

LEVERAGING SOCIAL MEDIA FOR SECOND LANGUAGE SPANISH PRONUNCIATION INSTRUCTION

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Broadly, research suggests that second language (L2) learners benefit from explicit pronunciation interventions (e.g., Kissling, 2013; Yoshida & Fukada, 2014); however, COVID-19 has impeded the teaching of various aspects of L2s (Yi & Jang, 2020), such as pronunciation. Twelve L1 English speakers from a U.S. college participated in two interventions via *Instagram* tutorials incorporating the IPA and articulatory features for instruction on the five vowels (/a,e,i,o,u/) and word-stress in Spanish (Lord, 2005). Tutorial presentation was counterbalanced between two participant groups. Participants recorded themselves reading a controlled, continuous speech task (Offerman & Olson, 2016), and ten tokens were analyzed in a pretest and posttest to assess changes in vowel and stress production. Tokens consisted of Spanish and English cognates (e.g., *color*), as these cognates are often pronounced with the vowel height, diphthongization, and word-stress of English, leading to differences that can impede intelligibility (Simões, 1996). Results were analyzed via a Likert scale rating of 1-5 (1=Non-native; 5=Native-like) by three native or native-like Spanish speakers, concluding that learners significantly improved their production of Spanish vowels with a slight trend for improvement in stress.

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INTRODUCTION

The current study explores explicit pronunciation instruction coupled with the use of a social media outlet, *Instagram*. This study explores the use of explicit methods utilized for the execution of two pronunciation interventions, recorded and uploaded as tutorials to *Instagram* for a first semester Spanish course. Incorporating the use of a social media platform for pronunciation instruction was motivated by challenges incurred by the COVID-19 pandemic with respect to L2 teaching (Yi & Jang, 2020). Detailed below is an overview of the practices and methods used for the pronunciation tutorials.

Explicit Pronunciation Instruction

Explicit pronunciation instruction has become one of the primary instructional approaches for teaching pronunciation, and research has shown that it leads to improved L2 production across varying L2s (Camus, 2019; Derwing & Munro, 2009; Kissling, 2013; Lord, 2005; Miller, 2012; Saito & Lyster, 2012; Yoshida & Fukada, 2014). One common practice is the inclusion of the International Phonetic Alphabet (IPA) as the focal point to teach L2 pronunciation. More specifically, with the incorporation of the IPA, learners are instructed to associate sounds in the L2 with IPA symbols rather than graphemes, allowing them to better understand place and manner of articulation (Lord, 2005; Lord, 2010; Miller, 2012; Sturm, 2013).

Another approach utilizes drills and repetitions, which have been shown to be beneficial to L2 learners (Offerman, 2020; Yoshida & Fukada, 2014), even though drills have been discouraged in the past. Within these studies, an instructor typically models a segment and participants are asked to repeat this segment in isolation. The instructor then models both a word and an utterance containing the target segment, with the participants additionally repeating the modeled word and utterance in a scaffolded exercise (Offerman, 2020). While various explicit pronunciation methods have been implemented in the past, the current study selected the two methodologies detailed above as the focus for the pronunciation interventions.

Features of Vowels & Stress in Spanish vs. English

Vowels

In American English, there are eleven vowels, as opposed to the five vowels in Spanish (Hammond, 2001). While Spanish has a five-vowel system that includes /a,e,i,o,u/, which are also found in English (Hammond, 2001; Lord, 2005), there are multiple differences to be considered when looking at vowels in Spanish vs. English. First, singularly written graphemes in Spanish correspond to one sound in Spanish and are never diphthongized as they sometimes are in English in a stressed position. For example, a common issue for L2 learners of Spanish is the tendency to diphthongize the vowels /i,e,o,u/ in the stressed position of a word as [i^y,e^y,o^w,u^w] (Hammond, 2001).

