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Podcasting and Input and Output-based Language Learning of English Modal Verbs

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Abstract

This study investigates the effectiveness of podcasts in teaching EFL learners English modal verbs (EMVs). It argues that current deductive exercises are ineffective and proposes a more engaging alternative through podcasts. A quasi-experimental design with pre-test, post-test, and control group was employed. The Oxford Quick Placement Test ensured homogeneity among 193 initial EFL students at Islamic Azad University in Rasht, with 157 participants selected and randomly assigned to five experimental groups (n=26) and one control group (n=27). The experimental groups received training on EMVs via six podcast episodes, incorporating input-based (e.g., comprehension tasks) or output-based (e.g., speaking tasks) exercises. In contrast, the control group used traditional paper-and-pencil drills. All groups took pre-tests and post-tests on EMVs, with item order varied to mitigate practice effects. Results were analyzed for statistical significance, revealing a significant and promising improvement in EFL learners' EMV knowledge. The podcasts naturally integrated EMVs into the conversation rather than explicitly explaining grammar rules, making the learning process more engaging. Findings suggest practical applications for teachers designing podcast-based exercises to maximize language acquisition. The findings are discussed in light of current perspectives on language learning and development, and suggestions for future research are provided.

Keywords:
EFL, English modals, Input practices, Output practices, Podcasts

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Introduction

The ubiquitous nature of technology necessitates acknowledging its transformative impact on societies, including a paradigm shift in educational policies. This has led to the adaptation of educational settings through the implementation of novel pedagogical methods. Language learning is no stranger to this trend, with computer technology increasingly crucial in enhancing second/foreign language acquisition. Advancements in Computer Assisted Language Learning (CALL) allow for modifying traditional methods (Hasan & Hoon, 2013) by integrating computers into language pedagogy. Initially designed for non-educational purposes, podcasts represent one such CALL medium with significant potential to foster language skill development in learners (McBride, 2009; Suseno, 2024).

Due to the standardized nature of many beginner-level English language learning (ELL) tasks, technology can effectively deliver these structured practices. These instructional systems can allow learners to develop their language skills, including vocabulary, grammar, and pronunciation. While not a replacement for human instructors, technology can enhance and facilitate student learning, particularly for those facing financial or geographical barriers to traditional classroom settings. Podcasts, for instance, are a popular method among ELL learners to hone their listening and comprehension skills.

The concept of input has gained significant traction within recent SLA research employing cognitive models (Bahrani & Nekoueizadeh, 2014). Proponents of input-based approaches argue that language acquisition is primarily driven by exposure to linguistic input, encompassing written and spoken texts alongside language descriptions (Kawaguchi, 2021). From a cognitive perspective, input exposure is essential for language development. Research suggests that sufficient exposure facilitates acquisition (Zauche et al., 2016). In contrast, output-based instruction prioritizes communication, placing students in situations that demand productive tasks from the outset of a lesson or activity. The rationale behind this approach is that production allows learners to identify areas where their interlanguage (the language system used by learners before achieving full proficiency) is adequate or requires further development (Guo, 2022).

The debate surrounding the relative importance of input and output in SLA persists. Some studies, like Rassaei (2012), posit that input is more crucial, primarily facilitating access to the learner's developing L2 system. However, research by Doughty and Long (2008) suggests that mere exposure to input is insufficient for achieving native-like accuracy. This ongoing debate has driven researchers to compare the effectiveness of various input-based and output-based instructional approaches on L2 development (Rassaei, 2012).

Modal verbs present a particular challenge for learners. Their sheer number and seemingly arbitrary verb-particle combinations contribute to this difficulty. Coursebook presentations and teacher pronouncements that modal verbs must be memorized often exacerbate these issues, implying a lack of an underlying system (Iranmanesh & Motallebikia, 2015). However, closer examination of the particles reveals patterns that suggest a more systematic approach to mastering these verb forms might be possible.

Numerous scholars have conducted substantial research on the impact of CALL on student and instructor learning outcomes, identifying a range of socio-psychological factors that influence its effectiveness. These factors encompass potential downsides, such as learner isolation and reduced interaction, alongside the benefits of high learner flexibility and instructor characteristics. Additionally, various theoretical frameworks have been proposed to account for the advantages and disadvantages of CALL integration in higher education.

By addressing these points, the introduction could provide a clearer picture of the research and why it is essential. The following study addresses these gaps by examining how podcasts, as an engaging and accessible form of CALL, can improve the acquisition of English modal verbs (EMVs). Specifically, it aims to answer the question: How do podcasts compare to existing methods for teaching modal verbs, and how does this fit into the debate about providing learners with language input versus having them use the language output? Understanding these dynamics can help educators design effective language instruction strategies, leveraging technology to enhance EFL learners' comprehension and production skills. This study will also specify the learners' proficiency level, targeting intermediate EFL students, to ensure the findings are relevant and applicable to this demographic.

Literature Review

Podcasting

The emergence of portable devices like MP3 players and podcasts empowers learners to construct "individualized media environments" (Nason, 2005, p. 176). Podcasts, a form of digital media, comprise episodic audio files streamed online for download onto computers or mobile devices. The term is a portmanteau of "broadcast" and "pod." However, it is essential to clarify that podcasts are not synonymous with learning management systems, course management systems, or virtual learning environments.

