

Exploring the Role of Modality: L2-Heritage Learner Interactions in the Spanish Language Classroom

Melissa A. Bowles
University of Illinois at Urbana-Champaign

Abstract

In most post-secondary Spanish language programs in the U.S., heritage language (HL) learners and second-language (L2) learners are enrolled together, in the same courses (Ingold, Rivers, Tesser, & Ashby, 2002). Nevertheless, there is scant empirical research on what actually goes on in these classrooms and what the nature of learner-learner interactions is (Blake & Zyzik, 2003; Bowles, in press). This study reflects a reality in many Spanish classes because it analyzes the task-based interactions of nine learner-learner pairs, each containing an L2 learner and an HL learner of Spanish. The pairs completed a series of three tasks — one oral (a spot-the-differences task) and two written (a crossword puzzle task and a cloze/complete-the-story task). Results showed that, in completing the tasks, the L2 and HL learners had their language-related issues resolved in equal proportion but that there were qualitative differences on the written tasks in terms of the linguistic targets. HL learners relied on their L2 partners for orthography issues (spelling and accent placement), whereas L2 learners relied on their HL partners for vocabulary issues and, to a lesser extent, for grammar-related queries. Implications for pedagogy in classrooms enrolling both L2 and HL learners are discussed.

Introduction

Second language acquisition (SLA) research has consistently supported the claims of the Interaction Hypothesis (Long, 1996), demonstrating that adults learning a second/foreign language benefit from conversational interactions with native speakers (Ellis & He, 1999; Gass & Varonis, 1985; Iwashita, 2003; Leeman, 2003; Mackey, 1999; Mackey, Gass, & McDonough, 2000; Mackey & Philp, 1998; Philp, 2003; Silver, 2000). In fact, a recent meta-analysis (Mackey & Goo, 2007) found substantial linguistic benefits across both immediate and delayed post-tests for learners who participated in conversational interaction with a native speaker, indicating that there were not only short-term gains from the interaction but longer-term retention as well.

Various aspects of conversational interaction combine to promote second language acquisition. As learners interact in a second/foreign language, they can receive comprehensible input and interactional feedback from their interlocutor (Gass, 1997; Long, 1996; Pica, 1994). As a result, learners may negotiate for meaning (Gass, 2003), which Pica (1994) describes as occurring when “learners seek clarification, confirmation, and repetition of L2 utterances they do not understand” (p. 56). In addition, interactions may push learners to modify their output (Swain, 1995, 2005), elaborating on what they originally said and, in some cases, making modifications to the grammar, vocabulary, or pronunciation of aspects of the original utterance. In the example below, taken from the dataset for the present study, the L2 learner begins a negotiation sequence

by indicating that she does not understand the word that her (HL) partner has said (*moño*, ‘bun hairstyle’). This, in turn, leads the HL learner to expand on the word *moño*, providing pushed output and further describing the woman’s hair as being at the back of her head, up high. In the following turn, the L2 learner catches on to the meaning and identifies the hairstyle as a difference between her picture and that of her HL partner.

L2: *Y su pelo está, como...*
‘And her hair is, like...’

HL: *como en un moño encima, or...*
‘like in a bun on top of, or...’

L2: *Sí... no sé si es un moño, si no es solamente un poco, eh... como diría, no bien peinado.*
‘Yes... I don’t know if it is a bun, if it is not just a little, eh... like you would say, not well combed.’

HL: *En la mía tiene como un, una, un moño atrás, así alto*
‘In mine [my picture] she has like a, a, a bun behind, up high’

L2: *Oh! Oh! La mía tiene como pelo que, que rodea su cara*
‘Oh! Oh! Mine has like hair that, that goes around her face.’

Through processes such as negotiation for meaning and production of pushed output during the course of interacting, learners’ attention may be drawn to gaps in their own language ability, as was the case with the L2 learner in the example above. In other cases, learners may produce a non-targetlike form and, in the course of interacting, find that their message is not understood. The learners may then be able to ‘notice the gap’ between the non-targetlike forms they produce and their targetlike equivalents (Schmidt & Frota, 1986). It is through such a process that learning, either of discrete lexical items, as in this example, or of morphosyntax or discourse-level features, can occur in conversational interaction.

Learner-learner interactions

Whereas the benefits of interacting with a native speaker are clear, language learners, especially those in a foreign language setting, engage in conversational interaction with other learners far more frequently than they do with native speakers (Adams, 2007). A small base of research has been conducted on learner-learner interactions and has indicated that many of the opportunities for SLA that arise in learner-native speaker interactions also occur in peer interactions (Adams, 2007; García-Mayo & Pica, 2000; Gass & Varonis, 1985; Mackey, Oliver, & Leeman, 2003; Pica, Lincoln-Porter, Paninos, & Linnell, 1996). Specifically, learners have been shown to provide each other with comprehensible input, as well as opportunities to negotiate for meaning and to produce modified output. Classroom and laboratory studies on learner-learner interaction

have also found that learners routinely engage in negotiation, collaboration, and metalinguistic analysis (Donato, 1994; Fotos, 1994; Porter, 1986; Swain, 1998, 2000).

Even though there are similarities between learner-native speaker interactions and learner-learner interactions, research has also shown that the latter are not comparable to learner-native speaker interactions in all ways. Although learners *do* provide each other with modified input, that input is not always targetlike and, therefore, may contain errors that would not occur in native speaker speech. However, on a positive note, learners have been shown to produce more output in response to negotiation signals with other learners than they do when interacting with native speakers (Adams, 2007; Pica, Lincoln-Porter, Paninos, & Linnell, 1996), suggesting an added benefit of learner-learner interactions.

Not surprisingly, negotiation among learners is more likely to focus more on lexical issues than on morphosyntax, and to be more inconsistent and variable than it is with native speakers, given the variability in learners' interlanguage grammars (Buckwalter, 2001; García-Mayo & Pica, 2000; Williams, 1999). Compared to teacher-led interaction, learner-learner interaction has also been shown to involve less consistent provision of feedback (Toth, 2008). Given the prevalence of learner-learner interaction in task-based language teaching paradigms, research in this area in a variety of instructional contexts is certainly warranted.

Language-Related Episodes in the Classroom

As previously indicated, one benefit of interaction is that it provides learners an opportunity to attend to issues of linguistic form while engaging in meaningful communication. Occasions when learners attend to the linguistic form of their message in the course of interaction have been referred to as form-focused episodes or language-related episodes (LREs). LREs include "all interaction in which learners draw attention to form, that is, those that focus on form in the context of meaningful interaction as well as those that are set apart from such communication and simply revolve around questions of form itself" (Williams, 1999, p. 595). As is clear from Williams' (1999) definition, LREs are a broader category than negotiation sequences, since LREs occur *whenever* a learner has a question about a form during interaction, whereas negotiation sequences occur *only* when a communication breakdown has occurred.

LREs have been used as a unit of analysis in classroom-based studies of interaction and have been shown to occur frequently in classroom contexts (Ellis, Basturkmen, & Loewen, 2001a, 2001b; Loewen, 2003, 2004; Swain & Lapkin, 1998, 2001, 2002; Williams, 1999, 2001). Furthermore, LREs may promote the noticing of L2 forms and subsequent learning, so their role in interactions is important.

Instructional Context

Historically, Spanish has been taught in the US as a "foreign language," as evidenced by the focus on instructional methods designed for monolingually-raised English speakers learning Spanish as adults (Valdés, 2006). Since the 1970s, enrollments in Spanish language courses in the US have changed drastically, to the point that classrooms across the country now frequently

enroll both monolingually-raised, English speakers wanting to learn Spanish as a foreign language and heritage learners who began acquiring Spanish and English in childhood. We follow Valdés' (2001) definition of an early bilingual, or heritage learner, as "a student who is raised in a home where a non-English language is spoken, who speaks or merely understands the heritage language, and who is to some degree bilingual in English and the heritage language" (p. 1). This definition captures the breadth of profiles that the term *heritage learner* encompasses, and highlights the fact that heritage learners are not a homogeneous group (Kanno, Hasegawa, Ikeda, Ito, & Long, 2008; Kondo-Brown, 2005; Valdés, 1995). Many factors, including age, context of acquisition, and amount of exposure to input in the heritage language (Montrul, 2008), affect these learners' competence in the heritage language.