Additionally, multiple vowels contained in the American English vowel system are “reduced vowels” (lax vowels) and are utilized often to indicate unstressed vowels to highlight the contrast with a stressed vowel in English (Hammond, 2001). Spanish also contains stressed and unstressed vowels, but vowel reduction never occurs in any form for unstressed vowels in Spanish (Hammond, 2001). Therefore, there is a tendency for many L1 English speakers to implement vowel reduction in L2 Spanish, often realized as either /ə/ or /ɪ/ (Flege & Bohn, 1989; Hammond, 2001), which can cause ambiguity with respect to which vowel is being produced in Spanish if L2 learners transfer these phonological patterns of their L1 to L2 Spanish.

Stress

Stress patterns in Spanish follow three rules: (1) if a word ends in a vowel or with the graphemes “n” or “s”, the stress falls on the penultimate syllable; (2) if a word ends in any other consonant besides “n” or “s”, the stress falls on the final syllable; (3) if a word carries an orthographic accent mark, or *tilde*, then stress is carried within this vowel where the *tilde* appears (Hammond, 2001). Since American English does not share this same set of word-stress parameters, it can be challenging for L2 learners of Spanish to produce a variety of words, especially cognates, without applying American English stress patterns (which can vary greatly) (Hammarberg, 1993).

L2 Teaching during COVID-19 & Social Media

The pandemic forced many changes in language education and became a point of concern since L2 instruction typically takes place in a traditional, face-to-face, classroom setting. Issues of student engagement and consequential acquisition of speaking skills have been at the center of this discussion, with acknowledgement that certain aspects of language learning are either lost or

become increasingly difficult to be facilitated through L2 instruction (Crawford et al., 2020). Yi & Jang (2020) reported on one practice that mitigated these concerns: an increased dependence on translanguaging, with language teachers being more willing to switch between the L1 and the L2, resulting in L2 learners relying more heavily on their L1. In response, multiple educators have utilized well-made, supplemental videos so that students can practice and learn L2 structures asynchronously and outside of the regularly afforded class time to provide increased L2 input opportunities.

As few studies have investigated L2 pronunciation instruction through an online setting (Inceoglu, 2019; Martin, 2020), the necessity for online materials has become more crucial due to COVID-19 (Yi & Jang, 2020). Videos and online tutorials have become a useful tool for teaching pronunciation (Fukada, 2013), with one study advocating for the use of the social media platform *Instagram* (Malik, 2019), in which L2 learners can easily access video content to practice and develop their L2 pronunciation. With possible further COVID-19 restrictions for teaching, as well as a continued demand for online resources, the use of videos and social media platforms provide more support for the accessibility and creation of online materials for L2 learning goals.

Research Questions

The following research questions have been proposed:

RQ1: Can a vowel pronunciation intervention via *Instagram* improve L2 learners' pronunciation of cognates in Spanish?

RQ2: Can a word-stress intervention via *Instagram* improve L2 learners' pronunciation of cognates in Spanish?

METHODOLOGY

Participants

All participants were L1 American English speakers, with a novice-level of Spanish, enrolled at a small, liberal arts college. Each participant was between the ages of 18 and 21, with access to an existing, active account on *Instagram*. A language background questionnaire, based on the Bilingual Language Profile (Birdsong et al., 2012), was distributed, including questions regarding years of exposure to Spanish, age of exposure, and using limited to no Spanish outside of the classroom setting. Novice-level (1st semester) proficiency in Spanish was determined by either a standard placement test provided by the college or by participants not having taken a Spanish course nor having exposure to Spanish prior to enrollment in the course.

Participants in this study ($N=12$) were split evenly into two groups, Group A ($N = 6$) and Group B ($N = 6$), and group assignment was random. Group A was presented with the first tutorial, *vowels*, and Group B was first presented with the tutorial, *stress*. One week later, Group A was presented with the *stress* tutorial, while Group B was presented with the *vowel* tutorial to counterbalance the presentation of tutorials and ensure that presentation order of the tutorials was not a factor. The tutorials consisted of roughly 10 minutes of explanation taught by two, near-native Spanish speakers. The content, curriculum, instructor, and treatments were the same for each group of participants.