The near-ubiquitous ownership of smartphones and computers has facilitated seamless integration into educational settings, fostering increased student engagement with technology-driven learning experiences. Podcasting, a relatively new method for sharing audio content online, emerged in 2005 and has developed rapidly since its inception (Selingo, 2006). Recognizing its potential to enhance educational outcomes,

educators readily adopted podcasting, initially leveraging its capabilities for information dissemination and news updates (Adams-Chapman, 2006).

The rise of podcasting can be attributed to its ability to offer time-shifted access to information. Users are empowered to consume audio content on MP3 players and other devices at their convenience, starkly contrasting traditional radio's limitations (Scutter et al., 2010). Dissatisfaction with generic content and excessive advertising in traditional radio has fueled the demand for more personalized content catering to specific listener interests (Adams-Chapman, 2006). This media fragmentation empowers listeners with more excellent choices, fostering a sense of control over their listening experience and potentially strengthening their connection with preferred content providers.

The self-directed nature of podcasts aligns well with principles of learner autonomy and fosters a sense of accomplishment through self-paced learning (Scutter et al., 2010). Students benefit from the flexibility and accessibility podcasts offer, allowing them to learn anytime and anywhere (Ibrahim, 2022; Andersen & Dau, 2020). While podcast consumption demands strong time management and self-discipline, many EFL learners embrace podcasts due to their potential to improve listening and speaking skills (Abdulrahman et al., 2018; Samad et al., 2017). Podcasts cater to students' diverse learning styles and needs, particularly those who may find the traditional classroom environment intimidating (Heilesen, 2010). Introverted or shy learners who are often hesitant to participate in class discussions can benefit from the non-threatening nature of podcasts. Unlike a traditional classroom setting where the instructor might prompt participation, podcasts allow these students to engage with the material at their own pace, fostering a sense of self-confidence and improved focus on comprehension.

While podcasting offers numerous benefits, it is essential to acknowledge potential drawbacks related to social and psychological factors. A key concern is the limited human interaction inherent in podcast-based learning, which could lead to feelings of isolation for some students and teachers (Moss et al., 2010). Additionally, learners lacking strong self-discipline and essential study skills may succeed more in traditional classroom settings. Research by Zydney et al. (2020) investigating blended learning environments highlights student concerns regarding technology-related timing issues and the potential for an unpredictable learning environment that can lead to student distrust. Some studies have been conducted on podcasting; for instance, Bueno-Alastuey and Nemeth (2022) explored the impact of student-created podcasts and Quizlet flashcards on vocabulary retention, considering receptive and productive vocabulary knowledge. Results indicated no significant difference between the two approaches in vocabulary acquisition, although both were effective in teaching new words. Participants, however, showed a preference for the Quizlet approach. Furthermore, Razaghi et al. (2022) examined the effects of audio podcast retelling

versus corpus-based vocabulary learning on the vocabulary development of Iranian English language learners. After administering a pretest, one experimental group learned vocabulary through podcasts, while the other used corpus examples. Post-test results revealed that the corpus-based learning group significantly outperformed the podcast group. To demonstrate the impact of podcasts on the development of A1-level students' oral reading, reading comprehension, pronunciation, and discriminative listening skills, an 8-week podcast-supported listening practice was conducted by Chaves-Yuste and de-la Peña (2023). This study involved 12 participants learning Turkish as an elective course at a Central European university. Using a single-group quantitative design, the research included pretests and post-tests, with data collected from the Turkish Language Teaching as a Foreign Language A1 Level Discriminative Listening Skill Test and discriminative listening worksheets used during the skill development process. The results indicated that podcasts improve discriminative listening skills for A1-level Turkish learners abroad. First-year students often struggle with understanding new concepts. To address this, ten students participated in a study by Suseno (2024) utilizing technology and a reliable internet connection for teaching. Qualitative analysis of the teaching process concluded that engaging with unfamiliar words and sentences in podcast material enhances students' ability to communicate their ideas. This method can be helpful for teachers and encourages further research.

Input and Output Practice

Within the second language acquisition (SLA) field, a widely accepted notion is that exposure to comprehensible input is critical for successful language acquisition (e.g., Krashen, 1985). Developing fluency in a second language is considered highly improbable without access to appropriate input. Structured-input instruction emphasizes form over meaning, focusing on linguistic elements while minimizing language production (e.g., grammar drills). While students receive explicit instruction on essential grammatical structures, the practice activities are not designed to elicit language output. Krashen's (1985) seminal work, the Input Hypothesis, was among the first to highlight the importance of comprehensible input in SLA classrooms. The hypothesis proposes that language acquisition occurs when learners are exposed to input that includes grammatical structures slightly above their proficiency level. Krashen suggests that mutual intelligibility (i.e., the ability to understand and be understood) is a critical indicator of appropriate input level. Therefore, the Input Hypothesis emphasizes that providing comprehensible input, primarily through reading and listening tasks, is central to language acquisition in classroom settings. In this context, the teacher's primary role is ensuring students receive sufficient comprehensible input. Building on previous research, VanPatten's (2002, 2003) Input Processing (IP) model delves into the processes by which language learners acquire form-meaning

relationships. The model emphasizes that processing resources available to learners and the meaning-bearing nature of the language forms significantly influence how learners process these forms (Harrington, 2004). In essence, IP addresses the transformation of input into intake, a crucial step in language acquisition across various contexts (VanPatten, 2002). The model focuses explicitly on how learners extract form from input and parse sentences during comprehension, all while prioritizing meaning acquisition (VanPatten, 2002, p.757). VanPatten (2003) defines input processing as the strategies and mechanisms learners employ to establish links between linguistic forms and their corresponding meanings or functions (p. 1). It is important to note that the principles and sub-principles outlined within the IP theory are applicable across diverse learning environments, including ESL/EFL contexts and classroom versus natural settings. The exploration of input processing in second language acquisition (L2) research was initially inspired by work conducted in the field of first language acquisition (L1) by scholars like Slobin (1973) and Bever (1970). Earlier L2 work (Nam, 1975; VanPatten, 1984) was principally interested in the assignment of function to nouns (e.g., subject/agent vs. object/patient), but work on input processing has subsequently led to questions about how learners link particular forms (e.g., inflections) to their meanings and functions.

