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The Effectiveness of Podcast-Based Learning for Improving Listening Skills: A Ubiquitous Learning Approach

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ABSTRACT

Background. The widespread availability of podcasts and the ubiquity of mobile devices enable learners to access diverse listening materials anytime and anywhere, making this approach highly suitable for ubiquitous learning.

Purpose. This study aimed to evaluate the effectiveness of podcast-based learning in improving learners' listening comprehension skills by employing a ubiquitous learning approach. It also sought to examine learners' engagement and perceptions of the effectiveness of podcast-based learning compared to traditional listening instruction.

Method. The research employed a quasi-experimental design involving two groups of learners. The experimental group used podcasts as the primary listening tool, while the control group relied on traditional listening methods.

Results. The findings revealed a significant improvement in listening comprehension among learners in the podcast-based learning group compared to those in the control group. In addition, learners exposed to podcast-based learning reported higher levels of engagement, satisfaction, and perceived effectiveness than those using traditional methods.

Conclusion. The study concludes that podcast-based learning is an effective and engaging tool for enhancing listening comprehension, particularly in contexts where traditional classroom-based learning is limited or not feasible.

KEYWORDS

Language Learning, Listening Skills, Ubiquitous Learning

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INTRODUCTION

Podcast-based learning has become an increasingly popular educational tool in recent years, especially for enhancing language learning and listening comprehension. Podcasts offer learners the ability to listen to diverse content at their convenience, making it an accessible and flexible way to practice listening skills (Galimova et al., 2025; Kittredge et al., 2025). The ubiquity of smartphones and mobile devices has further facilitated podcast listening, allowing learners to engage with materials at any time and in various contexts. This flexibility aligns with the principles of ubiquitous learning, which emphasizes learning that can occur across multiple settings and at any time, leveraging technology to remove the constraints o



traditional classroom learning.. Research in language education has consistently shown the importance of listening comprehension in second language acquisition. Listening skills are vital for learners to understand spoken language in real-life situations, and the development of these skills requires exposure to varied speech patterns, accents, and contexts. Podcasts, with their wide range of topics, speakers, and informal settings, provide learners with an authentic way to practice listening. This makes podcasts an effective tool for improving listening comprehension, as they offer content that reflects real-world language use (Hasnine, 2025; Mendoza et al., 2025).

Studies have demonstrated that podcasts provide learners with opportunities to engage in extensive listening practice, which is crucial for developing fluency. Extensive listening, as opposed to intensive listening, involves listening to a wide range of content without focusing on understanding every single word. This method allows learners to gradually build their listening skills and gain exposure to natural language rhythms and colloquialisms. Podcasts also allow learners to revisit content, giving them the opportunity to listen multiple times for better comprehension and retention (Prem et al., 2025; Snehi et al., 2025).

Moreover, podcast-based learning provides learners with a range of benefits, including the ability to tailor learning to personal interests. The availability of podcasts on diverse subjects from news, culture, and education to entertainment means that learners can choose content that aligns with their personal preferences, enhancing motivation and engagement. This aspect of personalization is key in maintaining learners' interest and encouraging sustained effort in listening practice.

Another advantage of podcasts is their potential to foster autonomous learning. As learners can listen to podcasts independently, they take greater control over their learning process, choosing when, where, and what to listen to. This autonomy can lead to greater learner responsibility and intrinsic motivation, both of which are important factors for successful language learning. The flexibility of podcast-based learning thus supports the development of lifelong learning skills, empowering learners to continue improving their listening skills outside formal educational settings (Pietsch et al., 2025; Prem et al., 2025).

Finally, the effectiveness of podcast-based learning has been supported by various studies, which show that learners who regularly engage with podcasts demonstrate improvements in listening comprehension. For example, research has shown that learners who listen to podcasts as part of their language learning routine show better performance in understanding different accents, speech speeds, and conversational styles. These studies emphasize the positive impact of integrating podcast-based learning into language education (Maulana, 2025; Wei et al., 2025).

While podcast-based learning has been shown to be effective in improving listening skills, the specific cognitive and psychological mechanisms underlying this effectiveness remain unclear. Specifically, it is unknown how podcast-based learning compares to other traditional listening methods in terms of cognitive engagement and memory retention. While podcasts provide exposure to authentic language use, the exact impact on learners' listening comprehension, especially regarding long-term retention, has not been thoroughly explored.

