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MORE, BETTER, EARLIER: DEVELOPING TARGETED LINGUISTICS STRATEGIES FOR SPANISH PRONUNCIATION

Dr. Jordan Sandoval, Western Washington University
Dr. Kirsten Drickey, Western Washington University
Nancy Brill, Western Washington University
Brahm vanWoerden, Western Washington University

Intermediate-level Spanish language classes focus primarily on developing vocabulary, core grammatical concepts, and awareness of cultural patterns. Consequently, instructors focus on syntactic and morphological aspects of the target language while neglecting explicit phonological instruction or relegating this to upper-division courses, where students arrive with fossilized L1-influenced production patterns that hinder their ability to effectively communicate with native speakers. We believe that these deficits are preventable with earlier intervention, and have thus created curricular components that give intermediate-level Spanish students explicit phonological training earlier in their study of the language. We have piloted these modules in intermediate-level Spanish classes at a medium-sized public institution in the Pacific Northwest and report improvements in students' understanding of English transfer features as well as increased confidence assessing their own productions and using Spanish outside the classroom.

INTRODUCTION

Not unlike many undergraduate programs, the beginner and intermediate Spanish language courses at the university in our study emphasize building active vocabulary and familiarity with common grammar structures, while advanced courses focus on writing, literature, and culture. Although students and professors alike express a desire for students to achieve native-like production and perception abilities, the lack of accessible pedagogical tools for teaching pronunciation at the intermediate level impedes this goal. By the time students reach upper-division courses with targeted instruction in phonetics, they have fossilized L1 transfer errors that are difficult to perceive and correct.

In a faculty-led assessment carried out in an advanced phonetics course taught for Spanish majors, students reported little awareness of key phonological differences between Spanish and English and demonstrated English transfer features hindering their production and perception of native-like Spanish speech. Moreover, students reported a lack of confidence in their ability to use Spanish outside of the classroom, citing difficulties communicating with native Spanish speakers. After just 10 weeks of instruction on Spanish phonetics, however, student recordings showed reduced English interference, suggesting that even brief explicit training on these features can improve student productions. Given that most of the students in the initial assessment were taking the phonetics course near the end of their academic career, we designed this project to create curricular materials to intervene at a much earlier point in students' study of Spanish.

This paper provides examples of curricular materials that can be incorporated into intermediate-level language courses to give students early phonological training. We have piloted these

materials in intermediate-level Spanish courses and report on improvements in students' understanding of the causes and effects of English transfer features, as well as improvements in students' confidence in their ability to interact with and produce native-like Spanish speech.

LITERATURE REVIEW

Our curriculum builds on various existing models for second-language learning in several key ways. Flege's Speech Learning Model (SLM) proposes that learners of an L2 can be trained to recognize phonetic and phonological distinctions in the L2 and that learners' accurate production of L2 sounds correlates to their perceptual representation of those sounds (Flege, 2005). To focus on reshaping students' representations of Spanish sounds, our curriculum emphasizes perceptual training regarding English transfer features in Spanish speech to strengthen students' ability to recognize these features in their own productions.

Numerous existing studies indicate that phonological training in various forms leads L2 learners to increasingly native-like productions. In a study of upper-division university students enrolled in a Spanish phonetics course, Lord (2005) reports statistically significant gains in production accuracy for the vibrant trill, the approximants /β, ð, ɣ/, and diphthongs across word boundaries, as well as post-test VOT values not differing significantly from those of native speakers. Likewise, Camus-Oyarzún (2016) finds significant reduction in VOT for the voiceless plosives among English speaking university students of various levels after 12 weeks of phonological training. Elliot (1995) reports similar findings, demonstrating that students who received phonetics instruction more accurately produced Spanish phonemes than their peers who lacked this instruction.

Looking at effects beyond the segmental level, Camus-Oyarzún (2016) also reports significantly reduced accentedness scores for students having undergone phonological instruction, as assigned by native speakers rating student productions from a paragraph reading task. Derwing and Munro (2005), and Venkatagiri and Levis (2007) produce similar conclusions with respect to speech comprehensibility, indicating that pronunciation instruction increases learners' comprehensibility in the L2.