While Krashen's Input Hypothesis (1985) emphasized the importance of comprehensible input for SLA, subsequent research has challenged the notion that input guarantees successful language acquisition (Gass & Mackey, 2014; Swain, 1995; Harley, 1989)—these critiques center on the fundamental differences between processing linguistic input and output. Research on the negotiation of meaning suggests that learners actively select and internalize specific elements from input, using them to construct their responses (Zhang, 2009). Recognizing the undeniable role of input in SLA, scholars like Swain (1995) and Yanmin and Yi (2019) advocate for a more comprehensive approach that combines input provision with opportunities for comprehensible output production.

English Modals

Modal verbs are critical in SLA due to their pervasive presence in spoken language. They convey various meanings, including permission, obligation, ability, and possibility. While models hold fixed core meanings, their usage in real-world communication can introduce subtle semantic variations. Kreidler (1999, p. 240) aptly highlights this complexity, stating that "modal verbs have numerous subtleties in what they express in different contexts." This multifaceted nature contributes to the challenges faced by second language learners in acquiring modal verbs. Leech (1987, p. 71) further emphasizes this difficulty, noting that "many pages, chapters, books have been written about the modal auxiliary verbs in English. What makes it so difficult to

account for the use of these words ... is that their meaning has both a logical and a practical (pragmatic) element."

In crafting podcasts for instructional purposes, particularly for teaching modal verbs, a tailored approach is essential to maximize their effectiveness (Al-Jarf, 2023). Podcast content should be meticulously curated to integrate modal verbs into contextualized dialogues and scenarios naturally, mirroring real-life language use. This ensures learners encounter modal verbs authentically, facilitating a deeper understanding and retention of their usage. Furthermore, podcasts should model diverse language registers, from formal to informal contexts, exposing learners to varied linguistic nuances. Interactive elements within podcasts, such as comprehension questions and interactive exercises, foster active engagement and deepen learners' comprehension (Chaikovska, 2020). Incorporating feedback mechanisms into podcasts offers learners immediate reinforcement and correction, promoting continuous improvement. By adopting these strategies, podcasts serve as dynamic tools for teaching modal verbs, offering learners engaging and personalized learning experiences tailored to their linguistic development needs.

Incorporating input and output approaches within podcast instruction for teaching modal verbs necessitates specific activities tailored to enhance learners' understanding and encourage active engagement. Input-focused activities could include listening exercises where learners identify and analyze modal verb usage in authentic conversations or narratives. Additionally, comprehension tasks could prompt learners to infer the meaning of modal verbs based on context and usage. To encourage output practice, podcasts could feature speaking tasks where learners engage in role-playing scenarios or discussions requiring them to use modal verbs appropriately. Furthermore, production exercises, such as sentence completion or storytelling tasks involving modal verbs, can provide opportunities for learners to practice using these verbs in context. By incorporating various input and output activities within podcast instruction, learners can develop a comprehensive understanding of modal verbs while actively engaging with the language meaningfully (Drew, 2017).

Despite years of formal English instruction, many learners continue to grapple with the accurate use of modal verbs. The inherent complexity of modal verbs lies in their ability to be expressed through various grammatical and lexical structures (Leech, 2004). While existing literature provides a broad understanding of the benefits of podcasts and the importance of input and output in SLA, there is a gap in research on how podcasts can be specifically designed to teach modal verbs effectively. Furthermore, the researcher conducted this study because of the discrepancies in the results of the studies and the effectiveness of podcasts on learners' language achievement. The current study addresses this gap by investigating the impact of podcast-based input and output practices on acquiring modal verbs in EFL contexts. Hence, this study examined the potential link between input and output practice

mediated by instructional podcasts to investigate Iranian EFL learners' acquisition of English modal verbs. More specifically, the study seeks to answer the following research questions:

1. Is there any significant main interactional effect of educational podcasts and practice type (input vs. output practice) on recognizing English modals?
2. Is there any significant main interactional effect of educational podcasts and practice type (input vs. output practice) on the production of English modals?

By addressing these questions, the research aims to understand how podcasts, integrated with input and output practices, enhance the learning of modal verbs in EFL contexts.

Methods

This study employed a quasi-experimental design utilizing pre-test and post-test assessments to investigate the efficacy of podcasts in teaching English modal verbs (EMVs) to English as a foreign language (EFL) learners. The quasi-experimental nature stems from the researcher's selection of participants from existing intact classes, followed by random assignment to the experimental or control groups.

Participants

The Oxford quick placement test was administered to an initial number of 193 EFL students at Islamic Azad University in the Rasht branch to ensure they were homogeneous regarding their language proficiency backgrounds. Based on the results, those whose scores deviated one standard deviation below and above the mean on the test were excluded, and finally157, participants were selected and randomly assigned into one control group (N=27) and five experimental groups, including group A (N = 26), group B (N = 26), group C (N=26), group D (N=26), and group E (N=26). Based on the test results, participants whose scores fell more than one standard deviation below or above the mean were excluded from the study. This exclusion criterion maintained a relatively uniform proficiency level among participants, minimizing variability that could confound the results. This approach helps ensure that any observed effects can be more reliably attributed to the intervention rather than differences in initial proficiency.