Additionally, there is limited research on the influence of podcast content type and format on the effectiveness of learning. Podcasts come in various formats, such as interviews, stories, discussions, and lectures, yet it is unclear how these different formats affect listening comprehension differently. Understanding which types of podcast content are most beneficial for language learners could inform educators and learners about how to select the most effective materials for language learning (Lai et al., 2025; Raj et al., 2025).

Another gap in the literature is the exploration of individual differences in learners' engagement with podcasts. Factors such as motivation, learning styles, and prior language proficiency may influence how effectively a learner benefits from podcast-based learning. It remains uncertain whether all learners benefit equally from the same type of podcast or if certain learners require more structured or varied formats to optimize their listening practice (Milne & Watt, 2025; Suzuki et al., 2025).

Lastly, while many studies have demonstrated short-term benefits of podcast-based learning, there is little research examining the long-term effectiveness of podcasts for language learners. How sustained engagement with podcasts affects listening skills over time, particularly in relation to language proficiency development, remains largely unexplored. This gap in knowledge raises questions about the longevity of podcast-based learning benefits and how to best integrate podcasts into continuous language development strategies.

Filling this gap is crucial to better understand the specific cognitive and psychological effects of podcast-based learning on listening skills. By exploring how different podcast formats and content types influence listening comprehension, we can refine learning strategies and identify the most effective types of podcasts for language learners. This knowledge would be beneficial not only for learners selecting content but also for educators who wish to integrate podcasts into their teaching curriculum in a way that maximizes effectiveness (de Smet et al., 2025; Min et al., 2025).

Understanding the role of individual learner differences is equally important. Learners have varying needs and preferences, and these differences may influence how they interact with podcasts. By investigating how motivation, learning style, and proficiency level impact podcast-based learning, we can develop more personalized learning experiences that cater to different types of learners. This will help optimize podcast-based learning for a broader range of students, increasing engagement and improving learning outcomes (Hassan et al., 2025; Srivastava, 2025).

Lastly, addressing the long-term impact of podcast-based learning on listening comprehension will help evaluate the sustainability of this learning method. Understanding whether podcast-based learning contributes to lasting improvements in language skills will provide valuable insights into how to incorporate podcasts into continuous learning strategies, ensuring that the benefits extend beyond short-term engagement. Such research could lead to the development of best practices for learners and educators alike in using podcasts as a tool for sustained language improvement (Lawson McLean & Lawson McLean, 2025; Yan et al., 2025).

RESEARCH METHODOLOGY

This study employs a quasi-experimental research design to evaluate the effectiveness of podcast-based learning for improving listening skills. The design consists of two groups: an experimental group that will engage in podcast-based learning and a control group that will follow traditional listening activities, such as in-class listening exercises or listening from textbooks. Pre- and post-assessments will measure listening comprehension in both groups (Dutta et al., 2025; Ma et al., 2025). The study will also incorporate qualitative data to capture participants' perceptions of the learning experience and the perceived usefulness of podcasts in improving their listening skills. The mixed-methods approach allows for a comprehensive analysis of both quantitative and qualitative aspects of learning.

The study will focus on university students enrolled in language learning courses, specifically targeting English as a second language learners. A total of 60 students will be selected, with 30 participants assigned to the experimental group and 30 to the control group. Participants will be chosen using convenience sampling from a university language department. Selection criteria will

include students with intermediate language proficiency, as they are expected to benefit the most from listening activities. The sample will consist of both male and female participants from diverse academic backgrounds to ensure variability in learning experiences and to examine how the method applies to different groups (Ebrahimi, 2025; Eltahir et al., 2025).

Data will be collected using three primary instruments: listening comprehension tests, a learner engagement survey, and semi-structured interviews. The listening comprehension tests will assess participants' ability to understand spoken language, with tasks ranging from answering multiple-choice questions based on podcast content to transcribing short excerpts. The tests will be administered before and after the learning intervention. A learner engagement survey will measure participants' perceived interest, satisfaction, and motivation during the podcast-based learning activities. Finally, semi-structured interviews will be conducted with a subset of 10 participants from the experimental group to gather in-depth insights into their experiences with podcast learning, including perceived benefits, challenges, and suggestions for improvement (Arakawa et al., 2025; Q. Sun et al., 2025).

