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# Spanish L2 Development in a Short-Term Domestic Immersion Program

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## Abstract

This exploratory study evaluated the impact of a Spanish second language (L2) domestic immersion (DI) program that was developed expediently at a large university in the United States in response to widespread study abroad (SA) program closures due to COVID-19. Spanish language learners ( $n = 14$ ) participated in an intensive, six-week summer immersion program for a total of 96 contact hours over the duration of the program. L2 development was evaluated via a conceptual replication of Issa et al. (2020), which recently provided compelling evidence of the benefits of short-term SA programs. L2 gains were measured using an acceptability judgment task, a lexical decision task, and an elicited imitation task. Results showed that DI learners had significant L2 gains in some of the same areas as the SA students, including subject-verb agreement and scores on the elicited imitation task. Implications for creating and maintaining DI programs in the current educational landscape are discussed.

## Abstract in Spanish

Este estudio exploratorio evaluó el impacto de un programa doméstico de inmersión (DI) de español como segunda lengua (L2) que se desarrolló en una universidad estadounidense en respuesta al cierre generalizado de estudios en

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el extranjero debido a la COVID-19. Catorce estudiantes de español participaron en un programa de inmersión intensivo durante el verano con un total de 96 horas de contacto a lo largo de las seis semanas de duración del programa. El desarrollo de la segunda lengua se evaluó a través de una réplica conceptual de Issa et al. (2020), el cual recientemente había aportado datos convincentes sobre los beneficios de programas de estudio en el extranjero de corta duración. La adquisición de la segunda lengua se midió usando una tarea de juicio gramatical, una tarea de decisión léxica y una tarea de imitación suscitada. Los resultados mostraron que los estudiantes del programa doméstico de inmersión desarrollaron sus competencias lingüísticas de forma significativa en algunas de las mismas áreas que los estudiantes que participaron en programas en el extranjero, incluyendo la concordancia entre sujeto y verbo, así como la puntuación en la tarea de imitación suscitada. Se discuten también algunas implicaciones sobre la creación y el mantenimiento de programas domésticos de inmersión en el actual panorama educativo.

**Keywords:**

Domestic immersion, study abroad, replication, classroom research

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**Introduction**

Study abroad (SA) is believed to be “one of the most favorable contexts for language learning” (Borràs & Llanes, 2019, p. 1), with many university programs encouraging a stay abroad as a culminating experience to earn a language major. However, the COVID-19 pandemic abruptly halted SA for thousands of students, as programs were cancelled or postponed in response to university, state, and national travel restrictions. In the United States (US), the Institute for International Education (IIE) reported a 53% decrease in SA enrollment from the 2018-19 to the 2019-20 academic years, accounting for over 184,000 fewer students (IIE, 2021a). During spring 2020, 867 institutions reported that more than 55,000 US students returned home early, and 93% of summer programs were cancelled during that same year (IIE, 2021a, 2020b). This left many university language programs seeking solutions to provide students with the type of sustained target language interactions and input that are considered an essential affordance of SA. On-campus, domestic immersion (DI) programs provide a possible alternative to SA, but they also require a substantial investment of time and resources. Although descriptions of DI programs vary widely across studies, here we follow Casillas’ (2020) definition

of DI as a domestic experience that “provides an input-rich environment sought out by highly motivated students... in which L1 [first language] use is prohibited and, importantly, L2 [second language] use and input are maximized” (p. 777). Given the extensive resources involved in developing, carrying out, or participating in a DI program, stakeholders—from university administrators to language program directors to students—may, reasonably, wonder if the endeavor of creating a DI program warrants the investment.

This study evaluated the value of developing a short-term Spanish DI program within a large, urban, public university in the US by measuring linguistic gains as well as by gathering supporting data on the program's impact on retention and recruitment. Using design and instrumentation based on Issa, Faretta-Stutenberg, and Bowden's (2020) recent empirical study of learner gains in a short-term SA environment, DI learners' gains on oral proficiency and receptive language measures were evaluated. Although this study is exploratory in nature and the sample size is modest, we prioritized sharing these data with expediency given (a) the uncertainty surrounding the reestablishment of SA programs in the coming years and (b) the ecological validity of the sample size (the approximate size of many SA cohorts). Our results showed that DI resulted in L2 gains in several key areas and may be a promising addition to language program offerings, especially within the current educational landscape that continues to be reshaped by the pandemic and other international affairs. Additional measures of student retention following the DI program and students' evaluative comments provide further support for expanding DI offerings.

## Review of the Literature

### Short-Term Study Abroad

Research in short-term SA provides a natural point of departure for understanding the impact of short-term DI programs. Although a robust body of literature from within the field of Second Language Acquisition has focused broadly on language development in SA environments (see, for example, Sanz, 2014; Sanz & Morales-Front, 2018; and metaanalyses from Tseng et al., 2021; Yang, 2016), there has been growing interest in the specific study of short-term SA (Zalbidea et al., 2021; Zalbidea et al., 2022), with a focus on SA experiences that last less than one academic semester. A thorough examination of short-term SA is especially beneficial for the theory-to-practice interface with postsecondary language programs, given that recent trends prior to the COVID-19 global

pandemic indicated that over 64% of undergraduate students studying abroad were doing so in short-term programs (IIE, 2020a).

A number of studies have revealed different types of linguistic gains associated with short-term SA programs, including oral production abilities (e.g., Hernández, 2016; Llanes & Muñoz, 2009; Martinsen, 2010; Zalbidea et al., 2021; Zalbidea et al., 2022) and receptive and productive vocabulary (Briggs, 2015; Grey et al., 2015; Issa et al., 2020; Martinsen, 2010; Zalbidea et al., 2021; Zalbidea et al., 2022). However, there have been fewer studies that focus on receptive linguistic abilities in a short-term SA context; these have generally found gains, although not necessarily on all measures (Grey et al., 2015; Issa et al., 2020; Zalbidea et al., 2022).

Receptive linguistic abilities are an essential component of L2 development, as “a learner’s ability to understand morphosyntactic and lexical phenomena in the L2 may allow learners to better understand—and learn from—L2 input that they encounter” in SA environments (Issa et al., 2020, p. 861). Notably, the recent study by Issa et al. (2020) documented the linguistic development of intermediate- and advanced-level Spanish learners in the context of two short-term (five-week) SA programs, showing that learners made significant gains in receptive measures of L2 lexical and grammatical development. Thus, Issa et al. (2020) provided evidence that even short-term SA can result in measurable L2 gains, and that study was therefore selected to serve as the basis for this conceptual replication, conducted in a short-term DI setting. In our view, the current study aligns with the definition of a conceptual replication in that there was “intentional adaptation of the initial study to investigate generalizability to new conditions, contexts, or study characteristics” (Marsden, et al., 2018, p. 325-326). In this way, this research serves to inform on the impact of short-term DI instruction while also responding to calls for increased replication efforts within the field (Marsden et al., 2018).

### DI Programs for Equity in L2 Learning

Despite the benefits of SA programs, the great majority of university language learners will, unfortunately, never study abroad. Although the IIE’s (pre-pandemic) data showed that the number of students who study abroad has been steadily increasing over the past 20 years, the highest level of SA participation for which they report data (during the 2018-19 academic year) showed that only 1.9% of all US undergraduate students had studied abroad (IIE,

2020a). Moreover, students from minority groups were greatly underrepresented within this already small group – representing 45% of US college students but only 31% of US students studying abroad in the last pre-pandemic academic year (IIE, 2021b). Fisher (2021) notes that this issue could be exacerbated by the COVID-19 pandemic.

One significant barrier in undergraduate students' ability to study abroad is their employment status. The increase in the cost of tuition was 63% between 2006 and 2016, compared to the Consumer Price Index increase of 21% for all items during that time (Bureau of Labor Statistics, 2016). This dramatic increase has made part- or full-time employment necessary for many students and restricted access to SA. Indeed, Sallie Mae (2021) reported that for the academic year 2020-21, 53% of families used student income or savings to help pay for college. Although the *overall* number of college students working has decreased over the past decade, the National Center for Educational Statistics found that the number of *full-time undergraduate students working more than 35 hours per week* had increased from 9.9% in 2010 to 11.4% in 2019 (U.S. Department of Commerce, 2020). Moreover, students from underrepresented minority groups constituted a disproportionate percentage of these full-time students with heavy workloads: In 2019, 18.5% of Black students and 13.6% of Hispanic students worked over 35 hours weekly, as compared to 9.7% of White students. As Perna and Odle (2021) state, "Employment during college too often contributes to inequity in higher education experiences, opportunities, and outcomes" (para. 26). Taken together, these data suggest that—even pre-pandemic—certain groups have had differential access to SA, with extracurricular responsibilities limiting L2 learning to local and/or classroom environments.

