| **RESEARCH ARTICLE**

The Improvement in English Listening Comprehension Competence of the Tenth-Grade Students Through using Podcasts: A Case Study

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| **ABSTRACT**

The growing development of the internet brings many opportunities to both English teachers and learners since they can access diverse resources, among which podcasts are considered one of the valuable tools for those who want to master English language skills, especially listening. This study aims to investigate the use of podcasts as a medium to enhance the tenth graders' listening comprehension competence. Involving 80 tenth graders at an upper secondary school in Dak Lak province, Vietnam, who were divided into a control group and an experimental group, the study mainly employed a combination of quantitative and qualitative approaches to measure the improvement in students' listening competence. The tools used for collecting the data were questionnaires, interviews, the pre-test, and the post-test. With the help of the statistical software SPSS version 20.0, a paired sample t-test was conducted to assess the statistical significance of the findings, and the descriptive statistics, including sum, mean, and percentage of each variable, were also found and analyzed. The results indicated that students were eager to use podcasts as a listening tool, thanks to their familiarity and accessibility. Despite some challenges during practice, podcasts effectively helped improve the learners' listening skills. Specifically, the students overcame the common difficulties that hinder their English listening comprehension, such as limited vocabulary, unfamiliar grammar, poor comprehensive listening ability, and pronunciation challenges. To conclude, it is recommended that students be consistent with podcast practice, and teachers should give enough instructions so that the best results can be achieved.

| **KEYWORDS**

Listening comprehension, podcasts, improvement, tenth-grade students, change.

| **ARTICLE INFORMATION**

1. Introduction

In the modern world, proficiency in English opens up numerous opportunities, as it is the predominant language across key domains of life like technology, science, medicine, and education. While developing the four core language skills is essential, learners often find listening to be one of the most challenging aspects (Alzamil, 2021). According to Rintaningrum (2018), students often express frustration with their unfamiliarity with spoken language and various speakers' accents. Additionally, they face some other difficulties, such as fatigue during listening tasks and a lack of concentration (Jyoti, 2020). Many students also encounter fundamental issues, including limited exposure to the language and insufficient listening materials (Sabet & Mahsefat, 2012). Therefore, how to help students overcome these obstacles is teachers' priority in their process of English teaching. Fortunately, thanks to the development of the internet worldwide, a wide range of available online materials can tackle the problems mentioned above, and podcasts (PCs) are considered one of them. This application is believed to widen the range of listening materials that students can use for their listening purposes (Kavaliauskienė, 2012). It also helps students learn with their own ability but get the maximum result. It also assists the learners in developing their listening competence and increasing their confidence in pronunciation and accent (Jain & Hashmi, 2013).

Despite being aware of the benefits that PCs can bring to English learners, it seems that many teachers, for certain reasons such as fear of innovation or limited time for each lesson, do not take advantage of this valuable application to enhance students' listening performance. Moreover, the situation seems to become worse when students mainly use available textbooks and focus on exam preparation and tend to pay more attention to reading, vocabulary, and grammar rather than listening (Bui & Duong, 2018). Therefore, this study was conducted with the aim of investigating the use of PCs to enhance listening competence for tenth-grade students at an upper secondary school (USS) in Dak Lak province, Vietnam. To be specific, the study seeks to answer the following research questions :

1. What are the 10th graders' perceptions of using PCs for the practice of English listening?
2. What are the challenges faced by the 10th graders when utilizing PCs to practice listening comprehension?
3. To what extent can PCs improve these 10th graders' English listening comprehension?

2. Literature Review
2.1. Previous studies
The study of using PCs to improve language skills has been the subject of substantial attention over time. Numerous efforts have been undertaken to explore the use of PCs in foreign language instruction. A study conducted by Hasan and Hoon (2012) with the participation of 53 second year students at Putra University of Malaysia aimed to examine students' perceptions of using PCs to develop listening skills. The findings showed that a majority of the students found that PCs helped to enhance listening ability and make listening lessons interesting and enjoyable. Besides, 120 teachers and students from the four proficiency levels of the English Language Institute at King Abdulaziz University in Saudi Arabia were the participants of another study carried out by Alshaikhi & Madini (2016). Data collected revealed that all the participants had a positive perception of using PCs to enhance extensive listening.

Rahayuningsih et al. (2021) conducted a study examining the use of audio PCs as a tool to improve listening skills in teaching English to 8th grade students at SMP 181 Jakarta. The author used the qualitative description method, collecting data mainly through interviews, observation, and testing. The results showed that PCs listening benefited both teachers and students since it made teaching listening skills easy for teachers and made students feel comfortable when practicing listening, leading to an improvement in students' listening ability. Hasibuan and Male (2022) conducted research with students of the English Language Education Department of Universitas Kristen Indonesia. By using the quantitative method, the data collected through questionnaires revealed PCs assisted both the teachers and the students in the learning process. Also, Nisa et al. (2022) conducted the study "the use of podcast to improve students' listening comprehension." The writer used one class in the seventh grade of SMP Muhammadiyah 35 Jakarta as the sample and the quantitative method with pre-experimental as a research design. The results revealed that using PCs had been an effective way to improve listening comprehension.