In fact, heritage learners encompass a large range of abilities in English and the minority language. Learners who are least proficient in the heritage language are referred to as receptive bilinguals, or 'overhearers;' these students comprehend a colloquial variety of the language but do not speak it, or have very limited speaking skills in it (Au, Knightly, Jun, & Oh, 2002; Oh, Jun, Knightly, & Au, 2003). At the other end of the spectrum are the most proficient heritage learners, who have typically received some schooling in the language and have both receptive and productive skills in a colloquial variety and a standard variety of the language.

Because Spanish is the most widely spoken heritage language in the US (Kagan & Dillon, 2008), the language profiles of Spanish heritage speakers is broad. Valdés (2001) has developed a typology to characterize three unique profiles of Spanish heritage learners. (It is important to note that her typology is based on Spanish heritage learners in the US.) According to this typology, the lowest proficiency Spanish heritage learners are English-dominant, typically third- or fourth-generation US-born Hispanic students who have limited speaking skills and little, if any, literacy skills in Spanish. The intermediate group consists of first- or second-generation US-born Hispanics with varying degrees of skill in Spanish and in English. Finally, the third (and most proficient) group consists of immigrants to the US who grew up at least partially in a Spanish-speaking country, received some schooling in Spanish, and are Spanish-dominant.

One thing that is clear about heritage learners' language ability is that it develops mainly through exposure to input in the home and community, most times without the benefit of reinforcement through schooling. This language background causes heritage learners as a group to have a more restricted lexicon and range of registers than their monolingually-raised counterparts, who tend to have access to both social and academic registers (Valdés, 2001). Early exposure to the language, however, does give heritage learners a phonetic advantage, so much so that "the general impression is that even basilectal [the least proficient] heritage speakers sound native-like" (Polinsky & Kagan, 2007, p. 378). Nevertheless, acoustic analyses have shown that even balanced bilinguals have different phonetic representations than monolinguals (Bullock, Toribio, Davis, & Botero, 2004; Caramazza, Yeni-Komshian, & Zurif, 1974), and research investigating heritage learners (Godson, 2004) suggests that indeed there may be differences between heritage learners' phonologies and those of either monolinguals or balanced bilinguals.

In terms of grammatical competence, heritage learners tend to display incomplete acquisition of some aspects of morphosyntax, including gender agreement (Montrul, Foote, & Perpiñán, 2008; Polinsky, 2006), tense, aspect, and mood distinctions (Lynch, 1999; Montrul, 2002, 2007; Pereltsvaig, 2008; Polinsky, 1997, 2006; Silva-Corvalán, 1994, see also Montrul, this volume), Differential Object Marking (Montrul & Bowles, 2008) and overuse of overt subject pronouns in pro-drop languages (Montrul, 2004, 2006; OrtheGuy, Zentella, & Livert, 2007; Polinsky, 1997, 2006). These morphosyntactic differences between the grammars of heritage learners and monolingual native speakers may be influenced by the reduced quantity of input in the heritage language and/or by contact with the majority language. But regardless of the cause, many of the gaps in heritage learners' morphosyntactic knowledge are also problem areas for L2 learners of Spanish (Lynch, 2008; Montrul, Foote, & Perpiñán, 2008, see also Montrul, this volume).

Since the 1980s, heritage learners have increasingly enrolled in Spanish language classes at the high school and college level for many reasons, including to maintain their speaking and listening abilities, to develop and/or improve literacy skills in Spanish, and/or to broaden their knowledge of different registers and styles of Spanish for professional reasons (Valdés, 2001). Researchers working within the field of heritage language acquisition have elaborated both linguistic and affective reasons for advocating separate Spanish classes for L2 and heritage learners (Colombi & Alarcón, 1997; Merino, Trueba, & Samaniego, 1993; Potowski, 2002; Valdés, Fishman, Chávez, & Pérez, 2006; Valdés, Lozano, & García-Moya, 1981). Beaudrie (2006) also provides a helpful comparison of the heritage and second-language curricula for low-proficiency level learners of Spanish in a southwestern US university.

Nevertheless, the instructional reality is that most colleges and universities do not have separate tracks for Spanish heritage learners. Mixed classrooms are the norm in many locations throughout the US for financial, demographic, and/or curricular reasons (Lynch, 2008). In fact, a study by the American Association of Teachers of Spanish and Portuguese revealed that just 18% of colleges and universities surveyed had specialized programs or tracks for heritage learners of Spanish (Ingold, Rivers, Tesser, & Ashby, 2002). In other words, in most post-secondary Spanish language classes, HL and L2 learners are enrolled together in the same courses. Despite the fact that this is the rule and not the exception in Spanish language education, there is scant empirical research on what actually goes on in such mixed classrooms and what the nature of learner-learner interactions is. In fact, just two studies to date (Blake & Zyzik, 2003; Bowles, in press) have examined task-based interactions involving L2-HL pairs.

Blake and Zyzik (2003) examined task-based interactions of 11 L2-HL pairs engaged in a jigsaw task. At the university where the study was conducted, HL learners were enrolled in separate Spanish for heritage speaker (SHS) classes, whereas L2 learners were enrolled in courses designed for foreign language learners of Spanish. Therefore, learners did not know each other prior to the study, at which point they were paired and sent to a laboratory to complete the jigsaw task. The participants in the study included both heritage learners who had been born in Spanish-speaking countries and had received schooling there and heritage learners who had been born in the US and had not received formal schooling in Spanish. The participants' mixed background with their heritage language made it difficult to extrapolate the findings. The study was

descriptive, so no statistical analyses were conducted, but an analysis of the text chats of the L2-HL learners did reveal some trends. Most notably, the HL learners assisted their L2 partners more often than the reverse, indicating greater linguistic benefits for the L2 learners than for the HL learners in the pairs. Nevertheless, the authors indicate that in some cases, the HL learners did seem to pick up some vocabulary from their L2 partners. In addition, the HL learners reported benefitting from their exchanges with L2 learners for affective reasons. Blake and Zyzik (2003) speculate that whereas HL learners might feel that their Spanish 'is not good enough' when they speak to monolingual native Spanish speakers, interacting with L2 learners as they did in this study gave them an opportunity to use their cultural and linguistic knowledge to help others. Thus, interacting with L2 learners seemed to boost the HL learners' confidence in their heritage language ability and appeared to reinforce a positive self-image for the HL learners.

Bowles (in press) analyzed the task-based interactions of 12 mixed learner-learner dyads, each containing an L2 learner and an HL learner of Spanish. The research was conducted in the students' regular classrooms, and students paired themselves as they normally did in the course, to ensure that the study would be as ecologically valid as possible. The study investigated (1) whether LREs occurred in the mixed L2-HL pairs, (2) whether one type of learner (L2 or HL) initiated more LREs than the other, and (3) whether one learner's LREs were resolved more frequently, or in a more targetlike way, than the other's. Results showed that L2 and HL learners initiated a similar number of LREs, but that LREs initiated by L2 learners were resolved significantly more often (and in a more targetlike way) than those initiated by HL learners. These findings indicate an imbalance in the dyads, since they show that L2 learners seemed to benefit more from interacting with their HL interlocutor peers than the reverse.

