

# Podcasting Proficiency: A Mixed-Methods Study on the Efficacy of Audio-Based Interventions in Fostering English Modal Verb Mastery among Iranian EFL Learners

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## Abstract

The usefulness of teaching English modal verbs (EMVs) to foreign learners through educational podcasts is examined in this study. The design of the study was quasi-experimental with a pre-test, post-test, and control group. The Oxford Quick Placement Test was used to ensure homogeneity among the 75 initial EFL students at Islamic Azad University in Rasht. As a result, fifty learners were chosen and randomly assigned to one experimental group (n = 25) and one control group (n = 25). While the control group used conventional paper-and-pencil drills, the experimental group was trained on EMVs through podcast episodes. The groups completed EMV pre-tests and post-tests. The podcasts considerably increased EFL learners' EMV knowledge according to statistical analysis of the results. Instead of clearly outlining grammar rules, the podcasts organically incorporated EMVs into conversation, making the learning process more interesting. Additionally, attitudes of students were evaluated through interviews. Thematic analysis of semi-structured interviews highlighted positive attitudes toward the accessibility, authenticity, and flexibility of podcasts, with learners reporting enhanced vocabulary, listening, and pronunciation, as well as reduced anxiety. Limitations included a lack of visual aids and interactivity. These findings advocate for integrating podcasts with balanced activities in EFL curricula to enhance grammar learning. The pedagogical implications have been discussed.

## 1. INTRODUCTION

Recent developments in Information and Communication Technology (ICT) have significantly reshaped educational practices (Latifah & Ajie, 2025). These developments have not only introduced new digital tools, but have also transformed the ways in which teaching and learning are conceptualized and implemented. As a result, classrooms are increasingly moving beyond

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conventional instructional models toward more technology-integrated environments. In contrast, traditional teacher-centered approaches often provide limited opportunities for active learner engagement. This limitation becomes particularly evident when teaching complex grammatical structures such as English modal verbs (EMVs). Because EMVs involve subtle distinctions in meaning and usage, students frequently struggle to grasp their pragmatic and contextual nuances through explanation-based instruction alone.

In response to these challenges, technology-supported strategies have gained attention. Specifically, learner-centered and interactive tools are now viewed as more effective alternatives for promoting deeper grammatical understanding. Among these tools, educational podcasts have emerged as a promising instructional resource (Elmi et al., 2024). Podcasts offer flexible access to authentic and context-rich language input, allowing learners to engage with content repeatedly and at their own pace. Moreover, the auditory and contextualized nature of podcasts may support learners' comprehending the meanings of modals in real-life discourse. This feature is particularly relevant in English as a foreign language (EFL) contexts, where exposure to authentic input is often limited. Therefore, integrating podcasts into grammar instruction may not only facilitate the acquisition of EMVs, but also promote more positive attitudes toward learning among Iranian EFL learners (Procel et al., 2024).

Podcasts, a Computer-Assisted Language Learning (CALL) tool, offer authentic audio-visual content accessible on various devices (Bozorgian & Shamsi, 2022). Moving away from traditional rote memorization, they provide a contextualized instructional approach (Luthfi, 2023). By presenting EMVs within meaningful dialogues, podcasts facilitate deeper linguistic understanding and retention (Al-Jarf, 2023). Their inherent flexibility and accessibility further boost motivation and engagement in modern EFL learners setting (Farshi & Mohammadi, 2013).

Technology is vital to modern education, facilitating personalized and flexible learning (Chiu, 2021). In EFL contexts, diverse digital resources enhance engagement and clarify complex concepts (Peña Gangadharan & Niklas, 2019). Beyond standard classroom hardware (Zhang & Zhang, 2025), podcasts have gained popularity for their efficacy in improving core language skills, including grammar and listening (Hasan, 2013). Their capacity for delivering authentic content makes them an essential supplement to traditional teaching methods (Gençter, 2015). Teaching EMVs is a significant challenge in the EFL context due to the nuanced usage of the verbs and contextual dependence (Ahmed, 2021). Traditional, decontextualized approaches often fail to address the underlying patterns of modal verbs effectively (Iranmanesh & Motallebikia, 2015). Additionally, many Iranian instructors struggle to engage tech-savvy students using conventional methods (Bensaid & Jiang, 2026). Given the widespread availability of personal devices, podcasts offer a motivating and interactive solution to these instructional difficulties (Shruthi et al., 2025).

Grounded in cognitive second language acquisition (SLA) research, this study highlights the necessity of authentic language exposure for effective learning (Bahrani & Nekoueizadeh, 2014). Podcasts facilitate this by embedding EMVs in naturalistic contexts, enabling learners to infer meaning through usage rather than isolated grammar rules (Chaikovska, 2020). This approach avoids the confusion typical of traditional methods. By integrating interactive features, podcasts further promote engagement and understanding, offering a superior alternative for personalized language instruction (Al-Jarf, 2023). Podcasts influence both linguistic outcomes and learner motivation by providing accessible, digitally-resonant content (Farshi & Mohammadi, 2013; Gholami & Mohammadi, 2015). These conversational media foster more positive attitudes than traditional rigid methods by reflecting real-world language use (Haddad, 2002). For instance, hearing native speakers use EMVs in various contexts enhances learners' confidence (Mashhadi et al., 2016). Although technological barriers and a lack of visual aids can be problematic (Phillips,

2017), the engaging and accessible nature of podcasts positions them as a compelling supplement to EFL instruction.

Although podcasts offer general language benefits (Mashhadi et al., 2016), their efficacy in teaching specific structures like EMVs is underexplored, particularly among Iranian EFL learners. Podcasts can clarify the pragmatic and syntactic functions of EMVs through authentic dialogues and interactive elements (Chaikovska, 2020). Nevertheless, the instructional design of podcast-based grammar lessons—and learners' perceptions of them compared to conventional methods—have not been thoroughly investigated. This study employs a mixed-methods design to investigate the effects of educational podcasts on EMV acquisition among Iranian EFL learners. The qualitative component explores learners' attitudes toward podcast-based instruction, defined as their feelings, opinions, or behaviors toward this approach, to understand its motivational impact. By addressing these objectives, the study aims to provide practical insights for educators designing technology-enhanced EFL curricula and contribute to the growing body of research on podcast-based language instruction. Based on the objectives of the study, the following research questions were formulated:

RQ1: Is there any significant main effect of educational podcasts on the recognition of English modals?

RQ2: Is there any significant main effect of educational podcasts on the production of English modals?

RQ3: What are the attitudes of Iranian EFL learners towards educational podcasts?

## 2. LITERATURE REVIEW

### Technology-enhanced English Language Learning (TELL)

Technology has reshaped English pedagogy, moving classrooms from textbooks toward dynamic digital tools (Godwin-Jones, 2018). TELL platforms now offer flexible, resource-rich experiences tailored to diverse needs (Chapelle & Sauro, 2017). Historically, TELL evolved from 19th-century phonographs to mid-20th-century audio-visual aids (Richards & Rodgers, 2014; Warschauer, 1996). CALL emerged in the 1960s with behaviorist drills, followed by the 1990s internet revolution, which introduced authentic global communication (Levy, 1997; Warschauer & Meskill, 2013). Currently, mobile-assisted language learning (MALL) enables "anytime, anywhere" learning via mobile devices, fostering learner autonomy and authentic interaction (Kukulska-Hulme & Viberg, 2018).

TELL's strength lies in its ability to create immersive, personalized learning environments. Multimedia elements, interactive exercises, and adaptive algorithms engage learners and support varied learning styles (Reinders & Pegrum, 2016). Technology also boosts motivation and social interaction, making lessons more enjoyable and interactive (Ahmadi, 2017; Baytak et al., 2011). For example, multimedia texts and online resources help learners explore language structures and contexts, moving beyond traditional lectures (Arifah, 2014). Recent advances, like AI-driven tools using natural language processing, enable tailored feedback and personalized learning paths, breaking from one-size-fits-all instruction (Bahari, 2022; Shardlow et al., 2022).

