

Enhancing TOEIC Listening Performance and Learner Agency through Podcast-Based Instruction in EFL Education

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Abstract

Podcasts have become valuable tools in language education, offering authentic input, flexibility, and opportunities for self-directed learning. While their effectiveness for improving listening comprehension is well established, less is known about their role in fostering learner agency, particularly in high-stakes testing contexts. This study investigated the effects of podcast-based instruction on TOEIC Listening performance and examined how structured podcast tasks encourage self-regulated learning behaviors. A quasi-experimental pre-test/post-test design was conducted with 53 undergraduates in a General English course at a Taiwanese university. The experimental group (n = 25) engaged in scaffolded podcast-based tasks designed to promote autonomy, while the control group (n = 28) received traditional textbook-based instruction. Results showed significant within-group gains for both groups, with improvements in the experimental group approaching statistical significance compared to the control group. Although ANCOVA revealed only near-significant between-group differences, analysis of learners' worksheets indicated active engagement in planning, monitoring, and reflection, suggesting that podcasts may support the development of learner agency. These findings suggest that podcast-based instruction holds potential as a supplementary tool for listening development and autonomous learning skills in digital learning environments.

Keywords: podcasts, EFL listening, learner agency, self-regulated learning, TOEIC

1. Introduction

Digital technologies have reshaped the landscape of education, and language learning has been no exception. Among these innovations, podcasts have become increasingly prominent in language classrooms. Their appeal lies in authentic linguistic input, portability, and flexibility, enabling learners to engage with language beyond the classroom in ways that complement traditional instruction (Abdous, Camarena & Facer, 2009; Abdulrahman, Basalamah & Widodo, 2018; O'Bryan & Hegelheimer, 2007). By exposing learners to real-world communication in accessible formats, podcasts support not only listening comprehension but also higher-order cognitive and metacognitive strategies such as prediction, inference, and monitoring (Hasan & Hoon, 2012; NamazianDost, Bohloulzadeh & Rahmatollahi, 2017).

In addition to linguistic benefits, podcasts have been recognized for their role in fostering learner agency. Agency refers to learners' capacity to take initiative, make choices, and regulate their own learning processes (Zimmerman, 2002). Because podcasts are on-demand and mobile, learners can decide when, where, and how they listen. This flexibility encourages self-regulated behaviors such as goal-setting, monitoring progress, and reflecting on outcomes. These practices are consistent with Self-Determination Theory (Deci & Ryan, 2000), which highlights autonomy as a key driver of intrinsic motivation. Recent studies further confirm that learners who engage with podcasts over time often report increased motivation, engagement, and independence in their learning routines (Davydenko, 2021; Hoang, 2025).

Despite these advantages, important questions remain. Much of the existing research in ESL/EFL contexts has relied on classroom-specific assessments, leaving it unclear whether podcasts are equally effective in preparing learners for high-stakes standardized tests such as the TOEIC. Moreover, while podcasts are frequently praised for improving comprehension, relatively few studies have examined their contribution to the development of agentic learning behaviors. This gap is particularly relevant in Asian higher education contexts, where standardized testing strongly influences employability and academic advancement.

The present study addresses these gaps by evaluating the effects of a structured podcast-based intervention on TOEIC Listening performance among undergraduates at a Taiwanese university. It also investigates how podcast-based instruction encourages self-regulated and reflective learning practices. By situating podcasts within the dual framework of listening comprehension and learner agency, this study seeks to extend the empirical evidence on technology-enhanced language learning and contribute to the broader pedagogical goal of preparing students as autonomous, lifelong learners in a digital age.

2. Literature Review

2.1 Podcasts in Language Education

Podcasts have emerged as a significant innovation in language education, driven by advancements in digital technology and the increasing availability of multimedia resources. Their pedagogical value lies in providing authentic linguistic content in convenient and versatile formats that suit both formal and independent learning contexts. Research over the past decade has investigated their incorporation into ESL/EFL curricula, their impact on learner outcomes, and their role in supporting cognitive and metacognitive strategies (Abdous et al., 2009; Abdous, Facer & Yen, 2012).

