interactive sessions in the computer lab for the teletandem group or the regular classroom for the FTF group. Sessions lasted between 20-25 minutes in which participants completed the two oral tasks. Upon consenting to participate, at the beginning of the study, participants received an individual difference (ID) questionnaire examining several IDs. All learner interactions were recorded for follow-up data analyses. Data was gathered at the beginning (pretest) and end of the semester (posttest) to explore potential language gains. After the immediate posttest session, a post-study exit questionnaire was administered. Regarding data analyses, oral transcriptions were transcribed and coded for a variety of oral performance measures along the complexity, accuracy and fluency (CAF) triad. To answer the two RQs, descriptive statistics were calculated depending on the normality of the distributions and according to the outcome variables. Statistical analyses included mean, standard deviations (SDs), and inferential analyses on each measure of oral fluency.

7. Results

RQ1: Is medium—teletandem versus face-to-face—related to L2 Spanish learners' development of oral fluency over a semester?

The descriptive analyses for the teletandem group on the four measures of speech production and pre- and post-treatment are provided in Table 1, and for the FTF group in Table 2. As displayed in the tables, participants produced almost the same *number of words* and *syllables* in both groups in the immediate post-test for both the picture description and the spontaneous task. Turning to the *syllables per minute* and *the repair* measures, values showed once again that the teletandem group was as fluent as the FTC group, with only a slight non-significant increase on task 2 (the spontaneous task) (M= 167.81) over the picture-description task (M= 148.84) for the teletandem learners.

For *productivity* on *TNW* and *TNS*, when looking at overtime effect only, means and SDs revealed a statistical effect for the variable *Time*, indicating differences were meaningful for all participants irrespective of the medium condition on the productivity scores from the pretest to the post-test. Similar

results were observed for the *speech rate* and the *repair* measure, all participants in both groups equally improving their fluency performance with regard to *syllables per minute* and disfluencies over time.

Inferential analyses confirmed the same results, revealing no statistically significant difference on any of the speed fluency measures based on the two treatment groups. For the two *productivity* measures, the factorial ANOVA test confirmed the effect for *Time*, showing differences were meaningful for all participants irrespective of the medium condition on the fluency scores from the pre-test to the post-test.

However, no meaningful effect of the type of *medium* (teletandem vs FCF) on the *number of words* ($N = 16$) F (1,31) = 2.79, $p = 0.105$, partial Eta squared = 0.331 over the course of the semester or the *total number of syllables* produced ($N = 16$) F (1,31) = 2.42, $p = 0.130$, partial Eta squared = 0.73. Likewise, results showed no statistically significant differences between the two instruction modalities on the *syllables per minute* measure ($N = 16$) F (1,31) = 1.56, $p = 0.220$, partial Eta squared = 0.048, and a marginal effect on the *repair* fluency measure ($N = 16$) F (1,31) = 3.22, $p = 0.082$, partial Eta squared = 0.094.

RQ2. Is type of task—spontaneous speech elicitation task versus picture elicitation task—related to L2 Spanish learner's development of oral fluency in teletandem versus face-to-face medium?

Regarding RQ2, when examining all fluency scores between the two task types and across treatment groups, Tables 1 and 2 revealed that even though all participants were more productive in the *number of words* and *syllables* in their speech on the spontaneous speech sample task over the narrative task, no interaction was found between type of *task* and *medium*. In line with these values, inferential analyses supported the results observed in the descriptive statistics, revealing a lack of effect for type of *task* when combined with type of *medium*.

Table 1: Descriptive Statistics on the *Fluency* Measures for the *Teletandem* Group on the Pre-test and Post-test

Fluency variables	Tasks	TTD Pre-test (n=17)		TTD Post-test (n=17)	
		Mean	SD	Mean	SD
Total number words (TNW)	Task 1	138.94	60.04	221.05	61.24
	Task 2	221.64	88.63	308.58	143.6
Total number syllables (TNS)	Task 1	253.11	111.3	372.23	165.4
	Task 2	451.70	185.1	603.35	227.3

Syllables/ Minute	Task 1 Task 2	131.37 136.05	35.14 37.38	148.61 167.81	36.58 81.89
Repair Fluency	Task 1 Task 2	7.17	4.40	14.29	8.85

Table 2: Descriptive Statistics on the *Fluency* Measures for the *Face-To-Face* Group on the Pre-test and Post-test

Fluency variables	Tasks	FTF Pre-test (n=16)		FTF Post-test (n=16)	
		Mean	SD	Mean	SD
Total number words (TNW)	Task 1 Task 2	173.62 293.62	61.24 143.6	223.06 308.12	76.83 117.6
Total number syllables (TNS)	Task 1 Task 2	310.93 586.12	107.8 281.2	405.12 598.12	146.7 224.4
Syllables/ minute	Task 1 Task 2	136.56 140.06	40.01 52.42	146.46 148.84	34.04 25.17
Repair fluency	Task[2] 1	10.25	7.25	11.87	7.55

8. Discussion, future directions and pedagogical recommendations

The current research addressed important questions related to the relationship between teletandem and language development on L2 fluency from a cognitive interactionist perspective. Hence, our findings are interpreted with caution considering its small-scale nature and exploratory nature.

