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Social interaction in the Spanish classroom: How proficiency and linguistic background impact vocabulary learning

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Abstract
Spanish learners engaged in two-way interaction gap tasks where, through social interaction, they identified and defined low-frequency vocabulary. Participants (referred to as actors to differentiate them from task partners) completed two such tasks. Each time, they collaborated with different partners of varying degrees of Spanish proficiency and linguistic background, either an L2 learner or a heritage speaker (HS). The purpose of the study was thus to shed light on if and how features of the collaborating partners in mixed (HS–L2) and matched (L2–L2; HS–HS) partnerships impacted vocabulary learning. Through a mixed methods analysis of the data (perception measures and qualitative responses, plus pre- and post-vocabulary tests), it was deduced that learners’ language proficiency level alone was not associated with differences in vocabulary gains. Rather, the nature of the partnerships among learners was more salient. In particular, learners in mixed partnerships had greater gains than those in matched partnerships. In addition, actors’ perceptions of the experience of working with their partner had no discernible effect on vocabulary, except for HSs who increased less when working with partners’ whose linguistic abilities they had rated as low. Pedagogical implications address learners’ social interaction in mixed language classrooms.

Keywords
heritage speakers, linguistic background, proficiency, Spanish, vocabulary
I Introduction

Interaction is defined as communication in which interlocutors exchange ideas, overcome communicative challenges, and help each other comprehend the message (Ellis & Heimbach, 1997). Followers of the interactionist position argue that interaction is crucial to language learning because it provides learners with opportunities to experiment with the target language (Storch, 1999; Swain, 1985, 1995). Indeed, many have emphasized that learning does not just happen as a result of interaction, rather, it is during interaction itself where learning occurs (Suzuki & Itagaki, 2009; Swain, Brooks, & Tocalli-Beller, 2002). This idea is assumed in the present study and is supported by prior findings on the role of social interaction in facilitating vocabulary learning in particular, which is the focus of this investigation (Brouwer, 2003; García Mayo & Zeitler, 2017).

In this study, learners from two intact upper-level Spanish courses engaged in two-way interaction gap tasks where, through face-to-face social interaction, information was exchanged and learners defined low-frequency vocabulary. Participants completed two such tasks, and each time collaborated with different partners (from the same course) of varying degrees of Spanish proficiency (i.e. learners’ general linguistic abilities, Leeser, 2004) and linguistic background (either L2, a learner acquiring Spanish as a second language, or, heritage speaker [HS], a learner who grew up a home where Spanish was spoken, although Spanish was not the majority language, Valdés, 2001b). Thus, the purpose of this study was to shed light on if and how low-frequency vocabulary learning during social interaction was impacted by features of the collaborating partners: language proficiency and linguistic background.

Interlocutors’ language proficiency and linguistic background are interconnected and have been found to determine how the interaction unfolds and what linguistic gains result from it (Philp, Adams, & Iwashita, 2014). For instance, Gass and Varonis (1994) posited that both high and low proficiency dyads produced comparable amounts of negotiation for meaning. However, in mixed proficiency dyads, roles (i.e. expert and novice) are spontaneously assigned where more proficient learners lead and assist less proficient learners in meeting task demands (Ohta, 2000; Yule & Macdonald, 1990). Conversely, more proficient learners can ignore and exclude less proficient partners, thus stalling learning for less proficient dyad members (Kowal
Regarding HSs and L2s’ collaboration in Spanish language classrooms, which is the focus of the current study, it is often HSs who possess higher proficiency levels than their L2 peers (Philp et al., 2014), which suggests that they would take the lead during collaborative tasks.

The next section expands on the topic of partnership membership, particularly as it pertains to Spanish L2s and HSs working together in a mixed class, thus highlighting how proficiency and language background intertwine in their collaboration. This is followed by an overview of how vocabulary is learned in the heritage and L2 languages. The review of the literature precedes a discussion on interaction from a sociocultural perspective, the theoretical framework guiding this investigation, which leads to the research questions posited for this study.

II Review of the literature

Mixed and matched dyads in the language classroom

Due to the growing numbers of HSs enrolled in United States-based university Spanish courses, there has been an urgency to investigate if collaborative work between L2s and HSs is equally beneficial to both learner types, or if one learner type benefits more than the other (Bowles, 2011). A few researchers have heeded the task. Blake and Zyzik (2003) examined task-based interactions of L2–HS dyads in a synchronous computer-assisted learning environment. Dyads were formed by HSs and L2s; it is not clear how participants’ proficiency compared. The analysis of learners’ text chats revealed that their negotiations focused mostly on the lexicon. The authors also concluded that both HSs and L2s benefited from the collaboration: HSs assisted L2 learners, and HSs reaped emotional benefits as HSs’ linguistic confidence grew in supporting L2s (although, no perception data were collected).

Bowles (2011) researched language related episodes (LREs), which are exchanges where learners’ attention turns to linguistic form, during three information-gap tasks. LREs were categorized according to their linguistic focus (grammar, vocabulary, pronunciation, or orthography) and resolution (solved or unresolved). Participants (L2s and HS) had comparable proficiency levels, as seen in the results of an adapted DELE test, where all scored within the
Intermediate level. Bowles found that (1) L2s and HSs initiated a similar number of LREs; (2) there was no relationship between the learner who initiated the LRE and who provided the resolution; (3) a large proportion of LREs targeting orthography were initiated by HSs; and (4) L2 learners’ LREs focused primarily on grammar and vocabulary. The author concluded that learners in mixed groups can assist each other in the learning process.

In Bowles, Adams and Toth (2014), L2–L2 and L2–HS dyads engaged in an information exchange activity followed by a perception questionnaire. Participants attended a fifth-semester grammar class and had comparable linguistic competencies based on the results of a placement exam, although it is not clear what their exact proficiency level was. The analysis of participants’ negotiations showed that both types of dyads focused on the lexicon more than grammatical or pragmatic questions. In addition, in L2–HS dyads, L2s and HSs initiated a comparable number of language inquiries, but those initiated by L2s were resolved more frequently than those initiated by HSs. HSs solved most inquiries. These findings imply that L2 learners in mixed dyads benefit more from the exchange than HSs. However, in the perception questionnaire, neither L2s or HSs found the interaction to be more beneficial to one learner type than the other. The authors attributed this finding to HSs’ linguistic insecurity.