2.2 Theoretical Framework: Self-Determination Theory

Self-Determination Theory (SDT) provides a robust framework for understanding motivation and human agency in learning, emphasizing that the satisfaction of autonomy, competence, and relatedness fosters intrinsic motivation, engagement, and self-regulation (Deci & Ryan, 2000). In language education, podcast-based instruction has been argued to support these needs by granting learners control over when and how they listen (autonomy), by providing scaffolded tasks that promote mastery (competence), and by creating opportunities to engage with target-language communities (relatedness). A growing body of research confirms that autonomy-supportive instruction enhances motivation and engagement (Jones, Llacer-Arrastia & Newbill, 2009; Reeve & Jang, 2006), while empirical evidence shows that need satisfaction predicts persistence and enjoyment in second language learning (Noels, Pelletier, Clément, & Vallerand, 2000). Findings from elementary contexts, such as Japanese EFL classrooms, suggest that autonomy-supportive practices sustain long-term motivation (Carreira, 2012; Oga-Baldwin & Nakata, 2014), whereas studies in Saudi higher education demonstrate that satisfaction of basic psychological needs fosters positive achievement emotions and improved performance (Alamer & Lee, 2019). Reviews of classroom interventions further indicate that autonomy-supportive strategies are not only trainable but also consistently effective across diverse cultural settings (Reeve & Cheon, 2021). Taken together, these studies highlight the explanatory power of SDT in understanding language learning motivation, although they also point to the need for further investigation of how autonomy-supportive practices, such as podcasts, operate in different contexts and across varying proficiency levels.

2.3 Integration of Podcasts in Language Learning

Research consistently emphasizes that podcasts are most effective when deliberately integrated into the curriculum rather than used as supplementary materials. Abdous et al. (2012) found that curriculum-integrated podcasting produced stronger academic outcomes than stand-alone use, while Abdous et al. (2009) demonstrated that structured podcasting within course tasks enhanced learning more effectively than review-only listening. Similarly, O'Bryan and Hegelheimer (2007) showed that embedding podcasts in an ESL listening strategies course improved both listening performance and active engagement. Hasan and Hoon (2013) further confirmed that podcasts best support language development when incorporated into guided activities that extend learning beyond the classroom. Reviews of mobile-assisted language learning likewise conclude that podcasts yield the greatest impact when closely aligned with instructional design and assessment (Burston, 2013; Reeve & Cheon, 2021). Collectively, this body of evidence highlights the importance of intentional curriculum design, in which podcasts are embedded within meaningful, scaffolded tasks that reinforce classroom learning. Nevertheless, despite the growing international evidence, research on how podcast-based instruction can be effectively implemented in Taiwanese higher education remains limited, particularly given learners' unique motivational and proficiency-related challenges.

2.4 Effects of Podcasts on Listening Skills and Learning Outcomes

A consistent finding in the literature is the positive impact of podcasts on learners' listening skills and affective factors. Rahman, Atmowardoyo, and Salija (2018) showed that students receiving podcast-assisted instruction achieved significantly higher listening comprehension scores compared to traditional methods. Hasan and Hoon (2012) reported that ESL learners perceived podcasts as motivating, anxiety-reducing, and effective for developing listening skills. Wang (2021) observed similar benefits among Taiwanese university students, who described podcasts as enjoyable and effective tools for learning. Davydenko (2021) further demonstrated that BBC Learning English podcasts improved both listening comprehension and motivation among Ukrainian university students. Together, these studies provide robust evidence that podcasts are effective for enhancing listening comprehension while also creating supportive and motivating learning conditions.

2.5 Podcasts and the Development of Self-Directed Learning and Agency

Beyond measurable skill outcomes, podcasts are increasingly recognized for their role in promoting self-directed learning and learner agency. Zimmerman (2002) and Benson (2013) define agency as learners' capacity to make choices, plan, monitor, and reflect on their own learning. Empirical research shows that podcasts can foster such behaviors. Naidionova and Ponomarenko (2018) found that podcasts helped students regulate their listening processes, while Hsu (2015) argued that authentic listening materials promote active strategy use such as predicting and inferring. Davydenko (2021) reported that structured podcast tasks enhanced both comprehension and motivation, while Wubalem (2022) showed that self-regulated podcast listening strengthened EMI teachers' professional discourse skills and reflective practices. Warschauer and Liaw (2011) emphasized that podcasts, along with other digital tools, expand opportunities for self-access learning by giving learners greater control over content and pace. Collectively, these findings demonstrate that podcasts are not only linguistic tools but also catalysts for building metacognitive strategies and agency.

