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READING ALOUD AS A STRATEGY TO ENHANCE PHONEMIC AWARENESS

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APRENDIZAJE DEL INGLÉS COMO LENGUA EXTRANJERA (TEFL)

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Abstract

At present, English teaching programs for young learners are seen as a mere suggestion from the Ministry of Education. Undoubtedly, there is insufficient concern about the implementation of explicit phonemic awareness training during the first years of exposure to the English language in young students. As a result, students become less proficient in English, especially when a lack of exposure is revealed in their educational contexts. (Agencia de Calidad, 2017). Moreover, this paper explores reading aloud as a self-learning technique to overcome the hinder of English language production in reading when it comes to phonemic awareness instruction in a non-face-to-face class setting. The strategy to be presented in the following proposal covers the process of acquiring phonemic awareness in primary education, specifically in 3rd grade students through an online platform of reading aloud in the COVID-19 pandemic context.

Key words: Phonemic awareness, reading aloud, primary education, exposure to L2

Resumen

En la actualidad, los programas de enseñanza de inglés para estudiantes de enseñanza básica se consideran una mera sugerencia del Ministerio de Educación. Sin duda, existe una preocupación insuficiente por la implementación de programas que instruyan en conciencia fonémica durante los primeros años de exposición al idioma inglés. Como resultado, los estudiantes se vuelven menos competentes en inglés, especialmente cuando se revela una falta de exposición en sus contextos educativos. (Agencia de Calidad, 2017). Además, esta investigación explora la lectura en voz alta como una técnica de autoaprendizaje en un entorno de clase no presencial. La estrategia que se presentará en la siguiente propuesta cubre el proceso de adquisición de conciencia fonémica en la educación primaria, específicamente en los estudiantes de 3er grado a través de una plataforma en línea de lectura en voz alta en el contexto de la pandemia de COVID-19.

Palabras clave: Conciencia fonémica, lectura en voz alta, educación primaria, exposición a L2

1. Introduction

The Second Language Acquisition (SLA) field covers different aspects as to how students learn and overcome difficulties in the four skills of English. Nonetheless, the acquisition of intelligible pronunciation with Phonemic Awareness (PA) is one issue that is commonly encountered in Chilean school settings. Moreover, the problem arises due to students not recognizing the sound of graphemes appropriately, even after years of English lessons at school (Agencia de Calidad, 2017). Thus, there is an increasing concern that young learners acquire quite a limited range of sounds and letters in the second language, obstructing the primary years of education to expand their phonemic awareness. However, there are conflicting views and an overall lack of research regarding how best to manage students' phonemic awareness in the EFL classroom. Furthermore, this concern is now applied to an ever-changing scenario that the COVID-19 pandemic signified. Along these lines, even though the crisis exposed fragility in education, it also brought positive outcomes that will endure even after reopening schools. One of those is using online platforms that can serve as tools for supporting students who might homeschool and only have oversimplified or impoverished materials. Therefore, this research aims to identify and evaluate one strategy that can apply meaningful texts and a significant experience that could trigger learning independence and autonomy. In consequence, this approach specifically refers to the reading aloud strategy as a tool to enhance phonemic awareness in a remote distance environment.

Several scholars explain phonemic awareness (PA) as the ability to recognize that words are composed of different phonemes. Therefore, learners that are phonemically aware, can manipulate words by segmenting and blending skills. Regarding Spanish learners of English, there is a common conflict when they are introduced to a foreign language containing unfamiliar sounds. Indeed, phonemes might look similar for learners in both languages, Spanish and English. Still, they may not be aware of the importance of variations in the realizations of similar words that are semantically different, and that are significant for comprehension. Therefore, this investigation aims to assess students' phonemic awareness regarding the realization of a specific sound in reading aloud tasks.

Undoubtedly, the decision to assess only one sound contributes to clearness and focus on the study to consistently meet the objectives of the research. Nonetheless, there are certainly some limitations to this study. Firstly, the focus is admittedly narrow, and does not consider how certain variables interact with each other. Secondly, the research method oversimplified the situation. Thirdly, spectrogram depictions cause a problematic analysis because they portray only a single word, whereas a depiction of a sentence could have provided more valuable insights. Finally, there is the limitation of the spectrographic analysis of the sounds. Many words were not as clear, since subjects recorded the readings with low quality devices. Further on this investigation, these limitations will be tackled and discussed. Despite these issues that confronted the present study, it still shed light on teaching strategies and the efficacy of PA training. Similarly, several attempts have been made to evaluate the effects of phonemic assessment training. A number of researchers have reported that explicit training in PA can guarantee literacy success. Indeed, factors that influence PA have been explored in several studies. One of those factors includes the reading aloud strategy.

Recent evidence suggests that read aloud (RA) boosts phonemic awareness because they trigger engagement that connects with learners' meaningful experiences. Therefore, if consistent reading aloud is performed in the English class, the amount of exposure and training increases through the input on different sounds in the learners' ears. Hence, reading aloud is considered one strategy that aids to develop phonemic awareness, primarily because of its non-explicit nature. The controversy of explicit or non-explicit teaching scenarios is widely discussed in the literature, as PA in a foreign language is linked to naturally developed PA in first language acquisition.

To sum up, this study will contribute to the body of knowledge on the reading aloud skill developments by surfacing and evaluating the reading aloud approach to enhance phonemic awareness. Likewise, this research will help address the current shortage of research in the EFL area and provide real-world value to educational contexts operating in a dynamic environment like the one that COVID-19 exposed. Next, a brief overview of the context of this study will be presented.

1.1. Context of the study

The field of foreign language acquisition covers different aspects in terms of how students learn and overcome difficulties in the four skills of English. Nonetheless, the acquisition of intelligible pronunciation with phonemic awareness is one issue that is commonly encountered in Chilean school settings. Moreover, the problem arises due to students not recognizing the sound of graphemes appropriately. This is mainly because of their native language (Spanish) influencing their output in the English language, and to the little exposure they have to the English sounds that they are not used to in their L1. For instance, studies on acoustic phonetics (Koffi, 2020) disclose that it is common for Spanish speakers to substitute a /v/ sound into a /β/ (p.163), which is quite problematic, as it interferes with intelligibility in lexical minimal pairs such as /v/ in vat versus /b/ in bat or /b/ in base vs /v/ in vase, among others. Thus, there is an increasing concern that young learners acquire quite a limited range of sounds and letters in the foreign language, obstructing the primary years of education advantage to expand phonemic awareness.

Nonetheless, the health conditions have forcedly commanded Ministries at a global scale to adapt on-site lessons to an online remote format. In Chile, this has pressured schools to implement remote learning, and it has obligated teachers to rely on technology or other systems to ensure a prioritized curriculum. In the case of the EFL classroom, it has become a challenge to improve language skills under these new circumstances, specifically the limited access to materials and lack of exposure to the sounds of English. However, several websites have offered alternatives to help students develop their skills at home through online reading.

The covid-19 pandemic crisis has forced to decrease the number of English lessons and the way they were delivered. Consequently, teaching has been moved online on an unprecedented scale, leaving a severe interruption in the students' learning process. Importantly, in the English learning context, students are less exposed to contact in the language, and the lockdown has produced a constraint for student-student interaction possibilities. During the months in lockdown, as a reference, students have been learning through online resources, gamification and virtual classrooms. Nonetheless, the use of textbooks has been significantly diminished in the last 6 months, as well as the use of readers from the library.

It is important to mention that before the pandemic, students were quite exposed to books, as they had a compulsory daily reading period at school after breaks, as well as at-home reading assignments. Therefore, I can assume with some certainty that students did not have enough input for the development of skills in the target language. However, even though they were reading frequently, it was noticeable that they had never been read to, as it would happen in a reading-aloud activity. However, due to the teaching innovations accumulated during the health crisis and the implementation of new online resources, children gradually transferred from concrete material to virtual classrooms, leading to the discovery of online reading aloud.

In this introductory section, I offered a broad overview of the context of this study. In the next chapter, I examine the research paradigm that contains a thorough account of the rationale of this investigation in its design. Next, I undertake a comprehensive outline of the methodological aspects that entail this research.

2. Research design

2.1. Research paradigm

It is proper to remark that this investigation aimed its attention at the epistemological model, more specifically, to an objectivist approach to social science. This approach espouses the view that reality is only one and it is independent of the individual, as it shows evidence through a practical, experimental and action-oriented investigation. The approach used to understand the reality presented in this investigation lies in the empirical and objective model. This is based on the fact that data is providing a coherent description of the phenomena, and it is guided by hypothesis testing, by making systematic, objective predictions and observations.

This study leaned towards the analysis of sounds, in relation to the process of reading aloud. One can argue that the data collected by research might exhibit valid evidence and knowledge that despite a change in time or place can be considered as an absolute reality. However, as established by post positivism, this reality is not absolute and can change as it recognizes that “we know the world only probabilistically and imperfectly” (Cohen et al,2018, p.17). This portrays that even though this study shows the reality of one specific context and sample, any sample would not show an absolute truth, and it only suggests a possibility for a change or improvement.

2.2. Research questions

This research attempts to answer the following research question:

1. How does reading aloud improve phonemic awareness in L2 reading instruction among 3rd graders through a remote learning context?

2.3. Objectives

General.

To assess students’ phonemic awareness in terms of the realization of a specific sound in reading aloud tasks.

Specific.

1. To implement reading aloud as a strategy to improve phonemic awareness among students in 3rd grade.
2. To compare the different phonological realizations of the phonemes /b/ and /v/ in students' readings.

2.4. Hypothesis

This study will test the following hypothesis:

1. Phonemic awareness is enhanced through the implementation of the reading aloud technique in the EFL distance online learning context.

2.5. Justification

A primary concern of English teachers is the lack of learners' phonemic awareness, which leads them to difficulties when reading in the L2. In fact, there is a problem with the strategies that teachers have used with their students in the years of educational instruction. In 2017, the Chilean Ministry of Education revealed the results concerning the level of English among students. These scores were analyzed in contrast to the environment and level of exposure to the language. Unsurprisingly, it showed a considerably higher success in students who reported having classes taught in English, more instances of interaction, auto efficacy and the use of non-school context tools, such as internet websites and television. However, the percentage of these successful students in elementary level (A1) was only of 32 percent. For instance, interference of students' mother tongue is likely to be higher, resulting in poor phonemic awareness, or PA, if strategies to promote exposure to the language are not put into practice. To illustrate, the English language has a variety of minimal pairs, words that are written similarly but are pronounced differently as they are semantically different. This situation can potentially hinder communication among students of English in Chile, if exposure to the target language and phonemic awareness are not covered. Nonetheless, research overlooks the necessity to instruct PA; Krashen (2011) seems to support this viewpoint of it not being useful for foreign language acquisition. Thus, little attention has been devoted to developing phonemic awareness strategies to implement a successful English course.

Despite studies reviewed claiming that PA need not be trained (Krashen, 2002) it can be claimed that implementing strategies to train PA in students might accelerate their foreign language development and proficiency. For instance, according to Linan-Thompson et al. (2003) among different critical elements that guarantee reading success, phonological awareness responds as one important aspect to consider. This is reported in detail by Adams et al. (1997) explaining that skilled readers display a high degree of phonemic awareness, whereas students who are unaware of the sound structure of spoken words often have difficulty acquiring decoding skills. This issue can potentially be handled in the Chilean reality, as the *Agencia de Calidad* revealed a significantly poor performance in reading and listening skills in the English national test carried out in 2017, more specifically in those students who reported little exposure to the language due to the teachers' use of Spanish in the English classes, lack of motivation to search for more opportunities to listen to English, and even detachment to the language due to a cultural phenomenon. Additionally, we can assume that it is probable that from 2017 to 2021 results might have aggravated due to the Chilean social uprising, that had been simmering for years, as well as the coronavirus outbreak in the last year, issues that are not minor and need to be considered as they affect the context.

This research shed light on the benefits of the reading aloud strategy to improve phonemic awareness in children. However, it did not cover reading comprehension or the extent to which students learn or understand the vocabulary they read. The overall intention was to help learners read and blend the most difficult phonics accordingly, while they recorded themselves, to find out whether reading aloud improved their general reading performance over a period of time. All in all, this might offer remote learning tools for teachers of English who instruct in more economically disadvantaged settings. Likewise, this study might impact society in terms of a Policy influence as to change learning requirements for 3rd graders, as it will provide strategies to enhance students' pronunciation and awareness of sounds and letters in the L2, the same way they would in the L1. Consequently, the findings of this research may benefit students' communication skills in foreign language literacy in the long run.

3. Method

Sound production investigations are rarely a simple task, it usually results from a complex set of circumstances that involve not only the phonological and phonetic features of a sound, but also the environment created in the utterances in terms of their frequency, pitch, friction noise, etcetera. Moreover, it becomes essential to discuss the abstract realizations of sounds with the support of experts in the English language, as well. Thus, by combining two instruments, we may obtain an accurate picture of what sound learners produce. For this, one of the instruments was a survey that provided some useful insights into the problem. The second instrument was the visual representation of the sounds produced on spectrograms. These results aligned point to an interesting trend that indicates a noticeable change in students' pronunciation and phonemic awareness.

3.1. Research Method

On the one hand, a quantitative method was the best to measure the data gathered, as the quantitative method presents and implies statistical analysis, hypothesis formulation, pre-testing and post-testing, and an experimental procedure for the investigation. On the other hand, these results were compared with the analysis of the visual representations of the sounds, or spectrograms, in order to obtain a more valid conclusion.

3.2. Procedure

A quantitative approach was selected to evaluate the learners' remote learning in this experimental study. Thus, the strategy to integrate all the components of the study coherently and reasonably was the implementation of an experimental design within a case study. This case study uses an experiment as the main method for data collection and analysis. Furthermore, this research shows a specific instance to illustrate a more general principle (Nisbet and Watt, p.72 1984). The main reason that was accounted for this decision was the context of the Covid-19 pandemic that affected the whole world. Indeed, due to the hardships of this pandemic, school communities were not as available for further efforts through the computer. Equally, students seemed tired and overexposed to screens in order to assure their progress and education, which limited the number of students who could participate in this investigation. Nonetheless, a

specific group of learners were willing to take part in this research and collaborated during the process of data collection.

The literature that tackles with phonemic awareness refers to both, explicit and non-explicit training as a way to help children become aware of the language. For this investigation, reading-aloud is tested as a strategy that represents a non-explicit approach to phonemic awareness that advocates for a more meaningful and natural process. Therefore, this project examines the characteristics of the data in detail in order to gain insights of the issue presented through this theory testing approach.

The study in this proposal seeks to collect recorded data to determine the extent to which students engage in the reading aloud strategy to develop phonemic awareness. The sample is composed of 5 learners in third grade of the school. Moreover, the purpose of the first stage of the study was to diagnose the current status of students' phonemic awareness, specifically in regards to one single sound. Namely, the depiction of only one sound was decided due to time restriction purposes and for the sake of conducting a clear and specifically oriented research. Furthermore, in order to confirm the sound, it was necessary to assess students' awareness of phonemes through the implementation of a diagnosis reading passage of around 100 words. This pre-test was deliberately chosen to target the /v/ sound, and it was taken from the phonics selection of the online library at the Raz Plus website. The aim was to evaluate whether students were aware of the correct realization of the sound [v], or if they were not aware of the difference between the voiced labiodental fricative [v], the voiced bilabial plosive [b] and the voiced bilabial fricative [β] in English pronunciation.

After choosing readers for the subjects, they read the passage and recorded themselves on the Raz Kids website, without previous practice. In order to achieve the first stage of this research, it was crucial to depend upon subjects' parents. What is more, the pandemic exposed fragility in the remote learning, as it challenged parents to become facilitators for the subjects. Thus, adults cooperated with the success of the steps that subjects had to take during the time this research lasted.

During the first week of the data collection process, learners were assigned a book on their online reading platform “Raz Kids”. This virtual platform offers a variety of texts, books and passages. All the library focuses on meaningful content that is appropriate for every age, starting from the lowest to an advanced reading level. The website is quite friendly user, and it is normally very attractive to all students. The reason behind this, is because the website has characters and prizes for every reading or assessment record that students are able to complete. The book was one called “Vince and Vickie adventure”. Subjects were instructed to only look at the written text and read the passage recording themselves, without prior listening of the read-aloud. Purposely, this passage contained words with the phoneme /v/. The aim was to evaluate students’ current awareness of the specific phoneme and its realization. In order to carry out this assessment, the group of English teaching experts listened to each recording and categorized them according to a specific allophonic realization, in which they had 3 options: [β], [b] and [v].

The pre-test was analyzed and confirmed that [v] was, in fact, a problematic sound for the students. On the one hand, it demonstrated negative interference from L1 in initial consonant words, on the other hand, it proved that subjects could not pinpoint to the difference in the realization of phonemes /b/ and /v/, particularly because of the nature of the Spanish language.

After that, learners were exposed to the reading aloud technique, accurately reading to self to an application called "Raz Kids". On that application, children were assigned a selection of diverse passages containing the challenging sound from the diagnostic test. Firstly, students were asked to listen to the audiobook to resemble a teacher reading aloud to them in class, this time due to the Covid pandemic, they were asked to carry out this task independently and from their homes. Afterwards, after listening they read aloud to themselves as they recorded the samples.

Students’ recordings were analyzed on the PRAAT software to provide with a more valid conclusion of the students’ progress in the reading aloud process through a visual analysis of spectrograms. Additionally, phonetic transcriptions were incorporated to describe each instance of occurrence of the identified conflicted sound among the group of students. After all the samples were analyzed on PRAAT, every word containing our target sound was cropped

and included in a questionnaire containing 50 words, which was shared with a group of 8 English teachers. Additionally, the set of words were randomly placed in the survey so experts would not have prior knowledge of the time each word was uttered by the subjects. Thus, it served to avoid biased opinions among the respondents, and obtain a clearer perception of the subjects' improvement over time.

Considering that language teachers have undergone years of comprehensive studies on the English language, it is proper to allow their experienced ear training to assess sounds reasonably. Experts' judgements were paired with visual cues to demonstrate improvement of the subjects' pronunciation and phonemic awareness or a lack thereof.

Then, the data was analyzed from a quantitative approach, looking into the number of occurrences of variants [b] [v] and [β]. Thus, percentages of each occurrence were analyzed in relation to the visual aid from PRAAT to reach more reliable conclusions from the perspective of the qualitative method of observation.

The method approach was chosen based on the premise that this study would be done through an experimental design within a particular case study that would analyze students' production of the most difficult sound from a diagnosis reading aloud test.

This method was chosen as the best means to collect in depth data about the implementation of the reading aloud strategy. However, there was no control group due to ethical and educational considerations, which might interfere with the conclusions and denote a clear limitation in the results.

3.3. Participants

In this case, our research was carried out with a 3rd grade on the Primary Years Program (PYP) of the IB courses at the Redland school. This group of students correspond to a sample of three children who are about seven years old. As far as their proficiency level, they are approximately at level A1 according to the Common European Framework of Reference (CEFR). In general, they all communicate in English effectively and understand instructions and

explanations. The lessons are given 100% in the target language, and students are exposed to English both in class and outside the classroom.

3.4. Instruments

Materials.

In order to expose students to the reading aloud technique, students were asked to use the Raz Kids application. Raz Plus is a comprehensive blended learning platform that provides a wide range of reading titles, ranging from all diverse levels. This site allows students to listen to the books as if someone were reading aloud to them, and at the same time, students can read aloud and record themselves. For the sake of this investigation, firstly, students were assigned a short passage that they had to record reading aloud, however, without prior knowledge of the audio of the book. Thus, we could obtain a close scenario of where students were at the time as a diagnostic basis. Once the diagnostic test was applied, students had to start listening to the passages that were assigned to them. After That, learners re read the passages recording their voices and storing the files in the website platform for every reading aloud task.

For every recording, an mp3 file was downloaded and cropped containing specific words that contained the segments with the target sound. Then, a questionnaire was designed with every sound file cropped from the original. Sound files were randomly incorporated in the survey, so experts would not be aware of the timeframe each audio was recorded by the learners. This was with the objective of avoiding a lack of validity of the results, as we were going to analyze improvement over time during the 5 weeks of the study. Furthermore, the survey was created in order to submit it to experts on the area of English language teaching, for them to help identify the specific sounds uttered by the different students in each file.

Additionally, these files were downloaded in mp3 format, and then exported to a software package for speech analysis in phonetics that reconstructs sound properties through spectrograms. For this analysis, the PRAAT software was used as a tool to visualize students' speech more accurately as a way to judge their pronunciation with the spectrograms shown on the software.

4. Theoretical Framework

This work addresses the problem of phonemic awareness development during COVID times. More specifically, it examines how reading aloud as a technique might support and supplement English learners through individual reading tasks, focusing on one particular sound. In this section, I first provide an overview of phonemic awareness as a general concept, and I give an account of views on how learners can acquire it effectively. In addition to surveying the literature on the key concept of phonemic awareness, I also review how reading development accompanied by an instructed phonemic awareness process supplements children's learning experience. Likewise, I explore how reading aloud is concerned with the interplay between phonemic awareness and reading success, as well as with its correlation with the context of English as a foreign language learning in young learners.

Furthermore, I will provide a thorough explanation of the phonology of the sounds to be tackled in this paper, both as a means to explain and analyze sounds and to differentiate sounds from their native language and their possible interference in the acquisition of a foreign language.

Traditionally, it has been argued that phonemic awareness is a key component of early literacy skills and reading success. What is more, numerous studies have attempted to explain the role of phonemic awareness (for example, Cunningham, 1990; Yopp, 2000; Yeh, 2008), highlighting that phonemic awareness is the ability to explicitly manipulate speech segments at the phoneme level. Likewise, Yopp (2000) defines phonemic awareness as an understanding that speech is composed of a series of individual sounds. More specifically, the author reminds us that phonemic awareness is an advanced phonological awareness stage, defined as the ability to recognize that a spoken word consists of a sequence of phonemes. To illustrate, in the words of Yopp (2000) "individuals that are phonemically aware recognize those sounds, can identify them in a word, and can manipulate the small chunks of speech, blending phonemes together to form words" (Yopp, 2000, p.130). These studies have discussed if phonemic awareness requires explicit training, or if it is, perhaps, a natural process that is taught and learnt implicitly. All in all, what we know about phonemic awareness is largely based upon first language acquisition; consequently, research on the matter in foreign language learning requires more attention.

4.1. Phonemic Awareness (PA), Decoding and Encoding

To determine the effects of reading aloud on phonemic awareness, it is fundamental to examine a comprehensive overview of the implications of phonemic awareness in children. Thus, the understanding of the process that young learners experience may shed light on the formation of renewed techniques in the field of teaching English as a foreign language (TEFL). Moreover, the concepts of decoding and encoding in the process of phonemic awareness development can serve as cues to acknowledge the relationship between reading aloud, phonemic awareness and reading success in the English language. Adams (2011) points out that phonemic awareness implies that the child is conscious about individual sounds as small units of speech. Moreover, the researcher clarifies that PA is purely linked to auditory skills. Thus, phonemic awareness is a component of the prerequisites to learn how to read, as it is crucial for coding and encoding abilities.

In their book, Laura A. et al (2007) explain that the term *decoding* can be defined as the ability to translate written symbols (letters) into spoken words. On the other hand, encoding refers to one's ability to translate spoken words into written symbols. However, they are not equivalent to "reading and writing", as these are less complex tasks that do not involve a high degree of cognition, though they are crucial for blending, segmenting and overall reading success.

Adams (2011) published an article that tackles with the relationship between alphabetic basics, word recognition, and reading. The scholar explains that it is through the connections from spellings of words to their pronunciations that letters and symbols become bound to the brain's domain of language. This explains how decoding helps memory to attain those patterns and connect the letters of a word's spelling with the matching components of its pronunciation. The scholar explains this process pointing that phonemic awareness develops as the child's brain works with the same letter, drawing a connection with the "same" sound tallying it with other words while, reciprocally, the pronunciation of each other will come to be represented in terms of its phonemes and defined by its spelling.