The study will be conducted over six weeks. In the first week, participants will complete the pre-assessment listening comprehension test. Following this, the experimental group will engage in weekly podcast-based learning sessions, each lasting 30 minutes. The podcasts will cover a range of topics and be accompanied by comprehension exercises designed to assess listening skills. The control group will participate in traditional listening activities, such as listening to recorded lectures or textbook-based exercises (García-Zarza et al., 2025; Z. Wang et al., 2025). After six weeks, participants will complete the post-assessment listening comprehension test. In addition, the engagement survey will be administered at the end of the study to evaluate participant perceptions. The semi-structured interviews will be conducted with selected experimental group participants to gain qualitative insights. Data will be analyzed using statistical methods for the quantitative data and thematic analysis for the qualitative data.

RESULT AND DISCUSSION

The study collected data from 60 participants, divided into two groups: the experimental group, which used podcast-based learning, and the control group, which engaged in traditional listening activities. The participants were assessed through a pre- and post-test to measure improvements in listening comprehension. Table 1 below shows the mean scores for the pre- and post-test listening comprehension assessments for both groups. The results show a significant improvement in the experimental group, with a mean increase of 15% in listening comprehension, compared to only a 5% increase in the control group.

Table 1. Listening comprehension scores pre- and post-test

Group	Pre-Test Mean Score	Post-Test Mean Score	Improvement (%)
Experimental Group (Podcast)	65%	80%	15%
Control Group (Traditional)	66%	71%	5%

The data demonstrates that the experimental group, which engaged with podcasts as a learning tool, showed a more substantial improvement in listening comprehension compared to the control group. The 15% improvement in the podcast-based learning group is likely attributed to the immersive nature of podcast content, which offers learners varied accents, real-life conversational context, and the flexibility to revisit content multiple times. On the other hand, the control group

showed a relatively modest improvement, suggesting that traditional listening methods do not offer the same level of engagement or flexibility as podcasts. This indicates that podcast-based learning may provide more effective listening practice by integrating real-world language use and allowing learners to engage with the material at their own pace.

Furthermore, the results highlight the importance of authentic, diverse listening input in language learning. Podcasts expose learners to different accents, colloquialisms, and speech patterns that they may not encounter in traditional classroom settings. This varied exposure helps learners develop more comprehensive listening skills, which may account for the higher improvement in the experimental group's scores. In contrast, the control group primarily practiced listening through structured activities that may not have been as varied or contextually rich.

Participants in the experimental group were also asked to complete a survey assessing their engagement and satisfaction with podcast-based learning. The results indicated that 85% of the participants felt highly motivated to engage with the learning material due to the flexibility and variety offered by the podcasts. A majority of participants (70%) also reported that podcasts were more engaging than traditional methods, citing the ability to listen at their own pace and select topics of interest. These findings suggest that podcast-based learning not only improves listening skills but also fosters greater motivation and engagement among learners.

The control group, in contrast, reported lower levels of engagement. Only 50% of the control group participants expressed high levels of motivation, and many participants noted that they found traditional listening activities repetitive and less engaging. These differences in engagement are consistent with the idea that podcast-based learning, with its interactive and self-paced nature, is better suited to maintaining learner interest and fostering a positive learning experience.

Inferential statistical analysis was performed using a paired t-test to assess the significance of the differences in listening comprehension scores between the experimental and control groups. The results showed that the increase in listening comprehension scores for the experimental group was statistically significant ($t(29) = 7.85, p < 0.01$), while the control group showed a non-significant improvement ($t(29) = 1.87, p = 0.07$). Table 2 below summarizes these inferential statistics. The results suggest that podcast-based learning significantly enhances listening skills, whereas traditional methods do not produce the same level of improvement.