Another study on students' perception of using PCs to enhance listening skills was conducted by Prastyo et al. (2023). The research employed qualitative methods and included surveys and interviews. The participant group consisted of 34 students from the English Department at Universitas Bandar Lampung. The result demonstrated noticeable enhancements in effectiveness and distinctiveness in students' listening skills through the integration of PCs as a learning medium. In addition, Tran Thu Ha (2023) carried out a study of using PCs to practice listening skills, but it focused on the steps of utilizing PCs in listening class, not its effectiveness on students' listening competence.

In summary, there have been a variety of studies relating to different aspects of using PCs in learning listening. They are classified into two groups. The first group focused on some aspects of PCs, like students' feelings when using PCs or podcast-used teaching steps, not focusing on the effectiveness of using PCs in improving listening comprehension. The second group revealed that PCs had positive impacts on students' listening, but they mostly focused on lower secondary or university students, and it seems none has focused on upper secondary school students. Thus, to fill these gaps, the researcher decided to explore the use of PCs in improving the listening comprehension of the students studying at USS in a province in Vietnam. The research findings hope to support Vietnamese English learners and teachers in promoting the effectiveness of language teaching and learning English listening skills.

2.2. Listening comprehension
The concept of "listening comprehension" has been defined as an interactive process in which listeners engage in receiving what speakers say, constructing and representing meaning, negotiating meaning with speakers, and responding (Rost, 2002). According to Ismayilli Karakoc (2019), listening comprehension involves many subskills in the process, such as understanding the main ideas, paraphrasing information, understanding the speaker's attitude and purposes, inferring meaning from context, and summarizing information.

In the local context of Vietnam, according to the 2018 General Education English Curriculum (GEEC) of the Ministry of Education and Training of Vietnam (MoET), English teaching aims to help students communicate in English through the four skills of listening, speaking, reading, and writing. The curriculum is designed with both general and specific objectives along with specific competence for students of every grade of each school level. According to the content of the 2018 General Education Program for English subject issued under Circular 32/2018/TT-BGDDT, upon successful completion of grade 10th level, students will be able to listen and understand the content of everyday conversations which are clearly stated, understand the main points of dialogues, monologues of 200-230 words on familiar topics and listen and understand information and common instructions.

2.3. Podcasts
2.3.1. Definition of podcasts
Podcasts are described as audio files that can be downloaded from the internet, either through manual downloads or via automated subscriptions (Tidal, 2021). Podcasts can be used on all kinds of mobile devices or computers at any time and anywhere without any special technology-related knowledge (Cebeci & Tekdal, 2006). They cover various topics and can be played back when needed, making them highly supportive of language learning, particularly in developing listening skills.

PCs are valuable for language learners who want to improve their skills. They provide a lot of useful knowledge and chances to enhance language proficiency. PCs cover a wide range of topics, including language education, personal growth, news, and cultural insights. The application offers a convenient and immersive way for students to improve their language skills.

2.3.2. Length of podcasts
With the aim of satisfying a wide range of audience interests and preferences, PCs should be designed with diverse lengths and formats (Stephens, 2007). The length of a podcast can differ greatly, with no fixed standard length. PCs can range from a few minutes to many hours. According to Carvalho et al. (2009), there are some common podcast length categories as follows:

+ Short podcasts: These PCs are brief, normally from 1 to 5 minutes.
+ Moderate podcasts: These PCs are often about around 6 to 15 minutes in length.
+ Long podcasts: Unlike short and moderate PCs, long-form PCs are usually more than 15 minutes long.
Furthermore, at present, on many podcast channels, there is still another type of PCs, which is the episodic PCs.
+ Episodic series: Many PCs consist of a series of episodes and these episodes vary in length since they depend on the content and storytelling requirements.

2.3.3. Types of podcasts
Podcast formats are ways to organize the content of the podcast. According to Tidal (2021), there are six main formats of PCs: solo style, interviews, panels, multiple hosts or conversations, instruction, and narrative.