Henshaw (2015) carried out an analysis of form-focused episodes (i.e. a point in the conversation where attention turned to linguistic form) during the interaction of mixed dyads during a writing task. Participants’ proficiency was determined via the MLA/DELE exam. L2s ranked low, while HSs’ proficiency varied from low to advanced. Nevertheless, proficiency was not a variable that the study controlled for. Henshaw’s study differs from others in that it accounted for learning gains, which referred to the incorporation of linguistic information developed during the interactive exchange into the individual writing tasks. In addition, learners completed an attitudinal questionnaire where they expressed their thoughts regarding the experience and their partners’ linguistic skills. Regarding vocabulary, HSs resolved significantly more lexical form-focused episodes than L2s. The analysis of learning outcomes demonstrated that L2s used information provided by their HS peer 72.9% of the time, but, information provided by L2s was incorporated by HSs only 55.3% of the time. This suggests that L2s trust the information offered by HSs, however, HSs do not rely in the same way in their L2
counterparts, whom they perceive as less proficient. In the delayed post-test though, both L2s and HSs incorporated information provided by their partners in equal frequencies. Nevertheless, retention rates in the delayed post-test declined sharply for both L2s and HSs.

Lastly, Walls (2018) researched interaction patterns of mixed and matched dyads during collaborative writing activities. Participants’ language competence was not assessed formally; however, the author noted that L2 participants were able to complete novice and intermediate-level tasks and HSs could perform advanced tasks. During the writing activities, Walls found matched dyads to be collaborative; in mixed dyads, interactional patterns fluctuated. The author surmised that differences in proficiency levels were a cause for variability in mixed dyads’ interaction patterns.

In summary, prior investigations allude to the complexity of interaction in mixed and matched partnerships. As seen before, there appears to be a tendency for L2s to benefit more from interacting with HSs than the other way around. In terms of identifying concrete learning outcomes, and to this author’s knowledge, only Henshaw (2015) attempted to uncover how much learners gained from the experience, which unveiled HSs’ distrust for information provided by L2s, a matter that would hinder HSs’ learning. Moreover, the studies reviewed before made it their objective to describe participants’ collaboration and the emergence of various linguistic questions brought up during the task. Unlike those studies, the current investigation makes vocabulary learning its main objective.

2 Vocabulary in the heritage language

The heritage language is developed mostly through exposure at the home and in extended places in the community that share the language; this occurs, in most cases, without the additional support of formal schooling (Ovando, 2003). Fairclough and Garza (2018) discuss several factors that emerge from the learning context that are relevant to understanding HSs’ lexicon, including dialectal lexical variation, age of acquisition, and receptive and productive lexical knowledge. Dialectal variation speaks of the difficulties resulting from the convergence of the various Spanish dialects spoken the United States. Indeed, as surmised by Zentella (1990, as cited in Fairclough & Garza, 2018), as speakers of different Spanish varieties come together,
they avoid misunderstandings by utilizing Anglicisms, which serve as more neutral terms (e.g. ‘cake’ in Spanish can be torta, pastel, or bizcocho, thus, Spanish speakers in the USA might use the Anglicism queic instead). Age of acquisition refers to the age in which a lexical item was learned. Words learned earlier in life are more easily and accurately accessed than those learned later (Montrul & Foote, 2014).

Another phenomenon is lexical attrition or the inability to produce a word, which is most apparent in those of the second and third generations (Montrul, 2013). In these instances, individuals might possess a passive comprehension of the item but production is affected. Indeed, and in reference to HSs’ receptive and productive knowledge, Fairclough (2011) concluded that HSs recognize items within the 5000 most frequent Spanish words; however, production is strongest in the more informal semantic domains such as home, family, and everyday activities (Potowski et al., 2014).

Because of the way their lexicon develops, HSs often encounter challenges in language production (Hulsen, 2000, as cited in Fairclough & Garza, 2018). Schwartz (2003) reported that during a writing task, the biggest constraint HSs experience is a lack of vocabulary and their continued search for the ‘right’ word. The author also commented on learners’ inappropriate use of the dictionary when they pursued the writing task as an English into Spanish translation, and their growing frustration as they could not match their intended meaning with the right word. Such experiences with the language undermine HSs’ linguistic confidence (Lowther Pereira, 2015). Schwartz (2003) argued that vocabulary knowledge can scaffold writing tasks, and when vocabulary is missing, HSs lack this support. In oral tasks, Lynch (2008) identified HSs’ usage of Spanish and English discourse markers, English words, false cognates, calques, and invented Spanish words, among others.

Research has also compared the lexicon of HSs to that of monolinguals and L2 learners. In the comparison with monolinguals, Carreira (2000) asserted that HSs’ lexical base is very similar to that of their monolingual counterparts. Valdés (2001a), on the other hand, ascertained that HSs tend to possess a more restricted lexicon and range of registers than monolinguals because monolinguals have access to the language via both social and academic means while HSs only access it socially. Valdés and Geoffrion-Vinci (1998) compared the
academic speech of Spanish HSs to that of Spanish native speakers and found that HSs used fewer academic forms, more colloquial and casual expressions, high-frequency words, and stigmatized forms such as archaisms (e.g. *pos* instead of *pues*) that are common among rural and working-class speakers (Fairclough & Garza, 2018). Valdés and Geoffrion-Vinci found that these lexical features signaled a more reduced vocabulary in HSs than that of native speakers and affected individuals’ production of speech in an academic register.

In comparing HSs to L2s, Fairclough (2011) stated that most HSs have a larger vocabulary than L2s; however, this advantage often vanishes when confronted with more formal topics. Here, L2s, who learned the language in the academic context, might be more familiar with formal vocabulary than HSs (Potowski et al., 2014). Indeed, and as seen in the next section, formal classroom instruction is one of the defining features of L2 vocabulary learning.

3 Vocabulary in the second language

Over time, the implementation of teaching methodologies has changed the focus and manner in which vocabulary instruction has unfolded in the L2 classroom (Zimmerman, 1997). For instance, today, the communicative method and task-based instruction emphasize real communication through interactive group and pair activities (García Mayo & Zeitler, 2017; Zimmerman, 1997), but do not stress vocabulary teaching except to support specific tasks (García Giménez, 2008). In these interactive contexts, learners experience socioconstructed processes conducive to learning and development (García Mayo & Zeitler, 2017), which often include a more knowledgeable participant that creates supportive conditions for a less competent partner and together they are able to extend current skills (Brouwer, 2003; Lantolf & Appel, 1994; Lantolf, 2000).

