Supporting the English Listening Comprehension Skill in a Costa Rica’s Rural High School: The Use of Teacher-Recorded Listening Exercises Modified with Background Noises

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Abstract
This project aimed at reinforcing the English listening skill of a group of seventh students from a high school in Cartago using teacher-recorded listening exercises modified with background noises. On the day one, participants of the control and experimental group were respectively exposed to two versions of the same podcast, one without the background noises and the other with them. A pre-test followed to record the performance of both groups on day one. The exposure continued during the following days, and on day six both groups listened to an English podcast with background noises included. A post-test followed to compare the results with those of the pretest. The results of the study indicated that the participants of the experimental group which, had been exposed to the listening material modified with background noises during a week, scored higher in the posttest, and experienced a sense of more confidence while completing the task. On the other hand, the performance of the control group (which was not exposed to modified podcasts until day six) was deficient, and participants expressed discomfort and lack of familiarity with the task. The results of this study could open a new way to understand and approach the creation of listening exercises which have been traditionally deprived from noises external to the speakers’ voices.
Keywords: control group, experimental group, anxiety, podcasting, stimuli

Resumen
Este proyecto tuvo como objetivo reforzar la capacidad auditiva en inglés de un grupo de séptimo de un colegio en Cartago, utilizando ejercicios de escucha grabados por el maestro y modificados con ruidos de fondo. El día uno, los participantes del grupo de control y experimental fueron expuestos respectivamente a dos versiones del mismo podcast, una sin los ruidos de fondo y la otra con ellos. Se realizó una prueba previa para registrar el rendimiento de ambos grupos el primer día. La exposición continuó durante los días siguientes, y el día seis ambos grupos escucharon una transmisión en inglés con ruidos de fondo incluidos. Se efectuó una prueba posterior para comparar sus resultados con los de la prueba anterior. Los resultados del estudio indicaron que los participantes del grupo experimental que habían sido expuestos al material de escucha modificado con ruidos de fondo durante una semana obtuvieron una puntuación más alta en la prueba posterior y experimentaron una sensación de mayor confianza al completar la tarea. Por otro lado, el rendimiento del grupo de control (que no estuvo expuesto a transmisión modificada hasta el día seis) fue deficiente, y los participantes expresaron incomodidad y falta de familiaridad con la tarea. Los resultados de este estudio podrían abrir una nueva forma de entender y abordar la creación de ejercicios de escucha que tradicionalmente han sido privados de ruidos externos a las voces de los hablantes.

Palabras clave: grupo control, grupo experimental, ansiedad, transmisión digital, estímulos

Introduction
The present work aimed at overcoming specific issues observed regarding the artificiality of the listening exercises provided by the textbook used at work. This research stemmed from the observation, throughout several years, of students’ performance and the tools provided by books in order to help them develop the listening skill. Also, some learners had reported the easiness of textbooks’ listening exercises versus the difficulty of comprehending oral messages from people outside the classroom. The researcher’s observations, along with students reported experiences, led to hypothesize that the listening material that has been used may not be preparing learners efficiently for language encounters outside the classroom. Thus, complementing English listening exercises with background noises were provided for a group of seventh grade students at a high school, this based on and supported by the results of the experiment carried out. Students will be exposed to aural input exercises modified with a variety of background noises. The effect of this exposure in the experimental group was analyzed and then a
compact disc with similar exercises will be provided for future usage. Therefore, this research focuses on reinforcing English listening comprehension skills of a group of 7th grade students from a high school in Cartago by developing teacher-recorded listening exercises, modified with background noises.

The problem that background noises pose on the learner’s comprehension skills had been already identified. For example, Bloomfield et al. (2010), wrote that “Noise likely imposes an additional load on working memory as well. L1 listeners are slower and less accurate at speech processing in the presence of noise,” they also asserted that “learners of a second language also struggle to decipher the phonology of the second language” when there are competing noises. This research is relevant for the high school because 7th and 8th grade students have reported the easiness of the listening exercises provided by the textbooks. On the other hand, the same learners display an evident struggle when exposed to other type of more realistic listening material, such as videos or movies. Videos and movies certainly impose an additional difficulty for learners since they usually contain a series of background noises that are not removed for easier comprehension. This study is also relevant because, by the last year of high school, these same students will be required to take the Test of English for International Communication (TOEIC hereafter) and demonstrate their listening comprehension ability in several environments and contexts. Thus, by exposing this population to the proposed material, higher test results may be shown in the TOEIC. Apart from that, external benefits could be delivered by this study as it may start changing the way teachers and material designers use and develop listening exercises. For example, traditionally, people arrange laboratories and classrooms in a way that reduces as much external noise as possible. The same appears to happen when recording listening comprehension material for textbooks; there is little ambient noise that is commonly faced in life. If this study gets to prove that students can be benefit from the exposure to the type of material that is proposed, then a new approach may be taken when practicing and developing material to enhance learners’ listening skills. By comparing the performance of the control and experimental group, this study could obtain information on whether some learners show any significant advantage through the exposure of listening exercises with background noises.

Research Problem

The identified problem was the artificiality of the listening comprehension exercises that the textbook provided to students and teacher. For example, such exercises seemed to be recorded in a studio, with voices of speakers who have knowledge on elocution, and there is little or no space for background and ambient noises (which is something that in fact occurs in real life). The identification of this problem started some years ago, and it emerged from the observation and listening of stories and comments a few learners shared with the investigator during work activities at different institutions. They manifested their difficulty of understanding messages during encounters in the street with speakers of
English. Although it is clear that there are many factors involving a good listening comprehension skill, the fact that outside the classroom there can be interfering sounds can lead to think that research may be necessary in this area.

It is important to study this factor because the artificiality of current listening exercises may be hindering the adequate development of students’ listening skills. The lack of exposure to authentic material could be one cause of students’ struggle to understand conversations in movies, for example, or with speakers of English in outdoor places. As a consequence, the present research tried to give answer to the question: How can teacher-recorded listening exercises, modified with background noises, reinforce the English listening comprehension skills of a group of seventh grade students from a high school in Cartago?

Objectives

**General Objective.** To reinforce the English listening comprehension skills of a group of 7th grade students from a high school in Cartago by developing teacher-recorded listening exercises modified with varied background noises.