2.6 Research Gap

Despite these positive findings, the literature exhibits gaps, particularly concerning the applicability of podcasts in specific contexts and its link to agentic behaviors. While studies have explored general comprehension scores and motivation, there is a clear need for research focusing on how podcasts influence performance on high-stakes standardized tests, such as the TOEIC, especially within Asian higher education systems where such tests significantly impact students' academic and professional trajectories. Furthermore, although the link between podcasts and self-directed learning is increasingly recognized, few studies explicitly investigate the development of measurable agentic behaviors, including specific planning, monitoring, and reflection practices, within podcast-based interventions. These limitations are particularly relevant for understanding the full pedagogical potential of podcasts in contexts like Taiwan.

2.7 Connecting to the Study

Building on these gaps, the present study investigates the effects of a structured podcast-based intervention on TOEIC listening performance while also examining how such instruction supports the development of learner agency through self-regulated and reflective practices. This dual focus contributes to both the empirical understanding of technology-enhanced language learning and the practical goal of preparing students as autonomous learners in high-stakes EFL environments.

To address the research gap identified above, this study was guided by the following research questions:

1. To what extent does podcast-based instruction, compared to traditional instruction, affect TOEIC Listening post-test scores after controlling for pre-test scores?
2. Is there a statistically significant improvement in the experimental group's TOEIC Listening scores?
3. Is there a statistically significant difference in gain scores between the podcast-based and control groups?
4. How does podcast-based instruction foster learner agency, as reflected in students' self-regulated learning behaviors such as planning, monitoring, and reflection?

3. Method

The methodology is organized into the following subsections: research design, participants, materials and instruments, intervention design, procedure, and data analysis.

3.1 Research Design

This study employed a quasi-experimental pre-test/post-test design to evaluate the impact of podcast-based instruction on listening comprehension. The TOEIC Listening test was used as the primary assessment measure, allowing comparisons between students exposed to podcast-based learning and those taught through traditional textbook-based instruction. To ensure fairness in outcome comparisons, Analysis of Covariance (ANCOVA) was applied to post-test scores, with pre-test scores serving as a covariate to adjust for baseline proficiency differences. Because intact classes were used, random assignment was not feasible in this instructional context. While this design enhances ecological validity, it also introduces potential group non-equivalence. For this reason, ANCOVA was employed to statistically adjust for baseline proficiency differences. Nevertheless, such statistical control cannot fully eliminate threats to internal validity, and the findings should be interpreted with appropriate caution.

3.2 Participants

The participants were fifty-three undergraduate students enrolled in a General English course at a Taiwanese university. To reflect authentic classroom conditions, participants were assigned to groups based on intact class sections rather than random allocation. The experimental group ($n = 25$) completed podcast-based tasks that were initially scaffolded to provide strategy support but gradually structured to promote greater autonomy and agency. The control group ($n = 28$) completed teacher-led, textbook-based listening activities without podcast integration. Although this quasi-experimental approach introduced baseline differences between groups, these were statistically controlled for in later analyses using ANCOVA.

3.3 Materials and Instruments

To capture the intervention's effects, multiple materials and instruments were employed.

3.3.1 Podcast Sources

Two podcast sources were selected: the *British Council Learn English – Skills Listening* series, offering structured practice aligned with CEFR B1 level, and *English Learning for Curious Minds*, which provided culturally engaging content to stimulate motivation and extended listening practice.

3.3.2 Assessment Tools

The TOEIC Listening test was administered both as a pre-test and a post-test. The test includes 100 multiple-choice items divided into four sections (Photographs, Question–Response, Conversations, and Short Talks), with total scores ranging from 5 to 495. Its standardized format ensured reliability in measuring global listening proficiency.