These interactive practices have proven to be effective in fostering vocabulary learning as well (Kim, 2008). For instance, Tocalli-Beller and Swain (2007) researched humorous language in the context of English as a second language where dyads worked together in language play sets. The analysis of participants’ interaction demonstrated that learners were able to move from no comprehension to comprehension and production while constructing new knowledge about target words. Kim (2008) compared the effects of collaborative talk versus
individual talk on vocabulary learning in Korean L2 learners. Results indicated that although learners in both groups targeted the lexicon during the task, those in the collaborative group outperformed those working on their own in terms of knowledge of target words’ meaning and function.

Indeed, the lexicon is central to the development of overall language competence (Gass, 1989; Wagner, Muse, & Tannenbaum, 2006). Laufer (2003) and Read (2000) posited that learners with greater vocabulary knowledge are more successful in communication than those with smaller vocabularies. In addition, vocabulary size correlates positively with proficiency in reading and writing, and language proficiency in general (Anderson & Freebody, 1981; Engber, 1995; Meara & Jones, 1987). However, and as seen before, the vocabulary learning process for L2s and HSs is vastly different, which results in lexical strengths and weaknesses for each learner type. Because vocabulary has a central role in language competence, therein lies the need to address the lexical needs for both L2s and HSs.

4 Theoretical framework: Social interaction in sociocultural theory

From a sociocultural theory (SCT) perspective, language learning is social, where internal mental processes result from constructions and representations originating during interaction. Learning is understood as a semiotic process mediated or enabled by symbolic and socioculturally-constructed tools such as language (Lantolf & Thorne, 2006). Thus, in SCT, language is more than a means of communication and serves an intrapersonal (i.e. speech is converted into thought) and cognitive function, where it mediates the development of higher mental functions and knowledge (Lantolf & Appel, 1994; Lantolf & Thorne, 2006).

Social interaction is characterized by the distribution of roles, novice and expert, where the resulting cooperative construction allows novices to accomplish that which they could not accomplish on their own. This refers to the Zone of Proximal Development (ZPD), which is conceptualized as ‘the distance between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers’ (Lantolf and Appel, 1994, p. 10). In the language learning field, the ZPD scope includes peer-peer interaction,
as seen in the current study, in which both participants collaborate and co-construct knowledge, alternate roles, and at times take no role at all (Lantolf, 2000). Thus, the ZPD is a metaphor for understanding how mediation is appropriated and internalized in social interaction.

Prior research supports the notion that language learning occurs in social interaction through various actions that define the collaboration, e.g. planning, coordinating, reviewing, negotiating, and scaffolding (e.g. Antón & DiCamilla, 1998; De Guerrero & Villamil, 2000; Donato, 1994; Swain & Lapkin, 1998). In this context, learning is understood as participants leaving the interaction having experienced a transformation of the structure of their mental functioning and conceptual understanding; this development goes beyond learning a cultural fact or being able to complete a particular task (Davin & Donato, 2013). In the current study, the implementation of social interaction in mixed and matched dyads or triads was defined by searching, comparing, contextualizing, discussing, and explaining the meaning of low-frequency target words with the ultimate purpose of promoting lexical development.

In summary, vocabulary learning is central to the language development of both L2s (Gass, 1989; Wagner et al., 2006) and HSs (Said-Mohand, 2005). However, research has demonstrated that the trajectory that these learners experience in the development of their lexicons is different. When differentiated instruction is not a possible, and HSs and L2s come together in a shared language learning context, it is essential to understand if the practices implemented in the classroom are useful to their particular language learning needs (Bowles, 2011), including the development of their vocabulary. The current study aimed to shed light on these queries by proposing the following research questions:

1. Did L2s and HSs present vocabulary gains following an interactive task?
2. In terms of dyadic/triadic memberships during the interaction, was proficiency in Spanish a factor in vocabulary gains?
3. In terms of dyadic/triadic memberships during the interaction, was linguistic background (HS or L2) a factor in vocabulary gains?
4. How did HS and L2 participants perceive their partners’ features (proficiency, linguistic background) in terms of their own vocabulary learning through the interactive
experience?

III Method

1 Participants

Forty-one learners (12 males and 29 females, aged 19 to 30 years) from two upper division Spanish courses (identified as Group 1 and Group 2) participated in this study. These were advanced conversation courses open to both L2s and HSs in a university located in the Midwest in the United States. Twenty-six students were Spanish L2s and 15 were HSs. Linguistic background information was gathered via a questionnaire adapted from Montrul (2012). In order to determine their proficiency, learners took the DELE test (multiple choice and cloze test), which has been used as an assessment for HSs and L2s (Bowles 2011; Montrul, 2010). The test has 50 points possible; a score between 40 and 50 equals advanced proficiency, 30 to 49 represents intermediate proficiency, and 1 to 29 signals low proficiency. Table 1 accounts for participants in each level. Here, the range of competencies represents the reality of mixed classrooms and contributes to the ecological validity of this investigation (Henshaw, 2015). The intervention for this research took place during class time. Each group completed two tasks on two separate days. Based on proficiency level and language, background, the instructor (and researcher) pre-determined dyad/triad membership, which was a common practice in the course. For this research, dyadic/triadic assignments aimed to have learners work with partners of different characteristics on each of the two intervention days. Both dyadic and triadic settings have been found to be effective for interaction and language learning (Donato & Davin, 2018).

Table 1. Participants’ proficiency levels.

<table>
<thead>
<tr>
<th></th>
<th>Second language (n = 26)</th>
<th>Heritage speaker (n = 15)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advanced</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Intermediate</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>Low</td>
<td>11</td>
<td>1</td>
</tr>
</tbody>
</table>

Adding the two participant groups together and the two data collection days (and taking into account that five learners were absent at one time or another), observations for this study fit these four partnering combinations: (1) four dyads and one triad of learners with same
proficiency and different linguistic background, (2) three triads and 15 dyads with learners having the same proficiency and same linguistic background, (3) five dyads of different proficiency and different linguistic background, and (4) six dyads and one triad of different proficiency and same linguistic background.

2 Procedure

A week before the first data collection day (and after receiving approval from the home institution Internal Review Board office), participants completed a vocabulary pre-test that consisted of 40 sentences in Spanish. Each sentence included a target vocabulary item (see Section III.3), which was underlined. Participants were instructed to translate the item into English or define it (either in English or Spanish). For example, for the sentence *Es una almunia extensa* (‘it is a large orchard’), students defined or translated the target word *almunia* as ‘orchard’ or ‘garden’. The post-test had the same format and took place immediately after the students completed the intervention. It is worth noting that although lexical competence implies various layers of knowledge about lexical units, such as collocation and register (Nation, 2013), the present study focused mostly on two areas: form and meaning.