Although students certainly can and do develop L2 proficiency within classroom contexts, the immersive environment of SA has affordances that greatly facilitate language learning (see, for example, DeKeyser, 2007; Sanz & Morales-Front, 2018). SA provides for increased L2 exposure in both amount and type of L2 contact (input, output, and interaction), fostering the type of "transformative learning experiences" described by Dietrich (2018). Importantly, SA also provides learners the opportunity to negotiate their own dynamic identity as a participating member of a target language (TL) speech community in the socio-local contexts where language learning happens

(Douglas Fir Group, 2016). Learners' emergent negotiation of opportunities to participate within a TL speech community shapes L2 interactions and, critically, can establish learners as legitimate contributors ("imagined communities," see Norton & McKinney, 2011).

DI programs may be able to recreate some of these same affordances found in SA while permitting students to maintain full- or part-time employment and/or fulfill other domestic obligations. Importantly, these programs often manifest positive social pressure for learners to remain in the TL (as compared to traditional classrooms with learners with common L1s) via language "pledges" or "contracts." The amount and type of L2 contact is also more standardized in DI, with these contact hours more closely linked to course credit than in a traditional SA environment. In fact, Freed et al. (2004) reported that students who participated in a DI program reported more contact hours in the TL than (at home) formal classroom or SA groups. In addition, DI programs with sustained involvement with local TL communities have the potential to offer opportunities to meaningfully negotiate identity and participation within a TL speech community, similar to traditional SA.

### Research in Domestic Immersion

Although a growing number of studies have examined language learning within DI contexts, DI programs remain an "understudied learning context" (Casillas, 2020, p. 777). These programs often include components similar to many SA programs, such as an array of co-curricular activities conducted in the TL and the aforementioned language "pledges" in which learners commit to communicating exclusively in the TL. Both were components of this study, resulting in an effort to increase exposure to TL input, interaction, and negotiation of meaning. Taken together these features of DI programs set them apart from traditional classroom learning contexts.

Research from a variety of languages has shown L2 gains following DI. For example, Chang and Seong (2015) found that, following a three-week ESL program in Korea, participants (n = 80) evidenced growth on every measure of the VERSANT test (grammar, vocabulary, fluency, and pronunciation). When comparing at-home, SA, and DI learners of French (n = 28), Freed et al. (2004) found that only the DI group made gains on various measures of L2 fluency such as number of words spoken, rate of speech, and length of turn. The researchers related these differential L2 gains to the fact that DI learners reported

significantly more hours speaking and writing in the TL each week as compared to the SA and at home groups (who reported using more of the L1, English). This finding could imply that the highly structured nature of DI programs facilitates TL contact and subsequent development for some learners who may otherwise show a tendency to communicate in English (or another shared L1).

### DI for L2 Spanish in the United States

L2 Spanish instruction holds a unique status within the US, given the country's substantial Spanish-speaking population. In 2019, 13% of the population spoke Spanish at home, and Spanish was the second most widely spoken language nationally following English (U.S. Census Bureau, 2019). Regarding overall number of Spanish-speakers, the US is second only to Mexico (Instituto Cervantes, 2021). Thus, the potential to develop local immersion contexts that afford learners opportunities to meaningfully participate in Spanish-speaking communities is especially prevalent throughout the country (although not all programs incorporate such involvement). Two recent empirical studies that examined Spanish L2 gains within DI programs in the US are described below.

Miano et al. (2016) collected data from 2012-2015 on 51 university students who participated in a summer domestic L2 Spanish immersion. The program lasted for two weeks, with learners receiving four hours of instruction each day. This daily instruction began with two hours of "lectures on language development." Activities for the remaining two instructional hours varied by program year, with examples including Spanish-speaking guest speakers from the community and the viewing of documentary films. The daily instructional sessions were followed by evening sessions "including table games, cooking classes, karaoke, [and] salsa dancing" (p. 292) as well as other cultural excursions. Results from ACTFL Oral Proficiency Interviews and the ACTFL written test (both scored by certified raters) showed pre-post L2 gains of at least one sublevel for 78% of participants and 71% of participants, respectively. Learners with initially higher ACTFL oral proficiency scores showed the most improvement in writing, whereas those with initially lower oral proficiency scores improved in both speaking and writing. The authors arrived at the conclusion that the ACTFL intermediate-mid proficiency category was the most

appropriate starting point for the program. Finally, 52% of participants continued in their study of Spanish following the DI program.<sup>1</sup>

Isabelli-García and Lacorte (2016) measured L2 Spanish gains of postsecondary learners participating in a seven-week DI program (n = 98). Language immersion took place for four hours daily, with two of those hours dedicated to “oral communication activities focused on the use of grammar in context,” one hour dedicated to L2 writing, and the remaining hour allocated to the “study of Hispanic cultures and societies” (p. 547). The researchers examined L2 learning for learners of five different proficiency levels (the lowest level was excluded in the results). Grammaticality judgment tests and pre-post questionnaires were used to assess learners’ ability to identify errors in Spanish sentences containing non-target-like direct translations of English left-headed noun-noun compounds (e.g., \**“tango zapatos”* to say “tango shoes”), verb-particle constructions (e.g., \**“esperaron para fuera”* to say “waited out”) and resultatives (e.g., \**“El sol cocinó los campos secos”* to say “the sun cooked the fields dry”; all examples originally from Slabakova, 2002). Three of the four groups showed statistically significant improvement for these structures pre-post DI. However, self-reports showed that not all proficiency-level groups experienced gains for affective measures such as motivation, and significant gains on an “Individual variability questionnaire” were only found within the two lowest proficiency groups. Overall, the researchers concluded that the “contextual properties of a domestic immersion program can support language learners’ acquisition of syntactically complex linguistic elements” (Isabelli-García & Lacorte, 2016, p. 544).

### Original Study and Motivation for Current Study

Given both the evidence for gains in short-term SA and the growing body of research showing L2 gains in DI programs, this study sought to investigate the impact of a DI program as an extension and conceptual replication of Issa et al. (2020), which had examined linguistic development of L2 Spanish learners during short-term SA in Spain. Participants in the original study were US university students enrolled in faculty-led SA programs in Santander (an

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<sup>1</sup> One of the objectives of Miano et al. (2016) was to evaluate whether the DI program would recruit students to take upper-level Spanish literature and culture courses. The authors concluded that DI had not been successful for this purpose, as fewer than 18% continued in the aforementioned courses following the program (though 52% did continue studying Spanish language).



intermediate language program for learners with two semesters of prior instruction,  $n = 18$ ) and Alicante (an advanced language and culture program for learners with at least six semesters of prior instruction,  $n = 17$ ). Linguistic development in L2 Spanish was assessed via receptive tasks that tapped into learners' morphosyntactic and lexical knowledge. An untimed acceptability judgment task (AJT) required learners to read sentences and decide whether they were 'good' or 'bad' in Spanish. The AJT gauged learners' sensitivity to (a) morphosyntactic agreement violations (i.e., grammatical gender agreement between determiners and nouns, gender agreement between nouns and adjectives, and subject-verb agreement) and (b) lexical semantic violations (i.e., if a given sentence made sense). Lexical knowledge was further explored via a timed lexical decision task (LDT), in which learners viewed a string of letters that followed Spanish phonotactic rules and decided (as quickly as possible) whether the string was a word in Spanish or not. Results for morphosyntactic conditions revealed significant gains for the intermediate learners on gender agreement between nouns and adjectives and subject-verb agreement but no significant gains for the advanced group. In the realm of lexical knowledge, both groups showed significant gains in their sensitivity to lexical semantic violations and their ability to discriminate between words and nonwords.

Issa et al. (2020) also sought to examine whether two factors of interest played a role in the linguistic gains made. Specifically, the researchers assessed whether amount of L2 contact during SA (measured via a weekly questionnaire) and/or initial proficiency in Spanish (measured via an elicited imitation task [EIT] during week one of SA) accounted for variability in linguistic gains. Results from a series of stepwise linear regressions revealed that self-reported contact with Spanish during SA did not predict linguistic development on the tasks used in the study, but initial proficiency did positively predict gains in lexical knowledge (as measured by the LDT) across all participants. In addition, although not a primary research question, Issa et al. (2020) reported that (only) the intermediate group made significant gains on the EIT over the course of the five-week SA experience.

In the present study we conducted a conceptual replication and extension of Issa et al. (2020), focusing on linguistic gains and including overall proficiency. We chose not to focus on the role of L2 contact due to both the null result in Issa et al. (2020) as well as limited self-report data available in the

present sample. The stepwise regression including initial proficiency scores was also omitted due to the smaller sample size of this dataset. Given the novelty of the program under study, which was developed in response to the exigencies of the pandemic, we additionally sought to explore the success of the DI program in enrolling students and fostering continued study of Spanish following the program's completion.