Instruments

A researcher-developed English modal verb test was administered to assess participants' knowledge of English modal verbs. The test was designed with considerations for both validity and reliability, ensuring it accurately measured the

targeted skill set. Appropriate podcasts, chosen based on the participants' proficiency level, were used in the classroom.

The same English modal verb test was administered to all groups as a pre-test (before the intervention) and a post-test to gauge any changes in modal verb knowledge. To mitigate potential practice effects, the order of the test items varied between the pre-test and post-test administrations. Both assessments had a time limit of 15 minutes (corrected from 20 minutes in the original text) for completion. Participants were instructed to read each question carefully and choose the correct answer. Scoring was straightforward, with one point awarded for each correct answer, resulting in a maximum possible score of 20 points.

Procedure

The intervention spanned an entire semester, with participants attending weekly sessions lasting one hour each. While the focus on teaching English modals remained consistent across all six groups, the instructional approach differed between the control and experimental groups. The control group received conventional instruction, primarily utilizing paper-and-pencil drills as follow-up activities. In contrast, the experimental groups received the same modal verb instruction delivered through podcasts, with a distinct set of follow-up activities or practice exercises.

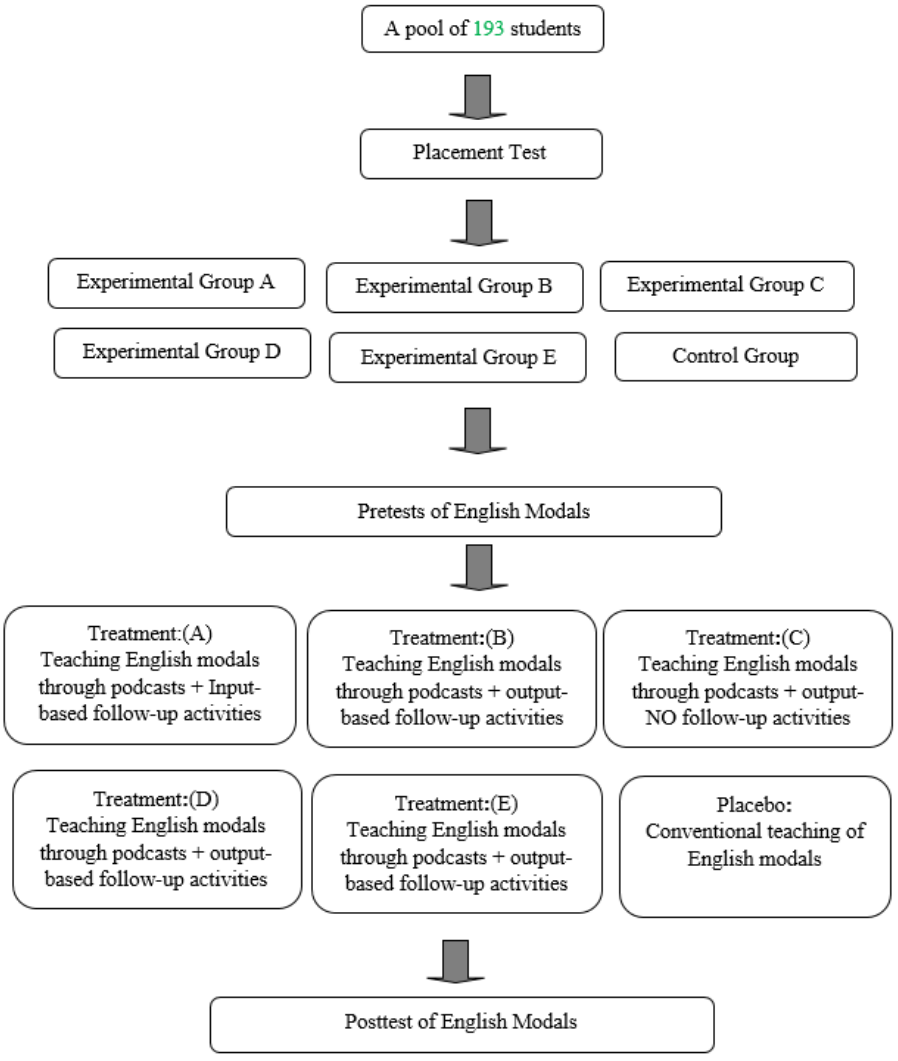
The study employed a five-group design to investigate the effects of podcasts and follow-up activities on EFL learners' acquisition of EMVs.

- Experimental Group A: Received podcasts with input-based follow-up activities (e.g., comprehension tasks, analysis exercises).
- Experimental Group B: Received podcasts with output-based follow-up activities (e.g., speaking tasks, production exercises).
- Experimental Group C: Received podcasts only, without any follow-up activities.
- Experimental Group D: Did not receive podcasts but engaged in output-based follow-up activities related to EMVs.
- Experimental Group E: Did not receive podcasts but engaged in input-based follow-up activities related to EMVs.