Additionally, Adams (2011) maintains that the visual word and its spelling selects the appropriate pronunciation, and this process activates the areas of the brain that are connected and involved with the processes of understanding of meaning and context, along with usages words can have. Thus, as the author reveals “the mapping from orthography to phonology- from spelling to pronunciation are the nexus between seeing and understanding the print of a page” (Adams,2011, p.8). For beginning readers, the very process of decoding leaves a trace in memory that connects the letters of a word’s spelling with the matching components of its pronunciation. This explanatory theory may serve to discuss how reading aloud could potentially foster phonemic awareness, as the child is hearing a model of pronunciation, at the same time as reading and listening.

4.2. Reading Development and Phonemic Awareness (PA) Instruction

There was a sharp agreement among authors about the necessity of PA instruction regarding guaranteeing literacy success. Yet, the role it plays in an English learning environment is not quite understood, as the doubtfulness of the need to implement explicit instruction in order to achieve any success in the development of students’ language skills is claimed. The main argument advanced by proponents of this position involves the natural characteristic that language acquisition implies, both in the native language and a foreign or second language. (Perfetti, 1987, Krashen, 2003). Drawing on a myriad of sources, the authors set out the different ways in which phonemic awareness can be linked to early reading success. Perfetti et al (1987) reported that it is a reciprocal causation; therefore, students must have some degree of PA before they start learning how to read. However, the question that researchers have tried to explain is whether PA is something that needs explicit training, or if it is a natural consequence of the acquisition of reading due to maturation. In 1987, Perfetti et al. explained that what is difficult about phonemic awareness training is its explicit and controlled nature. In his words, he notes that reading words, at least up to a point, required a less analytic process in which speech forms are associated with print forms. (Perfetti, 1987, p.284) this is explained under the premise that PA is not a unitary ability, but a combination of a child's abilities.

Conversely, Adams et al (1990) referred to the theory, indicating that without explicit support in phonemic awareness instruction, it eludes more of those learners who come from a

less literacy-rich backgrounds, provoking difficulty in learning how to read and write. Notwithstanding, there seems to be both advantages and disadvantages of PA training, it is clear that the ultimate goal is to guarantee language achievement through reading. This phenomenon has been alluded to in a variety of contexts, for example, Krashen (1994) makes clear that reading should be a meaningful experience that provides an overall language learning opportunity. He observes that in order to achieve literacy improvement, students should read for pleasure and habit. Furthermore, he introduces the concept of Free Voluntary Reading (FRV) as the answer to second language acquisition success. In addition to this, the scholar suggests that rather than arguing whether children need more direct instruction in the form of phonemic awareness and phonics, "our first priority is to make sure these children have something to read" (Krashen, 1994, p.70). Thus, Krashen is dubious about an over-emphasis on phonemic awareness and phonics training. In 2003, the same author published an article in which his claims kept supporting reading as the most valuable experience for the development of phonemic awareness. Indeed, the National Reading Panel carried out studies that consistently cast gains in phonemic awareness on tests on PA. (Ehri et al, 2001)

In fact, the evidence claims that the only reading experience is the cause of phonemic awareness (for example, Foorman, Jenkins and Francis, 1993; Murray, Stahl and Ivey, 1996).

In 1993, Foorman et al researched on phonemic awareness instructions, and reported no differences in improved PA with direct teaching of letter-sound correspondences. In a later study, Murray et al (1996) looked into the effects of shared storytelling experiences on children's awareness of phonemes in spoken words. They administered a print measure test, a pre-test and post-test consisting of a phoneme awareness onset-rime test. The treatment of the study included a 10 minute daily read-aloud over a period of 3 weeks, and even though it was little time over a short period, the results still showed gains in PA through storybook reading alone.

One of the major arguments claimed later by Smith (1999) is that even though he agrees that PA correlates with reading potential or ability, he makes clear that "children who are forced to pay attention to the nonexistent sounds before they are confident readers are simply bewildered by the instruction" (Smith, 1999, p.4). On the contrary, more recent studies indicate

that the impact of direct phonemic awareness instruction on phonemic awareness acquisition among children is significant. Likewise, given the evidence that phonemic awareness is necessary for success in reading development, since the year 2000 on, many researchers have been motivating the necessity to include PA instruction in the curriculum, especially with those students from less privileged environments. The National Reading Panel (2000) searched for relevant research on PA instructions and explicit training thereof. In general, the findings detected that phonemic awareness is highly effective in improving children's reading skills. However, the results concluded that explicit instructions in PA training was the cause of this improvement in reading and spelling. Specifically, it included systematic manipulation of phonemes with letters. Overall, they suggest PA instructions as it provides with a fundamental knowledge for reading success. Comparable remarks have been reported by Ukrainetz, et al. (2000). They noted that phonemic awareness is a critical component of reading and writing success, which illustrates a scenario that might guarantee future success in the instruction of English as a foreign language. This view is supported by Yeh (2008) who points out that explicit, systematic instruction is likely to promote phoneme segmentation skills and later reading ability. He also emphasized and indicated that Hispanic economically disadvantaged students gain literacy skills when taught phonemic awareness explicitly, which is in the same vein as what was noted in 1990 by Adams et al. in their investigation. Similarly, Johnson and Tweedie (2010) coped with considerable literacy difficulties in the disadvantaged context of young EFL learners in Malaysia. The researchers reported in detail how explicit PA training in the control group overrode the abilities of the experimental group of students. Consequently, they point out the implication of their findings in helping students from disadvantaged areas where the access to the language is limited.

In view of what has been mentioned above, one may suppose that PA should be explicitly trained. Nevertheless, together these studies provide valuable insight into the importance of PA for both views, yet the later reports that tackle with less privileged learners are frustratingly vague, because they are mostly anecdotal, as they only deal with very specific contexts. Also, the conflicting results of the two viewpoints may partially be due to the possibility that there is a major issue in terms of lack of resources in less advantageous schools.

Moreover, there is widespread agreement on the claim that children with lower literacy levels in English can learn phonemic awareness. However, I believe it should be in a naturalistic non explicit approach that is consistent with the principles of emergent literacy instruction. Furthermore, the implementation of phonemic awareness through reading aloud may serve to make use of letters and sounds embedded in meaningful storybooks, which will help students pursue better performance in the language.

4.3. Read-alouds

In the previous section, I referred to phonemic awareness training and studies that attempted to prove its relevance. Now, I shall explain the role of reading aloud in phonemic awareness development. Krashen (2003) examined in detail the study carried out by Castiglioni-Spalten and Ehri (2003). This study attempted to instruct a group of children directly through 20-minute ear (segmentation tests) and mouth training (articulatory gestures), while the control group had no special treatment. The group that was directly instructed showed some improved performance on tests of PA, though not significant. Additionally, the study reported that children had no engagement in the lessons and their reactions were quite disruptive. Thus, this outcome was acknowledged as "children were clearly bored “ (Krashen, 2003, p.2) with the experience. On the contrary, Krashen (2013) supports studies that confirmed the positive impact of reading aloud on language development (Feitselson et al, 1986; Blok,1999; Neuman, 1999). These studies reported children's encouragement and observed enthusiasm for hearing stories.

In a study conducted by Fisher et al (2004) the authors identified read-aloud practices in a random group of teachers. Even though they did not focus the investigation on the literacy development aspects, vocabulary learning or language acquisition, they open the gap for further research as they could observe students' engagement and positive outcomes from the experience in several schools. The researchers Fisher et al (2004) suggest that for conducting the read-alouds it is necessary to ensure that students build on an understanding of the purpose of the activity, rather than just leaving it as an optional activity for teachers. The study conducted by Fisher et al (2004) also identified how different teachers took action in read-alouds, and through field notes the researchers could identify the characteristics of each environment and the outcomes presented. They witnessed how these experiences built upon students' brains to

introduce new concepts, vocabulary, structures, pronunciation and transfer of the imagery into their own style when creating. All in all, in the words of the researchers “the read aloud goes beyond skills and literacy development in this classroom; it is an opportunity for teachers and students to develop, design, and acknowledge certain forms of knowledge within a classroom setting” (Fisher et al 2004, p.432).

4.4. Reading Aloud (RA) in EFL

Whilst some research has been carried out on reading aloud, not many studies have tackled the impact on primary students of English as a foreign language. Moreover, recent attention has focused on the provision of the effects that reading aloud has on children's emergent literacy development in their first language. Similarly, Amer (1997) noted that reading aloud is mostly acknowledged in English as a first language, and often discouraged by EFL teachers. He argues that RA can be equally important for the EFL/ESL learners at an early stage.

Overall, it seems like reading aloud is a skill which some teachers have had a tendency to overlook. Conversely, Harmer (2007) highlights that RA can be a particularly motivating and enjoyable experience, especially if it is an exciting piece of text. In his words, “reading aloud allows students to hear a clear spoken version of a written text and can be extremely enjoyable if the teacher is prepared to read with expression and conviction” (Harmer, 2007, p. 307). Likewise, a considerable amount of literature has been published on the benefits that reading aloud has regarding phonological and phonemic awareness. For example, in 2008, Duursma et al. published an article in which they examined and identified the features of reading aloud when it is delivered regularly by their families and teachers. They described how the stressed sounds in reading aloud is naturally teaching awareness of initial phonemes or shared phonemes across words. Similarly, this article emphasizes that reading aloud provides an environment that stimulates vocabulary growth and the overall familiarization with the relationship between syntax and semantics.

As reading aloud is not an explicit teaching technique to promote the acquisition of phonemic awareness, one of the major arguments presented in this research is the implementation of RA to confirm some degree of PA development in young learners used as an

explicit teaching strategy. Previously, I touched upon one study conducted by Neuman (1999). In this study, the expert compared the rating of students who did not receive reading aloud treatment and students who had reading aloud as the concrete means to develop PA. In her experimental design, the scholar attempted to examine the impact of an intervention, targeting children from economically disadvantaged care centers with high quality books. The idea was to support teachers with appropriate storytelling and read-aloud techniques. She identifies that the volume of book readings had an impact in the development of crucial skills. For example, she explains how this approach showed great incidental language learning in ESL students, which included word recognition, comprehension and oral skills. Neuman (1999) explained that "letter name knowledge, concepts of writing, and even phonemic awareness skills were more highly developed" (Neuman,1999, p. 305) suggesting that PA is a by-product of the exposure to reading aloud. Additionally, children in the study reported a great deal of enjoyment during the reading aloud process.

Earlier research carried out by Yopp (1992) obtained similar findings, and it largely illustrated recommendations for phonemic awareness activities, in which the emphasis was that reading aloud is an invaluable reading experience that supports learning. This suggestion has been consistent over the years, mainly when it is referred to engaging students in oral activities to emphasize the sounds of language and maximize students' potential to have a successful experience. All in all, Yopp (1992) suggests blending activities, as it requires children to manipulate individual sounds by combining them to form a word, and that the experiences should trigger positive feelings toward learning. The scholar explains that there should be a sense of playfulness and fun as children engage in these phonemic awareness activities. On the other hand, even though the scholar earlier pointed out that explicit PA training has results in higher levels of performance in reading and writing, later in 1995, Yopp claimed that while that might be true, it is possible to expose children to indirect PA teaching, in an environment which is natural and even spontaneous. She refers to reading aloud as a technique that fosters "a language-rich environment in which attention is often turned to language itself by means of word play in stories" (p. 538). She agrees that the best, most practical way to enhance students' sensitivity to the phonological basis of the language are children's books that draw attention to sounds and, therefore, improve students' phonemic awareness.

Stronger and newer evidence comes from Ninsuwan (2015), who also carried out an investigation that tested the effectiveness of reading aloud as a strategy towards EFL beginner learners. In his study, Ninsuwan (2015) draws our attention to the challenges and strategies for facilitating and promoting reading aloud towards EFL beginners. His focus of investigation was to confirm if RA is a competent strategy to improve not only students' awareness of the language, but also their comprehension skills. He found that RA did not override other techniques in comprehension results of the study. However, it provided learners with awareness of sounds and words, as well as yielding confidence and engagement. Furthermore, the researcher demonstrated that "students with low proficiency in English developed their understanding gradually in a form of pronunciation, reading new words, unfamiliar sentences, and increased students' confidence in reading" (Ninsuwan, 2015, p. 1837). He agrees that reading aloud helps students see reading as a continuous process, rather than meaningless separate graphic cues.

In short, even though explicit phonemic awareness teaching has been disregarded as a necessary strategy by some authors (Krashen, 1994; Krashen, 2003) collectively, all the studies outline and suggest reading as the best means to foster phonemic awareness in students at an early stage.

4.5. English Consonant Phonemes and Allophones

English has 24 different consonant phonemes, consisting of 6 stops, 2 affricates, 9 fricatives, 3 nasals 2 approximants and 2 semivowels. As stated by Catford in the year 2001, phonemes are abstract phonological units, each of which is manifested in several different ways. Therefore, phonemes cannot be pronounced, as they are only an abstraction, in contrast to the physical realization of a sound which is concrete. These manifestations can be related to specific contexts and phonological environments. For instance, it is possible to note that English sounds have environmental variants that indicate whether a sound is aspirated, unaspirated, voiced or voiceless, among other features. These realizations are called allophones. In addition, as suggested by Collins et al. in 2013, allophones are abstract structures that can be recorded, stored and reproduced, and analyzed in acoustic or articulatory terms (Collins, 2013, p. 13). which will serve as our main data collection basis.

Consonant phonemes /b/ and /v/.

Auditory properties: According to literature, English has six plosive phonemes: /p/, /t/, /k/, /b/, /d/ and /g/. For this research, I decided to focus my attention on phonemes /b/ and /v/. The plosive /b/ is a bilabial phoneme, since the lips are pressed together in its realization. Furthermore, /b/ can occur at the beginning of a word, in medial position or at the end of a word. Also, this consonant can be fully voiced, partly voiced, or devoiced depending on its position in the word, as explained earlier. In general, literature about phonetics and phonology (Collins et al, 2013, Catford, 2001, Roach, 2010) agree that bilabial sounds can occur in different positions, for instance in the initial position of the word in the consonant, when followed by a vowel sound (CV) (i.e. Consonant Vowel context), in medial position (CVC), (i.e. Consonant Vowel Consonant), and in final position (VC), (i.e. Vowel Consonant context), when it follows a Vowel sound, as we shall see in detail below.

Initial position (CV). Voicing can be affected by the speed of the speaker. If pronounced very slowly, there may be voicing during the entire compression phase, while in rapid speech there may be no voicing at all. The release of /b/ is followed by weak plosion right about the time voicing begins, which explains that aspiration does not occur. All in all, /b/ is always described as voiced even if it is voiceless because it initially is always capable of being voiced.

Medial position (VCV). In general, the pronunciation of /b/ depends on whether the syllables preceding and following the plosive are stressed. Thus, it can have the same realization as in the initial or final position.

Final position (VC). Final /b/ has little voicing, the plosion is very weak and not audible. All in all, literature about phonology and phonetics (Collins,2013) suggest differentiating voicing in terms of "strength" in which consonants are realized. Thus, /t, k, p, ʃ/ are voiceless and pronounced with much more force as they have energetic articulation and are voiceless, they are called "fortis" plosives. On the other hand, /b, d, g, dʒ/ are often weaker and scarcely voiced, researchers have decided to call them lenis stops. Although there is insufficient

investigation in regards to their measure and degree of strength, these characteristics will serve as cues to define improvement in EFL students.

Fricatives. As explained by experts in phonology (Roach, 2010, Collins, 2013), fricatives are speech sounds produced when airwaves encounter an obstacle in a narrow passage. The obstacle causes the movable articulators (lips, tongue and uvula) to come close together as to narrow the passage of air molecules. Therefore, a hissing sound is made. All fricatives except /h/ occur in fortis/lenis pairs, and depending on their place of articulation it will be realized accordingly. For example, for the sake of this investigation I will focus on labio-dental fricatives /f/ and /v/, as I want to determine how EFL learners become phonemically aware of the difference of the sounds /b/ and /v/. For the latter sound, the lower lip makes contact with the upper front teeth producing friction noise. Moreover, lenis /v/ is never very strong and scarcely audible, and has potential voice. Therefore, this feature might help differentiate sounds produced by learners in this study concerning the realization of /v/ sounds accurately.

4.6. Auditory Properties of Consonant Phoneme /v/

As explained in the preceding section, fricative /v/ is produced in the lower lip when it makes near contact with the upper front teeth resulting in labio-dental friction. Thus, lenis /v/ has potential voice. As Catford (2001) explains, the articulation of /v/ involves turbulent airflow through a narrow channel, resulting in a buzzing noise. This noise is called voicing, and it is possible to note it if compared to another fricative which is voiceless. For example, /f/ still produces a hissing sound, but the phonation is quite different as the buzzing sound is absent in it. Also, this voicing is quite controllable, as it depends purely on the openness of the glottis. Hence, if the glottis is wide open it is likely to produce an unvoiced sound due to the free airflow of airstream in the vocal tract. However, Catford (2001) makes clear that “if the glottis is narrowed, it means that the airstream sets the vocal fold rhythmically, vibrating-rapidly, opening and shutting, thus letting the air go through little puffs that we hear as the buzzing sound” (Catford,2001, p. 37).

5. Visual Cues in Spectrograms

In the previous chapter, we discussed the physical aspects regarding the production of stops and fricatives, more specifically concerning b and v. In this part, we will emphasize visual cues to determine if the realization of a sound is, in some degree, close to its allophonic representation. For instance, a word with a phoneme /b/ can be realized as [b] or [β] or even [v] by a Spanish speaker. Based on the assumption that Spanish speakers tend to mingle these sounds as it does not result in unintelligibility of the speech in their native tongue, it allows for greater communication constraints in the English language learning process. In this connection, it is interesting to consider the existence of minimal pairs, words that have similar written structure but different pronunciation and meaning. For this reason, it is crucial to explore visual cues that can allow for greater ease in comparing the sounds produced by English as a foreign language learners.

5.1. Visual Cues for /v/ and /b/

In the Spanish language, phonemes /v/ and /b/ do not require any difference in the articulation of the sound in order to deliver a coherent message. Nonetheless, for English learning it is necessary to make a difference and understand the acoustic features of similar sounds in order to produce words efficiently. To illustrate, English has 2 fricative sounds that are quite alike, as both of them share place of articulation. Moreover, the phonemes /v/ and /f/ are similar in spectral characteristics, but the voicing produced by the vocal folds is what produces the difference in the words, for example, “foul” and “vowel”. In the case of a voiced fricative /v/, the spectrogram will show striations in the spectrum indicating the strong voicing of this consonant. According to Johnson (2003) in labial fricatives like [f] and [v] which are made with turbulence at the lips, there is almost no vocal tract in front of the constriction to filter the sound. Hence, the spectra of labial fricatives do not have peaks, but energy spread over a large frequency range (Johnson, 2003, p.190). Consequently, fricatives will appear in a turbulence form, and considering the amount of force of airstream, sibilant fricatives will create much higher amplitude noise in comparison to non-sibilant fricatives, such as /v/, which will probably show a more controlled and pure turbulence. Visually, it is possible to spot this energy as a voicing bar at the bottom of the spectrogram, as well. Additionally, Johnson (2012) explains

that the auditory spectra shown in fricatives, varies depending on the resonant frequencies of the front cavity, so as the place of the articulation moves from front to back, frequencies will go from higher to lower. For instance, a fricative /s/ will be much higher than a fricative /h/. All in all, this information alludes with significant insights to what spectrograms should look like for fricatives.

Conversely, Ladefoged (2001) points out that fricatives and stops are the only English consonants that can be either voiced or voiceless, feature that will always depend upon the phonological environment. The scholar explains that stops and fricatives are similar in many ways. For example, both can modify the length of the vowels. He also notes some cues to find the changes in voicing for both [b] and [v]. For example, very little voicing happens while the lips are closed together as in the words “pie” or “buy” (Ladefoged, 2001, p. 57) in “pie” there is a release of air called aspiration, considered a period of voicelessness. There is also no voicing during the closure of voiced stops in sentence initial position, except when preceded by a voiced sound.

In the case of [v] if it is followed by a voiceless sound [t] or by a pause at the end of the phrase, it is not fully voiced as in the sentence “prove two times” (Ladefoged, 2001, p. 66). However, if it is followed by a vowel, it can be fully voiced as in “prove another time”.

5.2. /b/ and /v/ Articulations in the Spanish Language and their Difficulty

Catford (2001) explains in detail the articulation of the voiced bilabial fricative sound that is common in Spanish. He remarks that it starts with pulmonic pressure, lips separated very slightly thus allowing air to escape through the narrow channel. In addition, if this realization is produced with voicing while maintaining turbulent flow, then the sound is indeed a voiced bilabial fricative. Catford (2001) makes a clear distinction between the bilabial fricative sound [β] and its approximant variation. The expert discusses how if the realization of [β] is maintained, but then carefully opened very slightly, the frication noise disappears. As a consequence, the fricative sound becomes an approximant. Catford (2001) notes that these sounds are characteristic of Spanish speakers, although there is disagreement as to when /b/ is a fricative or approximant sound in the Spanish language.

Comparable evidence has been reported by Vergara and Perez (2013) and Saavedra and Ortiz (2003). Thus, it is widely held that /b/ is commonly pronounced as a bilabial fricative or approximant in Chilean Spanish. One of the major arguments presented here is that Chilean Spanish does not differentiate between [v] and [b]. To illustrate, Saavedra and Ortiz (2003) exhibits Chilean /b/ as a bilabial fricative that phonetically looks like this: e.g. *cabo* [»ka βo], *tuvo* [»tuβo] (Saavedra and Ortiz, 2003, p. 13). Thus, both phonemes might become a problematic area for Chilean learners as /b/ and /v/ do not need to show a difference in Spanish. However, in English it is necessary to make a difference between the articulations for [b] and [v], otherwise it would not be legible and it would, therefore, imply communication issues. Hualde (2014) argues that in Spanish, the realization of the consonant /b/ will vary depending on the degree of constriction. For instance, if it is more open, the spectrogram will show /b/ with similar characteristics and similar formants as the boarding vowels around it, and therefore it will be considered an approximant sound.

All in all, history of the pronunciation of the Spanish language (Catfield, 1981) suggests that the phoneme /v/ disappeared in the process of neutralization of /b/ and /v/ possibly before medieval times. This assumption has contributed to the rejection of the existence of a voiced labiodental allophone [v] of the phoneme /b/ in Spanish. Until recently, there has been no reliable evidence of this belief. However, literature has emerged that offers contradictory findings about this topic. What is more, Hualde (2014) advocates that Chilean Spanish has a strong tendency to realize phonemes /b/ and /v/ both as labiodental fricatives or approximants of the [v] in intervocalic position. Sadowsky (2010) attempted to investigate this hypothesis that in Chilean Spanish the phoneme /b/ has a voiced labiodental allophone. This investigation proved that the labiodental sound [v] is the main allophone of the phoneme /b/, and this allophone has settled in the Spanish phonetic system as the study reveals that it is realized, in most of the cases, in a variety of phonetic environments.