On the day of the intervention, all instructions on how to proceed were verbally instructed as well as displayed on a screen. As a first step, learners were presented with a list of partnerships (on a power point slide) for the day. Once learners sat together, each dyad (or triad) member received a copy of a cross-word puzzle. Each individual received part of the definitions or clues for the target words needed to complete the puzzle. Thus, the cross-word puzzle was the same but the clues needed to complete it had been equally divided among dyad/triad members, which made it so learners could not complete the puzzle without collaborating with others.

Instructions guided participants as they completed three stages in the activity. In Stage 1 (20 minutes) students exchanged the information they had each received and began trying to identify the target words that would fit the cross-word puzzle. In Stage 2 (15 minutes), learners could access two online dictionaries (wordreference.com and rae.es) and further investigate their individual definitions (15 minutes) as they continued to interact with their partners. If, at
any point during the first two stages, learners figured out what the target words were, they were instructed to guide their partners in identifying the words themselves rather than simply disclosing the answers. In Stage 3 (15 minutes), participants could reveal the actual terms while they finished completing the puzzle together. The instructor kept track of the time and led participants throughout the stages for task completion. Students carried out the task in Spanish; they recorded (with their phones, tablets or personal computers) and uploaded their dialogues to the course’s online platform. With these recordings, the researcher was able to assess that their exchanges were truly interactive. The following excerpt is representative of the type of dialogue learners engaged in during the task. In this instance, the dyad is made up of two L2 learners, both in the intermediate level. They are on the first stage of the activity.

O: La de mía, horizontal, es número 3: despedir una carga con una pistola, por ejemplo.  
(‘Mine, horizontal, it’s number 3: to fire the charge with a gun, for example.’)  
K: Yo sé qué es la palabra en inglés, pero no sé qué significa en español.  
(‘I know what the word is in English, but I don’t know what it means in Spanish.’)  
O: Describa, descríbalo, como, decir en tu ejemplo. ¿Qué piensas?  
(‘Describe, describe it, like, say an example. What do you think?’)  
K: Es como cuando quieres. Tienes una pistola y quieres matar otra persona.  
(‘It’s like when you want to. You have a gun and want to kill another person.’)  
O: ¿El emoción o la acción?  
(‘The emotion or the action?’)  
K: Acción. (‘Action.’)  
O: Despedir una carga con una pistola, por ejemplo. (‘To fire the charge with a gun, for example.’)  
K: Lo siento estoy horrible para decir. (‘I’m sorry I’m horrible to say.’)  
O: Está bien. (‘It’s OK.’)  
K: Bueno, tenemos algunos de míos que no hemos hablado de. (‘Well, we have some of mine that we have not talked about.’)

In this excerpt, O reads the definition she received. The target word they are looking for is **disparar** (‘to shoot’). K, her partner, recognizes the term and tries to explain it to O. O does not identify the target word at this point; however, she does in Stage 2 when learners revisit the term.

Following the cross-word puzzle, participants completed the vocabulary post-test. For this, they were not allowed to consult with each other or any resources. They also filled out a perception questionnaire, which is discussed below. In closing the class period, the students and the instructor reviewed all answers in the cross-word puzzle and discussed target words’
meaning. As requested by the students, all target words and definitions were then posted in the course’s online learning platform for further reference.

3 Task

Tasks employed in prior investigations on social interaction, being content and meaning-based, readily supported learners’ natural tendencies to focus on the lexicon (e.g. a two-way jigsaw task in Blake and Zyzik, 2003; a two-way information exchange with pictures in Bowles et al., 2014). For that reason, the cross-word puzzle was selected for the current study where the focus of the task was identifying and defining low-frequency words.

Low-frequency items were targeted for two reasons. First, prior studies, although their objective was not lexical, prompted the use of every-day vocabulary, which is familiar to HSs (e.g. describing an apartment). This would possibly change the way in which roles are naturally distributed in the interaction between an L2 and a HS, being the latter most familiar with those semantic domains, thus reinforcing HSs role as experts. Second, if the lexicon is familiar to HSs, the task presents little pedagogical value (at least regarding this area of language) for HSs, which would promote feelings of the task being of service to L2s only (as seen in Blake & Zyzik, 2003; Henshaw, 2015).

Target words were selected from the 8000 and 9000 levels in the CREA (2017) frequency list (10000 most frequent words). CREA (2017) is a computerized corpus built from written texts (e.g. books, newspapers, magazines) and transcripts of spoken Spanish (e.g. radio broadcasts) spanning 29 years (1975–2004) and sourced in all Spanish-speaking countries. The 8000 and 9000 levels were selected in order to avoid a ceiling effect in HSs (Fairclough, 2011). Also, because the task included learners of different backgrounds, a more general word sampling was necessary to truly tap into learners’ lexical competence (Eyckmans, 2004). Ultimately, the selection of low-frequency items aimed to provide participants with equal (or similar) footing as they experienced somewhat comparable levels of difficulty during the task.

As a first step in the selection of target words, a total of 60 items were identified and piloted in a group of learners that was comparable to those participating in this research. Words that were known by more than 50% of those participants were discarded. Next, twenty target words were
identified for this study. They were divided into two cross-word puzzles, each including eight verbs, ten nouns, and two adjectives. This distribution is consistent with the occurrence of each part of speech in natural language (Tocaimaza- Hatch, 2014). However, because of an error in the pre-test where a noun was omitted, only seven nouns were included in the analysis, which added to total of 19 items per cross-word puzzle. Table 2 (cross-word puzzle 1) and Table 3 (cross-word puzzle 2) list target words and their frequency number in the CREA (2017) corpus. Parts of speech are indicated in parentheses (A for adjective, N for noun, and V for verb) together with their translations.

Table 2. Target items for cross-word puzzle 1.

