

**The Shadowing Technique as a Strategy to Improve Pronunciation in Public Elementary
School Students**



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Students**

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Students**

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Dedicated to

Those who supported us during this journey.

Appreciation

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Abstract

This study investigates the effectiveness of the Shadowing technique as a strategy for improving pronunciation among fifth-grade students at Francisco Jose de Caldas Elementary School in Santander de Quilichao, Cauca. Employing a qualitative action research design, the study engaged eight students aged between 8 and 11 in the fifth grade across eight sessions, including pre-test and post-test assessments. Data collection included a field diary and a pre-test and post-test, and the use of Praat software for analysis. As per results of the gathered data revealed an improvement in the participants' pronunciation throughout the sessions, thus affirming the efficacy of the Shadowing technique.

***Keywords:** Shadowing technique, English as a Foreign Language (EFL), Pronunciation and Pronunciation strategies.*

Resumen

Este estudio investiga la efectividad de la técnica Shadowing como estrategia para mejorar la pronunciación en estudiantes de quinto grado de la Escuela Básica Francisco José de Caldas en Santander de Quilichao, Cauca. Empleando un diseño cualitativo de investigación-acción, el estudio involucró a ocho estudiantes de entre 8 y 11 años del grado quinto a lo largo de ocho sesiones, incluyendo evaluaciones pre-test y post-test. Los instrumentos de datos incluyeron diario de campo, y pre-test, post-test y el uso del software Praat para el análisis. De acuerdo con los resultados de los datos recogidos reveló una mejora de la pronunciación de los participantes a lo largo de las sesiones, lo que confirma la eficacia de la técnica de Shadowing.

Palabras clave: *Técnica del Shadowing, Inglés como lengua extranjera, Pronunciación y estrategias de pronunciación.*

Résumé

Cette étude examine l'efficacité de la technique du shadowing en tant que stratégie d'amélioration de la prononciation chez les élèves de cinquième année de l'Escuela Básica Francisco José de Caldas à Santander de Quilichao, Cauca. Utilisant un modèle de recherche-action qualitative, l'étude a impliqué huit élèves de cinquième année, âgés de 8 à 11 ans, au cours de huit sessions, y compris des évaluations pré-test et post-test. Les outils de collecte des données comprenaient des journaux de terrain, et des pré-tests, des post-tests et l'utilisation du logiciel Praat pour l'analyse. Selon les données recueillies a révélé une amélioration de la prononciation des participants au fil des sessions, confirmant l'efficacité de la technique du Shadowing.

Mots-clés: *Technique du Shadowing, l'Anglais Langue Étrangère (ALE), Prononciation et Stratégies de prononciation.*

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Introduction

Communicating effectively in a second language is a valuable skill that opens doors to new opportunities and experiences. Pronunciation is crucial in language learning, as speaking clearly and accurately improves communication and comprehension. Finding innovative strategies to help students improve their pronunciation is essential to their linguistic development. One of them is the Shadowing technique, which refers to imitating the pronunciation of a native speaker simultaneously.

This research explores the effectiveness of the Shadowing technique as a strategy to improve pronunciation in public elementary school students. Focusing specifically on fifth-grade students in Santander de Quilichao, Cauca, this study explores how implementing the Shadowing technique can positively impact students' English pronunciation skills. By emphasizing the importance of pronunciation and providing targeted interventions, educators can help students develop more accurate and precise speech, ultimately improving their communication skills.

Using a qualitative approach and an action research design, this study investigates the results of applying the Shadowing technique over eight sessions with fifth-grade elementary school students. The methodology includes pre-tests and post-tests, data collection on acoustic phonetics measurements, and analysis of students' progress in pronunciation. By examining the impact of the Shadowing technique on students' pronunciation skills, this research brings valuable insights to the field of language education.

Overall, this study aims to analyze the effect of the Shadowing technique as a practical and effective tool for improving the pronunciation of public elementary school students. By exploring innovative teaching strategies and incorporating techniques such as Shadowing,

educators can further support students in their language learning journey and improve their overall language proficiency.

Problem statement

Many countries know the importance of bilingual speakers, and English is one of the first languages taught on the list. For this reason, teaching English as a foreign language has been explored, and different resources have been implemented in the classroom to teach the language efficiently. However, aspects of the English language, such as pronunciation, are naturally more challenging for EFL students and need a deeper exploration and strategies.

According to Bartoli, as cited in Jaramillo and Isaza (2016), despite the advances in English classes, pronunciation has yet to receive the importance it deserves, which affects oral communication in students. Moreover, researchers have somewhat neglected the pronunciation aspect when it comes to second language acquisition because they have focused their attention mainly on areas such as grammar and vocabulary of the English language; however, students with poor pronunciation will not be understood, even if they have good grammar (Foote & McDonough, 2017).

One of the most significant barriers students face in being intelligible when speaking in English is the influence of their L1, in this case, Spanish, on their performance. Thus, phonetics is one of the areas that study the pronunciation of a language, and according to Robert A. et al. (1995), languages are differentiated by the phonetic properties used to distinguish the vowels that each language possesses, Spanish with five vowel sounds while English with fifteen. In that sense, students struggle with phonetic qualities that do not exist in Spanish, such as the vowel sounds /ʌ/, /ɪ/ and /æ/.

EF Educational First through the EF English Proficiency Index (EF EPI) collected data from 2.2 million adults to classify the level of English of the countries, where Colombia ranks number 77 among one hundred nations (Educational First, 2021). These results reveal that despite the efforts of the Colombian national government to raise the level of English in the country through the launch of programs, such as "National Bilingualism Program, Program for Strengthening the Development of the Competences in Foreign Languages, and National English Program: Colombia Very-Well," have not been enough to cover the challenges that have arisen to achieve the target goals of increasing the level of English. In this sense, according to Correa & González (2016), in public elementary schools, different challenges could be taken into consideration to improve the level of English, such as the number of hours dedicated to the language, the number of teachers hired, and the availability of didactic and technological resources.

Correspondingly, there is still a need to find new strategies to help the improvement of one of the aspects of the English language in public elementary schools, in this case, pronunciation, to make the speech of foreign language learners easily intelligible and communication more effective. Thus, the shadowing technique was proposed as a strategy for English classes in public schools in Colombia. According to Foote & McDonough (2017), this technique has enhanced many aspects of second-language students' pronunciation. Still, first, it was necessary to study the effects of this technique in students. In this context, eight fifth-grade students from the educational institution Francisco Jose de Caldas were chosen to implement the shadowing technique. In addition, samples of their pronunciation were recorded before and after the application to obtain more accurate results when analyzing the effect of the technique. The following research question guided the problem statement: What is the effect of the shadowing

technique on the pronunciation of the English phonemes /ʌ/, /ɪ/, and /æ/ in fifth grade students at Francisco Jose de Caldas public elementary school in Santander de Quilichao, Cauca?

Justification

According to Statista (2021), English has the most speakers worldwide, with about 1.452 billion people having it as their second language. Learning English is a need to be part of the world now, and it is essential to be competent enough to express thoughts. In this way, the English teacher role implies a non-stop process because it is necessary to find and implement strategies that help students to be competent in English. However, there are some aspects of the language that need to be more trained, such as pronunciation. According to Bartoli as cited in Jaramillo and Isaza (2016), despite the advances in teaching EFL, pronunciation plays a critical role in effective oral communication by preventing misunderstandings. The differences between the phonetic systems of English and Spanish can affect students' pronunciation, making it essential to focus on improving these skills. Enhancing students' pronunciation aligns with the National Government's goal of becoming a bilingual country. Implementing strategies that target pronunciation will help improve students' overall linguistic abilities.

For this reason, this study aimed to implement the shadowing technique in eight fifth-grade students from the Elementary School Francisco Jose de Caldas as a strategy to contribute to the improvement of pronunciation, focusing on the English phonemes /ʌ/, /ɪ/, and /æ/. An extracurricular space was chosen to develop the sessions of the technique, so as not to delay the educational process in the institution of the selected students. This study expects to provide a distinct perspective on the strategies implemented in teaching English as a foreign language to

improve oral communication, especially pronunciation, which deserves more importance in EFL classes.

General Objective:

To analyze the effect of the Shadowing technique on the pronunciation of the English phonemes /ʌ/, /ɪ/, and /æ/ in fifth grade students at Institución Educativa Francisco Jose de Caldas public elementary school in Santander de Quilichao, Cauca.

Specific Objectives:

- To obtain speech samples of the participants before and after the intervention.
- To implement pronunciation training sessions based on the Shadowing technique focusing on phonemes /ʌ/, /ɪ/, and /æ/ in English.
- To measure the vowel formants in the pre and post-intervention samples and compare them with those of a native speaker.

Literature review

Pronunciation has become one of the areas of interest in teaching English as a foreign language, which has led to the implementation of different techniques such as the Shadowing technique to improve performance in this area. This technique has been implemented around the world for the development of pronunciation, which has contributed significantly to the teaching of EFL.

Yavari and Shafiee (2019) conducted a study to explore the effect of shadowing and tracking on Iranian EFL learners' speaking fluency. Sixty students (between 15 and 20 years old)

of English from Jahad Danesheshgahi Language Institute in Isfahan, Iran were selected and divided into ten groups: a Shadowing group, and a tracking group. In addition, ten sessions, pretest, post-test, and semi-structured interviews were used to conduct the research, giving as result that the shadowing technique is more effective than tracking to improve oral fluency, to be employed in regular EFL classes.

Salim et al. (2020) implemented the shadowing technique to improve the pronunciation of students at a Senior High School; it was conducted in a quasi-experimental study, in which seventy students participated, divided into a control group and an experimental group. Interviews, multiple choice questions, audio recordings, pre-tests, and post-tests were the instruments used to conclude that the shadowing technique not only improves pronunciation but also listening skills. Then, the investigators employed the shadowing technique in four parts: mumbling, synchronized reading, prosody shadowing, and content shadowing. In this way, according to the results, there was evidence that the technique of shadowing is useful to improve basic pronunciation, being a technique that also attracts the attention of students.