By virtue of the home/community environment in which they learned Spanish, heritage learners tend to have greater oral than written fluency (Montrul, 2008). It stands to reason, then, that they would benefit less than their L2 partners in interactions involving oral tasks. An open question, however, is whether HL learners in mixed (L2-HL) dyads benefit less than their L2 partners across the board, in both oral and written tasks. To what extent is interaction affected by task modality (oral vs. written)? The purpose of the current study is to examine L2-HL task-based interactions on a series of both oral and written tasks. Specifically, the study seeks to answer the following research questions.

Research Questions

1. Does one type of learner (L2 or HL) initiate more language-related episodes than the other (a) overall, (b) in the oral task, or (c) in the written tasks?
2. Does one learner's (L2 or HL) language-related episodes get resolved more often than the other's (a) overall, (b) in the oral task, or (c) in the written tasks?
3. Does one learner's (L2 or HL) language-related episodes get resolved in a more targetlike way than the other's (a) overall, (b) in the oral task, or (c) in the written tasks?

Method

Participants

Participants were 18 learners enrolled in Spanish language courses at a large Midwestern U.S. public university. Half of the learners ($n=9$, 2 males, 7 females) were monolingually-raised English speakers born in the US. These learners reported not having had Spanish language instruction until high school or college and were, therefore, categorized as *second-language learners*. Ages ranged from 18-21 years ($M=19.75$). The other half of the learners ($n=9$, 3 males, 6 females) were bilingually-raised Spanish/English speakers born in the US. For eight of the nine learners, both parents were born in a Spanish-speaking country (either Mexico, Colombia, El Salvador, or Peru). The ninth learner had one Mexican-born parent and one US-born Spanish-speaking parent. Crucially, all nine learners reported speaking both Spanish and English at home growing up. Although they reported that they were English-dominant, speaking more English than Spanish in their everyday lives, all reported that they continued to interact with at least one family member in Spanish on a regular basis. Based on these criteria, these learners were categorized as *heritage language learners*. More precisely, the demographic data from a language background questionnaire and language use/preference data indicate that these learners belonged to the second group of heritage learners of Spanish in Valdés's typology: first or second-generation US-born Hispanics with stronger skills in English than in Spanish, owing to their upbringing in English-medium schools. They were traditional-age college students, ranging in age from 18-22 years ($M=19.75$).

Both the L2 and HL learners reported that they had always attended schools where English was the language of instruction. That is, none of the learners had attended bilingual or immersion schools in the US. All of the students took a written Spanish proficiency test (the vocabulary and cloze portions of the DELE test, which has been used in previous studies, including Montrul (2004) and Montrul, Foote, & Perpiñán (2008). The highest possible score on the test is 50 points. Descriptive statistics on the test scores of both the L2 and HL learners are provided in Table 1. A paired-samples t test found the scores of the two groups to be statistically similar overall, $t(8)=2.18$, $p=0.06$.

TABLE 1
Results of DELE Test Scores

	Mean	SD	Minimum	Maximum
L2 learners ($n=9$)	32.56	4.59	28	40
HL learners ($n=9$)	35.44	5.03	28	41

Materials

Language Background Questionnaire

All learners filled out a detailed language background questionnaire (adapted from Montrul, Foote, & Perpiñán, 2008). The data from the questionnaire were used to categorize learners as either L2 or HL learners and included not only biographical information such as age and birthplace but also details about patterns of language use in their home during their childhood and in their daily interactions as college students.

Communicative Tasks

In Spanish language courses at the university where the study was conducted, learners are accustomed to a communicative approach in which they complete communicative tasks in pairs and small groups on a regular basis. Since all of the learners in this study were enrolled in Spanish courses at the time of the study or had been enrolled in them in the previous academic year, pair-based communicative tasks were determined to be ecologically valid and to simulate the classroom environment. All of the learners were recruited from among the 200-level Spanish courses at the university, where no heritage Spanish courses were being offered at the time, and were compensated \$10 for their participation in the study. All of the tasks were designed to be completed in pairs, so each learner was paired with either an L2 or an HL learner, as follows. Students were first sorted by proficiency (as measured by their scores on the DELE), and as long as any two students scored within five points of each other, they were deemed eligible to be paired together, regardless of linguistic background. Within proficiency groups, students were ultimately assigned to work with a given partner based on mutual availability during a given time slot. The entire resulting dataset of nine L2-HL pairs was analyzed in this study. All of the other HL learners who volunteered were paired with other HL learners, and their data is currently being analyzed and contrasted with that of the L2-HL pairs.

This study expanded on Bowles (in press), which examined the task-based interactions of mixed pairs of L2-HL learners on just an oral task. In that study, learners completed a two-way information gap task in which the learners had different drawings of a kitchen with various objects placed in it. They were instructed that there were 10 differences and five similarities between the two drawings and that they had to move objects (printed on stickers) on their respective drawings to match that of their partner without looking at each other's drawing. This oral task was intended to tap knowledge of home vocabulary.

In the present study, a different two-way information gap task was designed, this time with the two pictures designed to elicit more general, rather than home-related, vocabulary ([Appendix A](#)). In addition, two written tasks were designed to be completed in pairs, to enable a comparison of interactions based on task modality. The first written task was a carefully controlled, discrete two-way information gap task ([Appendix B](#)). In this task, the two learners had to work together to complete a crossword puzzle with each partner having just half of the clues. The second written task was a collaborative writing task in which learners worked together to 1) fill in blanks in a short love story and 2) write both a happy and a sad/tragic ending to the story ([Appendix C](#)). The three tasks were similar to the types of oral and written tasks that the learners completed in

the course of task-based L2 classroom work (Foster, 1998; Mackey, Oliver, & Leeman, 2003; Swain & Lapkin, 1998).

Coding

Learners' interactions were digitally recorded using portable digital voice recorders placed on the table between each pair of learners. The interactions were subsequently transcribed by a native Spanish-speaking research assistant who had experience teaching Spanish language courses at the university.

First, instances in which learners focused their attention on a particular form were identified. The unit of analysis was language-related episodes (LREs), defined by Williams (1999) as "Discourse in which the learners talk or ask about language, or question, implicitly or explicitly, their own language or that of others" (pp. 594-595). LREs have been quantified in previous research on learner-learner interaction as a measure of the extent to which learners focus their attention on particular forms (Adams, 2007; Ross-Feldman, 2007).

Each LRE was subsequently coded according to which learner (L2 or HL) initiated it. As in Ross-Feldman (2007), the learner who first questioned the language being used was coded as initiating the LRE. Additionally, each LRE was coded depending on whether its linguistic focus was *grammar, vocabulary, pronunciation, or orthography (spelling or accent placement)*.¹

Example 1 below, from the crossword puzzle task, was coded as an LRE focused on orthography (the word *seiscientos* 'six hundred'). In this instance, the HL learner initiates the LRE when she asks her L2 partner about the spelling of the word 'six hundred,' which they both agree is the correct response.

Example 1

HL: ¿*Quinientos? ...quinientos más cien... ¿sabes cuál es?*

 'Five hundred? Five hundred plus one hundred, do you know what it is?'

L2: *Quinientos es cinco cent*

 'Five hundred is five hund...'

HL: *Yeah*

L2: *Más*

 'Plus'

HL: *So, seiscientos?*

 'So, six hundred?'

L2: *Sí*

‘Yes’

HL: *Seis es, eh, ese-i-e?*

‘Six is, uh, S-I-E?’

Initiation of LRE

L2: *Ese-e-i, creo, pero no importa porque es no, no con otro...*

‘S-E-I, I think, but it doesn’t matter because no, not with another...’

Finally, each LRE was coded for *resolution*, based on whether the learners came to an agreement about the questioned language form. When the learners came to an agreement, this was coded as *resolved*; if they didn’t come to an agreement, it was coded as *unresolved*. Subsequently, each resolved LRE was coded as either *more targetlike* (if the outcome of the LRE was more targetlike than the trigger), or *less targetlike* (if the outcome of the LRE was equally as non-targetlike or even less targetlike than the trigger). Example 2 from the collaborative writing task shows an LRE that was resolved in a more targetlike way, in this case when the HL provided the targetlike verbal inflection for the perfective past tense (preterit) form of the verb *saber* (to know).