While these studies in the existing literature provide promising evidence in terms of the effectiveness of phonological instruction in helping L2 learners achieve more native-like productions, less research exists that specifically addresses the effects of this instruction in terms of changes in student confidence and students' ability to self-assess and practice their L2 productions. In investigating various factors affecting L2 production accuracy, Elliot (1995) and Nagle (2018) each report that students' motivations and attitudes towards pronunciation instruction are significant predictors of their success in achieving native-like fluency. Their findings suggest that students with positive attitudes towards their learning and progress typically have more success in acquiring L2 phonology, while those who view achieving native-like fluency as unattainable typically did not make significant gains in their production accuracy. These findings support the idea that increasing student confidence in their L2 abilities has the potential to better their productions. Furthermore, a number of studies report that learner's anxiety or confidence in the L2 correlates to their production accuracy, with speakers who report high anxiety and low confidence demonstrating less native-like productions (Park & Lee, 2005; Osboe et al., 2007).

Based on these findings, the present study aims to improve students' confidence and ability to self-assess and practice their L2 productions through the use of explicit phonological instruction.

In many language classrooms, students receive various forms of oral L2 input—instructor speech, music, movies, and the like—but without explicit attention to the phonological features of the L2 and how they differ from the L1. Students are expected to perceive and reproduce these patterns without explicit instruction as to what they are. We hope that beginning explicit pronunciation instruction earlier in students' study of Spanish strengthens their confidence in their ability to improve their productions and interact with native Spanish speakers.

The curriculum we have developed offers explicit instruction in phonetics and phonology and provides students with concrete ways to measure and improve their Spanish productions. This begins with a comparison of the vowel spaces of each language, moves on to consonants, and finally dives into suprasegmental features such as stress, syllabification, and regional variation. Students work through online instructional materials that include descriptions and comparisons of phonological patterns in English and Spanish; perception tasks designed to demonstrate and apply those patterns; and, finally, production tasks that allow students to apply these concepts and assess their own pronunciation. These online materials are supplemented with hands-on training in a computer lab, facilitated by undergraduate student assistants in coordination with the faculty supervisors.

This paper reviews the effects of this explicit phonological instruction as it pertains to students' confidence in their L2 abilities. To explore these effects, a sample of students enrolled in an intermediate-level Spanish course recorded themselves reading aloud a paragraph in Spanish before and after undergoing 10 weeks of phonological instruction. Students were asked to analyze their recordings from the start and close of the term, as well as reflect on how the phonological instruction changed their awareness of English transfer features and their confidence interacting with Spanish outside the classroom.

Research Questions

1. Can early, explicit linguistic instruction in phonetics and phonology help language students understand and identify English-influenced transfer features in Spanish speech?
2. Will these interventions result in increased confidence using Spanish and an increased willingness to practice independently?

METHODS

Participants

30 students enrolled in an intermediate-level Spanish course at a medium-sized public institution in the Pacific Northwest, predominantly from English language backgrounds, constituted the participant pool for this study.

Materials

Materials for this project consist of online modules introducing and contrasting the phonetic and phonological systems of Spanish and English. These materials incorporate perception activities training students to recognize English transfer in Spanish speech as well as production activities prompting students to analyze their own pronunciation. The goal of these materials is to give students the tools to understand and identify English transfer in Spanish speech. In doing so, we hope to increase student confidence in their L2 abilities by making explicit the production patterns often solely addressed implicitly. The curriculum begins with instruction on the Spanish vowel inventory, moves to consonants, and ends with instruction on stress, syllabification, and regional variation. Instruction begins with the Spanish vowel system, as English transfer features with respect to vowels, the use of the schwa in particular, were determined by the instructor and researchers to cause the greatest problems in students' comprehensibility and accentedness. Furthermore, beginning instruction with segmental features allows students to practice their perception and production skills with smaller, discrete units of language before continuing on to suprasegmental features and practice at the phrasal level. This approach is motivated by the Elaboration Theory (Riegeluth & Stein, 1983). Though suprasegmentals have historically been the focus of L2 pronunciation instruction, some findings suggest a need to shift this focus, citing lower importance of suprasegmentals for communicative effectiveness as well as L2 learners' difficulty in learning specific suprasegmental features (Jenkins, 2000; Levis, 1999; Pennington & Ellis, 2000). Findings from a study investigating the ability of L1-Spanish learners of English to perceive the schwa phoneme suggest that focusing instruction on smaller units of language (in this study, lexical items) leads to gains in perception accuracy both at the smaller, lexical level, and at the larger, phrasal level (Gómez Lacabex et al., 2009).