In fact, this is problematic for the investigation as it is one of the reasons, if not the main one, Spanish learners of English have trouble with phonemes /b/ and /v/, hence the relevance of this study. To illustrate, Ortega (2009) and Eckman (1977) classify voiced sounds as marked features of phonology for learners of a foreign language. Ortega (2009) explains that

all languages have both, voiced and voiceless sounds, and children will learn the voiceless ones first. Because of this, devoicing can occur as a phonetic process in the human brain when learners encounter voiced sounds in certain positions. For example, students can devoice sounds in the position they are accustomed to in their L1, and this approach will depend on the markedness of the phonological feature of the language, as proposed by Eckman. Eckman (1985) explains the Markedness Differential Hypothesis, which claims that it is possible to predict the degree of difficulty involved in learning a certain aspect of the target language. It considers that the learner has already obtained knowledge about language by having acquired the first language. There is also idea of interlanguage, which is shaped by similar principles as the native language. Eckman (1985) discusses these 2 aspects and concludes that in terms of speaking, voiced sounds are the most marked. in other words, "it depends on how far the native language is from the target language" on the markedness scale. (Eckman, 1985, p. 294)

For example, Finch and Ortiz (1982) presented a table of the frequency of occurrence of consonant phonemes for both English and Spanish. It shows that in English, stop sounds have an occurrence over 20% in comparison to Spanish where they occur at a 14% frequency. Therefore, a stop sound /b/ will become more marked than a /m/ sound that portrays similar frequency in both languages, therefore, not causing difficulty in the English learner. Finch and Ortiz (1982) also explain that in Spanish /b/ is commonly realized as a fricative or approximant especially between vowels, and realized as plosives after nasal sounds. However, in English, /b/ is realized as a plosive in all positions. The problem exists when differentiating between plosives and fricatives, particularly /b/ and /v/, which in the words of Ortiz "it betrays the Spanish speaker of English" (Ortiz, 1982, p.68).

Indeed, there is a gap in the literature when it comes to fully understanding the phonological process that the brain experiences with a foreign language. If voicing is a marked feature of the language and therefore, difficult to acquire, then because of the markedness feature, it should become an easier task to train students' ears through storytelling in a foreign language.

6. Results

I begin by reporting the results of a pretest that used the initial assessment that students had to submit in their recordings. Initially, I assumed that students struggled with the realization of the sound [v] due to frequent mispronunciations and communicational issues during online classes. In order to verify the issue, I took the deliberate decision to test the subjects with a reading passage targeting the sound. This sample shows the reading of that extract from the book “Vickie and Vince”, specifically of 4 words containing the /v/ or /b/ phoneme. Learners did not have the experience of a reading aloud of the extract, they were told to only read it with the knowledge and skills they had at the time. The data analysis shows rough estimates of the accurate realization of the sound [v] as a cue to assess phonemic awareness during independent reading. Visual representation of the mouth of the participants would have portrayed a more precise account of the study. However, the context of the study limited this aspect greatly. This is the reason that this report includes experts of English language teaching assessing these recordings, and I described these results with what spectrograms obtained from PRAAT revealed.

6.1. Diagnostic test

Table 1 shows the results obtained from the questionnaire that experts of English answered for every word in the study. For the diagnostic test, experts assessed the word “valley”

Table 1

Responses to Survey Sounds Question of the Word “Valley”

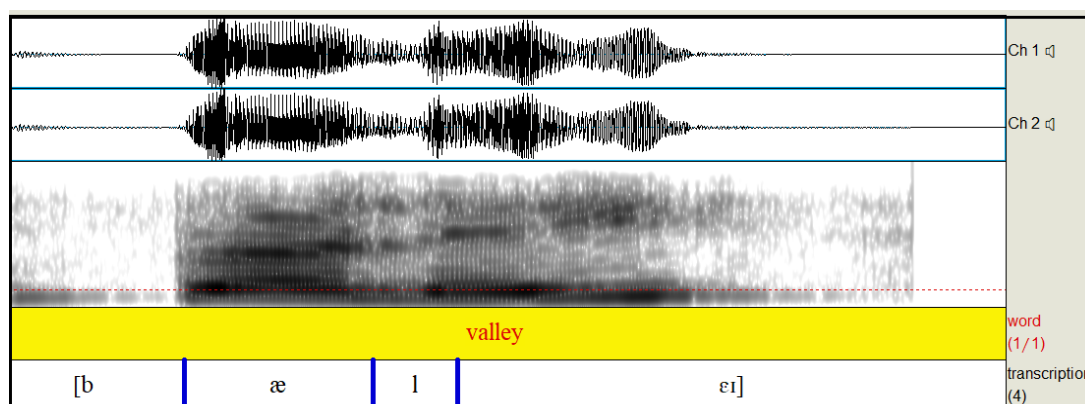
DW	WORD				
	valley	Q1	Q2	Q3	MEAN
	[β]	12.5%	0.0%	62.5%	25.0%
	[b]	62.5%	25.0%	0.0%	29.2%
	[v]	25.0%	62.5%	37.5%	41.7%
	Another	0.0%	12.5%	0.0%	4.2%

Note: Q= Question number in the survey. DW= Diagnostic week

For the word “valley” even though 41.7% argue it is a [v] sound, 54.2% of experts still claim that it resembles a [b] or [β]. Overall, most experts agree that the realization of the sound [v] is other than [v] and a close examination of spectrograms reveals particular characteristics that back up this trend. Accordingly, figures 1, 2 and 3 show the spectral features of the word uttered by the subjects.

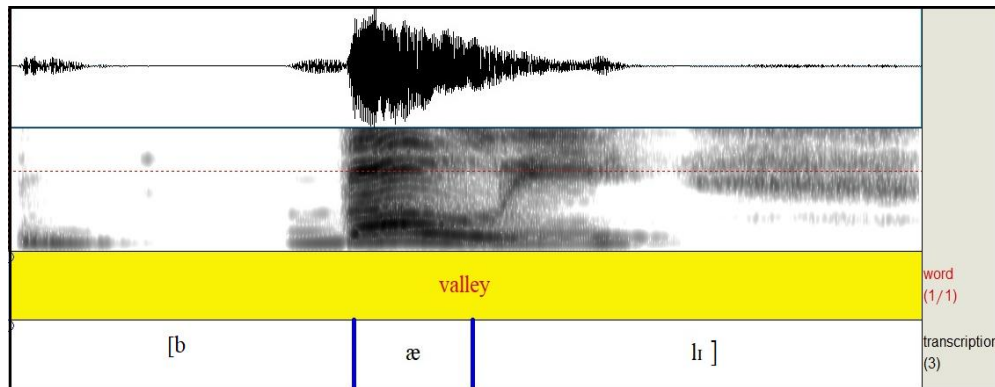
Figure 1

Spectrogram of Word “Valley”



The spectrogram in Fig. 1 shows vibration of the vocal folds, but there is not frication in the realization of this word. It looks certain that there is a period of aspiration and a release of air that rapidly meets the vowel following the phoneme /v/ in the word “valley”. The subject is certainly delivering a stop sound with some voicing. Similarly, Fig. 2 shows a comparable realization of the same word, which denotes another stop sound instead of a voiced fricative sound.

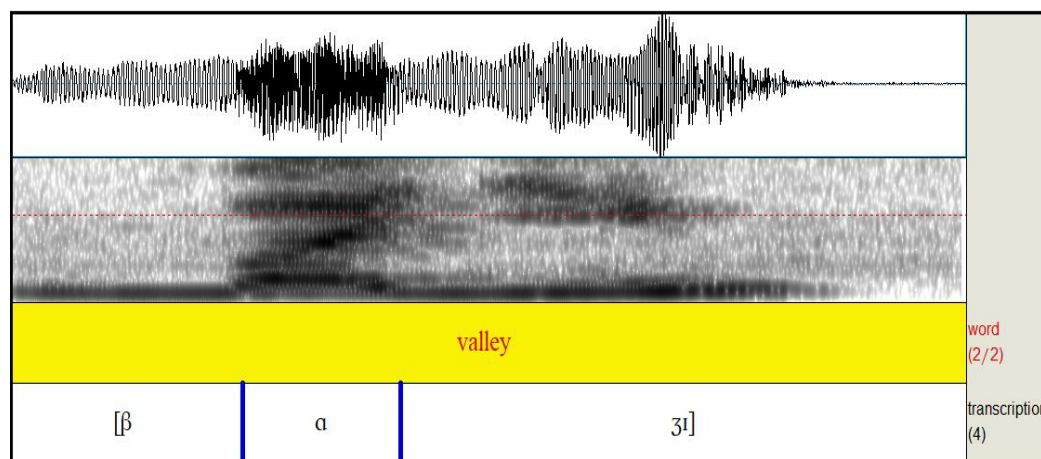
Figure 2
Spectrogram of Word “Valley”



Spectrograms reveal a clear mispronunciation of the sound [v]. Figure 2 visually shows a pattern proper of a stop sound. There is a closure period with a voicing bar and a burst of energy that is rapidly intertwined with the vowel sound, creating an even voicing throughout the word.

The table below illustrates some of the main characteristics that both [v] and [β] share in regards to their spectrographic representation. For instance, see that Figure 3 shows the realization of the word “valley” by another subject from the sample. The spectrogram below illustrates a clear example of the difficulty of distinguishing [v] and [β] as they are indeed notably similar.

Figure 3
Spectrogram of Word “Valley”



As data suggests, 62.5% of experts agree with the claim that this sound is quite similar to the Chilean pronunciation of the sound, which is represented by [β]. It is possible to see frication noise from the beginning of the word; however, this noise is rather flat as it does not evidence clear frequencies. Therefore, it looks lighter in color in comparison to its voicing bar that is noticeably dark. Thus, it might suggest that the bilabial constriction is not narrow enough to create a strong turbulent airstream that is produced by the labiodental articulators. In fact, this is fundamental to the voiced fricative sound of phoneme /v/. Moreover, as voicing is introduced in the vowel, the apparent frication vanishes. Thus, it suggests that it is not a labiodental fricative sound, but an allophonic variation of /b/.

The evidence presented thus far supports the idea that this group of subjects struggle with the sound /v/, and it is apparent that there is indeed L1 transfer as some sounds seem to resemble the Chilean allophone [β]. If I now turn to Table 2, it shows that the overall response to the word “village” was virtually inclined to depict a [b] sound. See below the detailed results obtained from the questionnaire of experts assessing the word “village”

Table 2

Responses to Survey Sounds Question of the Word “Village”

DW	WORD	Q8	Q9	Mean
	village			
	[β]	25.0%	25.0%	25.0%
	[b]	37.5%	50.0%	43.8%
	[v]	37.5%	25.0%	31.3%
	Another	0.0%	0.0%	0.0%

Note: Q= question number in the survey. DW= Diagnostic week

For the word “village” 43.8% of experts think that students realized the word with a [b] sound, while 25% perceived it as a bilabial fricative. Figure 4 and Figure 5 show the spectral features of the word “village” as to compare the evidence with the results from the survey.

Figure 4

Spectrogram of Word “Village”

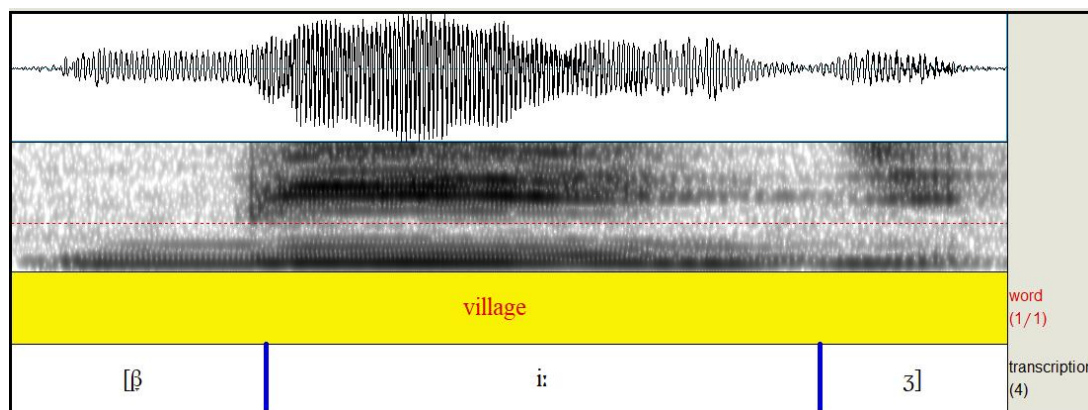


Fig. 4 shows some noise proper of the environment of the recording, and immediately there is a clear voicing bar before the burst of energy, which looks similar to a [b] sound. Nonetheless, it is more likely to represent a [β] sound as there is a flat frication and strong voicing at low frequencies only, in comparison to higher frequencies and overall stronger energy a voiced labiodental fricative sound would show.

Figure 5
Spectrogram of Word “Village”

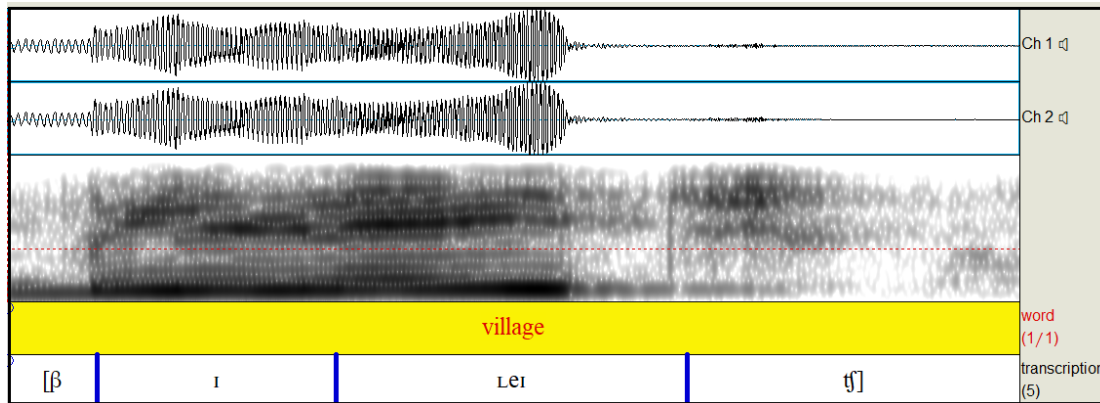


Fig 5. Shows a more visible frication with low frequencies, which looks similar to a [v] sound. However, because the color of the energy is lighter, it depicts some loss in frication noise, especially at higher frequencies. It is undoubtedly a voiced fricative, as there is a clear voicing bar and some turbulence, therefore, the sound is most likely a [v] or a [β] sound.

The next section of the survey deals with the results for the word “vacation”. For this word, over half of those surveyed argued if the realization was a [v] or a [β] sound. Table 3 shows the results obtained from the questionnaire of experts assessing the word “vacation”.

Table 3
Responses to Survey Sounds Question of the Word “Vacation”

WD	WORD				
	vacation	Q4	Q5	Q7	MEAN
	[β]	25.0%	0.0%	50.0%	25.0%
	[b]	62.5%	12.5%	37.5%	37.5%
	[v]	12.5%	87.5%	12.5%	37.5%
	Another	0.0%	0.0%	0.0%	0.0%

Note: Q= question number in the survey.

For the word vacation, even though there is a strong disagreement whether subjects realized it with a [v] sound or not, overall experts assessed it as either a [β] with 25% or as a

[b] with an average of 37.5%. These answers tally with the visual representations. Look at Figure 6 below.

Figure 6
Spectrogram of Word “Vacation”

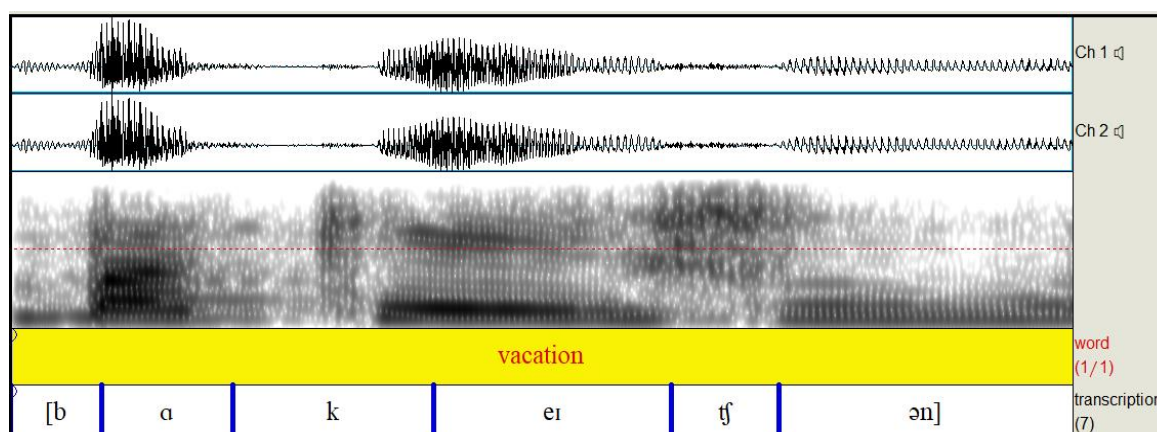


Figure 6 depicts an unclear sound that has light energy, without clear formant frequencies. There is, however, a somewhat voicing bar at the bottom, but it seems unclear in comparison to the vowel sound, which is darker and stronger in energy. It almost looks like the subjects aspirated and suddenly released the air provoking that marked difference, idea that is coherent with the experts' answer of a 62.5% for the [b] sound in this particular case.

The results, as shown in Table 3, indicate a majority of answers corresponding to [b]. Figure 7 shows a clear illustration of the phenomena in this section of the survey. There is certainly a stop sound with some voicing.

Figure 7
Spectrogram of Word “Vacation”

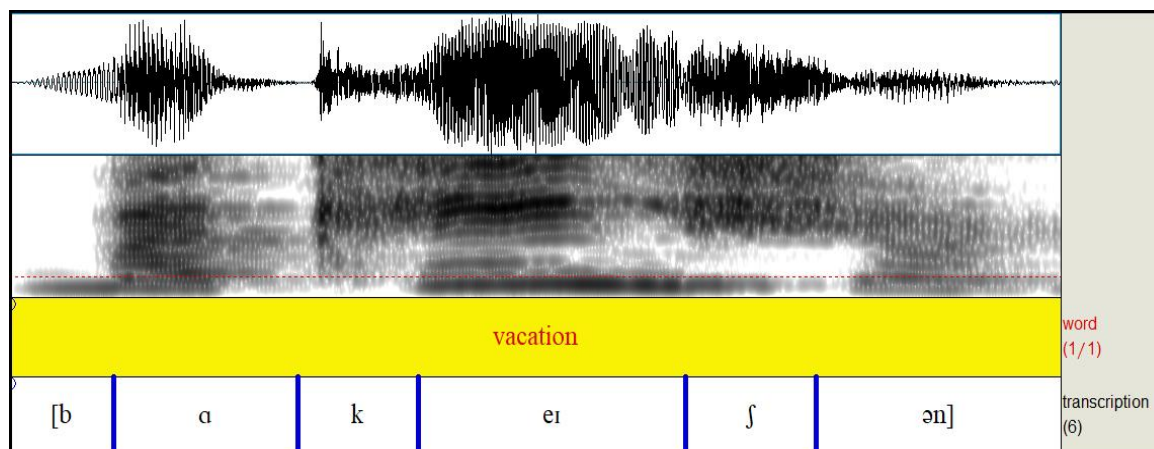


Table 3 shows that 87.5% assessed the sound as other than [v], and only a 12.5% thought it was indeed a [v] sound for this subject.

In Figure 6, there is some faint noise, visually low frequencies, and light vibration of the vocal folds compared to the vowel next to the [v] in “vacation”, but a somewhat precise fundamental frequency as explained earlier. Similarly, in Figure 7, it is possible to notice a comparable situation. However, there is a complete absence of friction noise at the beginning of the word. Throughout the spectrogram, there should showcase friction noise and a distinct voicing bar at the bottom to visualize a [v] sound.

Likewise, Figure 8 shows another student's word vacation, which resembles a similar situation as Figure 6 and Figure 7.

Figure 8
Spectrogram of Word “Vacation”

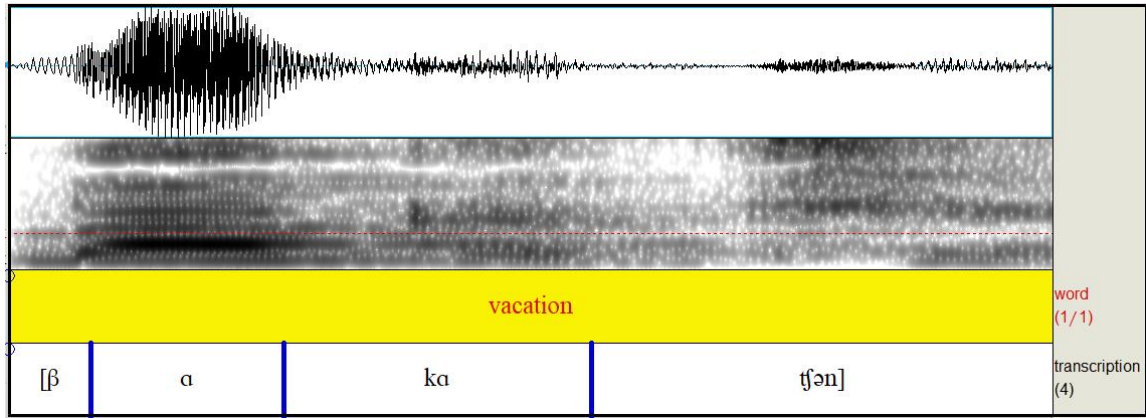


Fig. 8 shows a somewhat [b] sound that represents a [β] sound. The waveforms are not clear at the beginning of the word, there appears some voicing that lacks strong frication noise. Thus, it could mean that the subject delivered this sound allowing air to escape through the constriction channel.

Next, the following table shows the results corresponding to the word “beach”. Interestingly, there is only one subject who attempted to deliver the word. The other subjects omitted the word altogether, which did not allow to collect the data for all the samples. Still, the only subject’s realization of the word “beach” is illustrated in the table below.

Table 4 shows the results obtained from the questionnaire of experts assessing the word “beach”

Table 4***Responses to Survey Sounds Question of the Word “Beach”***

WORD	
beach	Q6
[β]	25.0%
[b]	37.5%
[v]	37.5%
Another	0.0%

Note: Q= question number in the survey. There is only one learner’s response as the others omitted the word in their recordings.

Table 4 shows that only a 37.5% of experts classified this word as realized with a [b] sound. The others assessed it differently with almost 63% as an inaccurately realized sound. Figure 9 shows the spectrogram of the word “beach” of the only student who pronounced it.

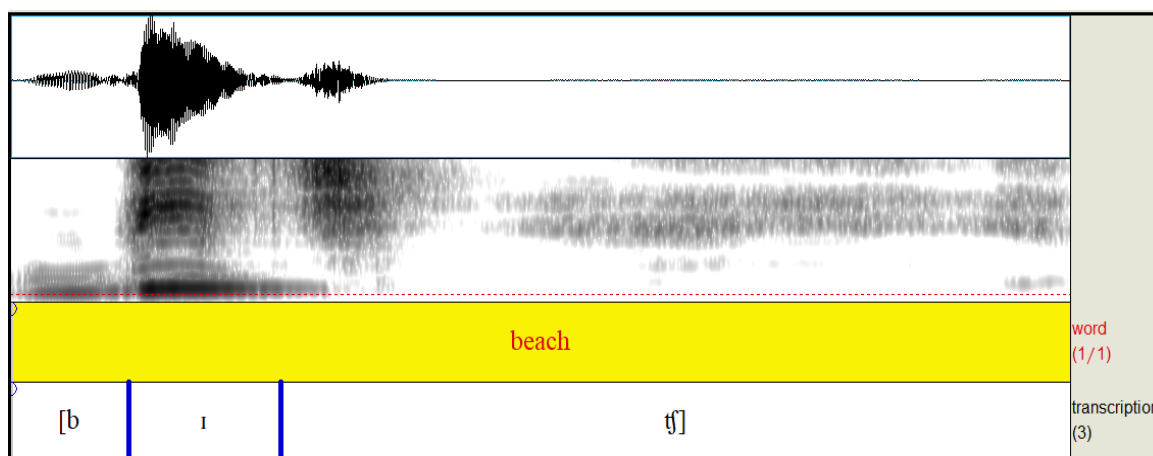
Figure 9***Spectrogram of Word “Beach”***

Figure 9 depicts a clear plosive sound with some vibration of the vocal folds due to the /b/ ability to be voiced in initial position. There is not friction noise, which determines this is not a fricative sound. In addition, it cannot be interpreted as [β] sound, because it lacks frication.