However, TELL faces challenges. Technological barriers, such as unreliable internet or limited digital literacy, can hinder access, especially for novice users (Lim & Aryadoust, 2021). Distractions or superficial engagement with digital tools may also reduce effectiveness (Khudoyberdi ugli, 2024). While some studies highlight TELL's benefits, others note limitations, like difficulty assessing productive skills or ensuring consistent learner progress (Liu et al., 2002). These issues underscore the need for thoughtful implementation to maximize TELL's potential.

## Educational Podcasts

As a dynamic TELL tool, podcasts offer EFL learners engaging, context-rich content that facilitates self-directed learning (Gusfira & Putri, 2022; Shahramiri & Gorjian, 2013). Beyond enhancing core skills like listening and speaking, they significantly boost learner motivation and confidence (Sansinadi & Wardhany, 2020). Modern podcasts encompass diverse formats, from academic lectures to peer-created content, resonating with younger, digitally-accustomed audiences (Rüdel, 2007; Tobin & Guadagno, 2022). By delivering authentic native-speaker dialogue and varied accents, podcasts transcend the rigidity of traditional methods (Bakhsh & Gilakjani, 2021). Their inherent flexibility allows for self-paced, repeated engagement, making them a crucial resource for diverse learners and those with special needs (Conroy & Kidd, 2022; Enriquez et al., 2023).

The pedagogical value of podcasts lies in their ability to create immersive, interactive learning environments. They promote active participation through activities like discussions or comprehension tasks, enhancing skills like pronunciation and vocabulary (Agarid & Nurzahra, 2018). Research highlights their role in reducing learning anxiety, improving student-teacher rapport, and fostering deeper engagement, often leading to better academic outcomes (König, 2021; McGarr, 2009). Students also prefer podcast-based assignments over traditional essays, finding them more effective for building communication confidence (Hopkins, 2012). Moreover, creating podcasts encourages creativity and collaboration, as learners can produce and share content with peers (Alizadeh, 2018). Despite their benefits, podcasts face challenges in ELT. Technical issues such as unstable internet or poor audio quality can disrupt learning, while limited digital literacy may hinder access for some learners (Fachriza, 2023). Audio-only podcasts may lack visual cues, making comprehension difficult, and some learners find them less interactive than classroom settings due to limited teacher feedback (Gusfira & Putri, 2022). These challenges highlight the need for thoughtful integration to maximize the potential of podcasts.

## Modal Verbs in English Grammar

Modal verbs are vital for expressing nuances in English, covering abilities, possibilities, and obligations. Their mastery is difficult for EFL learners due to their context-dependent meanings and dual logical-pragmatic nature. Modality encompasses epistemic probability and deontic necessity, requiring learners to navigate complex pragmatic functions like polite requests or commands (Turdiboyeva, 2024). Misusing these verbs can lead to unnoticed miscommunication, a problem often compounded by teaching methods that emphasize rote learning rather than contextual fluency (Ahmed, 2021).

Research on modal verb acquisition has a rich history, particularly in developmental linguistics. Hirst and Weil (1982) explored how children aged three to six grasp modal propositions, finding that epistemic modals (e.g., expressing possibility) are understood earlier than deontic ones (e.g., commands), though task complexity may influence results. Byrnes and Duff (1989) confirmed these findings, noting that familiar modals like *has to*, are easier for young learners than less common ones like *might*. Noveck et al. (1996) further suggested that epistemic modals involve logical inferences beyond mere speaker commitment, adding depth to their acquisition challenges. These studies highlight that modal verb mastery involves understanding both their relative strength and contextual application, a process that extends to EFL learners.

For non-native speakers, the multifaceted meanings of modals—shifting based on context—pose significant hurdles. While native speakers intuitively use modals to soften requests or assert authority, EFL learners often struggle with these subtleties, leading to errors that disrupt communication (Cheng & Qiu, 2007). Traditional teaching approaches, which may focus on

grammatical rules without sufficient real-world application, exacerbate these difficulties (Iranmanesh & Motallebikia, 2015). As a result, learners need innovative strategies such as technology-enhanced tools to bridge the gap between form and function.

### Empirical Studies

While research highlights the potential of podcasts, methodological gaps remain. Yeh et al. (2021) found that syllabus-integrated podcasts enhance motivation, yet the study lacked objective proficiency metrics. Conversely, Gholami and Mohammadi's (2015) quasi-experimental study showed that active podcast creation improved Iranian learners' vocabulary and attitudes more effectively than passive methods, though its scope was limited to lexis.

Other research presents a mixed outlook. Razaghi et al. (2022) found corpus-based learning superior to podcasts for vocabulary, though their findings are constrained by a narrow focus and vague instructional design. Collectively, these studies underscore the need for more comprehensive research into specific grammatical outcomes.

More recent investigations have sought to extend the use of podcasts to grammar and speaking skills but face similar methodological issues. Suseno (2024) examined learning the grammar and pronunciation among 12 college students, reporting qualitative improvements despite the small sample and reliance on observational data. Assia (2024) also found perceived gains in the fluency, vocabulary, and pronunciation among 50 Algerian learners, yet difficulties with fast speech and accents highlighted the need for content adaptation. While its mixed-methods design added depth, it still emphasized perceptions over measurable outcomes. Halimah et al. (2025) reported enhanced speaking skills, motivation, and vocabulary among Indonesian students, though persistent grammar difficulties and limited participant numbers constrained generalizability.

Collectively, these studies suggest that podcasts can enhance listening, vocabulary, and speaking skills (Halimah et al., 2025; Rachmaniputri et al., 2021), yet the literature remains fragmented and largely descriptive. The emphasis on vocabulary and general language skills (e.g., Gholami & Mohammadi, 2015; Razaghi et al., 2022) has overshadowed specific grammatical domains such as epistemic modal verbs (EMVs), which require a nuanced understanding of context and pragmatics. Although some research (Nan & Ciang, 2024; Suseno, 2024) addresses learning grammar through podcasts, it does not distinguish between recognition and production—key aspects of EMV mastery (Iranmanesh & Motallebikia, 2015). Moreover, Iranian learners' attitudes toward podcast-based instruction remain underexplored (Eady & Lockyer, 2013), indicating a gap in understanding both the cognitive and affective dimensions of podcast-mediated grammar learning. To address this gap, the present study adopts a mixed-methods approach to examine the main effects of educational podcasts on English modal verb (EMV) recognition and production as well as to explore Iranian EFL learners' attitudes toward this instructional tool. By investigating these dimensions, the study aims to provide empirical insights into optimizing podcast-based instruction for EMV acquisition in EFL contexts.

## 3. METHODOLOGY AND DESIGN

### Participants

To investigate the effectiveness of educational podcasts in teaching EMVs to EFL learners, this study employed a quasi-experimental mixed-method design with control and experimental groups. A pilot study was conducted three months before the onset of the study to refine the research

methodology, determine the optimal number of podcast episodes, and identify potential design flaws. The pilot study involved 15 undergraduate students (aged 19–26, male and female) at Islamic Azad University, Rasht, Iran, enrolled in a General English course. For the main study, 75 EFL students from the same university were initially recruited. The Oxford Quick Placement Test (OQPT) was administered to ensure homogeneity, with 25 students excluded for scores deviating one standard deviation above or below the mean, leaving 50 intermediate-level students in the age range of 20–25. These were randomly assigned to one experimental group ( $n=25$ ) and one control group ( $n=25$ ). Participants absent for two or more sessions were excluded from the analysis to ensure data reliability.