<table>
<thead>
<tr>
<th>Target word</th>
<th>Frequency</th>
<th>Target word</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>abanico (V – ‘to fan’)</td>
<td>9,388</td>
<td>estallar (V – ‘to burst, blow out’)</td>
<td>9,567</td>
</tr>
<tr>
<td>almunia (N – ‘orchard, garden, farm’)</td>
<td>9,626</td>
<td>hortensia (N – ‘hydrangea’)</td>
<td>9,553</td>
</tr>
<tr>
<td>atreve (V – ‘to dare’, 3rd person sing.)</td>
<td>9,810</td>
<td>ponencia (N – ‘talk’)</td>
<td>9,463</td>
</tr>
<tr>
<td>chamorro (A – ‘close clipped’)</td>
<td>9,519</td>
<td>puntualizó (V – ‘to specify, detail’, 3rd person singular, preterit)</td>
<td>9,157</td>
</tr>
<tr>
<td>cocer (V – ‘to boil, cook’)</td>
<td>9,285</td>
<td>rige (V – ‘regulate’, 3rd person singular)</td>
<td>9,346</td>
</tr>
<tr>
<td>difundir (V – ‘to spread, disseminate’)</td>
<td>9,329</td>
<td>rúa (N – ‘street in a small town’)</td>
<td>9,799</td>
</tr>
<tr>
<td>divisa (V – ‘make out, distinguish’, 3rd person singular)</td>
<td>9,231</td>
<td>talante (N – ‘mood, disposition, frame of mind, way of doing something’)</td>
<td>9,143</td>
</tr>
<tr>
<td>envergadura (N – ‘wingspan’)</td>
<td>9,422</td>
<td>Ventura (A – ‘something that will happen in the future’)</td>
<td>9,102</td>
</tr>
<tr>
<td>escolta (N – ‘bodyguard, escort’)</td>
<td>9,703</td>
<td>yacimiento (N – ‘mineral deposit’)</td>
<td>9,457</td>
</tr>
<tr>
<td>escorial (N – ‘site where slag from metallurgical factories is discarded’)</td>
<td>9,303</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 3. Target items for cross-word puzzle 2.

<table>
<thead>
<tr>
<th>Target word</th>
<th>Frequency</th>
<th>Target word</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>almacenamiento (N – ‘storage’)</td>
<td>8,516</td>
<td>montero (N – ‘hunter’)</td>
<td>8,535</td>
</tr>
<tr>
<td>arce (N – ‘maple’)</td>
<td>8,573</td>
<td>párpados (N – ‘eyelids’)</td>
<td>8,638</td>
</tr>
<tr>
<td>azulgrana (A – ‘blue and scarlet combination’)</td>
<td>8,626</td>
<td>recorre (V – ‘traverse’)</td>
<td>8,366</td>
</tr>
<tr>
<td>burla (N – ‘mockery’)</td>
<td>8,421</td>
<td>retira (V – ‘to move away’, 3rd person singular)</td>
<td>8,406</td>
</tr>
<tr>
<td>compatriota (N – ‘countryman’)</td>
<td>8,531</td>
<td>saneamiento (N – ‘sanitation’)</td>
<td>8,559</td>
</tr>
<tr>
<td>disparar (V – ‘to shoot, fire’)</td>
<td>8,461</td>
<td>sujet (V – ‘to hold’, 3rd person singular)</td>
<td>8,420</td>
</tr>
<tr>
<td>ejes (N – ‘axles’)</td>
<td>8,613</td>
<td>surgieron (V – ‘to emerge’, 3rd person plural preterit)</td>
<td>8,438</td>
</tr>
<tr>
<td>ganaderos (N – ‘cattle breeder’)</td>
<td>8,566</td>
<td>tramos (N – ‘stretch’)</td>
<td>8,560</td>
</tr>
<tr>
<td>hortalizas (N – ‘vegetables’)</td>
<td>8,642</td>
<td>trasladó (V – ‘to move’, 3rd person singular preterit)</td>
<td>8,446</td>
</tr>
<tr>
<td>lozano (A – ‘glowing, healthy’)</td>
<td>8,586</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Perception questionnaire

Following the vocabulary post-test, participants completed a perception questionnaire adapted from Bowles et al. (2014) (Appendix 1). The 12-item Likert-type scale questionnaire included negative and positive items on the experience of working with their partner and vocabulary learning. In addition, the questionnaire included open-ended questions that varied slightly each intervention day. The perception questionnaire was written in English; students also answered in English for the most part. For the first day, questions were:

1. If you could choose who to work within the Spanish class (including today’s activities), who would you choose to work with?
2. What are your thoughts regarding today’s activities and your partner?

For the second day, questions included:

1. You worked with a different partner today than last time. In comparing your partner last time (Student A) and today (Student B), who did you enjoy working with the most in
terms of language learning gains? In other words, when did you learn more, last time or today?

2. How did your Spanish learning and Spanish interaction change working with student A and B?

5 Data analysis

This study employed a mixed methods approach, which offers a quantitative measure of participants’ behaviors while also providing insights into the individuals’ perception of their learning (Watanabe, 2008). Students’ comments from the open-ended questions (from the perception questionnaire) were qualitatively analysed by determining frequent themes. Pre- and post- tests scores, and perception measures results were submitted to a three-factor analysis.

In the analysis, two terms are introduced: actors and partners. This distinction allows the focus to shift from the individuals’ features (e.g. linguistic background and proficiency) to those of their partners’ and how the latter have a role in individuals’ vocabulary gains.

a Proficiency contrasts. To test for differences between low, intermediate, and advanced proficiency learners, two orthogonal contrasts were created. The first contrasted the low proficiency participants to the others (low vs. the rest), and the second compared intermediate to advanced participants (intermediate proficiency vs. advanced proficiency).

b Perception measures. A principal component factor analysis of the partner rating data was performed to identify the underlying factors. A three-factor solution was the best fit to the data (accounting for 65.67% of the variability in the indicators). The strongest factor that emerged reflected communication ability (i.e. my partner speaks Spanish better than I do; my Spanish pronunciation is better than my partner’s [reversed]; my partner has a larger vocabulary in Spanish than I do; my partner speaks Spanish more often than I do; I probably practice more Spanish than my partner does [reversed]; and my partner helps me learn vocabulary more than I help him/her).

The second strongest factor was deemed to reflect value of the interaction (i.e. I was able to help my partner today more than s/he helped me [reversed]; talking to my partner helps
me improve my Spanish, and it helps me when my partner corrects me).

The last factor consisted of partner criticism (i.e., my partner’s Spanish could improve by talking to me; if my partner corrects me, I wonder if s/he’s making a mistake; and my partner and I probably speak Spanish about equally as often [reversed]).