Hamada (2020) conducted a study with thirty-six university Japanese learners at an English intermediate level. The primary study focused on bottom-up listening skills related to comprehension skills. Despite the positive results of the primary study, it was limited in enhancing phonemes recognition. These findings led to a new Shadowing procedure, with twelve Japanese university students, which was based on pronunciation and three components: attention to output, corrective feedback, and explicit instruction. The new shadowing procedure was focused on six phonemes (/f/, /v, / /θ/, /ð/, /l/, /ɹ/) that were difficult for Japanese learners to learn how to pronounce them.

Leonisa and Puspita (2022) used the shadowing technique to investigate if there is development in the pronunciation of fifty-one students of 10th grade of SMAN 1 Jetis Ponorogo in Indonesia to contribute to the main goal in Indonesia, the development of communication skills. The research was of a quasi-experimental design, dividing the participants into control and experimental groups, to which pre-test and post-test were applied. In this way, according to the results obtained, it was concluded that there was more effectiveness in the experimental group that used the shadowing technique, since the experimental group had better performance in pronunciation, unlike the control group.

Septia and Morgana (2022) conducted a classroom action research study during COVID-19 with twenty-five ninth-grade students to improve English pronunciation competence. The study was composed of two cycles, each one had three meetings (two for the shadowing technique and one for a post-test) where the shadowing technique was composed of ten steps. The first cycle helped to plan the next one due to the importance of focusing on elements of pronunciation (allophones, stress, rhythm and pitch, and intonation) that needed more emphasis. For data collection, researchers used an observation sheet and a test which provided positive results in pronunciation of practitioners.

Despite the benefits of shadowing, recognition and widespread adoption of the practice are still limited, and it is only popular in certain regions, particularly in Asia (Hamada, 2020, p. 4-12). For that reason, few investigators have conducted studies about the technique in Colombia. Jaramillo and Isaza (2016), conducted a project focused on the development of oral accuracy in English using the shadowing technique. For this purpose, fourth-grade students were chosen at the Instituto Técnico Superior in Pereira City, Colombia. In this respect, the project was based on Thornbury's model, which according to Jaramillo and Isaza (2016), allows students

to understand the auditory input, and the characteristics of spoken English and to appropriate the auditory input by memorizing and rehearsing it, which in this case acts as a "fluency improvement technique". The topics used in the materials based on The Shadowing Technique were chosen to consider students' likes (cartoons, T.V. series, sports, and music), these likes were implemented in songs and videos. Five sessions of ninety minutes were used to apply the material. It was concluded that there was an improvement in listening input, as well as in the pronunciation of the words used in the material, for example, instead of saying /gɪrl/ they did their best to say /gɜ:rl/ (Jaramillo & Isaza, 2016, p. 1-51).

New strategies for pronunciation development have been introduced to enhance pronunciation. Nevertheless, Yo Hamada, presents the shadowing technique as an efficient tool to use in foreign language classes as it has been shown in previous studies. In this study, Yo Hamada (2018) explored and analyzed the effectiveness of two types of shadowing: haptic-shadowing and IPA-shadowing, in improving pronunciation skills in Japanese university students. The study involved fifty-eight second-year university students who were divided into three groups: haptic-shadowing, IPA-shadowing, and control. The results showed that both haptic-shadowing and IPA-shadowing were effective in improving pronunciation skills, with IPA-shadowing being more effective in improving segmental features. The study suggests that incorporating IPA symbols into shadowing practice may help learners connect what they hear more directly with what they need to pronounce. Finally, Yo Hamada highlighted through this study the potential of shadowing as a useful tool for foreign language teaching and learning (Hamada, 2018, P. 167-181).

According to Sugiarto et al (2020), the shadowing technique is a sophisticated technique of teaching English pronunciation that was originally designed to improve the ability to hear and

speak. The technique involves listening to a native speaker and repeating what they say immediately after they say it, while trying to match their intonation, rhythm, and speed as closely as possible. The goal is to develop a more natural and fluent speaking style by training the muscles involved in speech production to work more efficiently. The article suggests that the shadowing technique is effective in improving English pronunciation, particularly in the areas of speaking skill and fluency.

As it is evident, the literature review exposes the positive effect of the shadowing technique that has been employed worldwide to improve oral skills, specifically pronunciation in learners whose L1 is different from English. Although the Shadowing technique has been used with young learners, this study will be conducted with children to improve their pronunciation of the phonemes /ʌ/, /ɪ/, and /æ/.

Theoretical Framework

The shadowing technique is considered an online task. In this sense, the working memory takes place due to the function of the phonological loop. For this reason, Baddeley as cited in Hamada (2014) states “Shadowing reinforces learners’ phonological coding and their speech perception, particularly by training the phonological loop, which is part of the working memory”. Additionally, according to Kadota as cited in Hamada (2014), the working memory capacity will increase thanks to the shadowing technique, with the online repetitions that allow the phonological information to stay longer in the phonological loop in the working memory.

Furthermore, knowledge can influence future processes such as production, in this case, pronunciation. For this reason, McDonough & Trofimovich as cited in Hamada (2014) state that “the phenomenon in which prior exposure to language somehow influences subsequent language

processing, which may occur in the form of recognition or production”. This is why Kadota (2012) exposes the top-down shadowing in which the knowledge is already acquired, and they use the technique with what they already have, for this reason, when there is an unknown vocabulary, the passages are more difficult. Even Hamada (2014) introduces the terms of pre- and post-shadowing.

Acton et al (2013) as cited in Hamada (2018), defined Haptic Shadowing as the use of physical movements to experience the rhythm and intonation of the language they are learning. In this approach, students use their hands to tap out the rhythm of the speech they are imitating. On the other hand, IPA-shadowing involves students using International Phonetic Alphabet (IPA) symbols to help them visualize the sounds they are hearing and producing. This method is believed to aid students in their cognitive processing while listening and speaking by increasing their conscious awareness of the characteristics of individual sounds (Hamada, 2018, P. 169-181). While both methods were found to be effective in improving pronunciation skills, the study concluded that haptic-shadowing was more effective in improving rhythm and intonation features, while IPA-shadowing was more effective in improving individual sounds.

Conceptual Framework

Pronunciation

Pronunciation is “the way a certain sound or sounds are produced” (Richards & Schmidt, 2002, p. 429). Unlike Articulation, which refers to the actual production of speech sounds in the mouth, pronunciation stresses how the hearer perceives sounds (Richards & Schmidt, 2002, p. 429). Likewise, according to Richards and Schmidt (2002, p. 469), as cited in Leonisa and

Puspita (2022, p. 33), pronunciation is defined as the process of producing particular sounds with meaning and accuracy so that others can comprehend them in communication.

When talking about English pronunciation, it is necessary to think about phonemes rather than graphemes (letters of the alphabet) because English spelling is confusing in many ways, as that is its nature. For example, all languages have several used sounds (vowels and consonants) called phonemes. In English, for example, “the vowels in the words 'pin' and 'pen' are different phonemes, as are the consonants at the beginning of the words 'pet' and 'bet’” (Roach, 2009, p. 2), these phonemes are embodied in the International Phonetic Alphabet (IPA) dictionary. Some elements are part of the pronunciation in English, for instance, regional varieties such as the “rhotic” pronunciation in some American accents or the non-rhotic pronunciation in certain British accents; accent variations, for example, American, British, and Australian English, which have different sounds, intonation, and rhythm. In addition, the melody and rhythm of speech refer to intonation, which changes according to the elements mentioned above. (Ibid., P. 50-161).

Pronunciation Learning Strategy

The importance of teaching English pronunciation has led to employing a variety of learning strategies to make pronunciation an easier process for learners. It is crucial to mention that according to Oxford as cited in Szyszka (2017) a learning strategy refers to “specific actions, behaviors, steps, or techniques that students use to improve their progress in developing skills in a second or foreign language”. Furthermore, the learning strategies are classified into dimensions depending on their function. These dimensions, according to Oxford as cited in Arias and Poter (2018) are known as Cognitive, metacognitive, memory, compensatory, affective, and social strategy. In this sense, it can be said that learners have employed learning strategies to improve

their pronunciation, resulting in pronunciation learning strategies. According to Peterson as cited in Szyszka (2017) Pronunciation Learning Strategies is “steps taken by students to enhance their pronunciation learning”, in this way, the author also exposes different strategies within the Oxford framework, some of which include: representing sounds in memory and analyzing the sound system. Additionally, Arias and Potes (2018) used the Oxford framework to expose some strategies for pronunciation such as rhyming pairs to link words with similar pronunciation, cloze dictations, and the attitude game as an activity to link the intention with the information said and not behind, the Shadowing as a strategy used by learners to improve pronunciation, the learner has to speak and listen to the input at the same time.

Shadowing Technique

Shadowing is a technique that despite being a recent concept has begun to be relevant and be studied in different fields, which has caused a more significant interest in language learning; Initially, according to Hamada (2012), shadowing was a training technique for interpreters. However, Asian countries such as Iran, China, and Japan have started using the technique for learning languages in which listening and speaking skills are involved. In this context, according to Tamai as cited in Hamada (2014) "Shadowing is defined as an active and highly cognitive activity in which learners track speech they hear and vocalize it as clearly as possible while simultaneously listening" (Hamada, 2014, p. 1). Learners conduct two activities simultaneously, repeating the speech and listening to it. According to Kadota (2007) shadowing, through repetition, stimulates working memory by bringing verbal information into the phonological loop, which allows the retention of phonological information for a longer period; this process would benefit the development of listening and oral production skills.

For all these considerations, shadowing has started to become relevant in recent years and many authors have studied the technique in language learning. For Kadota and Tamai cited in Hamada (2014) through shadowing and repetition more phonological information is held in the phonological loop, which is in the short-term memory. It is also considered the most effective technique if it is accompanied by other activities, such as learning vocabulary. In this sense, Hamada (2014) proposes the concepts of pre-shadowing (shadowing before learning the content) and post-shadowing (shadowing after learning the content, such as vocabulary) to attend to what learners should work on. Before or after having meaningful benefits in results.