## Instruments

### *Oxford Quick Placement Test*

The Oxford Quick Placement Test (OQPT), developed by Cambridge ESOL and Oxford University Press, is a trusted tool for assessing English proficiency, validated with over 6,000 students across 20 countries. This study used the paper version. Sixty multiple-choice questions cover vocabulary, grammar, and cloze tasks, giving a clear snapshot of participants' general English skills to ensure they're at a similar level. Designed by [Allan \(1992\)](#), version 2 of the OQPT was used, with 60 minutes allotted for completion. Its reliability is strong, with a reported Cronbach's Alpha of .809 ([Allan, 1992](#)) and the score distribution met normality assumptions (skewness and kurtosis within  $\pm 1.96$  of standard errors). Administered at the beginning of the study, the OQPT ensured participant homogeneity.

### *Pretest and Posttest in Modal Verbs*

To evaluate the students' understanding of English modal verbs, a tailor-made instrument was constructed to assess both recognition and production in contextually grounded situations. The test comprised two sections. The first section contained 25 multiple-choice items requiring students to choose the appropriate modal verb (e.g., *can*, *might*, *must*, or *should*) according to the semantic function of the sentence, such as distinguishing obligations from permission. Section 2 consisted of 15 fill-in-the-blank items designed to assess learners' controlled production of English modal verbs. Unlike the recognition section, students were required to retrieve and supply the appropriate modal verb without being provided with options. Although the task was constrained to single-word responses, it required contextualized recall and form-function mapping, thereby moving beyond recognition to guided output. This format allowed the researchers to examine learners' ability to produce modals accurately in specific communicative situations, such as giving advice ("You should study harder for the IELTS exam") or expressing possibility ("It might rain later"). Section 2 features 15 fill-in-the-blank sentences, requiring students to supply the appropriate modal verb for situations like giving advice ("You should study harder for the IELTS exam") or expressing possibilities ("It might rain later"). Totalling 20 points, the test evaluates comprehension and practical use of modals for necessity, permission, and more. Participants were given 40 minutes to complete the test. The time allocation was determined based on pilot testing, which indicated that most students required approximately 30–35 minutes to complete all items without time pressure. To clarify the scoring scheme, each item in the test was given an equal weight, but scores were normalized to a 20-point scale to ensure consistency. Moreover, both the pretest and posttest were piloted with a similar group of learners to check the reliability, and minor revisions were made based on the item difficulty and clarity. To control for testing and practice effects, identical items were used in the pretest and posttest with a fully randomized item order in the posttest ([Creswell](#)

& Creswell, 2017). Although the use of identical items may raise concerns regarding potential memory effects (Roediger & Karpicke, 2006), this design choice was made deliberately to ensure strict construct comparability by assessing the same linguistic features at the same level of difficulty across both testing occasions. In addition, scoring procedures focused on the grammatical accuracy and appropriate modal use, rather than on whether students reproduced responses identical to those provided in the pretest. Consequently, any observed changes in performance can be more confidently attributed to instructional effects rather than test familiarity, while preserving the validity and comparability of the measurement instrument. Validated by three experienced professors from Islamic Azad University, Rasht, the test achieved a Cronbach's Alpha reliability of .76 during piloting.

### *Semi-structured Interview*

To explore participants' attitudes toward using podcasts for grammar learning, semi-structured interviews were conducted with the students in the experimental group and EFL teachers. Unlike structured interviews with fixed questions, this exploratory approach, as described by Braun and Clarke (2006), allowed flexible discussions around the benefits and drawbacks of podcast-based instruction. Four open-ended questions, translated into Farsi for lower-level learners, encouraged candid responses about the strategy's strengths and challenges in English classes. Interviewees responded in Farsi, and their answers were translated into English for qualitative analysis, providing rich insights into their perceptions for the study's final research question. To ensure translation validity, the interview questions were first translated from English into Farsi and then back-translated into English by an independent bilingual expert. Discrepancies between the original and back-translated versions were discussed and resolved to ensure semantic equivalence. The researcher also switched between reading the codes line by line and tried to process the data in an attempt to identify meaningful qualitative units for analysis. To address the need for greater interpretive depth, the qualitative data were not merely categorized but were analyzed following the Braun and Clarke (2006) model of thematic analysis. After familiarization with the transcripts, initial codes were generated inductively to capture recurring ideas, which were then grouped into broader themes reflecting participants' perceptions of podcast-based grammar learning. These themes were reviewed and refined to ensure internal coherence and distinction. The analysis, thus, went beyond simple categorization to interpret the underlying reasons behind learners' attitudes, highlighting how podcasts fostered a sense of agency and contextualized learning opportunities within the EFL classroom. This interpretive process provided a more nuanced understanding of why the intervention influenced learners' perceptions, rather than merely reporting what occurred.

For estimating the credibility of the interview questions, the researcher presented the information gathered from the interviewees and asked them to pay attention to each question and the answers given by themselves to see whether there are any problems with or differences in the answers. The participants approved the accuracy of the data and, therefore, the credibility of the interview was approved. All interviews were audio-recorded to ensure accurate capture of participants' responses and to facilitate detailed transcription for qualitative analysis. To further enhance the credibility, the participants reviewed their responses and confirmed that the data accurately reflected their intended meaning. This member-checking procedure helped establish the trustworthiness and validity of the interview findings. For the aim of the dependability, 30% of the results of the interview were re-checked by two colleagues of the researcher who were familiar with the data analysis section and the results of the inter-rater reliability were reported to be .95.

## Procedure

For the main study, 75 native Persian-speaking EFL students were recruited from the same university. The OQPT was administered to ensure the homogeneity. Twenty-five students with scores deviating one standard deviation from the mean were excluded, leaving 50 participants randomly assigned to one experimental group ( $n=25$ ) and one control group ( $n=25$ ). Participants signed a consent form explaining the purpose of the study and confirming that the test performance would not affect their course grades. The experimental group received EMV instruction via podcast episodes featuring authentic dialogues, while the control group used traditional paper-and-pencil drills. The intervention spanned three months, with two sessions per week (10 sessions in total).

To assess EMV recognition and production, a custom-designed test was administered as a pretest and a posttest. Participants had 40 minutes to complete each test, with item order shuffled to minimize practice effects.

In the podcast group, the class began with a lead-in which was related to the theme of each podcast to activate the learners' background knowledge. Before listening to the podcast, the specified grammar of the podcast in EMVs was written on the board by the instructor. After that, the podcast was played, and the learners were asked to take notes. Later, the podcast was played for the second time, and the learners were allowed to complete their notes. The participants were then asked to guess the meanings and functions of EMVs based on the podcast they had heard. Then the complex parts of each podcast were reviewed through questions and answers by the teacher. For the intervention, the podcasts were developed specifically for this study. Each podcast was recorded by native English speakers with an American accent. Each listening session lasted approximately 20–25 minutes, including pre-listening, while-listening, and post-listening activities, with each podcast segment ranging from three to five minutes to maintain learners' attention and ensure the manageability. Learners listened to each podcast twice: during the first listening, they completed preliminary notes and during the second listening, they added additional notes and were asked to infer the meanings and functions of English modal verbs based on the contextual cues. The podcasts were selected and designed by the researcher in consultation with the course instructor based on learners' proficiency level (i.e., intermediate), as determined by their placement test scores and course requirements. The linguistic complexity, speech rate, and vocabulary load were carefully controlled to match the learners' level. Complex sections were then clarified and discussed through teacher-led questions and answers to reinforce comprehension. Regarding practice types, podcast activities initially focused on modal recognition where learners identified and interpreted EMVs in context during listening tasks. This was followed by guided production activities, such as summarizing the content of podcasts and constructing sentences using target modal verbs, to support the transition from comprehension to active use.

In the control group, the class began with a lead-in related to the theme of each lesson on EMVs to activate the learners' background knowledge. Before engaging with the drills, the specified EMVs were listed on the board by the instructor (without explicit rule explanation, to prime focus only). After that, the learners were provided with traditional paper-and-pencil drills on EMVs and asked to complete them while taking notes on key examples. Later, the drills were reviewed a second time, allowing learners to refine and complete their notes. The participants were then prompted to infer the meanings and functions of EMVs based on the examples in the drills. Finally, more complex elements of each drill were reviewed through structured teacher-led questions and answers, probing ambiguities and facilitating clarification. This procedure paralleled the experimental group's structure in all respects except the core input medium, ensuring

equivalent levels of explicit priming, scaffolding, and mediation while contrasting decontextualized mechanical exercises with authentic audio contexts.