6.2. Results Week 1

After students were exposed to a diagnostic task, they started reading aloud in the first week. It would appear to be some evidence that the first experience of listening the reading aloud before recording themselves reading the text makes a great difference in the results. Nonetheless, we shall now analyze the specific instances in both, the visual representation of the sounds and the percentage of experts' assessments to interpret the results. Furthermore, the overall frequencies and depiction at the moment of air release will vary depending on the vowel surrounding the [v]. Table 5 shows the percentage of experts who assessed the sound [v] in the word "discovered"

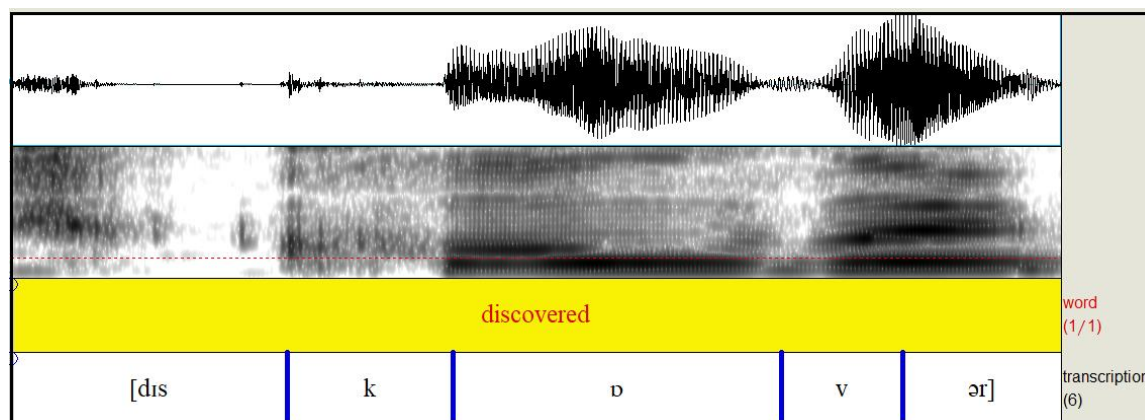
Table 5

Responses to Survey Sounds Question of the Word "discovered"

W1	WORD			
	discovered	Q10	Q14	MEAN
	[β]	0.0%	62.5%	31.3%
	[b]	0.0%	0.0%	0.0%
	[v]	100.0%	25.0%	62.5%
	Another	0.0%	12.5%	6.3%

Note: Q= question number in the survey. W1= week 1 of the study

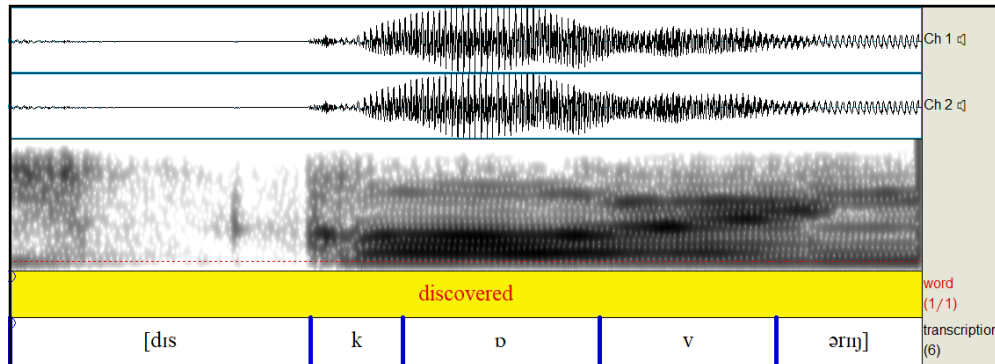
Taken together, the results of this week demonstrate a higher [v] response from the experts who assessed the sounds. Turn to see Figure 10 and figure 11 that exhibits the visual representation of the word "discovered".

Figure 10***Spectrogram of Word “Discovered”***

In the case of the word “discovered”, 37.7% of teachers of English believe that the realization of the [v] sound is more closely similar to a [β] sound. On the other hand, 62.5% of experts hear this sound as an accurately delivered [v] sound.

The spectrograms show how the vowels around the [v] create a vowel-like environment, however, it is noticeable that the segment that corresponds to [v] displays a randomly turbulent airstream. Additionally, there is a voicing bar at the bottom, which might suggest that there is vibration of the vocal folds due to the voicing coming from the vowels. All in all, it is virtually close to a [v] sound.

Figure 11
Spectrogram of Word “Discovered”



There was a significant positive correlation between respondents’ answers to the survey and spectrographic depictions. Overall, a comparison of the two results reveals substantial evidence to assert students’ easiness with the sound [v] in this word in particular.

Subsequently, I discuss a comparable outcome corresponding to the word “even”. Next, we shall see below the chart summarizing the survey results in Table 6. Then, the visual representations of the word “even” in figure 12 and 13 are portrayed.

Table 6
Responses to Survey Sounds Question of the Word “Even”

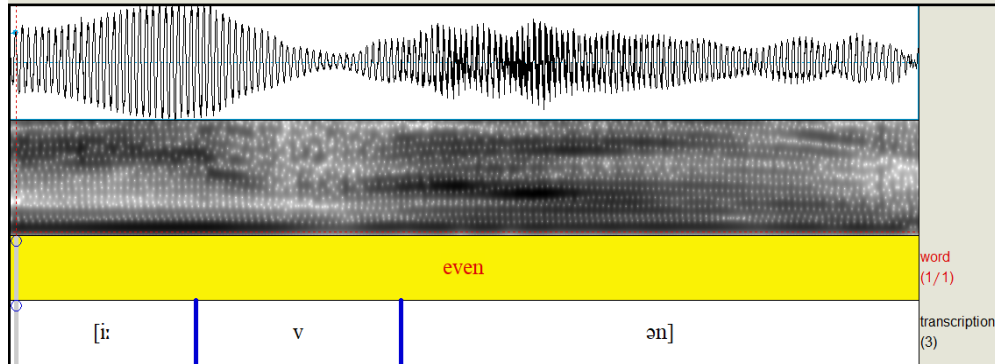
W1	WORD			
	even	Q11	Q12	Mean
	[β]	25.0%	12.5%	18.8%
	[b]	0.0%	0.0%	0.0%
	[v]	75.0%	87.5%	81.3%
	Another	0.0%	0.0%	0.0%

Note: Q= question number in the survey. W1= week 1 of the study

The spectrograms below show how the vowels around the [v] contribute to the strongly voiced environment. Above all, it is noticeable that the segment that corresponds to [v] displays an energetic randomly turbulent airstream. Additionally, there is a voicing bar at the bottom,

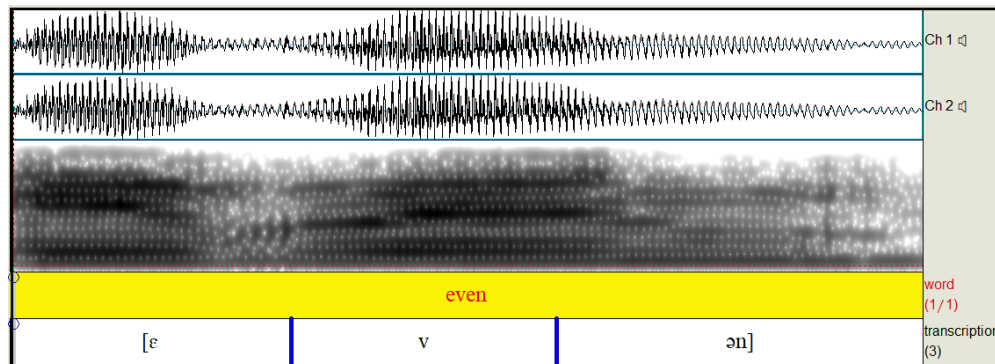
clear high frequencies, which together clarifies that there is vibration of the vocal folds due to the voicing coming from the vowels.

Figure 12
Spectrogram of Word “Even”



Notably, the characteristics illustrated in Figure 11 and Figure 12 indicate the same situation in Figure 13.

Figure 13
Spectrogram of Word “Even”



Given these spectral features descriptions along with the survey answers, In the case of the word “even”, 81.3% of experts assessed the words as a clear [v] sound, and only 18.8% assessed it as a [β] sound. Hence, this sound is almost certainly a [v] sound.

Next, I show the results for the word “Vikings”. Table 7 shows the percentage of experts who assessed the sound [v] in the word “Vikings”. There are also figure 14 and figure 15 portraying the visual cues for the same word.

Table 7

Responses to Survey Sounds Question of the Word “Vikings”

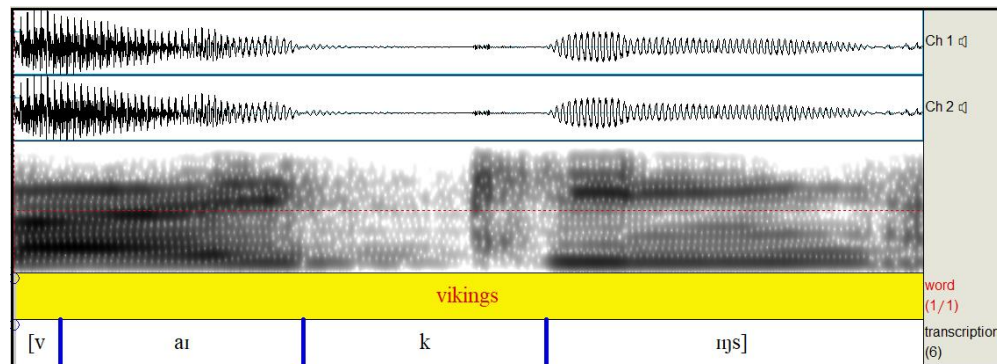
W1	WORD	Q13	Q15	MEAN
	vikings			
	[β]	25.0%	0.0%	12.5%
	[b]	25.0%	0.0%	12.5%
	[v]	37.5%	100.0%	68.8%
	Another	12.5%	0.0%	6.3%

Note: Q= number of question in survey. W1=week 1 of the study. Another= the experts did not specify the sound as they were unsure.

In the first place, it is essential to highlight that this is the only initial consonant /v/ during this week of the study. Granted, experts classified intervocalic words in high percentage of occurrence, the word “Vikings” still shows a significantly high number with a 68.7%. Next, the picture that represents the word in its spectral features shows a vibrant environment. Phoneme /v/ is immediately realized with enough frication to deliver a cohesive sound.

Figure 14

Spectrogram of Word “Vikings”

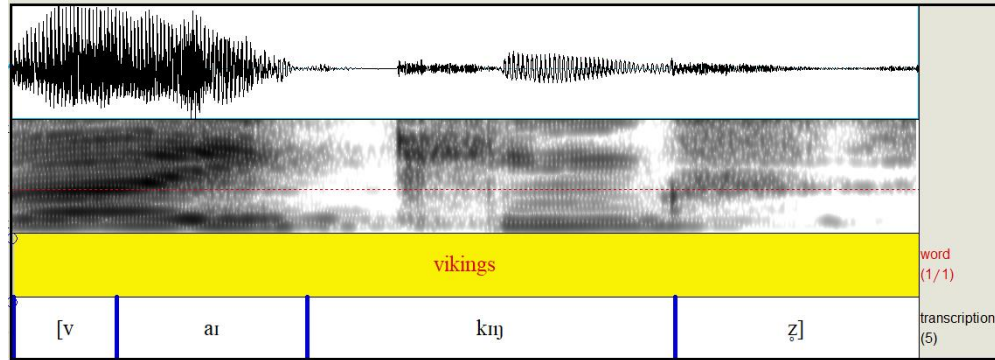


For the word “Vikings” 68.7% of experts indicated this sound to be close to a [v] sound. Whereas 25% of teachers of English assessed it as either a [β] or a [b] sound. If compared both,

Figure 14 and Figure 15, there is a similar situation occurring in both pictures. This depiction shows overall frication, turbulence and frequency noise. As mentioned above, this word is certainly a voiced fricative sound.

Figure 15

Spectrogram of Word “Vikings”



Overall, Figure 14 and figure 15 reveal clear friction noise and evident vocal fold vibrations. It is possible to see a turbulent airstream from the beginning of the word, with low-frequencies and a voicing bar, as well as higher frequencies.

6.3. Results of week 2

After subjects finished the first week task, they started the second week with a new passage. They were told to listen to the audiobook corresponding to the pages assigned to them. There appears to portray quantitative evidence that after the first experience of reading aloud, learners started to struggle again. This is shown in table 8. Nonetheless, we shall now describe the specific instances in both, the visual representation of the sounds and the percentage of experts' assessments to present the results along with figure 16, figure 17 and figure 18.

Table 8

Responses to Survey Sounds Question of the Word “Vast”

W2	WORD				
	vast	Q16	Q17	Q23	MEAN
	[β]	37.5%	25.0%	50.0%	37.5%
	[b]	37.5%	62.5%	37.5%	45.8%
	[v]	25.0%	12.5%	12.5%	16.7%
	Another	0.0%	0.0%	0.0%	0.0%

Note: Q= number of question in survey. W2=week 2 of the study. Another= the experts did not specify the sound as they were unsure.

The frequency of realization of the sound [v] for all learners corresponds to a mean of 16.7%. While with a striking mean of 45.8% for a [b] sound and a 37.5% for [β] sound. The results clearly depict difficulties for students according to the specialists. Indeed, an unclear environment for the phoneme [v] in the word ‘vast’ is observed in figures 16 and 17. There is some background noise, but the visuals do not support the realization of a [b], as there is a lack of a silence period, a burst, and then a release. Instead, there is irregular distribution of energy with much higher frequencies than what we would see in an accurately realized [v] sound. Furthermore, it is most likely to be close to a [β] sound, which tallies with the survey percentage of 37.5%.

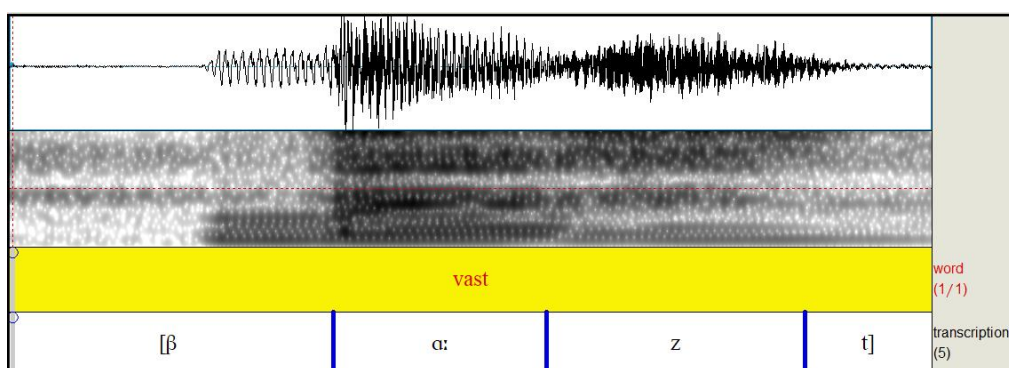
Figure 16*Spectrogram of word “Vast”*

Figure 16 exhibits initially some environmental noise, and then, there is a substantial voicing bar at the bottom of the spectrogram. The overall environment depicted from this picture suggests a sound that corresponds to a fricative one. Nevertheless, frequencies are not as clear as they would for the [v] sound. Yet, it cannot be ensured as visual illustrations on their own are insufficient.

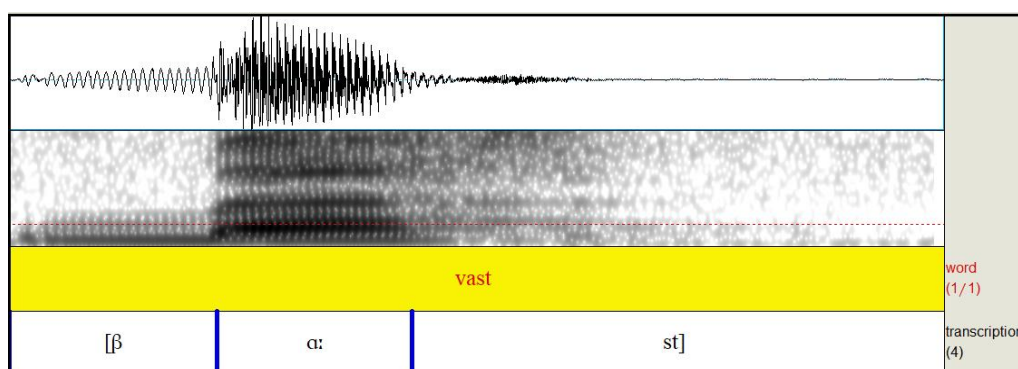
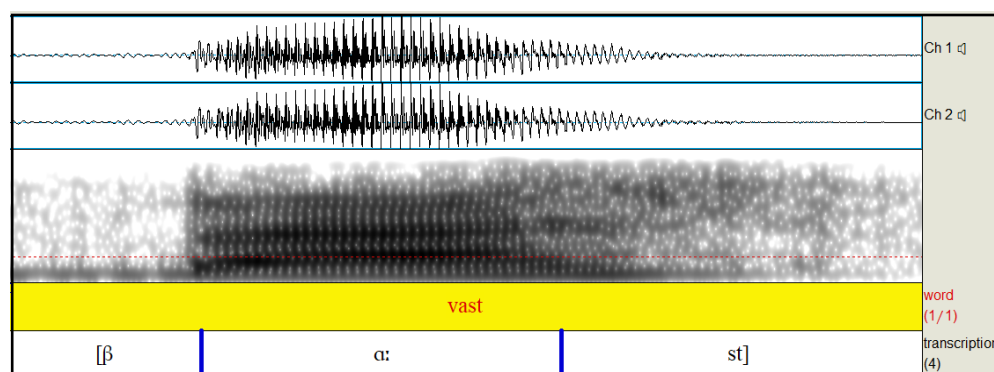
Figure 17*Spectrogram of Word “Vast”*

Figure 17 displays the word “vast”. This realization in comparison to the previous Figures 15 and 16, do not show sufficient friction noise. There is a voicing bar, which determines the vibration of vocal folds. This voicing seems to start at the lowest point and reach a higher point, but then it stops. Apparently, the subject used the lips slightly parted and allowed more

air through the constriction channel, realizing a [β] sound. A comparable outcome is observed in Figure 18, corresponding the same word “vast”. In this occasion, the realization of the word seems like a voiced fricative, as mentioned earlier, by opening the articulators slightly that allows air through the channel.

Figure 18

Spectrogram of Word “Vast”



Next, I shall report the results corresponding to the word “venus”. For this, Table 9 shows the results corresponding to the experts’ judgements for the same word. For this occasion, respondents indicated an overall disagreement with the sound realized by the subjects. This chart reveals that 45.8% suggests that subjects are pronouncing a [b] sound, 16.7% a [β] sound and 4.2% of experts are unsure.

Table 9

Responses to Survey Sounds Question of the Word “Venus”

W2	WORD				
	venus	Q19	Q20	Q24	MEAN
	[β]	12.5%	25.0%	12.5%	16.7%
	[b]	37.5%	37.5%	62.5%	45.8%
	[v]	50.0%	25.0%	25.0%	33.3%
	Another	0.0%	12.5%	0.0%	4.2%

Note: Q= number of question in survey. W2=week 2 of the study. Another= the experts did not specify the sound as they were unsure.

Figure 19 shows the visual representation of the realization of the word recorded by one student. In contrast, Figure 20 illustrates the same word but with different realizations.

Figure 19

Spectrogram of Word “Venus”

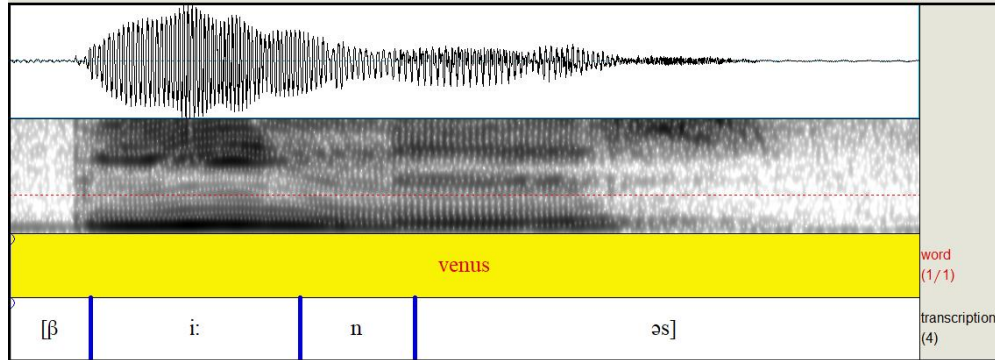


Figure 19 shares the same characteristics as the realizations from the word “vast” reported earlier. The sound is clearly slightly voiced and overall friction noise. Although it looks white and light, it still suggests the appearance of a fricative sound. Nevertheless, it does not have high frequency noise. In contrast, Figure 20 shows frequencies at higher levels, as well as a voicing bar. Thus, this sound is without a doubt a voiced fricative one, specifically the [v] sound.

Figure 20

Spectrogram of Word “Venus”

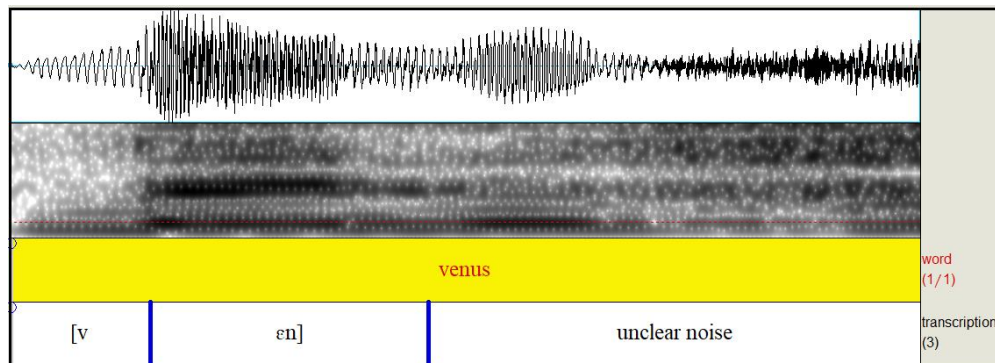
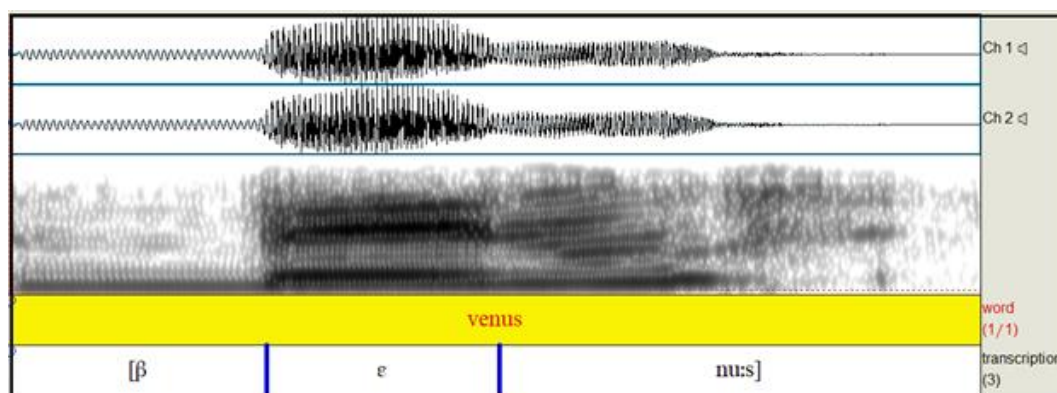


Figure 21 shows the word “Venus” in which the spectrogram depicts some vibration of the vocal folds, but it is not as clear. Moreover, it resembles more an approximant sound of [β], as it is voiced but it lacks of strong frication noise due to the opened release of air

Figure 21

Spectrogram of Word “Venus”



The frequency of the sound is not high, it only shows very light friction noise and the voicing bar, which supports the idea that it might not be a [v] sound. Yet, it does depict a fricative sound, which could potentially be a [β] sound. Looking into the percentages of experts who assessed this word, 45.8% voted for a [b] sound, and a 16.7% for a [β]. However, the spectrogram does not corroborate the existence of a stop sound.