**Specific Objectives**

1. To identify the difficulties students encounter when they are exposed to listening comprehension exercises.
2. To design a series of teacher-recorded listening exercises modified with varied background noises.
3. To validate and implement the creation of teacher-recorded listening exercises modified with varied background noises.
4. To evaluate the effectiveness of teacher-recorded listening exercises modified with varied background noises that are intended to reinforce the English listening skill of a group of 7th grade students from a high school in Cartago.

**Background Research**

A preliminary search was done to mention theory and pertinent works published on issues about the development of the listening skill in learners from Costa Rica and nearby countries. In general terms, research on the skill of listening comprehension is limited if compared with that of other skills or areas of learning. However, in the area of Latin America, Costa Rica and Colombia have released a few studies regarding the listening skill of language learners. The following are some of the theory and studies found at a national and international level.

Many are the factors that play a crucial role when talking about the listening comprehension ability of foreign language learners (L2 learners). Variables such as accent, speed of speech, vocabulary, memory, and even culture make this skill one of the most complex and difficult to understand. On the other hand, teachers are commended the task of facilitating learners the necessary practice and strategies to be proficient in all the linguistic skills of the target language. Nonetheless, in Costa Rica, there seems to be a lack of clearly defined parameters for teachers to follow and help their students with the communicative competence in Spanish (their first language).
As a matter of fact, a study conducted by Brenes (2011), investigated how Spanish teachers develop the speaking and listening competence in students from 28 public high schools in the province of Cartago. Although the Costa Rican Ministry of Public Education (MEP) states that the communicative competence must be developed, this study found that, in these high schools, no didactic activities nor evaluation techniques are implemented from the teachers to accomplish what MEP establishes in regard to such competence; instead, only activities related to grammar and literature were observed in the classes. Brenes (2011) is not the only one who has targeted this problem of some public high schools in Costa Rica, Murillo (2009), mentions that there is a disparity in the dealing of the linguistic skills, and this certainly causes a poor performance in Spanish tests and in the communicative competence (listening and speaking).

The study of Brenes (2011) is relevant to this research because it dealt with population from the same province where this study was carried out. The fact that some students from the target population may come from these institutions makes it pertinent. Even though the emphasis of the present research is on English as a foreign language, it becomes almost mandatory to be aware of the background preparation that students may be receiving in their first language (L1). It is important to know that little practice is being given to the listening skill of Spanish, since it may influence students’ listening performance in the classes of English.

A few other Costa Rican authors have directed their attention to the development of the listening in the language class. For example, Córdoba, Coto, and Ramírez (2005), addressed this issue in an article that is part of a research project about the teaching and learning of the listening skill in public high schools of Costa Rica. In such article, a few issues such as the definition, importance, and characteristics of listening comprehension are given. More importantly, the authors write that oral messages are often accompanied by a series of noises such as music, oral conversations, horns, among others, that interfere with the message, and this is the reason why listeners should be able to discriminate between useful and useless sounds. The authors also noted that the activities and materials used for this skill should be relevant, interesting, and appropriate for students’ level, which is the key to develop the aural comprehension. In the same line of content, in its program for III cycle, the Costa Rican Ministry of Education (2003), claimed that students of English “should be prepared to cope with understanding speech in different settings (background noise, distance or unclear sound reproductions)” (p. 19). The above information is relevant to objective number one because it gives support to the proposition that background noises are a factor that can pose an extra difficulty when listening, it also reveals the need of the careful design of activities and materials that challenge students and prepare them for communication in different environments.

The textbook is perhaps the resource that teachers take most advantage of in the language classrooms. Unfortunately, sometimes it becomes the only one used with students, and other suitable materials and activities are left behind. When choosing the
appropriate English textbook for a student class, it is necessary that teachers, and other administrative staff, analyze the needs and culture of the population, the book, its content and appropriateness of the activities and methodology, among other factors. In other words, choosing a textbook is a task that requires time, responsibility, careful thought and observation from a team of experts.

Regardless of its brand or quality, no book can meet all the requirements and needs of a class, and in this line, Viales and Carmona (2014) conducted a study that demonstrated the importance to evaluate and complement textbooks with extra materials. The purpose of their research was to evaluate the effectiveness of the textbook Play and Learn used by two groups at an Elementary School in Sarapiquí, Costa Rica. In regard to the listening skill, Viales and Carmona (2014) found that this textbook lacks activities for such purpose, 93% percent of the students also confirmed so when asked about it, the other 7% expressed that they practice listening when the teacher spoke (p. 410). The entire population also said that the book emphasizes reading and writing. Once again, in another place with a different population, a study concludes that listening is a skill that seems to be disregarded by teachers and textbooks not only in English but also in their first language. This research is relevant to the present study because the results of the first one may contrast or be similar to what the target population will express about their textbook and its listening exercises.

At an international level, a few studies have been done in regard to authentic listening material and background noise influence. For instance, Camacho (2013) revealed some factors that influenced the listening comprehension skill of three students from a public university in Colombia. This case study observed, interviewed, and analyzed participants in different ways. It was found that, among others, motivation, anxiety, concentration, and background noise affected their aural comprehension. Regarding the latter, the authors wrote, they say that discriminating the noise and the background sounds present in some listening exercises did not allow them to identify the key information to answer some of the questions. They also stated that the noise distracted them to the point of losing their interest in the exercise (p. 73).

The study did not mention if the background noises were inserted on purpose or not, but according to what students expressed, it certainly posed a challenge that, perhaps, they were not used to. Although this is a qualitative case study, the methodology used somehow guides, or gives hints, on how to approach the population of the present research. For example, interviewing students and taking notes of what they have to say about their experiences. In other words, Camacho’s research (2013) gave some guidance for accomplishing objectives three and four.

The development of the listening skill through videos has also been studied in the Colombian context. Bustos and Mora (2013) conducted a study in which they examined the needs of a group of students of a night high school, and found that listening was the skill students felt less prepared, and, in fact, it was. After that, they proposed the use of subtitled videos
in order to help learners strengthen the identified weakness. By using and evaluating this complementary tool, the researchers discovered that learners were able to improve, as a group, 50% in comparison with the results of the pretests. Students also reported feeling more motivated and engaged when using this resource. Finally, among the recommendations given by the authors, is the taking into account of students’ interests in order to choose the videos for improving the listening skill; this is relevant to the present research because it provides a path on how to proceed when choosing the topics of the possible listening exercises that were used in the research.