Each session incorporated work on three podcasts, followed by the completion of specific follow-up activities. These activities, categorized as either input-based (emphasizing comprehension and analysis) or output-based (focusing on speaking and production), were adapted from Nagata (1998a). Due to the study's targeted focus on English modal verbs, the participants' native language was deemed unnecessary for successful task completion. The experimental groups received EMV instruction delivered through specially created podcasts. These podcasts were explicitly designed for this study to target learning modal verbs, incorporating a combination of explanations and real-world examples to enhance understanding and retention. Each podcast episode integrated modal verbs naturally into conversations rather than relying

solely on explicit grammar rules. This design aimed to make the learning process more engaging and contextually relevant. The content of the podcasts included scenarios where modal verbs are commonly used, such as giving advice, making requests, and discussing possibilities. The podcasts helped learners grasp the usage and nuances by presenting modal verbs in context. To gauge the participants' knowledge of English modals, an English modal verb test was administered to all groups before the intervention (pre-test) and again immediately following a two-week treatment period (post-test). The pre-test and post-test had a time limit of 20 minutes for completion. Participants were instructed to read each question carefully and choose the correct answer. Scoring was straightforward, with each correct answer receiving one point. Therefore, the maximum possible score was 20 points for the 20 items, and each student received a mark out of 20. A visual representation of the study's procedure is provided in Figure 1.

Figure 1. The procedure of the study



There were some tasks as input-based activities. After listening to a podcast episode, students answered multiple-choice or short-answer questions designed to test their understanding of the modal verbs used in the context of the conversation. For example, they might listen to a scenario where someone is giving advice using 'should' and then answer questions about the advice given. Students were also provided transcripts of the podcast episodes and asked to highlight or underline the modal verbs. They then discussed the meanings and uses of these verbs in small groups, focusing on why certain modal verbs were chosen over others in specific contexts. EFL learners were engaged in role-play activities based on the podcast scenarios for the output-based activities. For instance, they might act out a conversation where one student has to give advice using modal verbs like 'should' or 'ought to,' while another student asks for permission using 'can' or 'may.' The learners were also asked to create dialogues or short monologues using a set list of modal verbs. These activities required them to apply their knowledge of models in new contexts, reinforcing their understanding through use. SPSS version 28 was used to analyze the data. Consequently, the means and standard deviations were calculated. One-way ANOVAs were employed to test the hypotheses, assuming no significant difference exists between the groups under study. Moreover, a post hoc test was used to conclude where the differences lie.

Results

Descriptive statistics were used to analyze the production and recognition test data. These statistics provide an overview of the participant's attitudes towards the practice type (input-based versus output-based) and the role of podcasts in improving their English language learning. These results are presented in Table 1 below.

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Table 1
Descriptive Statistics for Pretest Sc

		N	Mean	Std. Deviation
production pretest	Experimental Group A	26	13.4231	1.70113
	Experimental Group B	26	13.4615	1.70249
	Experimental Group C	26	14.1923	1.64971
	Experimental Group D	26	13.6538	1.93788
	Experimental Group E	26	14.3077	1.61912
	Control Group	27	13.4074	1.73780
	Total	157	13.7389	1.73998
recognition pretest	Experimental Group A	26	15.5000	1.63095
	Experimental Group B	26	15.4231	1.72448
	Experimental Group C	26	16.5769	1.39063
	Experimental Group D	26	15.6538	1.87494
	Experimental Group E	26	16.2308	1.63236
	Control Group	27	15.4444	1.69464
	Total	157	15.8025	1.69630

The same round of analyses is performed for the modal recognition and production posttests. These results are presented in Table 2 below.

Table 2
Descriptive Statistics for the Post-test Results

		N	Mean	Std. Deviation
production posttest	Experimental Group A	26	17.3077	1.64364
	Experimental Group B	26	17.2692	1.21845
	Experimental Group C	26	16.7308	1.61388
	Experimental Group D	26	17.0385	1.96938
	Experimental Group E	26	16.9231	1.64738
	Control Group	27	13.6296	1.77911
	Total	157	16.4650	2.09557
recognition posttest	Experimental Group A	26	18.3077	1.49048
	Experimental Group B	26	18.1538	1.43366
	Experimental Group C	26	17.7308	1.48479
	Experimental Group D	26	17.8846	1.92514
	Experimental Group E	26	17.8462	1.75937
	Control Group	27	15.7037	1.72793
	Total	157	17.5924	1.84653

Based on the results, Experimental Group A had the highest mean score in the production test (M= 17.3077) and the recognition test (M=18.3077), while the control group had the lowest mean score in both tests (M=13.62 for the production and M=15.70 for the recognition). The Experimental Group D had the highest standard deviation in the production test (SD=1.96) and the recognition test (SD=1.92). The initial results suggest that Experimental Group A, which received podcasts with input-based follow-up activities, outperformed the other groups on production and

recognition tests. Conversely, the control group, which received no specific intervention, exhibited lower mean scores on both assessments. These findings hint at a potential influence of activity type (input-based versus output-based) and the presence or absence of podcasts and follow-up activities on language learning outcomes. However, further analysis is necessary to confirm the statistical significance of the observed group differences. To proceed with further analysis, Levene's test for homogeneity of variance was conducted on the pre-test and post-test data for both production and recognition tasks. This test assessed the null hypothesis that the variances of the populations from which the samples were drawn were equal. The results of these tests are presented in Table 3.

Table 3
Levene's Test of Equality of Error Variances

		Levene Statistic	df1	df2	Sig.
production pretest	Based on Mean	.415	5	151	.838
production posttest	Based on Mean	1.623	5	151	.157
recognition pretest	Based on Mean	.796	5	151	.554
recognition posttest	Based on Mean	1.117	5	151	.354

The Levene statistic measured the difference among the groups' variances. The larger the statistic, the more evidence there was that the variances of the groups were significantly different. It was noticed that all four p-values were more significant than 0.05, indicating that there was no statistically significant difference in variances in the production and recognition tests among the groups. Thus, the assumption of homogeneity of variances was established.