The first research question asked whether medium type - teletandem versus face-to-face - related to L2 Spanish learners' development of oral fluency over a semester. Results provide preliminary evidence that for these advanced learners, no benefits were shown for the teletandem group over their FTF counterparts on their overall oral productivity (amount of language produced), fluency (words and

[2] Data was not available for Task 2 for the repair fluency measure.

syllables per minute), and repairs elicited. In other words, medium type did not seem to be associated to oral fluency development for these particular L2 learners of Spanish over the period of a semester.

The second research question examined whether type of task—spontaneous speech sample versus a picture elicitation task-related to L2 Spanish learners' development of oral fluency in teletandem versus face-to-face medium type. Even though participants in both the teletandem and the FTF group produced an overall greater amount of language on the spontaneous speech sample task (total number words and syllables), this benefit did not appear to be connected to the type of medium. In other words, when looking at whether type of task had any enhancing effect on oral fluency in both types of media (teletandem and FTF), no interaction between type of task and medium was observed. Importantly, the mediating effect of type of L2 task on learners' oral performance in the area of fluency could be further explained according to the nature of the task itself.

The findings regarding task type are particularly noteworthy. When comparing these findings with previous task-based literature that have examined task types, the current findings seem to support Derwing, Rossiter, Munro and Thomson (2004) in the idea of task structure. In this case, these participants showed more fluent speech in the open-ended task over the narrative task. As Derwing and colleagues suggested, this task provides learners with more freedom in terms of elaborating their discourse, possibly leading to more fluent language production. Participants had to talk about a particular topic related to the cultural and historical content of the course, but were not restricted in their use of particular vocabulary and grammar forms, as they had not been provided any particular guidelines in this regard.

The present data is in accordance with Foster and Skehan (1996) and Mehnert (1998), on the idea that the degree of structure that a task presents makes a difference and impacts CAF areas of L2 performance differently, with tasks designed with a clearer and familiar structure and content eliciting more fluent speech. It is further in line with Tavakoli and Skehan (2005) in their interpretation of degree of structure in Foster and Skehan's (1996) and Skehan and Foster's (1997) research based on Levelt's model of speech production (1989). When there is prior knowledge on a particular topic in a task, the "Conceptualizer component is unpressured, with the result that attention can be more easily allocated to the formulator and will impact upon fluency and accuracy" (p. 246).

In addition, it is important to highlight that in the non-scaffolded task (the spontaneous task), participants had more time on task (TOT) while performing, which may have partially accounted for an improved performance in participants' fluency.

This study is not without limitations, particularly regarding the small sample size and short duration of the teletandem interactions. Since participants only participated in eight interactions, this may have not been sufficient time for any actual effect to occur. Future studies should include more participants

and ensure more interactions are incorporated into the research design. Long-term teletandem treatments could yield different results.

A question that arises from these results is linked to the construct of fluency and its conceptualization. As argued by Derwing, Munro and Thomson (2009), temporal features of speakers' L1 production seem to predict the same features in the L2. Therefore, future research should assess participants' fluency scores in the L1 to compare them to the L2 scores as a baseline when interpreting these linguistic characteristics of the learner.

This study only focused on particular aspects of L2 fluency, namely on speech fluency and repairs. Nonetheless, to achieve a broader picture on the overall effects of teletandem on L2 development, future studies need to be conducted and further explore other areas of speech production, such as syntactic and lexical complexity and accuracy. In addition, incorporating additional fluency measures would help achieve a more solid operationalization of the construct, leading to a better understanding of its behavior in a teletandem environment.

Regarding pedagogical implications, based on the current findings it is unclear whether TTM or FTF benefits FL learners' production in relation to the temporal and repair characteristics of their L2 speech. At this point, it would be unwise to make predictions regarding learners' language development when participating in tandem interactions, especially when in a short-term situation. Although the benefits of teletandem have been attested in certain aspects of the learning experience, as of today, its exact role in learners' development and acquisition of the L2 is still unknown. Additional studies will need to be conducted in this line of research to shed light on this instruction modality and its impact in the FL learning process.

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