Example 2

L2: *Y...y ella lo...eh...sabió?*

HL: and...and she ...eh...*knewed it?

Y ella lo...supo?

L2: And she ... knew it?

Supo! Oh! You're right!

Knew! Oh! You’re right!

All of the data were coded by two raters in an iterative process. One rater was a native Spanish-speaking graduate student and the other was a faculty member with near-native ability in Spanish. Both raters have had extensive experience teaching a range of levels of Spanish language courses at the university level. In the first phase, each rater coded all of the data independently. Then, in cases where the coding did not match, the raters revisited the data and discussed the application of the coding scheme further until they reached 100% agreement on all of the coding categories. This process, sometimes referred to as coding socialization, has been documented previously in the interaction literature (Philp, Oliver, & Mackey, 2006).

Results

Across all three tasks, there was a total of 202 LREs. Approximately one-third of the LREs focused on vocabulary ($n=67$, 32%), one-third focused on grammar ($n=72$, 35%), and one-third focused on orthography ($n=64$, 31%). Just a small number of LREs ($n=3$, 1%) focused on aspects of pronunciation. The breakdown of LREs by linguistic focus is represented in Figure 1.

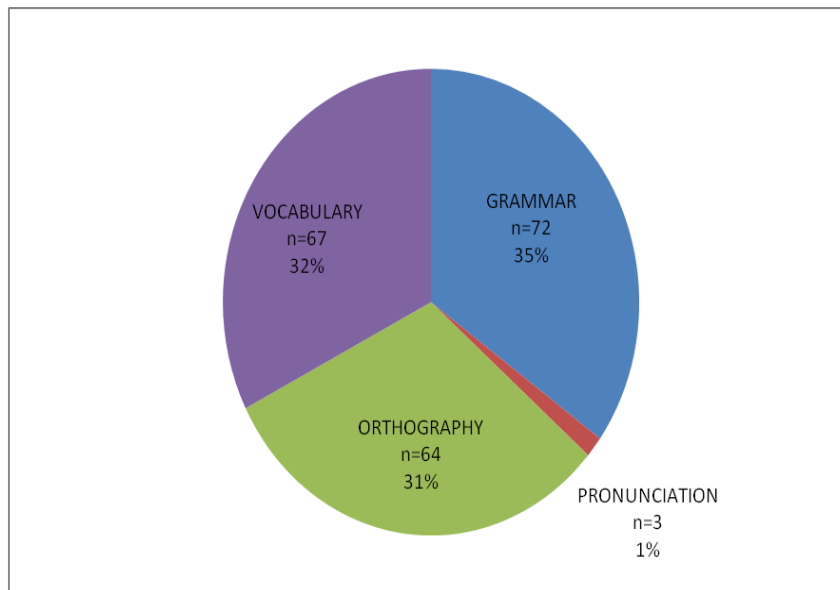


Figure 1. Number and Proportion of LREs by Linguistic Focus (All three tasks)

LREs were then examined separately on the oral and on the written tasks. On the oral task, there was a total of 31 LREs (approximately 15% of the total number of 202 LREs that occurred across the three tasks). Almost all of the LREs in the oral task focused on vocabulary ($n=30$, 97%), whereas just one LRE (3% of the dataset) focused on grammar. The breakdown of LREs by linguistic focus on the oral task is represented in Figure 2.

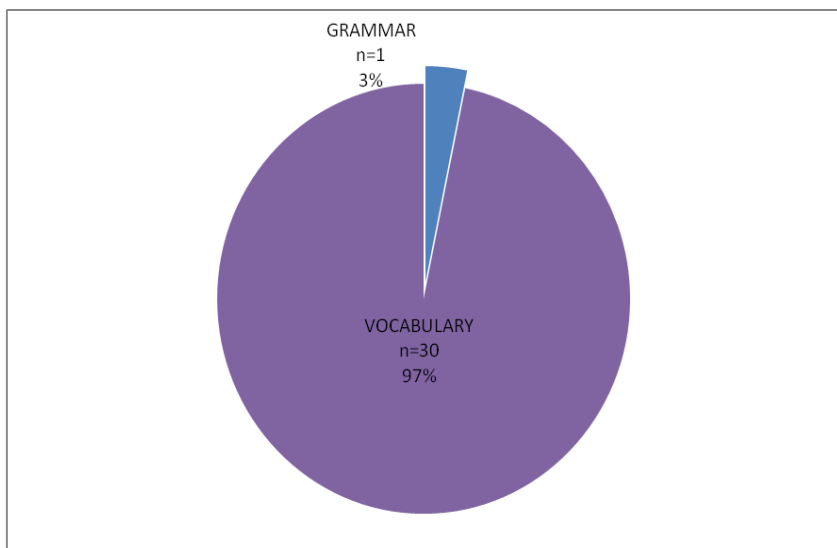


Figure 2. Number and Proportion of LREs by Linguistic Focus (Oral task)

On the written tasks, there was a total of 171 LREs. (In other words, the majority of LREs (85%) occurred on the written tasks.) The largest percentage (41%) of the LREs on the written tasks focused on grammar, followed by orthography (37%), and vocabulary (21%). Again, just a small percentage (2%) of the LREs focused on pronunciation. The breakdown of LREs by linguistic focus on the written tasks is represented in Figure 3.

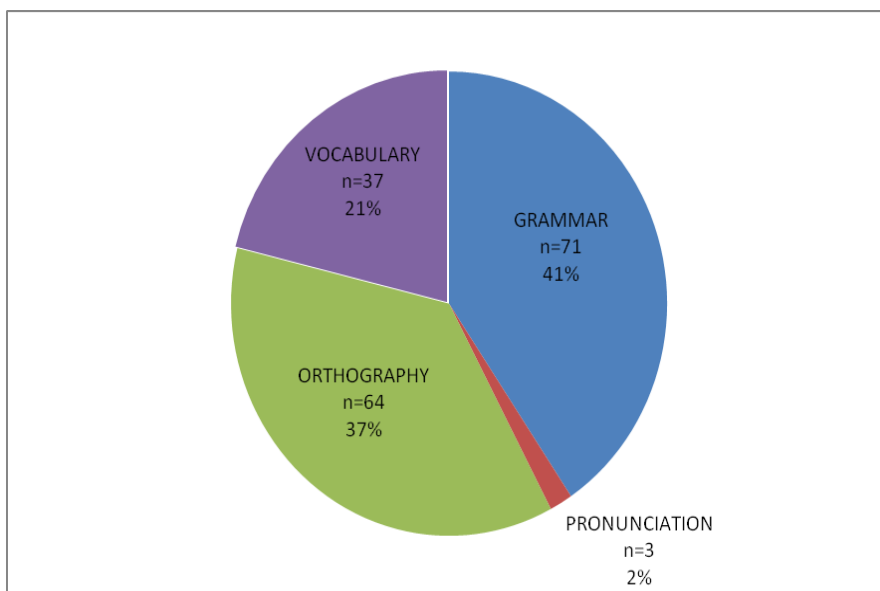


Figure 3. Number and Proportion of LREs by Linguistic Focus (Written tasks)

There was variation across the dyads in terms of number of LREs. Nevertheless, all dyads engaged in some LREs during the tasks. The range across the three tasks was 10-48 ($M=22.4$) LREs per dyad.