## Research Questions

The following research questions guided the present study:

1. Do Spanish language learners evidence linguistic development in both grammatical and lexical receptive abilities during a short-term DI program?
2. Do Spanish language learners evidence linguistic development in L2 oral proficiency during a short-term DI program?
3. How successful was the DI program in enrolling students and encouraging continuation in the study of Spanish at the university level?

## Methods

### Domestic Immersion Program

The DI program took place over six weeks during the second half of summer session, occurring in July and August of 2021. Students earned six credits for completing the program, and those credits counted towards a Spanish major or minor. All program applicants were required to have either taken (and passed) the first course in the intermediate Spanish sequence (equivalent to third-semester Spanish at the institution) or to have taken a placement test indicating that their level of competency was equivalent to having completed this course. Enrollment also required direct approval from the program coordinator, who met individually with each applicant to informally assess their proficiency and fit for the program (no applicant was excluded).

All DI students were required to take an in-person language course three afternoons per week as part of the immersion program. Intermediate-level students took a Conversation and Composition class (Spanish Intermediate II), and advanced-level students took a topics course called Introduction to Social Justice in Latin America. Both courses were taught in the TL and taken for a letter grade. Three evenings per week and on the same days that the language courses met, all DI students met together for another in-person meeting called

“immersion sessions,” taken as a pass/fail course. Immersion sessions sought to simulate the type of interactions in the TL that occur during daily life in an SA setting; these included activities such as cooking classes, yoga classes, and interactive conversations with invited speakers from the community (for a full list of program activities see Supporting Materials A). All participants signed a “contract” agreeing to communicate exclusively in Spanish during immersion sessions, with any recurrent use of another language outside of emergencies potentially resulting in expulsion from the program (this did not happen for any student).

Each language class and immersion session lasted for two hours and forty minutes each. This made for a total of 48 hours spent in class and 48 hours spent in immersion sessions, resulting in a total of 96 contact hours for the program. Participants were also encouraged, but not required, to attend additional cultural events in the community that occurred concurrently with the DI program. All instruction occurred in person, with institutional and state protocols for COVID-19 observed (masking, social distancing, etc.). Students did not pay additional program fees.

## Participants

14 students participated in the study, 12 female and two male (self-identified). All participants were undergraduate students with the following breakdown for status: two sophomores, five juniors, six seniors, and one fifth-year student. When asked to report prior years of formal L2 Spanish instruction, 80% responded and indicated an average of approximately 5.6 years. All participants reported English as their first “native language” and their most dominant language, although two participants indicated that they had had exposure to Spanish at home and in other family-related settings from birth. Thus, we will consider and use the terms “TL” and “L2” as broadly interchangeable for these participants. None of the students reported having previous college SA experience, though four of them reported previous time abroad in Spanish-speaking countries (three stayed for one month and one for three months).

## Instructors

The three classes that were part of the program (Spanish Intermediate II, Introduction to Social Justice in Latin America, and the immersion sessions) were designed by the coordinator of the DI program. Spanish Intermediate II

was taught by an experienced teaching assistant, and the coordinator taught the advanced-level course and led the immersion sessions with the help of a different teaching assistant. The teaching assistant for the immersion sessions mainly aided with the organization of activities such as writing a weekly newspaper about the program or recording short films in groups.

## Study Procedures

All testing took place during the first and sixth (last) week of the DI program. During week 1, participants met as a class in a computer lab to complete a background questionnaire, an AJT, and an LDT, in that order. During week 6 participants again visited the computer lab as a class and completed different versions of the AJT and the LDT. Any participant choosing not to participate in the study was given a composition assignment to complete during those times. Elicited imitation tasks (EITs) were scheduled individually with one of the researchers outside of normal program meeting times, with EIT sessions occurring during week 1 and again during week 6. All instruments are described in detail in the following section.

## Instruments

The measures of linguistic knowledge and abilities used in the study were based on Issa et al. (2020) as retrieved from the IRIS database ([www.iris-database.org](http://www.iris-database.org)). The background questionnaire, AJT, and LDT are described in the following sections.

### Background Questionnaire

This questionnaire contained 22 base questions on participants' demographic information and language-learning history (Supporting Materials B). If the participants spoke or had learned multiple languages, the second component of the survey included a series of questions on each additional language known or studied, expanding out via drop-down menus to up to 65 possible questions.

### Acceptability Judgment Task

The Acceptability Judgment Task (AJT) evaluated learners' sensitivity to grammatical and lexical violations within the context of sentences in Spanish and took approximately 10 minutes to complete. The full set of stimuli consisted of 208 sentences, with 26 acceptable and 26 unacceptable sentences from a lexical-semantic condition and the same acceptable/unacceptable distribution

for each of three different morphosyntactic conditions: grammatical gender agreement for articles, grammatical gender agreement for adjectives, and subject-verb agreement.<sup>2</sup>

Following Issa et al. (2020), two versions of the AJT were devised from the item bank (104 items each + five practice items for initial test) such that participants did not repeat items across testing sessions. Item order was pseudorandomized so that participants were never consecutively presented with more than three items from the same condition (lexical-semantic, article agreement, adjective agreement, or subject-verb agreement) or acceptability rating (acceptable/unacceptable). The IBEX program (IBEX.spellout.net) was used for data collection. The sentences were presented to participants on a computer screen, and participants rated each sentence as 'good' or 'bad' by pressing a key. D prime (*d'*) scores were calculated for each participant to account for response bias. As explained in Issa et al. (2020), "A *d'* score of 0 represents chance-level sensitivity to grammatical and ungrammatical sentences (i.e., an inability to discriminate between these), whereas a score of 1.0 represents approximately 69% accuracy for both types, a score of 2.5 corresponds to roughly 90%, and a score of 4.65 is effectively perfect discrimination." (p. 876). The list of stimuli sentences for both versions of the AJT are included in Supporting Materials C. Kuder Richardson reliability coefficients (KR20, for dichotomous variables) were used to evaluate reliability of the AJT, and all values were within the acceptable range. At week 1, KR20 values were .92 and .77 (for versions 1 and 2, respectively), and at week 6 they were .84 and .85. (Half of the participants were randomly assigned version 1 during the first week and version 2 during the sixth week, with the inverse true for the other half of participants).

### Lexical Decision Task

The Lexical Decision Task (LDT) assessed learners' ability to identify words in Spanish and took about 10 minutes to complete. In this task, originally adapted from Grey et al. (2015), participants were presented with 160 lexical items on a computer screen, including both words and nonwords. Participants pressed a key to indicate whether they believed each item was a word or not.

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<sup>2</sup> The AJT test used for this study expanded the number of stimuli from Issa et al. (2020) by including a targetlike and non-targetlike version of each of the original stimuli. Several repeated items were removed from the adjective agreement category for both versions, making the total number of stimuli included in the analysis 202.

Two versions of the LDT, with item order pseudorandomized, were used so that participants did not see the same items in the same order during the two testing sessions. As with the AJT,  $d'$  scores were used to account for response bias. A list of the stimuli is included in Supporting Materials D. Unfortunately, a software compatibility issue resulted in the loss of data for this measure for half of the participants, and therefore LDT results are presented only descriptively in the Results section.

### Elicitation Imitation Task (EIT)

This task, adapted from previous research (Ortega, 2002) by Faretta-Stutenberg and Morgan-Short (2018), is an increasingly common measure of global oral proficiency used in L2 research. As described in Issa et al. (2020), “The EIT aligns with Hulstijn’s (2011) definition of basic language cognition (BLC) given that it requires participants to process phonological, lexical, and grammatical information at the same time” (p. 30). Following Issa et al. (2020), we employed two EITs, each of which contained a total of 30 sentences that increased in complexity throughout the task. Each EIT took approximately 10 minutes to complete. The two versions of the EIT were counterbalanced across participants and testing times (week 1 and week 6). To complete this task, participants met individually with either the first author or a research assistant. Each test began with six practice sentences in English. After hearing each sentence, participants heard a short beep and were instructed to repeat as much of the sentence as they could in the time provided. The audio stimuli were played through computer speakers, and each participant’s repetition of the stimuli was recorded on a portable digital audio recorder.