Comparing differences on the factors between L2s and HSs. As a preliminary step to regression analysis, paired samples t-tests confirmed that overall test scores improved significantly \( t(37) = 12.14, p < .05 \) from pre (\( M = 9.0\%, SD = 10.9 \)) to post (\( M = 34.5\%, SD = 17.4 \)). A three-level multilevel modeling approach was employed to operationalize an individual-level analysis of differences over time (level 1), variability between-dyads/triads (level 2) and finally between-individuals (level 3). The dependent variable was test scores. Models were built in stages at each nested level. All level 1 effects were entered into the model as fixed at the dyadic/triadic level (i.e., variability in these effects across dyads/triads was not tested) but random at the between-individual level (allowing the comparison between people).

The dyad/triad level predictors (i.e., level 2) included the partner’s linguistic background, and whether each member of the dyad/triad had the same linguistic background. Next, the partner’s status was included by means of two orthogonal contrasts of proficiency (comparing ‘low vs. the rest’ and ‘intermediate vs. advanced’). The partner factors (communication ability, value of the interaction, and partner criticism) were also included. Finally, two-way interactions between the partner’s status, proficiency contrasts, and the partner factors were tested. The level 2 effects entered into the model fixed at the between-individual level (although differences in these effects between people were not tested). Lastly, the individual level predictors (i.e., level 3) included the participants’ own linguistic background, and the two orthogonal contrasts of proficiency (comparing ‘low vs. the rest’ and ‘intermediate vs. advanced’).

IV Results

This section presents, first, findings for the quantitative analysis, which are then followed by a qualitative report on the open-ended questions.

Quantitative results
As a first step, an unconditional model (with no predictors) provided the intra-class correlation (ICC). The ICC revealed that 84.6% of the variability was within-individuals (level 1), 15.3% at the between-dyads (level 2) and the remaining .1% was between-individuals (level 3). This reflected a significant proportion of dyadic level variability ($X^2_{(34)} = 347.27, p < .05$) but not between-individuals ($X^2_{(39)} = 38.58, p > .05$). Nevertheless, hypothesis testing continued nesting the data between-individuals, given that there exists variability at the population level (Kline, 2015), which warranted exploring what differences do exist. This action was also theoretically supported by previous related studies on HS and L2 populations (e.g. Henshaw, 2015).

a. **Within-individual level differences.** The first within-individual comparison that was tested considered differences in pre- and post- scores. As expected, scores improved significantly ($b = .13, SE < .01, t_{(40)} = 14.2, p < .05$), thus demonstrating that learners’ vocabulary had grown following the intervention. Adding this effect of change over time reduced prediction error in the estimation of the test scores by .05% reflecting significant improvement to the models ($\Delta X^2 = 76.3, p < .05$). The model showed significant differences between individuals (at level 3) in the pre/post effect ($X^2_{(33)} = 54.6, p < .05$), providing evidence that learners improved and there is actual differences that we can try to explain. Therefore, this serves as a basis to explore the differences further.

b. **Partner level differences.** At the dyad/triad level, testing was done to identify any effects of the partners’ status on the change in test scores. Here, there was no direct effect based on the type of partners one had ($b = -.02, SE < .01, t_{(34)} = 1.47, p > .05$). In other words, it did not make a difference on its own whether the actor engaged with a partner who was L2 or HS. However, there was a difference once it was accounted for whether the actor and partner were of the same linguistic background or not ($b = -.07, SE = .03, t_{(34)} = 2.64, p < .05$), which supports the idea that learners benefit more from working in mixed partnerships than in matched ones. This result is illustrated in Figure 1 where the largest increase from pre to post was among L2 (Actor)/Heritage (Partner) dyads/triads, whereas the smallest was among Heritage (Actor)/Heritage (Partner) dyads/triads. The effect of same status dyads/triads reduced prediction error in the change over time by 55.6%. The figures in this section do not portray the
full range of scores (from 0% to 100%) in order to highlight the effects.

Figure 1. Differences in improvement of test scores as a function of the actor and partner statuses.

Figure 2. Differences in improvement of test scores as a function of the interaction between partner statuses and the communication factor.
Upon testing for partners’ proficiency and the interaction of the partner’s status and proficiency, there were no significant effects. At this point, the factor scores (communication ability, value of the interaction, and partner criticism) were added with no significant direct effects either. This would imply that overall performance from collaborative work, in general, is not affected (neither positively or negatively) by participants’ perceptions of their partner. There was, however, one significant interaction; namely, the change in scores over time differed as a function of how people valued the interaction and the partner’s status. As presented in Figure 2, actors paired with HSs rated low in communication ability did not increase over time as much as groups with other pairings and perceptions. This result suggests the value of mixed partnerships over matched partnerships, but also highlights the complexity that comes with empirically studying interactive work since it is not possible to fully separate variables as independent categories and make concrete assessments on the role of partner status and perceptions.

Individual level differences. At this point, at the individual level (level 3), it was then possible to test for differences in test scores overall and on the improvement over time first, as a function of the actor’s status. The addition of these variables reduced prediction error by 42.7% and 9.0% respectively. This reflected a significant improvement to the modeling of test scores overall ($\Delta \chi^2_{(1)} = 104.27, p < .05$) and in the change over time ($\Delta \chi^2_{(1)} = 5.2, p < .05$). Not only did HSs score better overall (31.7%), they also improved at a greater rate than for L2s (16.8%; see Figure 3).

Lastly, the actor’s proficiency contrasts (‘low proficiency vs. the rest’ and ‘intermediate proficiency vs. advanced proficiency’) were added to test scores overall and on the improvement over time. There were significant differences in the scores overall between the three levels of proficiency (see Figure 4; error bars reflect the standard errors) but not in the change over time. Thus, participants in all three proficiency levels achieved gains, but not one level outperformed the other differently over time. The effect reduced prediction error by an additional 20.3% significantly improving the model ($\Delta \chi^2_{(2)} = 19.6, p < .05$).
Qualitative results

Cross-word puzzle 1. In the open-ended questions included in the perception questionnaire following the first intervention, nine L2s indicated that they would rather partner with a HS because they are more competent. Six L2s expressed that they had no preference for any one
partner. Nine L2s indicated that they would prefer working with another more proficient L2, who is not afraid of correcting them. In this last group, learners pointed to particular individuals that they would wish to work with because, in their view, they were more proficient. Two learners that were mentioned by name as being more proficient were L2 learners who had tested in the intermediate level, the same proficiency level of the L2 participants who had identified them.