EFL (English as a Foreign Language)

In recent years, many researchers have been growing interested in the concept of "English as a Foreign Language" (EFL). This construct has generated a meaningful change in perception about the teaching-learning process, distinguishing it from the "English as a Second Language" (ESL) concept. This can be defined as follows: "Foreign language learning refers to learning a non-native language, which is only learned in a formal classroom and not commonly used in the community. The exposure to the language is lesser than the second language (L2)" (Quimosing, 2022, p. 1). This means that foreign language learning can be understood as a process in which the learner tries to learn a language not spoken in their community. For this reason, the foreign language is not in their daily life due to the lack of exposure, only when the learner is in the classroom.

Therefore, learning and teaching English for exclusively academic purposes is considered EFL in countries where students are not exposed to the language outside the classroom. This is because English is not the dominant language in these countries. For example, Quimosing (2022)

exposes that "In Taiwan, English is treated more like a subject to be studied than a living language to be used in everyday speech" (p. 2).

Contextual framework

Santander de Quilichao is a municipality in the Cauca department. It is one of the most populous municipalities in the region, and its population includes Indigenous, Afro-Colombian, and mestizo people. The municipality has 24 official schools, including Institucion Educativa Francisco José de Caldas, which has two headquarters: Elementary and High Schools and offers formal education from Preschool to high school.

The study was conducted with students who attend Francisco José de Caldas public elementary school in Santander de Quilichao, Cauca. The school is in an urban area and has around 600 students who live in both rural and urban areas of the town; the exposure of the students most of the time is reduced to 1h per week. In this sense, the study focused on eight students in fifth grade, four boys, and four girls, between the ages of 8 and 11, who attended Francisco José de Caldas public elementary school and lived in the urban area, their English level was expected to be aligned with A2 of the European Framework of Reference for Languages, as established in "Guía 22 de los Estándares Básicos de Competencias en Lenguas Extranjeras". An extracurricular schedule was assigned to carry out the eight sessions since taking students' school time for so many sessions was impossible. In addition, before applying the shadowing technique, written informed consent (see appendix C) was sent to each student's legal guardians, emphasizing the study's purpose, data collection methods, and voluntary

participation. This process ensured that participants and their guardians understood their identities were protected and used for educational purposes.

Methodology

This study aimed to analyze the effect of the Shadowing technique on the pronunciation of the English phonemes /ʌ/, /ɪ/, and /æ/ Institucion Educativa Francisco Jose de Caldas in Santander de Quilichao public elementary school students after 8 application sessions to understand the change that could be generated using the Shadowing technique.

This study adopts a qualitative approach, driven by the desire not to be limited to an analysis based solely on numerical data when applying the Shadowing technique. Besides, it was essential to get data that can be observable to understand the students' behavior and attitudes towards this technique. In this sense, the study sought to discover findings that were not strictly numerical, from the direct observation of the students' pronunciation.

Likewise, an action-research design was selected for this study aligned to the qualitative approach. Among the design's characteristics, the intention of the change in the research process is important, to understand and act on a specific problem in a community, in this context, in eight fifth-grade students from Francisco José de Caldas Elementary School. In addition, in this design Álvarez-Gayou, as cited in Sampieri et al. (2014), three perspectives are considered: technical-scientific vision, deliberative vision, and emancipatory vision; this study considered the technical-scientific vision for research when implementing sequential phases of action, according to Lewin as cited in Sampieri et al., (2014) are planning, fact identification, analysis, implementation, and evaluation.

Furthermore, as cited in Sampieri et al. (2014), Creswell's approach, aligned with action-research design, highlights the importance of collective inquiry in generating change through the development and learning of participants by implementing an action plan. In this sense, a specific need was addressed in the educational field (pronunciation), specifically on the vowel sounds /ʌ/, /ɪ/, and /æ/ in fifth-grade students attending public elementary schools aged 8 to 11.

Thus, pre-and post-tests and a field journal were used to collect data about students' pronunciation progress by applying the Shadowing technique, and videos and Praat were used as resources to conduct the study. Both resources and materials allowed us to evaluate and learn about the progress made by applying the Shadowing technique at the end of the project.

Instruments

Pre-test and Post-test: First, a pre-test was applied to evaluate the phonemes we were looking to work on, such as /ʌ/, /ɪ/, and /æ/, students had a copy in which there were nine words carefully selected based on the vowel phonemes presented earlier. Following this, the students pronounced each single word (see Appendix A). Secondly, a post-test was applied with the exact words chosen for the pre-test, and together with the audio recording made by a native English speaker, we did a comparison exercise with both tests to analyze the effect of the shadowing technique in the development of pronunciation during the sessions at the end of the project.

Field Journal: During the project sessions, a field journal was kept for writing observations and reflections on what was observed during the development of the activities. This journal registered essential aspects to consider at the end of the project.

Resources

To conduct the sessions, it was necessary to use resources for its development. On the one hand, basic elements such as student chairs and electricity access were needed. In addition, considering the essence of the technique, it was necessary to have electronic devices such as projectors and a computer. In this sense, the shadowing technique could be used with resources such as audio recordings and audiovisual material such as videos, the latter were used to develop the eight sessions proposed for applying the method. The researchers created eight videos using audio content recorded by the same native speaker used for the "Native Speaker Audio.", the words chosen to analyze the pronunciation of the vowel sounds were included in the script designed for each video. Moreover, each video addressed a linguistic topic corresponding to what is proposed in the DBA Mallas de Aprendizaje of Colombia: introducing yourself, like and do not like, emotions, daily routine, the family, and adjectives. This was done to implement the shadowing technique by sounds and images, allowing students to understand the speaker's discourse better. Moreover, the acoustic analysis software "Praat" used in phonetics and phonology was used to measure the formants of vocal segmental aspects /ʌ/, /ɪ/, and /æ/ to identify how precisely the participants on the recordings were pronouncing each one.

Data

Native speaker audio: An American English speaker from the region West South Central recorded an audio sample pronouncing the nine words proposed in the pre-test and post-test, where each phoneme (/ʌ/, /ɪ/, /æ/) had three words that represented them (see appendix A).

Students Audio Recordings: Students were asked to read a list of nine words containing the vowel phonemes chosen as the basis for this research. The researchers recorded each

participant's pronunciation on an audio recording. The collected data served as evidence of the process conducted, allowing a more detailed analysis of students' interactions and progress regarding pronunciation skills.

Procedure stage

For this study, three tenth-semester students of the bachelor's degree in modern Languages, English, and French, at the Universidad del Cauca were teacher-practitioners and researchers.

The first step in conducting this research was planning the sessions, followed by implementing the Shadowing technique, examining the progress, and finally analyzing the information. The format proposed by Hamada (2014) (see appendix B) was used as a reference to plan the sessions and conduct the Shadowing procedure.

The researchers' material focuses on the vowel phonemes /ʌ/, /ɪ/, /æ/, and was used to plan sessions. The steps to follow when implementing the Shadowing technique with the participants followed the format proposed by Hamada (2014).

The implementation was composed of eight sessions of 60 minutes, with eight fifth-grade students who attended the Institucion Educativa Francisco Jose de Caldas public elementary school in Santander de Quilichao. Before applying the technique, the practitioners demonstrated what the students were asked to do during the session by teaching the script and the vocabulary they found. "This task is known as post-shadowing, which indicates that the learning content should be learned before the shadowing training because it improves the performance of the students and the effectiveness of the technique" (Hamada, 2014, as cited in Jaramillo & Isaza,

2016). Knowing this, we proceeded to apply the technique. Subsequently, the material selected and created by the practitioners was shown to the students.

After completing the first step and listening to the audio for the first time, the practitioners had a space to clarify doubts, where the students could know the meanings of the unknown words and the pronunciation of words in the text. When all the doubts about the exposed content had been solved, they had to perform two different activities: x and parallel reading. In the first activity, they repeated the incoming sounds like a whisper without text and shadowed while reading the text in the second activity. Subsequently, students practiced the shadowing technique three times.

Assessment

The evaluation phase was conducted before and after the sessions to collect meaningful data for the project results. In this manner, the evaluation instruments consisted of voice recordings of the students, an audio recording from a native English speaker, a pre-test, and a post-test. The evaluative role of each one is presented below:

A pre-test was designed to assess the students' pronunciation skills before we proceeded with the shadowing technique. It allowed us to gather baseline information about their pronunciation abilities.

A post-test was an evaluation presented after applying the technique. Its main objective was to determine the contribution of the Shadowing technique. By comparing the results of the post-test with those of the pre-test, it was possible to determine and analyze the advances and differences between the initial and final students' pronunciations.

The native speaker's audio served as a comparison sample between the pronunciation of each student in the pre-test and the native English speaker's pronunciation. After the method was applied, the pronunciations of the pre-test were compared with the audio of the native speaker to finally compare both results and analyze the effect of the technique in terms of vowel pronunciation.

Audio recordings were made while the students pronounced the words that contained the vowel sounds /ʌ/, /ɪ/, /æ/ to measure the formants of these 3 vowels and compare them with those of the native speaker sample, thus, to analyze the effect of the implementation of the Shadowing technique.

Results

The researchers implemented eight sessions for the development of this project, including the pre-test and post-test. The estimated time for the sessions was 1 hour and included six steps:

1. Exposition of information: The script and vocabulary to work on were exposed.
2. Listening to the audio: Students did not shadow, they listened.
3. Reviewing the text: The text was reviewed to clarify difficult sounds and meanings of the words.
4. Mumbling: The students shadowed the incoming sounds like a whisper without text.
5. Parallel reading: Students shadowed while reading the text.
6. Shadowing three times: Students shadowed the incoming sounds aloud without text.

To conduct the planned sessions an extracurricular space was chosen, in which a table, chairs, photocopies with the scripts, and a TV were required. The implementation of the

technique started with the pre-test in which students had to pronounce nine words (but, jump, umbrella, man, cat, bank, basic, milk and ship) in which the phonemes to study were included in a worksheet. Before recording the audios, the practitioners asked the students about the Shadowing technique to identify if they had previous knowledge about the technique. Still, they indicated a need for more information and how it works.