Modules begin with a description of the phonological feature in question and include visual aids and audio contrasting English-influenced Spanish productions and native-speaker productions. Figure 1 below shows a sample text given to students; it introduces the Spanish vowel system, including images of the vowel space in Spanish and its English counterpart, along with audio clips of each of the five Spanish vowels in isolation and in words.

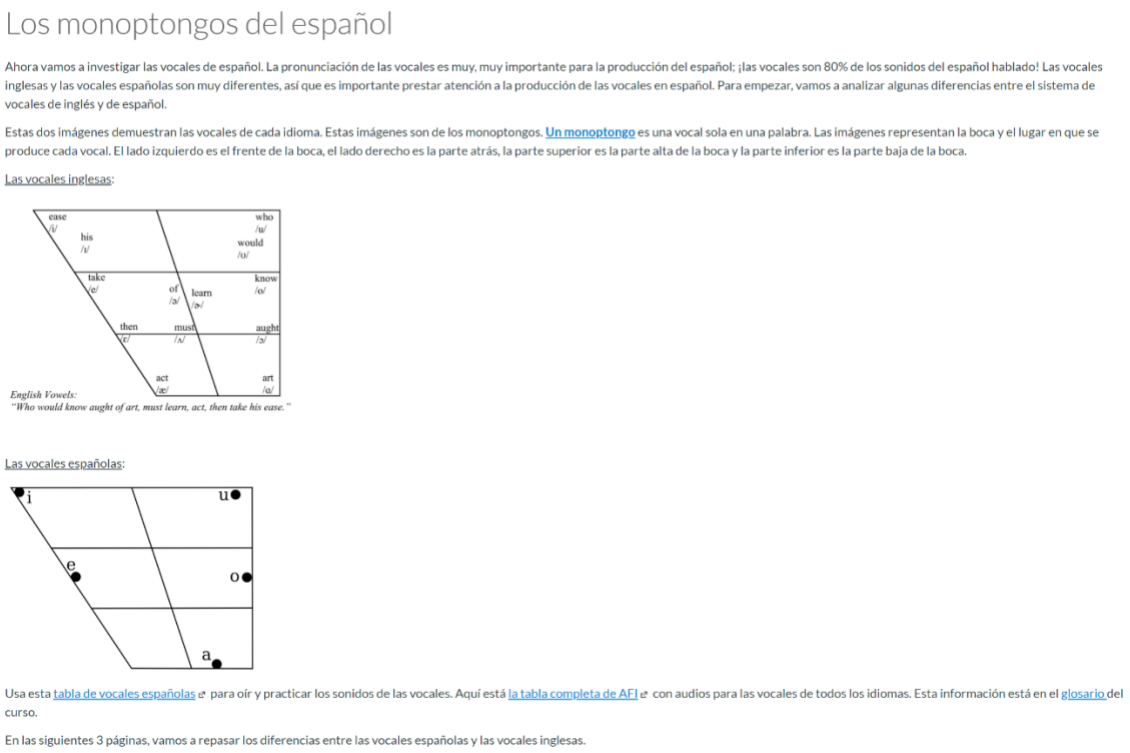

Figure 1. Canvas page introducing English/Spanish vowel system.

Students then receive explicit instruction regarding common English transfer features that mark the speech of Spanish learners as non-native. Figure 2 below illustrates a sample module in which students learn about the off-gliding of Spanish monophthongs, described here as 'vowel stability,' a characteristic common in the speech of Spanish students from an English L1 background. Embedded in this module are audio clips contrasting English-like productions of Spanish words with native-speaker productions of those same words. Following these materials is a perception quiz which tests students' ability to recognize the presence or absence of English transfer in the production of Spanish words (Figure 3).