Seven HSs indicated that they had no preference in terms of a partner. Four indicated that they would rather work with an L2 for various reasons: two wished to help L2s and one found that L2s challenge what she (the HS) says. One HS stated that she enjoyed partnering with a particular L2 learner as she usually learned a lot from her (both the HS and the L2 learner placed at the intermediate proficiency level). Three HSs said that they would prefer to collaborate with another HS; one wished to work with a more advanced HS that was mentioned by name, another wished to partner with any other HS so they could learn from each other, and the third one expressed a desire to work with a particular HS to whom she was related.

b Cross-word puzzle 2. Upon comparing their partners for the first and second task, nine L2 learners concluded that it was better to partner with an HS because of their advanced proficiency, which resulted in more productive answers and learning gains. Five L2s showed a preference for working with L2 partners. As also seen in cross-word puzzle 1, two L2s mentioned a preference for working with a particular L2 learner whom they perceived as being more advanced, although that was not the case. One L2 noted that she preferred working with any L2 learner so as not to feel so inferior. Another L2 also observed that she was more passive collaborating with an HS, and that she had been more engaged and taken the lead more when working with another L2, which she found to be better for her learning experience. Six HSs preferred working with another HS, three had no preference, and two indicated a preference for partnering with L2 learners of equal or more advanced proficiency.

V Discussion

Four research questions guided this investigation on how partners’ linguistic background
and proficiency affects the learning of low-frequency vocabulary during an interactive task. Each of these lines of inquiry is explored in this section.

The first research question sought to determine if lexical gains had indeed resulted from the experience. Not surprisingly, results showed that all participants, regardless of linguistic background or proficiency, experienced lexical gains in the course of the vocabulary intervention. These findings are in line with prior literature on language learning in interactive contexts (Donato, 1994), including vocabulary learning (specifically word meaning, as seen in Tocalli-Beller & Swain 2007; Kim, 2008), nested in both dyads and small groups (Fernández Dobao, 2012b; Donato & Davin, 2018).

From a sociocultural perspective, the ZPD construct sheds light on learning in a collaborative setting. As originally theorized, the ZPD represents potential development resulting in collaboration and from guidance afforded by a more capable peer (Ohta, 1995). However, in language learning, this construct has been broadened to include peer-peer interaction where partners collaborate and co-construct knowledge without necessarily embodying strict roles (Lantolf, 2000). In the current study, because of the conditions introduced by the task itself, it is possible that more traditional role-taking patterns where HSs mediate L2s may have been disrupted. On one hand, although HSs had an advantage in their knowledge of target items (as seen in the pre-test results), a large number of target words were unknown to them. Thus, and unlike prior investigations where HSs had a clear advantage over L2s in lexical knowledge, in this study, all participants could gain from the experience and HSs were less likely to fill the expert role by default. On the other hand, and from an SCT angle, it is important to note the use of tools that supported learners’ interaction, i.e. socially constructed artifacts (Lantolf & Thorne, 2006), such as online dictionaries and the distribution of cues for the cross-word puzzle (the shared end-goal). The availability of these artifacts to each individual may have also fostered a relatively neutral working field in terms of role taking since each learner had access to resources (and some were unique to the individual) that were needed by all partners in completing the task.

The second and third research questions sought to isolate the effect of language proficiency and linguistic background for the collaborating partners. In regards to language
proficiency, prior literature has found it to be a determining role in how the collaboration unfolds. For instance, Fortune (2005) concluded that advanced learners turn their attention to form and the reference of rules more often than intermediate learners; Suzuki and Itagaki (2007) argued that advanced learners’ linguistic collaboration is more productive in terms of language learning gains than that of less proficient learners. Hence, these investigations highlight how participants’ proficiency can encourage (or not) the types of social exchanges necessary for learning and suggest an advantage for more proficient learners. In the current study though, and somewhat contrary to prior literature, proficiency alone did not appear to make a difference in the resulting overall scores. Here, the only significant effect for participants’ proficiency was found in the overall performance of learners between the three proficiency levels (low, intermediate, and advanced), thus demonstrating that everybody made relative gains regardless of their proficiency level. The evidence in this study did not support that one proficiency grouping had advantages over the other in the task at hand.

Although proficiency alone did not appear to have an impact, learners’ linguistic background did, at least partially. Previous studies on partners of different linguistic background show an advantage, in terms of gains from the collaboration, for L2 learners partnering with either HSs (Bowles et al, 2014; Henshaw, 2015) or even native speakers (Fernández Dobao, 2012a). This advantage results from the HS or native speaker being able to mediate language learning for the L2 (Huong, 2007). Although, one caveat remains, which is that not all of these partners are able or interested in affording L2’s learning experience at all times (as seen in Fernández Dobao, 2012a).

In the current investigation, linguistic background alone did not show an effect rather, linguistic background had an effect when individuals worked with somebody of different linguistic background than their own. In other words, the partner’s linguistic background on its own did not appear to influence learning gains, but being with someone of a different linguistic background than the actor’s did. Indeed, greatest gains were achieved (from pre- to post- test) among L2(actor)-HS (partner) combinations whereas the smallest gains were among HS(actor)-HS(partner) combinations. This finding contributes a new shade of understanding to collaborative work in mixed dyads/triads where concrete vocabulary learning was associated
with mixed partnerships. In this particular instance, where the goal is low-frequency vocabulary learning, the collaboration of heterogeneous partnerships appears to be beneficial to both learner types.

The fourth question addressed perceptions of the experience working with partners. Previous investigations tapped into this inquiry, e.g. Bowles et al. (2014) and Henshaw (2015), and revealed that HSs tend to not rely on the mediation provided by L2s and that they present linguistic insecurity. However, unlike the current study, these investigations did not connect learning gains with those perceptions. Here, the question of perceptions was addressed quantitatively and qualitatively, and each analysis provided a different angle to the inquiry. First, quantitative measures sought a connection between perception measures and vocabulary gains. Results showed that partner perceptions had no discernible effect on vocabulary overall; meanwhile gains were impacted by the actors’ beliefs. Second, the qualitative analysis revealed details about learners’ preferences and perceptions. Most relevant to this analysis is that HSs did not present strong opinions regarding who to collaborate with based on their own language learning goals. Conversely, L2s perceived an HS or a more proficient L2 as ideal partners because they can provide the mediation they seek. However, this study also revealed that often L2 partners viewed other L2 learners as ideal partners because they appeared to be more proficient than themselves, even if in reality they were not. Perhaps these participants appeared to be more proficient because they seemed confident and outspoken. This finding is in line with investigations on personality and learner perception. For instance, Ożańska-Ponikwia and Dewaele (2012) identified a correlation between the perception of L2 proficiency and personality traits; namely, openness in seeking social interaction, agreeableness, and empathy. Thus, L2 learners had clearer expectations regarding partnerships than HSs, although these were not always supported by the reality of their partners’ competence in Spanish.