From this data in table 10, it is apparent that respondents still agree that learners tend to pronounce the phoneme /v/ in ‘volcanoes’ as a [b] sound with a mean answer of 45.8%. Some experts claim that students pronounce it as [β], while a small percentage of 4.2% are unsure of the sound.

Table 10

Responses to Survey Sounds Question of the Word “Volcanoes”

W2	WORD				
	volcanoes	Q18	Q21	Q22	MEAN
	[β]	25.0%	37.5%	12.5%	25.0%
	[b]	62.5%	25.0%	50.0%	45.8%
	[v]	12.5%	37.5%	25.0%	25.0%
	Another	0.0%	0.0%	12.5%	4.2%

Note: Q= number of question in survey. W2=week 2 of the study. Another= the experts did not specify the sound as they were unsure

Data from figure 22 and figure 23, shows subjects uttering the word “volcano” fairly similar to what is expected of a fricative sound [v]. Figure 22 has low frequencies quite marked at the voicing bar, which represents vibration of the vocal folds. There is some noise, albeit it might not be a strong frication, and it does not show clear higher frequencies. On the contrary, Figures 23 and 24 show much darker, higher frequencies at the bottom, which demonstrates clear acoustic characteristics of a voiced fricative sound [v].

Figure 22

Spectrogram of Word “Volcanoes”

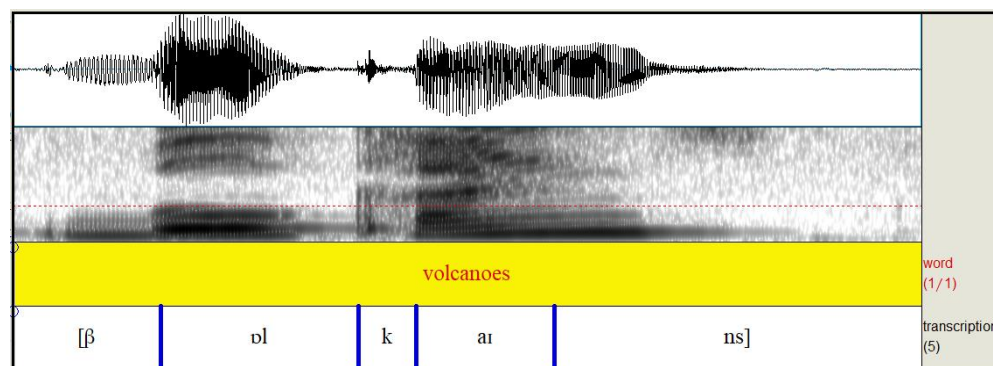
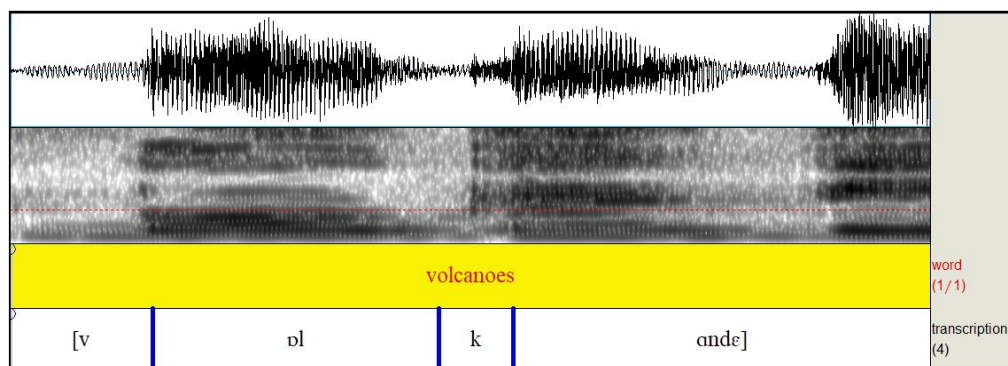


Figure 22 shows the absence of higher frequencies. There is voicing bar and lighter friction noise. This illustrates a [β] sound.

Figure 23

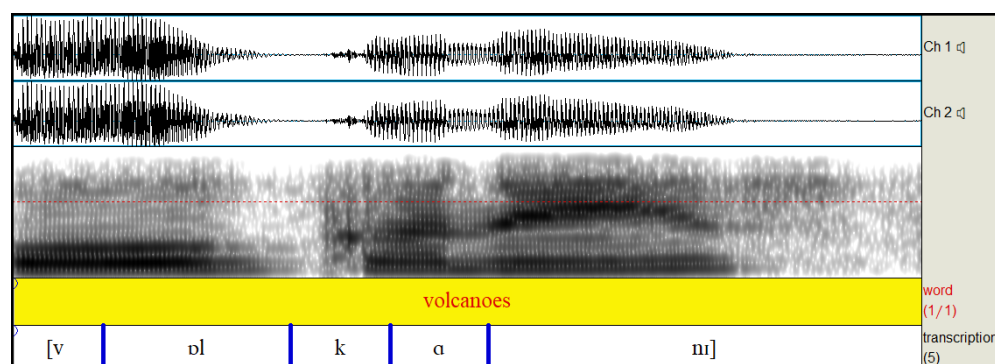
Spectrogram of Word “Volcano”



In comparison to Figure 22, Figures 23 and 24 depicts a very well delivered sound. It has friction noise, voicing bar and higher frequencies, proper of [v].

Figure 24

Spectrogram of Word “Volcano”



6.4 Results of week 3

The following week, subjects were asked to read another passage that contained several words with the target sounds. Table 11 shows the results of the questionnaire that experts in EFL answered for the word “rivers”. Percentages of well delivered [v] sound demonstrate a significant increase in students’ reading aloud experience, particularly with the sound [v].

Table 11***Responses to Survey Sounds Question of the Word “Rivers”***

W3	WORD	Q43	Q48	Mean
	rivers			
	[β]	37.5%	0.0%	18.8%
	[b]	0.0%	0.0%	0.0%
	[v]	62.5%	87.5%	75.0%
	Another	0.0%	12.5%	6.3%

Note: Q= number of question in survey. W3=week 3 of the study. Another= the experts did not specify the sound as they were unsure

75% of experts categorized the sound as a [v], while only 18.8% answered [β]. These results can be paired with the visual representation of the sounds in spectrograms. Figure 25 displays energy that tends to be distributed throughout the spectrogram. There is a clear turbulence and friction noise, as well as a voicing bar. All in all, it is likely to be a [v] sound.

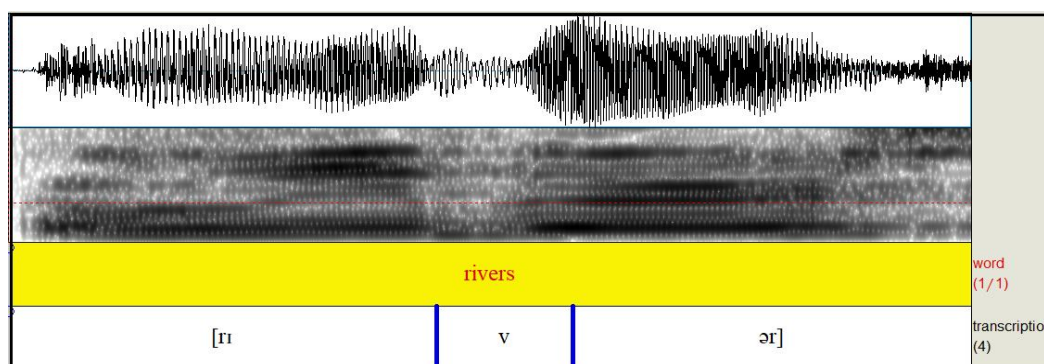
Figure 25***Spectrogram of Word “Rivers”***

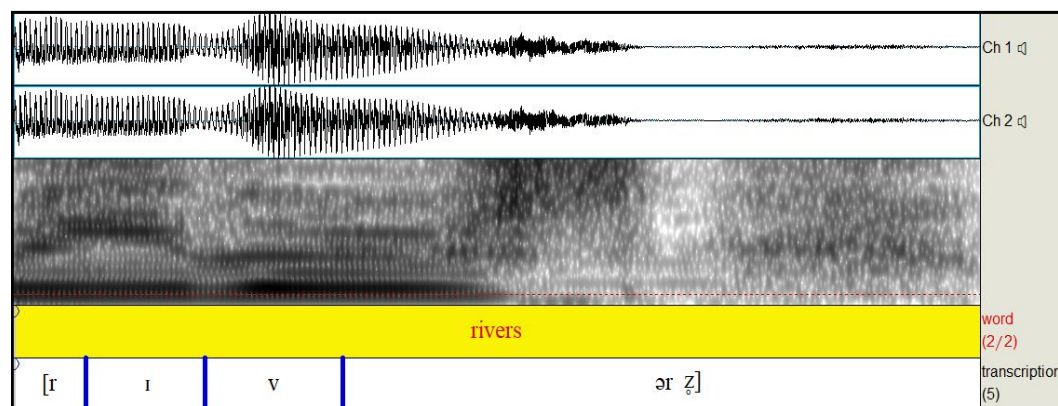
Figure 26
Spectrogram of Word “Rivers”


Table 12 shows the results from the survey corresponding to the word “lives”. There is some agreement that the sound in the word “lives” is either a [β] or a [v]. In figure 26 There is some friction noise but a light energy at the bottom of the fundamental frequency, which is usually noticeable in voiced fricatives. Nonetheless, in this particular case, the voiceless fricative [s] generates devoicing in order to offer a much more suitable and convenient environment for the smooth realization of the word.

Table 12
Responses to Survey Sounds Question of the Word “Lives”

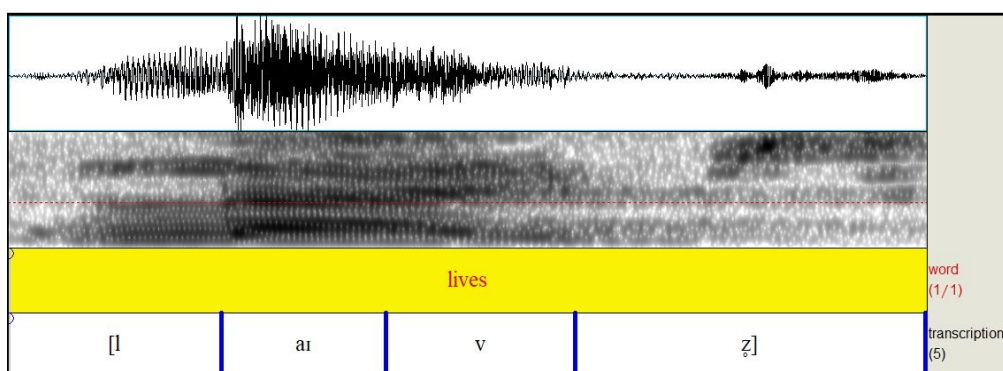
WORD					
S3	lives	Q45	Q47	Q50	MEAN
	[β]	25.0%	25.0%	12.5%	20.8%
	[b]	25.0%	0.0%	0.0%	8.3%
	[v]	25.0%	25.0%	37.5%	29.2%
	Another	25.0%	50.0%	50.0%	41.7%

Note: Q= number of question in survey. W3=week 3 of the study. Another= the experts did not specify the sound as they were unsure.

In general, experts leaned towards a sound that is different from [v]. There is some agreement that it might be similar to the Chilean allophone, or it is another sound that cannot be

pinpointed, as shown in table 12 with a 41.7% of responses for “another”, in comparison to a 20.8% for [β] and 8.3% for [b].

Figure 27
Spectrogram of Word “Lives”



Data in Figure 27 shows an interesting spectrogram, in which the word “lives” reveals a devoiced [z] sound with high frequencies that are visible in the highest point with marked dark energy, but no fundamental frequency that denotes a lack of voicing. The previous [v] sound seems very short and rapidly devoiced into the [z] sound. However, there seems to show a [v] sound that is not as intense due to the quick change. On the contrary, figure 28 shows a very clear marked energy throughout the spectrogram.

Figure 28
Spectrogram of Word “Lives”

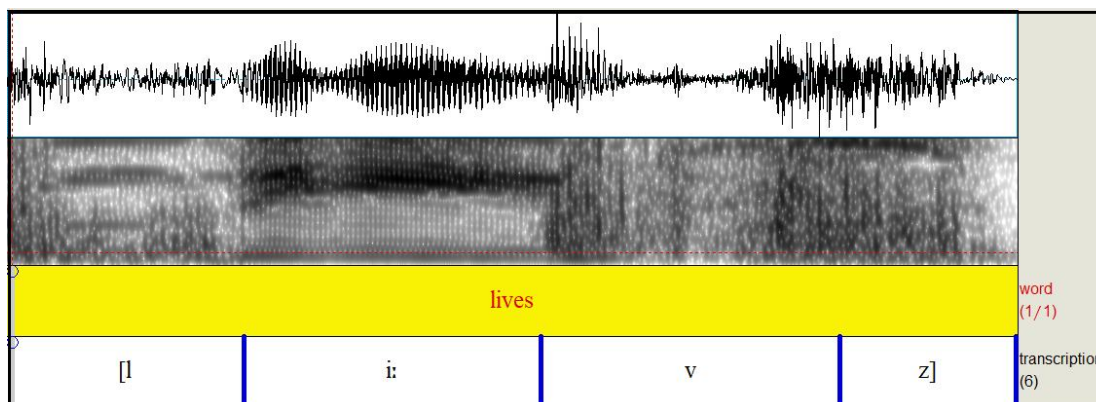
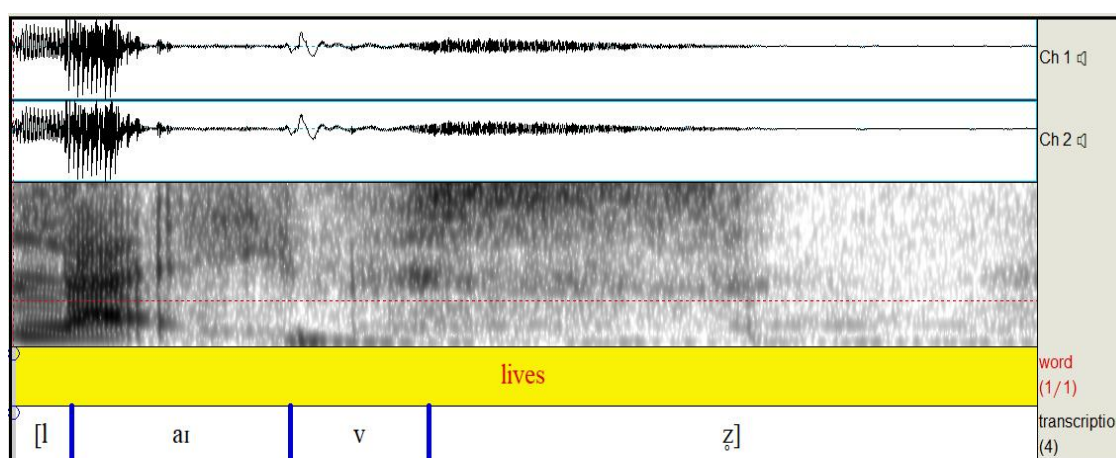


Figure 28 shows both [v] and [z] with clear high frequencies and evident noise throughout the spectrogram. Both sounds seem to show a clear voicing bar at the bottom of the spectrogram.

Similarly, Figure 29 shows a somewhat acceptable environment for a [v] sound.

Figure 29

Spectrogram of Word “Lives”



This spectrogram shown in Figure 29 shows light energy for [v], although it is unquestionable that it has voicing as there is some darkness at the bottom of the voicing bar, compared with the devoiced [z], which does not have darkness at low frequencies, but it has them in the highest point of frequencies, similarly to the previous [v] sound. All in all, these characteristics identify fricatives quite easily.

Data in table 13 shows the word “covered”, which even though it reveals some discrepancies among experts, it still exhibits a 62.5% of experts’ answers alluding to an accurately developed [v] sound. As I shall demonstrate below, figures 29, 30, and 31 show spectrograms with clear fundamental frequencies, overall friction noise and high frequencies.

Table 13

Responses to Survey Sounds Question of the Word “Covered”

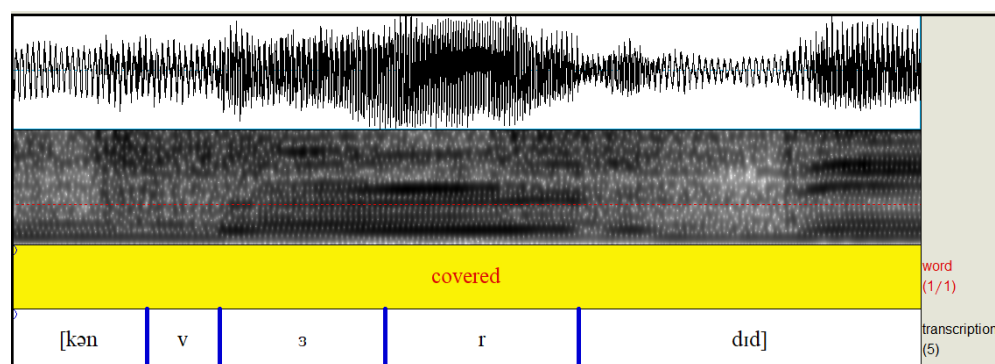
W3	WORD				
	covered	Q44	Q46	Q49	MEAN
	[β]	25.0%	12.5%	0.0%	12.5%
	[b]	50.0%	0.0%	0.0%	16.7%
	[v]	0.0%	87.5%	100.0%	62.5%
	Another	25.0%	0.0%	0.0%	8.3%

Note: Q= number of question in survey. W3=week 3 of the study. Another= the experts did not specify the sound as they were unsure.

Now, I shall describe the realizations of the word “covered”. Figure 30 looks overall noisy and voiced. Phoneme /v/ is undeniably realized as a voiced fricative sound.

Figure 30

Spectrogram of Word “Covered”

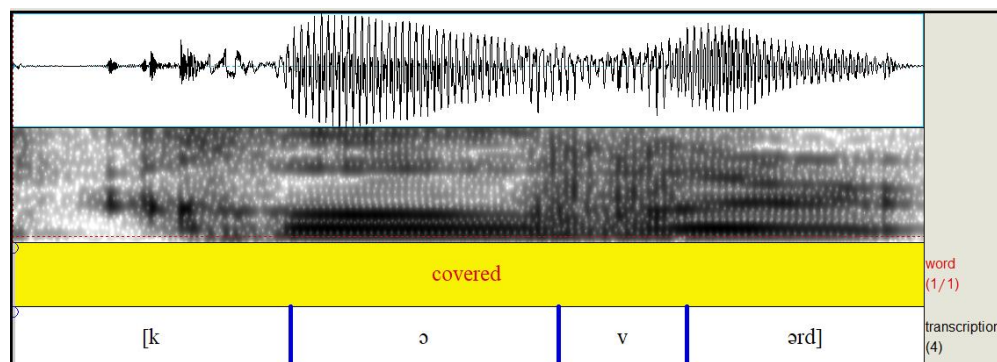


Note: Phonetic transcription as realized by the learner.

Providing that phoneme /v/ is in between vowels, the environment in the realization of the word supports the voicing of the /v/. There is turbulence noise and overall frequencies at the lowest and highest points. Overall, it is realized as a [v].

Figure 31

Spectrogram of Word “Covered”

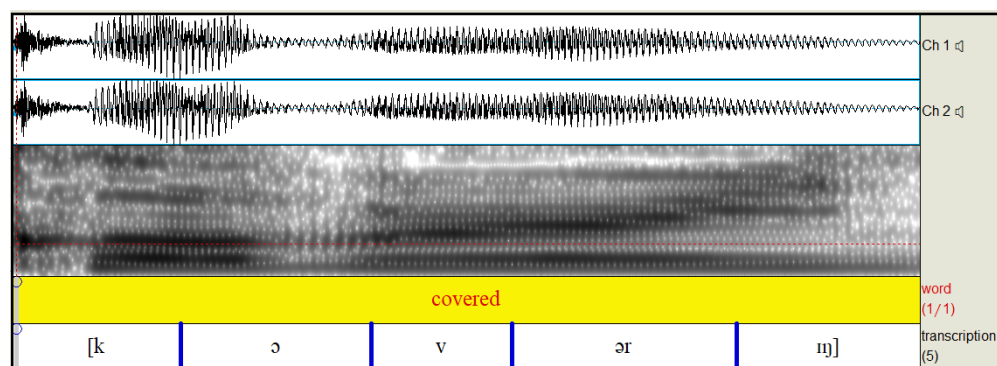


Note: Phonetic transcription as realized by the learner.

Such circumstances described above, definitely apply to the illustration of the word “covered” in Figure 32, which demonstrates having the characteristics of a voiced fricative sound.

Figure 32

Spectrogram of Word “Covered”



Note: Phonetic transcription as realized by the learner.

6.5. Results of week 4

During week four, learners continued the reading aloud experience. They were assigned a different passage containing the target sound [v], and the results obtained from this data exhibit a 25% of experts assessing the word “canvas” as accurately delivered. Moreover, 66.6% are divided between [β] and [b], while 8.3% of experts are unsure.

Table 14

Responses to Survey Sounds Question of the Word “Canvas”

W4	WORD	Q27	Q28	Q31	MEAN
	canvas				
	[β]	25.0%	37.5%	37.5%	33.3%
	[b]	12.5%	50.0%	37.5%	33.3%
	[v]	50.0%	12.5%	12.5%	25.0%
	Another	12.5%	0.0%	12.5%	8.3%

From the data in Figure 32 and Figure 33, the word canvas evidences clear frequencies both at the bottom of the spectrogram and in the higher zone. There is indeed noise, and it is quite marked. Indeed, both Figures depict a [v] sound.