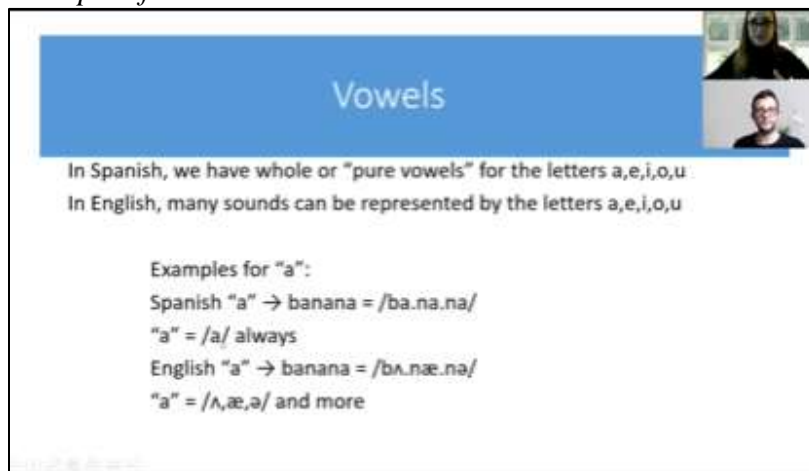
Instagram was selected for the video tutorial access, as it is a free and reported as one of the most popular social media platforms for individuals between the ages of 18 and 29 (Berti, 2020). Additionally, participants indicated that they engaged with *Instagram* daily and that they regularly engaged with video content through this platform. Each participant was provided with the account information for the tutorials and was asked to inform their instructor if they encountered any issues. No participant reported access issues, and participants accessed the tutorials via the “follow” function on the tutorial account, verified by the instructor.

Treatment

The vowel tutorial explained the IPA and the place and manner of articulation for the five Spanish vowels, /a,e,i,o,u/. Learners were told that, in Spanish, these vowels are considered “pure vowels” (Lord, 2005), meaning that the pronunciation of these is never produced with diphthongization or reduction of vowels if they occur in CVC, VC, or CV order (Hammond, 2001). Furthermore, contrasts of sounds in English were given as examples to show the contrast in pronunciation, with vowels such as /æ/ or /ə/, which do not exist in Spanish (Hammond, 2001). Examples such as *banana* (banana) and *crisis* (crisis) were provided as samples to compare and contrast differences. Moreover, participants were then presented cognates in Spanish to utilize for practice in isolation as a drill exercise, followed by the same sample words within a sentence. Figure 1 below shows an example of the treatment.

Figure 1

Example of vowel tutorial



The image is a screenshot of a video tutorial slide. At the top, there is a blue header with the word "Vowels" in white. Below the header, there are two lines of text: "In Spanish, we have whole or 'pure vowels' for the letters a,e,i,o,u" and "In English, many sounds can be represented by the letters a,e,i,o,u". Below this, there are examples for the letter "a": "Examples for 'a':", "Spanish 'a' → banana = /ba.na.na/", "'a' = /a/ always", "English 'a' → banana = /bʌ.næ.na/", and "'a' = /ʌ,æ,ə/ and more". In the top right corner, there are two small video thumbnails showing a woman and a man.

With respect to the tutorial on word-stress, a similar approach was used by first presenting patterns of stress in Spanish, followed by comparisons in Spanish and English (see sub-section *Stress*). Cognates that carry the stress on different syllables in English were provided as examples of contrast, such as *información* (information) and *energía* (energy). Figure 2 below provides an example from the tutorial.

Figure 2

Sample of stress tutorial



Instrument

Prior to all tutorial viewings and as a pretest, participants recorded a short story in the form of a paragraph, containing 10 different tokens (a method utilized in Offerman & Olson, 2016). This same short story was recorded by participants two weeks after viewing the last tutorial as the posttest. Each token was balanced for type of stress and number of syllables, containing a variety of vowels within each token, as can be seen below in Table 1. Worth noting is that none of the tokens in the tutorials or the short story were the same.