3.3.3 Learning Materials

To support comprehension and engagement, the intervention included structured British Council exercises, custom-designed worksheets

tied to cultural podcast episodes, and reflective prompts. These tasks were designed not only to consolidate learning but also to provide evidence of self-regulated learning behaviors such as planning, monitoring, and reflection.

3.3.4 Submission Platform

Accountability was maintained through the Tronclass learning management system, where students submitted screenshots of completed online tasks. Printed worksheets were also collected in class, ensuring consistency of participation across students.

3.4 Intervention Design

The intervention spanned seven weeks, beginning in Week 2 of the semester. Students in the experimental group engaged in weekly podcast-based activities requiring approximately 30–40 minutes of listening and 20–30 minutes of task completion. Each activity followed a three-phase structure recommended in prior research:

- Pre-listening activities included vocabulary previews and prediction tasks to activate background knowledge (O’Bryan & Hegelheimer, 2007).
- While-listening tasks focused on gist and detail comprehension, supplemented with vocabulary practice (Hasan & Hoon, 2012).
- Post-listening tasks emphasized reflection, group discussion, and short writing activities to consolidate comprehension and promote agency (NamazianDost et al., 2017).

A detailed weekly schedule of podcast episodes, objectives, and activities is presented in Table 1. The control group addressed the same weekly themes through textbook-based instruction without podcasts or reflective tasks.

Table 1. Podcast-Based Learning Schedule (CEFR B1/B1+ Aligned)

Week	Podcast Episode Title	Learning Objectives	Sample Activities	CEFR Alignment	Duration
1	A Phone Call from a Customer / Student Discussion / A Team Meeting about Diversity	A Comprehension of workplace and conversational English; identify tone	Comprehension questions, role-play	B1	~30–40 min
2	A Weather Forecast / An Interview about Listening Skills / An Introduction to a Lecture	Informational and academic contexts; key points extraction	Main ideas notation, question prediction	B1+	~30–40 min
3	Arriving Late to Class / At the Chemist / Chatting About Series	Situational conversation cues; vocabulary expansion	Comprehension tasks, short dialogues creation	B1	~30–40 min
4	Making a Decision / Meeting an Old Friend / Work-Life Balance	Conversational decision-making; reflection	Opinion-giving expressions identification, journal entries	B1+	~30–40 min
5	The Tower of London	Cultural listening; vocabulary expansion	Historical fact summarization worksheet	B1	~30 min
6	The Curious Taste of British Food	Cultural perspectives; descriptive language	Cuisine comparison worksheet	B1	~30 min
7	How to Use Podcasts to Improve Your English	Reflection on learning strategies; self-directed learning planning	Reflective writing worksheet	B1+	~30 min

Total Commitment: Approximately 30–40 minutes of listening plus 20–30 minutes of task completion weekly.

3.5 Procedure

At the outset of the semester, both groups completed the TOEIC Listening pre-test to establish baseline proficiency. Over the following seven weeks, the experimental group participated in structured podcast-based activities, while the control group received conventional instruction. In Week 9, both groups completed the TOEIC Listening post-test under identical conditions.

In addition to quantitative test data, qualitative data were collected from the experimental group throughout the intervention period. Students’ completed worksheets and reflective prompts were gathered on a weekly basis and analyzed to examine evidence of planning, monitoring, and reflection, which are behaviors associated with learner agency.

3.6 Data Analysis

Data analysis proceeded in two stages. First, quantitative analyses were conducted to evaluate the intervention’s effect on listening performance. Descriptive statistics were calculated for pre-test, post-test, and gain scores. Paired t-tests assessed within-group improvements, independent t-tests compared gain scores across groups, and ANCOVA was used to adjust for baseline differences.

Second, qualitative analysis was applied to the experimental group’s worksheets. Guided by Zimmerman’s (2002) model of self-regulated learning, student responses were examined for evidence of planning, monitoring, and reflection. This analysis addressed the fourth research question by illustrating how podcasts contributed to the development of learner agency.