- Solo style: This podcast format is the single-host format, typically used by experts to share their experience and knowledge.
- Interviews: This podcast will have a host who interviews a new guest in each episode, often about a specific topic. The guest shares their expertise and experience.
- Panels: This format is similar to the interview format, but it has more guests, often three or more people discussing a topic.
- Multiple hosts or conversational: This is a commonly used podcast format where two people engage in a direct conversation and have good chemistry together. One may share new knowledge while the other shares funny personal stories.
- Instructional: The instructional podcast format is used to teach new skills. There is a clear goal in the podcast. These can be accompanied by show notes, handouts, websites, or other learning modules. The podcast may also supplement a library workshop or classroom instruction.
- Narrative: The primary objective of narrative PCs is to educate listeners by offering ideas in the form of an engaging and immersive encounter. These PCs can include both fictional and non-fictional content. The art of storytelling empowers listeners to actively engage with the knowledge they are acquiring.

2.4. Implementation of podcasts in teaching listening comprehension
According to (Rost,1991), PCs are well-suited for extensive listening activities and play a vital role in enhancing students' learning motivation and giving them the chance to be exposed to authentic native speakers' speech. Besides, Fox (2008) stated there are some steps for using PCs:

Step1: Listening for pleasure and/or as homework.
Step 2: Listening with a pre-prepared teacher glossary would help to make PCs accessible to lower levels.
Step 3: Listening to a short chunk.
Step 4: Listening with a transcript (prepared by the teacher).

Step 5: Using a chunk as dictation practice.

Apart from following these steps, if teachers deliver PCs as homework, teachers can use 5-10 minutes at the beginning of the next class period to ask students to do a quick test related to the podcast they practiced at home (Lauer, 2019). These can be used as a demonstration of activity learning dynamics and can be used for grading.

3. Methodology
3.1. Research methods
The researcher used a combination of quantitative and qualitative approaches to implement the study. The quantitative data were gathered by delivering questionnaires, pre-test, and post-test, whereas the qualitative data were collected from interviews. The qualitative data from the questionnaires helped to figure out the perceptions of the 10th graders of using podcasts to practice English listening comprehension, as well as the challenges they might encounter in this process. The pre-test was conducted prior to the use of PCs for listening practice, and the post-test was carried out after the intervention. The results of the pre-test and post-test were then analyzed and compared to explore the improvements in 10th graders' listening comprehension competence. The outcome of the qualitative analysis was utilized not only to address the research questions but also to provide a thorough explanation of the quantitative stage's outcome.

3.2. Setting, population and sampling
3.2.1. Setting
The chosen Upper Secondary School is the location where the study was taken place. The-10th–graders are the ones the researcher especially targets to gather the necessary information to address the research questions. The PCs used in the study were taken from Breaking News English PCs and British Council PCs. The content of the PCs is related to the topics from unit 6 to unit 10 in the textbook used by these 10th graders, which is "Tieng Anh 10 – Global Success", published by the Vietnam Education Publishing House in collaboration with Pearson Education (2022). The trial ran for 15 weeks, beginning in late January 2024.

3.2.2. Population and Sampling
According to Creswell (2012), samples are target population groups that researchers have chosen to collect target population data. The population of this study is the tenth-grade students in Dak Lak province who are supposed to have less experience learning listening through PCs. This study selected 80 tenth-grade students at USS in Dak Lak province in the school year 2023-2024 as the sample of this research. The participants were divided into two groups: an experimental group with 40 students from class A and a control group with 40 students from class B, and all of them did the pre-test and post-test.

3.3. Data collection
3.3.1. Research instruments
The instruments used in this research include questionnaires, interviews, a pre-test, and a post-test.

3.3.1.1. Questionnaires
A questionnaire of 19 close-ended questions and 1 general question was designed based on the Likert scale for 40 students with two parts. The first part, from question 1 to question 10, focusing on students' perception of using podcasts to practice listening to English, was delivered to students before using podcasts. The second part, from question 11 to question 19, about students' disadvantages when using podcasts to practice listening, was delivered to students after the first cycle of using podcasts. The students' responses were scaled from 5 to 1: strongly agree (5), agree (4), undecided (3), disagree (2), and strongly disagree (1). All the questionnaires were given to students to answer in the classroom under the instruction of the researcher. If the participants could not understand clearly, the researcher would explain or translate into Vietnamese.

3.3.1.2. Interview
The researcher developed 10 questions for 10 randomly chosen students from the experimental group. The ten-question interview was divided into 2 parts. The first part, from questions 1 to 5, focused on students' perceptions of using podcasts to improve listening comprehension. The second part aimed at investigating the challenges that students faced when using podcasts to practice listening *comprehension*. Interviews lasted ten to fifteen minutes, with translation provided if necessary.