Fortunately, some students expressed that they had used platforms like TikTok, where people do activities similar to the technique. For this reason, the process of understanding the purpose of the activities was more straightforward. Later, when recording the audio recordings, each student was called privately to pronounce twice the nine words that would be used at the end of the sessions for the analysis. It was revealed that some students were not familiar with English pronunciation in their classes. For this reason, they tend to pronounce vowels in English like those in Spanish for instance, instead of /'ʌm,brɛlə/ students pronounced /um 'bre λa/.

In the first session, the 6 steps to follow were explained to students (see figure 1). During the first step, “Exposition of information,” when the script corresponding to the video “Expressions to narrate and time” (see figure 2) was shown, students appeared scared as they did not understand the vocabulary of the script. Evidently, students were unfamiliar with texts entirely in English even when they watched of the first session the video for the first time (see figure 3), they expressed, “It is difficult” and “I understood some words.” However, some facts were observed since session one, such as changes in the pronunciation of selected vowel phonemes. Initially, they pronounced the word "basic" using the Spanish pronunciation. After repetitions of the videos, students started to modify their pronunciations of some words such as “umbrella”, instead of /um 'bre λa/. they said /'ʌm,brɛlə/.

Furthermore, the practitioners decided that some adjustments were necessary to make to the lesson plan that was taken as a reference from Hamada Yo (2014); first, they had to adapt it to elementary school students, increasing repetitions of activities and changing the order of some steps to make the sessions easier for them and have better results, for example, Mumbling, review the text and parallel reading were activities that changed their order.

Figure 1 Implementation evidence



Figure 2 Script Session 1



EXPRESSIONS TO NARRATE AND TIME

Once upon a time, there was a boy whose name was Erick. He usually woke up at 7 AM and had a basic breakfast, his favorite drink, milk, and a piece of bread. Then, he went to school. One day, his alarm did not ring, and he missed the bus. He decided to walk with his umbrella. While walking in front of a bank with his umbrella, he found a cat that liked to jump. It was cute but he could not take it home. Erick got home at 9 and since then, he visited the cat but when he became a man, they never saw each other again.

Figure 3 Video Session 1



In the second session, the steps to follow were explained one more times to students. In this case, it was noted that it lasted forty-five minutes, shorter than the estimated duration of 1 hour. After finishing the second step, “To listen to the audio,” practitioners decided that it was necessary to reduce the speed of the video because the nature of the native English speaker made it difficult for the children to understand and identify the words. This change helped students to

understand the words better when they listened to the audio and did the activity “Parallel reading”. Later, practitioners noticed that students were copying each other's pronunciation when reviewing the text. For instance, one participant said "Basic", and the next repeated the same, so the practitioners decided to call each student privately.

During the third session, students were more familiar with the activities they had to do, resulting in a shorter duration from then. In this session, despite the difficulty of doing the technique without text, some students commented that they noticed a difference between their pronunciation and the one of the videos, such as /bæŋk/ and /mɪlk/, which produced a more significant effort from students to pronounce the words exactly as the video. However, despite having gone through three sessions already, in the fourth session, some students still mispronounced certain words; it was evident that some words were more difficult to recognize, such as “jump” and “umbrella.”

It is important to clarify that for the fifth and sixth sessions the duration of each session was shorter, as students already knew what they had to do and went straight forward with the activities proposed in the lesson plan. It is important to mention that each lesson plan followed up the same structure to facilitate its development. Sometimes, students missed sessions, leading to scheduling additional time to ensure continuity in the progress they had achieved up to that point.

Finally, in the post-test, during the audio recordings, some students corrected their pronunciation upon realizing their own mistakes as the test was developed, demonstrating that they became aware of how to pronounce the words correctly. This suggests that shadowing had a positive effect by making them more aware of what they were listening to and their

pronunciation, proving an improvement in retaining phonological information; Kadota, as cited in Hamada (2014), stated the phonological information stayed longer in the working memory, due to the online repetition making it easier to remember.

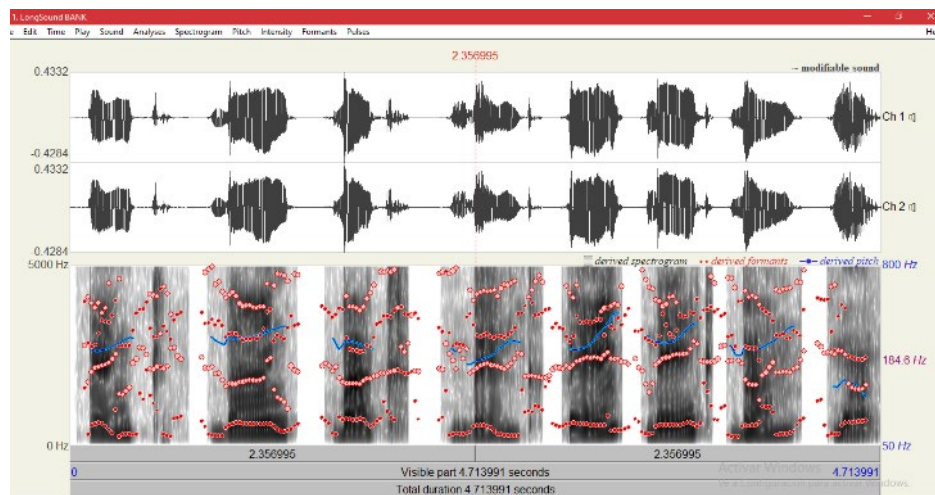
Praat

Praat is a free software for acoustic analysis in linguistics. In this research, it was used as a tool to analyze the audio recordings in both pre-test and post-test, to analyze the impact of the shadowing technique on the pronunciation of the English phonemes /ʌ/, /ɪ/ and /æ/.

Initially, the pronunciation of each word was consolidated individually for all participants. For example, the pronunciation of the word "Jump" by each student was unified in a single audio file. For the analysis of the audio recordings, the periodic waves of participants' vocal cord vibrations and their formants on the spectrogram were considered.

The formants indicate the amount of energy released in the articulation of each word, expressed in Hertz (number of times an event is repeated during one second). These are represented by small circles forming a line, and these four lines indicate the precise moment when the vowel formant occurs. For the study, only the first and second lines were considered from bottom to top, that is, F1 and F2, respectively, establishing the approximate range of the instant at which the phoneme under study is generated and recording its measurement in Hertz (See figure 4)

Figure 4 Software Praat



The same procedure was followed with the native speaker's audios, which were used as reference, both in the pretest and post-test. The data collected were entered into an Excel spreadsheet, where each phoneme, the words that contained them, and the F1 and F2 data for each one, were collected.

In the pre-test, the vowel phoneme /ʌ/ included the words: Jump, but, and umbrella and each one had different vowel formants according to students' pronunciation measure in Hertz (see table 1).

- Jump: the vowel formants were for F1 from 419.2 to 932.5 Hertz and for F2 from 1048 to 2770 Hertz.
- But: the vowel formants were for F1 386.1 to 899.4 Hertz and for F2 from 700.7 to 2853 Hertz.
- Umbrella: The vowel formants were for F1 from 353 to 502 Hertz and for F2 from 2241 to 2638 Hertz.

Table 1 Pretest vowel formants /ʌ/

WORD	VOWEL	F1	F2
JUMP 1	/ʌ/	932.5	1926
JUMP 2		502	1744
JUMP 3		584.8	1380
JUMP 4		502	2605
JUMP 5		452.3	2770
JUMP 6		617.9	2439
JUMP 7		419.2	1048
JUMP 8		667.6	2522
BUT1		651	1131
BUT 2		551.7	2787
BUT 3		518.6	2770
BUT 4		386.1	700.7
BUT 5		899.4	1942
BUT 6		684.1	2853
BUT 7		502	849.7
BUT 8		882.8	1810
UMBRELLA 1		502	2572
UMBRELLA 2		353	2572
UMBRELLA 3		419.2	2456
UMBRELLA 4		353	2638
UMBRELLA 5		419.2	2439
UMBRELLA 6		386.1	2241
UMBRELLA 7		452.3	2638
UMBRELLA 8		386.1	2539

The vowel phoneme /æ/ included the words: cat, man, and bank. Each one with different vowel formants according to students' pronunciation (see table 2).

- Cat: the vowel formants were for F1 from 717.2 to 915.9 Hertz and for F2 from 1810 to 2307 Hertz.
- Man: the vowel formants were for F1 from 468.9 to 998.7 Hertz and for F2 from 1678 to 2472 Hertz.

- Bank: the vowel formants were for F1 from 435.8 to 1148 Hertz and for F2 from 1578 2323 Hertz.

Table 2 Pretest vowel formants /æ/

CAT 1	/æ/	766.9	1893
CAT 2		816.6	3135
CAT 3		915.9	1843
CAT 4		717.2	1810
CAT 5		849.7	1827
CAT 6		899.4	1827
CAT 7		1015	1727
CAT 8		717.2	2307
MAN 1		502	2323
MAN 2		468.9	1909
MAN 3		617.9	1711
MAN 4		518.6	2472
MAN 5		998.7	2274
MAN 6		717.2	1843
MAN 7		816.6	1678
MAN 8		700.7	2158
BANK 1		485.4	1578
BANK 2		435.8	1810
BANK 3		1032	1843
BANK 4		584.8	1678
BANK 5		1065	2323
BANK 6		1148	1926
BANK 7		965.6	1843
BANK 8		717.2	1678

The vowel phoneme /ɪ/ included the words: milk, ship, and basic. Each one with different vowel formants according to students' pronunciation (see table 3).

- Milk: the vowel formants were for F1 from 386.1 to 568.2 Hertz and for F2 from 2058 to 3085 Hertz.

- Ship: the vowel formants were for F1 from 353 to 551.7 Hertz and for F2 from 2323 to 2837 Hertz.
- Basic: the vowel formants were for F1 from 336.4 to 551.7 Hertz and for F2 from 2290 to 2803 Hertz.