Figure 32

Spectrogram of Word “Canvas”

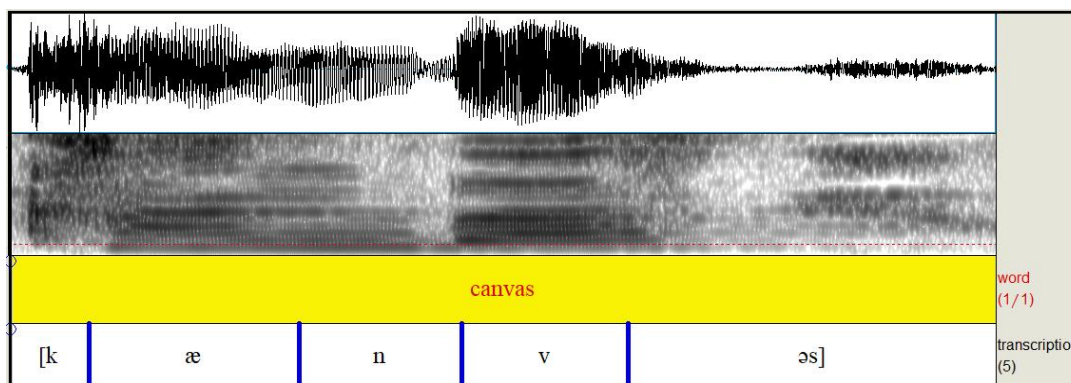


Figure 33

Spectrogram of Word “Canvas”

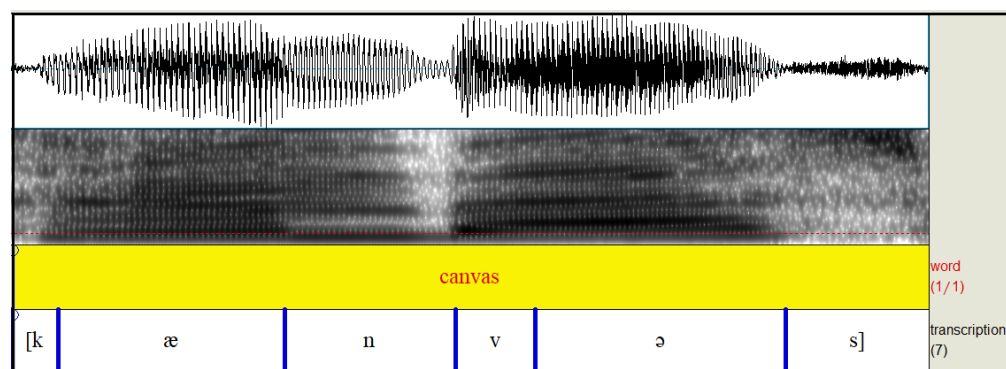
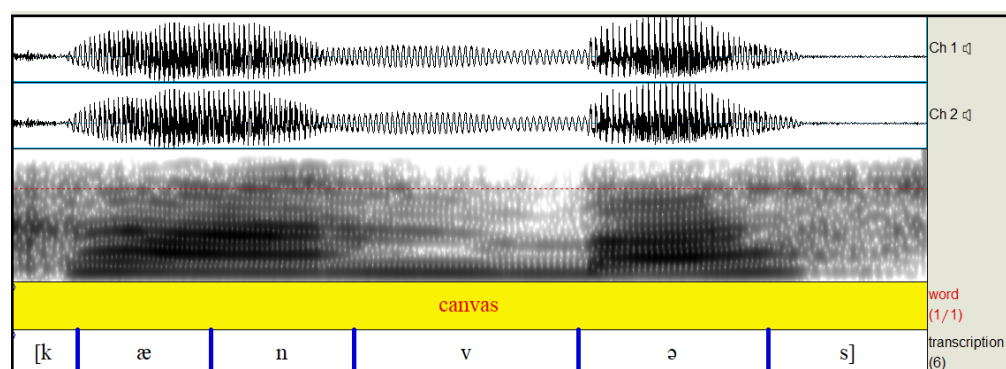


Figure 34

Spectrogram of Word “Canvas”



The data obtained from Figure 34 shows the word “canvas” with clear noise, however, it is not marked and strong if compared to the previous Figure 32 and 33. Nonetheless, the voicing bar is visible and clear, and the high frequency region is lacking energy in comparison to the vowel sound following the [v] sound.

As table 15 shows, there is a significant difference between the percentage of sounds that experts assessed as [b] and [v] with 4.2% and 66.7% accordingly. Still, 16.7% of experts report an unknown sound, while 12.5% hear a [β] sound.

Table 15

Responses to Survey Sounds Question of the Word “Navy”

W4	WORD				
	navy	Q26	Q29	Q32	MEAN
	[β]	25.0%	0.0%	12.5%	12.5%
	[b]	0.0%	12,5%	0,0%	4.2%
	[v]	50.0%	87,5%	62,5%	66.7%
	Another	25.0%	0.0%	25.0%	16.7%

It is apparent from this table that the word “navy” shows an accurate realization among subjects. Interestingly, Figure 34, Figure 35 and Figure 36 show overall friction noise and visible frequencies at the bottom part of the spectrograms and at high regions. Although, there is some difference in terms of the energy allocated in the frication. For instance, Figure 35 is quite lighter than Figure 34, but all in all they look quite close to a voiced fricative sound.

Figure 35

Spectrogram of Word “Navy”

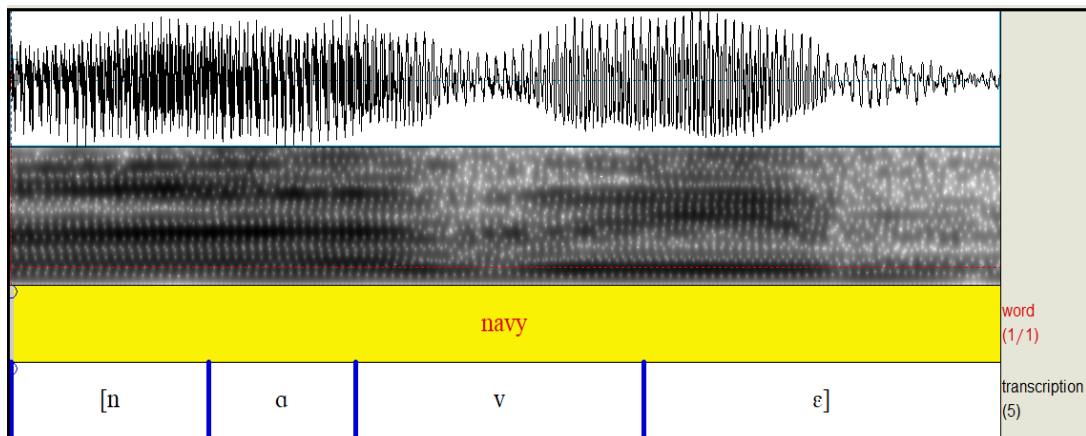


Figure 36
Spectrogram of Word “Navy”

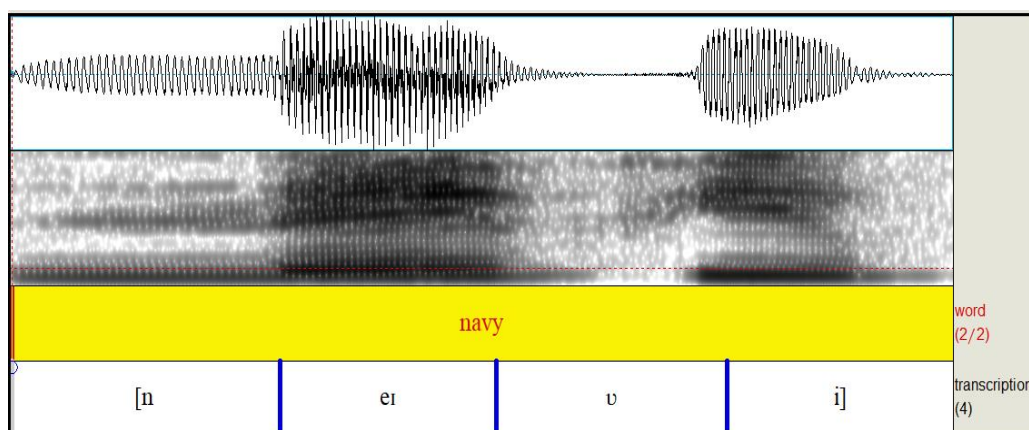
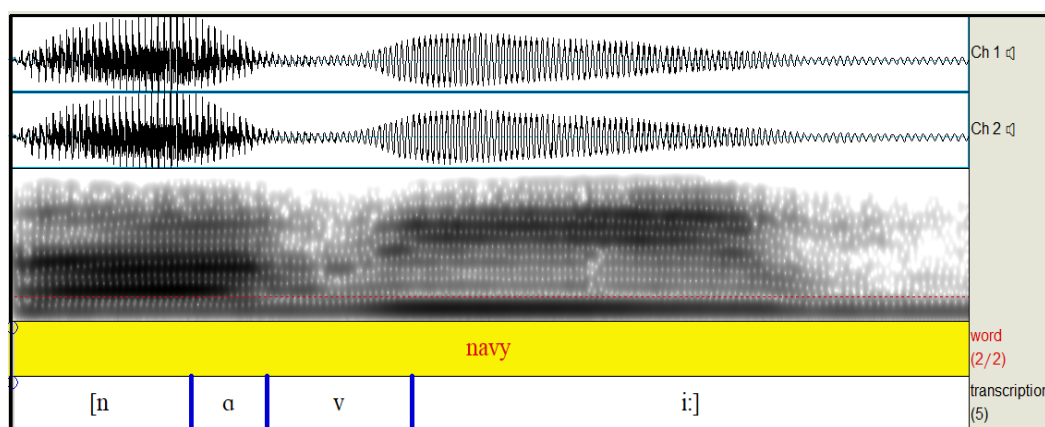


Figure 37
Spectrogram of Word “Navy”



Data obtained from Table 16 shows a significant improvement in students' pronunciation of the sound [v] with a 58.3%, while others reported the sounds to be a [β] sound with a 33.3%

Table 16

Responses to Survey Sounds Question of the word “Vincent”

W4	WORD				
	Vincent	Q25	Q30	Q33	MEAN
	[β]	62.5%	37.5%	0.0%	33.3%
	[b]	12.5%	12.5%	0.0%	8.3%
	[v]	25.0%	50.0%	100.0%	58.3%
	Another	0.0%	0.0%	0.0%	0.0%

In short, as previously stated, the results obtained from the survey demonstrate subjects’ improvement in the realizations of the [v] sound. Next, the spectrogram shows the visual cues to report the results for this week.

Figure 38

Spectrogram of Word “Vincent”

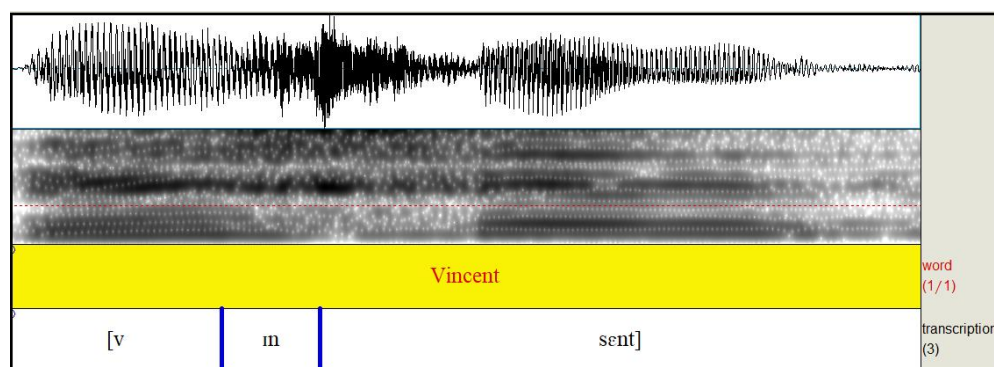


Figure 38 shows a [v] sound in initial position. There is clear voicing and turbulence, which indicates the presence of a fricative sound. Frequencies are noted throughout the picture and overall well delivered sound. Accordingly, I examine the next spectrograms corresponding to the word “Vincent” in Figure 39.

Figure 39

Spectrogram of Word “Vincent”

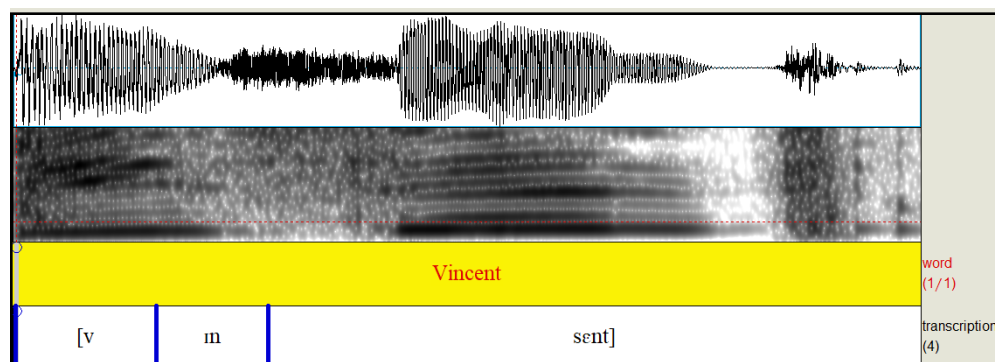


Figure 39 displays an overall sufficient environment for a fricative sound to occur. There is voicing bar, high frequencies and turbulence. Thus, it is most likely a [v] sound. Likewise, Figure 40 exhibits a comparable environment in the word.

Figure 40

Spectrogram of Word “Vincent”

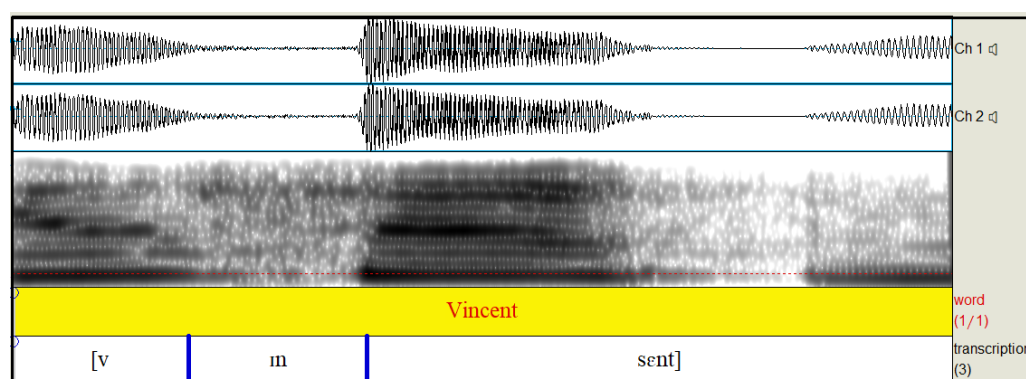


Figure 40 shows the characteristic expected in the realization of a voiced fricative sound. There is turbulence and clear frequencies that demonstrate both, voicing and frication.

6.6. Results of week 5

During this week, students read the last text to assess the results of the 4 weeks of exposure to the reading aloud strategy. As predicted, results lead to agree with improvement in the realization of the [v] sound; therefore, the findings are in line with the general objective of this study.

All in all, experts and spectrograms highlight enhanced results when compared to the diagnostic reading. For example, for the word “vest” 66.7% of experts agree with this result, while some respondents were more hesitant in dealing with assessing words with L1 interference and a problematic realization of [v] as [β] or [b].

Table 17

Responses to Survey Sounds Question of the Word “Vest”

W5	WORD				
	vest	P34	P37	P40	Mean
	[β]	0.0%	12.5%	25.0%	12.5%
	[b]	50.0%	0.0%	0.0%	16.7%
	[v]	50.0%	87.5%	62.5%	66.7%
	Another	0.0%	0.0%	12.5%	4.2%

During the final week, it is possible to notice improvement in the pronunciation of students in regard to the [v] sound. All in all, fricatives occur when air flow passes through a narrow constriction of air, creating a turbulent environment. Hence, in Figures 40 and 41, the findings clearly indicate at the start of the word “vest” that turbulent flow of air is present. In fact, the labiodental fricative [v] shows jagged edges close to the peaks in the period, which are common in fricatives, but lacking in the realization of the sound [b].

Figure 41

Spectrogram of Word “Vest”

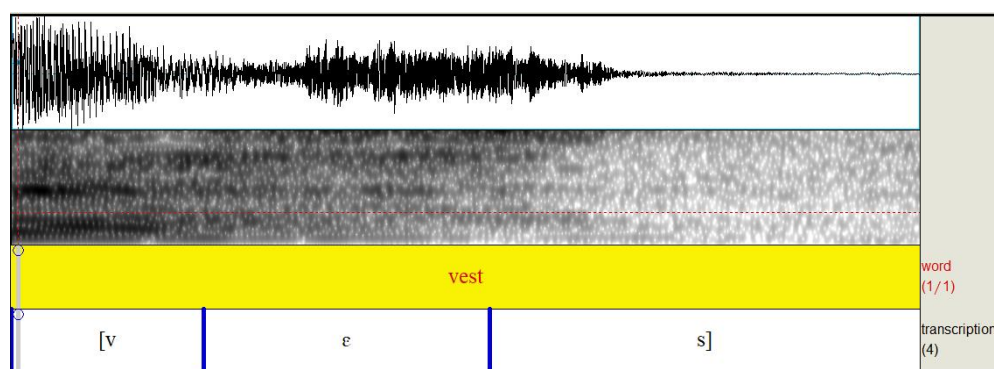


Figure 42

Spectrogram of Word “Vest”

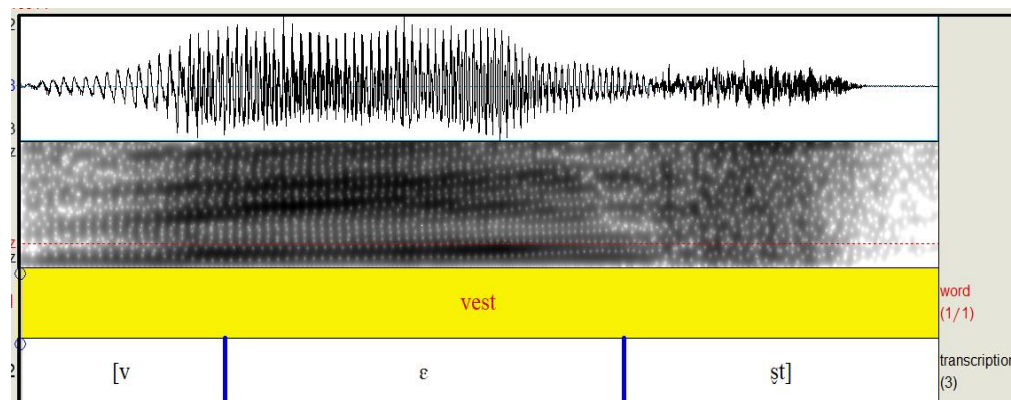
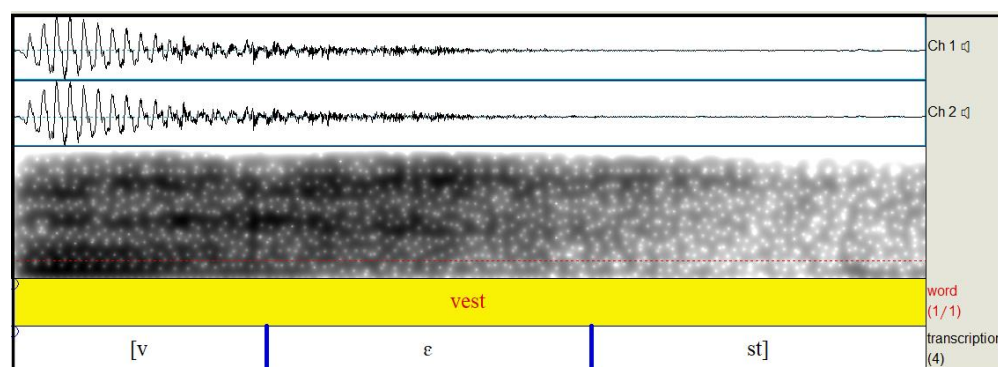


Figure 43

Spectrogram of Word “Vest”



The data concerning the word “van” presented points to the existence of a general phenomenon of enhanced pronunciation in relation to the sound [v]. The results suggest, although they do not show conclusively, that students are much more aware of the sound [v]. To illustrate, Table 18 shows an approximate 80% of the samples comprising a well delivered voiced fricative sound. Besides, it is relevant to observe that there are still some experts who assessed the sound as another sound different than [v], although it is a very small portion of about 20%.

Table 18***Responses to Survey Sounds Question of the Word “Van”***

W5	WORD				
	van	Q36	Q39	Q42	MEAN
	[β]	50.0%	0.0%	0.0%	16.7%
	[b]	12.5%	0.0%	0.0%	4.2%
	[v]	25.0%	100.0%	100.0%	75.0%
	Another	12.5%	0.0%	0.0%	4.2%

The sample data drawn from spectrograms depict the realization of the word “van”. Figure 43 shows a clear turbulence of friction noise and high frequencies that are very common in fricative sounds. There is, however, unclear voicing bar. In general, it is close to an accurately delivered [v] sound. The other examples seen in Figure 44 and Figure 45 show overall voicing throughout the spectrogram and friction noise.

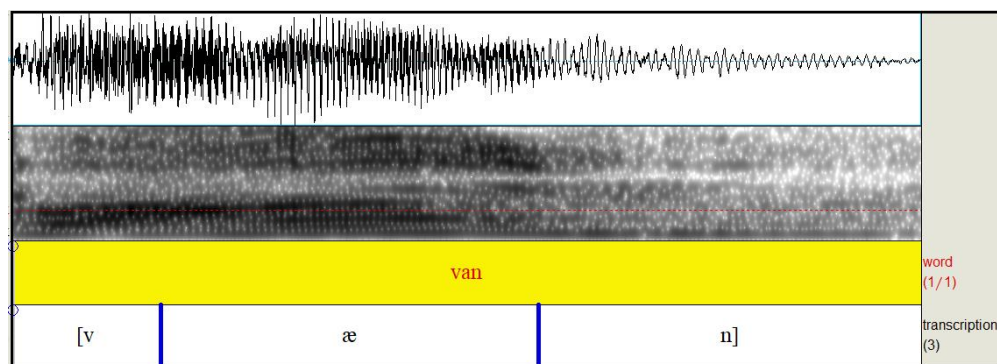
Figure 44***Spectrogram of Word “Van”***

Figure 45

Spectrogram of Word “Van”

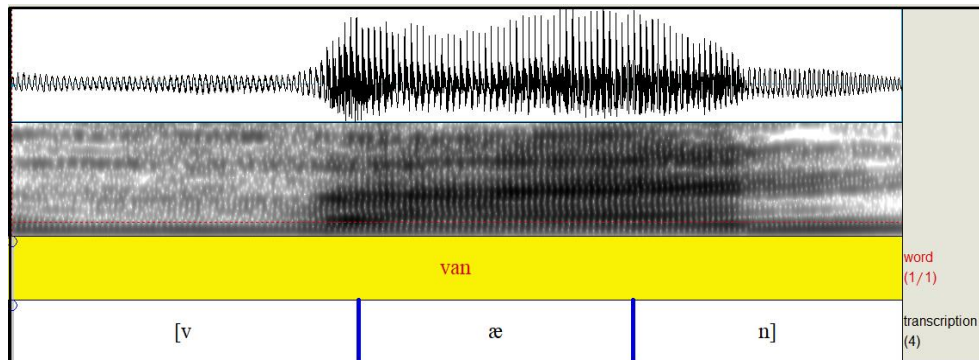
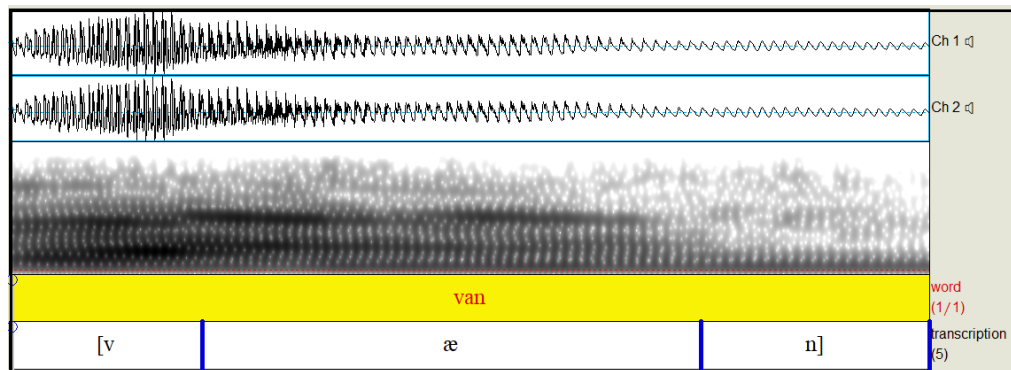


Figure 46

Spectrogram of Word “Van”



The following table depicts results from the word “volcano” during the last week of this research.