To answer the first research question, “Does one learner (L2 or HL) initiate more LREs than the other (a) overall, (b) in the oral task, or (c) in the written tasks?” separate t tests were run to compare the mean number of LREs initiated by each interlocutor overall, in the oral task, and in the written tasks. Overall, HL learners initiated an average of 10.88 LREs ($SD=10.4$), whereas L2 learners initiated an average of 11.55 LREs ($SD=8.05$). Results indicated that the difference in means was not statistically significant, and that HL learners and L2 learners initiated a similar number of LREs across the three tasks, $t(16)=-.15$, $p=.88$. Looking just at the oral task, HL learners initiated an average of just 1 LRE ($SD=1.66$), whereas L2 learners initiated an average of 2.44 LREs ($SD=3.36$). Results indicated that this difference in means was not statistically significant, and that HL and L2 learners initiated a similar number of LREs on the oral task, $t(16)=1.16$, $p=.26$. Finally, on the written tasks, HL learners initiated an average of 9.88 LREs ($SD=8.84$), while L2 learners initiated an average of 9 LREs ($SD=5.19$). Results indicated that this difference in means was not statistically significant, and that HL and L2 learners initiated a similar number of LREs on the written tasks, $t(16)=-.26$, $p=.39$.

Given that both HL learners and L2 learners initiated LREs, the question arises as to whether one learner’s LREs were resolved more frequently than the other’s overall, on the oral task, or on the written tasks. If this were the case, it would suggest that the linguistic benefits of the interaction were one-sided, in favor of one learner or the other.

To examine this second research question, each LRE was tallied based on which learner initiated it (HL or L2) and based on whether it was resolved or unresolved. The tallies were used to generate the 2x2 contingency tables (Tables 2-4). On the oral task, the frequencies demonstrate that 19 of the 20 LREs initiated by L2 learners (95%) were resolved, and that 7 of the 10 LREs initiated by HL learners (70%) were resolved. Since the assumptions of the chi-square test were not met (because two cells had a frequency of less than 5), a Fisher’s exact test was run to determine whether LREs were resolved significantly more depending on whether an L2 or an HL learner initiated them. Results indicated that there was no significant difference between resolution of L2 and HL learners’ LREs ($p=0.09$).

TABLE 2
2x2 Contingency Table (Resolved and Unresolved
LREs by Learner on the Oral Task)

	<i>LRE Initiator</i>				<i>Total</i> (<i>n</i>)
	<u>HL</u>		<u>L2</u>		
	<i>n</i>	%	<i>n</i>	%	
<i>LRE Resolution</i>					
Resolved	7 (70)		19 (95)		26
Unresolved	3 (30)		1 (5)		4

On the written tasks, the frequencies demonstrate that 77 of the 85 LREs initiated by L2 learners (91%) were resolved, and that 86 of the 89 LREs initiated by HL learners (97%) were resolved. Since the assumptions of the chi-square test were not met (because one cell had a frequency of less than 5), a Fisher's exact test was run to determine whether LREs were resolved significantly more depending on whether an L2 or an HL learner initiated them. Results indicated that there was no significant difference between resolution of L2 and HL learners' LREs ($p=0.13$).

TABLE 3
2x2 Contingency Table (Resolved and Unresolved
LREs by Learner on the Written Tasks)

	<i>LRE Initiator</i>				<i>Total</i> (<i>n</i>)
	<u>HL</u>		<u>L2</u>		
	<i>n</i>	%	<i>n</i>	%	
<i>LRE Resolution</i>					
Resolved	86 (97)		77 (91)		163
Unresolved	3 (3)		8 (9)		11

Across the three tasks, the frequencies demonstrate that 96 of the 105 LREs initiated by L2 learners (91%) were resolved, and that 93 of the 99 LREs initiated by HL learners (94%) were resolved. A chi-square test was run to determine whether LREs were resolved significantly more

depending on whether an L2 or an HL learner initiated them. Results indicated that there was no significant difference between resolution of L2 and HL learners' LREs ($\chi^2=0.175, p=0.68$).

TABLE 4
*2x2 Contingency Table (Resolved and Unresolved
LREs by Learner on the Three Tasks)*

	<i>LRE Initiator</i>				<i>Total (n)</i>
	<u>HL</u>		<u>L2</u>		
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
<i>LRE Resolution</i>					
Resolved	93 (94)		96 (91)		189
Unresolved	6 (6)		9 (9)		15

Finally, to answer the third research question, whether one learner's (L2 or HL) LREs were resolved in a more targetlike way than the other's overall, in the oral task, or in the written tasks, resolved LREs on each task were examined in detail.

On the oral task, all of the resolved LREs initiated by both L2 and HL learners were resolved in a more targetlike way. These results are presented in Table 5. A Fisher's exact test confirmed that this difference was not statistically significant ($p=1.00$).

TABLE 5
2x2 Contingency Table (Nature of LRE Resolution by Learner on the Oral Task)

	<i>LRE Initiator</i>				<i>Total (n)</i>
	<u>HL</u>		<u>L2</u>		
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
<i>Nature of LRE Resolution</i>					
More targetlike	7 (100)	19 (100)	26		
Less targetlike	0 (0)	0 (0)	0		

On the written tasks, 80% of the LREs initiated by HL learners were resolved in a more targetlike way and 87% of the LREs initiated by L2 learners were resolved in a more targetlike way (see Table 6). A chi-square test revealed that this difference was not statistically significant, $\chi^2=.778, p=.38$.

TABLE 6
2x2 Contingency Table (Nature of LRE Resolution by Learner on the Written Task)

	<i>LRE Initiator</i>				<i>Total (n)</i>
	<u>HL</u>		<u>L2</u>		
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>	
<i>Nature of LRE Resolution</i>					
More targetlike	70 (80)	66 (87)	136		
Less targetlike	17 (20)	10 (13)	27		

As Table 7 shows, across the three tasks, a similar proportion of LREs were resolved, no matter whether they were initiated by HL (82%) or L2 (89%) learners. A chi-square test revealed that this difference was not statistically significant, $\chi^2=1.631, p=.20$.

TABLE 7
2x2 Contingency Table (Nature of LRE Resolution
by Learner across the Three Tasks)

	LRE Initiator				
	HL		L2		Total (n)
	n	%	n	%	
<i>Nature of LRE Resolution</i>					
More targetlike	77 (82)		85 (89)		162
Less targetlike	17 (18)		10 (11)		27

Quantitative Analysis

Overall, the results of this study show that both L2 and HL learners initiated a similar number of LREs across both oral and written tasks. Furthermore, LREs initiated by both types of learners were resolved in equal proportion. Nevertheless, the data do reveal different patterns by the two learner types on the written task, where there were approximately equal proportions of LREs focused on grammar, orthography, and vocabulary. Specifically, 47 of the 70 orthography-focused LREs (67%) were initiated by HL learners, while the other 23 (33%) were initiated by L2 learners. These quantitative data alone indicate that HL learners had more doubts about spelling and accent placement than their L2 peers. In fact, a closer examination of the transcriptions reveals that when HL learners initiated orthography-focused LREs, they did so almost exclusively because they *themselves* were unsure of the spelling or accent placement in a given word. Some HL learners were quite explicit about their perceived lack of knowledge of accent placement. One HL learner, for example, directly tells her L2 partner, “*Corrécrame si no tengo los acentos, por favor.*” “Correct me if I don’t have the accents, please.” In another pair, the L2 learner, having just received help from her HL partner on aspect choice, answers the HL learner’s question about accent placement and says, “Put us together and we’re a great Spanish team, aren’t we?”

Overall, the data reveal that the L2 learners are indeed quite accurate with spelling and accent placement; in fact, of the 47 orthography-focused LREs that HL learners initiated, there were only 3 (6%) that were resolved in a less targetlike way. This degree of accuracy is perhaps attributable to the context in which the L2 learners acquired Spanish – in high school and/or in college classrooms, where they received a great deal of written input. And an examination of the one-third of orthography-focused LREs that were initiated by L2 learners shows that these were generally not because the L2 learner questioned his/her own knowledge of orthography but rather that they questioned the spelling and/or accent placement on a word or phrase that the HL learner had written.