Table 3 Pretest vowel formants /ɪ/

MILK 1	/ɪ/	485.4	2671
MILK 2		419.2	3217
MILK 3		386.1	2903
MILK 4		568.2	2058
MILK 5		535.1	2986
MILK 6		535.1	3002
MILK 7		435.8	3085
MILK 8		435.8	2654
SHIP 1		518.6	2456
SHIP 2		452.3	2837
SHIP 3		353	2671
SHIP 4		419.2	2605
SHIP 5		551.7	2621
SHIP 6		452.3	2505
SHIP 7		386.1	2770
SHIP 8		386.1	2323
BASIC 1		468.9	2621
BASIC 2		717.2	2539
BASIC 3		336.4	2770
BASIC 4		468.9	2770
BASIC 5		551.7	2803
BASIC 6		518.6	2290
BASIC 7		353	2588
BASIC 8		386.1	2390

The same process was done with vowel formants obtained in the post-test with the same vowel phonemes that included the same words used in the pre-test. The vowel phoneme /ʌ/ had different vowel formants according to students' pronunciation in the post-test (see table 4).

- Jump: the vowel formants were for F1 from 475.6 to 745.7 Hertz and for F2 from 1324 to 2404 Hertz.
- But: the vowel formants were for F1 from 398.5 to 745.7 Hertz and for F2 from 112. to 2038 Hertz.
- Umbrella: The vowel formants were for F1 from 340.6 to 475.6 Hertz and for F2 from 1671 to 2539 Hertz.

Table 4 Posttest vowel formants /ʌ/

JUMP 1		475.6	1421
JUMP 2		533.5	1787
JUMP 3		552.8	1151
JUMP 4		456.3	1614
JUMP 5		668.5	1729
JUMP 6		552.8	1324
JUMP 7		668.5	22121
JUMP 8		745.7	2404
BUT1		591.4	1170
BUT 2		398.5	2019
BUT 3		398.5	112
BUT 4		649.2	1344
BUT 5	/ʌ/	629.9	1344
BUT 6		745.7	1536
BUT 7		610.7	2038
BUT 8		572.1	1633
UMBRELLA 1		359.9	2539
UMBRELLA 2		475.6	2539
UMBRELLA 3		359.9	1536
UMBRELLA 4		321.3	2134
UMBRELLA 5		417.8	2212
UMBRELLA 6		359.9	1671
UMBRELLA 7		456.3	2559
UMBRELLA 8		340.6	2385

The vowel phoneme /æ/ included the words cat, man, and bank, each with different vowel formants according to students' pronunciation in the post-test (see table 5).

- Cat: the vowel formants were for F1 from 591.4 to 765 Hertz and for F2 from 1633 to 2308 Hertz.
- Man: the vowel formants were for F1 from 244.2 to 572.1 Hertz and for F2 from 1942 to 2655 Hertz.
- Bank: the vowel formants were for F1 from 263.5 to 668.5 Hertz and for F2 from 1556 to 2520 Hertz.

Table 5 Posttest vowel formants /æ/

CAT 1		765	1922
CAT 2		765	1826
CAT 3		707.1	1845
CAT 4		629.9	1729
CAT 5		591.4	2308
CAT 6		707	1999
CAT 7		726.4	1633
CAT 8		649.2	1729
MAN 1		437.1	2212
MAN 2		535.5	2019
MAN 3		398.5	2192
MAN 4	/æ/	244.2	2308
MAN 5		535.5	2655
MAN 6		572.1	2308
MAN 7		533.5	1942
MAN 8		572.1	2057
BANK 1		398.5	2308
BANK 2		572.1	1826
BANK 3		668.5	1942
BANK 4	263.5	2173	
BANK 5	533.5	2424	
BANK 6	552.8	2520	
BANK 7	1054	2192	
BANK 8	649.2	1556	

The vowel phoneme /ɪ/ included in the post-test included the same words: milk, ship, and basic, each with different vowel formants according to students' pronunciation (see table 6).

- Milk: the vowel formants were for F1 from 359.9 Hertz to 668.5 and for F2 from 1961 to 2944 Hertz.
- Ship: the vowel formants were for F1 from 437.1 to 533.5 Hertz and for F2 from 2231 to 2676 Hertz.
- Basic: the vowel formants were for F1 from 398.5 to 861.4 Hertz and for F2 from 2173 to 2732 Hertz.

Table 6 Posttest vowel formants /ɪ/

MILK 1	/ɪ/	359.9	2289
MILK 2		514.2	2944
MILK 3		359.9	2617
MILK 4		456.3	1961
MILK 5		533.5	2212
MILK 6		668.5	2212
MILK 7		437.1	2424
MILK 8		572.1	1980
SHIP 1		494.9	2077
SHIP 2		475.6	2676
SHIP 3		417.8	2597
SHIP 4		437.1	2308
SHIP 5		533.5	2269
SHIP 6		475.6	2347
SHIP 7		437.1	2269
SHIP 8		475.6	2231
BASIC 1		437.1	2462
BASIC 2		398.5	2732
BASIC 3		1170	2674
BASIC 4		321.3	2559
BASIC 5		417.8	2636
BASIC 6		475.6	2578
BASIC 7		861.4	2173
BASIC 8		456.3	2694

As the pre-test and post-test, the audios from the native English speaker were analyzed using the software Praat to know vowel formants that were taken as reference for the project

using the same words. For the vowel phoneme /ʌ/ the word jump had formants in F1 775.9 Hertz and for F2 1664 Hertz; for the word but the F1 was 831.4 and F2 1664 Hertz; for the word umbrella the F1 was 592.6 and F2 1637 Hertz (see table 7).

Table 7 Reference vowel formants /ʌ/

WORD	VOWEL	F1	F2
JUMP	/ʌ/	775.9	1664
BUT		831.4	1664
UMBRELLA		592.6	1637

For the vowel phoneme /æ/, the word cat had F1 803.7 Hertz and F2 1664 Hertz; for the word man, the F1 was 581.5 and F2 1887 Hertz; for the word bank, the F1 was 671.1 and F2 2345 Hertz. (see table 8).

Table 8 Reference vowel formants /æ/

CAT	/æ/	803.7	2317
MAN		581.5	1887
BANK		671.1	2345

For the vowel phoneme /ɪ/, the word milk had F1 609.3 and F2 2039 Hertz; for the word ship, the F1 was 567.7 and F2 2321 Hertz; for the word basic, the F1 was 597.8 and F2 2076 Hertz (see table 9).

Table 9 Reference vowel formants /ɪ/

MILK	/ɪ/	609.3	2039
SHIP		567.7	2321
BASIC		597.8	2076

Then, three scatter plots were drawn representing the data obtained in F1 and F2 for the reference, pre-test, and post-test audios. To achieve the study's purpose, it was necessary to invert the values of each axis of the graph to visualize the location of the phoneme formants. In this way, information was obtained about the height and centrality of each one.

Data Analysis

A pre-test and post-test were designed to analyze the effects of the shadowing technique on the pronunciation of the vowel sounds /ʌ/, /ɪ/, and /æ/. To build these tests, nine words were selected, three per each mentioned phoneme, and every word contained one of the vowel sounds to analyze: But, Jump, Umbrella; Basic, Milk, Ship; and Man, Cat, Bank, respectively. Then, the students were asked to pronounce each word separately, and those pronunciations were recorded on audio. Later, the pronunciations of each word by all participants were unified into a single audio file, which was then entered into the Praat software for interpretation and analysis.

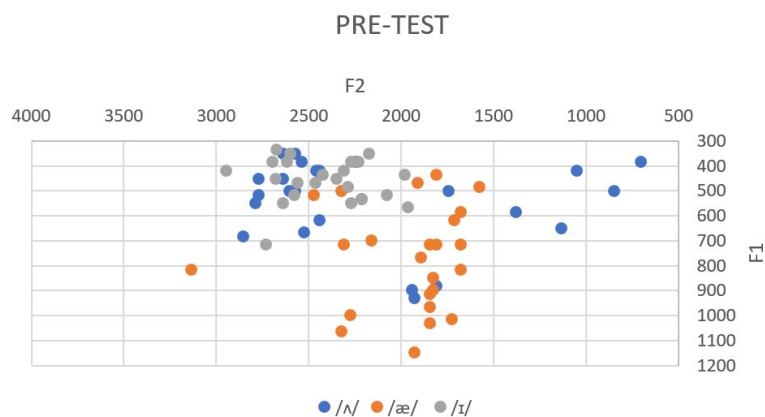
The same process and structure were used for both the pre-test and the post-test to ensure concordance between the two tests and effectively demonstrate the behavior and changes in pronunciation before and after the application of the technique.

The reference is from the native American English speaker. A person from United States was selected, who pronounced the same words contained in the pre- and post-test designed for the participants, the pronunciations were recorded in a separate audio for each word and entered into the Praat software for their respective analysis. Following this, the data provided by Praat was recorded in excel to obtain the graphs shown below and the pre-test was compared with the

reference and the post-test with the reference to analyze how close the participants' pronunciations were to that of the native speaker, before and after the sessions.

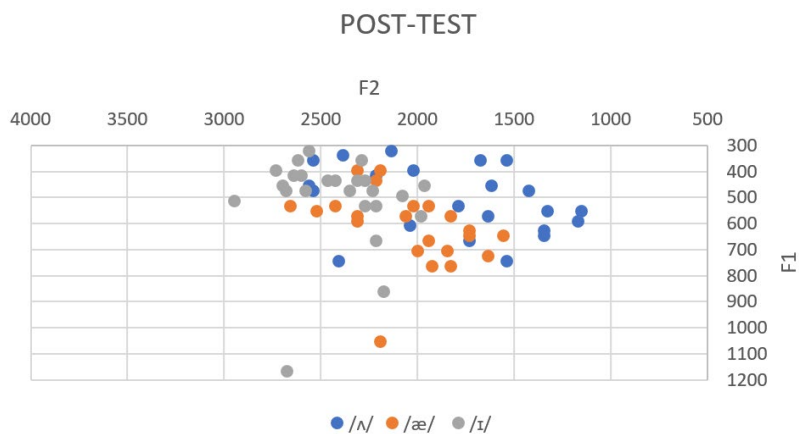
In the graph illustrating the pretest, a wider dispersion of phonemes pronounced by the students before the implementation of the shadowing technique is observed. This dispersion covers a range of (500 - 3200) Hertz for F2 and a range of (300-1200) Hertz for F1 (See graphic 1).