Table 1

Tokens Embedded in the Short Story Task

Spanish	English
<i>doctor</i>	doctor
<i>hospital</i>	hospital
<i>general</i>	general
<i>común</i>	common
<i>tolerante</i>	tolerant
<i>chocolate</i>	chocolate
<i>terrible</i>	terrible
<i>color</i>	color
<i>melón</i>	melon
<i>probable</i>	probable

Ratings and Inter-rater Reliability

Three raters listened to both the pretests and posttests of each participant, rating the oral production of the subjects from 1-5 (1=Non-native; 5=Native-like) (Levis & Sonsaat, 2020). Raters were 30-40 years of age, consisting of two females and one male, with one rater being the instructor; one rater was a native Spanish speaker and two were native-like (extensive experience with Spanish of

15+ years) Spanish speakers. Raters were provided with the recordings for each participant from the pretest and posttest in a random order. When conducting a study with raters, it is important to note how strongly ratings agree in order to account for potential biases. First, a Spearman's *rho* (correlation) (Plonsky & Derrick, 2016) was performed to test for inter-rater reliability. The results showed that raters A + B had a positive correlation of .148 ($p < .05$) and raters A + C had a stronger positive correlation of .491 ($p < .01$), both statistically significant, while raters B + C had a positive correlation that was not statistically significant. It is difficult for raters to agree 100 percent on judgements; however, it was not ultimately clear why rater B exhibited differences.

RESULTS & ANALYSES

The 12 participants produced 10 tokens at both the pretest and the posttest, resulting in a total of 240 tokens. Of these 240 tokens, 20 (8.3%) were eliminated from the final analysis for recording errors or issues (e.g., background noise or not completing the entirety of a task). For each of the following analyses, a mixed-effects model was run evaluating the ratings for each token by each rater. Further, the lme4 package (Bates et al., 2014) was used to conduct all mixed-effect models. For the mixed-effects model, *time* (pretest or posttest) as well as *group* (Group A and Group B) were included as fixed effects, while *participant* (subject) and *rater* (item) were set as random effects with random intercepts. Effect sizes were also calculated for all groups to assess the magnitude of effect utilizing Cohen's *d*. Following the model of Plonsky and Oswald (2014), the criteria for a *d* value is set at: small = 0.40, medium = 0.70, and large = 1.00.

Vowels

For the vowels, a mixed-effects model was conducted to determine (1) if groups were well-matched at the pretest, and (2) if any group(s) individually made significant improvement from pretest to posttest. In assessing these, observance of the *t* value is crucial; the significance criterion was set at $|t| > 2.00$.

Results of the initial model (Table 2) indicated that there were no significant differences in the groups at the pretest. Considering the effect of time, the results demonstrate that there was a significant interaction for Group A at the posttest (with Group A set as the intercept), such that there was a significant difference between the intercept (pretest) and the posttest. These results can be seen in Table 2 below.

Table 2

Results for Vowels

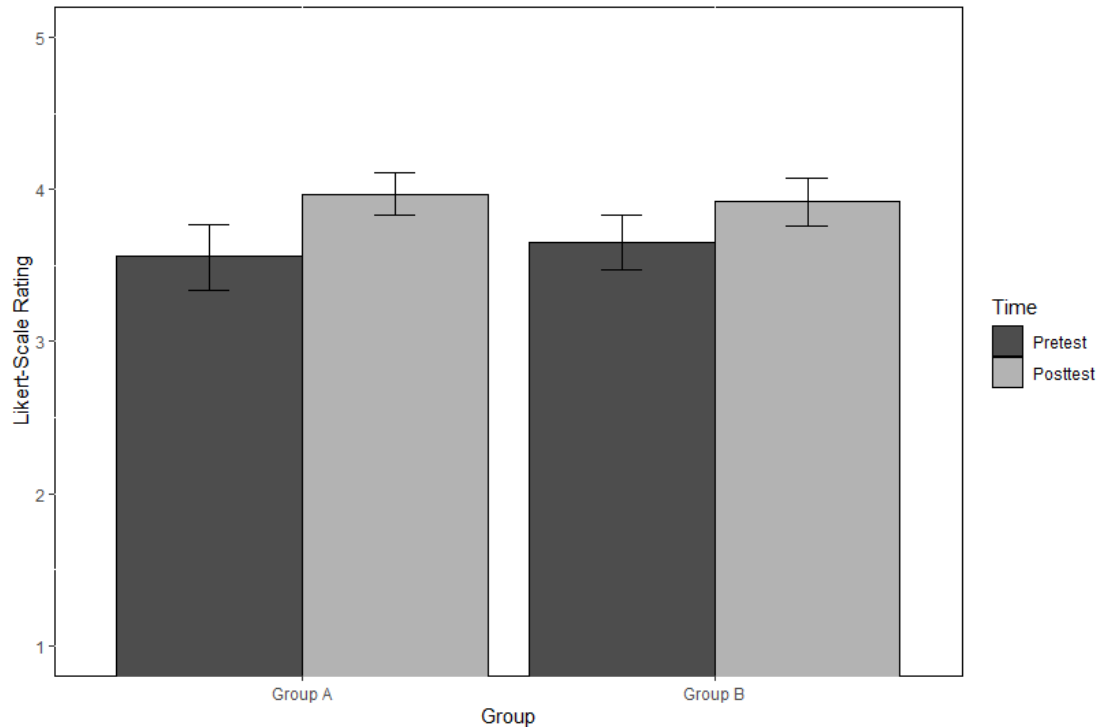
Parameters	β	<i>SE</i>	95% <i>CI</i>	<i>t</i>	<i>d</i>
Intercept (Pre: Gr. A)	3.648	0.308	[2.707, 4.590]	11.838	-
Gr. B	-0.086	0.217	[2.495, 4.628]	-0.398	0.069
Posttest: Gr. A	0.271	0.114	[3.132, 4.707]	2.383	0.250
Posttest: Gr. B	0.136	0.161	[3.169, 4.769]	0.842	0.294