Table 19

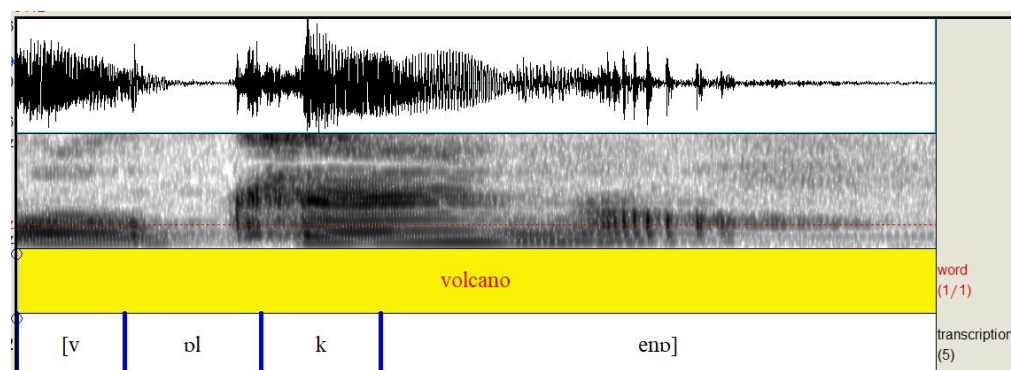
Responses to Survey Sounds Question of the word “volcano”

W5	WORD				MEAN
	volcano	Q35	Q38	Q41	
	[β]	37.5%	12.5%	37.5%	29.2%
	[b]	12.5%	12.5%	50.0%	25.0%
	[v]	50.0%	62.5%	12.5%	41.7%
	Another	0.0%	12.5%	0.0%	4.2%

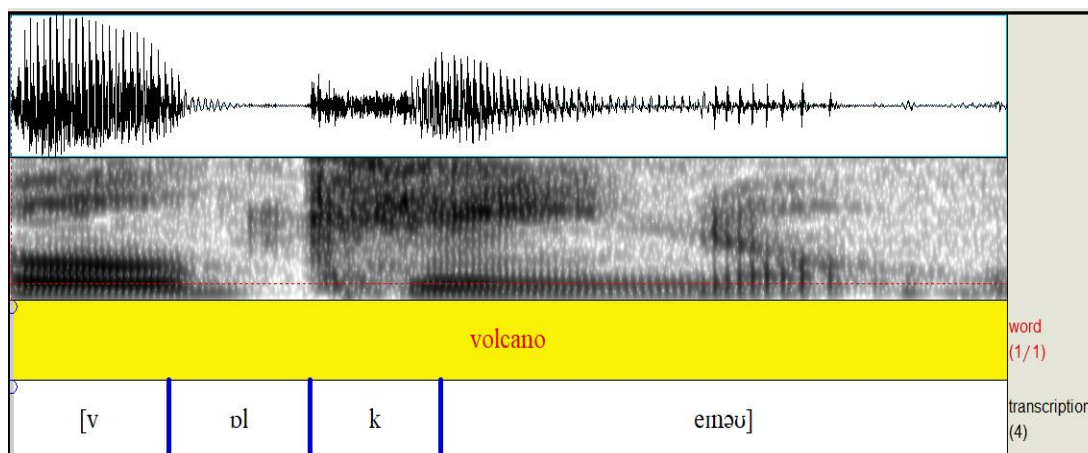
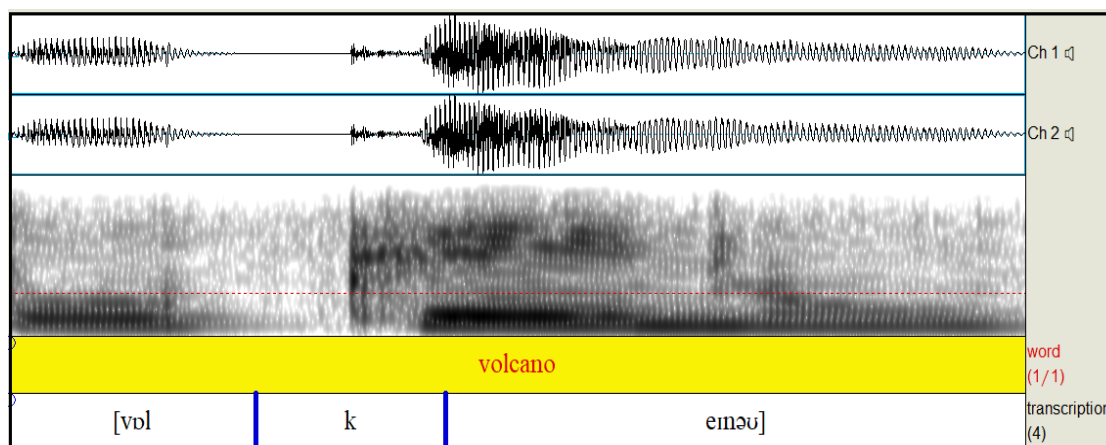
It is apparent from Table 19 that few experts believed that the sound of phoneme /v/ in the word “volcano” resembles another sound than [v], which provides the summary percentage of the experts’ opinions with 41.7%. The table below illustrates some disagreement, though, with the sounds [b] and [β] with 25% and 29.2% of opinions accordingly.

Figure 47

Spectrogram of Word “Volcano”



This example shown in Figure 47 corresponds to the realization of the word “volcano”, which 37.7% of experts considered as a [β] sound. This claim might be true, since there is some light frication noise. However, the voicing bar at the bottom seems to be influenced by the assimilation of the following vowel. Thus, it probably starts as an approximant due to a more relaxed vocal tract configuration, and as the vowel is introduced, the environment might have been responsible for creating the voicing bar (regressive assimilation) that starts to get darker before the vowel starts. Notwithstanding, due to the depiction of friction noise and voiced environment, I cannot determine with certainty if it elicits a [v] sound or a [β] sound.

Figure 48***Spectrogram of Word “Volcano”*****Figure 49*****Spectrogram of Word “Volcano”***

The last spectrographic evidence shows that these words extracted from the last reading are articulated as a voiced fricative. Even though some experts classified some of the sounds as [β] and considering that spectrograms display some frication noise, it is possible that due to the rounded environment of the vowel in the word “volcano” this frication shows slightly. Ladefoged (1996) presented the characteristics of fricatives among languages, and he concluded that [β] is most likely to be an approximant rather than a fricative sound. However, this might differ depending on the environment around the sound. For instance, if it is a rounded environment, it might show more noise. In addition, the scholar showed some differences

between [β] and [v] (Ladefoged, 1996, p.142), and for the bilabial sound the evidence does not support the claim that it shows frication noise, but only a strong frequency at lower levels. Moreover, it seems unlikely that [b] is ever consistently realized as a fricative.

In general, besides the previous example, data shows a consistent [v] sound, which shows overall spread energy and peaks (frication), as well as a clear fundamental frequency proper of voiced sounds that are generated by vocal fold vibration.

6.7. Overall results and graph illustrations

After data was collected and analyzed, all the percentages were displayed in two graphs. The first graph depicted in Figure 50, presents data relating to the assessment survey that experts of the English language answered. Realizations of accurately delivered [v] sound assessed at each week have been plotted on the graph. The x axis indicates the week of the study, and the y axis shows the mean percentage of [v] assessed sounds for every subject in the study. Additionally, the second graph in Figure 51 indicates the mean percentages of general accurately delivered [v] sound for the total of the sample.

Figure 50

Graph of percentages of sound [v] in experts' assessment per student

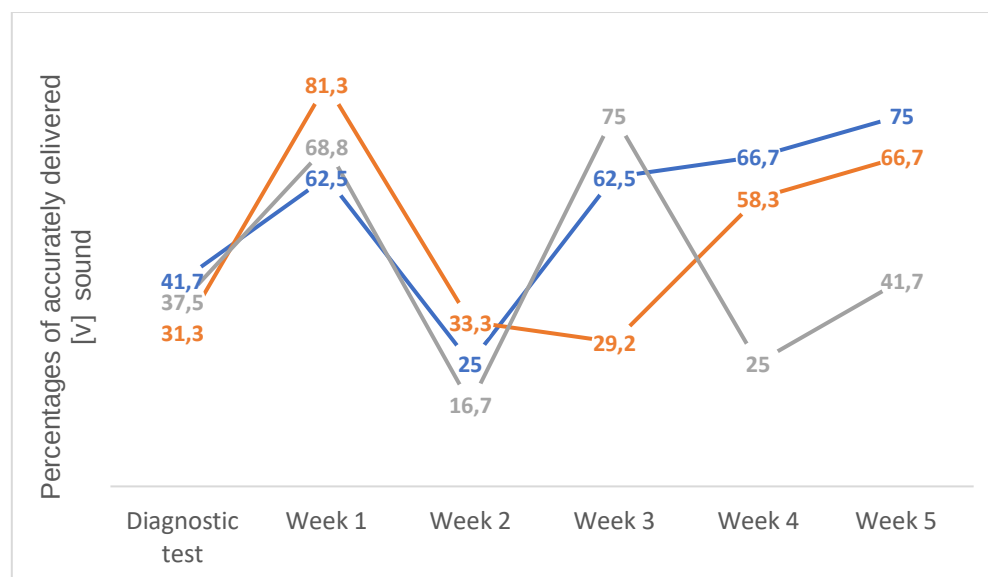
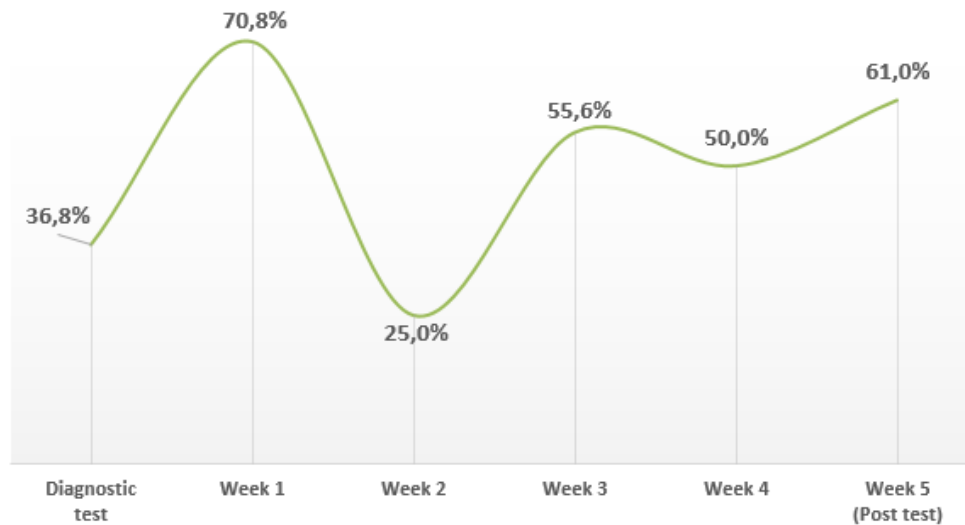


Figure 51

Graph of average percentages of sound [v] in experts' assessment



From the graphs above, we can see that the group of learners reported a significant improvement in their realizations of [v] sound compared to what can be seen from the data in the diagnostic results.

The diagnostic test shows that students only had a 36.8% of success in their realizations of [v] sound according to the questionnaire answered by English experts. In week one, we see that there was a sharp increase in an apparent improvement after the diagnostic test, which slumps shortly in week 2. What is striking in this graph is the sharp drop in the progress of subjects. As time passes, this progress plummets at 25% of accurately delivered sound [v]. Then, it shows a steady rise that is somewhat maintained in weeks 3 and 4 with similar results. After that constant improvement, from the graph we can see that the improvement of [v] sound reaches a peak at 62%, which demonstrates a positive correlation between reading aloud and phonemic awareness.

7. Discussion

In the preceding section, I showed the results from spectrograms as well as percentage of experts who answered an assessment survey. These cases highlight an important overall improvement in students' phonemic awareness, as their pronunciation evolved quickly to more accurate pronunciation of the sound [v]. Collectively, both the survey results and the spectrographic visualization of the sounds outline a significant change in students' performance. Equally, I tried to deduce as much as I can from the data, drawing conclusions that are soundly based on the results.

However, the findings from students' recordings raised some issues in the process of this research, which needs to be considered in this discussion. Similarly, some of the findings obtained were unexpected and require explanations. Additionally, several findings also point to questions needing further attention from researchers. Therefore, all these aspects are taken up in this section.

7.1. Diagnosis phase of the study

On the one hand, students read meaningful and entertaining stories, fun fact informational texts and close to life experiences passages. On the other hand, it becomes an online game platform, allowing students to enjoy their reading assignments. As a result, this phase demonstrated that students definitely had issues with the words containing the target sound /v/. For example, according to the results of the questionnaire, 54.2% of experts assessed the realizations of the word "valley" as an unclear [β] or [b].

Table 20

Summary of results for the diagnostic

Word	Allophonic variation of phoneme /v/ and /b/			
	[β]	[b]	[v]	Another
Valley	25.0%	25.0%	41.7%	4.2%
Village	25.0%	43.8%	31.3%	0%
Vacation	25.0%	37.5%	37.5%	0%
Beach	25.0%	37.5%	37.5%	0%

This chart corresponding to table 20 shows the overall results of the questionnaire for the diagnostic test. As it is possible to see, there is a strong agreement that these words are either realized as a bilabial fricative [β], or as an approximant, or just as a plosive sound. There are, however, some experts who still evaluated the sounds as well delivered sound in some cases, like in the example of the word "valley".

For this set of words, it is crucial to bear in mind that these words start with the target phoneme studied, /v/. Finch and Ortiz (1982) emphasize the idea that Chilean Spanish tends to deliver phonemes /b/ and /v/ as their allophonic variation [β]. Nonetheless, Spanish studies on phonology expose that these phonemes are usually realized as [b] after nasal sounds, which is not the case for these samples. On the contrary, phoneme /b/ is always plosive for the English language (Finch and Ortiz,1982).

Additionally, there is some disagreement in regards to the acoustic properties of [β]. To illustrate, Catford (2001) states that the [β] sound is typical in Spanish. However, he emphasizes the difficulty in pinpointing when phonemes /v/ and /b/ are delivered as a fricative or as an approximant. Moreover, the contribution offered by several scholars like Finch and Ortiz (1982,2003), Vergara and Perez (2013), Sadowsky (2010) suggests that there is no particular way to distinguish single allophonic variations in Spanish of the sound [β]. In addition, Vergara and Perez (2013) confirms that graphemes do not serve as cues for specific realizations. Yet, the experts agree that some patterns, like intervocalic /b/ and /v/ will lean towards a fricative sound, and that in initial position is in free variant.

It is interesting to see that there is only one word starting with phoneme /b/ among all the data samples. Still, students seemed to struggle with realizing the word "beach", as only one subject attempted to read it. That sample sounded as [bi:tʃ], although some experts still regarded it as a [v] sound with 37.5% of occurrence. This, in fact, demonstrates the disagreement even among experts of the English language in regards to what they hear and assess as a specific sound. Furthermore, this particular case shows an accurate realization of [b], however the fact that the other subjects skipped the word can be interpreted as evidence that the sound represents a challenge to the subjects.

As Eckman (1985) proposed, voiced sounds tend to be more marked than voiceless sounds, especially for children who are still learning their native language. There is also the fact that students will depend upon the features of their own language to create their own interlanguage as a means to understand the foreign language better. If that is the case, then it makes sense that learners are not realizing the English plosive /b/ as they omitted the word 'beach' altogether, because, as Finch and Ortiz point out (1982), in the Spanish language plosives are not as common as in English, meaning that it is indeed a marked feature of the language. Similarly, the evidence obtained from the words containing phoneme /v/ reveals spectrograms that depict an evident lack of frication noise, as it is possible to note the absence of energy in the pictures of words containing phoneme /v/ (For example, see Fig. 1).

Samples obtained from the diagnostic test suggests that subjects have difficulty with the target sound in initial position. Now, I shall demonstrate with the outcomes for the word "valley". If I turn to Fig. 1 and Fig. 2, both representations depict absence of friction noise. There is, however, some voicing. Thus, indicating the presence of a stop sound. If I look closely, Fig.2 shows a small white space between voicing and the release of airflow in the vowel. Consequently, that blank gap represents aspiration. All in all, the phoneme /v/ is, in the majority of the results, realized as a stop sound. In fewer cases, there is friction noise but not enough frequencies in the turbulent airstream to categorize them as a voiced fricative [v]. Furthermore, these were identified as [β] sounds.

To sum up, all the words from the diagnostic test had a similar issue. The realization of phoneme /v/ was not accurate, and subjects had randomized their delivery. In general, the sample group struggled with the awareness of English phonemes /v/ and /b/.

7.2. Week 1 and the start of the read alouds

At the start of this week, parents received instructions for the sample recording. They were told that learners had been assigned another book. The idea is that they had to listen to it while reading the text, resembling someone reading aloud to them. Subjects were told to pay more attention to the sounds and the realization of the words in the read-aloud, which probably contributed to the raised of their overall awareness of the reading.

Results from this week are outstanding, after explicit instruction to listen to the book and concentrate on the sounds. See Table 21 below:

Table 21

Summary of results of week 1

Word	Allophonic variation of phoneme /v/			
	[β]	[b]	[v]	Another
Discovered	31.3%	0.0%	62.5%	6.3%
Even	18.8%	0.0%	81.3%	0.0%
Vikings	12.5%	12.5%	68.8%	6.3%

A strong relationship between reading aloud and phonemic awareness has been reported in the literature, and it seems that based on this data presented in the first week, interesting findings can be noticed. Firstly, it is crucial to point out that in this week most of the words are intervocalic. This pattern displays that the phoneme /v/ is in between vowels, creating the perfect voicing environment. Interestingly, though, these words corroborate what Finch and Ortiz (1982) and Vergara and Perez (2013) discuss in their works. On the one hand, both scholars observe that in the Spanish language, intervocalic realizations of phoneme /b/ are mostly (if not always) delivered as the bilabial fricative [β], which in turn, is quite similar to the realization of

the English phoneme /v/. Furthermore, the bilabial fricative [β] and the labiodental fricative [v] sounds are both realized through the same manner of articulation. Likewise, the airstream is allowed through the narrow channel of the vocal tract producing a hissing sound. However, they are not produced in the same place of articulation. Consequently, it would have been necessary to see students' video recordings of their mouths to clarify this point and have more accurate results. Therefore, there is a serious discussion as to determine the actual sound the subjects produced.

There are several occasions in which the realizations of phoneme /v/ shown in spectrograms depict virtually the same environment. Therefore, the analysis of both voiced fricative sounds is challenging. What is more, the two voiced fricatives sounds discussed in this study look so similar, but at the same time, differ in so much in English and Spanish. For instance, it is encouraging to compare experts' opinions with the spectrograms to analyze the results better.

If I refer back to Fig.10, corresponding to the word "discovered", it looks like a fricative sound due to its frication energy and existence of lower frequency at the voicing bar. However, the energy spread is not as intense. It shows some "white spots" in between frication, which might suggest that the sound is more likely to be an approximant variation of /v/. If I consider what Catford (2001) presents in his book, the only difference between a fricative sound and an approximant variation is the widening of the articulatory channel, so the energy might be less potent because of this reason.

For both intervocalic words in this passage, there is disagreement among experts. However, it is clear that subjects do not confuse sounds when it appears in between vowels. This phenomenon is explained by the theory presented by Eckman (1985), which emphasizes the belief that L1 serves as a source to support interlanguage based on markedness. Consequently, if Spanish learners of English are accustomed to realizing intervocalic /b/ or /v/ as fricatives in their native language, then it becomes an unmarked feature, which would explain the transfer to their L2. Likewise, it also explains why survey respondents agreed that the sound they heard is a fricative sound. If Spanish transfer of an unmarked feature is considered in this analysis, then these words might not completely depict a real improvement in English phonemic

awareness yet. On the contrary, the data obtained from an initial [v] sound word as in "Vikings", shows significant improvement. Experts who assessed this sound concluded that it is realized as a [v] in a 68.8% agreement. There is still a 12.5% who assessed it as a [b] and [β], and a 6.3% who identify it as a different sound. Because the phoneme /v/ is in initial position, it is crucial to explore literature concerning the realization of the sound and its spectrographic characteristics.

In reviewing the visual representation of the word "Viking" in Fig.14 it is possible to note the clear realization of a voiced fricative sound. However, it is difficult to determine its place of articulation. Clearly, this sample does not show a [b] sound, as it has an intense friction noise at all frequencies. It might be possible that experts had issues with the sound quality. Also, because it is a voiced sound, it can easily be confused with the bilabial fricative [β]. All in all, this finding confirms the association between Chilean Spanish realization of phonemes /b/ and /v/ and its transfer to L2. This factor may explain the relatively accurate delivery of the English sounds, and the possible explanation for sudden good results along with the read aloud experience that subjects experienced.

7.3. Week 2 of read alouds

The table below indicates the results for the overall sample group in week 2.

Table 22

Summary of results of week 2

Word	Allophonic variation of phoneme /v/			
	[β]	[b]	[v]	Another
Vast	37.5%	45.8%	16.7%	0.0%
Venus	16.7%	45.8%	33.3%	4.2%
Volcanoes	25.0%	45.8%	25.0%	4.2%

During this week, subjects were assigned another passage on their reading platform. Data collected from this sample exhibits only phoneme /v/ in initial position. Some interviewees argued that the phoneme /v/ in the three words was not clear, while other experts agreed that it resembled a [b] sound in 45.8%. Some considered that the sounds were close to a [β] sound in 37.5%, and a smaller percentage of 33.3% of experts thought that the sounds were indeed a [v] sound. In general, there is disagreement among respondents of the questionnaire and it is necessary to analyze these results with what spectrograms revealed. Taken together, these results suggest that subjects had trouble reading the words. Looking back at Fig.17 and Fig.18 there is apparent visualization of voicing bars. However, there is no frication in the spectrograms, or only subtle energy and noise, which might explain the answers of experts who nearly considered even categorization of the sounds.

In the case of experts who considered the words to portray a [b] sound, according to the literature reviewed, the realization of /b/ is always described as voiced even if it is voiceless because in an initial position it is always capable of being voiced (Collins et al, 2013, Catford, 2001, Roach, 2010). Along these lines, looking at the spectrograms, a voicing band appears at the bottom of the spectrograms, which illustrates vibration of the vocal folds. However, the visible noise is not a characteristic of a plosive sound in English. Additionally, spectrograms that represent the results of this week show significant energy spread in the spectrogram. Conversely, they do not look quite like voiced fricatives. The literature explains that frication will depend on the openness of the vocal tract. Thus, Catford (2001) suggests that the more open, the airstream that will pass through the channel will be voiceless. The widening of articulators may explain the distribution of energy in the case of two fricative sounds that are voiced and voiceless.

For the realizations in this week, subjects clearly voice the initial sound in the words. In contrast to what researchers argue in the literature about Spanish language, it is essential to take into account the potential of voicing at the start of the words in Spanish as to analyze any transfer from L1.

Hualde (2004) points out that Chilean Spanish mainly delivers /b/ and /v/ sounds as either fricatives or approximants. The only difference is detectable through observing the

openness of the vocal tract; as the subject slightly opens the channel, it will become an approximant variation of the voiced fricative, which loses its frication noise. It could explain that the turbulent air flow, standard in voiced fricatives, does not show clearly as such in Figure 22 corresponding to the word "volcanoes" as they portray the noise with light energy, which may suggest a loss in frication. It is interesting to consider that as Finch and Ortiz (1982) discuss, in initial position fricative and plosive variants are in free variation in Spanish, as opposed to English where a plosive sound is always plosive. When subjects encounter these variations, like an initial /v/ sound, they might respond to Spanish language influence in their L2. At this stage in the study, subjects are not fully aware of the different sounds. Finch and Ortiz (1982) argue that Spanish consonants are, in general, articulated with weaker muscular tension than their English counterparts, as well. This fact could explain the lighter energy illustrated in spectrograms.