4. Results

An independent samples t-test on pre-test scores revealed a significant baseline difference between groups, with the experimental group

(M = 200.19, SD = 54.71) scoring higher than the control group (M = 115.71, SD = 26.45), $t(51) = 7.31, p < .001$.

Despite this difference, both groups demonstrated significant within-group improvements. The experimental group improved by an average of 49.04 points (SD = 47.69), $t(24) = 5.24, p < .001$, while the control group improved by 25.71 points (SD = 39.67), $t(27) = 3.43, p = .002$.

A comparison of gain scores showed a near-significant advantage for the experimental group, $t(51) = 1.96, p = .055$. To account for baseline differences, an ANCOVA was conducted with pre-test scores as the covariate. Pre-test scores significantly predicted post-test outcomes, $F(1, 51) = 40.26, p < .001$, while the effect of instructional method approached significance, $F(1, 51) = 3.27, p = .076$. Figure 1 presents the pre-test and post-test scores by group (left panel) and gain scores (right panel). As shown, both groups improved from pre-test to post-test, with the experimental (podcast) group demonstrating numerically larger gains, though these differences approached significance rather than reaching it.

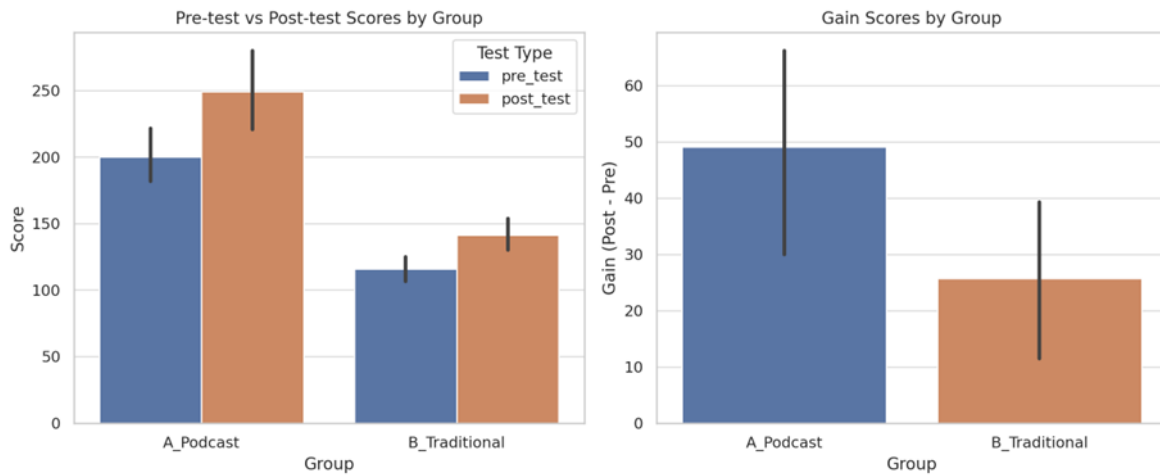


Figure 1. Pre-test vs. post-test scores by group (left) and gain scores by group (right). Error bars represent standard deviations

5. Discussion

A key consideration in interpreting the findings of this study is the significant baseline difference in listening proficiency between groups prior to the intervention, with the experimental group scoring approximately 85 points higher than the control group on the pre-test. This initial non-equivalence poses a threat to internal validity, as it complicates claims regarding the effects of the intervention itself. Although ANCOVA was used to statistically adjust for these differences, such corrections can only partially account for pre-existing disparities between intact classroom groups. Therefore, the near-significant trend favoring the podcast group ($p = .055$) must be interpreted cautiously and viewed as suggestive rather than conclusive evidence of a treatment effect.

With this important methodological limitation acknowledged upfront, the present study nonetheless provides insight into the potential of podcast-based instruction for EFL listening development and learner agency. Both groups improved from pre-test to post-test, and the podcast group demonstrated numerically larger gains. These results align with prior research demonstrating that repeated exposure to authentic input enhances measurable language outcomes (Abdulrahman et al., 2018; NamazianDost et al., 2017). The trend toward improvement in the experimental group is also consistent with studies reporting benefits of podcast-based learning compared to conventional methods (Rahman et al., 2018; Davydenko, 2021), though the present findings indicate that such benefits were not statistically definitive under the current design constraints.