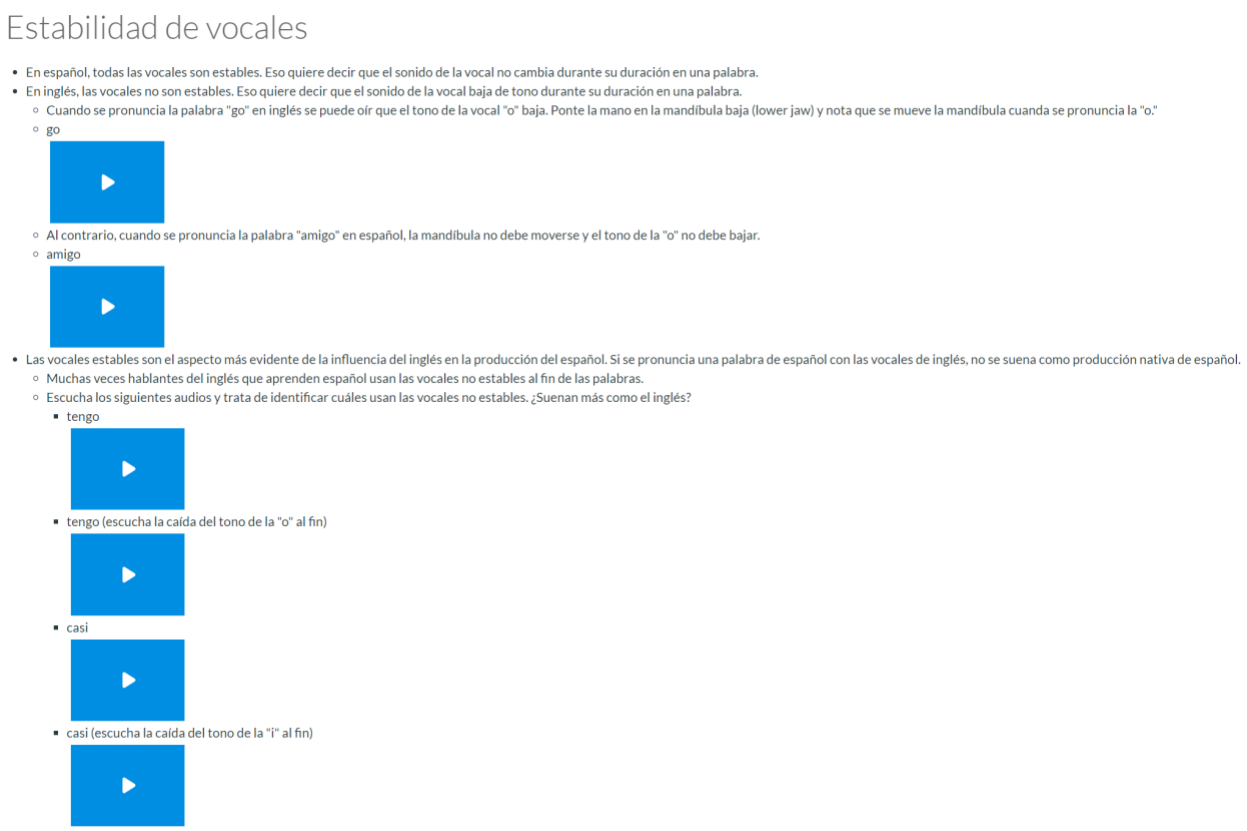

Figure 2. Canvas page describing vowel stability (off-gliding) in Spanish and English.