Graphic 1 Pre-test

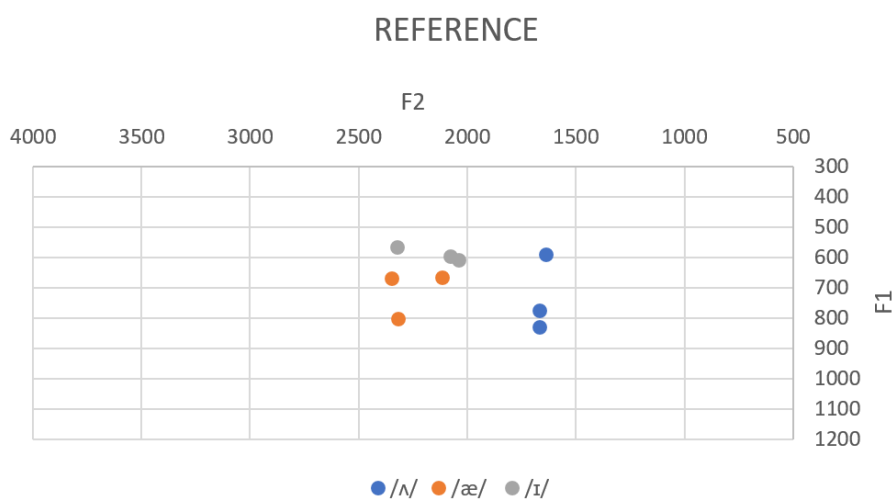


In the post-test graph (see graphic 2), a significant reduction in the dispersion of the students' pronunciation data is evidenced, showing a greater closeness to the reference pronunciation coordinates (see graphic 3) and an improvement considering the data collected in the pre-test.

Graphic 2 Post-test



Graphic 3 Reference

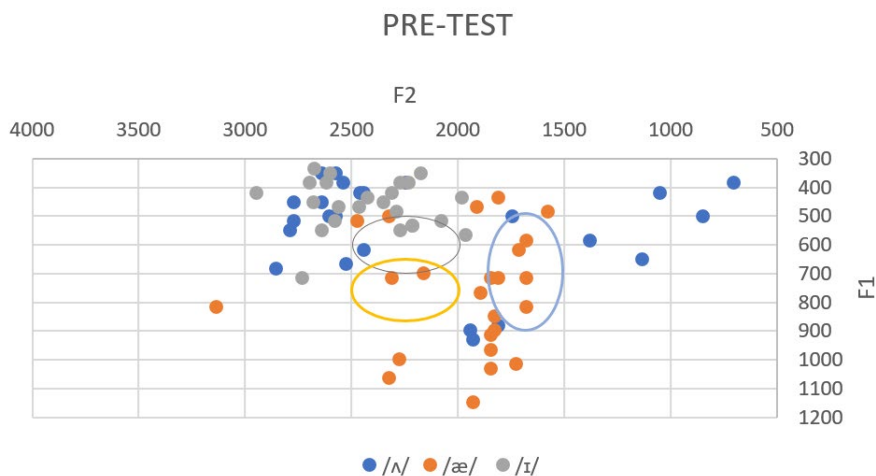


To compare the data obtained from the audio recordings between the participants and the native speaker, a tolerance limit was established to determine the proximity of the results of the pretest and post-test to the reference audio, after being analyzed using the Praat software. Thus, for the phoneme /æ/, a range was considered between 650 and 850 Hertz in F1, and between 2000 and 2500 Hertz in F2; for the phoneme /ʌ/, a range was established between 500 and 900 Hertz in F1, and between 1500 and 1700 Hertz in F2; finally, for the phoneme /ɪ/, a range was delimited between 500 and 700 Hertz in F1, and between 2000 and 2500 Hertz in F2. In addition,

analysis of the formant coordinates of the vowel formants within each range was carried out to examine the resulting differences.

In the pretest (see graphic 4), it was observed that only 2 formants were within the established range for the phoneme /æ/. Similarly, for the phoneme /ʌ/, only 1 formant met that condition. Finally, for the phoneme /i/, 3 formants were identified to be within the established range. According to the reference, the farther the formants are from the established range, the farther the pronunciation of the vowel sound it represents is from sounding like that of the Native. This means that only vowel formants that fall within and close to the range resemble sounding like the reference; thus, from the data illustrated in the graph, it is evident that most students pronounce vowel sounds far differently than a native speaker of English.

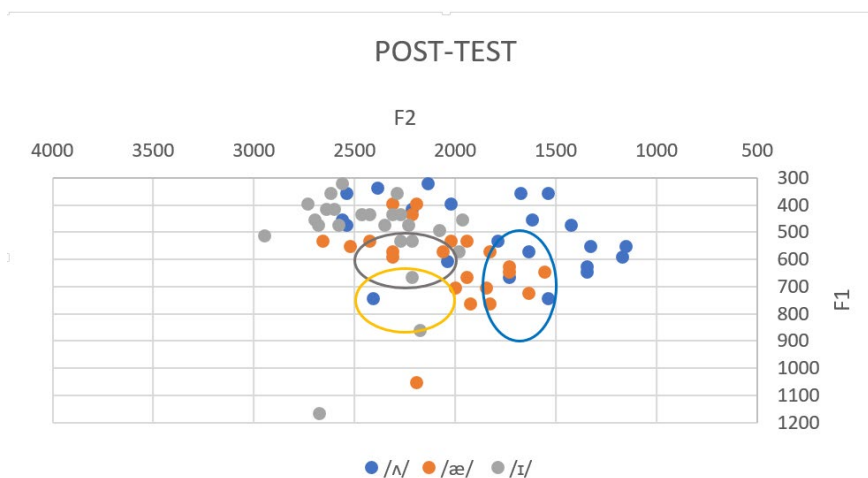
Graphic 4 Pre-test analysis



The same comparison was made with the post-test data (see graphic 5), and it was observed that no formant was within the established range for the phoneme /æ/. On the other hand, 4 formants corresponded to the phoneme /ʌ/, while 3 formants coincided with the phoneme /i/. Although, after applying the technique, the data obtained showed that fewer formants are

exactly within the established ranges considering the pronunciation of the reference, these same formants, which in the pretest were too far from the range, are much closer this time. In short, the formants show that after applying the technique, many more of the students' vowel pronunciations resembled much more closely that of the American speaker.

Graphic 5 Post-test analysis



The results presented in the graph are of crucial importance for the study, as they facilitate the comparison of the pronunciation of the phonemes /ʌ/, /ɪ/, and /æ/ in English before and after applying the technique, in contrast to the reference (English speaker) audios and allow us to analyze the effect of such technique on the students' pronunciation.

It was found that, although few formants remained within the established ranges for each of the selected vowel phonemes after comparison with the reference standard (native speaker), when analyzing and comparing the graphic representation of the pronunciations before (pretest) and after (posttest) the sessions, the formants went from being widely dispersed throughout the map to being closer to each other, and consequently, much closer to the formants of the

reference. This means that, although the pronunciation of the students after the application of the technique was different from that of the native speaker, there were changes and improvements in their pronunciation. Such results were not only manifested in the Cartesian graphs (Graphics 1 and 2) but also in the progressive observations made by the researchers throughout each session in the field diary. In brief, it can be concluded that the shadowing technique proved to be effective in improving students' pronunciation of the phonemes /ʌ/, /ɪ/, and /æ/.

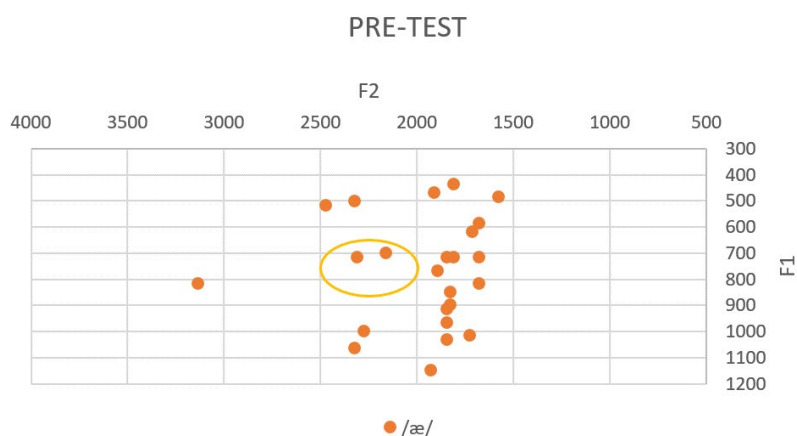
Findings

For the development of the sessions, material made by the practitioners was used. This material included scripted videos with topics and vocabulary based on DBA. and “Mallas de Aprendizaje” of Colombia corresponding to fifth grade of elementary school, such as introducing yourself, like and do not like, emotions, daily routine, the family, and adjectives. However, during the sessions, it was noticed that students had a low exposure to English and did not know as many words as expected.