The following assumption was the equality of covariance. Table 4 represents the results of the Box's Test of Equality of Covariance Matrices, which was used to determine whether the covariance matrices of multiple groups were equivalent.

Table 4
Box's Test of Equality of Covariance Matrices

Box's M	287.408
F	5.359
df1	50
df2	41791.953
Sig.	.000

The Box's M value was 287.408, with the F value of 5.359, which was the ratio of the variance between groups to the variance within groups. The statistical significance value was Sig. =.000. Based on the statistical significance level, the results suggested that the observed covariance matrices of the dependent variables were not equal across groups. Consequently, Pillai's trace criterion was used to interpret the results of the MANOVA test.

After examining the main assumptions of the parametric tests, a one-way Analysis of Variance (ANOVA) was run to compare the groups' means at the beginning of the study. The results are given in Table 5.

Table 5
Results of One-Way ANOVA (Pretest Scores)

		Sum of Squares	df	Mean Square	F	Sig.
production pretest	Between Groups	21.505	5	4.301	1.441	.213
	Within Groups	450.788	151	2.985		
	Total	472.293	156			
recognition pretest	Between Groups	30.520	5	6.104	2.203	.057
	Within Groups	418.359	151	2.771		
	Total	448.879	156			

The significance values of the F test in the ANOVA table for the pretests of production and recognition were both greater than (.05). The average scores were equal across the control and the experimental groups at the beginning of the study (F production (5, 151) = 1.441, p=.213> .05; F recognition (5, 151) = 2.203, p=.057> .05). Thus, it could be concluded that in the first administration of the production and recognition tests, there were no statistically significant differences among the groups.

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Table 6 shows the results of the Multivariate Analysis of Variance (MANOVA) with three effects for the post-test scores: podcast, practice type, and the interaction between podcast and practice type.

Table 6
Results of the Multivariate Tests

Multivariate Tests [a]							
Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Podcast	Pillai's Trace	.299	15.745[b]	4.000	148.000	.000	.299
	Wilks' Lambda	.701	15.745[b]	4.000	148.000	.000	.299
	Hotelling's Trace	.426	15.745[b]	4.000	148.000	.000	.299
	Roy's Largest Root	.426	15.745[b]	4.000	148.000	.000	.299
Practice type	Pillai's Trace	.496	12.291	8.000	298.000	.000	.248
	Wilks' Lambda	.509	14.864[b]	8.000	296.000	.000	.287
	Hotelling's Trace	.955	17.545	8.000	294.000	.000	.323
	Roy's Largest Root	.944	35.170[c]	4.000	149.000	.000	.486
Podcast * Practice type	Pillai's Trace	.205	4.251	8.000	298.000	.000	.102
	Wilks' Lambda	.798	4.422[b]	8.000	296.000	.000	.107
	Hotelling's Trace	.250	4.591	8.000	294.000	.000	.111
	Roy's Largest Root	.235	8.757[c]	4.000	149.000	.000	.190

a. Design: Intercept + Podcast + Practice type + Podcast * Practice type

The values of four different test statistics for each effect are reported in Table 7: Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root. Since Box's M test was statistically significant (See Table 8), Pillai's trace criterion was used because it is more powerful for deviations from assumptions (Tabachnick et al., 2013).

The results showed statistically significant main effects of both Podcast ($F(4,148) = 15.745$, $p<0.01$, partial eta squared=0.299) and Practice type ($F(8,298) = 12.291$, $p<0.01$, partial eta squared=0.248) on the dependent variables. Additionally, there was a statistically significant interaction effect between podcast and practice type ($F(8,298) = 4.251$, $p<0.01$, partial eta squared=0.102). These results suggested that both podcast and practice type had statistically significant effects on the dependent variables. The results implied statistically significant effects of podcast, practice type, and their interaction on the dependent variables. The partial eta squared values suggested that these effects account for a "moderate" proportion (around 10% to 30%) of the variance in the dependent variables. Overall, these results provided evidence for the importance of considering both podcast and practice types in understanding the factors influencing the learners' production and recognition of English modals.

The following table represents the results of the Between-Subjects Tests for different dependent variables, including the production posttest and recognition posttest, to determine the main effects and the interaction effects of podcasts and practice type on the production and recognition of English modals.

Table 7

Tests of Between-Subjects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
podcast	production posttest	60.226	1	60.226	21.815	.000	.126
	recognition posttest	33.163	1	33.163	12.222	.001	.075
Practice type	production posttest	134.227	2	67.113	24.310	.000	.244
	recognition posttest	62.407	2	31.204	11.500	.000	.132
Podcast * Practice type	production posttest	68.513	2	34.256	12.408	.000	.141
	recognition posttest	24.316	2	12.158	4.481	.013	.056

A one-way ANOVA revealed a statistically significant main effect for the factor "Podcast" on both production and recognition post-tests. This indicates that participants

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who received podcasts performed significantly better on both production and recognition of English modal verbs compared to those who did not ($F(1, 1) = 21.815$, $p = .000$, $\eta p^2 = .126$ for production; $F(1, 1) = 12.222$, $p = .001$, $\eta p^2 = .075$ for recognition).