As a way of summary, through this preliminary search of background research on the listening skill, it is possible to arrive at the following conclusions. First, there seems to be a lack of research on the development and factors affecting the listening skill in the context of Costa Rica. Also, even less research appears to be when talking about listening in a foreign language. On the other hand, the few Costa Rican studies conducted in this subject, agree that in certain high schools the methodology and types of books do not promote the listening comprehension skill, which may be affecting the learners’ performance in the communicative competence. Finally, studies (Brenes, 2011; Murillo, 2009; Córdoba, Coto, and Ramírez, 2005; Viales and Carmona, 2014; Camacho 2013; Bustos and Mora, 2013) and high commands of the Costa Rican education state the importance of preparing students for language encounters outside the classroom, where background and distracting noises may be present. However, no study was found that tested the effectiveness of listening exercises with background noises when supporting the listening skill of students.

**Participants.** The target population for this study was a group of 7th grade students from a high school in Cartago. This is a private high school that has been in the field of education for more than 20 years. Although this institution is in Cartago, there is a great number of students who come from San José and commute every day. Many of these learners have studied English for several years; some come from public elementary schools, others from varied private elementary schools which also emphasize the teaching of English, and a few come from state elementary schools. In this institution, all groups receive 14 lessons of English per week, and at the end of eleventh grade they take the TOEIC. Such test measures students’ skills in speaking, reading, and listening; and learners are expected to score high in order to demonstrate their learning and efficacy of the English program. Although many students do well in the TOEIC, other learners score lower than the average, and show deficiencies in their listening comprehension skill. Another interesting aspect is that, sometimes, students manifest their struggle to orally comprehend English when interacting outside the classroom, which may indicate a weak preparation and assessment in regard to listening, this considering the varied environments encountered beyond a test or a classroom practice. Regarding their socioeconomic situations, most students have parents with a professional career who belong to an upper middle class.
A total of 54 students were part of the study. From them, there were 36 males and 18 females, and their ages ranged between 12 and 13 years old. Most of these students have received English instruction since preschool, an average from 7 to 10 lessons a week. All participants are learning English as a foreign language, whereas two of them speak it as a second language. In regard to the teachers, 4 out of 6 have been working in the institution for more than 3 years and have more than 5 years of professional experience.

**Pedagogical Frame of Reference.**

This section contains background information on the main concepts related to the listening skill. Understanding the complexity of this process enables the reader to see the relevance and helpfulness of this project’s final product. Concepts such as bottom and up and top down processes; as well as variables like vocabulary size and culture are examples of the contents covered here. Finally, taking into account the theory presented here will serve as guidance on the creation of podcasts for English as a foreign language students.

**Variables Involved in L2 Listening Comprehension, Assumptions and Factors when Listening an L2.** The ability to learn and speak and foreign language requires mastery in several areas: Writing, speaking, reading, and listening. Each of them must be fully rehearsed if the desired results are to be achieved. The amount of time and practice a learner needs to become proficient in any of these skills will depend on individual and other external and internal factors. Listening is one skill in which some learners often encounter difficulties at the moment of developing it. For example, it is common to find students expressing that they usually need to double listening to an exercise or a person conveying a message in order to grasp the main idea. Another typical example is when learners express their struggle to understand native speakers more than non-native speakers. Many are the issues and stories surrounding the difficulties when listening and understanding in a foreign language. However, until recent years, this area had not been of much attention for researchers in the field of language acquisition. The purpose of this space is to provide an overview of the concepts and main findings in regard to factors that hinder the listening skill in a second language; A secondary aim is to briefly discuss some basic information on the relevance of podcasts for the development of a foreign language, as well as the process of their creation and recording.

Before starting with any type of variable, it is first mandatory to discuss a few aspects related to the main issue. Listening is defined as “making sense of sounds heard and reacting after this process” (Mlanlioğlu, 2013, p. 1177). On the other hand, Krashen (1995) defined listening comprehension as “the ability to extract information from auditorily presented language material.” This comprehension is an area that requires special attention, especially because today people live in the era of communications, speakers need to be able to deal with phone calls, videos, video chats, recordings etc. Besides this, listening is a crucial skill for learners of a second language (L2) because it represents a source of new information. For example, during the first years of
life, children receive a great amount of oral input before they start producing the first sounds and understanding the syntactic patterns of the language. In fact, Krashen (1985) stated that “if input is understood, and there is enough of it, the necessary grammar is automatically provided” (p. 2). Based on the above information, it is possible to say that listening is not only important to understand messages and to favor communication, but also important because it helps develop the speaking abilities by improving the grammar of a speaker.

After reviewing the relevance of listening skill for language learning, it is now time to understand how it occurs. Listening is a complex activity that can take place through two different processes: bottom up and top down. These two concepts are crucial before starting the study and understanding of variables in listening comprehension. According to Richards and Renandya (2002) “the bottom-up processing model assumes that listening is a process of decoding the sounds that one hears in a linear fashion, from the smallest meaningful units (phonemes) to complete texts” (p. 239), in other words, what listeners do is to decode phonemes, words, phrases, utterances and text meaning in this exact order to finally decode the main idea or message. It is called bottom up because it starts from the smallest unit, phonemes (which is the bottom), and ends in meaningful texts, which represents the upper or last component of the process. On the other hand, there is the top down processing model which consists in using previous knowledge and meaningful content to form hypotheses that match what is being said (Batova, 2013, p. 4). Brown (2006) explained that “we know certain things about certain topics and situations and use that information to understand” (p. 2), and this is what the top down process consists of. However, it is widely accepted that people use both processes to decode information; in fact, Nihei (2002) asserted that “listeners are not passively listening to speakers or information but are actively reconstructing the speakers' intended meaning and getting meaningful information by decoding the sounds, words, and phrases” (p. 6). As can be seen, context and background information (top down) as well as unit recognition (bottom up) are crucial for a successful listening comprehension. Understanding the process of listening may guide teachers at the moment of using listening activities because it gives hints on how listening comprehension can be evaluated. Apart from that, some wrong assumptions can be clarified and avoided in regard to the development of the listening skill.