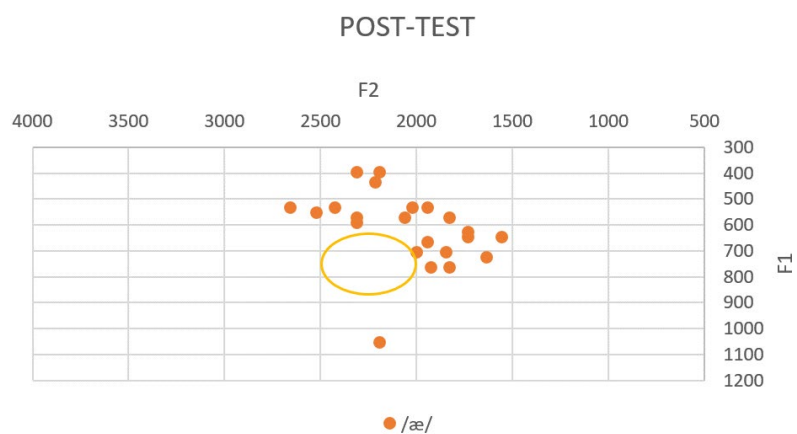
On one hand, the limited exposure to the language had a notable impact on their performance during the sessions. This aspect had to be considered when designing the instructional materials and the steps to follow during the application sessions. This was also a factor that influenced the difficulty in the pronunciation of the chosen words, and it was noticed in the vowel sound /æ/, which, considering the results shown by the post-test (see graphic 7), had obtained no formants within the established range of tolerance. This vowel sound is a low-front vowel, which means the jaw opens more compared to more closed vowels like /e/ or /a/ in Spanish, so students substituted /æ/ for /a/ before listening to the audio, and for /e/ right after, as in man, cat and bank; for this reason there was a notable difference between the pretest (see

graphic 6) and the post-test (see graphic 7) with two and no formants respectively within the established range of tolerance. Although /a/ is the closest vowel in Spanish, it is neither as open nor as forward as /æ/, leading to inaccurate pronunciation, so it represented a big challenge for them.

Graphic 6 Analysis pre-test phoneme /æ/



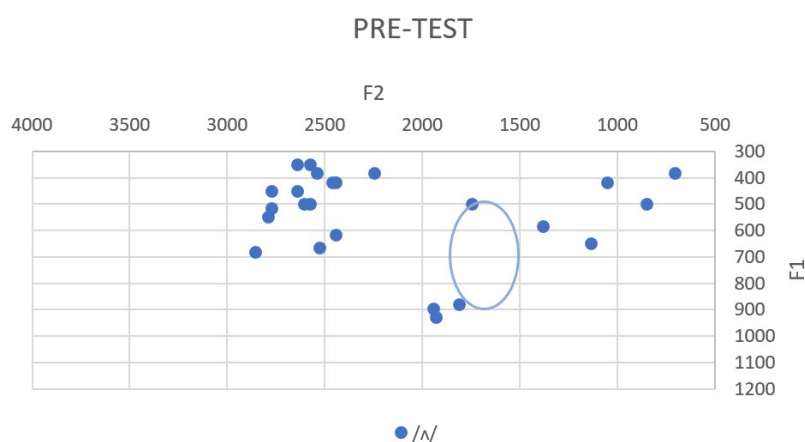
Graphic 7 Analysis post-test phoneme /æ/



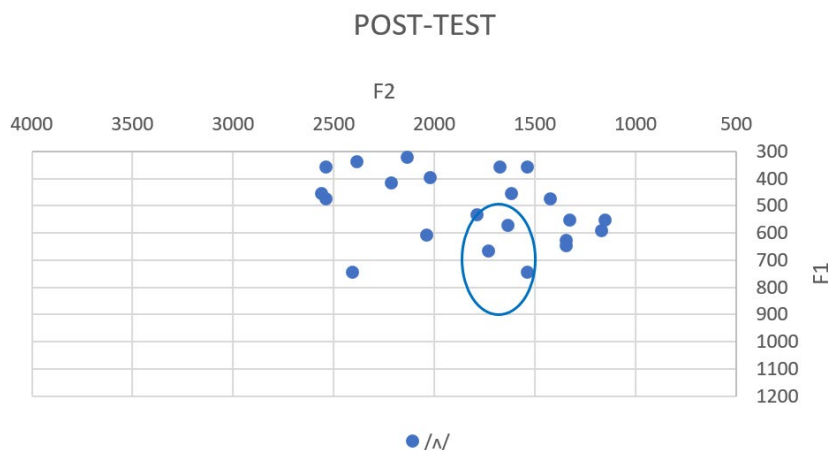
The vowel sound /Λ/ was also challenging for students due to its location on the chosen words. For instance, /Λ/ in “jump,” “but,” and “umbrella” is influenced by different phonemes in their vicinity. This is part of what is called “phonological processes”. In “jump,” the /Λ/ is placed

between an affricate voiceless and a bilabial voiceless, whereas in “but,” the /ʌ/ is placed between a bilabial voiced and an alveolar voiceless; all this can affect how phonemes are produced. Even though it was a new sound for students, comparing the before (see graphic 8) and the after (see graphic 9), it was evident that students comprehended efficiently how to produce this phoneme after following the shadowing process.

Graphic 8 Analysis pre-test phoneme /ʌ/



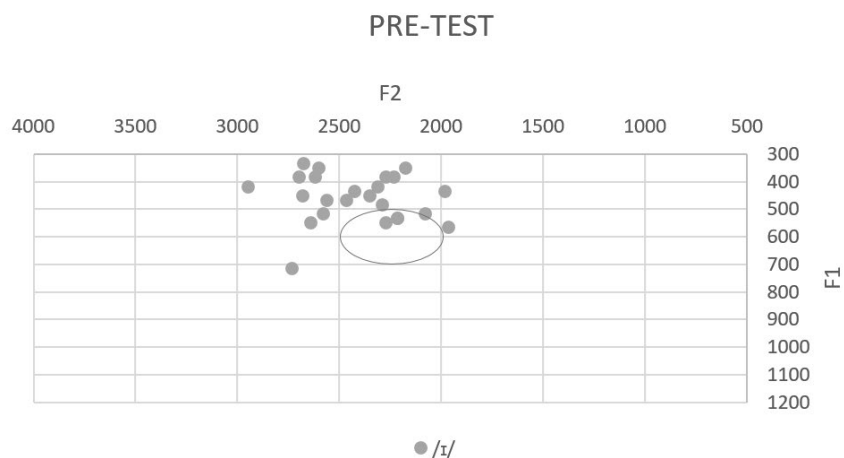
Graphic 9 Analysis post-test phoneme /ʌ/



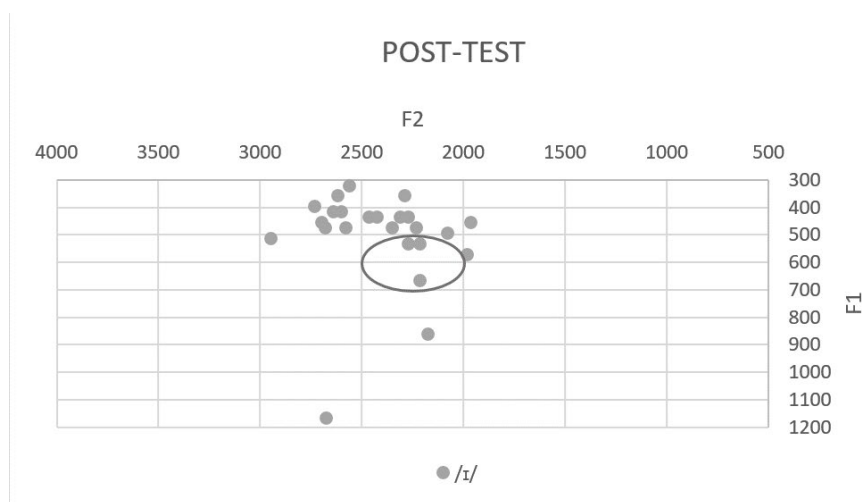
A similar situation happened with the vowel sound /i/. In Spanish, there is no clear contrast between short and long vowels, leading learners to not perceive or not correctly

reproduce the shortness of /ɪ/. Therefore, students were not familiar with adjusting the pitch and stress of the tongue to produce this sound, resulting in inaccurate pronunciation, which makes them tend to substitute /i/ for /ɪ/, as in “ship,” “milk,” and “basic”. The vowel's position also determined how students produced the phoneme; in “milk” and “ship”, the phoneme /ɪ/ is in a closed syllable, immediately followed by a consonant, which helps keep the vowel short and accurate; but in “basic”, this vowel sound appears in the final syllable, which is an open syllable and is not in the tonic syllable. Being on an unstressed syllable and at the end of the word, students tended to lengthen the vowel, making it sound more like /i/ rather than /ɪ/. In this way, it can be observed that, although one additional formant completely fell within the established tolerance range in the post-test (see graphic 11), most of the formants in the pre-test (see graphic 10) already showed that the students were not far from the correct pronunciation. This is because the sounds in Spanish and English tend to be similar for students at first sight.

Graphic 10 Analysis pre-test phoneme /ɪ/



Graphic 11 Analysis post-test phoneme /i/



On the other hand, it was found that the number of sessions could have been higher to allow students more time to work with the material, increasing the number of sessions could have been a good option to familiarize students with the material. Additionally, when working with children adapting the video speed to the students' abilities and needs such as their English level significantly enhanced their comprehension, attention and participation during activities using the Shadowing Technique.

It was noticed that the auditory component was more important for students; they tended to focus primarily on the auditory aspect and ignore the visual. This finding indicates that students were focused only on recognizing and processing the verbal information before the visual information, such as gestures and movements. Besides, another important aspect is that working in small groups was essential for the study, as children quickly become distracted during activities. This approach allowed us to monitor each student's progress and pronunciation better, as they often copied the pronunciation of their peers.

Conclusion

In conclusion, this research project about the Shadowing Technique as a strategy to improve the pronunciation of public elementary school students has provided valuable insights and results in pronunciation when learning English as a foreign language. The different objectives of this project must be considered to support the affirmation of the shadowing technique's positive effect on students' pronunciation.

Firstly, the first objective proposed for obtaining speech samples of the participants before and after the intervention. was achieved. Thanks to the pre and post-test, it was possible to collect the necessary data before and after the application of the technique, contributing to the analysis that allowed to achieve the main objective of the research. It can be concluded that the Shadowing technique can be used efficiently to improve pronunciation in English; familiarizing the students with the words they need to pronounce before the implementation and apply what they learn right after.

The second objective of this research was successfully achieved by conducting eight implementation training sessions using the shadowing technique with various session materials in which the target vowel phonemes were included. This process and the data collected during the sessions also helped achieve the final specific objective: measuring the vowel formants in the pre-and post-intervention samples to compare them with those of native American English speakers.

The speech samples of the participants revealed a change in the students' pronunciation. The information collected was valuable when comparing students' pronunciation before and after, showing that the shadowing technique had a positive effect.