3.3.1.3. Pre-test and post-test
A pre-test and a post-test were designed based on the exam format for assessing level 3 English proficiency indicated in the Vietnam 6-level language proficiency framework issued by The Vietnam Ministry of Education and Training. Each test consists of 16 questions covering some aspects: pronunciation, vocabulary, grammatical features, and understanding of specific information, and was designed in four parts:
Part 1: 4 three-option multiple choice questions

Part 2: 4 three-option multiple choice questions
Part 2: 4 fill-in-blank questions
Part 3: 4 detailed True-False questions

Students finished each test in 20 minutes (not including time to transfer the answers to the answer sheet because students work directly on the exam paper). The pre-test, which was the 1st semester test, was conducted before treatment. It was given to 80 grade-10th students from the control group and the experimental group to evaluate their initial listening skills and knowledge before receiving the treatment in the form of listening with podcast media.

After the pre-test, students from the experimental group received treatment, while those from the control group were given listening exercises in the textbook. The treatment lasted 15 weeks, with 15 PCs taken from Breaking News English PCs and British Council PCs were administered one per week after the pre-test.

After that, the post-test, which was the 2nd semester test, was given to students of both the control group and experimental group to measure their listening competence. The purpose of the post-test in this study was to see if students' listening comprehension skill was improved after using PCs. The findings of this post-test were compared to those in the pre-test to determine if PCs could help 10th graders with their listening skills.

3.3.2. Procedures of data collections
The steps of data collection were as follows:

Step 1: Two listening tests, which were the semester tests, were prepared (the pre-test was the 1st semester test, and the post-test was the 2nd semester test). Each test consisted of 16 multiple choice questions, and a list of 15 PCs related to the topics in the textbook was built from the podcast Learn English-British Council. The questionnaires and interview questions were also designed in this phase.

Step 2: The pre-test was delivered to the students of both the experimental group and the control group. The students finished the test in 20 minutes.

Step 3: The first part of the questionnaires and the first part of the interview were delivered to students in the experimental group.

Step 4: The researcher introduced 15 PCs with related exercises as homework to students and gave guidance on how to practice listening through PCs in 15 weeks. The researcher, who is also their teacher, checked students' work through a quick test with 5-7 questions at the beginning of the following week. The ten PCs were divided into two cycles. The first cycle included 5 PCs conducted in the first 5 weeks. After that, a questionnaire was delivered to 40 students in the experimental group, and an interview with 10 randomly chosen students from those 40 students to explore any challenges that they encountered, which helped the teacher design more appropriate listening exercises for the left 10 PCs of the second cycle.

Step 4: The researcher asked 80 students from the two groups to do the post-test and compare the results.

The reason why the researcher chose the 10th graders was that they could realize their own learning methods by themselves. They could clearly recognize their weak points, strong points, and their difficulties in the listening process as well.

4. Results and Discussion
4.1. Students' perception of using podcasts for improving listening
The students' perception of using PCs for improving listening competence was demonstrated through some aspects, such as students' familiarity with PCs, students' opinions of the accessibility of PCs, and students' desires to use PCs to practice listening comprehension skills. Based on the results analyzed through SPSS software, the mean of this cluster is 4.01, much higher than the middle scale of the Likert scale, indicating that students had generally positive perceptions of using PCs to enhance their listening competence and this was strengthened by the high percentage of agreement with each statement shown in Table 1 :

Table 1: Students' perception of using podcasts for improving listening competence

Questions		Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Students' familiarity with podcasts	Students are familiar with podcasts.	0%	5%	7.5%	47.5%	40%
	Students have been using podcasts for a long time.	0%	17.5%	5%	35%	42.5%
Students' opinions of the accessibility of podcasts	Podcasts are easy to play	0%	7.5%	12.5%	45%	35%
	Using podcasts is possible every time and everywhere.	0%	7.5%	15%	45%	32.5%
	Podcasts can be played on different devices.	0%	5%	5%	75%	15%
Students' desires for using podcasts to practice listening skill	I think the topics on podcasts are diverse and interesting.	0%	0%	7.5%	35%	57.5%
	I believe podcasts will give me many examples of correct ways to structure a sentence.	0%	7.5%	7.5%	42.5%	42.5%
	I think podcasts will enhance students' motivation in learning English listening skill.	0%	7.5%	7.5%	72.5%	12.5%
	I think podcasts should be implemented in listening class.	0%	7.5%	7.5%	57.5%	27.5%
	I will use podcasts to practice listening in the future.	0%	0%	5%	70%	25%

The high percentage of agreement with each statement above shows that PCs are not strange to the learners since they used this application for a long time. However, in an interview conducted on March 1st, 2024, they admitted that their primary use of PCs was not for practicing listening skills. One student noted, "*I have to say that I use podcasts a lot. It seems that every day before going to sleep, I listen to some music or comedy podcasts.*"

Despite this, students recognized the potential of PCs as a valuable learning tool. They appreciated that PCs could be accessed anytime, anywhere, and on various mobile devices. Additionally, they believed that PCs would enhance their motivation to learn listening skills, thanks to the diverse and engaging topics available. They also believed that PCs would give them the correct ways to structure a sentence. Another student shared in the interview: "*I think the podcasts' content is interesting and practical because it is close to what happens in daily life, so podcasts will help the students find it easy to understand the meaning through context and increase their motivation in listening to podcasts.*". As a result, students expressed a strong desire to incorporate PCs into their classroom practice and future learning.