To explore participants’ attitudes toward podcast-based instruction, semi-structured interviews were conducted with 15 out of 25 students in the experimental group. Four open-ended interview questions, presented in Farsi for accessibility, prompted discussions on the benefits and challenges of the podcast-based strategy. Each interview lasted between 10 and 20 minutes and was audio-recorded, translated into English, and analyzed qualitatively. A total of six interview sessions were conducted to ensure data saturation and capture diverse perspectives on podcast use in grammar instruction. Following the final treatment session, the posttest of EMVs was administered. The posttest was conducted immediately after the last lesson to assess learners’ recognition and production of EMVs, with no intervening time gap between the conclusion of the treatment and assessment.

Data Analysis

Quantitative data from the pretest and posttest on EMVs were analyzed using the Statistical Package for Social Sciences (SPSS) version 28. Means and standard deviations were calculated for the experimental (podcast-based instruction) and control (traditional drills) groups. Independent sample t-tests were conducted to test the null hypotheses that no statistically significant differences existed between groups in EMV recognition and production. For the qualitative component addressing learners’ attitudes, semi-structured interview data were analyzed using thematic analysis, as outlined by Braun and Clarke (2006). This method involved six stages: (1) familiarizing with the data, (2) generating initial codes, (3) searching for themes among codes, (4) reviewing themes, (5) defining and naming themes, and (6) producing a final report with themes and sub-themes. The researcher read interview transcripts line by line, coding meaningful units to identify patterns related to the benefits and challenges of podcast-based instruction.

4. RESULTS

The first research question dealt with the effectiveness of pedagogical podcasts on the recognition of English modals. A pre-test and a posttest in the recognition of EMVs were presented to the learners to investigate EFL learners’ progress between the groups. Table 1 shows the descriptive statistics of the pretest in the groups in terms of EMVs’ recognition.

Table 1: Descriptive Statistics of Pre-test of EMVs in the Recognition

| Group               | N  | Mean    | Std. Deviation | Minimum | Maximum |
|---------------------|----|---------|----------------|---------|---------|
| Control Group       | 25 | 14.4214 | 1.69464        | 13.00   | 15.00   |
| Experimental Groups | 25 | 13.8769 | 1.67875        | 12.00   | 15.00   |

The descriptive statistics presented in Table 1 for the recognition pretest of EMVs revealed subtle differences between the Control Group (Mean=14.42, SD=1.69) and the Experimental Group (Mean=13.87, SD=1.67). The Experimental Group exhibited a slightly higher mean score compared to the Control Group, suggesting a marginally better performance on average. Both groups had comparable standard deviations (1.67 for Experimental vs. 1.69 for Control), indicating

similar variability in scores. After the treatment, a posttest in EMV's recognition was administrated to the learners in both groups (See [Table 2](#)).

**Table 2: Descriptive Statistics of Post-test of EMVs in the Recognition**

| Group               | N  | Mean    | Std. Deviation | Minimum | Maximum |
|---------------------|----|---------|----------------|---------|---------|
| Experimental Groups | 25 | 17.9838 | 1.62217        | 14.00   | 20.00   |
| Control Group       | 25 | 15.7042 | 1.73862        | 13.00   | 17.00   |

The descriptive statistics presented in [Table 2](#) for the post-test of EMVs in the recognition task reveal notable differences between the Experimental Group and the Control Group. With equal sample sizes (N=25), the Experimental Group achieved a higher mean score of 17.98 compared to the Control Group's 15.70, suggesting that the interventions (e.g., podcast and/or follow-up activities) in the Experimental Group were associated with better recognition performance. However, this table cannot clearly show the existence of significant differences between the two groups. To run an independent sample t-test, a set of assumptions such as test the normality of the data was needed ([Table 3](#)).

**Table 3: Kolmogorov-Smirnov tests of normality of posttest of Recognition**

|           | Kolmogorov-Smirnov <sup>a</sup> |    |       | Shapiro-Wilk |    |      |
|-----------|---------------------------------|----|-------|--------------|----|------|
|           | Statistic                       | df | Sig.  | Statistic    | df | Sig. |
| Treatment | .138                            | 25 | .200* | .939         | 25 | .475 |
| Control   | .174                            | 25 | .200* | .962         | 25 | .329 |

\*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

As the results showed, the *p*-value in the control group with *df* = 25 is .329, and the *p*-value of the treatment group with *df*=25 is .475. As both significance levels are higher than 0.05, the data is normally distributed in the posttest of grammar. Because the distribution of the data was normal in the posttest of recognition, an independent sample t-test was run ([Table 4](#)).

**Table 4: Results of Independent Sample t-test in the Recognition of EMVs**

|                             | Levene's Test for Equality of Variances |       | t-test for Equality of Means |        | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |       |
|-----------------------------|-----------------------------------------|-------|------------------------------|--------|-----------------|-----------------|-----------------------|-------------------------------------------|-------|
|                             | F                                       | Sig.  | T                            | df     |                 |                 |                       | Lower                                     | Upper |
| Equal variances assumed     | 1.149                                   | 0.450 | 4.793                        | 48     | .000            | 2.280           | 0.476                 | 1.323                                     | 3.236 |
| Equal variances not assumed |                                         |       | 4.793                        | 47.760 | .000            | 2.280           | 0.476                 | 1.323                                     | 3.236 |

The results of the independent samples t-test ( $t(48) = 4.79$ ,  $p < .000$ ,) indicated a statistically significant difference between the mean scores of the experimental group’s and control group’s on the posttest of recognition for EMVs. Specifically, the experimental group ( $M = 17.98$ ,  $SD = 1.62$ ) outperformed the Control Group ( $M = 15.70$ ,  $SD = 1.73$ ), with a mean difference of 2.28, suggesting that the interventions (i.e., podcasts) were effective in enhancing recognition performance. The 95% confidence interval, ranging from 1.32 to 3.23, does not include zero, reinforcing that the observed difference is unlikely to be due to chance. The Cohen’s d effect size was calculated:  $d = 1.35$ , indicating a large practical significance of the effect of the intervention. Thus, it can be concluded that the pedagogical podcasting demonstrated significantly higher recognition performance post-intervention. The second research question focused on the production of EMVs. The descriptive statistics of the pretest of EMVs’ production has been reported in [Table 5](#).

**Table 5: Descriptive Statistics of Pre-test of EMVs in the Production**

| Group              | N  | Mean  | Std. Deviation | Minimum | Maximum |
|--------------------|----|-------|----------------|---------|---------|
| Control Group      | 25 | 12.41 | 1.74           | 11.00   | 13.00   |
| Experimental Group | 25 | 13.60 | 1.72           | 11.00   | 14.00   |

The Descriptive Statistics of the Pretest of EMVs in the Production, as shown in the provided table, indicated that the Experimental Group ( $M=13.60$ ,  $SD=1.72$ ) and the Control Group ( $M=12.41$ ,  $SD=1.74$ ) had, to some extent, similar performance prior to the intervention. The Experimental Group exhibited a slightly higher mean score compared to the Control Group, with a mean difference of 0.18, suggesting minimal pre-existing differences in production abilities. Both groups

displayed similar variability in scores, with standard deviations of 1.72 and 1.74, respectively. Table 6 shows the descriptive statistics of the posttest of production.