Furthermore, the way listening occurs (top down and bottom up processes) some interesting assumptions had been widely accepted until a few years ago. For instance, it was believed that if a student could speak the target language, then he/she would be able to “to decode the aural version of structures and vocabulary they learn in their textbooks” (Meskill, 1996, p. 180). It was also thought that listening was a skill that would develop without much external help (Osada, 2004, p. 54); those may be some reasons why this area did not receive much emphasis in certain foreign language classrooms. Teachers were not aware of the complexity and the factors hindering a proper listening comprehension, and they been underestimating the mediation of this skill.
Despite the above ideas, other authors prove that in order to develop proficient language skills, some practices and techniques are required. Rost (2002) implied that teachers are expected to provide students with suitable strategies and activities students will face in the future, and in this same line, Krashen (1982), famous for his theory of comprehensible input, suggested that learners must be exposed to tasks that are one level beyond their current capacity; this with the purpose of challenging the learners and helping them move to the next level of learning. Moreover, finally, it has also been noted that even incomprehensible input provides learners with tools to develop their language skills (Bahrani, 2013).

Teaching practices are not the only factors playing a role in students listening skills. As it is known, every individual learner has his/her own skills, strengths and weaknesses. In listening comprehension, much of it is determined by personal conditions or by the environment a person has been exposed to. For example, if an individual has a broad background in the Indian culture, perhaps, it will be easier for him/her to grasp main ideas from a passage that talks about India than for a person who has never heard of this place or culture before. In the same way, the syntactic patterns that an oral passage contains may entail extra difficulty for learners with different levels of English.

**Vocabulary.** The number of words a learner has acquired will certainly influence his/her capacity to comprehend aural messages. Different authors have made their contribution to the awareness of the importance of lexical terms to deal successfully with the decodification of oral messages. For example, Nation (2006) stated that it is necessary to have acquired 6000 words to reach 98% coverage in a movie. This means that depending on the length of the movie, some speakers may require more vocabulary knowledge in order to reach a higher understanding. Now, considering that a native speaker needs around a year to learn a thousand words (Nation, 2006), the time for foreign language learners to achieve a similar amount of vocabulary will probably increase, this because they may not be immersed in an environment that provides as much language input as that of the first one. By considering the time required for vocabulary learning and its influence in listening comprehension, better decisions can be made when choosing the level of listening practice for students. It can also help understand further problems derived from it such as the capacity of concentration.

Listeners’ lexicon may also influence the capacity of concentration when receiving oral input. According to Pourhossein (2011), “listeners sometimes encounter an unknown word which may cause them to stop and think about the meaning of that word and thus cause them to miss the next part of the speech” (p. 981). This situation is very common with inexperienced listeners that have a limited vocabulary and who lack strategies to cope with comprehension, the fact that they do not understand a word could cause frustration and anxiety, which may result in giving up the task. Moreover, Kurita (2012), claimed that vocabulary knowledge predicts the degree of listening comprehension because listeners focus on content words.
to extract main ideas from passages (p. 39). As can be seen, there seems to be a consensus among experts on the relevance on the amount vocabulary when dealing with aural comprehension in second language. The fewer words a learner knows the more challenging this type of task becomes. Understanding the relevance of vocabulary size in listening comprehension is useful because it provides a path to follow when creating and using podcasts. For example, before starting any listening activity, a vocabulary review might be useful to get learners familiar with the terms and help them decode the message of an aural passage.

**Familiarity with the Accent.** Familiarity with accent appears to be another factor affecting learners’ capacity to decode oral language. As it is known, English is not just spoken by a group of people of a country. This language has native speakers from many countries around the world which add their different intonations and pronunciations to the language. Apart from that, since it is an international language, English is also spoken by a significant number of non-native speakers who also contribute with such variability. On the other hand, English as a foreign language learners are usually taught by a non-native teachers who share the first language of the students. This causes students to get accustomed to a pattern of pronunciation and intonation different from the many that can be found outside a classroom context. To support this, Xie and Fowler (2013) mentioned that “the language background shared between the talker and listener and individual language experience affect the intelligibility of foreign-accented speech” (n.p). Moinzadeh, Rezaei and Dezhara (2012) also believed that, beside other factors, “accent plays a crucial role in comprehending spoken language” (p. 968). further, it has been argued that when choosing listening materials for students, familiarity with the language should be one of the most crucial factors to take into account, (Bloomfield *et al.* 2010) and more interestingly, after a literature review, Bloomfield *et al.* (2010) concluded that it is almost mandatory to consider accent familiarity when factors such as noise are present in the listening material; this, since research has found noise to be more influential than usual when combined with different accents. This last information is also valuable for the present study for two reasons; first it proves that listening material recorded with non-native speakers are valid and useful for the enhancement of students’ listening comprehension in English, and second, it seems mandatory to provide a familiar accent when a variable such as noise’ influence is to be measured in an experiment.

**Listener’s Anxiety.** Anxiety is another well-known factor that hinders listening comprehension and language learning process in general. According to Vogely (1999), anxiety in listening tasks is said to be one of the most debilitating types of anxieties because learners are expected to answer quickly after a one-time task (p. 107). If the learner is not able to answer in the expected time, he/she may get frustrated and become “debilitated” from an emotional point of view. Anxiety may be manifested in different ways such as apprehension worry, fear, nervousness, etc. (Çubukçuoğlu, 2008, p. 149).
For example, during listening tests, fear and nervousness can be observed in students’ faces, nervous tics such as hitting the pen against the desk, moving their hands and feet constantly, and even sudden physiological needs. On the other hand, Krashen (1982) asserted that “low anxiety appears to be conducive to second language acquisition, whether measured as personal or classroom anxiety” (p. 31). Krashen appears to be right when he implied that successful language learners tend to have low levels of anxiety. For instance, students who may not obtained very high scores on tests, but who do not panic when they have to speak, seem to perform better in tasks where improvisation is needed; these students hesitate less and are able to transfer their ideas more easily than those who may obtain even higher scores on written tests, for example.

In conclusion, anxiety is a crucial factor for second language listening comprehension; numerous experts coincided on the idea that L2 high anxious students may encounter more difficulties than those who use varied strategies to cope with listening. For example, “students who are susceptible to anxiety, first and foremost, are involved in their self-deprecatory thoughts, worry and tension rather than focusing on what is being told to them” (Atasheneh & Branch, 2012, p. 182). Apart from that, listeners are not able to easily stop or control the flow of information received and this makes students more vulnerable to listening anxiety (Kimura, 2008, p. 188). Knowing the negative impact of anxiety on listening tasks can help teachers understand the importance of teaching students other listening strategies.