4.2. Students' challenges when using podcasts and suggested solutions
In the process of using PCs to enhance listening competence, the learners encountered several difficulties categorized into three main groups: internet-related challenges, competence-related challenges, and device-related challenges. Besides, the analysis using SPSS software revealed an overall mean score of 3.8, reaching the Agree side on the Likert scale, which suggested that most of the respondents faced the obstacles mentioned above. The following table provides more specific information on these issues.

Table 2: Students' challenges when using podcasts for improving listening competence

	Challenges	Strongly disagree	Disagree	Undecided	Agree	Strongly agree
Internet-related challenges	My internet connection is slow	10%	12.5%	0%	45%	32.5%
	My phone sometimes loses internet connection while using podcasts.	2.5%	27.5%	0%	30%	42.5%
	Downloading podcast files consumes too much mobile data.	7.5%	20%	0%	40%	32.5%
Competence-related challenges	I cannot hear much because it is too fast.	0%	20%	0%	37.5%	42.5%
	I just know a few words in the podcasts.	0%	15%	0%	47.5%	37.5%
	I cannot concentrate because the podcasts are too long.	0%	15%	0%	57.5%	27.5%
	Some strange grammar structures in the podcasts make me confused.	0%	17.5%	10%	47.5%	25%
Device-related challenges	Doing podcasts' exercises on mobile devices is sometimes very tough for its small screen	0%	15%	0%	50%	35%
	My phone doesn't have enough memory space to download podcasts.	0%	25%	0%	60%	15%

According to Table 2, a significant number of students reported experiencing slow internet connection, with 32.5% strongly agreeing and 45% agreeing to this statement. Additionally, a total of 72.5% encountered issues with their phones losing connection while using podcasts. Many students expressed concerns about mobile data usage, with 40% agreeing and 32.5% strongly agreeing that downloading podcast files consumes too much data.

Competence-related challenges were also significant, as a large majority of participants (80%) found the pace of podcasts too fast to understand, and 85% indicated they only recognized a few words. The length of several episodes posed concentration difficulties for over 80% of students, while 72.5% felt confused by unfamiliar grammar structures.

Device-related issues were frequently mentioned, with 50% agreeing and 35% strongly agreeing that completing podcast exercises on small screens was challenging. Concerns about insufficient memory were also prevalent, with 75% overall approving that their phones lacked enough space for downloading podcast files. Additionally, nearly three-quarters of respondents noted that podcast files took up considerable memory on their devices, which could limit their ability to store content.

Besides, in the interview conducted on March 1st,2024, some students shared:

"Yes. Not all the four podcasts, but about two of them are too long. I think I would listen more effectively if the podcasts were shorter." (Interview with student no.2)
"My phone sometimes does not have enough space to download podcast files; this interrupts my learning on podcasts since it takes time to find the ways for this problem." (Interview with student no.10)
"It was very difficult for me to understand what the speakers said because it seems that I do not know much of the vocabulary in the podcasts." (Interview with student no.6)

In summary, there were some challenges students faced when they used PCs for their listening purposes. Some solutions were suggested in Table 3 to address these challenges with the hope of getting better listening results.

Table 3: Challenges and suggested solutions

Challenges	Solutions
1. My internet connection is slow.	- Encouraging students to utilize school internet to download podcasts for at-home practice - Providing USB copies of podcasts for students using computers
2. My phone sometimes loses internet connection while using podcasts.	
3. Downloading podcast files consumes too much mobile data.	
4. I cannot hear much because it is too fast.	- Delivering podcasts with slower speed of speaking - Instructing students to choose slower speed of speaking mode on podcasts
5. I just know few words in the podcasts.	- Giving key vocabulary appearing in the podcasts or related to the podcasts' content
6. I cannot concentrate because the podcasts are too long.	- Delivering shorter podcasts - Splitting podcasts into shorter audio files and sending them to students
7. Some strange grammar structures in the podcasts make me confused.	- Giving unfamiliar and important grammar structures appearing in the podcasts
8. Doing podcasts' exercises on mobile devices is sometimes very tough for its small screen.	- Preparing podcasts' exercises on paper and delivering them to students in advance
9. My phone doesn't have enough memory space to download podcasts.	- Instructing students to use stream podcasts instead of downloading them - Providing shorter podcasts

The solutions mentioned above were then implemented across the ten additional PCs used in the second cycle of the study. After this implementation period, students from both the control group and the experimental group completed a post-test, which also served as their second semester exam.