**Table 6: Descriptive Statistics of Post-test of EMVs in the Production**

| Group              | N  | Mean  | Std. Deviation | Minimum | Maximum |
|--------------------|----|-------|----------------|---------|---------|
| Control Group      | 25 | 15.13 | 1.64           | 11.00   | 16.00   |
| Experimental Group | 25 | 17.59 | 1.78           | 13.00   | 20.00   |

Table 6 reveals that the mean score of the experimental group on the posttest of EMVs in production was 17.59 with a standard deviation of 1.78. In addition, the mean score of the Control Group on the posttest with a standard deviation of 1.64 was 15.13. To explore the existence of any statistically significant difference between the two groups after the intervention and in terms of EMVs production knowledge, an independent sample t-test was conducted. The assumption of homogeneity of variances was met (Levene's  $F = 1.17$ ,  $p = 0.430 > 0.05$ ), justifying the use of the "Equal variances assumed" row in the table (Table 7).

**Table 7: Results of Independent Sample t-test in the Production of EMVs**

|                             | Levene's Test for Equality of Variances |      | t-test for Equality of Means |        |                 |                 |                       |                                           |       |
|-----------------------------|-----------------------------------------|------|------------------------------|--------|-----------------|-----------------|-----------------------|-------------------------------------------|-------|
|                             | F                                       | Sig. | T                            | df     | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |       |
|                             |                                         |      |                              |        |                 |                 |                       | Lower                                     | Upper |
| Equal variances assumed     | 1.17                                    | 0.43 | 5.085                        | 48     | 0.001           | 2.464           | 0.485                 | 1.490                                     | 3.439 |
| Equal variances not assumed |                                         |      | 5.085                        | 47.650 | 0.001           | 2.464           | 0.485                 | 1.489                                     | 3.439 |

The results of the independent samples t-test ( $t(48) = 5.08$ ,  $p = 0.001$ , Cohen's  $d = 1.43$  representing a large effect size) indicated a statistically significant difference between the groups' mean scores on the posttest of production for EMVs. Specifically, the experimental group ( $M = 17.59$ ,  $SD = 1.78$ ) outperformed the control group ( $M = 15.13$ ,  $SD = 1.64$ ), with a mean difference of 2.46, suggesting that the interventions (e.g., podcast and/or activities) were effective in enhancing production performance. The 95% confidence interval, ranging from 1.49 to 3.43, does not include zero, reinforcing that the observed difference is unlikely to be due to chance. Thus, it

can be concluded that the experimental group demonstrated significantly higher production performance post-intervention compared to the control group.

For the last research question, the attitudes of 15 out of 25 learners (those who volunteered) in the pedagogical podcast group were reported. Thematic analysis was done for the content of the interview to summarize data obtained from the interview with the participants who were exposed to the educational podcasts for learning EMVs. The language learners were asked about the effectiveness of the educational podcasts in teaching and learning English modal verbs. They stated that the educational podcasts could be accessed from anywhere with an internet connection. They also believed that using podcast was convenient for them, allowing them to fit in study time around their schedule. In this regard they stated:

*"There are many different educational podcasts available. I can listen to the podcast at any time and have access to it from anywhere"*

They also highlighted the flexibility of using educational podcasts for learning a specific structure such as modal verbs. EFL learners also claimed that podcasts improved other aspects of their foreign language learning such as vocabulary, listening, and pronunciation. One of them said:

*"When I listen to podcasts about modal verbs, I can learn many new vocabulary items which are related to modal verbs in context."*

Another language learner stated:

*"This semester I had regular listening practices that have improved my ability to understand the spoken English easily. I can also listen to native-speaker pronunciation of modal verbs, while imitating their pronunciation and improve my own pronunciation."*

The next issue made by the EFL learners was related to the role of podcasts in reducing their anxiety. They could listen to the podcasts while they were doing other activities, such as exercising. One of the interviewees said:

*"I usually feel nervous or uncomfortable while speaking in front of my classmates. However, podcasts have provided me with a low-stress way to practice my English freely."*

EFL learners also talked about the cost-effectiveness of the available podcasts. They stated that the teachers introduced podcasts that were available freely so they could easily use them to improve their English skills. Finally, they said that it was easy for them to share podcasts with their friends or classmates.

Regarding the disadvantages of using the educational podcasts, EFL learners complained about the lack of visual aids in many podcasts. One of them said:

*"Some podcasts rely mainly on audio, which are difficult for me to understand. I need visual cues to learn better"*

The next issue was related to the limited amount of interaction between the teacher and the learners while using podcasts. Some of the learners preferred the classroom setting over podcasts since they believed they could not ask questions or receive immediate feedback from their teacher. Learners were also dissatisfied with some technical difficulties. One of them said:

*"I sometime face technical problems such as poor internet connection or low-quality sound which hinder my learning experience."*

Another language learner said:

*"I am not comfortable with technology and find it challenging to access and use the educational podcasts."*

Some learners were concerned about the distractions while they used podcasts. They believed that distractions such as noise or interruptions made it difficult for them to concentrate on the content of a podcast. Additionally, a few learners declared that it was difficult for them to retain information presented in the podcast without additional opportunities to practice or review.

A few learners mentioned that working on podcasts is time-consuming and that they had to invest a significant amount of time to see satisfactory improvement in their language learning. Finally, a few learners stated that learning through podcasts creates a limited engagement. Some learners found listening to podcasts to be a passive or less engaging experience than other forms of language learning. Table 8 summarizes the results.

**Table 8: The Participants Views Toward Using Educational Podcasts**

| Theme                | Sub-themes                              | Frequency |
|----------------------|-----------------------------------------|-----------|
| Perceived Benefits   | Accessibility (anytime/anywhere access) | 12        |
|                      | Convenience (fits personal schedule)    | 11        |
|                      | Variety of available podcasts           | 9         |
|                      | Flexibility in learning pace            | 10        |
|                      | Improved vocabulary learning            | 8         |
|                      | Improved listening comprehension        | 9         |
|                      | Improved pronunciation                  | 7         |
|                      | Reduced learning anxiety                | 6         |
|                      | Cost-effectiveness                      | 6         |
|                      | Ease of sharing with peers              | 5         |
| Perceived Challenges | Lack of visual support                  | 10        |
|                      | Limited teacher–learner interaction     | 8         |
|                      | Technical difficulties                  | 7         |
|                      | Distractions during listening           | 6         |
|                      | Time-consuming nature                   | 5         |
|                      | Limited engagement                      | 4         |
|                      | Limited retention without practice      | 4         |