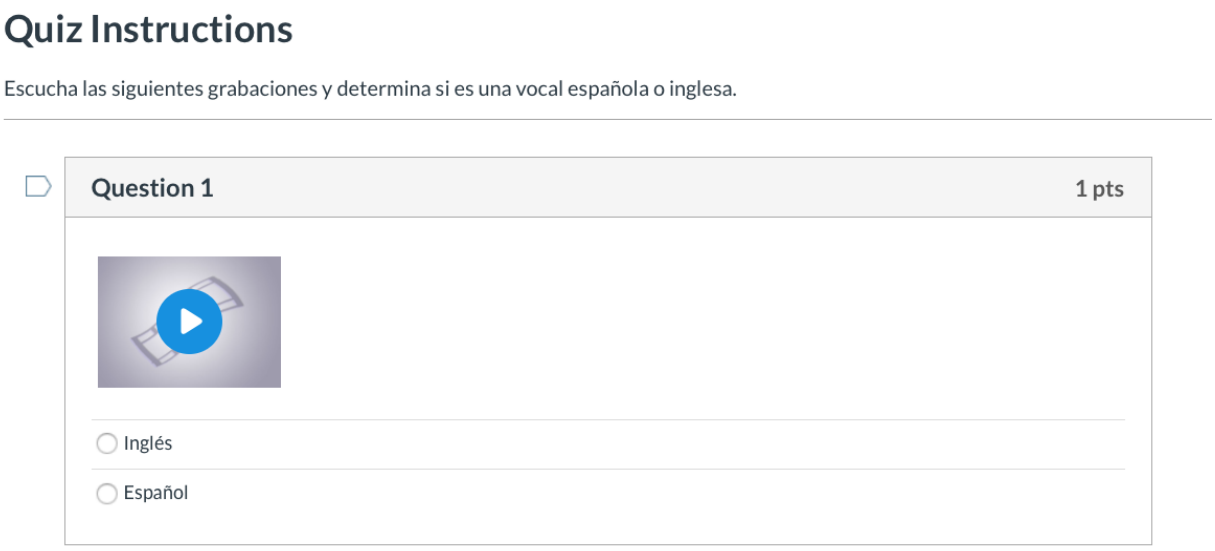

Figure 3. Sample question in which students are asked to identify productions as showing a presence or absence of English influence with respect to vowels.

In conjunction with these online materials, students also receive classroom instruction from upper-division Spanish and Linguistics students during which time they are able to practice and analyze their own Spanish productions. Students are introduced to Praat (Boersma & Weenink, 2018) and taught how to read and use spectrograms to analyze their own production of Spanish vowels and compare them to those of native speakers. Figures 4a and 4b below show spectrograms generated for the word *amigo,* one from an English speaker, demonstrating the off-gliding of the final vowel /o/ (Figure 4a), and the other from a native Spanish speaker (Figure 4b). These are used to show students visually how English transfer features affect Spanish productions. This capacity for visual analysis allows students to interpret and refine their errors more fully than if they were restricted to audio. Comparisons can be made quickly and directly, with precise, visual evidence for the differences between productions. The use of technology for visual feedback in L2 pronunciation instruction has been a topic of growing popularity, with a number of studies reporting positive effects (Reed & Liu, 2019; Inceoglu, 2019).

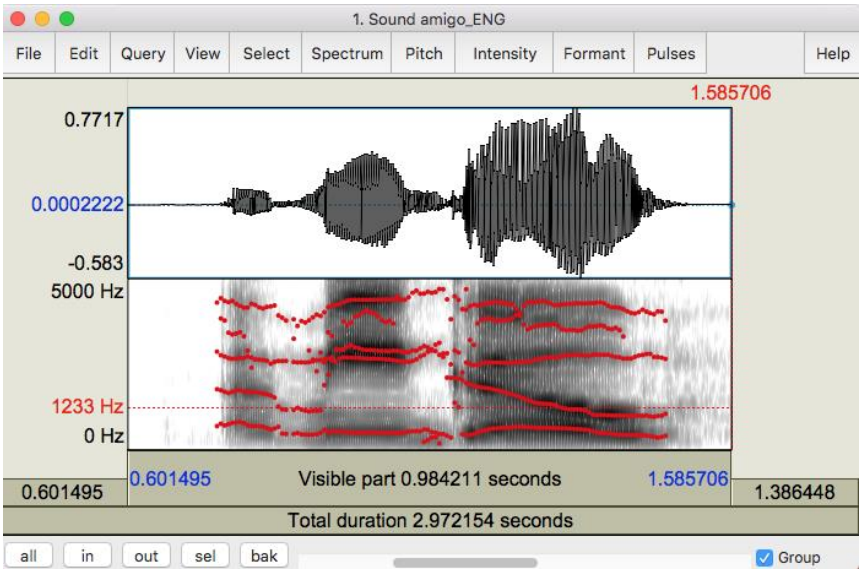

Figure 4a. Spectrogram showing production of the word *amigo,* read by a native English speaker and showing the off-gliding of the final vowel /o/.