4.3. Improvement in listening compentence
To assess the impact of PCs on tenth-grade students, a paired sample t test was conducted with the statistical significance value (sig) = .000 < 0.05. This result shows a substantial and considerable difference between the Mean in the post-test scores compared to the Mean of the pre-test scores for the experimental group. Specifically, these improvements were evidenced by the positive change in the scores of every aspect of listening comprehension as follows :

4.3.1. Improvement in pronunciation
Based on the reality of teaching experience, pronunciation is one of the difficulties making students struggle with listening skills and leading to their bad listening scores. This is more obvious through the results in pronunciation of the two groups, and this is indicated in the following table:

Table 4. *Mean score of pre-test, post-test, and improvement in pronunciation of the two groups*

Variable	Scores		Improvement
	Pre-test	Post-test	
Pronunciation of the control group	0.2794	0.3040	.0246
Pronunciation of the experimental group	0.3098	0.4535	0.1437

Firstly, looking at the results of the pre-test, both groups had very low mean scores, which were 0.2794 and 0.3098. The very small difference between the two Mean (0.0304) shows that the two groups had a similar pronunciation ability. However, the data after the intervention demonstrates that the use of PCs led to a substantial improvement in the participants' pronunciation skills. The mean pronunciation score for the participants who experienced podcast practice increased remarkably from 0.3098 to 0.4535, leading to the difference between the pre-podcast and post-podcast pronunciation scores of 0.1437, which represents the improvement in pronunciation skills. This substantial increase in the mean score after using the PCs suggests that the podcast intervention was effective in enhancing the participants' ability to pronounce words and phrases as well as recognize them in listening to audio more accurately. This is strongly reinforced when compared to the control group' scores, which reveal a much smaller improvement of 0.0246 (from 0.2794 to 0.3040) for the group that did not use PCs.

4.3.2. Improvement in vocabulary

Lacking vocabulary is one of the challenges students encounter when doing listening tests. The evidence is the students' score in the vocabulary of both the control group and the experimental group, which was rather low before the intervention, but there were some remarkable changes after using PCs to practice listening. The following figure illustrates this fact.
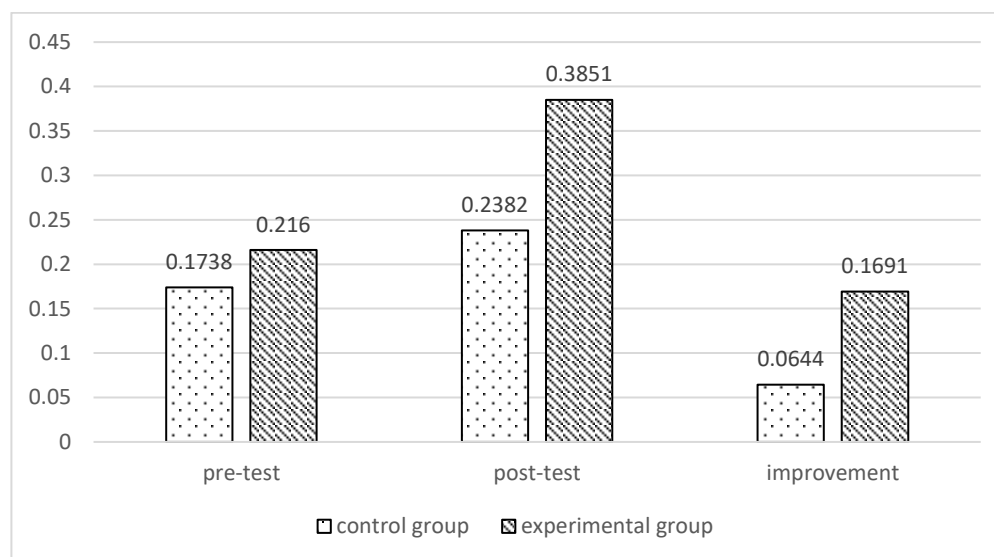

Figure 1. *The mean score of the pre-test and the post-test and improvement in vocabulary of the two groups*

The first part of the figure presents the results of the pre-test vocabulary assessment for both the experimental group and the control group. These data provide important insights into the initial vocabulary knowledge of the participants before the intervention. The difference in the mean vocabulary scores between the two groups in the pre-test is 0.0422 (mean of control group = 0.1738 and mean of experimental group = 0.2160), which poses a fact that the two groups had comparable vocabulary knowledge prior to the intervention.