With Group B at the pretest set as the intercept, another significant interaction was found with respect to time, as Group B also demonstrated significant improvement ($t = 2.833$). Moreover,

there appeared to be no significant interaction between Groups A and B at the posttest (Group A at the posttest set as the intercept with Group B at the posttest: $t = 0.227$), indicating that neither group outperformed each other at the posttest. The results are additionally displayed below, in Figure 3.

Figure 3

Likert-scale ratings by group and time for vowels



Stress

As with the vowels, a mixed-effects model was conducted for the stress ratings to determine (1) if groups were well-matched at the pretest, and (2) if any group(s) individually made significant improvement from pretest to posttest. Results show (Table 3) that there were no significant differences in the groups at the pretest. Observing the effect of time, no significant improvement is found from pretest to posttest for either group. These results can be seen in Table 3 below.

Table 3

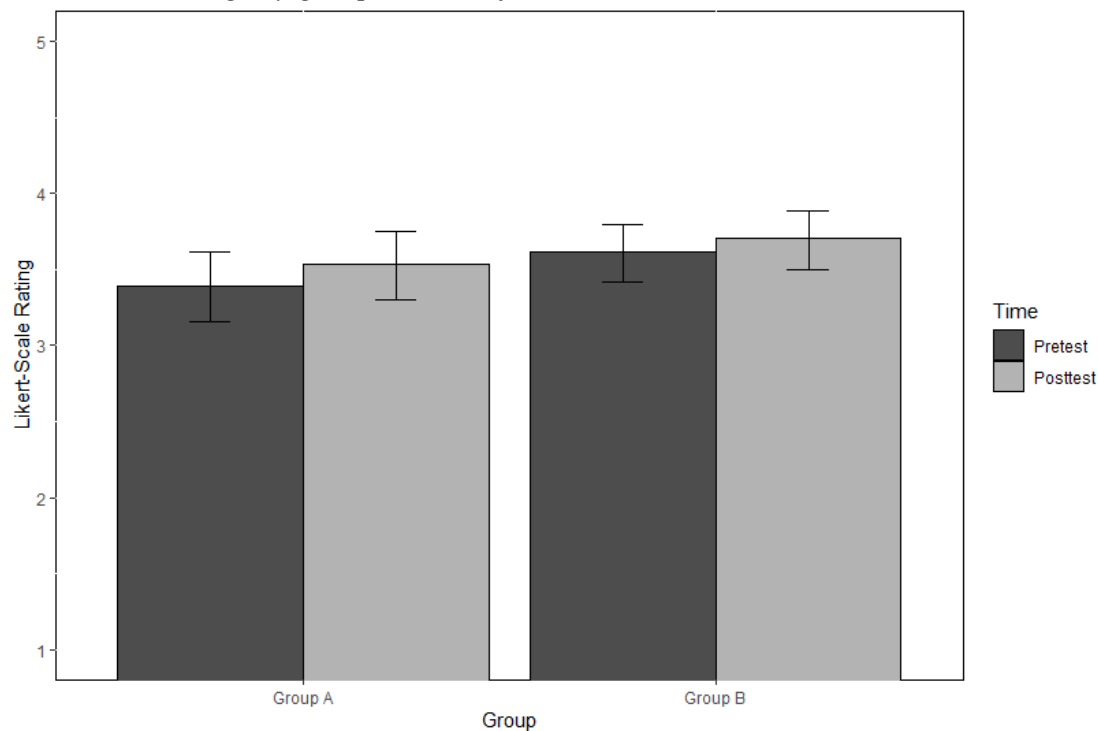
Results for Stress

Parameters	β	SE	95% CI	t	d
Intercept (Pre: Gr. A)	3.611	0.256	[2.707, 4.590]	14.090	-
Gr. B	-0.222	0.310	[2.495, 4.628]	-0.718	0.069
Posttest: Gr. A	0.093	0.145	[3.132, 4.707]	0.637	0.250
Posttest: Gr. B	0.0494	0.205	[3.169, 4.769]	0.240	0.294

With Group B at the pretest set as the intercept, no significant interaction was found with respect to time ($t = 0.977$). Moreover, there appeared to be no significant interaction between Groups A and B at the posttest (Group A at the posttest set as the intercept compared with Group B at the posttest: $t = -0.558$), indicating that, once again, neither group outperformed the other. These results are displayed below in Figure 4.

Figure 4

Likert-scale ratings by group and time for stress



DISCUSSION

Pedagogical Implications

The results provide evidence that interventions, similar in structure and execution to the ones in this study, aid in the improvement of L2 pronunciation for beginning level students in terms of Spanish vowel quality. However, stress, which is usually more difficult to learn and acquire (Romanelli & Menegotto, 2015), may need more immediate feedback and multiple repetitions to show significant improvement, although trends towards improvement can be observed. Given that social media is part of many language learners' lives (Berti, 2020; Stieger & Lewetz, 2018) and has been used previously for L2 teaching and materials development (Malik & Asnur, 2019; Reinardt, 2019), it would be a missed opportunity to eschew the platform as a language learning tool.