Example 3 below occurred when the pair was working together during the collaborative writing task and coming up with an ending to the story. They agree on an ending, and as the HL learner

begins to write what they have agreed upon, she asks whether the word *después* ‘after/later’ has an accent. When her L2 partner tells her that it does, the HL learner further asks whether it is over the letter ‘e’ in the word. The LRE concludes with the (targetlike) resolution and with the HL learner writing the word correctly in their story.

Example 3

L2: *Dos años después la vio otra vez en la biblioteca, o algo así*

‘Two years later he saw her again in the library, or something like that.’

HL: *OK... (writing) dos años...*

‘OK... two years...’

L2: *Oh, dos semanas! No dos años! Perdón!*

‘Oh, two weeks! Not two years! Sorry!’

HL: *Dos semanas después...¿después lleva acento?*

‘Two weeks later...does later have an accent?’

L2: *Sí*

‘Yes’

HL: *¿Sobre la ‘e’?*

‘Over the ‘e’?’

L2: *Sí*

‘Yes’

Example 4 below is characteristic of an orthography-focused LRE initiated by an L2 learner in response to something his/her HL partner has written. In this example, which is taken from a different pair writing an ending to one of the stories, the partners agree about what to write, and then the L2 learner reads what her HL partner has written and comments that perhaps they need to put accents on the o’s (of the word *pasó* ‘happened’), which occurs twice in the sentence. The exchange ends with the HL learner adding those accents, thereby making the words targetlike.

Example 4

HL: *What happened... even though... aunque pasó lo que pasó, like... aunque it happened, he had to continue*

‘What happened...even though...even though what happened, happened, like... even though it happened, he had to continue.’

L2: *Eh...well...quizás...can you...sí, quizás necesitamos acentos, eh...sobre los o's*

‘Eh...well...maybe...can you...yes, maybe we need accents, eh...over the o's.’

HL: *De pasó?*

‘Of *pasó*?’

L2: Mmhm

Even in terms of orthography, the benefits were not entirely one-sided (with L2 learners always helping HL learners with spelling and accent placement.) Examples 5 and 6 below are taken from the same L2-HL pair working on the crossword puzzle task. In Example 5, the HL learner asks her L2 partner for the spelling of the word *zanahoria* ‘carrot’ [sanaórja] and then for the spelling of *alcohol* ‘alcohol’ [alkól]. As the learners comment, both of these words contain the letter ‘H’ in Spanish, which, although present in the orthography, is not phonetically realized. In Example 6, the (same) HL learner is able to provide a spelling for her L2 partner (of the word *ingeniero* ‘engineer’).

Example 5

HL: *La primera la tuvistes, ¿verdad?*

‘The first one you had, right?’

L2: Sí

‘Yes’

HL: *¿Qué es? ¿Zanahoria?*

‘What is it? Carrot?’

L2: Mmhm

HL: *Y no... ¿cómo se escribe?*

‘And no...how is it written?’

L2: *(spelling in Spanish) Z-A-N-A-H-O-R-I-A*

HL: *Hache... ok*

H...ok

L2: *Sí, olvidé que...*

‘Yes, I forgot that...’

HL: *Tiene una hache*

‘It has an H.’

L2: *Yeah, hache, sí, yo también*

‘Yeah, H, yes, me too.’

HL: *Y el número dos es alcohol, ¿verdad?*

‘And number two is alcohol, right?’

L2: Mmhm

HL: *¿Cómo se escribe?*

‘How is it written?’

L2: *¿Alcohol?*

‘Alcohol?’

HL: Mmhm

L2: *(spelling in Spanish) A-L-C-O-H-O-L*

Oh, hache...

HL: ‘Oh, H...’

L2: *Siempre es el hache*

‘It is always the H.’

Example 6

HL: *[Reading from the crossword clue] una persona que ha estudiado ingeniería.*

‘A person who has studied engineering.’

L2: *Que... ¿Que estudia qué?*

‘What... Who studies what?’

HL: *Ingeniería*

‘Engineering.’

L2: *Ingeniería...pues...¿tienes ingeniero, no?*

‘Engineering...well...you have engineer, right?’

HL: Mmhm

L2: *Y ¿cómo lo deletreas?*

‘And how do you spell it?’

HL: *(spelling in Spanish) I-N-G-E-N-I-E-R-O*

L2: *Oh, I-E-ERRE-O*

‘Oh, I-E-R-O.’

Turning to grammar and vocabulary-focused LREs, the pattern of initiation is reversed from what was observed with orthography-focused LREs. L2 learners initiated the majority of the grammar and vocabulary-focused LREs. Grammar LREs occurred mainly in the written tasks, which required learners to narrate in the past tense and thereby choose between perfective (preterit) and imperfective aspect (imperfect). L2 learners often initiated LREs surrounding the issue of aspect selection and often provided their HL partners with some sort of ‘rule’ or metalanguage to discuss the aspect. In Example 7 below, the L2 learner initiates an LRE about the correct aspect of a verb in the cloze task, referring to the fact that the event occurred once, on a particular, specified day. (L2 learners are often taught that perfective aspect (preterit) is used when there is a time limit specified for an event.)

Example 7

L2: ...Angelina

HL: *Tenía que hacer mucha tarea*

‘(She) had (IMP) to do a lot of homework.’

L2: *¿Crees que es tenía o tuvo que hacer mucha tarea porque una noche, en esta noche?*

‘Do you think it is *tenía* (IMP) or *tuvo* (PERF) because one night, on that night?’

HL: *Um... Siento que tenía, porque...sería Angelina tenía que hacer mucha tarea pero aceptó.*

‘Um...I feel like it is *tenía* (IMP), because...it would be Angelina had to do a lot of homework but she accepted (his offer to go on a date).’

Whenever HL learners initiated a grammar-focused LRE, they seemed to rely on ‘feel’ in order to determine the correct morphology, as shown in Example 8, which is taken from one pair as they worked on the written cloze task. The L2 learner proposes using an imperfective verb, and her HL partner alternately repeats the imperfective and perfective verb forms, presumably to determine which sounds correct to her in the context. Other HL learners echoed this strategy, with one even saying, “*Me suena este*” ‘This one sounds right to me’ to convince his partner to use a perfective over an imperfective verb.

Example 8

L2: *...preguntó a todo el mundo pero nadie la... conocía.*

‘(He) asked (PERF) everyone but no one knew (IMP) her.’

HL: *Conocía... conoció... conocía, bien.*

‘Knew (IMP)...knew (PERF)...knew (IMP), good.

L2 learners initiated 26 of 35 vocabulary-focused LREs (74%), and these almost always occurred in response to something that the HL interlocutor said or wrote that included a lexical item not familiar to the L2 learner. For instance, in Example 9 below, a pair is completing the spot-the-differences task, and the HL learner is describing something that a boy in his picture is doing. He uses a verb that is unfamiliar to the L2 learner (*pisar*), and over the course of an extended negotiation sequence, he is able to get the L2 learner to understand its meaning.

Example 9

HL: *Está a punto de pisar... ¿de pisar qué? Un baseball.*

‘(He) is about to step on...to step on what...a baseball.’

L2: *Hmm...¿pisar es como to kick?*

‘Hmm...*pisar* is like ‘to kick?’’

HL: *No, eh...pisar...*

‘No, uh...*pisar*...’

L2: *Pisar es...*

‘*Pisar* is...’

HL: *Lo que, lo que harías si es que hay un araña en el piso, lo pi-, lo pisas.*

‘What, what you would do if there is a spider in the floor, you, step on it.’

L2: *No sé.*

‘I don’t know.’

HL: *Lo que...*

‘What...’

L2: *like, en el mío es, like, como es de...bah! con su pie*

‘Like, in mine (he) is, like...bah! with his foot.’

HL: *Sí, eso es pisar.*

‘Yes, that is *pisar*.’