For example, a top down approach might be more efficient to reduce anxiety because it does not require the learner to understand every single word is said. Also, pre-listening activities such as vocabulary reviews might also help reduce anxiety levels.

**Working Memory.** According to Bloomfield *et al.* (2010) working memory (WM) refers to a cognitive process in which storage, processing and recovery of information from memory are involved (p. 6). However, this cognitive process mentioned above is different throughout learners, and whereas one can be very skilled at storing and retrieving information, another may show a significant struggle when performing the same task. The relationship between Working Memory and second language proficiency has already been pointed out. For instance, Linck, Koeth and Bunting (2013) claimed that “WM is an important component of the cognitive processes underlying bilingual language processing and performance on measures of L2 proficiency” (n. p). This proficiency takes into account areas such as reading, speaking, and listening. Regarding the latter, listening, Shanshan and Tongshun (2007) discussed that working memory, in English as a foreign language (EFL) students, has a negative impact on the length of time information can be stored in memory, and in the speed to retrieve such information in the long term (p. 51). They also discussed that L2 working memory span seems to have more influence on EFL listening comprehension. One of the reasons behind the strong influence of memory in listening comprehension could be that, listening is an automatic process for
native or highly proficient L2 speakers, but not for beginners or intermediate L2 students (Buchweitz, 2014). Thus, not being able to perform a process automatically prevents learners from carrying more than one task at the same time, and this certainly affects students negatively since it is common to have several distractions in a large class. Also, unlike reading tasks, in listening practice the learner cannot go back to the notes to retrieve details that help them remember complete ideas; here the learner is expected to remind details and main ideas from a one-minute exposure, for example. Based on this information, it is possible to conclude that a listening comprehension exercise should not be too long or full of information if learners are not yet fully proficient in the target language. It appears recommendable to choose short tasks that measure the listening skill without having too much influence from other factors, such as working memory.

**Authenticity of the Message.** The level of authenticity in listening exercises has been targeted as a factor posing challenge in listening comprehension. Bloomfield et al. (2010) explained that authentic aural material can be defined as “a piece of real language created by a real speaker for a real audience” (p. 18). The problem with passages provided by textbooks is that they are usually intended to show a component of a language and not to transmit a real message, which makes them lose authenticity and portray language far from reality. Not being exposed to reality causes students to behave unexpectedly when it comes the time to face it, and although a few learners might not show any problem to change from classroom to the real-life context, the truth is that many other learners do encounter adversity when using the target language in real contexts. In this regard, it is claimed that “to prepare students for real-life listening outside the classroom, it is necessary to implement aural authentic materials at all levels of language instruction and listening-comprehension training” (Thanajaro, 2000, p. 39). Although it is believed that authenticity is reached by using materials that are designed for native speakers and not for teaching purposes, it is also true that any attempt to reproduce the reality could add some degree of authenticity to such materials. On the other hand, it is necessary to recognize that authenticity is sometimes a synonym for difficulty, and the materials that have such feature are more challenging than those created for teaching purposes. In fact, Ghaderpanahi (2012) mentioned that “since authentic texts are generated by and for native speakers of the language, they are perceived as being too difficult for EFL students to understand” (p. 150). Thus, based on this, teachers should try to replicate real life in their language classes and materials as much as possible, although this may entail an extra difficulty.

**Distortion and Noise.** The influence of distortion and noise in listening comprehension is a topic that has been addressed by some authors. Authentic conversations or passages do not usually happen in places that are totally free of external or competing noises. These obstacles represent an additional load in listening comprehension and make the task of building a semantic
framework more difficult (Bloomfield, A. et al., 2010 p. 54). In fact, for Schafer et al. (2013), the most influential factor in listening comprehension, in children, is the acoustics of the classroom and the environment. On the other hand, it is also believed that children are more vulnerable than adults to the effects of noise in listening; some basic language functions such as cortical response and short term memory are negatively influenced by acute noise (Kattle, Bergström, & Lachmann, 2013). The fact the short-term memory is affected by competing noises could be one of the reasons why listening material and teaching practices avoid the presence of background noises in classroom contexts.

Although little is known on the effects of background noise in second language learners, Soleymani and Marefat (2003) carried out a study to explore the extent to which noise represents a problem in L2 listening. Participants listened to a number of passages with a quiet background noise; the investigation found such noise to be significantly disruptive when it came to L2 listening comprehension. Although most studies in regard to this factor have been done with native listeners, Bloomfield, A et al, 2010 asserts that “these difficulties are even more pronounced when a listener is trying to understand a non-native language” (p. 54). However, more research appears to be needed in order to discover pedagogical implications on how to overcome noisy environments.

In general terms, literature proves the variability on factors affecting the listening comprehension in second language. Vocabulary, anxiety and background knowledge, seem to be some of the most influential in regard to personal variables. On the other hand, the more authentic a passage is the more difficult it appears to become; this because features such as background noises pose an extra difficulty that is not found in academic listening material. However, although these variables have been clearly identified to hinder comprehension, it is not recommendable to modify listening passages or speech in order to make them easier for learners; this exposure to authenticity has been found to bring about more benefits than drawbacks.

Recording Audio Material for Listening Comprehension Practice

There are some basic aspects and guidelines on the creation of audio material intended for several purposes, among them, L2 listening exercises. The first aspect is a good sound, although a good sound might be a very subjective concept, Lyons (2014) explained that a good sound involves audibility, intelligibility, and fidelity; the first one makes reference to the volume the audio has, if it is low or loud enough; the second one has to do with the clarity of the passage and the possibility to understand it, the voice, pronunciation, noise, among others, and the last one (fidelity) refers to its feature of making people feel as if they were next to speaker or source of sound. Nonetheless, Lyons (2014) also asserted that “a good sound is 100% subjective” (p. 7) and that the most difficult objective is to achieve the intended sound. Among other variables, Lyons (2014) recommended that people avoid the use of hard surfaces, fans, electrical noise, and external people when
recording an audio. For example, certain wall materials do not absorb the waves of the sounds; instead they bounce them, such bouncing causes a resonance across the room that distorts the overall quality of the recording.

