Dealing with phonotactic interference in native Spanish speakers students of English as a foreign language, an action research

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Abstract

This research study involves dealing with phonotactic interference in young adult students of English as a foreign language at Universidad Santo Tomás. As Spanish speakers, students have influence from their mother tongue into their target language pronunciation, which is what this research tries to tackle. This was done applying a pre-test, a treatment and a post-test to see actual improvements after the lesson. In the pre-test and post-test, students had 121 opportunities in which they could have interference when reading. In the pre-test, students presented a 67% of interference, while in the post-test students presented a 29% of interference. Taking into consideration the results, students showed that they need phonotactic instruction to overcome specific problems, explicitness is a good factor when it comes to errors they are not aware of. English teachers must be aware of the phonotactic constraints of the language they are teaching in order to predict possible problems in pronunciation.

Keywords: phonotactics, English as foreign language, pronunciation, phonology, young adult learners.

A Spanish speaker who tries to produce the word *speak,* will probably have problems when producing it orally. Since Spanish does not allow the cluster /sp/ at the beginning of any syllable, the speaker would unconsciously produce an "epenthetic vowel" (additional sound) before this cluster, which can be /e/ or /ə/, to assimilate the sounds to the mother tongue's phonotactic rules. Since most of Spanish speakers learning English at a basic level do not know this difference and they cannot perceive it, they tend to have this interference. How can we deal with these interferences? Are students able to produce these features which are not part of their language?

That is the problem this study tried to tackle, the interferences from the first language (L1) over the target language (L2) in Spanish-speaking students of English. These students presented the problem producing different consonant clusters beginning with /s/, which was the starting point for the research study. This study wants to increase students' phonotactic awareness and

consequently increase their intelligibility when producing English orally. We will understand phonotactic awareness, as the ability to be conscious about the differences between Spanish and English sound organization, and the production of sounds. Also, this investigation aims to consider and include phonotacic studies English teaching programs, so they would be able to predict certain problems their future students might have due to a phonotactic interference. In addition, this study can work as the starting point for future research on the same area, not only at the onset level in syllables, but at the coda, e.g. when producing final clusters verbs in simple past.

Most people have the ability to speak a language, to understand a language, even to perceive a language when we do not know what language is, but still we can differentiate it from other sounds. In order to go deeper with languages, and to understand them in detail, we must study them, and that is why Linguistics was born, which is the scientific study of language (Crystal). Linguistics can be subdivided into different types of studies, which aim to specific features of language. One of those is phonology, which studies how phonic substance is configured and organized into a specific language. But since the research deals with the specific combinations of sounds that are allowed in a given language, it is focused on Phonotactics. As human beings, we are able to produce an uncountable number of sounds, and phonotactics tells us which sounds we can use in a language, and in which order. That is why there are differences between languages regarding sounds and their organization, e.g. in the Spanish syllable we can have up to two consonants in the onset, and in English up to three. These differences can create interference when learning a second or foreign language, and that is what this study tries to deal with. Interference refers to the errors a speaker introduces into one language as a result of contact with another language (Crystal, Brown, Lightbown & Spada).

In order to carry out this research study, some aspects had to be covered, as the information gathering from students, in order to have proof of the interference in certain situations. Also as the study intended to deal with students' interference, it had to include a process to determine how to do so, and a final information gathering to see the actual changes.

Method

Participants

This study took place at Universidad Santo Tomás, in Santiago, Chile. The group was composed by young adult students learning English as a second language, in a course called *English Basic II*, which is a mixed class with students from different programs at the University, namely, students from psychology, law, kinesiology, nursing, among others. This class is compulsory for students from those programs, that is to say, they cannot fail it otherwise they will not be able to graduate. From this, it can be inferred that English is not one of their main interests.

The group was composed by 25 students. The sample of students who participated in the research was selected through volunteer participation, so any student who wanted to participate in the study was able to do it. The number of students who agreed to participate were 11. The only thing they knew from the beginning was that they would participate in a pronunciation lesson. Students did not know what they had to do, so they would not have hints about which aspects of pronunciation they would work on.

Material

In order to gather the necessary information regarding students' phonotactic awareness, I created a tongue twister which included 11 pre-initial /s/ consonant clusters in the onset to use it as a pre-test and post-test. The tongue twister designed for the research is the following:

"A spider in Spain
Screams on a spoon
As she spreads all the bread
Of a store near the street
She's stressed for the spring
But she was strong and she finally smiled"

Procedure

For the pre-test, students were asked if they could be recorded while they read the tongue twisters, once again without giving any further information, so students would not pay attention to specific aspects of the reading, and they would show their actual performance and pronunciation skills. In order to analyze these sample recordings, and to have observable proof from students' performance, I decided to use printed copies of the tongue twister as checklists for the auditory analysis, and put marks when students produced the epenthetic vowel. Later, for the acoustic analysis, the audio files were read with spectrograms, which produce a graphic representation of the sound, and it shows when students produce or not an epenthesis. Both data analysis techniques were used, in order to triangulate results, and to make the analysis more reliable.

For the treatment, I designed a pronunciation lesson to apply it after the pre-test. Here students were exposed to the differences between Spanish and English onset, regarding the possible combination of sounds. They understood that Spanish speakers could produce an additional sound when pronouncing words with pre-initial /s/ consonant cluster at the beginning, so they started to notice that they also produced this epenthesis, and tried to produce the words correctly.

Then, students practiced at a word level, with random words selected for the lesson. Here one student had to pick a word to teach the rest of the class how it should be pronounced, so all of them would be practicing. After these exercises, students practiced at a sentence level. I tried to make funny sentences, in order to catch students' attention and to make it more interesting for them, e.g. six stupid students (related to a video they saw). Here I taught them with choral repetition, and showing them the difference between producing and not producing an epenthetic vowel.