Participants’ sentence-level repetitions were scored on a scale of 0-4 following the scoring system in Ortega et al. (2002), allowing for a maximum of 120 points per test.<sup>3</sup> Two raters (the first author and a research assistant) were trained by the third, fourth, and fifth authors on rating EITs. The two raters independently transcribed and rated both the initial (week 1 of the program) and final (week 6 of the program) EITs, and then met to review and resolve discrepancies, discussing both their transcriptions and ratings. For responses on which no agreement between raters was reached, the third, fourth and fifth authors jointly met to resolve the discrepancies. Due to the iterative and

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<sup>3</sup> Issa et al. (2020) had a maximum score of 116 due to an error in one of the items. That issue has since been corrected.

collaborative nature of the scoring procedure—including all items being scored by both raters, followed by collaborative resolution of all discrepancies—interrater reliability is not calculated or reported. These procedures follow those of the original study. We can, however, report interrater agreement after the first two independent raters met to compare transcriptions and discuss item-level discrepancies, which was 98% and 97% for week 1 and week 6 EIT scores, respectively. Upon consultation with the remaining three raters, 100% agreement was reached. The order of administration of the two versions of the EIT was counterbalanced, such that participants who completed version A during week 1 completed version B during week 6 and vice-versa. Cronbach's alpha reliability measures for EIT scores from week 1 were .77 and .89 for versions A and B, respectively. Reliability measures from week 6 were .84 and .79 for versions A and B, respectively. Here we note that these values fall within the field-specific interquartile ranges for (laboratory) instrument reliability shown in Plonsky and Derrick's (2016) meta-analysis. The stimuli for the EIT are included in Supporting Materials E, and the task is available on the IRIS digital repository. Thirteen participants completed EITs at both testing sessions.

### Program Impact

In order to measure the impact of the DI program, the coordinator provided data on (a) enrollment trends for the program, (b) the number of participants who were enrolled in one or more Spanish courses the semester immediately following the program, and (c) any specific cases of students who enrolled in a Spanish certificate, minor, or major following successful completion of the summer DI program. Additionally, evaluative comments from individual students were collected via email at the program's end.

## Results

### RQ1: Receptive L2 Grammatical and Lexical Knowledge

RQ1 asked whether L2 Spanish learners evidenced linguistic development in both grammatical and lexical receptive abilities during a short-term DI program. We examine results for these two areas separately, based on AJT performance as a measure of grammatical and lexical receptive abilities and LDT performance as an additional measure of lexical receptive abilities.

## Results for Grammatical Sensitivity

Boxplots were used to identify any potential outliers in week 1 and week 6 scores on the AJT for the three grammatical conditions, and no data points fell 1.5 times outside the interquartile range. All AJT scores were thus included in this analysis. Anderson-Darling tests of pre-post differences showed normal distributions for article agreement ( $A = .36, p = .39$ ), adjective agreement ( $A = .31, p = .52$ ), and subject-verb agreement ( $A = .45, p = .23$ ), in keeping with assumptions for paired-samples  $t$ -tests. As such, two-tailed paired-samples  $t$ -tests were conducted on these scores, with results shown in Table 1. Given the modest sample size, statistical bootstrapping (10,000 repetitions) is also presented in Table 1. Whereas there were descriptive gains in all conditions, significant gains were shown by both non-bootstrapped and bootstrapped analyses for subject-verb agreement only, with a medium-to-large effect size of .71.

Condition	Week 1		Week 6		<i>df</i>	95% CI	<i>d</i>	<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>					
<u>Adjective</u>									
<i>d'</i>	1.52	(1.15)	1.77	(1.21)	13	[-.80, .30]	.21	-.98	.34
<i>d'</i> (bootstrapped)						[-.73, .22]			.32
Accuracy	.74		.77						
<u>Article</u>									
<i>d'</i>	1.58	(.99)	1.89	(.96)	13	[-.87, .25]	.32	-1.19	.25
<i>d'</i> (bootstrapped)						[-.79, .19]			.29
Accuracy	.74		.79						
<u>Subject-verb</u>									
<i>d'</i>	2.14	(1.08)	2.73	(.45)	13	[-1.16, -.01]	.71	-2.22	.045*
<i>d'</i> (bootstrapped)						[-1.10, -.12]			.03*
Accuracy	.83		.91						

\* $p < .05$

TABLE (1): GRAMMATICAL ABILITIES: ACCEPTABILITY JUDGMENT TASK RESULTS

## Results for Lexical Sensitivity

Boxplots were again used to identify any potential outliers for scores on the AJT lexical-semantic condition, and again, no data points fell 1.5 times outside the interquartile range for either week 1 or week 6 scores. All AJT scores were thus included in this analysis. An Anderson-Darling test of pre-post differences showed a normal distribution for article agreement ( $A = .41, p = .29$ ), and a two-tailed paired-samples  $t$ -test was thus conducted on these scores, with results shown in Table 2. Given the modest sample size, statistical bootstrapping



(10,000 repetitions) is also presented in Table 2. The descriptive gains observed in the lexical-semantic condition did not reach statistical significance but did have a medium effect size ( $d = .55$ ).

Condition	Week 1		Week 6		<i>df</i>	95% CI	<i>d</i>	<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>					
Lexical-semantic									
<i>d'</i>	1.80	(.92)	2.30	(.88)	13	[-1.04, .05]	.55	-1.98	.07
<i>d'</i> (bootstrapped)						[-0.93, .01]			.15
Accuracy	.79		.85						

TABLE (2): LEXICAL ABILITIES: ACCEPTABILITY JUDGMENT TEST RESULTS

Additional information about learners' lexical abilities comes from performance on the LDT. Results for the LDT ( $n = 7$ ) are presented and analyzed descriptively for the reasons outlined in the Methods section. Five of the seven participants with LDT data showed improvement in their  $d'$  scores, and mean scores for both words and non-words increased from week 1 to week 6.

Participant	Week 1					
	<i>d'</i>	Accuracy Category		<i>d'</i>	Accuracy Category	
		<i>Words</i>	<i>Non-words</i>		<i>Words</i>	<i>Non-words</i>
406	1.49	.73	.81	1.86	.66	.93
407	.80	-.79	.05	.98	.86	.46
410	1.54	.60	.90	.92	.80	.53
413	1.39	.70	.81	1.15	.73	.71
414	1.16	.79	.64	1.35	.77	.73
415	2.49	.81	.94	3.37	.87	.99
416	2.36	.92	.82	3.53	.90	.99
<b>Mean</b>	<b>1.61</b>	<b>.77</b>	<b>.70</b>	<b>1.88</b>	<b>.80</b>	<b>.76</b>

TABLE (3): LEXICAL DECISION TASK SCORES

## RQ2: Oral Proficiency

RQ2 asked whether L2 Spanish learners evidenced linguistic development in L2 oral proficiency during the six-week DI program as measured by an EIT. To examine this question, elicited imitation scores during weeks 1 and 6 were compared. An Anderson-Darling test showed pre-post differences to be normally distributed ( $A = .24$ ,  $p = .70$ ), and a paired-samples  $t$ -tests was used to compare scores. As found by a  $t$ -test and confirmed by bootstrapping (see Table 4), participants made significant gains on the EIT (although with a smaller effect size).

	Week 1		Week 6		<i>df</i>	95% CI	<i>d</i>	<i>t</i>	<i>p</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>					
EIT scores	54.31	(22.78)	60.31	(21.38)	12	[1.17, 10.83]	-.27	2.71	.02*
Bootstrapped						[-9.92, 1.17]			.04*

\* $p < .05$

TABLE (4): ELICITED IMITATION TASK

### RQ3: Success of DI Program

Outside of learners' linguistic gains following DI, this initiative was evaluated for impact on a programmatic level in terms of enrollment and student retention. Twenty-two students originally enrolled during pre-semester registration, and 15 continued past the first day and completed the program (three students withdrew before the beginning of the program for personal reasons such as financial reasons or scheduling conflicts; attrition in DI programs is addressed in the Discussion section). In the semester following the DI program, all but one of the participants (93%) continued taking Spanish classes in the department. In addition, two students reported changing their specialization because of their participation in the DI program. In the first case, the student was expected to graduate in the spring before the program without a minor or other certification in Spanish besides having taken Intermediate Spanish I. However, after learning about the opportunity to participate in the program, the student decided to delay graduation by one year to complete a Spanish minor (the student participated in the DI program and then took additional classes over the 2021-22 academic year). In the second case, a student enrolled in the program to complete a Spanish minor. The semester following participation in the DI program, the student met with the coordinator of the program to discuss options for switching from a Spanish minor to a Spanish major and to seek out information about graduate studies in Spanish. The student has since added a Spanish major and is planning to pursue a graduate degree in Spanish Applied Linguistics.