Discussion

How do this study’s findings compare to those of previous studies on L2-HL interactions? Both Blake and Zyzik (2003) and Bowles (in press) found that in the paired oral interactions they examined, HL learners assisted their L2 partners more than the reverse. In other words, there were greater benefits for the L2 learners than for the HL learners. In Bowles (in press), this difference was quantified in terms of LREs; L2 learners’ LREs were more likely to be resolved, and in a more targetlike way, than those of HL learners on the oral task in that study. But in the present study, such differences were not found on the oral task. This is perhaps an artifact of the

tasks used. In both Blake and Zyzik (2003) and Bowles (in press), the tasks targeted home vocabulary, whereas the oral task in this study included a broader range of more general vocabulary. Since neither previous study included any written tasks, it is not possible to compare this study's results on the written tasks with any others. Future research should, therefore, continue to investigate the effects of modality on paired (L2-HL) interactions to determine whether the trends uncovered here hold.

Although neither the present study nor Blake and Zyzik (2003) or Bowles (in press) set out specifically to examine L2 and HL learners' attitudes to working together in paired interactions, both Blake and Zyzik (2003) and this study provided evidence that mixed L2-HL interactions were favorable. Blake and Zyzik (2003) commented that the HL learners in their study felt that interacting with L2 learners was a "confidence-boosting experience" and that they could serve as "a respected source of information" for their L2 partners (p. 540). In the present study, both L2 and HL learners seemed to be aware of their strengths and weaknesses, and some explicitly stated (to their partners) that they enjoyed being paired with a learner from a different linguistic background. Far from being an environment in which HL learners needed to "mask their native pronunciation" and L2 learners felt embarrassed or afraid to speak or use their Spanish, as Potowski (2002) has documented in some mixed classrooms, the students in this study seemed to embrace their differences and to use them to their benefit. Evidence for this comes from the fact that HL learners routinely asked their L2 partners for assistance with spelling and accent placement, and that L2 learners often asked their HL partners for their intuition about aspectual distinctions ("Just listen to your ear, 'cause you'll say it right") or relied on their vocabulary knowledge to help in phrasing things ("Would you say, like, is there an expression in Spanish like 'she was being short with him'? I've never seen it.")

The results of this study suggest that when L2 and HL learners are together in the same language classrooms, there may be mutually beneficial ways that they could be paired for pedagogical purposes. On written tasks in particular, L2 learners could assist HL learners with issues of spelling and accent placement and, conversely, HL learners could help to augment L2 learners' lexical repertoire.

Limitations and Future Research

More research examining the paired interactions of L2 and HL learners is clearly needed, given that there have been just two studies to date, one by Blake & Zyzik (2003), the other by Bowles (in press). Among the issues to be addressed is the extent to which the findings presented here are generalizable to both more and less advanced courses than the one these learners were enrolled in. For instance, would similar patterns of LRE initiation and resolution be found in elementary-level courses, or on the other end of the spectrum, in advanced level composition and/or content courses on literature, culture, or linguistics?

Given the reality that both types of learners are together in the same classrooms, such studies are needed not only on Spanish as a heritage language but also on other heritage languages being taught in the US and elsewhere. An open question, for example, is whether L2 learners would still have an advantage in orthography compared to HL learners in a language with a non-Roman

alphabet (e.g., Russian, Korean, or Arabic) or in a language with a logographic writing system (e.g., Chinese). Future studies should also examine the issue of learning outcomes as a result of paired interactions like the ones reported in this paper. This would require individualized post-tests based on the particular linguistic features addressed in the LREs of each learner's interaction, as has been done in L2-L2 interaction research (Adams, 2007; Loewen, 2005). Nevertheless, it would be one way to determine whether learners in fact make linguistic gains from L2-HL interactions, and the extent to which such gains are made by both L2 and HL learners.

Future studies comparing mixed L2-HL pairs to matched (L2-L2 and HL-HL) pairs will also be crucial. Such research would be able to get at the heart of major questions in the field of heritage language acquisition, and particularly, to address how to best teach HL learners.

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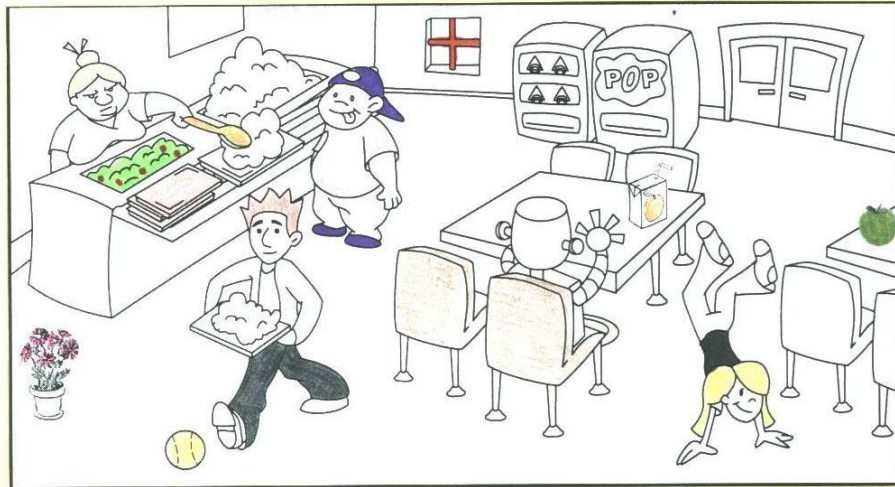
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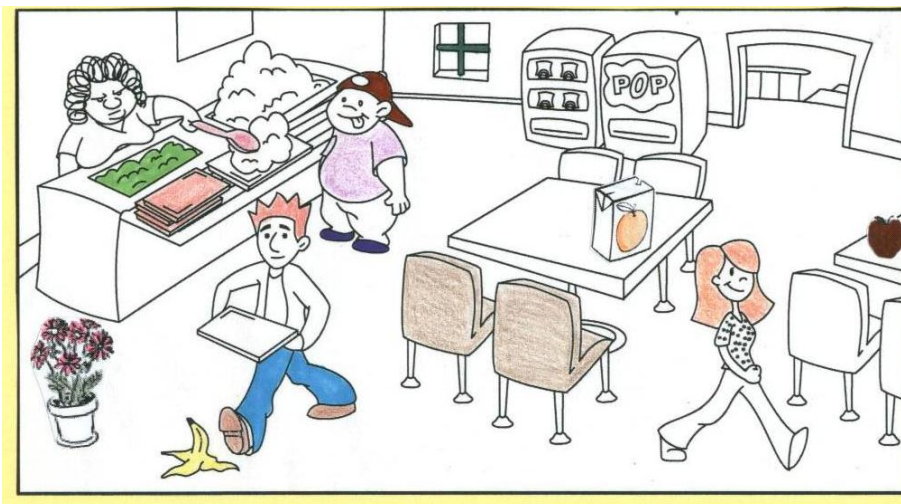
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Appendix A ([back](#))

Spot-the-Differences Task (Oral Task)



Picture for Student A



Picture for Student B

Appendix B ([back](#))

Crossword Puzzle Task (Written Task 1)

Instructions:

- To complete this crossword puzzle, you will need to help each other out. You have half of the clues, and your partner has the other half. The grid is the same for both of you.
- Take turns reading each other the clues.
- ****If you know the word, you may write it on your crossword puzzle, but don't tell your partner what the word is!!****
- If one of you doesn't know what the words is, you can ask each other for help.
- If neither of you know what the word is, you can move on to another word.
- When you're done with all the clues, you will compare grids to make sure you got the same words!