Finally, to see whether they improved some aspects in their pronunciation, I decided to use the same tongue twister during the post-test, so I could have a one to one comparison. The post-test had the same procedure, students read while they were recorded, and the audios were also analyzed auditorily and acoustically. Because of time constraints, students were not recorded after the treatment, so they had the chance to record themselves and send the recordings during the same or the following days.

These two data analysis methods helped to see actual changes between pre and post-test, and helped to support the results by means of data triangulation in order to be more reliable and consistent when giving the results.

Results and Discussion

I can say that the treatment fulfilled our main objective and decreased the amount of production of epenthesis. The treatment worked, as well as the pre-test and the post-test as means of information gathering.

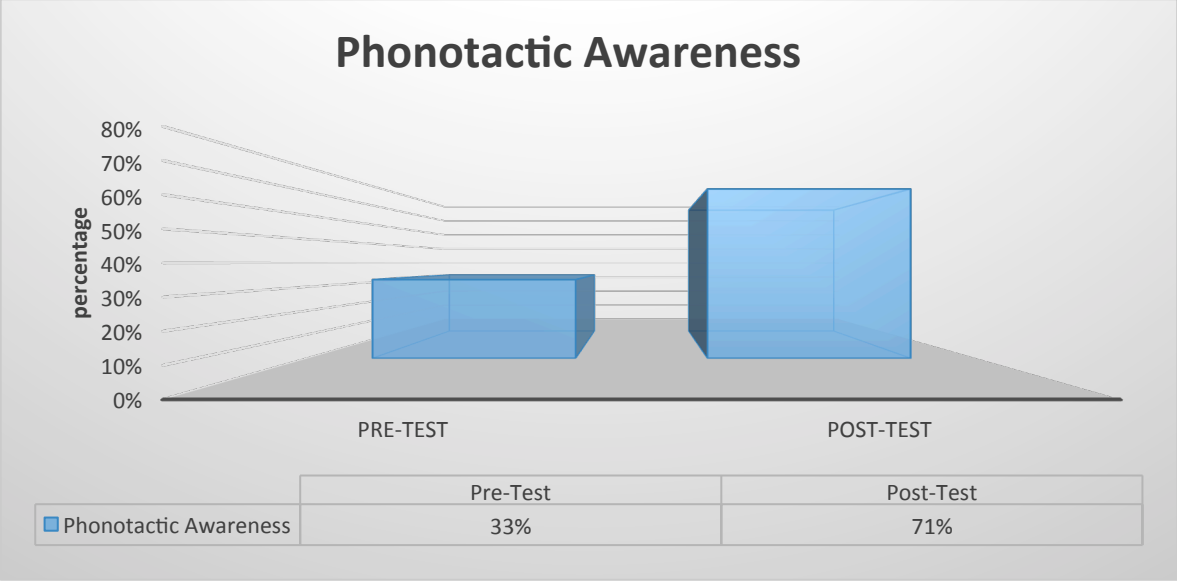
Pre-Test

Analyzing the data from the pre-test, I had 121 opportunities in which students had to produce an /s/ consonant cluster, i.e. 121 possible phonotactic interferences. Of the total amount of clusters, in 40 chances students produced no interference, i.e. no additional sound. In other words, students presented a 33% of phonotactic awareness.

Post-Test

After the analysis of the post-test, I obtained that students produced a correct pronunciation of the /s/ consonant cluster in 81 opportunities out of 121, i.e. students presented 71% of phonotactic awareness.

Comparing both pre-test and post-test, there was a 38% improvement in their phonotactic awareness after implementing the treatment over the sample of 11 students. With these results we can infer, that the treatment worked, it helped students realize how to produce /s/ consonant clusters correctly. We can see the difference between pre and post-tests results in the following graph;



Limitations

The study presented limitations mainly related to time. Because the English course follows an established program, there is not much time for extra activities. That is why the

pronunciation lesson which was designed to be carried out in 45 minutes had to be applied in only 20 to 25 minutes. Probably the percentages of phonotactic awareness would have been higher, if the class could have been done in the 45 minutes. In addition, from the beginning I planned to do more than one pronunciation lesson, in order to give students more practice, and to make them acquire this feature of pronunciation in their competence rather than just performance, but students only had one chance to have the class, and it had to be during a short period of time.

To conclude I can say that the treatment actually helped students to increase their phonotactic awareness and decrease phonotactic interference when producing words starting with /s/ consonant clusters. Thus I can say that the research assumption was achieved.

With this research study I found that some explicitness followed by practice in pronunciation can help students improve their skill. Giving the fact that students had a limited amount of time to practice, they improved a considerable amount the results in the post-test. Sometimes students need to be exposed to the real problems and concrete examples to make them realize the mistakes they could be making.

This discovery could be applied to other contexts, at high school level or even lower, so as to tackle this interference sooner. If at any time, pronunciation is taken into consideration in schools' English curriculum, this research study could help to include that feature of pronunciation in the program, to make students practice /s/ consonant clusters at the beginning of words and acquire phonotactic awareness.

Also, as mentioned before, this research study could help future investigation on the same area, Phonotactics. Other possible phonotactic interference present in Spanish speakers when learning English as a foreign language could be the final /s/ sound in verbs, in the 3rd person singular in present simple, or the final /t/, /d/ sound in final [ed] for verbs in simple past. This study includes the possible combinations of sounds in each part of the English and Spanish syllable, and will help researchers identify the problems in advance.

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