## Discussion

This study evaluated the viability and impact of a short-term DI Spanish program within the context of massive closures in SA programs brought on by the COVID-19 pandemic. Indeed, the Open Doors 2020 Report showed a 53% decrease in SA participation as compared to 2019 pre-pandemic rates (IIE, 2021a), and restoration of pre-pandemic SA enrollments may not be tenable for the foreseeable future given the pace of economic recovery and the repeated

emergence of novel variants of COVID-19. This global crisis could exacerbate existing issues of equity in access to SA. For example, pre-pandemic data have already shown that underrepresented populations of full-time university students face obstacles that could impede their ability to sojourn abroad, such as disproportionately heavy workloads (U.S. Department of Commerce). It is our hope that this extension and conceptual replication of Issa et al. (2020) in the context of DI during the ongoing pandemic will be of immediate use for educators and administrative stakeholders considering developing or restructuring DI programs at their own institutions. Although the group of learners included in this investigation was modest in size, results indicated several key similarities between L2 gains in the DI environment and the more traditional SA environments from Issa et al. (2020).

### Language Learning Gains in DI

To answer RQ1, which asked whether DI program participants made linguistic gains in grammatical and lexical receptive abilities, we examined changes in learner performance on the AJT and the LDT from week 1 to week 6. Results indicated that the DI program contributed to the development of some of these receptive abilities. Specifically, the learners were able to increase their sensitivity to subject-verb agreement violations, but they showed no statistically significant change in their abilities to perceive violations of grammatical gender agreement (on articles or adjectives). This pattern of results suggests that the six-week intensive DI experience was particularly beneficial for increasing receptive knowledge of morphosyntactic agreement phenomena that have a higher degree of communicative value, as subject-verb agreement arguably represents both syntactic and semantic information whereas grammatical gender agreement is purely syntactic. As for the development of lexical abilities, growth in this domain is less clear. Although we see descriptive improvement for the lexical-semantic condition of the AJT with a medium effect size, the change is not significant. Moreover, due to data loss with the LDT, we can only comment on descriptive growth for this task, which suggests improvement in the identification of words and non-words. This descriptive pattern of results seems to tentatively suggest that participants' lexical retrieval, identification, and decoding abilities improved after the DI program.

In order to address RQ2, which asked whether learners made oral proficiency gains in the six-week DI program, we examined changes in EIT

scores from the beginning to the end of the program. Results revealed that participants showed significant improvement after the DI program with a modest effect size. Thus, our results indicate that after the intensive DI program learners' basic language cognition (Hulstijn, 2011) improved. This change in oral proficiency is likely due to the additional exposure to the target language and the increased and concentrated opportunities for L2 interaction and negotiation of meaning that the DI program (especially the evening immersion sessions) offered participants.

### Short-Term SA and DI

Regarding how our results pattern with those reported in Issa et al. (2020), we address this by descriptively (though not statistically) comparing the results obtained in Issa et al. (2020) and the findings from the current study. Regarding grammatical receptive abilities as measured by the AJT, our results diverge from the original study in some respects but align in others. First, although Issa et al. (2020) found significant gains for grammatical gender agreement after SA (with the intermediate group), our DI participants do not show the same growth for grammatical gender agreement. Our results do, however, partially align with those found for the intermediate group in Issa et al. (2020) in that we also found a significant increase in sensitivity to violations of subject-verb agreement on the AJT. Indeed, the significant effect reported in the current DI study also showed a medium effect size (following Plonsky & Oswald, 2014), similar to the effect size reported in the original SA study (current study:  $d = .71$ ; Issa et al., 2020:  $d = .79$ ).

Turning to lexical development, as measured by the lexical-semantic condition of the AJT, our results partially align with Issa et al. (2020). Although we do not report a significant change, we see descriptive growth when comparing results from week 1 to those from week 6, with a small effect size (current study:  $d = .55$ ; Issa et al. advanced group:  $d = .68$ ). As for the LDT, although we are only able to report descriptive results for the current group due to data loss, the descriptive results are generally in line with those reported in Issa et al. (2020) insofar as we also see descriptive growth on this measure. This suggests that participants may have become more accurate at identifying words and non-words.

In terms of gains in global oral proficiency (as measured by the EIT), though not a primary research question in the Issa et al. study, the authors did

examine EIT score change and reported significant gains among the intermediate (but not the advanced) learners. Interestingly, although the present learner group has more in common with Issa et al.'s advanced group in terms of language background and experience (comprising learners who have self-selected to continue to study Spanish beyond university requirements), in terms of initial proficiency, the current learners fit somewhere between Issa et al.'s two groups. Specifically, DI participants' mean EIT score at week 1 of 54.3 (range 19-96) places them between the Issa et al. intermediate group (mean 27, range 13-50) and their advanced group (mean 72, range 45-111). The present results, then, extend the finding of significant increases in global oral proficiency to a somewhat higher intermediate-level group of learners participating in a short-term DI program.

### Programmatic Impact and Considerations

We consider that, taken together, the continuation rates and new enrollments in Spanish degrees reported here suggest an overall positive impact for the DI program. The continuation rate of 93% was markedly higher than the 52% reported in Miano et al. (2016). It should be noted, however, that the participants in the current study had already taken or placed out of required second-year Spanish courses and therefore likely had higher initial interest in language study, given that they were already enrolled beyond the basic language/required level. Although the relationship between participation in the DI program and continued language study does not necessarily indicate causation, students' continued interest in language study and the informal feedback offered to the program coordinator suggested an overall positive impact on their desire to continue formally studying Spanish. Moreover, this conclusion is bolstered by participant responses to a voluntary program feedback email solicitation sent to all 14 participants, which asked two questions: 1) What would you like to tell future students about this program? 2) What did you take away from your experience in this program? We received three responses, all of which indicated that students perceived that the value of the experience warranted the time and effort invested in the DI program. For example, one stated that "the program is a significant time commitment but that is why its [sic] so effective and worth it. Its [sic] fun, engaging, and great preparation for real-life use of the Spanish language (Student 1)." Other students perceived value in the opportunities to participate in authentic interactions with both their fellow students in the program and members of the Spanish-

speaking community in the region: “I loved being able to meet students from all different grade levels and different backgrounds and being able to bond through all the different activities!” (Student 2). “Its [sic] a great opportunity to experience the breadth of Hispanic culture in [name of city] and a great introduction to the socio-political complexity of the region” (Student 3).

It is noteworthy to consider several aspects which may be helpful for future DI programs. In terms of attrition, it is important to take into account that DI programs may imply a softer commitment as compared to SA, given that students often enroll in such programs through regular enrollment systems, which facilitate dropping classes even once the program has started. In general, SA programs require a stronger commitment as students need to book flights, make deposits, and make other preparations in advance. Although it is also common for a small number of students to withdraw from SA programs at the last minute, in the authors’ SA experience, attrition rates are not typically as high as those from the DI program (which in this case went from 22 initially enrolled to 15 who continued beyond the first day). In terms of budget, DI may not in fact be much less expensive than traditional SA programs, as tuition fees abroad are often lower than in domestic programs. However, as mentioned earlier, students may be able to maintain their work income in DI programs, something that is typically not possible in SA.

### Sustainability of DI

Even outside the context of a global pandemic, DI programs provide opportunities for a large population of students, promoting equity and access for language immersion experiences. At the institution where this program took place, a particular consideration has been the future sustainability of this immersion program during the anticipated future resurgence of traditional SA programs. In the spring of 2023, the DI program continued into its third year and a modest number of summer SA programs reopened enrollment; we saw no indications that that the DI program negatively impacted SA enrollment. In fact, students have frequently cited the DI program as a “first step” as they prepare to eventually enroll in SA. This suggests that the DI program may be serving a different underlying population than the traditional SA programs.

## Limitations

This study had several limitations. The modest sample size limits the extrapolation of results from the inferential statistical analyses. Both the sample size and the fact that all participants completed the immersion experience together also did not allow for separate analyses of intermediate- and advanced-level learners, as had been done in Issa et al. (2020). Finally, data loss prevented inferential analysis of the lexical decision task.

## Conclusion

The COVID-19 pandemic has resulted in the widespread closures of SA programs over the past several years. One option that institutions of higher education have for promoting immersion-type language learning in the current educational landscape is through DI programs. This exploratory study evaluated the impact of one such short-term DI program that was developed specifically to address the demand for Spanish L2 immersion education in the context of severely limited SA options. Specifically, we used a design based on Issa et al.'s (2020) recent study on L2 gains in short-term SA to evaluate Spanish language learning in DI. Notably, findings indicated that learners in the DI context aligned with SA students from Issa et al. (2020) in that they showed significant gains in receptive measures of subject-verb agreement as well as in performance on an EIT. DI in this study thus mirrored at least some of the learning gains associated with traditional short-term SA. We note, however, that the DI participants did not show the same L2 gains in gender agreement or lexical development as did the SA learners in Issa et al. (2020).