To obtain an acceptable sound, a microphone is an essential tool that improves significantly the quality of the audio file. Using and choosing the right microphone in the right way depends all on the intended recording. Savage (2011) stated that condenser microphones, because of their features, are mostly used in studios. Among such features are the fact that they generate less self noise and a high output. In this line, Lyon (2014) supported Savage’s argument by writing that “large diaphragm microphones are the ones preferred by recording studio engineer and broadcast announcers” (p. 11) this since this type of microphone diminishes the “hiss” sound which results in a higher fidelity sound. Moreover, both authors coincide on the idea that it is important to adopt a consistent distance between the microphone and source of sound. The closer the speaker is to the microphone the higher the volume will be, and the consistent distance is necessary to keep a consistent volume throughout all the recording. Finally, windscreens are recommended filters to reduce the popping sounds result of the uttering of the sounds /p/, /t/, /d/ and /b/ (Lyons, 2014, p. 14). These filters are very useful, especially, when speakers are not experts in elocution.

The next aspect to consider when recording audio file is the software that will be used to edit the voices. There is a great deal of software that can help improve the quality of a recording, for example, Adobe Audition, GarageBand, and Audacity. This last provides the advantage that it is free, and the options it gives for editing are vast to obtain high quality. From the previously discussed issue, it becomes clear that listening is an ability that requires attention from the teacher’s side. Only exposing learners to aural material may not prepare them to use the English proficient. Due to the lack of learners’ exposure it seems necessary a careful consideration of internal and external factors that play an important role while receiving oral messages. In this line, distortion and noise appears to be one of the variables least researched in this scope, and the influence it has might be of great importance if compared with other factors. Finally, in regard to podcast creation, tools and environment of recording are two essential elements in the creation of high sound quality podcasts. Thus, a professional microphone, a soft-surface room, and editing software will help achieve high quality material for listening practice.

**Procedure.** To validate the podcasts with background noises, two experts on different fields were contacted. One is an experienced journalist in audio-visual production. She verified aspects such as speakers’ tone of voice, scripts and structure of the conversations, sound effect and music. Apart from that, she also provided some recommendations to improve the quality of the product. On the other hand, the second professional who validated the audios was an expert on the teaching of English (see appendix 6). He has worked as an English teacher for more than 25 years, and 10 as a national and international trainer of professionals.
in the same area. Some of the aspects considered were grammar, pronunciation, speed of elocution, and background noise effect. In the same way, this professional provided useful feedback on aspects that could be modified if improvement is desired.

This is how this study was conducted to get the results. First, students were explained that, during a week, they would be subject of a study in the listening skill area, and all they were expected to do was to show their understanding of the conversations in the audios. Once students were told about this, they were exposed to the first conversation on the first day of the week. Right after this, a pretest was given for students to complete and demonstrate how much they had understood. During the rest of that same week, the first 15 minutes were dedicated to listen to a different exercise and to discuss the information orally with the teacher. The control and experimental groups were conducted through the same procedure, but the experiential group was exposed to the audios with background noises; whereas the control group listened to the same audios but without any interfering noise. Finally, one week later, both groups listened to the last exercise and were given a posttest to compare their performances. Students were asked to avoid saying when they finished their test, this to avoid pressure or anxiety in the other participants.

Result and Discussions

Difficulties in Listening. As mentioned before, this research first objective is to reinforce the English listening comprehension skills of a group of 7th grade students from a high school in Cartago by developing teacher-recorded listening exercises modified with varied background noises as well as to identify the difficulties students encounter when they are exposed to listening comprehension exercises. Listening in a foreign represents a complex task in which learners must deal with a wide variety of barriers. Among these barriers are vocabulary, cultural knowledge, speaker’s accent, working memory and distortion and noise. However, besides some of the previous variables, in this research students also reported other factors such as classmates’ noises and classroom acoustics. Following are the reported difficulties encountered by the participants of this study while listening podcasts modified with background noises. This information was gathered by the question “Was there any “factor that hindered the comprehension of the audios?”

Vocabulary. This subcategory refers to the English words unknown for some participants. The listening comprehension capacity is influenced by the number of words a language learner knows. Although most of the participants had been exposed to English for several years, one of them reported issues with the vocabulary used in the conversations of the podcasts. When asking the question “Was there any factor that hindered the comprehension of the audios?” one participant wrote “The true is that the most difficult part to understand was the words which I didn’t listen to previously”. This issue reported by this participant is in accordance with Kurita (2012) when she explained that vocabulary
knowledge predicts listening comprehension since learners use content words to extract information from aural passages. The researcher’s notes also confirm the problem with the vocabulary since one of the notes explains that, right after listening to the podcasts, a few learners seemed to be asking other learners the meaning of certain words.

**Classroom Acoustics.** This category refers to how the design and materials used to build a classroom had a negative impact on listening performance. Besides the background noises in the podcasts, the acoustics of the classroom was another factor that made it difficult for learners to decode aural messages. Two students reported this factor in the questionnaire. On the other hand, classroom acoustics has been already found to have a negative impact on students; in fact, Crandell (2000) concluded that “inappropriate classroom acoustics can deleteriously affect not only speech perception, but also psychoeducational and psychosocial achievement.” Also, Schafer et al. (2013) believed that the most influential factor in listening comprehension, in children, is the acoustics of the classroom and the environment.

**Speakers’ Pronunciation.** Two students manifested their struggle with the pronunciation of the speakers. Although the podcasts were recorded with non-native English teachers who speak Spanish as their first language, two participants found their pronunciation difficult to understand. For example, one of them wrote, “I didn’t understand what the speakers said” The other student was more concise and simply wrote pronunciation. These two specific cases matched the findings of Major, Fitzmaurice, Bunta, and Balasubramanian (2002) where they found that Chinese performed worse when they heard English speech from other Chinese speakers but mismatch the same findings where they found that “speakers of Spanish scored significantly higher when listening to Spanish-accented speech.”

**Concentration.** One of the students experienced lack of concentration at the moment of listening to the podcasts. The background noises from the listening exercises plus other external noises appeared to have joined together to hinder the process of listening in this participant. One possible explanation for this specific case may be explained by Hamouda (2013), when she stated that students lost concentration in listening when they were looking for an answer, thinking about another question, or the passage was too long.