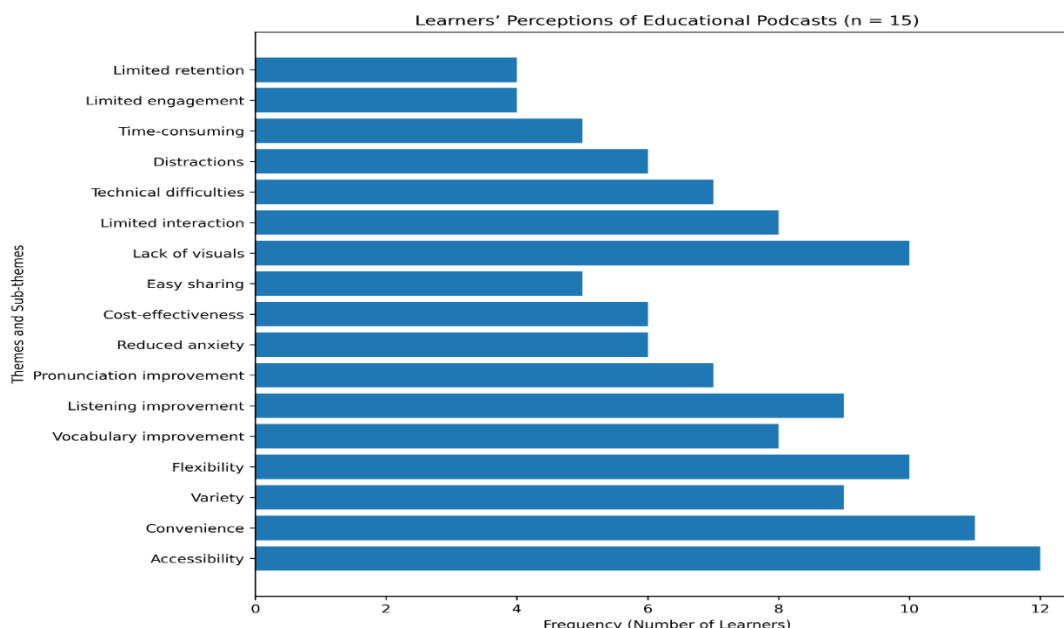


Figure 1: Learners' perceptions of the educational podcasts

## 5. DISCUSSION AND CONCLUSION

The current study was an attempt to investigate the efficacy of podcasts in teaching EMVs to EFL learners in terms of recognition and production. The results showed that using pedagogical podcasts improved EFL learners' EMVs in both recognition and production. Overall, the study suggests that podcasts can be a valuable tool in learning English grammar with the potential to improve student performance. These results are consistent with previous research (e.g., [Elekaei et al., 2020](#); [Mashhadi et al., 2016](#)), as individuals responded favorably to the ease and convenience of using podcasts, they were motivated to utilize more listening resources ([Asoodar et al., 2016](#)) which are incredibly rich with new vocabulary items in context ([Evans, 2011](#)), or they promoted "active learning and listening" ([Abdulrahman et al., 2018](#)). As a result, podcasts could be used in language classes to increase students' motivation ([Abdous et al., 2009](#); [Asoodar et al., 2016](#)) as well as to help teachers and students improve auditory skills and vocabulary expansion ([Mashhadi et al., 2016](#)).

The results of this study show that researchers and EFL teachers believe pedagogical podcasts are useful in improving EFL students' understanding of English modal verbs. These findings highlight how important it is to give students the right tools to help them learn English. By exposing students to speech from both native and non-native speakers, podcasts offer educators a special chance to accommodate a greater variety of learning preferences and styles. Additionally, students typically find podcasts to be interesting and entertaining. The findings of this study are consistent with earlier research by [Abdulrahman et al. \(2018\)](#), [Heilesen \(2010\)](#), and [Samad et al. \(2017\)](#), who also found podcasts to be a useful tool for improving language proficiency. The results contradict those of other studies, including one by [Bueno-Alastuey and Nemeth \(2022\)](#). They investigated the effects of Quizlet flashcards and student-produced podcasts on vocabulary retention and discovered no discernible difference between the two methods for learning new words. Participants, however, favored the Quizlet method. This is in contrast to our results which highlight the potential of podcasts designed especially for modal verb instruction and imply that the focus and content of podcasts' may be very important for their efficacy.

The results align with those of [Chaves-Yuste and de-la Peña \(2023\)](#). They found that podcasts successfully enhanced discriminative listening skills after conducting an eight-week listening practice with A1-level Turkish learners. This confirms our findings that listening to podcasts can help with language acquisition. However, our research also shows that in order to maximize the educational benefits of podcasts, carefully planned follow-up activities are essential. Lastly, [Suseno \(2024\)](#) discovered that students' capacity to express themselves is improved when they interact with new words and sentences in podcast content. This supports our findings that by offering real-world examples and context-rich scenarios, podcasts can aid in the acquisition of modal verbs, improving comprehension and production abilities. The authentic, contextualized language exposure offered by educational podcasts, which immersed learners in the natural uses of EMVs, is the rationale for the efficacy of pedagogical podcasts on EMV recognition and production.

The attitudes of EFL students in the podcast group were the subject of the final research question. Although the current study emphasizes the advantages of podcasts for EFL students, it is crucial to recognize some opposing perspectives. Contrary to this study, [Cann \(2007\)](#) found that students might not always embrace podcasts in the classroom. Despite this disparity, the participants of the study had favorable opinions of podcasts as useful educational resources, especially for vocabulary and listening comprehension. These results are consistent with those of [Asyifah and Indriani \(2021\)](#) and [Saeedakhtar et al. \(2021\)](#).

This study highlights the significance of developing a rich learning environment that integrates a variety of teaching strategies. Through a variety of strategies, such an environment would support the growth of modal verb knowledge, favoring discovery learning over rote memorization. By exposing students to real-world situations through podcasts, this change enables them to independently investigate the fundamental principles guiding the use of modal verbs.

The interviews with EFL learners provided in-depth perspectives on the role of educational podcasts in language learning, shedding light on both their benefits and challenges. Learners overwhelmingly expressed a positive attitude towards podcasts, emphasizing their effectiveness in improving listening comprehension and exposing them to diverse accents and authentic language use. Many reported that consistent listening practice helped them recognize speech patterns, intonation, and pronunciation, thereby boosting their overall comprehension skills. Furthermore, they appreciated the flexibility and accessibility of podcasts which allowed them to engage with English learning outside the classroom at their own pace and in various settings such as commuting or during leisure time. However, despite these advantages, some learners found it difficult to keep up with the natural speed of spoken English and struggled with unfamiliar vocabulary. Without accompanying visuals, some learners felt lost when trying to infer meaning from context, making comprehension more challenging.

The qualitative data revealed that podcasts were perceived as more engaging than traditional textbook activities due to their use of authentic materials and native-speaker models. Exposure to real-language contexts and diverse accents likely made EMVs more relatable and memorable, enhancing learners' motivation and comprehension. This authenticity, coupled with the variety of podcast topics, catered to different learning styles and interests, as noted by learners who appreciated personalized content, contributing to the significant post-test improvements.

### Conclusive Implications and Suggestions for Further Studies

This study provides evidence that educational podcasts can effectively enhance Iranian EFL learners' recognition and production of EMVs. By combining podcasts with structured follow-up activities, learners not only improved their grammatical knowledge but also reported gains in

vocabulary, listening, and pronunciation, along with reduced anxiety. Thematic analysis further confirmed learners' and teachers' positive perceptions of podcasts as accessible, flexible, and authentic tools that create meaningful language contexts. Despite some limitations such as limited interactivity and the absence of visual aids, these findings underscore the pedagogical value of integrating technology-enhanced methods into language instruction, particularly for teaching complex grammatical structures. The results of this study demonstrate the effectiveness of educational podcasts in enhancing the learning and both recognition and production of EMVs'. The quantitative findings revealed significant improvements in both recognition and production post-test scores for the experimental group compared to the control group. These results suggest that the interventions including podcasts and follow-up activities significantly enhanced learners' ability to recognize and produce EMVs. The qualitative data from thematic analysis further corroborated these findings, highlighting learners' and teachers' positive perceptions of accessibility, flexibility, and authenticity of podcasts in providing real-language contexts. Despite some limitations, such as the lack of visual aids and limited interactivity, the overall impact of the interventions was substantial, affirming the value of integrating technology-enhanced methods in language instruction. Collectively, these findings advocate for a balanced approach in EFL instruction through accessible technologies like podcasts to create a dynamic, learner-centered environment for mastering complex linguistic structures like EMVs.

The findings of the study regarding the use of educational podcasts for teaching EMVs suggest significant pedagogical implications for EFL learners, teachers, researchers, and curriculum developers. Learners should leverage the accessibility and authenticity of podcasts to enhance EMV comprehension and production for low-stress learning and for practical applications while addressing distractions through focused strategies. Teachers are encouraged to integrate podcasts into lessons with balanced activities, provide structured feedback, and curate diverse, interactive content to boost engagement. Researchers should investigate multimodal interventions, longitudinal effects, and learner variables to optimize podcast-based learning alongside developing assessment tools. Curriculum developers should embed podcasts in EFL syllabi with supplementary materials, digital literacy training, and collaborative tasks to ensure relevance and balance between comprehension and production, fostering effective, learner-centered instruction.