At the programmatic level, results suggest that short-term DI programs may have the potential to be effective tools for recruitment and retention of students in undergraduate language programs in university settings. DI programs may reach different populations of students as compared to traditional SA, implying a complementary (and not competitive) relationship between DI and SA. DI programs also have the potential to strengthen relationships between the institution and communities of L2 speakers in the region, facilitating the socio-local conditions that promote acquisition. Taken together, the findings of this study indicate that short-term DI programs at the university level are worth the investment.

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## Supporting Materials A: Co-Curricular Activities for the Immersion Program

1. A series of script writing workshops in conjunction with the recording of a short film and the celebration of a Goya ceremony (prizes included)
2. Movie screening and discussions
3. Yoga classes
4. Cooking workshops by chefs from local restaurants for the following dishes: arepas, tingas de pollo, gazpacho, and tortilla de patatas
5. Culturally focused presentation by Latinos members of the community
6. Virtual Reality: Jerez de la Frontera.
7. Art exhibitions by Latino members of the community
8. Salsa classes

## Supporting Materials B: Background Questionnaire

### \* Required

1. Participant Number \*
2. Date \*
3. Date of Birth \*
4. Gender \*

*Mark only one oval.*

- Male
- Female
- Transgender
- Prefer not to answer

5. Year in School \*
6. How many years of formal education do you have? \*  
(Include kindergarden through college/graduate school)
7. Are you a first-generation college student? \*  
*Please choose one.*
- Yes  
 No
8. Please mark the category/categories that best describe your ethnic background. \*  
*Check all that apply.*
- White, non-Hispanic  
 Black, non-Hispanic  
 Hispanic or Latino  
 American Indian, Eskimo, or Aleut  
 Asian or Pacific Islander  
Other:  \_\_\_\_\_
9. Please list all the languages you know or have studied in order of acquisition \*  
(Language 1, Language 2, etc)
10. Please list all the languages you know or have studied in order of dominance \*  
(Language 1, Language 2, etc)
11. Have you ever traveled to a Spanish-speaking country prior to this study? \*  
*Mark only one oval.*
- Yes  
 No
12. Duration of Travel

If yes, where, when (what age) and for how long? If multiple times, please describe (for example, 2 times to Mexico, 1 week each, ages 12 and 16)

13. Have you ever held residence in a Spanish-speaking country prior to this study? \*

*Mark only one oval.*

Yes

No

14. Duration of Residence

If yes, when (what age) and for how long?

Native Languages

This is any language you were completely fluent in as a child and are still completely fluent in now.

15. NATIVE LANGUAGE #1 \*
16. Age of Exposure to Native Language #1 \*
17. Place of exposure to Native Language #1 \*

*Check all that apply.*

Home

Other family

School

Work

Other:  \_\_\_\_\_

18. Proficiency in Native Language #1 \*

Please rate your proficiency of the following aspects of NATIVE LANGUAGE #1 on a 1-5 scale, where 1 indicates low proficiency and 5 indicates high, native- like proficiency.

Mark only one oval per row.

	1	2	3	4	5
Reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. For the following 3 items, please list the number of years and months you spent in each language environment:  
 A COUNTRY where Native Language #1 is spoken (number of years and months)
20. A FAMILY where Native Language #1 is spoken (number of years and months)
21. A SCHOOL and/ or WORK environment where Native Language #1 is spoken (number of years and months)
22. Comments about Native Language #1  
 Ex: My parents spoke German to me, but I've learned English since starting school.
23. NATIVE LANGUAGE #2
24. Age of Exposure to Native Language #2
25. Place of Exposure to Native Language #2

Check all that apply.

- Home
- Other Family
- School
- Work

Other:  \_\_\_\_\_

## 26. Proficiency in Native Language #2

Please rate your proficiency of the following aspects of NATIVE LANGUAGE #2 on a 1-5 scale, where 1 indicates low proficiency and 5 indicates high, native- like proficiency.

*Mark only one oval per row.*

	1	2	3	4	5
Reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## 27. For the following 3 items, please list the number of years and months you spent in each language environment:

A COUNTRY where Native Language #2 is spoken (number of years and months)

A FAMILY where Native Language #2 is spoken (number of years and months)

A SCHOOL and/ or WORK environment where Native Language #2 is spoken (number of years and months)

## 28. Comments about Native Language #2

Other Languages

What other languages do you know? Please include any language(s) other than your native language(s) that you have studied or learned either formally or informally. For each language, please include the information requested.

## 29. LANGUAGE #1 \*

## 30. Age of Exposure to Language #1 \*

31. In what situation did you learn Language #1? (Mark all that apply.) \*

*Check all that apply.*

Home

School

Work

Other:  \_\_\_\_\_

32. At what age were you most fluent in Language #1? \*

33. Proficiency in Language #1 \*

Please rate your proficiency of the following aspects of this language on a 1-5 scale, where 1 indicates low proficiency and 5 indicates high, native- like proficiency.

*Mark only one oval per row.*

	1	2	3	4	5
Speaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

34. In what contexts have you received formal instruction in Language #1? (high school, immersion program, etc.) \*

35. How many years of formal instruction in Language #1 have you had? \*

42.

A COUNTRY where Other Language #1 is spoken (number of years and months)

43. A FAMILY where Native Language #1 is spoken (number of years and months)



44. A SCHOOL and/ or WORK environment where Other Language #1 is spoken (number of years and months)
45. Comments about Other Language #1  
Ex: After high school, I lived in Paris for one year.
46. OTHER LANGUAGE #2
47. Age of Exposure to Other Language #2
48. In what situation did you learn Other Language #2? (Mark all that apply.)

*Check all that apply.*

Home

School

Work

Other:  \_\_\_\_\_

49. At what age were you most fluent in Other Language #2?
50. Proficiency in Other Language #2

Please rate your proficiency of the following aspects of this language on a 1-5 scale, where 1 indicates low proficiency and 5 indicates high, native- like proficiency.

*Mark only one oval per row.*

	1	2	3	4	5
Reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

51. In what contexts have you received formal instruction in Other Language #2? (high school, immersion program, etc.)

52. How many years of formal instruction in Other Language #2 have you had?  
A COUNTRY where Other Language #2 is spoken (number of years and months)  
A FAMILY where Other Language #2 is spoken (number of years and months)  
A SCHOOL or WORK environment where Other Language #2 is spoken (number of years and months)
54. Comments about Language #2
55. OTHER LANGUAGE #3
56. Age of Exposure to Other Language #3
57. In what situation did you learn Other Language #3? (Mark all that apply.)  
*Check all that apply.*
- Home  
 School  
 Work  
Other:  \_\_\_\_\_
58. At what age were you most fluent in Other Language #3?
59. Proficiency in Other Language #3  
Please rate your proficiency of the following aspects of this language on a 1-5 scale, where 1 indicates low proficiency and 5 indicates high, native- like proficiency.

*Mark only one oval per row.*

	1	2	3	4	5
Reading	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Writing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Speaking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understanding	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

60. In what contexts have you received formal instruction in Other Language #3? (high school, immersion program, etc.)
61. How many years of formal instruction in Other Language #3 have you had?

A COUNTRY where Other Language #3 is spoken (number of years and months)

A FAMILY where Other Language #3 is spoken (number of years and months)

A SCHOOL or WORK environment where Other Language #3 is spoken (number of years and months)

65. Comments about Other Language #3

## Supporting Materials C: Acceptability Judgment Task

TABLE (C1): ACCEPTABILITY JUDGMENT TASK VERSION 1

Item number	Sentence
4	The children eats ice cream.
5	The artist works in her studio every morning.
6	Alan wears matching rice in the summer.
7	Martin feeds his seven cat at night.
8	We love to practice Spanish.
11	Lupe lleva su blusa bonita.
12	Carmen se pone su vestido bonita.
13	Éster lleva su bufanda largo.
14	José lee su contrato largo en su oficina.
15	Soledad no hace su tarea aburrida los fines de semana.
16	Tomás escribe en su libro aburrida.
17	Maite prefiere llevar su bolsa pequeño.
18	Raúl lleva su regalo pequeño a la fiesta.
19	A Montse le gusta mucho su oficina blanca.
20	Irene limpia su plato blanca después de la cena.
21	Héctor tiene difiultad en subirse a su bicicleta alto.
22	Carmen guarda todo en su armario alto.
23	Yvette tira su bolsa vieja en la basura.
24	Maite le da su vestido vieja a su hermana.
25	Isabel compra su blusa caro en México.
26	Felipe lleva su anillo caro todos los días.
27	Luz no quiere hacer su tarea extensa.
28	Luigi trabaja en su contrato extensa hoy.
31	A David le gusta montar su bicicleta favorita.
32	Inés lee su libro favorita a los niños.
33	A Flor le encanta su oficina moderno.
34	Miguel va a vender su armario moderno.
37	La abrigo de Maite es elegante.
38	El abrigo de Felipe es de cuero.
39	Miguel quiere pintar la baño.
40	A Carmen no le gusta limpiar el baño.
41	Jaime limpia el casa cada día.
42	La casa de Luz está en la ciudad.
43	Tomás lleva la corbata con su traje.
44	A Ramón no le gusta el corbata.
45	Andrés trabaja en el escritorio.