Here's an example:

Student A: *Two across, domestic animal that barks.*

Student B: *I'm not sure...*

Student A: *Like a Labrador Retriever.*

Student B: *OK, I know.*

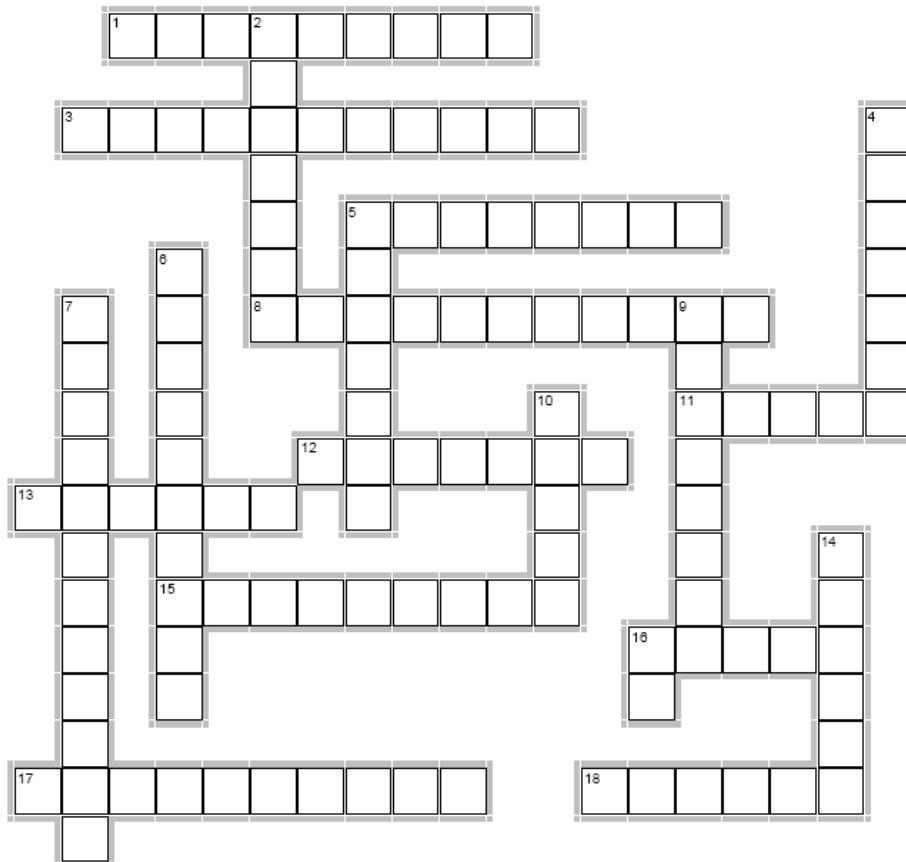
ESTUDIANTE A

Horizontales

1. Vegetal de color naranja que les gusta mucho a los conejos.
5. La palabra general para describir clases como la química, la física y la biología.
8. La disciplina que estudia las lenguas.
11. Otra palabra para coche o automóvil, que se usa principalmente en el dialecto mexicano
12. El nombre de la moneda de los Estados Unidos, en plural.
13. Un animal salvaje muy común en África, que es muy alto, tiene un cuello muy largo y es herbívoro.

Verticales

9. El utensilio que se usa para cortar alimentos o para untar la mantequilla sobre el pan.
10. El participio pasado del verbo "hacer".
14. El día de la semana que viene después del miércoles.
16. Una bebida típica de Inglaterra, que puede ser caliente o helado, con cafeína o herbal.



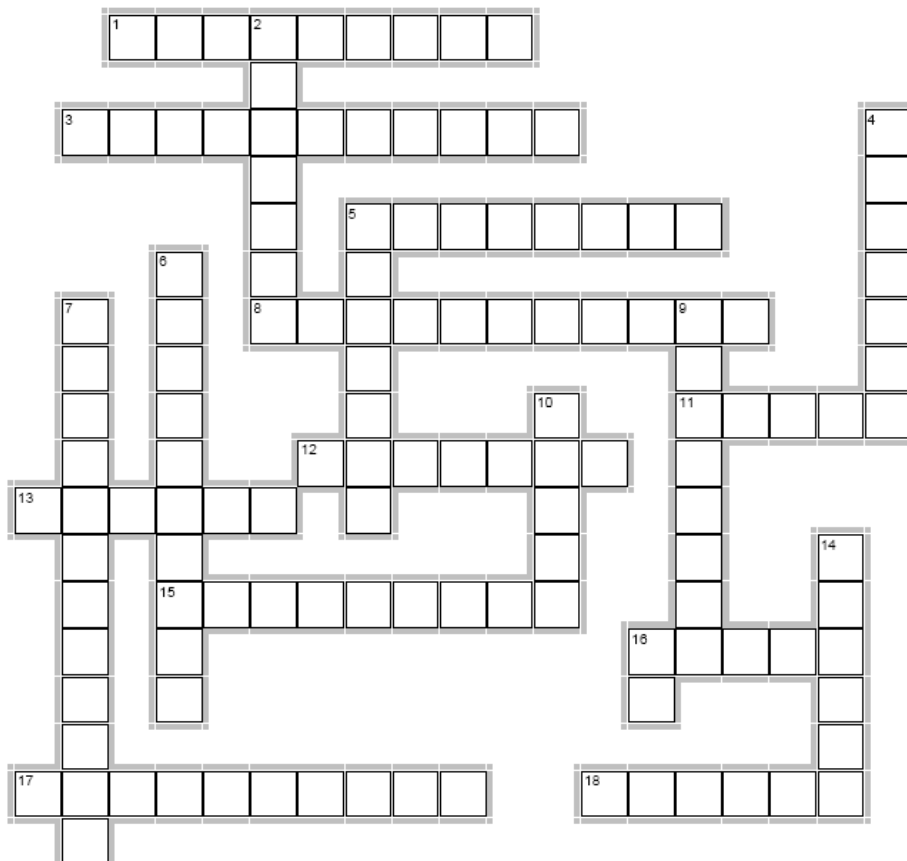
ESTUDIANTE B

Horizontales

3. Quinientos más cien.
15. Una persona que ha estudiado ingeniería.
16. Lo que haces con un instrumento musical, pero en presente del subjuntivo, primera persona singular.
17. El político que es la autoridad máxima en un estado. Por ejemplo, George Bush era el de Texas, y Arnold Schwarzenegger es el de California.
18. Lo que algunas personas comen para el desayuno. Son de color blanco y amarillo, y tienen mucha proteína.

Verticales

2. Lo que contienen algunas bebidas, como la cerveza, el vino y el tequila.
4. El adjetivo que describe algo que es bizarro, raro, que no es común.
5. Lo que canta un cantante.
6. Otra palabra para cuarto o dormitorio. El lugar de la casa donde tienes tu cama.
7. Lo que tienes en la cocina para mantener fríos los alimentos.



Appendix C ([back](#))

Collaborative Writing Task (Written Task 2)

STEP 1: Work together to complete these love stories with the correct form of the verbs in parentheses. Keep in mind these stories are narrated in the past!

LOVE STORY #1

Anoche, Angelina _____ (leer) un libro cuando Brad la _____ (llamar) por teléfono para invitarla a cenar en un restaurante. A Brad _____ (gustar) mucho Angelina y ella lo _____ (saber). Angelina _____ (tener) que hacer mucha tarea, pero _____ (aceptar) la invitación de Brad. Brad _____ (llegar) a las siete y ellos _____ (salir). _____ (hacer) buen tiempo, entonces ellos _____ (decidir) caminar al restaurante.

LOVE STORY #2

Ayer, Leonardo _____ (ver) a una chica fascinante en la calle Green y en ese momento _____ (saber) que ella _____ (ser) la mujer de su vida. Leonardo _____ (querer) invitarla a salir, pero ella _____ (desaparecer) y él no _____ (poder) decirle ni "hola". Pobre Leo _____ (preguntar) a todo el mundo pero nadie la _____ (conocer). Leo _____ (dudar) que él la _____ (ver) otra vez en su vida.

Note

1. Ross-Feldman (2007), a study investigating learner-learner interactions by males and females in mixed- and matched-gender dyads, is the only previous study to my knowledge that has examined the incidence and resolution of LREs in this way.