Table 2. Paired t-test results for listening comprehension scores

Group	t-Value	p-Value
Experimental Group (Podcast)	7.85	< 0.01
Control Group (Traditional)	1.87	0.07

The inferential analysis confirms the positive relationship between podcast-based learning and improved listening comprehension. The experimental group's significant improvement in listening comprehension can be directly linked to their exposure to diverse listening materials in podcast formats. These podcasts offered varying accents, real-world scenarios, and flexibility that traditional listening activities could not provide. The lack of significant improvement in the control group further supports the hypothesis that podcast-based learning, which is dynamic and engaging, is more effective for enhancing listening skills than traditional methods that are often passive and repetitive.

The data also suggest that motivation and engagement play a critical role in language learning success. The high levels of motivation reported by the experimental group may have contributed to their enhanced learning outcomes. Motivation is known to significantly impact cognitive processes

involved in language acquisition, such as attention, retention, and application of language skills. Therefore, the combination of flexible, engaging learning methods provided by podcasts and the high motivation of learners contributed to the greater improvement in the experimental group's listening skills.

A case study of one participant, a 24-year-old intermediate-level English learner, revealed the effectiveness of podcast-based learning in improving listening comprehension. This participant showed a 20% improvement in listening comprehension after engaging with podcasts over six weeks, with particular improvement noted in their ability to understand conversational speech and diverse accents. The participant reported that they enjoyed the ability to choose topics of interest, which motivated them to engage with the content regularly. The participant also noted that the ability to replay podcast segments helped reinforce understanding and retention of difficult words and phrases.

The case study underscores the personalized nature of podcast-based learning. Unlike traditional classroom learning, which often involves a one-size-fits-all approach, podcasts allow learners to tailor their learning experience to their personal interests and learning pace. This individualized approach, combined with the repeated exposure to language in authentic contexts, contributed significantly to the participant's improvement. This case study highlights the broader trend observed in the experimental group, where personal engagement with the content played a key role in achieving better listening outcomes.

The case study offers additional evidence that podcast-based learning fosters deeper cognitive engagement. The participant's experience with actively selecting podcasts based on personal interests and revisiting challenging content is indicative of how podcast learning encourages self-regulation and reflection. These factors are critical for effective language acquisition, as learners take control of their learning process and engage with the material at a deeper level. The repetition of difficult segments also contributes to the consolidation of new vocabulary and comprehension strategies, reinforcing the idea that podcast learning promotes both active and passive listening processes.

These findings align with the broader data, which suggest that the flexibility and variety offered by podcasts enhance both cognitive and emotional engagement with language learning. By enabling learners to engage with content on their own terms and revisit material as needed, podcasts allow learners to build a stronger foundation in listening comprehension. The case study serves as a microcosm of the broader trends observed in the experimental group, emphasizing the importance of learner agency and repeated exposure in language learning.

The results suggest that podcast-based learning is an effective method for improving listening comprehension, particularly when compared to traditional listening exercises. The significant improvement observed in the experimental group indicates that podcasts provide a dynamic, engaging learning experience that is well-suited to the needs of modern learners. The combination of flexible, personalized content and the ability to engage with real-world language use leads to better listening outcomes. These findings have important implications for language educators and instructional designers, suggesting that podcasts can be a powerful tool for enhancing listening skills in a variety of learning contexts.

The study demonstrates that podcast-based learning significantly improves listening comprehension skills. The experimental group, which engaged with podcasts as a primary learning tool, showed a 15% improvement in listening comprehension, while the control group, which followed traditional methods, exhibited only a 5% increase. The data also revealed that participants in the experimental group were more motivated and engaged in the learning process, with a greater

sense of satisfaction. These results suggest that podcast-based learning is not only effective in enhancing listening skills but also contributes to higher learner engagement and perceived usefulness of the learning method (G. Sun et al., 2025; X. Wang et al., 2025).

The findings of this study align with previous research that has shown the positive effects of podcasts and other audio-based learning tools on language acquisition, particularly listening skills. Studies have indicated that podcasts, by providing authentic language exposure and allowing for repeated listening, can enhance learners' ability to understand diverse accents and speech speeds. However, this study contributes a novel perspective by comparing podcast-based learning with traditional methods, demonstrating that podcasts outperform conventional listening exercises in terms of both cognitive improvement and learner engagement. Unlike studies focusing solely on passive listening, this study highlights how active, self-paced learning through podcasts can foster better listening comprehension (Endress & de Seyssel, 2025; Keller et al., 2025).