Similarly, the data reported here appear to support the assumption that subjects rely on the markedness of the language and the transfer of what they are used to using in their mother tongue. Several scholars (Finch and Ortiz, 1982; Vergara and Perez, 2013, Sadowsky, 2010) believe that because Chilean English does not distinguish between phonemes /b/ and /v/, they randomly realize the sound, probably disregarding its orthography (Vergara and Perez, 2013). It was demonstrated that there is no relation between the grapheme and its pronunciation, as most of the subjects elicited the labiodental consonant [v] in a reading task containing words with the phoneme /b/ in them. This evidence might support the view that it is complicated for Spanish learners of English to become aware of English sounds. At least up to this point in the research, subjects are still struggling. All in all, this week does not show significant improvement in subjects' realizations of phoneme /v/. According to survey respondents, only between 16.7% and 25% of experts agree that there is an improvement, in contrast to 45.8% and 37.5% who hear either [b] or [β].

It seems like the position of the sound is what contributes to the difficulty and markedness of the language. Previously, I discussed that phoneme /v/ in intervocalic position is relatively more straightforward than in initial position. On the one hand, according to literature describing sounds of the Spanish language, it becomes quite vague due to the randomness and free variant in this position, regardless of the grapheme. On the other hand, spectrograms are

challenging to interpret. However, they do show vibration and frication, which is relatively strong in most cases, suggesting a voiced fricative sound.

7.4. Week 3 of read alouds

Table 23 shows the results for the overall sample group in week 3.

Table 23

Summary of results of week 3

Word	Allophonic variation of phoneme /v/			
	[β]	[b]	[v]	Another
Rivers	18.8%	0.0%	75.0%	6.3%
Lives	20.8%	8.3%	29.2%	41.7%
covered	12.5%	16.7%	62.5%	8.3%

The third week of reading aloud, subjects were assigned a new text. Results from this week appear to align with what was analyzed in week one. Again, all the contexts containing the phoneme /v/ were intervocalic. Nevertheless, some respondents still argued that the sounds they heard were [b] or [β]. Still, the majority of experts heard a well-delivered sound in all words, with "rivers" being the word holding the highest percentage:75%. For this week, all spectrograms showed frication and voicing.

Referring back to Fig.27, the difference between voiced fricative and voiceless fricative sound in the word "lives" is clear. There is voicing bar, friction noise, and for the [s] sound, there is no bottom voicing bar, but there is high-frequency energy, proper of voiceless fricatives. The other spectrograms look like the subjects devoiced the [v] because of the [s] sound coming after the v, which makes sense and shows an environment that supports that natural articulation. However, I would not say any of these spectrograms depict a plosive sound. It is unlikely that Spanish learners will deliberately utter a plosive sound instead of a fricative in intervocalic position.

There are still some experts who struggled identifying the sound. More specifically, there is 41.7% of experts claiming "another" sound. This can be interpreted in a variety of ways.

Firstly, it is probable that the sound quality of the audios caused some trouble for listeners of the survey. Secondly, if Chilean speakers commonly deliver intervocalic /b/ and /v/ as voiced labiodental fricatives, it is most likely that respondents heard an approximant variation of the labiodental fricative. This particular realization is uttered with a broader opening of the vocal tract and a loss of frication, which could be shown with a lack of friction noise. Perhaps, due to the natural openness that vowels around the /v/ implies in words like "lives" and "covered", 'it creates a possible environment to deliver an approximant sound, in comparison to the realization of the word "rivers" that is certainly more closed. I shall demonstrate this observation with the spectrographic representation of these words. Fig. 25 shows the word "river". As mentioned above, this word creates the perfect environment for a voiced fricative, which is clearly a labiodental sound. The energy in the spectrogram is bold and clear, with voicing bar and overall friction noise. Thus, not only does the little openness of the vocal tract contribute to the frication and voicing, but also the natural voicing of the vowels around it.

Interestingly, Fig. 26 shows the word "lives" that in this case is pronounced as [livz], which explains the narrowness of the channel in contrast to "lives" pronounced as "larvz". This spectrogram shown in Fig.26 represents a little loss of frication energy, as it is not as bold as the previous sound discussed. Nonetheless, this is not significant as it is still a fricative sound, but perhaps explanatory of why experts assessed it as "another" sound. Similarly, Fig.27 shows the example of the same word, but pronounced as "larvz" which looks comparably more substantial in its frication energy due to the environment created by the context surrounding phoneme /v/.

Lastly, during this week it is fundamental to consider the markedness of the language for this sample group. There is evidence that phoneme /v/ realization is generally accurate and does not hamper coherence. Providing that there are not video recordings of the subjects, it cannot establish that these realizations are indeed [v], as they could confirm [β] sounds instead. At least, for this specific intervocalic pattern in English, it does not significantly affect the outcome. Furthermore, this evidence is adhered to by scholars who demonstrated an almost inevitable realization of a voiced fricative sound in intervocalic positions in Spanish speakers.

7.5. Week 4 of read alouds

The table shown indicates the results for the overall sample group in week 3.

Table 24

Summary of results of week 4

Word	Allophonic variation of phoneme /v/			
	[β]	[b]	[v]	Another
Canvas	33.3%	33.3%	25%	8.3%
Navy	12.5%	4.2%	66.7%	16.7%
Vincent	33.3%	8.3%	58.3%	0.0%

The results corresponding to week 4 of reading aloud started to show more accurate pronunciations of phoneme /v/. Again, most of the words contain /v/ in an intervocalic position. However, there is one word that has an initial /v/. The single most striking observation to emerge from the data comparison was that, surprisingly, the initial consonant /v/ in the word "Vincent" represents 58.3% of experts' assessment opinions. This result is startling, as in week two, respondents of the survey found most words starting with /v/ as problematic, since they assessed those outputs with 33% of accuracy for the phoneme [v], as opposed to the word "Vincent" in this week, which has a 58.3%.

The spectrogram that illustrated the word "Vincent" is, without a doubt, a voiced fricative sound. It has a clear voicing bar at the bottom, friction noise, and intense energy. As far as the other words are concerned during this week, they do not represent any issue for the subjects. Spectrograms reveal friction noise and clear voicing bars. However, it is difficult to determine with certainty the place of articulation of these words, as we do not have any video footage of the subjects pronouncing the words analyzed. All in all, there is some improvement during this week. Although with some disagreements, it is something that comes naturally due to language transfer. Finch and Ortiz (1982) asserts that a lack of awareness of the different sounds in Spanish and English constitutes a problem of phonemic status that interferes with intelligibility. However, he clarifies that even reading and looking at the words does not necessarily serve as a visual aid because of the unconscious usage of the familiar sounds in the L1. Vergara and Perez (2013) support this unconsciousness, who declare a strong realization of a labiodental fricative regardless of its grapheme. This randomness is an issue, but the experts maintain that it can be trained over time. Therefore, during this week of the study, I could say

that subjects had unconscious ear training after three weeks of reading aloud. It is probably showing some improvement compared to the diagnostic test. If I consider other studies that show significant improvement in PA, most of the learners reported enjoyment during the process, because it did not seem like a mere task but a meaningful experience that triggered enjoyment.

By way of illustration, for this research, subjects were not in school. Of course, the context helped students to find more fun manners to do homework. The reading platform was one of them, as they genuinely enjoyed reading and winning points on the platform. Likewise, subjects were on recess time, and they knew that this experience did not imply a grade. In the absence of any clear evidence to the contrary, a positive and fun environment make a significant difference in learning.

The main argument advanced by proponents of this position involves success in phonemic awareness. For example, the study carried out by the National Reading Panel (2000) put forward the discussion that Krashen established concerning reading aloud and phonemic awareness in 2003 that boredom is a critical factor. The scholar disregards an explicit and systematic phonemic awareness process as it seems to demotivate children. Similarly, Krashen is quite harsh and even claims it is a boring experience (Krashen, 2003). Moreover, I do not think this experience was boring for subjects, neither do I think it was highly entertaining. It was carried out as naturally as possible, as they are used to reading nonfiction and fiction books on their Raz Kids account.

7.6. Week 5 and final diagnosis

The table shown indicates the results for the overall sample group in week 5.

Table 25***Summary of results of week 5***

Word	Allophonic variation of phoneme /v/			
	[β]	[b]	[v]	Another
Vest	12.5%	16.7%	66.7%	4.2%
Van	16.7%	4.2%	75.0%	4.2%
Volcano	29.2%	25.0%	41.7%	4.2%

The final week was not intended to have subjects listening to the audio version of the text chosen for them. For this week, they were asked to read a phonics book targeting the phoneme /v/ as a way to assess their latest level of awareness of the English phoneme. For this, experts assessed these words without prior knowledge of the time these words were recorded. In general, because experts never knew if the words corresponded to week 1, or if it was part of a diagnostic test or part of the final test. Thus, it guarantees that percentages known in the charts are far from biased observations. Furthermore, I am emphasizing this because during the final week, subjects did an incredible job with the recordings. It shows in both, spectrograms and percentages of experts' assessment of the sounds. The majority of those who responded to this item perceived that the realization of /v/ was in fact [v]. Still, a minority of participants indicated that sounds were either "another" sound, or [β] and [b]. The percentage for the latter does not go above 25%, in contrast to 75% for the [v] sound. Taken together, these results suggest that there is an association between reading aloud, ear training, and the markedness of English versus Spanish features.

Turning now to the visual cues, all the words from this test show an obvious setting for a voiced fricative sound, except for one particular case in Fig. 47 where it possibly shows an arguable representation of the sound. This spectrogram suggests that the subject might have realized the word with widening of the vocal tract, allowing air to escape through a less narrowed channel, eliminating some of the friction noise. Generally speaking, spectrograms show clear frication, energy and high-frequency peaks along with a precise dark voicing bar, characteristics that are not present in the diagnostic test.

The initial objective of this research was to identify improvement in learners' phonemic awareness. Prior studies have noted the importance of reading aloud, which was taken as a strategy to help learners become more aware of sounds that are not common in their native language. However, this is quite problematic for students when it comes to acquiring unfamiliar sounds like [v]. In learners' natural process of language acquisition, phonemic awareness allows decoding and encoding abilities that help children recognize letters and symbols as a spoken unit, information that is attained in the brain. Because this process implies that children store all patterns about spelling and pronunciation in their memory, it becomes difficult to detach from those features present in their L1. Once children encounter unfamiliar sounds, they become intricate features of the language. Eckman (1985) advanced this theory that the markedness of certain aspects of a language can benefit or worsen the process of acquisition of an L2. In this analysis, it was relevant to see that subjects really demonstrated a firm reliance on their L1. In 2010 Sadowsky's assertion that Chilean Spanish has a labiodental fricative allophone for /b/ introduced the theory that Chileans do not have trouble pronouncing intervocalic /v/, yet, they struggle with the influence of Spanish in initial /v/ and /b/. Finch and Ortiz (1982) and Vergara and Perez (2013) discuss that this is quite ambiguous in Spanish, as it can be a free variant. Furthermore, subjects demonstrated this free variant on all occasions, and survey respondents perceived the same, as they could never pinpoint a specific result.

The question whether reading aloud affects phonemic awareness can be answered in light of what studies have suggested on the matter. Perfetti et al (1987) argue that a controlled setting to teach phonemic awareness is somewhat questionable. He suggests that PA should come from a natural, uncontrolled nature as it becomes meaningful. Krashen (2003) agrees with the scholar. He also points out studies that conclude that PA is enhanced through storytelling and reading aloud from natural experiences (Feitselson et al, 1986; Blok, 1999; Neuman, 1999). These 4 weeks of reading aloud did not demonstrate linear progress. Obviously, features of Spanish language are always present in these subjects, even at the end of it when they read the words from the post test. It did, however, show a significant improvement overall when compared to the diagnostic test.

Even though the results do not show a steady improvement in subjects' phonemic awareness, specifically regarding phoneme /v/, consider the graph illustrated in Fig.50 that

depicts students' progress throughout the four-week period of reading aloud. As it can be seen, all the data collected for this research started with a low awareness of phoneme /v/. Every subject started at their own individual level of proficiency, but all of them followed a similar pattern of progress. During the diagnostic test, all of them demonstrated some sort of difficulty with the sound. Then, in the first week they all showed some awareness due to Chilean Spanish influence, as well as awareness of the reading aloud itself. After this week, there is a sharp drop in week two of reading aloud. This decline can perhaps be explained by the fact that words belonged to a Markedness feature of the language, as most of the words started with phoneme /v/ as opposed to an intervocalic position, as it happened in week one. After this week, subjects experienced a rise in the results that is quite significant, with the exception of one subject, who experienced a decrease. However, all of them had an overall growth in their awareness. Take, for example, the subject who started the diagnostic test with 31.3% of accuracy in the delivery of /v/ versus 66.7% in the post test. The weakest subject still improved, from 37.5% to 41.7% of accuracy of the /v/ sound. In general, all subjects improved their phonemic awareness over time. Although this is not a linear progress, it depicts a regular progress for learning acquisition, with highs and lows but with a positive outcome in the end. Taking into account that numbers do not matter, as they only illustrate certain instances of subjects, it is vital to highlight the overall improvement. Krashen (2013) agrees that universally, children develop competencies while hearing stories read to them, and all that really matters is to ensure progress over time. Additionally, Krashen had already supported this idea before, in 2003, explaining that this is something that can be done by exposing students to stories and meaningful print, so as to develop all the PA that is necessary to guarantee a successful learning process. For an extensive account on this view, see how Finch and Ortiz declared the problematic matter concerning phonemes /v/ and /b/ for the Spanish learner of English in 1982. The expert points out the importance of making a difference in the realizations of phonemes /b/ and /v/ in English, and offers some suggestions for the English teacher. In conclusion, the scholar agrees that one of the techniques that support learning of unfamiliar sounds is by consistent ear training and speaking practice. Thus, reading aloud established in an appropriate environment that fosters autonomy and engagement can eventually non explicitly teach phonemic awareness. Significantly, this environment differs in sociocultural contexts and health conditions as educational communities experienced due to the

pandemic of COVID-19. Furthermore, reading aloud can be modified and adapt in all contexts, through different platforms according to the reality of the students.

I conclude this section with the general observation that the material in the reading aloud experiment is insufficient to allow any safe conclusions concerning an absolute accurate realization of the sounds. Nevertheless, results generally tally with experts' judgments and depiction of the spectrograms served as cues to argue that subjects did improve their phonemic awareness.

8. Conclusion

The present study was designed to determine the effects of reading aloud as a strategy to enhance phonemic awareness (PA). Specifically, the aim was to assess one particular sound under the conditions of reading aloud tasks in a period of four weeks. As a result, this study has shown that reading aloud (RA) can serve as a tool to support students in a remote learning context. These findings suggest the success of RA in face-to-face settings as well, as the only difference is the way it is delivered.

One of the more significant findings to emerge from this study is that phonemic awareness in a foreign language is a complex task requiring attention to various implications and factors that support and hinder the learning process. Likewise, the present study confirms previous findings and contributes additional evidence that suggests that reading aloud is a non-explicit approach to teach phonemic awareness. Reading aloud combined with meaningful print (digital and concrete) through fun storytelling can foster increased ear training and exposure to the foreign language.

This study analyzed the way learners tended to utter the words containing the target phoneme /v/. This decision was based not only on the diagnostic test, but also on the assumption that teaching phonemes /v/ and /b/ is challenging, as students struggle to acquire the sounds in English. Scholars agree that this difficulty, particularly in spoken language, is a challenge stemming from L1 influence. Thus, one of the findings that this study confirmed was the initial assumption that Spanish learners of English have difficulty with the initial consonant sounds of the phonemes mentioned.

However, despite the theory that supports that Spanish does not make a difference between phonemes /b/ and /v/ (i.e. they are allophonic variations of the same phoneme), there has been sufficient research that disregards their pronunciation. What is more, some phoneticians (Vergara and Perez, 2013) also point up arbitrary manners to realize words containing the mentioned phonemes in the initial conditions of the sentence. However, there is a strong argument that Spanish in Chile has evolved these sounds. Despite the concurrent belief that there was no labiodental fricative allophone in Chile, researchers have argued that this variation of phoneme /b/ is relatively common, especially in between vowels. Therefore, this

implication challenged this study and helped acknowledge the context and possibly transfer it to the L2. Nonetheless, studies that have confirmed a voiced labiodental fricative sound in Chilean Spanish have provided video recordings of the subjects speaking. Therefore, it would have been necessary to compare audio samples and video recordings to conclude a more notable finding. Likewise, several other significant limitations need to be considered:

- 1.The sample corresponded to only decontextualized words that do not portray a broader scope of the context in which sounds occurred.
- 2.Some of the audio samples had low quality, which constituted disagreement among experts who answered the survey and caused some of them to report not distinguishing the word heard.
- 3.The previously reviewed evidence concerning the sounds of the language challenged this study.

All in all, the following conclusions can be drawn from the present study:

Spectral analysis is a complex task that requires sufficient expertise in phonology and phonetics to interpret sounds successfully. As mentioned earlier, variables in the phonological environment of the words were not fully developed in the interpretation of the results. Spectrograms offer various ways to measure different features of the voice, frequency values, degree of intensity, values for pitch, and so on. All those measurements require an expert in the field to better acknowledge the way subjects learning a foreign language acquire sounds that are not familiar in their native language. However, what visual representations of the voice demonstrate elucidate fundamental principles of recognizing sounds in languages. Thus, results from this research can indeed shine a light on current teaching strategies to support learning through a remote system. Not only does it imply polishing teaching strategies, but also fostering independent learning through reading.

This is primarily a consistent topic reviewed in the literature, as reading appears to be a potent tool to guarantee success in learners of a foreign language in a diversity of aspects. Furthermore, the pandemic context that the world has experienced in the last two years has obligated people to become active and more independent in their learning process. Thus, it is essential to provide instances for learners to increase their exposure to the language through

books and read-aloud experiences. Likewise, as students become more independent, they can make sufficient progress by knowing the steps to take to read aloud online. As a result, the longer students are exposed to these experiences, the better their performance in the foreign language will be. Besides, there may be a consistent increase and improvement in students' phonemic awareness and overall comprehension of the sounds of the languages, as well.

From this research, I observed interference from L1 in the realizations of the sounds in words studied in this project. Thus, I can conclude that creating this interlanguage between L1 and L2 among subjects outweighs the disadvantages. Consequently, despite having inconsistent positive results on the duration of this study, it is essential to consider that learning is not a linear process.

Besides, the idea that students are retreating more into their minds to face the challenge of reading a passage becomes a meaningful experience. This involvement creates autonomy, self-awareness of the sounds, and overall training. This concept constantly alludes to the literature, which explains that there is no formula to teach the allophonic variations of phonemes in a foreign language. Nonetheless, it is training the word that captures all the attention after the analysis of results. The fact that subjects constantly demonstrated challenges with the /v/ sound in the initial position versus the easiness when it came between vowels invites not to avoid L1 in L2 teaching.

Moreover, I believe that L1 should never be considered a hamper in foreign language learning. On the contrary, it can be used to reinforce familiar sounds and to help students become phonemically aware of the differences in both languages, thus allowing the learner to get used to associating features of the languages and helping them build up an "English-sound discrimination mechanism which will operate differently from the Spanish one" (Finch and Ortiz, 1982, p.68). As the expert also asserts, it comes down to ear training and oral practice, both which are key elements in reading aloud.

9. Limitations

This chapter delves deeply into the factors that confronted this research, and it pays particular attention to all the details that might have heavily confirmed the findings. Firstly, a summary of the issues in the context is established to explain the challenges this research faced during the weeks of its implementation.

9.1. Pandemic context

The closure of schools and the rapid implementation of distance learning forced teachers to train for online platforms and adapt lessons to virtual scenarios. In general, the coronavirus outbreak led to an increasing fear of the emergence of new variant strains, which established a constant instability in the delivery of school lessons. Thus, the shifts upended the students' routines. Moreover, it was observed that students became unenthused and drained, impediments that seriously threatened the learning process in the EFL classroom. Furthermore, this situation implied that students' parents were compelled to play a more prominent role in their children's learning processes. Likewise, parents became facilitators for their children, especially for young learners, who needed support to study on the online platforms required by the school successfully. It required the correct use of the virtually-delivered support on platforms and the implementation of suitable quality devices and tools. Therefore, I relied on 10-year-old children's parents for this investigation to help me record their voices during four weeks in the last trimester of the school year. It is crucial to consider that due to the economic disadvantages that most people were experiencing, the school community was not allowed to ask for specific tools for the teaching practice online.

Consequently, I encountered students whose recordings had low sound quality and whose microphones had several technical difficulties. All in all, readings were mostly intelligible, though some of them were not always as clear as I expected them to be for the purpose of this study. In general terms, I cannot guarantee that parents followed the instructions of this research study as explained to them through e-mail; neither can I ensure that students truly understood the process of reading aloud for every text assigned to them. Nonetheless, in light of the results, the sample group followed the process accordingly, primarily due to the

overall significant improvement found for each student in their particular level of English and family context.

9.2. Issues

Evidence from acoustic properties of the sounds.

As commented above, the sample group had issues with the sound quality of the recordings. However, I did not foreshadow the issue that was raised from analyzing their voices. It is tricky to differentiate sounds only by visualizing spectrographic realizations of sounds. Some sounds can acquire similar features as neighbor sounds in a sentence, which, due to environmental influence, can change the voicing and devoicing of sounds (a phonological phenomenon known as Assimilation). Consequently, it was necessary to apply an assessment questionnaire to experts in EFL, which contained all the words where the specific sound was supposed to be, words which were extracted from the data collection process. Some of the experts reported having trouble hearing the audios correctly, as the quality of the recordings was not always optimal. Moreover, this study has an explicit limitation, meaning that findings are interpreted cautiously.

Transfer of L1 to L2.

An issue that did not foreshadow in this study was the impact of the evidence presented on some studies about Chilean Spanish. Strong evidence highlights that the Chilean Spanish phoneme /b/ has an allophonic realization primarily delivered as a voiced fricative sound [v] (Vergara and Perez, 2013; Sadowsky, 2010). This report is contradictory to the findings of this study, since as opposed to what the expert presents, it is not very likely that the sample group in the diagnostic phase realized the English sound [v] as a voiced fricative in initial consonant words such as "Vince" or "vacation" due to a possible Chilean Spanish transfer from L1 to L2. Nonetheless, we cannot assume that every subject in this study relied entirely on their L1 without proper justification and evidence of their specific context. Thus, the studies regarding Chilean Spanish allophonic variations of phoneme /b/ mentioned above are only a piece of information that could help analyze and bring comparable results in this study. Despite these limitations and issues, the discussion focused on what spectrograms revealed, compared to experts' opinions

on the sounds. Besides, they do not depict a factual finding, but rather they shed light on the phonemic awareness acquisition in L2, when students are more exposed to read alouds.

In sum, there are certainly some limitations to this study. Firstly, the focus is admittedly narrow, and does not consider how certain variables interact with each other. For example, there is evidence of the existence of a labiodental voiced allophonic variation of /b/ in Chilean Spanish (Sadowsky, 2010). This information was not foreshadowed, and required the use of video recordings of the subjects, an idea that could not prosper due to the pandemic context. Additionally, the research method implied an oversimplifying of the situation through the quantitative approach to assess sounds. Thus, a percentage of one particular sound cannot generalize subjects' knowledge and progress in their PA. In addition, spectrograms show only single words containing the target sound. Single visual depictions cause a problematic analysis because a sentence context could have provided more valuable insights to understand the sounds' realizations more thoroughly. Finally, there is the limitation of the spectrographic analysis of the sounds. Many words were not as clear, since subjects recorded the readings with low-quality devices, and other sounds had too much environmental noise that translated into friction in the spectrograms. Generally, these limitations aided this research to avoid any further issues and guarantee some degree of validity and reliability. Obviously, this indeterminate area needs to be classified by further research on phonemic awareness development through reading aloud.

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