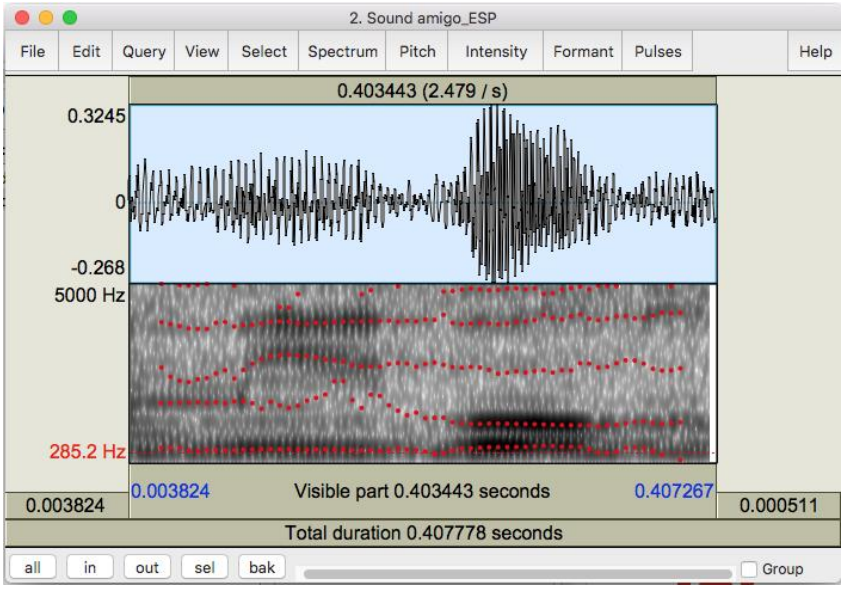

Figure 4b. Spectrogram showing production of the word *amigo,* read by a native Spanish speaker and showing the stability of the final vowel /o/.

Other examples of in-class activities include having students use Skittles on their tongue while producing vowels to feel for tongue height and advancement; placing their hands in front of their mouths to feel for aspiration when producing the voiceless plosives /p/, /t/, and /k/; and orthographically syllabifying words and phrases followed by listening and transcribing corresponding native speaker audios. These activities give students more tools to identify and understand English transfer features by introducing tactile and visual representations of these features in addition to the traditional auditory element. By introducing these diverse representations of English transfer features, students no longer have to rely solely on their ability to perceive features auditorily, but rather develop a multitude of ways to identify these features.

Student Facilitator Roles

A unique feature of our project is the inclusion of upper-division Spanish and Linguistics majors who serve as undergraduate student facilitators. These students are trained in the identification of English transfer features in Spanish speech and are responsible for developing online material, holding office hours to answer student questions, and leading classroom instruction focused on practice identifying English transfer features. These facilitators teach the intermediate-level students to identify English transfer features using auditory, visual, and tactile activities, thus offering a model of how the intermediate-level students can begin to analyze their own productions. Peer-to-peer feedback has become a growing topic in L2 pronunciation pedagogy, with existing studies suggesting that language learners' production abilities benefit from giving feedback to peers (Lord, 2008; Martin, 2019). Our undergraduate student assistants lead the intermediate students through pronunciation analysis, helping them develop the skills necessary to analyze both unfamiliar productions and their own productions.

Data Analysis

Students recorded themselves reading a paragraph aloud in Spanish at the start and end of the academic term and were asked to reflect on what English transfer features they noted in their initial and final recordings. Students were also asked to reflect on what tools for self-assessment they took away from this phonetics curriculum and how these tools impacted their own confidence and ability to interact with and produce native-like Spanish speech, which is where we focus the present study.

RESULTS

After receiving phonological training, students reported greater confidence in their ability to interact with native speakers and move towards more native-like productions, as well as increased metalinguistic awareness and ability to assess their Spanish productions. The following quotes from participants in this project demonstrate some of the students' reflections on the curriculum and how the curriculum impacted their confidence in their Spanish abilities. Comments 1-5 present positive feedback in terms of students' increased metalinguistic awareness and ability to analyze their own productions, with comments 4 and 5 demonstrating positive reception of the visual and tactile activities incorporated into our training. Comments 6-9 speak to increases in students' confidence communicating with native speakers and practicing their production abilities.