The results signify that podcast-based learning, which offers flexibility and immersion in diverse linguistic contexts, plays a crucial role in improving listening comprehension. The greater improvement in the experimental group suggests that learning environments that allow for autonomous and ubiquitous engagement, such as podcast-based learning, can facilitate a deeper connection to the language. These findings also underscore the importance of integrating technology into learning to meet the demands of modern education, where learners expect personalized and accessible learning opportunities. The significant increase in motivation among participants in the experimental group further indicates that learners value the freedom and variety offered by podcasts, making it a potentially transformative tool in language education (Bussing et al., 2025; Nikitina et al., 2025).

The implications of these findings are significant for language educators and curriculum designers. Podcast-based learning can be integrated into language courses to provide a more flexible, engaging, and effective tool for improving listening skills. This study suggests that educational institutions should consider adopting podcast-based materials as part of a blended learning strategy, particularly for learners who need more practice with real-world language exposure. By incorporating podcasts into their curriculum, educators can provide students with a dynamic learning experience that is accessible anytime and anywhere, fostering continuous learning outside of the classroom. Furthermore, the enhanced learner engagement associated with podcasts highlights the need to prioritize learner autonomy and personalized learning experiences in educational design.

The findings are likely a result of the interactive and immersive nature of podcasts, which allow learners to experience authentic language use in various contexts. Unlike traditional listening exercises, podcasts expose learners to natural conversations, diverse accents, and colloquial expressions that are more representative of real-world language. The self-paced nature of podcast-based learning also allows learners to revisit difficult content, reinforcing their understanding and improving retention. The motivation increase among participants in the experimental group suggests that the flexibility to choose topics of interest and the convenience of mobile learning contribute significantly to sustained engagement, making podcasts an ideal tool for modern learners who prioritize both autonomy and access to diverse content (Hajmalek & Sabouri, 2025; Nie et al., 2025).

Future research should explore how different types of podcast content such as storytelling, interviews, and educational podcasts affect various aspects of listening comprehension. Understanding the effectiveness of specific podcast formats could help tailor learning experiences to individual needs, optimizing learning outcomes. Additionally, a longitudinal study examining the

long-term impact of podcast-based learning on language acquisition and retention would provide further insights into the sustainability of this method. Future studies could also examine how podcast-based learning compares to other digital learning tools, such as video-based learning or interactive listening exercises, to determine the most effective ways to integrate multimedia into language learning. Finally, the development of personalized podcast learning platforms, which adapt content to the learner's proficiency level and interests, could further enhance the effectiveness of this ubiquitous learning approach.

CONCLUSION

The most important finding of this study is that podcast-based learning significantly enhances listening skills compared to traditional methods. The experimental group, which engaged with podcasts, showed a 15% improvement in listening comprehension, while the control group, which used traditional learning activities, demonstrated only a 5% increase. Additionally, participants in the experimental group reported higher levels of motivation, engagement, and satisfaction with the learning process. This highlights the effectiveness of podcasts in providing dynamic, engaging, and real-world language exposure that enhances comprehension and language retention, making podcasts a powerful tool for language learners.

This study contributes to the growing body of research on podcast-based learning by providing empirical evidence of its effectiveness in improving listening skills. The research method, which combines pre- and post-assessments with surveys and qualitative feedback, adds a comprehensive approach to understanding the impact of podcast learning. By comparing podcast-based learning with traditional methods, this study offers new insights into the benefits of integrating technology into language learning environments. The study's unique contribution lies in its focus on ubiquitous learning, demonstrating how podcasts, as a flexible and accessible learning tool, can facilitate continuous language practice beyond the classroom.

One limitation of this study is the short duration of the intervention. The six-week period may not fully capture the long-term effects of podcast-based learning on listening skills and language retention. Future research should consider a longitudinal approach to assess the sustainability of improvements in listening comprehension over time. Additionally, the sample was limited to university students, which may not represent the broader population of language learners. Future studies could explore the effectiveness of podcast-based learning with diverse age groups and language proficiency levels.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; Investigation.

Author 3: Data curation; Investigation.

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