The next section addresses pedagogical implications gathered from this research. This is followed by a discussion of limitations and ideas for future studies drawn from this study’s findings.

Pedagogical implications
While it is understood that HSs and L2s need differentiated instruction where the learning needs for each learner type can be met (Carreira & Kagan, 2011), this is not always possible given practical constraints of course enrollments. This study presents pedagogical implications for mixed courses.

First, in regards to the lexicon targeted in the study, words had been selected from the 8000 and 9000 frequency levels. Here, frequency explains how likely an item is to be encountered, and possibly learned if noticed (N. Ellis, 2002). In the context of Spanish learning, it has been stated that L2 learners need to master the most frequent 3000 words in the first two years of coursework, although this is not always achieved (Sánchez- Gutiérrez, Miguel, & Olsen, 2018). Also, as reported before, HSs struggle with academic registers requiring lower frequency words (Valdés & Geoffrion-Vinci, 1998). Therefore, because of the lexical knowledge needed to perform in the language and the limitations that both L2s and HSs possess in this area of competence, it is imperative to continue seeking ways in which they can expand their lexicon.

A focus on low-frequency words can be worthwhile goal for HSs and L2s working together. This need is most apparent among L2s and HSs majoring in Spanish, who, in order to succeed in upper-level literature, culture, and linguistics courses, need to be able to read and comprehend non-adapted textbooks and engage in discussion on their readings in the target language. Therein lies the importance of not only continuing to acknowledge vocabulary learning as central to overall language competence, but to focus on specific targets, such as low-frequency words.

Second, in this research, both the task type and the target vocabulary tried to make it so HSs were not seen as the expert by default thus promoting learning gains for all participants and discouraging the perception that L2s benefit more than HSs. In other words, the task was challenging enough for all and all learners were able to contribute to a common goal. This structured distribution of resources emanating from the task itself rather than the individual participants can create a more equitable, arguably more positive, approach for all.

Third, mixed dyads presented more gains than matched ones. This finding encourages instructors to consider pairing up students in this fashion when engaging in comparable class activities. However, caution must be taken in also acknowledging learners’ perceptions of their
partners as well, be it L2 or HS. As seen in Storch (2008), perceptions might not have a real effect on learning but they can have an effect on collaborative orientations, which do affect learning.

2 Limitations and future studies

First, the analysis of lexical gains suggest that the experience overall had a positive effect. However, having a control group would have made a stronger case in attaching these outcomes to the experience. Second, the inclusion of a delayed post-test would have demonstrated the persistence of lexical gains over time. Third, the sample size is modest. Having a larger data pool would have made it possible to introduce more statistical power to reveal differences and additional permutations in the experimental setting. Fourth, it must be acknowledged that there is a degree of subjectiveness in the way the model was set up to address the particular research questions for this research, and, changing predictors would probably change results slightly. Fifth, doing additional interventions would add clarity to the results presented in this study (though this would need to be done with different target words since, otherwise, gathering multiple data points for the same target words would have a ceiling effect).

Lastly, this research assumes that language learning takes place in interaction and does not inquire on the manner in which collaboration is shaped among participants in mixed and matched dyads/triads. A future investigation should shift its focus to how learning occurs in these diverse partnerships. Two items to explore are: how learners’ personality and proficiency perceptions change the interaction, and assessing the effect of true proficiency versus perceived proficiency in collaborative patterns and learning outcomes.

VI Conclusions

The purpose of this research was to investigate how learner features, i.e. linguistic background and proficiency level, played a role in vocabulary learning resulting from collaborative work. In this study, Spanish L2s and HSs from two intact (face-to-face) courses engaged in two two-way interaction gap tasks that consisted of identifying and defining low-frequency vocabulary. For each task, learners collaborated with different partners of different
proficiency levels and linguistic background. The analysis of vocabulary pre- and post-tests and perception measures revealed three main findings. First, proficiency did not appear to make a difference in the resulting overall scores; all learners made relative gains regardless of their proficiency level. Second, linguistic background alone did not show an effect; however, it did have an effect when individuals worked with somebody of different background than their own. In other words, learners (be it HSs or L2s) gained more from collaborating with somebody different to themselves than from working with somebody of their same linguistic background. This suggests that there are advantages for both learner types when collaborating in a non-differentiated language classroom. Lastly, learners’ perceptions of their partner or the interaction had no overall effect on vocabulary gains. Here, qualitative data also provided nuance to our understanding of learners’ perceptions and preferences. For instance, most HSs did not have explicit preferences for a partner while L2s clearly preferred working with a more advanced learner, including an HL. However, personality traits appeared to interfere with L2s’ assessments of proficiency in others, as they often overestimated proficiency in those who were talkative and participative. The study concludes with pedagogical implications on the subjects of instruction of low-frequency vocabulary and designing learning tasks that take into account learners’ linguistic background and proficiency in non-differentiated instruction. It also calls for future studies that can build on the findings from the current research, such as investigating what makes mixed partnerships more beneficial than matched ones.

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Appendix 1. Perception questionnaire.

Please show below whether you agree or disagree with the following statements about your partner and how you worked together today:

1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=somewhat agree, 5=agree, 6=strongly agree

My partner speaks Spanish better than I do. 1 2 3 4 5 6
Talking to my partner helps me improve my Spanish. 1 2 3 4 5 6
My Spanish pronunciation is better than my partner’s. 1 2 3 4 5 6
My partner has a larger vocabulary in Spanish than I do. 1 2 3 4 5 6
It helps me learn better Spanish when my partner corrects me. 1 2 3 4 5 6
My partner probably speaks Spanish more often than I do. 1 2 3 4 5 6
My partner’s Spanish could probably improve by talking to me. 1 2 3 4 5 6 If my partner corrects me, I wonder if s/he’s the one making a mistake. 1 2 3 4 5 6 I probably practice Spanish more than my partner does. 1 2 3 4 5 6
My partner and I probably speak Spanish about equally often. 1 2 3 4 5 6
My partner helps me learn vocabulary more than I help him/her. 1 2 3 4 5 6

In today’s activity, I was able to do more for my partner (in terms of vocabulary) than him/her for me 1 2 3 4 5 6

Source: adapted from Bowles et al., 2014.