Comments from intermediate Spanish students

1. "Since learning about the sound systems, I notice my pronunciation was more accurate than before … finally learning about it [Spanish and English sound systems] really seemed to improve my Spanish speaking all around. It was something I wasn't aware of before and now it's something to really acknowledge when conversing in Spanish."
2. "I knew my speech did not sound like native speech, but I did not know how to identify or address issues… The most important takeaway from these activities was the identification of specific ways in which I can make my speech sound more like native speech… I am also getting better at listening to native speech and identifying the differences between that and my own speech…"
3. "I have always tried to listen to the pronunciation of how words sound in the Spanish language and just repeat with what I hear. Over the course I have found myself knowing a lot more about how each individual vowel in the Spanish language sounds… I can now take this lesson into my future of Spanish speaking and use it to benefit myself as I continue learning."
4. "In completing these activities, I learned about linguistics and the possibility of seeing alongside hearing how I spoke in Spanish. I had never thought about the vowel count in Spanish or English, or even realized that they would be in different spots on a vowel chart. I knew the vowels sounded different, and now it makes a lot of sense after everything we've done on Praat, but I had no idea just how different they are."
5. "Learning why sounds are different in Spanish than in English helped me be more aware of how I was shaping sounds with my mouth and how I could change things when they weren't sounding quite right."

6. "I feel more confident and excited to practice Spanish given the insight gained from this course. As I have mentioned before, it is hard to believe that I was not taught more about pronunciation sooner in my Spanish learning journey."
7. "The most important takeaway for me was the concept of resyllabification. Sometimes it is difficult for me to understand Spanish from native speakers because my brain is wired to understand with breaks in between words… Realizing this has helped me to better understand and practice speaking."
8. "By allowing consonants to carry over into syllables across words I feel that my speech flows much better, sounds much less awkward, and makes me feel more confident in the language (something that I lack especially when talking with native speakers)."
9. "This knowledge will also assist me when I feel overwhelmed talking to native speakers who appear to be speaking so 'fast.' In realizing that it is not speed but words blending together which makes the language appear so foreign, I hope to move away from my cop out 'más despacio por favor' and understand people speaking at a natural pace in a natural Spanish rhythm."

DISCUSSION

Results from our pilot project of these materials show positive outcomes in advancing students' ability to understand and identify phonological differences between English and Spanish and in giving students more confidence interacting with native speakers. Student reflections after completing the program demonstrate not only an increased metalinguistic awareness of the phonetic and phonological systems of Spanish and English, but also an increased ability and willingness to apply this knowledge to their own productions.

It is important to emphasize the restrictions inherent to our study and the interpretations of its results. Here we specifically investigate changes in students' ability to analyze Spanish productions and their confidence in their ability to move towards native-speaker performance. We do not, however, have a control against which to compare our participants' advancements, nor do we employ quantitative measures to assess students' Spanish productions.

Moving forward, we have begun quantitative analysis of student recordings in order to assess changes in student productions. These recordings are assessed with respect to vowel quality using formant analysis and VOT for the voiceless plosives. Furthermore, recordings are being rated by native speakers for accentedness, intelligibility, and comprehensibility in order to investigate how these factors may affect students' success in communicating with native speakers.

ABOUT THE AUTHORS

Dr. Jordan Sandoval teaches linguistics at Western Washington University. Her research interests include mental representations of words and the impact of orthography on those representations, as well as, most recently, second language pronunciation instruction.
Email: crossfj@wwu.edu

Dr. Kirsten Drickey teaches Spanish language, literature, and culture at Western Washington University. She is the Curriculum Coordinator for Western's Employee Language Program, in which upper-division undergraduate students lead conversational language workshops for university faculty and staff. Her training and background are in literary studies, with an emphasis on contemporary Latin America, but her love of language teaching has led her, most recently, to more formal research on second-language acquisition and pedagogy.
Email: drickek@wwu.edu

Nancy Brill is in her final year studying Linguistics and Spanish at Western Washington University. Alongside this project, she works as a facilitator leading Spanish language workshops for the university's Employee Language Program, and works as an editor for a developing linguistics textbook. Inspired by these projects, she hopes to continue exploring second-language pedagogy and cross-linguistic transfer.

Brahm vanWoerden is a junior Spanish and Linguistics major at Western Washington University. He works as a student facilitator in the Western Employee Language Program, and as an assistant in the Linguistics Computer Lab. An interest in Spanish and the nature of second-language acquisition drew him to the project and he hopes to continue to find new ways to explore this area.

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