**Classmates Talk.** Several students reported problems with the noise coming from other classmates. During the listening of the podcasts, several students appeared to be surprised by the distraction of the background noises inserted in the podcasts; this caused some of them to start mumbling, in their native language, expressions and questions like “what?” “What is that unusual thing?” were noted by the researcher. This mumbling of some students was the reason why some participants expressed this factor as hindering the listening of the podcasts. From the 31 participants, 10 of them reported classmates’ noises to be distracting while listening.
**Background Noises.** Most of the students had trouble understanding the podcasts due to the background noises. This was the factor that influenced and hindered listening comprehension the most. When asking the question, “were the background noises an obstacle for the comprehension of the podcasts?” 29 students chose one of the three following answer options: “1) yes, because they did not allow me to concentrate”; “2) yes because they did not let me hear the conversations”; “3) somehow, because in some moments they did not let me understand.” On the other hand, only two participants chose option number 4 which was, “nothing at all, the background noises did not affect the comprehension.” The above answers seem to match with what Bloomfield *et al* (2010) asserted about the influence of noises when listening: background noise difficulties are “even more pronounced when a listener is trying to understand a non-native language” (p. 54). Also, Soleymani and Marefat’s (2003) study findings coincide with the present study in the sense that, in both of them, participants found such noise to be significantly disruptive when it came to L2 listening comprehension.

The category and subcategories derived from specific objective number 2 are shown in Figure 1. To remind the reader, this objective was to design a series of teacher-recorded listening exercises modified with varied background noises.

![Figure 1. Category 2 related to specific objective two and its respective emerging categories.](image-url)
Speakers’ Anxiety. This subcategory refers to the anxiety and nervousness reported by the volunteer English teachers who served as speakers in the podcasts. Some of the podcasts were recorded at the speaker’s house and others in a common place. In all the cases, speakers appeared to be confident and relaxed until the first recording was made. However, after a second or third repetition of the same part, speakers seemed to lose their confidence by asking too many times if the new version was correct or not; some speakers also started asking about the pronunciation of words even when they already knew them. One of the volunteers expressed the following “oh my god, I cannot believe it, this is more difficult than I thought”. In other cases, speakers requested to record certain sections again since they felt they sounded nervous, for example one speaker said, “no, no, let’s record it again, in that part, I sounded awful, like nervous”. After the session was completed, several speakers reported that they felt insecure about the fluency and pronunciation of some words; this made them nervous and made it more difficult for them to concentrate. In this topic, Stunt (2014) wrote that, “during vocal recording sessions even the most confident performers can find themselves in a mental place that undermines their ability to produce their best results” he also asserted that “nervousness can be due to a lack of experience or anxiety about meeting expectations.” As it can be seen, the anxiety issues reported above match with the theory described by Stunt (2014).

Acoustics. This subcategory refers to the acoustics of the places where the recording of the podcasts took place. As mentioned previously, the podcasts where recorded in varied spaces depending on the convenience of the volunteer. This situation caused the researcher to deal with problems regarding the acoustics of the environment. It was noted by the researcher that places such as living rooms yielded higher quality of the recordings. On the other hand, classrooms and small dining rooms caused some type of sound bouncing that lowered the quality of the recording. In fact, one recording session had to be canceled due to the resonance of the room. In some cases, placing some type of fabric around the microphone helped the recordings significantly.

Students’ Perceptions about the exercises.

With the instrument for the evaluation of the podcasts, the perceptions of the E.G participants were collected after they had taken the posttest. Some of the questions answered were: 1) How difficult was it for you to understand the modified podcasts during day one? 2) How difficult was it for you to understand the modified podcasts during day six? 3) How did you feel the first time you listened to the modified podcasts? 4) How did you feel the last time you listened to the modified podcasts? 5) Do you think these podcasts prepare you better for a conversation in life? In general terms, the answers to the previous questions were as follows. For question number one, 7 participants found the comprehension of the podcasts “somehow difficult”, 8 very difficult, 12 “difficult”, while only 4 students found them “not difficult at all”. For question number two,
17 students found the comprehension of the podcast “not difficult at all”, 12 found it “somehow difficult”, 1 “difficult”, and 1 “very difficult”.

In terms of question number three, 15 students felt “anxious”, 10 “frustrated”, 5 “uncomfortable”, and only one “relaxed, with no problem”. Regarding question number four, 16 participants felt “A little bit more relaxed”, 13 “Totally relaxed”, and 2 “same as the first time”. Finally, to the questions of whether the podcast prepare them better for conversations, 1 participant responded “No” whereas 30 responded “Yes”.

The answers to question number 5 can be classified into four types: training, concentration and understanding, real-life approach, and confidence builder. In regard to training, several students wrote that they considered the podcasts useful because they represented a training that could enable them to deal with conversations in noisy places. Some examples of answers were “because in real life, when we are in the street, there are noises that we cannot control, so this [the podcasts] prepares us to cope with it in the future.”

Another example of a comment related to this issue was the following, “because it becomes almost like a habit to talk or listen with so much noise”. What students expressed related to this issue is supported by Córdoba, Coto, and Ramírez (2005). They asserted that oral messages are often accompanied by a series of noises such as music, oral conversations, horns, among others, that interfere with the message, and this is the reason why listeners should be able to discriminate between useful and useless sounds. The training side expressed by some participants was also related to concentration and understanding. For instance, some participants expressed that these podcasts would help him/her especially if he/she traveled to another country since they helped to rehearse the ability of keeping focused.

Other students found the podcast useful because they represented a task similar to what they will find in real life. To support this, some participants shared the following comments “in real life, there are many distracting noises”; “people are not always located in environments free of noises that might influence the comprehension of a conversation. In this regard, the Costa Rican Ministry of Education (2003), claimed that students of English “should be prepared to cope with understanding speech in different settings (background noise, distance or unclear sound reproductions)” (p. 19). Finally, other students found the podcasts and its exposure to be a type of trust builder, they said after the exposure they felt more confident when having conversations English with other people.

Students thoughts about the podcasts were varied, some of them expressed the exercises represented a real-life training, others complained about the volume, while others mentioned it was an interesting challenge. The first group of students expressed that they were satisfied with the material because they were training for real life. These participants felt that the podcasts prepare them for conversations outside the classrooms; for instance, one student wrote the following, “In general, I liked everything and I would not change anything because these things [the noises] sometimes happen in real life”.