- 46 A Inés le gusta la escritorio.
- 47 La falda de Montse es de lana.
- 48 El falda de Maribel le queda bien.
- 49 Lourdes siempre sigue el horario.
- 50 Es importante seguir la horario para evitar sorpresas.
- 51 Según Pilar la maleta funciona bien.
- 52 El maleta de Raúl es grande.
- 53 La mochila de Juan es muy útil.
- 54 El mochila de Raúl le sirve bien.
- 55 A Inés le gusta mucho la novela.
- 56 Según Inés el novela es muy interesante.
- 57 Flor lleva el sombrero cuando hace sol.
- 58 A Juan le fascina la sombrero de su abuelo.
- 59 La teléfono de que usa Carol funciona bien.
- 60 Miguel usa el teléfono y no el correo electrónico.
- 61 Isabel no quiere estudiar para la prueba.
- 62 Mateo va a tomar el prueba el jueves.
- 63 Ellos casi siempre comen arroz con su cena.
- 64 Mateo ve el arroz en el cielo.
- 65 Alfonso come sus cereales con azúcar y leche.
- 66 Samuel juega azúcar con su padre.
- 67 Mi mamá usa sus lentes para leer.
- 68 Maribel está frustrada porque tiene lentes en la escuela.
- 69 Mi esposo lleva su impermeable cuando llueve.  
Luca siempre pide impermeable cuando come en un restaurante elegante.
- 70
- 71 Hay muchos pájaros en el bosque cerca del lago.
- 72 Los señores Ruiz beben bosque con sus parientes.
- 73 Olivia juega fútbol con el equipo de su universidad.
- 74 Tenemos mucha comida en el equipo que está en casa.
- 75 Elena siempre lleva calcetines altos cuando hace frío.
- 76 Muchos animales viven en calcetines cerca de ríos y bosques.
- 77 La chica se seca el pelo con su toalla.
- 78 Mi abuela sólo come el pelo después de cenar.
- 79 Cuando comemos sopa ponemos cucharas y pan en la mesa.
- 80 La mujer sube las cucharas para hacer ejercicio.
- 81 El escultor crea una escultura cada mes.
- 82 El médico manda la escultura a la farmacia.
- 83 Lia se quita las sandalias cuando está en la playa.
- 84 El cocinero prepara sandalias para la cena.
- 85 El día de su boda la novia recibe un anillo.
- 86 El conejo come una boda todos los días.

87	El cocinero pone cebolla en la salsa de tomate.
88	Las mujeres van a cebolla para comprar sandalias.
89	Él bailan en la sala con su perro.
90	Ellas bailan el tango en la calle.
91	Él celebra el cumpleaños de su novia.
92	Todos mis amigos celebra conmigo.
93	La secretaria contestan el teléfono.
94	Ellos contestan las preguntas del policía.
95	Ella siempre esquía con su familia.
96	Cada invierno ellos esquía en las montañas.
97	Marisa estudian matemáticas porque quiere ser contadora.
98	Las chicas estudian español porque es una lengua hermosa.
99	Marta solamente habla francés con sus primos.
100	Ellos nunca habla inglés en la clase de español.
101	Elisa llegan tarde para la clase de química.
102	Ellas llegan pronto a la fiesta.
103	Juanita mira dibujos animados en la tele.
104	Las tías de Carla mira telenovelas.
105	Cada día Elisa nadan en el lago.
106	Todos los niños nadan en la piscina del vecino.
107	Cada noche Diego toca la guitarra.
108	Ellos toca muchos instrumentos en la banda.
109	Durante el fin de semana él lavan su coche.
110	Antes de comer ellas lavan las manos con jabón.
111	Mi compañero de cuarto canta en la ducha.
112	En la clase de alemán ellas canta canciones.
113	Cada verano él exploran un país nuevo.
114	Durante la primavera ellas exploran la ciudad juntas.

TABLE (C2): ACCEPTABILITY JUDGMENT TASK VERSION 2

Item number	Sentence
11	Lupe lleva su blusa bonito.
12	Carmen se pone su vestido bonito.
13	Éster lleva su bufanda larga.
14	José lee su contrato larga en su oficina.
15	Soledad no hace su tarea aburrido los fines de semana.
16	Tomás escribe en su libro aburrido.
17	Maite prefiere llevar su bolsa pequeña.
18	Raúl lleva su regalo pequeña a la fiesta.
19	A Montse le gusta mucho su oficina blanco.
20	Irene limpia su plato blanco después de la cena.
21	Hector tiene dificultad en subirse a su bicicleta alta.

22	Carmen guarda todo en su armario alta.
23	Yvette tira su bolsa viejo en la basura.
24	Maite le da su vestido viejo a su hermana.
25	Isabel compra su blusa cara en México.
26	Felipe lleva su anillo cara todos los días.
27	Luz no quiere hacer su tarea extenso.
28	Luigi trabaja en su contrato extenso hoy.
31	A David le gusta montar su bicicleta favorito.
32	Inés lee su libro favorito a los niños.
33	A Flor le encanta su oficina moderna.
34	Miguel va a vender su armario moderna.
35	Anabel quiere usar su plato culinaria.
36	Carlos quiere visitar su universidad culinaria.
37	El abrigo de Maite es elegante.
38	A Carmen no le gusta limpiar la baño.
39	Miguel quiere pintar el baño.
40	El casa de Luz está en la ciudad.
41	Jaime limpia la casa cada día.
42	Tomás lleva el corbata con su traje.
43	A Ramón no le gusta la corbata.
44	Lourdes siempre sigue la horario.
45	Según Pilar el maleta funciona bien.
46	A Inés le gusta el escritorio.
47	La falda de Maribel le queda bien.
48	Flor lleva la sombrero cuando hace sol.
49	El mochila de Juan es muy útil.
50	Es importante seguir el horario para evitar sorpresas.
51	La maleta de Raúl es grande.
52	Miguel usa la teléfono y no el correo electrónico.
53	La mochila de Raul le sirve bien.
54	La abrigo de Felipe es de cuero.
55	Según Inés la novela es muy interesante.
56	Andrés trabaja en la escritorio.
57	El falda de Montse es de lana.
58	A Juan le fascina el sombrero de su abuelo.
59	El teléfono de que usa Carol funciona bien.
60	A Inés le gusta mucho el novela.
61	Isabel no quiere estudiar para el prueba.
62	Mateo va a tomar la prueba el jueves.
63	Mateo ve el avión en el cielo.
64	Ellos casi siempre comen avión con su cena.

- 65 Samuel juega béisbol con su padre.
- 66 Alfonso toma su cereal con béisbol y leche.
- 67 Maribel está frustrada porque tiene problemas en la escuela.
- 68 Mi mamá usa sus problemas para leer.
- 69 Luca siempre pide pescado cuando come en un restaurante elegante.
- 70 Mi esposo lleva su pescado cuando llueve.
- 71 Los señores Ruiz beben vino con sus parientes.
- 72 Hay muchos pájaros en el vino cerca del lago.
- 73 Tenemos mucha comida en el refrigerador que está en casa.
- 74 Olivia juega fútbol con el refrigerador de su universidad.
- 75 Muchos animales viven en valles cerca de ríos y bosques.
- 76 Elena siempre lleva valles altos cuando hace frío.
- 77 Mi abuela sólo come el postre después de cenar.
- 78 La chica se seca el postre con su toalla.
- 79 La mujer sube las escaleras para hacer ejercicio.
- 80 Cuando comemos sopa ponemos escaleras y pan en la mesa.
- 81 El médico manda la receta a la farmacia.
- 82 El escultor crea una receta cada mes.
- 83 El cocinero prepara verduras para la cena.
- 84 Lia se quita las verduras cuando está en la playa.
- 85 El conejo come una zanahoria todos los días.
- 86 El día de su zanahoria la novia recibe un anillo.
- 87 Las mujeres van a la zapatería para comprar sandalias.
- 88 El cocinero pone zapatería en la salsa de tomate.
- 89 Él baila en la sala con su perro.
- 90 Ellas baila el tango en la calle.
- 91 Él celebran el cumpleaños de su novia.
- 92 Todos mis amigos celebran conmigo.
- 93 La secretaria contesta el teléfono.
- 94 Ellos contesta las preguntas del policía.
- 95 Ella siempre esquían con su familia.
- 96 Cada invierno ellos esquían en las montañas.
- 97 Marisa estudia matemáticas porque quiere ser contadora.
- 98 Las chicas estudia español porque es una lengua hermosa.
- 99 Marta solamente hablan francés con sus primos.
- 100 Ellos nunca hablan inglés en la clase de español.
- 101 Elisa llega tarde para la clase de química.
- 102 Ellas llega pronto a la fiesta.
- 103 Juanita miran dibujos animados en la tele.
- 104 Las tías de Carla miran telenovelas.
- 105 Cada día Elisa nada en el lago.