Similarly, the main effect of "Practice Type" was statistically significant on both production and recognition post-tests ($F(2, 2) = 24.310$, $p = .000$, $\eta p^2 = .244$ for production; $F(2, 2) = 11.500$, $p = .000$, $\eta p^2 = .132$ for recognition). This suggests that the type of follow-up activity (input-based vs. output-based) significantly impacted participants' performance in both the production and recognition of modal verbs. Furthermore, the interaction effect between "Podcast" and "Practice Type" was also statistically significant for both production and recognition post-tests ($F(2, 2) = 12.408$, $p = .000$, $\eta p^2 = .141$ for production; $F(2, 2) = 4.481$, $p = .013$, $\eta p^2 = .056$ for recognition). This finding suggests that the influence of follow-up activity type on participant performance differed depending on whether they received the educational podcasts. Table 8 below represents the results of the multiple comparisons for different dependent variables, including the production pretest, the posttest, the recognition pretest, and the posttest.

Table 8

Results of the Multiple Comparisons

Dependent Variable	(I) Practice type	(J) Practice type	Mean Difference (I-J)	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
production pretest	Input-based	Output-based	-.3462	.595	-1.1839	.4916
		No follow up activities	-.2540	.753	-1.0878	.5798
	Output-based	Input-based	.3462	.595	-.4916	1.1839
		No follow up activities	.0922	.963	-.7416	.9259
	No follow up activities	Input-based	.2540	.753	-.5798	1.0878
		Output-based	-.0922	.963	-.9259	.7416
production posttest	Input-based	Output-based	.0769	.973	-.7287	.8825
		No follow up activities	2.0221*	.000	1.2203	2.8239
	Output-based	Input-based	-.0769	.973	-.8825	.7287
		No follow up activities	1.9452*	.000	1.1434	2.7470
	No follow up activities	Input-based	-2.0221*	.000	-2.8239	-1.2203
		Output-based	-1.9452*	.000	-2.7470	-1.1434
recognition pretest	Input-based	Output-based	-.2500	.746	-1.0570	.5570
		No follow up activities	-.4231	.430	-1.2263	.3801
		Input-based	.2500	.746	-.5570	1.0570

The table shows the results of multiple comparisons between practice types regarding different dependent variables (production pretest, production posttest, recognition pretest, and recognition posttest). For the production pretest, there were no statistically significant differences among the groups. In comparison, for the production posttest, there were statistically significant differences between the control group and each of the experimental groups. Specifically, participants who engaged in input-based or output-based practices and benefitted from podcasts had a higher mean score than those who did not engage in any follow-up activity. However, there was no statistically significant difference between the groups involved in output-based and input-based follow-up activities in the post-test.

There were no statistically significant differences among the groups for the recognition pretest. However, for the recognition posttest, there were statistically

significant differences between the control group and each of the experimental groups. Specifically, participants who received podcasts and engaged in input-based or output-based practices had a higher mean score than those who did not engage in any follow-up activity. However, there was no statistically significant difference between the groups involved in output-based and input-based follow-up activities.

Overall, these results suggested that engaging in input-based or output-based practices and working on educational podcasts might be beneficial for improving the production and recognition of English modals, while not engaging in any follow-up activities may not yield significant improvement. Therefore, the results of the statistical analyses revealed that educational podcasts' main effect on recognizing and producing English modals was statistically significant. In addition, the main effect of the practice type (input vs. output practice) on the recognition and the production of English modals was also statistically significant. The interactional effect of the educational podcasts and practice type (input vs. output practice) on the recognition and production of English modals were also statistically significant.

Discussion and Conclusion

The current study attempted to investigate the efficacy of podcasts in teaching EMVs to EFL learners. The acquisition of modal verbs presents a well-documented difficulty in language learning. Instructors have explored various instructional approaches, with some focusing on explicit grammar instruction and others advocating for integrated approaches that combine grammar with other language skills like reading, writing, listening, and speaking. While research on utilizing podcasts for modal verb instruction remains limited, this study suggests they hold promise as an engaging and effective teaching tool. The findings support the positive impact of specific tasks, such as those incorporating input and output practices, on modal verb learning. The study suggests that podcasts and follow-up activities can be a valuable addition to the English language learning toolkit, potentially improving student performance. These findings are in line with earlier studies (e.g., Mashhadi et al., 2016; Elekaei et al.,2020) since the participants reacted with positive perceptions due to the ease and convenience of using podcasts or because they gained motivation to practice more listening materials (Asoodar et al., 2016), which are prosperous with new vocabulary items in context (Evans, 2008); or because they encouraged ‘active learning and listening’ (Abdulrahman et al.,2018).

Therefore, podcasts could be used in language classes, on the one hand, to help teachers and learners improve auditory skills and vocabulary expansion (Mashhadi et al., 2016) and on the other hand, to boost students’ classroom motivation (Abdous et al., 2009; Asoodar et al., 2016). The present study demonstrated the potential of podcasts to foster EFL learners’ English vocabulary learning, which aligns with earlier studies (Stanley, 2006; Mashhadi et al., 2016).