Beyond test scores, the integration of podcasts also supported behaviors associated with learner agency. Analysis of weekly worksheets revealed that students engaged in planning, monitoring, and reflection, all of which are central to Zimmerman’s (2002) model of self-regulated learning. These findings are echoed in recent research highlighting podcasts’ role in strengthening learners’ sense of autonomy and responsibility. For instance, Wubalem (2022) found that podcast-based listening enhanced EMI teachers’ oral academic English while promoting reflective practices, while Davydenko (2021) observed increased motivation and engagement among EFL learners. Collectively, these results suggest that podcasts may serve as tools not only for language proficiency development but also for cultivating self-regulated learning behaviors.

The findings also resonate with Self-Determination Theory (Deci & Ryan, 2000), which emphasizes the importance of autonomy-supportive environments. By enabling students to control when and how they engaged with input, the podcast intervention supported learners’ sense of ownership, which in turn may have sustained motivation and engagement. This suggests that the benefits of podcasts may extend beyond cognitive outcomes to include affective and agentic dimensions such as self-efficacy and persistence.

Despite these encouraging results, the study has limitations. The quasi-experimental design and intact class assignments limited randomization, while the relatively small sample size constrained generalizability. In addition, learner agency was examined indirectly

through worksheets rather than systematic coding of behaviors or learner interviews. Future research should address these limitations by adopting larger-scale, randomized designs and employing mixed methods to capture both quantitative and qualitative evidence of agency. Moreover, the role of emerging technologies such as AI-driven podcast platforms warrants exploration, particularly for their potential to provide adaptive, personalized learning pathways.

6. Limitations

Several limitations must be considered when interpreting these findings. First, the study employed a quasi-experimental design using intact classroom groups, resulting in a substantial baseline difference in pre-test scores between the experimental and control groups. Although ANCOVA statistically adjusted for these differences, such correction procedures can only partially mitigate threats to internal validity, and therefore, causal claims must remain tentative. Second, the relatively small sample size ($n = 53$) further constrained statistical power, making it more difficult to detect between-group differences at a conventional significance level. Third, the analysis of learner agency relied on worksheet-based evidence of planning, monitoring, and reflection rather than learner interviews or narrative self-reports. This methodological choice limited the depth of insight into students' internal reasoning processes during podcast listening. Finally, the study examined listening outcomes only through TOEIC-format testing; future research could incorporate diversified measures of listening proficiency and longitudinal tracking to better capture sustained gains over time and across different listening contexts.

7. Conclusion

This study offers preliminary evidence that podcast-based instruction may support EFL learners' listening comprehension while also supporting the development of learner agency. Both experimental and control groups achieved significant within-group improvements from pre-test to post-test. Although the experimental group demonstrated numerically greater improvement, the between-group difference approached but did not reach conventional levels of statistical significance ($p = .055$). Therefore, the suggestion of a potential advantage for podcast-based learning should be interpreted as indicative rather than conclusive.

In addition to measurable listening outcomes, podcasts encouraged self-regulated learning behaviors such as planning, monitoring, and reflection. These findings suggest that podcasts are not only effective tools for comprehension practice but also valuable resources for fostering learner autonomy and sustained motivation, in line with Self-Determination Theory.

Several limitations should be acknowledged, including the quasi-experimental design, with significant baseline differences between groups, the relatively small sample size, and reliance on worksheet-based qualitative data rather than richer interview sources. Future studies should adopt randomized controlled designs, larger participant groups, and additional qualitative data sources to more robustly determine the relationship between podcast engagement, agency, and standardized listening performance.

Overall, while the findings remain exploratory, they suggest the potential pedagogical value of incorporating structured podcast-based activities into an EFL curriculum. Used thoughtfully, podcasts may contribute to enhanced learner engagement and autonomy, supporting students in developing both listening competence and greater control over their language learning processes.

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Authors' contributions

The author was solely responsible for the study design, data collection, data analysis, and manuscript preparation.

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Data sharing statement

No additional data are available.

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