106	Todos los niños nada en la piscina del vecino.
107	Cada noche Diego tocan la guitarra.
108	Ellos tocan muchos instrumentos en la banda.
109	Durante el fin de semana él lava su coche.
110	Antes de comer ellas lava las manos con jabón.
111	Mi compañero de cuarto cantan en la ducha.
112	En la clase de alemán ellas cantan canciones.
113	Cada verano él explora un país nuevo.
114	Durante la primavera ellas explora la ciudad juntas.

## Supporting Materials D: Lexical Decision Task (LDT) Stimuli

Word	1=word; 0=nonword
risa	1
éxito	1
alegría	1
paz	1
cariño	1
beso	1
abrazo	1
belleza	1
salud	1
amistad	1
apoyo	1
fe	1
suerte	1
lealtad	1
placer	1
sonrisa	1
confianza	1
triumfo	1
acuerdo	1
certeza	1
falta	1
fracaso	1
odio	1
traición	1
pobreza	1
celos	1
lucha	1
dolor	1
enfermedad	1
rabia	1
daño	1

peligro	1
mentira	1
pérdida	1
engaño	1
duda	1
soledad	1
temor	1
riesgo	1
pereza	1
plata	1
cara	1
mesa	1
cuadro	1
edificio	1
ventana	1
ceniza	1
hielo	1
sol	1
pantalla	1
teclado	1
almohada	1
pared	1
cuero	1
dedo	1
revista	1
bandera	1
carta	1
espejo	1
madera	1
humo	1
bosque	1
sombra	1
rueda	1
nieve	1
miel	1
juguete	1
cerebro	1
fuego	1
vela	1
vidrio	1
reloj	1
rodilla	1
espalda	1
hombro	1
oreja	1
estrella	1
cartera	1
pierna	1
nube	1

rida	0
falud	0
suerse	0
triunto	0
cobicia	0
laño	0
buerte	0
besu	0
atistad	0
abrigo	0
solemad	0
edio	0
paída	0
apozo	0
gerdad	0
sérdida	0
licha	0
pobreta	0
delos	0
nolor	0
fol	0
lariño	0
melleza	0
priunfo	0
tucha	0
donrisa	0
falma	0
fracado	0
colfianza	0
montira	0
semor	0
angaño	0
lesa	0
meniza	0
panlalla	0
ventapa	0
renista	0
larta	0
peclado	0
sared	0
daja	0
prepio	0
almosada	0
tremio	0
espedo	0
madena	0
rumo	0
bolque	0
simbra	0

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ruefa	0
tiel	0
buguete	0
inla	0
suego	0
vula	0
eslada	0
rodima	0
tinsa	0
bollar	0
oneja	0
castera	0
lierna	0
nubu	0
carnel	0
plava	0
nielo	0
edicio	0
ruada	0
riengo	0
fracañó	0
duego	0
lombra	0
piersa	0
coniza	0
onio	0
ratia	0
relor	0
oreca	0
jidrio	0
esmalda	0
apoño	0

## Supporting Materials E: Elicited Imitation Task

TABLE (E1): ELICITED IMITATION TASK VERSION 1

Number	Prompt
1	Quiero comerme el huevo.
2	El pez está en la sala.
3	La tarea la tiene Carla.
4	Él se duerme por la tarde.
5	¿Qué dijo que iba a acabar hoy?
6	Dudo que sepan hablar Portugués.
7	Las casas de este país son muy grandes.
8	Puede que haga mucho calor esta noche.
9	Los coches son muy baratos pero feos.
10	Me gusta la comida que es saludable.
11	La chica con la que yo bailo es chilena.
12	Antes de correr me comí una manzana.
13	Quiero un coche en el que quepa mi familia.
14	A ellos les encantan los libros de romance.
15	Él siempre tiene hambre porque no sabe cocinar.
16	Me gustaría que el hijo de mi tía comiera.
17	Cruce la calle y después vaya a la derecha.
18	Él ha empezado a entrenar con sus amigos.
19	Me gustaría que el semestre terminara pronto.
20	El bebé al que se le cayó la manta tiene frío.
21	Una amiga mía va a la capital con sus sobrinos.
22	La princesa que era muy bonita fue rescatada.
23	Después de comer, siempre tiene que lavarse los dientes.
24	La cantidad de personas que votan ha incrementado.
25	Antes de poder salir de la casa busqué mis llaves.
26	El jefe al que atacó el empleado era gordo.
27	Le pedí a mi hermana que me ayudara en la casa.
28	El trabajo no fue tan fácil como me habían dicho.
29	¿Te importaría traerme el café que dejé en la cocina?
30	Hay muchas personas que se quedan en casa si nieva mucho.

**TABLE (E2): ELICITED IMITATION TASK VERSION 2**

<b>Number</b>	<b>Prompt</b>
1	Quiero cortarme el pelo
2	El libro está en la mesa
3	El carro lo tiene Pedro
4	El se ducha cada mañana
5	¿Qué dice usted que va a hacer hoy?
6	Dudo que sepa manejar muy bien
7	Las calles de esta ciudad son muy anchas
8	Puede que llueva mañana todo el día
9	Las casas son muy bonitas pero caras
10	Me gustan las películas que acaban bien
11	El chico con el que yo salgo es español
12	Después de cenar me fui a dormir tranquilo
13	Quiero una casa en la que vivan mis animales
14	A nosotros nos fascinan las fiestas grandiosas
15	Ella sólo bebe cerveza y no come nada
16	Me gustaría que el precio de las casas bajara
17	Cruza a la derecha y después sigue todo recto
18	Ella ha terminado de pintar su apartamento
19	Me gustaría que empezara a hacer más calor pronto
20	El niño al que se le murió el gato está triste
21	Una amiga mía cuida a los niños de mi vecino
22	El gato que era negro fue perseguido por el perro
23	Antes de poder salir él tiene que limpiar su cuarto
24	La cantidad de personas que fuman ha disminuido
25	Después de llegar a casa del trabajo tomé la cena
26	El ladrón al que atrapó la policía era famoso
27	Le pedí a un amigo que me ayudara con la tarea
28	El examen no fue tan difícil como me habían dicho
29	¿Serías tan amable de darme el libro que está en la mesa?
30	Hay mucha gente que no toma nada para el desayuno

## Author Biography

**Kara Moranski** (Ph.D., Temple University) is an Assistant Professor of Spanish Linguistics in the Department of Romance and Arabic Languages and Literatures at the University of Cincinnati. She uses her training in both applied linguistics and educational statistics to conduct curricular research, seeking to identify and enhance instructional methods that promote classroom language development, primarily but not limited to Spanish language education.

**Juan Godoy-Peñas** (Double Ph.D. Florida International University and Complutense University of Madrid) is an Assistant Professor Educator in Spanish, Coordinator of the Spanish basic language program, and Co-Director of the Spanish local immersion program at the University of Cincinnati. His work focuses on curriculum development, diversity, equity, and inclusion in second language teaching, and the role of technology in language classrooms.

**Bernard Issa** (Ph.D., University of Illinois at Chicago), is an Associate Professor of Spanish Linguistics at the University of Tennessee-Knoxville, specializing in second language acquisition. Bernard's research agenda examines how individual difference variables (e.g., motivation, attention, second language use, and working memory) relate to the learning and processing of second language grammar and he examines how those variables interact with learner external factors including instructional method and learning context (e.g., study abroad, domestic immersion).

**Mandy Faretta-Stutenberg** (Ph.D., University of Illinois at Chicago) is an Associate Professor and Spanish Basic Language Program Director in the Department of World Languages and Cultures at Northern Illinois University. Her research explores the role of individual differences in learner characteristics in explaining variability in linguistic development for learners in various learning contexts, such as study abroad, domestic immersion, classroom instruction, and various laboratory settings.

**Harriet Wood Bowden** (Ph.D., Georgetown University) is an Associate Professor of Spanish Linguistics at the University of Tennessee-Knoxville. Her research examines first, second, and heritage language acquisition and neurocognition. She is particularly interested in understanding the interaction of multiple learner-internal and external factors influencing language learning and neurocognition, including cognitive, pedagogical, and contextual (including study abroad vs. foreign language learning contexts).