After the intervention, the control group's post-test mean score increased to 0.2382, which showed a very slight improvement of 0.0644 from the pre-test to the post-test. In contrast, the experimental group, which received the podcast-based instruction, had a tremendously higher post-test mean score of 0.3851, leading to an improvement of 0.1691, which is much higher compared to the improvement of the control group. This positive change in the podcast user group was demonstrated through the information presented in Table 5. There was an amazing increase in the number of students scoring 3-4 correct answers, from 4 in the pre-test to 30 in the post-test. Correspondingly, there was a decrease in the number of students scoring 0-2 correct answers.

Table 5. *Improvement in vocabulary of students in experimental group*

	Pre-test	Post-test
0 correct answer	4	0
1 correct answer	9	0
2 correct answers	23	10
3 correct answers	2	17
4 correct answers	2	13

4.3.3. Improvement in grammar

According to the reality of teaching and the results of the questionnaires, grammar is also one of the major barriers leading to students' low listening test scores. Perhaps it is because of the different grammar points that make students confused when doing listening tests. Grammar is used to combine individual words to form various meaning sentences and communicate effectively. Listening to PCs helps students encounter many different grammar structures appearing in the spoken language, and this helps students limit grammar-related mistakes when listening to English.

Table 6. *Mean score of pre-test, post-test, and improvement in grammar of the two groups*

Variable	Scores		Improvement
	Pre-test	Post-test	
Grammar of control group	0.2794	0.2885	0.0091
Grammar of experimental group	0.2984	0.3383	0.0399

Table 7. *Improvement in grammar of students in experimental group*

	Pre-test	Post-test
0-2 correct answer	19	7
3-4 correct answer	21	33

The findings from Table 6 suggest that the use of PCs had a positive impact on the students' grammar skills. The experimental group, exposed to the podcast-based intervention, showed greater improvement in grammar scores than the control group. Turning to detail, the control group's scores increased slightly by 0.0091 (from 0.2794 to 0.2885), indicating minimal change. In contrast, the experimental group's scores rose by 0.0399 (from 0.2984 to 0.3383), demonstrating a significant improvement. The improvement of the experimental group was more clearly shown in Table 7, with a significant change in the number of students scoring 0-2 correct answers (decreasing from 19 students to 7 students) and 3-4 correct answers (increasing from 21 to 33 students).

4.4.4. Improvement in comprehension

From the data analysis using SPSS, there was a slight decrease from the pre-test (0.2264) to the post-test (0.2257), which indicated that the control group's comprehension did not improve over time. Meanwhile, the students in the experimental group demonstrated a notable improvement in their comprehension scores, rising from 0.1790 in the pre-test to 0.3105 in the post-test, resulting in an overall improvement of 0.1315. This proves that the use of PCs was more effective in enhancing listening and comprehension skills compared to the traditional methods used by the control group. This considerable change in the experimental group's performance is shown in Figure 2.
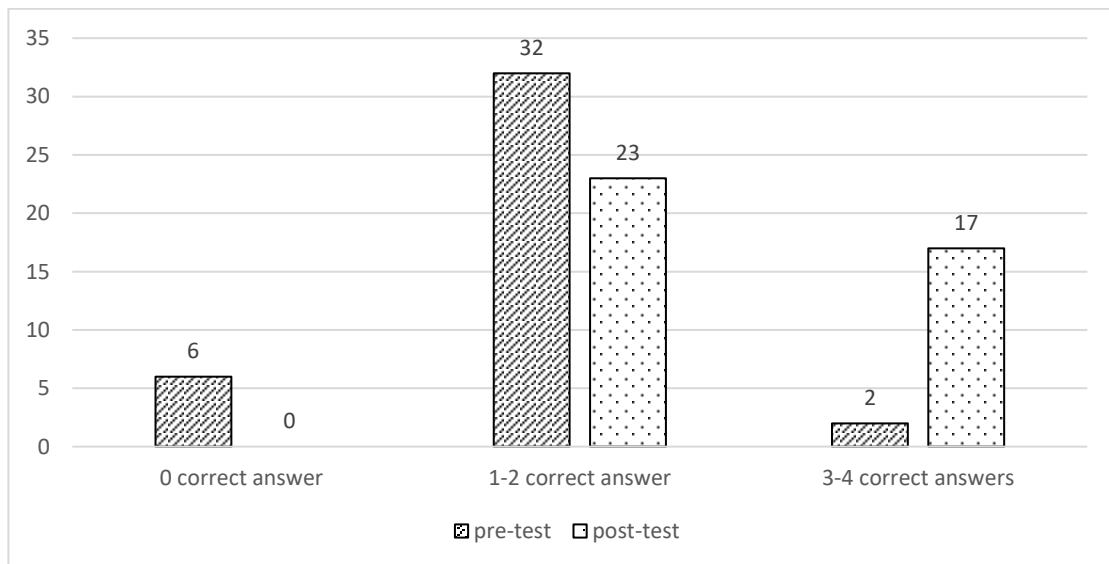