This study's findings demonstrate that both input-based and output-based activities are perceived as effective by researchers and EFL instructors in enhancing EFL learners' knowledge of English modal verbs. These results underscore the significance of providing learners with appropriate resources to facilitate their English language acquisition. Podcasts present a unique opportunity for instructors to expose students to speech from both native and non-native speakers, thus catering to a broader range of learning styles and preferences. Additionally, students generally find podcasts to be engaging and enjoyable. The current study's conclusions align with prior research by Abdulrahman et al. (2018), Heilesen (2010), and Samad et al. (2017), who similarly identified podcasts as a valuable tool for developing learners' language skills. The findings contrast with some studies, such as a study conducted by Bueno-Alastuey and Nemeth (2022). They explored the impact of student-created podcasts and Quizlet flashcards on vocabulary retention, finding no significant difference between the two approaches in vocabulary acquisition. However, participants preferred the Quizlet approach. This contrasts with our findings, which emphasize the potential of podcasts specifically tailored for modal verb instruction, suggesting that the content and focus of the podcasts might play a crucial role in their effectiveness.

Similarly, Razaghi et al. (2022) examined audio podcast retelling versus corpus-based vocabulary learning in Iranian English language learners' vocabulary development. They found that corpus-based learning significantly outperformed the podcast group. This difference might be attributed to the nature of the learning tasks. In contrast, corpus-based learning might offer more systematic exposure to vocabulary. Our study indicates that podcasts, combined with input and output activities, can effectively enhance modal verb acquisition.

Chaves-Yuste and de-la Peña (2023) conducted an 8-week podcast-supported listening practice with A1-level Turkish learners and found that podcasts effectively improved discriminative listening skills. This supports our findings that podcasts can be beneficial in language learning. However, our study adds that specifically designed follow-up activities are crucial in maximizing the instructional benefits of podcasts. Finally, Suseno (2024) found that engaging with unfamiliar words and sentences in podcast material enhances students' ability to communicate their ideas. This aligns with our findings that podcasts can facilitate modal verb acquisition by providing real-world examples and context-rich scenarios, thus enhancing comprehension and production skills.

While the present study highlights the benefits of podcasts for EFL learners, it is essential to acknowledge some contrasting viewpoints. Cann (2007) reported findings that diverge from this study, suggesting learners may not always welcome podcasts in the classroom. Despite this discrepancy, the participants in this research expressed positive perceptions of podcasts as valuable learning tools, particularly for listening

comprehension and vocabulary acquisition. These findings align with Asyifah and Indriani (2021) and Saeedakhtar et al. (2021).

The current study reinforces the growing recognition of podcasts as a valuable technology in CALL (Computer-Assisted Language Learning) and MALL (Mobile-Assisted et al.). Podcasts offer a unique solution to the challenge of limited exposure to authentic language, a common obstacle EFL learners face to achieving higher levels of proficiency and motivation. Their ability to provide exposure to both native and non-native speakers caters to a broader range of learning styles and preferences. Furthermore, podcasts can communicate between teachers and students, extending learning beyond the classroom environment (Elekaei et al., 2020).

This study challenges the prevailing notion of relying on a singular instructional method for teaching modal verbs in EFL classrooms. It argues against neglecting the potential benefits of alternative approaches. Instead, the findings underscore the importance of creating a rich learning environment incorporating diverse instructional methods. Such an environment would foster the development of modal verb knowledge through a combination of techniques, promoting discovery learning over rote memorization. This shift empowers students to independently explore the underlying rules governing modal verb usage by exposing them to authentic contexts through podcasts.

The study advocates integrating podcasts with Task-Based Language Teaching (TBLT) principles for EFL modal verb instruction. This combined approach empowers learners to investigate the complexities of the language through podcasts independently and subsequently apply their understanding in meaningful interactions. In contrast, traditional deductive methods have long dominated modal verb instruction, relying heavily on rote memorization of grammar rules through tedious exercises. The present study argues for a paradigm shift, embracing the novelty and engagement of podcasts in conjunction with TBLT principles to enhance learning outcomes.

Several limitations are noteworthy in this study. Data collection encountered challenges, with many participants dropping out throughout the process. These absences between the pre-test and post-tests or during treatment sessions resulted in a reduced final sample size. This reduction potentially limits the generalizability of the findings, as a larger and more consistent participant pool could have yielded different post-test results. In other words, one significant limitation is the sample size and the homogeneity of the participant group, which consisted solely of Iranian EFL learners at a single university. Future research should include a more extensive and diverse sample to increase the generalizability of the findings.

Furthermore, the study's external validity is restricted by its limited context. The exclusive focus on Iranian EFL learners makes it difficult to generalize the findings to learners from other nationalities. Future research that investigates modal verb

instruction across diverse contexts, including learner proficiency levels, is necessary to enhance the generalizability of these results.

Moreover, this study did not explore the impact of different podcast formats on learning outcomes. Future research could investigate the effectiveness of various podcast formats, such as interview-based, narrative, or conversational styles, to determine which is most effective for teaching specific language components like modal verbs. Additionally, exploring how podcasts can be optimally integrated with Task-Based Language Teaching (TBLT) principles could provide deeper insights into their role in enhancing language acquisition. For instance, researchers could examine how task complexity, task sequencing, and task repetition in podcast-based activities impact the learning of modal verbs.

Furthermore, longitudinal studies could be conducted to assess the long-term effects of podcast-based instruction on learners' proficiency with modal verbs. Investigating the retention of knowledge over extended periods would help determine the sustainability of podcasts as a teaching tool. In conclusion, this study contributes to the growing body of research supporting the use of podcasts in language learning. Focusing on modal verbs and integrating input and output practices demonstrates how podcasts can effectively teach complex grammatical structures. This suggests that with thoughtful design and implementation, podcasts can play a significant role in modern language instruction. Future research should continue to explore and expand upon these findings to optimize podcast-based language teaching strategies further.

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