The second tendency in answers was in terms of what they would change about the podcasts. Some of the participants reported that had liked the materials because the external noise was loud, while others disliked it because it was too loud for them. Some examples of such as comments are “I did not like sometimes vocalization was not well done, I would increase the volume of the speaker's voice.” Another example of these comments is “I would change the background noises; I did not like it when conversations were not understandable.” In regard to the previous comments, Gordon-Hickey, Moore, and Estis (2012) explained that “background noise acceptance depends on the listener and the stimulus condition,” which could explain the reason why a few students found the background noise volume too loud or annoying for them. On the other hand, other students expressed they had liked the exercises; however, they would reduce the volume of the noises.

Finally, the third tendency deals with the idea that participants liked these podcasts because it represented a challenge for them. For example, one student wrote, “I liked how much effort must have been done to put all the sounds in the podcasts, and only if one would make an effort was I able to listen well. Another student expressed “I liked them because they are like a challenge for me.” The fact that some students liked the challenging of the podcasts might have some relationship with the theory of comprehensible input, where Krashen (1982) stated that learners should be exposed to tasks that are a bit farther than their current capacity for learning to occur.

Conclusions, Scope, Limitations, and Recommendations

Based on the analysis of data previously presented, the conclusions, scope of the research and some recommendations for future similar studies will be given in this section.

Conclusions. This study’s main goal was to reinforce the English listening comprehension skills of a group of 7th grade students from a high school in Cartago by developing teacher-recorded listening exercises modified with varied background noises. Although the study was carried out in the context mentioned above, its findings may have relevance to other contexts in Costa Rica and even outside the country; the issues reported and advantages shown by the participants in a six-day period may change the way listening practice has been traditionally perceived. On the other hand, to accomplish the goal of this project there were several stages, three of them were the creation of podcasts, the implementation and the evaluation of the effectiveness of the proposed material.

In regard to the difficulties faced while listening, it is possible to say that participants encountered some of the most common issues when it came to listening comprehension in a foreign language. The first difficulty was vocabulary. Although there were activities to previously present troublesome vocabulary in the podcasts, a few learners still showed problems with this issue; this confirms the importance of an efficient mediation and strategies to get students familiar with the lexicon before any task that involves listening comprehension. Also, the fact
that a learner knows the meaning of a word may not be a predictor of success in listening performance because the pronunciation known by such learner might be erroneous and may influence the outcomes negatively. In other words, meaning and pronunciation seem to be mandatory to prepare students for a listening task.

Another important aspect to take into account is the acoustics of the classrooms. Classrooms are not usually designed for a good resonance of sounds, the materials of the walls and windows seemed to negatively affect learners comprehension of listening texts. Language teachers and administrators should join efforts to equip classrooms with materials that absorb sound waves and thus help learners not only with listening tasks but also with the process of learning (since listening is essential for such process).

Concentration appeared to be another factor hindering the process of listening. Although only one student explicitly expressed that he/she had problems focusing on the task, other students reported similar problems caused by the classmates’ noise, which might have also affected the level of concentration. The lack of practice under demanding conditions and the lack of self-confidence to deal with these situations could be a possible explanation why some participants found comprehension of the first podcasts frustrating. Finally, and most importantly, the background noises inserted in the podcasts certainly posed a serious issue during the first days of the exposure, which may mean that students lacked strategies to cope with listening in environments where other competing noises were present.

In regard to podcast creation, the techniques and materials used were appropriate. One of the purposes of the study was to create challenging listening exercises that would measure the effect of a short exposure to them. Although most of the learners found the exercises difficult at some point, through the collection of students’ perceptions, and the results of the pre and posttest, it was possible to conclude that the final product accomplished its purposes of enhancing the listening skills of the participants, and serving as instruments to prove such reinforcement. On the other hand, it is also important to note that creating listening material requires an extensive preparation and consideration of variables that can arise through the process; for example, the fact that some speakers encountered anxiety while recording could indicate that English teachers’ feelings such as lack of self-confidence and nervousness are higher when they know they are being recorded.

The main goal of the study was achieved and proved by the exposure to podcasts modified with background noises. As mentioned previously, during the first exposure to the exercises, most students found the podcast background noises disruptive for the comprehension; nonetheless, through a six-day exposure the participants in the experimental group gained training and confidence to deal with listening tasks that took them to their limits. This was proved by the fact that the overall group score was higher by day six, and also, by what participants expressed about the podcasts. In contrast with the control group, when this was exposed to the modified podcasts, participants showed a significant difference in terms
of scores (lower in this case). Based on this, the experimental group gained an improvement and advantage, in terms of listening performance, over the control group due to the exposure to the modified podcasts during six days.

Moreover, when learners reported their opinions on the podcasts, most of them said that they had found them useful for future practice. The proximity to reality was one feature identified as helpful, and even though it did not appear pleasant for students to try to comprehend the conversations, they still admitted the relevance of the material, and several learners even expressed they had liked the exercises. Although more research is needed, language materials developers could start considering the inclusion of background noises in the listening comprehension exercises, especially if considering that students might encounter noisy environment when using English in the future, for example, one of those environments are call centers, in which customers make calls from different places such as streets, work places, etc.

The results of this study open a new way of understanding listening comprehension material for language learning. Traditionally, this type of exercises is recorded so that only the voices of the speakers are heard, while no background noise can interrupt the message; however, it was found that the inclusion of competing noises helped learners after a short exposure to them because it provided training and self-confidence to the learner.

Recommendations. Some recommendations for future similar studies are the following. First, any teacher or researcher who wishes to work with podcasts should consider the context of the population to create materials that brings benefits to learners and that is found useful by them. Engaging and motivating students in their learning process is mandatory to help them do their best. Also, when recording podcasts, it is necessary to plan their scripts and have them peer reviewed; the vocabulary, grammar structures and expressions are crucial for their effectiveness. Furthermore, when recording with unexperienced speakers, it is important to remain calm and patient if the recording has to be repeated several times because speakers might suffer from anxiety which could only complicate the process. Moreover, it is recommendable to record using a special software designed for this purpose (for example Audacity) as it provides a variety of editing and recording options that simplify the task. Finally, in terms of usage of modified podcasts, it is necessary to consider that most students may not be familiar with L2 listening in noisy environments, which at the beginning, might annoy learners; however, if the task is presented as a challenge, students could see the practice in a more positive way and find it even interesting.

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