Figure 2. *Improvement in comprehension scores in listening tests of the experimental group*

The figure presents an upward trend in the experimental group's listening comprehension scores before and after using PCs. More specifically, in the pre-test, a relatively large number of students (6 students) scored 0 correct answers, suggesting that some learners were struggling with the listening comprehension assessment. However, this scoring category completely disappeared in the post-test, indicating that the students overcame their comprehension challenges with the help of PCs. Furthermore, the number of students achieving 1-2 correct answers decreased from 32 to 23 out of 40 students. This led to an increase in the number of students getting the highest scores with 3-4 correct answers (from 2 in the pre-test to 17 students in the post-test). The substantial shift towards higher scores, the reduction in low-scoring categories, and the improvement in intermediate and high-level performances all indicate that the podcast-based intervention was effective in enhancing the students' listening comprehension competence.

To sum up, the data collected in the two listening tests, the pre-test and the post-test, illustrate that PCs assisted students in enhancing their pronunciation, expanding their vocabulary, improving grammar knowledge, and comprehending listening contents. The improvement gained in the listening tests indicates that the podcast-based intervention had a positive and dramatic impact on dealing with the students' listening problems, which led to their low scores on listening tests and enhancing their listening comprehension competence.

5. Conclusion and recommendations
5.1. Conclusion
The results of the data analysis revealed that the 10th graders at the chosen USS had a positive perspective on using PCs to practice listening skills. Most of them recognized that podcasts are familiar, easy to use, and accessible on any device, making them a convenient study resource. Also, the informants agreed that the topics were varied and interesting, and they supported the implementation of podcasts in their listening classes.

However, during their podcast-based listening practice, the learners faced several difficulties categorized into three main groups: internet-related, English competence, and device-related issues. Many students expressed that their listening practice was hindered by a lack of vocabulary, fast speaking rates, and long podcast durations. Some also found their devices inadequate for accessing PCs. Fortunately, most difficulties stem from external conditions, prompting the researcher to propose solutions for key issues: adjusting podcast speeds, providing key vocabulary, shortening podcast lengths, explaining unfamiliar grammar, and offering printed exercises in advance.

Finally, the comparison of the pre-test and post-test results showed a clear difference in the improvement level of listening competence between the two groups. The experimental group using PCs made remarkable progress compared to the control group, which did not use PCs. These improvements were reflected in the increased listening scores for pronunciation, vocabulary, grammar, and overall content comprehension.

In summary, the findings highlighted the role of PCs as an effective digital learning tool to help 10th graders enhance their listening competence. This medium can be used to design suitable listening activities both inside and outside classrooms so that students can improve their listening competence as much as possible.

5.2. Recommendation
It is recommended that teachers should introduce some PCs apps that are suitable for students' competence in their teaching process or encourage students to choose PCs whose content is aligned with the learning objectives of the curriculum to help them acquire a well-rounded education in listening competence. Besides, teachers should encourage and motivate students to listen to PCs and do listening exercises to practice listening skills regularly, as well as give them some strategies to fully optimize this learning tool. Finally, teachers should evaluate student progress and provide constructive feedback to identify areas for growth so that learning methods can be adjusted accordingly.

Students should be more active in their learning. They should pay more attention to their listening weaknesses and choose the PCs that bring as much improvement to their listening competence as possible. They also should not only spend much more time consistently practicing listening with PCs but also actively engage with any supplementary listening exercises or activities provided with the PCs. This repeated exposure and practice is crucial for developing and strengthening their listening comprehension competence. The combination of relevant content, suitable practice, and consistent effort will lead students to the highest possible gains in this important language proficiency area.

5.3. Limitation of the study
Despite the researcher's best efforts, this study has several limitations. That it was conducted with a limited number of tenth-grade students at a single school, and time constraints might affect the implementation of the study. Furthermore, the narrow range of

listening topics in the treatment process, along with the requirement for students to practice with PCs selected by the researcher instead of their own preferences, could influence their motivation and engagement, potentially leading to less effective listening outcomes. As a result, the findings may not fully represent all aspects of podcasts as a learning tool.

5.4. Suggestions for further research

To fill the gap left by this study relating to podcast-based listening practice, as mentioned above, further studies might be conducted, such as examining students' preferences for podcast formats and topics as well as their impact on engagement and listening comprehension, analyzing specific podcast features in relation to listening skill along with expanding research to different groups of learners. It is hoped that these studies will help deepen our understanding of how podcasts can improve students' listening competence.

Conflicts of Interest: The authors declare no conflict of interest.
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