Thirdly, it was successfully achieved the general objective that focused on analyzing the effect of the shadowing technique on the pronunciation of the English phonemes /ʌ/, /i/, and /æ/ by achieving the three specific objectives within this project. The analysis of the shadowing technique in the students' pronunciation could be carried out thanks to the different instruments used to collect and analyze data, such pre-test, post-test and field journal. In this way, it is stated that the technique did have a positive effect since, after this implementation, the students' pronunciation had a behavior much closer to the one that was taken as a reference (American Native English speaker). Although in some cases, as in the phoneme /æ/, it was not precisely the one of reference, the behavior of the participants' pronunciation improved over what was collected in the pre-test.

After reaching the objectives of this research, it was possible to determine the positive effect of implementing the Shadowing technique to improve pronunciation. The students gradually improved their English pronunciation through the sessions, which was evident in the results at the end of the sessions. This work can help future research focused on pronunciation or those who want to explore the Shadowing technique slightly more.

Limitations

For the development of this project, several difficulties were found. Firstly, the sessions were limited to 1 hour, and some participants were not on time, making it difficult to use the estimated session time effectively; sometimes, students did not attend, making it necessary for additional sessions outside the schedule to keep students' progress. Secondly, selecting topics and vocabulary was challenging, as it had to match the different English levels of the students, though efforts were made to follow the DBA topics for fifth grade. Additionally, recording the audios in a private room was necessary because of the background noise to have clean data to

analyze later, and the process of editing the audio files was challenging because it required unifying each word pronunciation of all participants into one audio and rigorously selecting the moments when the vowel to be analyzed was pronounced, for this process it was important to have laptop or pc in a good condition for a efficient work. Finally, finding a willing native speaker to help with recording the audio material was difficult, and it was essential that this person had not only good pronunciation but also clarity in speech to be easily understood by the participants.

Recommendations

Considering the students' English language exposure, creating more spaces for students to interact with the language is essential. For this reason, podcasts, songs, videos in English, and techniques such as Shadowing can complement classroom learning and reinforce pronunciation skills. Integrating the Shadowing technique in EFL classes enhances students' pronunciation skills, alongside periodic sessions focusing on specific phonemes to improve their oral communication skills. Moreover, before implementing the technique with students, it is recommended that the purpose of the technique and the steps that students must follow be explained.

Through workshops and resources focused on pronunciation teaching strategies, teachers can learn how to create more interesting and valuable for students. The Shadowing technique as a strategy, with many branches to be used, is proposed for EFL classes. It allows the teacher to use existing material such as videos, songs, and podcasts or create his own material depending on the specific learning objective to achieve. In our case, we employed this technique to enhance the pronunciation of the phonemes /ʌ/, /ɪ/, and /æ/. We consider that the use of the technique

must be done with structured steps to follow to have an accurate action plan, such as the one proposed by Hamada as we did and adapt it to students' needs if it is necessary.

As researchers, we hope that this project helps future studies aimed at improving pronunciation. We believe that the shadowing technique, with the use of different materials can develop other pronunciation elements, for instance movies or TV shows be used to improve intonation using different dialogues and situations to perform, even rhythm and oral accuracy can be developed as Jaramillo and Isaza (2016) demonstrated the effectiveness of using songs to enhance English oral accuracy with four-grade students.

Moving forward, it is crucial to continue exploring innovative pronunciation teaching strategies and incorporating effective techniques like shadowing to support students' language learning. By emphasizing the importance of pronunciation and providing targeted interventions, educators can help students develop more precise and more accurate speech, enhancing their communication skills in English.

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Appendix A

Universidad del Cauca, Santander de Quilichao
Bachelor in Modern Languages, English and French

Shadowing Technique as a Strategy to Improve Pronunciation in Public
Elementary School Students

Practitioners: Carlos Andrés Bonilla Ríos, Juan Sebastian Carabali
Arteaga, Kenny Melissa Carabali Carabali
2024



Universidad
del Cauca

PRE-TEST

Objetivo: Este test se hace con el fin de evaluar la pronunciación de los estudiantes de quinto grado al leer palabras que contienen los fonemas /ʌ/, /ɪ/, y /æ/, con el propósito de establecer un punto de referencia antes de la implementación del método shadowing con el fin de medir la mejora en la pronunciación a lo largo del proceso de enseñanza.

Instrucciones: Lea en voz alta cada una de las siguientes palabras en inglés.

Words:

- But
- Jump
- Umbrella

- Man
- Cat
- Bank

- Basic
- Milk
- Ship

Appendix B

PLAN DE CLASE

Apellidos y nombres:

Fecha:

Número de sesión:

Tiempo:

Tema(s)	
Objetivo(s)	

<i>Stage</i>	<i>Descripción de la actividad</i>
1. Exposition of the information	In this part, the script and vocabulary to work on will be expose
2. To listen to the audio	Then, students will not shadow, they will listen.
3. Review the text	The text will be reviewed to clarify difficult sounds and meanings of words.
4. Mumbling	They will shadow the incoming sounds like a whisper without text.
5. Parallel reading	Students will shadow while reading the text.
6. Shadowing 3 times	Students will shadow the incoming sounds aloud without the text

Adaptado de: Registro Planeación de clase del estudiante educador del programa de Licenciatura en Lenguas Modernas Inglés – Francés, diseñado por JZR – 22/02/2017.

Appendix C

Santander de Quilichao,

Señores

PADRES DE FAMILIA

I.E. Francisco José de Caldas

Santander de Quilichao, Cauca.

Cordial saludo.

Por medio de la presente me permito solicitar su autorización y consentimiento para la participación de su hijo(a) en el proyecto de investigación **“LA TÉCNICA SHADOWING, COMO ESTRATEGIA PARA MEJORAR LA PRONUNCIACIÓN EN ESTUDIANTES DE ESCUELA PÚBLICA”**.

Responsables:

Yo, **KENNY MELISSA CARABALI**, identificada con cédula de ciudadanía n° 1.007.148.528, **JUAN SEBASTIAN CARABALI ARTEAGA**, identificado con cédula de ciudadanía n° 1.193.082.175, **CARLOS ANDRÉS BONILLA RIOS**, identificado con cédula de ciudadanía n° 1.007.149.022, estudiantes de la Universidad del Cauca, Sede Norte e investigadores del proyecto.

Procedimiento:

Previa autorización de la institución y consentimiento informado por parte de los padres y el (la) adolescente, debidamente firmado, se procederá a realizar las sesiones y registro fotográfico como instrumentos de investigación para la realización de este proyecto se requiere la participación de los estudiantes.

Agradeciendo su atención,

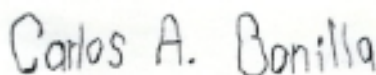
Cordialmente,



KENNY MELISSA CARABALI
C.C 1.007.148.528



JUAN SEBASTIAN CARABALI
C.C 1.193.082.175



CARLOS ANDRÉS BONILLA RIOS
C.C 1.007.149.022

FORMATO DE CONSENTIMIENTO INFORMADO

Yo: _____, identificado(a) con la cédula de ciudadanía número _____ de _____, en calidad de progenitor(a)/tutor(a) de _____, deseamos manifestar a través de este documento, que fuimos informados suficientemente y comprendemos la justificación, los objetivos, los procedimientos y beneficios implicados en la participación de nuestro hijo(a), en el proyecto de investigación: “LA TÉCNICA SHADOWING, COMO ESTRATEGIA PARA MEJORAR LA PRONUNCIACIÓN EN ESTUDIANTES DE ESCUELA PÚBLICA”, que se describe a continuación:

Equipo De Investigación

El equipo lo conforman: **KENNY MELISSA CARABALI CARABALI, JUAN SEBASTIÁN CARABALI ARTEAGA Y CARLOS ANDRÉS BONILLA RIOS** de la Universidad del Cauca, Sede Norte.

Participación Voluntaria

La participación de nuestro hijo(a) en este estudio es completamente voluntaria, si él o ella se negara a participar o decidiera retirarse, esto no le generará ningún problema, ni tendrá consecuencias a nivel institucional, ni académico, ni social. Si lo desea, nuestro hijo(a) informaría los motivos de dicho retiro al equipo de investigación.

Confidencialidad

La información suministrada por nuestro hijo(a) **será confidencial**. Los resultados podrán ser publicados o presentados en reuniones o eventos con fines académicos sin revelar su nombre o datos de identificación. Se mantendrán los cuestionarios y en general cualquier registro en un sitio seguro. En bases de datos, todos los participantes serán identificados por un código que será usado para referirse a cada uno. Así se guardará el secreto profesional de acuerdo con lo establecido en la Ley 1090 de 2006, que rige el ejercicio de la profesión de psicología en Colombia.

Así mismo, declaramos que fuimos informados suficientemente y comprendemos que tenemos derecho a recibir respuesta sobre cualquier inquietud que mi hijo(a) o nosotros tengamos sobre dicha investigación, antes, durante y después de su ejecución; que mi hijo(a) y nosotros tenemos el derecho de solicitar los resultados de los cuestionarios y pruebas que conteste durante la misma. Considerando que los derechos que mi hijo(a) tiene en calidad de participante de dicho estudio, a los cuales hemos hecho alusión previamente, constituyen compromisos del equipo de investigación responsable del mismo, nos permitimos informar que consentimos, de forma libre y espontánea, la participación de nuestro hijo(a) en el mismo.

Este consentimiento no inhibe el derecho que tiene mi hijo(a) de ser informado(a) suficientemente y comprender los puntos mencionados previamente y a ofrecer su asentimiento informado para participar en el estudio de manera libre y espontánea, por lo que entiendo que mi firma en este formato no obliga su participación.

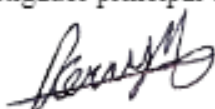
En constancia de lo anterior, firmamos el presente documento, en la ciudad de _____, el día _____, del mes _____ de _____.

Firma _____

Nombre _____

C. C. No. _____ de _____

Investigador principal de la investigación:



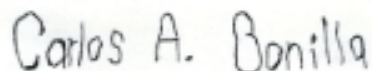
KENNY MELISSA CARABALI

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