Further, adapting to the world of social media, it is possible to create short tutorials that both enhance the classroom mode of learning and also in building community where students can have

a sense of shared experience that brings language learning into their daily lives beyond the classroom. COVID-19 caused many language courses to adapt to an online platform, which limited the execution of certain instructional practices, such as pronunciation practice. As a supplemental tool, online video tutorials can bridge the gap that is often evident in language classes that are all or partly online.

Future Directions & Limitations

Though this study used cognates to provide students with practices to differentiate more intentionally between English and Spanish pronunciation, it would be of interest to conduct a study with the same parameters, differing in the testing of cognates against non-cognates and examining similarities and/or contrasts with respect to improvement. Perhaps the lack of familiarity of non-cognates would allow learners to pronounce their L2 more easily based on the rules they learn without succumbing to L1 influence (Flege, 1987).

Moreover, it would be worth conducting this study with the same parameters, but instead of only one intervention per feature (vowels and stress), multiple interventions would be conducted throughout a longer period to examine whether learners are able to produce more target-like stress patterns. Additionally, the same set of tokens could be tested again, but expanding the group of test tokens and elicitation tasks would provide a larger data set for a more robust study, while also informing which vowels, if any, appear to be more problematic for L2 learners and in what contexts.

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APPENDIX

Appendix A

Controlled, Continuous Speech Task

“El **doctor** entra en el **hospital** y tiene muchos pacientes hoy. En **general**, es un día **común** para él – hay gente con fiebre, con huesos rotos, y dolores de cabeza. Pero este día, algo raro pasa. Entra en el hospital un paciente un poco distinto. No es **tolerante** al **chocolate** y ha comido mucho. Ahora se siente **terrible**. El paciente tiene un **color** raro y parece un **melón**. Es **probable** que tenga alergia.”