Future research should extend the findings on using educational podcasts for teaching EMVs by exploring the effectiveness of podcasts across other linguistic structures such as conditionals or phrasal verbs, and incorporating multimodal interventions with visual or interactive components to address learners' concerns about limited visuals and interactivity. Longitudinal studies are needed to assess the retention and real-life application of EMV skills while examining learner variables like proficiency, motivation, or technological comfort. Researchers should develop validated assessment tools and feedback mechanisms to overcome limitations in evaluation and feedback and investigate culturally relevant content to enhance engagement across diverse EFL contexts. Additionally, studies on teacher training, cost-effectiveness, and scalability in resource-constrained settings could ensure broader implementation, providing a comprehensive understanding of the potential of podcast-based learning in EFL instruction.

## References

- Abdous, M. H., Camarena, M. M., & Facer, B. R. (2009). MALL technology: Use of academic podcasting in the foreign language classroom. *ReCALL*, 21(1), 76–95.  
<https://doi.org/10.1017/S0958344009000020>
- Abdulrahman, T., Basalama, N., & Widodo, M. R. (2018). The impact of podcasts on EFL students' listening comprehension. *International Journal of Language Education*, 2(2), 23–33. <https://doi.org/10.26858/ijole.v2i2.5878>
- Ahmadi, D. (2017). The use of technology in English language learning: A literature review. *International Journal of Research in English Education*, 2(3), 115–125.
- Ahmed, M. A. (2021). Saudi EFL learners' use of English modal verbs: A study of challenges and solutions. *International Journal of Language and Literary Studies*, 3(2), 301–311.  
<https://doi.org/10.36892/ijlls.v3i2.991>
- Agarid, W. R., & Nurzahra, M. (2018). Analyzing podcast application to improve listening ability. *PROJECT (Professional Journal of English Education)*, 1(3), 175–180.
- Alizadeh, Y. (2018). Second language listening in Persian. In *The Routledge Handbook of Second Language Acquisition and Pedagogy of Persian* (pp. 235–256). Routledge.
- Al-Jarf, R. (2023). Grammar podcasts for ESL college students. *Online Submission*, 2(2), 36–43.  
<https://doi.org/10.32996/bjtep.2023.2.2.4>
- Allan, D. (1992). *Oxford Placement Test 2*. Oxford University Press.
- Arifah, A. (2014). Study on the use of technology in ELT classroom: Teachers' perspective. *ELT Forum: Journal of English Language Teaching*, 3(2), 1–8.
- Asoodar, M., Marandi, S. S., Vaezi, S., & Desmet, P. (2016). Podcasting in a virtual English for academic purposes course: Learner motivation. *Interactive Learning Environments*, 24(4), 875–896. <https://doi.org/10.1080/10494820.2014.937344>
- Assia, B. (2024). *The Role of Podcast in Developing EFL Students' Speaking Skill* (Doctoral dissertation, university center of abdalhafid boussouf-MILA).
- Asyifah, D. A., & Indriani, L. (2021). The student perspective: The impact of podcasts on EFL students listening comprehension. *Eduvelop: Journal of English Education and Development*, 4(2), 127–134. <https://doi.org/10.31605/eduvelop.v4i2.858>
- Bahrani, T., & Nekoueizadeh, M. (2014). The role of input in second language acquisition. *Journal of Advances in Linguistics*, 1(1), 1–6.
- Bahari, A. (2022). Artificial intelligence in language education: Opportunities and challenges. *Journal of Language and Education*, 8(2), 8–20.
- Bakhsh, H. S., & Gilakjani, A. P. (2021). Investigating the effect of podcasting on Iranian intermediate EFL learners' listening comprehension skill. *LEARN Journal: Language Education and Acquisition Research Network*, 14(2), 247–281.
- Baytak, A., Tarman, B., & Ayas, C. (2011). Experiencing technology integration in education: Children's perceptions. *International Electronic Journal of Elementary Education*, 3(2), 139–151.
- Bensaid, M., & Jiang, J. (2026). Differentiated instruction for multilingual learners: A thematic analysis of research and practice. *Journal of English Learner Education*, 19(1), 3.
- Bozorgian, H., & Shamsi, E. (2022). Autonomous use of podcasts with metacognitive intervention: Foreign language listening development. *International Journal of Applied Linguistics*, 32(3), 442–458.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101.

- Bueno-Alastuey, M. C., & Nemeth, K. (2022). Quizlet and podcasts: Effects on vocabulary acquisition. *Computer Assisted Language Learning*, 35(7), 1407–1436.  
<https://doi.org/10.1080/09588221.2020.1802601>
- Byrnes, H., & Duff, A. (1989). The acquisition of modal meanings in context. *Applied Psycholinguistics*, 10(3), 313–333. <https://doi.org/10.1017/S0142716400007990>
- Cann, A. J. (2007). Podcasting is dead. Long live video!. *Bioscience Education*, 10(1), 1–4.
- Chaikovska, O. (2020). The impact of podcasts designed through audacity on improving grammar skills. *Open Educational E-Environment of Modern University*, 8, 1–7.
- Chapelle, C. A., & Sauro, S. (2017). *The handbook of technology and second language teaching and learning*. Wiley Blackwell.
- Chaves-Yuste, B., & de-la Peña, C. (2023). Podcasts' effects on the EFL classroom: A socially relevant intervention. *Smart Learning Environments*, 10(1), 20.
- Cheng, L., & Qiu, R. (2007). Pragmatic competence and the use of English modals by Chinese EFL learners. *Asian EFL Journal*, 9(2), 23–40.
- Chiu, T. K. (2021). Introducing digital transformation to a school curriculum: Transforming learning with technology. *Educational Technology & Society*, 24(3), 1–13.  
<https://doi.org/10.46328/ijonse.343>
- Conroy, K., & Kidd, W. (2022). Podcasting and inclusive education: Supporting diverse learners through flexible digital media. *Journal of Inclusive Education*, 26(4), 389–404.
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Eady, M. J., & Lockyer, L. (2013). Tools for learning: Technology and teaching strategies. *Learning to Teach in the Primary School*, 2, 71–89.
- Elekaei, A., Tabrizi, H. H., & Chalak, A. (2020). Evaluating learners' vocabulary gain and retention in an e-learning context using vocabulary podcasting tasks: A case study. *Turkish Online Journal of Distance Education*, 21(2), 190–203.
- Elmi, F., Nikou, S., & Moghaddam, M. (2024). Digital transformation in education: New paradigms and approaches. *International Journal of Education and Technology*, 15(2), 23–38. <https://doi.org/10.58898/sij.v3i1.01-08>
- Enriquez, M. A., Santos, R. L., & Cruz, J. P. (2023). Podcast-based learning and accessibility in higher education. *Education and Information Technologies*, 28(2), 2143–2161.
- Evans, N. (2011). *Dying words: Endangered languages and what they have to tell us*. John Wiley & Sons.
- Fachrizza, A. (2023). Promoting EASPod application for academic speaking for EFL in Pesantren-Based university. In *International Conference on English Language Teaching (ICON-ELT)* (Vol. 4, No. 1).
- Farshi, N., & Mohammadi, Z. (2013). Use of podcasts in effective teaching of vocabulary: Learners' attitudes, motivations and limitations. *Theory and Practice in Language Studies*, 3(8), 1381.
- Gençlter, B. (2015). How does technology affect language learning process at an early age?. *Procedia – Social and Behavioral Sciences*, 199, 311 – 316.  
<https://doi.org/10.1016/j.sbspro.2015.07.552>.
- Gholami, R., & Mohammadi, M. (2015). The effect of active podcast creation on vocabulary development and attitudes of Iranian EFL learners. *Journal of Language Teaching and Research*, 6(5), 1015–1022. <https://doi.org/10.17507/jltr.0605.14>
- Godwin-Jones, R. (2018). Using mobile technology to develop language skills and cultural understanding. *Language Learning & Technology*, 22(3), 1–17.

- Gusfira, V. Y., & Putri, N. E. (2022). The use of English podcast among English education students at universitas Negeri Padang. *Journal of English Language Teaching*, 11(4), 544–555.
- Haddad, R. K. (2002). The effectiveness of an instructional program on promoting English language literacy among Jordanian kindergarten children. *International Journal of Research in Education and Psychology*, 5(01), 194–209.
- Halimah, N., Yusnida, D., & Ayouni, N. (2025). The student interest in learning speaking skills through English podcast. *Meucaee: Journal of Language Teaching, Linguistics, and Literature*, 1(1), 12–28.
- Hasan, M. M., & Hoon, T. B. (2013). Podcast applications in language learning: A review of recent studies. *English Language Teaching*, 6(2), 128–135. doi:10.5539/elt.v6n2p128
- Heilesen, S. B. (2010). What is the academic efficacy of podcasting?. *Computers & Education*, 55(3), 1063–1068. <https://doi.org/10.1016/j.compedu.2010.05.002>
- Hirst, D., & Weil, A. (1982). Modal propositions in early child language: An experimental study. *Journal of Child Language*, 9(2), 315–332. <https://doi.org/10.1017/S0305000900002311>
- Hopkins, J. (2012). Students' perceptions of podcasting as a learning tool in higher education. *Journal of Media Practice*, 13(2), 133–148.
- Iranmanesh, H., & Motalebikia, S. M. (2015). Teaching modal verbs: Task-based vs. traditional approaches. *International Journal of Foreign Language Teaching and Research*, 3(11), 39–46.
- Khudoyberdi ugli, S. J. (2024). Challenges of technology-enhanced language learning in higher education contexts. *International Journal of Language and Linguistics*, 11(1), 45–52.
- König, J. (2021). Podcast-based learning and student engagement in higher education. *Teaching in Higher Education*, 26(6), 789–804.
- Kukulka-Hulme, A., & Viberg, O. (2018). Mobile collaborative language learning: State of the art. *British Journal of Educational Technology*, 49(2), 207–218.
- Latifah, N., & Ajie, B. (2025). Analysis of the impact and benefits of technology trends in global accessibility and customized learning. *International Journal of Teaching and Learning (INJOTEL)*, 3(2), 406–418.
- Levy, M. (1997). *Computer-assisted language learning: Context and conceptualization*. Oxford University Press.
- Lim, F. V., & Aryadoust, V. (2021). Digital literacy and technology-enhanced language learning: Issues and implications. *Computer Assisted Language Learning*, 34(8), 1028–1050.
- Liu, M., Moore, Z., Graham, L., & Lee, S. (2002). A look at the research on computer-based technology use in second language learning: A review of the literature from 1990–2000. *Journal of Research on Technology in Education*, 34(3), 250–273.
- Luthfi, M. (2023). The significance of podcasting for EFL learning. *Journal of English Language Teaching and Learning (JETLE)*, 5(1), 60–75.
- Mashhadi, A., Hayati, M., & Jalilifar, A. (2016). The impact of podcasts on English vocabulary development in a blended educational model. *Applied Research on English Language*, 5(2), 145–172.
- McGarr, O. (2009). A review of podcasting in higher education: Its influence on the traditional lecture. *Australasian Journal of Educational Technology*, 25(3), 309–321.
- Nan, J., & Ciang, L. N. (2024). An action research on the impact of podcasts in grammar learning of elementary students. *International Journal of Language and Literary Studies*, 6(2), 360–384.
- Noveck, I. A., Hird, K., & Reimer, K. (1996). The acquisition of epistemic modal meaning: Logical inference in children. *Journal of Child Language*, 23(1), 85–106. <https://doi.org/10.1017/S0305000900009115>

- Noveck, I. A., Ho, S., & Sera, M. (1996). Children's understanding of epistemic modals. *Journal of Child Language*, 23(3), 621–643.
- Peña Gangadharan, S., & Niklas, J. (2019). Decentering technology in discourse on discrimination. *Information, Communication & Society*, 22(7), 882–899.
- Phillips, B. (2017). Student-produced podcasts in language learning--Exploring student perceptions of podcast activities. *IAFOR Journal of Education*, 5(3), 157–171.
- Procel, G. J. O., Medina, M. L. F., Sotomayor, D. J., & Sanchez, M. A. (2024). Using technology in English teaching. *Journal of Environmental Research and Public Health*, 17(9), 9.
- Rachmaniputri, F. I., Purnawarman, P., & Gunawan, M. H. (2021). Students' perceptions towards the use of podcasts in listening class. In *Thirteenth Conference on Applied Linguistics (CONAPLIN 2020)* (pp. 179–187). Atlantis Press.
- Razaghi, A., Faruji, L. F., & Salehi, M. (2022). Audio podcast retelling versus corpus-based learning and vocabulary knowledge development of English language learners. *Anatolian Journal of Education*, 7(1), 181–196.
- Reinders, H., & Pegrum, M. (2016). Supporting language learning on the move: An evaluative framework for mobile language learning resources. *EuroCALL Review*, 24(2), 3–14.
- Richards, J. C., & Rodgers, T. S. (2014). *Approaches and methods in language teaching* (3rd ed.). Cambridge University Press.
- Roediger, H. L., & Karpicke, J. D. (2006). The power of testing memory: Basic research and implications for educational practice. *Perspectives on Psychological Science*, 1(3), 181–210.
- Rüdel, M. (2007). Podcasting as a new educational technology. *Computer Assisted Language Learning*, 20(1), 45–58.
- Saeedakhtar, A., Haqju, R., & Rouhi, A. (2021). The impact of collaborative listening to podcasts on high school learners' listening comprehension and vocabulary learning. *System*, 101, 102588. <https://doi.org/10.1016/j.system.2021.102588>
- Samad, I. A., Bustari, A., & Ahmad, D. (2017). The use of podcasts in improving students' speaking skill. *Journal of English Language and Education*, 3(2), 97–111. <https://doi.org/10.26486/jele.v3i2.256>
- Sansinadi, I. T., & Wardhany, D. S. (2020). Podcast usage: Expanding English learning of undergraduate student at universitas Ahmad Dahlan. *English Education: Journal of English Teaching and Research*, 5(1), 13–24.
- Shahramiri, P., & Gorjian, B. (2013). The effect of podcast transcription activities on intermediate and advanced EFL learners' writing accuracy. *Advances in Digital Multimedia (ADMM)*, 40(3), 194–199.
- Shardlow, M., Przybyła, P., & Wróbel, K. (2022). Natural language processing for education: A survey. *Artificial Intelligence Review*, 55(4), 3291–3340.
- Shruthi, H. L., Radhakrishnan, A., Veigas, A. D., Railis, D. J., & Dinesh, R. S. (2025). Analyzing pedagogy and education in English language teaching using information and communication technology. *Education and Information Technologies*, 30(12), 16551–16573.
- Suseno, E. (2024). Using podcast material to modify foreign words and expressions to improve EFL learners' speaking abilities. *Linguistics Initiative*, 4(1), 16–29.
- Tobin, S. J., & Guadagno, R. E. (2022). Why people listen: Motivations for podcast consumption. *Journal of Radio & Audio Media*, 29(1), 1–18.
- Turdiboyeva, D. B. (2024). Functional and semantic analysis of English verbs. *Mental Enlightenment Scientific-Methodological Journal*, 5(03), 366–373.

- Warschauer, M. (1996). Computer-assisted language learning: An introduction. In S. Fotos (Ed.), *Multimedia Language Teaching* (pp. 3–20). Logos International.
- Warschauer, M., & Meskill, C. (2013). Technology and second language learning. In J. C. Richards & W. A. Renandya (Eds.), *Methodology in language teaching: An anthology of current practice* (pp. 303–318). Cambridge University Press.
- Yeh, H. C., Chang, W. Y., Chen, H. Y., & Heng, L. (2021). Effects of podcast-making on college students' English speaking skills in higher education. *Educational Technology Research and Development*, 69(5), 2845–2867.
- Zhang, Y., & Zhang, Y. (2025). Exploring technology-assisted language learning innovations and effectiveness in enhancing English linguistics skills for college students. *Education and Information Technologies*, 30(14), 20597–20625.