

Investigating Online Learning Versus Face-To-Face Instruction and It's Impact on Students' Listening Comprehension

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Received: April 2026; Revised: May 2026; Accepted: May 2026; Published: June 2026

Abstract

Most people agree that one of hardest talents to master is listening comprehension because learners must analyse spoken word instantly while understanding meaning, vocabulary, pronunciation, and contextual information simultaneously. In the past few, the increasing use of online learning has led to ongoing debate regarding whether online instruction is as effective as traditional face-to-face instruction in developing listening comprehension. Therefore, this study aimed to investigate the effect of online versus face-to-face instruction on EFL students' listening comprehension. This study employed a quasi-experimental pre-test-post-test non-equivalent control group design. The participants were 130 first-semester students of the English Language Education Department, Mandalika University of Education. Two intact classes were selected purposively, consisting of an experimental group receiving online instruction and a control group receiving face-to-face instruction. The treatment was conducted over six instructional meetings. The instrument was a listening comprehension test consisting of multiple-choice items measuring main ideas, specific information, and implied meaning. Instrument validity was established through expert judgment and item analysis, while reliability testing using Cronbach's Alpha a coefficient of 0.82, indicating high internal consistency. The data were analysed using descriptive and non-parametric inferential statistics because the data violated normality and homogeneity assumptions. The Wilcoxon Signed-Rank Test revealed significant improvement in both the experimental group ($Z = -4.60, p < .001$) and the control group ($Z = -4.50, p < .001$). However, the Mann-Whitney U Test showed no statistically significant difference between the two instructional groups ($p = .143 > .05$). The findings indicate that both online versus face-to-face instruction effectively improved students' listening comprehension, but neither instructional mode demonstrated statistically superior outcomes within the context of this study. The results suggest that instructional quality, meaningful listening input, learner engagement, and effective learning design may play a more important role in listening comprehension development than instructional delivery.

Keywords: Online learning; Face-to-face instruction; English teaching-learning; Listening comprehension

How to Cite: Qomariyah, S.S., & Nafisah, B.Z. (2026). Investigating Online Learning Versus Face-To-Face Instruction and It's Impact on Students' Listening Comprehension. *Journal of Language and Literature Studies*, 6(2), 876-886. doi: <https://doi.org/10.36312/jolls.v6i2.4882>



<https://doi.org/10.36312/jolls.v6i2.4882>

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INTRODUCTION

Listening comprehension serves a crucial function in acquiring second or foreign languages, as it delivers the essential linguistic input that enables learners to improve their vocabulary, grasp grammatical concepts, recognize pronunciation patterns, and develop communicative skills. Within EFL settings, listening is often regarded as one of the most mentally challenging skills because of the swift and ephemeral characteristics of spoken communication, the scarce chances for genuine exposure, and the necessity for learners to interpret meaning instantaneously (Field, 2008; Goh & Vandergrift, 2021; Simpson, 2021). In contrast to reading, listening does not provide learners with the option

to easily revisit the input; therefore, students must decode sound understand meanings, retain details in their short term recollection, and relate inbound information to what they already know at the same time. These intricate cognitive tasks frequently pose significant challenges EFL students, especially for those with limited language skills and inadequate experience with authentic spoken English (Graham, 2017; Graham & Zang, 2024); Hiver et al., 2020). Traditionally, listening instruction in EFL classrooms has been conducted through face-to-face interaction, where teachers facilitate comprehension through direct explanation, immediate feedback, clarification, repetition, and negotiation of meaning (Rost, 2025). Face-to-face instruction also allows learners to benefit from classroom interaction, peer discussion, non-verbal cues, and scaffolded support, all of which may contribute positively to listening comprehension development. However, the swift advancement of educational technology and the expansion of online learning environments have significantly transformed language teaching practices worldwide (Macaro et al., 2020). Online instruction provides greater flexibility, broader access to multimedia resources, and opportunities for autonomous learning through audio-visual materials, digital platforms, and interactive listening activities (Blake, 2013). At the same time, online learning may reduce direct interaction, limit immediate feedback, and create technological challenges that influence learners' comprehension processes and classroom engagement (Ortikov, 2024).

This trend is also observable within the English Language Education Department at the Mandalika University of Education. Ideally, it is anticipated that students will enhance their listening skills through consistent engagement with genuine listening resources, active involvement in class discussions, and structured teaching strategies. However, the real teaching environment reveals numerous obstacles that could impede the development of listening comprehension. Observations made in listening lessons show that a lot of students find it challenging to grasp spoken English in real-time, especially when faced with new vocabulary, fast-paced speech, and various authentic accents. In virtual learning setups, these challenges are frequently exacerbated by unreliable internet connections, minimal classroom interactions, diminished focus, slowback, and fewer chances for instant clarification. As a result, students may find it hard to keep concentration and effectively process auditory information during online listening tasks. These circumstances create a gap between the ideal goals of listening education and the actual experiences faced by English as a EFL learners in technology- based classrooms.

As a result, comparing online and face-to-face instruction has become a crucial topic in modern EFL pedagogy. Regarding the efficacy of both teaching modalities, prior research has shown conflicting results. According to a number of academics, face-to-face training typically results in higher language learning outcomes because it fosters richer communicative engagement, direct interaction, and instant feedback (William, 2024; Gacs et al., 2020; Khan, 2024). However, other research indicates that when accompanied by suitable technology tools, learner autonomy, and well-thought-out instructional strategies, online learning can produce results that are on par with or even more successful (Coman et al., 2020; Zeng & Xiao, 2024; Chiu, 2022). Multimedia-based input and technology-enhanced learning environments have been shown to improve students' listening proficiency and engagement in listening training. However, empirical findings remain inconclusive because some studies report no significant differences between instructional modes, while others indicate that face-to-face instruction remains more effective, especially for learners with lower proficiency levels.

There are still a lot of significant gaps in this discipline, despite the increasing quantity of studies in this area. First, rather of directly looking at listening comprehension as the primary end variable, many prior research has concentrated on students' impressions

or general language achievement. Second, a lot of research uses descriptive or correlational methods, which makes it difficult to prove that instructional mode and learning outcomes are causally related. Third, comparatively little research has been done in Indonesian higher education environments, especially in private universities where student learning conditions, infrastructure, and technology readiness may differ significantly from those in more technologically advanced educational settings. Therefore, there is still a lack of empirical data about the relative efficacy of online and in-person training on EFL listening comprehension in localized Indonesian contexts.

Thus, this study's innovation is found in its quasi-experimental comparison of online and in-person instruction, particularly in EFL listening comprehension courses in Indonesian higher education. This study explicitly focuses on listening comprehension as a cognitively demanding skill and methodically compares two instructional modalities within the same learner population and instructional framework, in contrast to many prior studies that highlight general language achievement or learner perceptions. Additionally, by adding localized empirical data from Mandalika University of Education, this work enhances the larger conversation about the efficacy of instructional modalities in EFL learning environments. This study answers the following research question: Is there a significant effect in listening comprehension achievement between EFL students taught through online instruction and those taught through face-to-face instruction? It is based on the research gap and instructional issues mentioned above.

This study aims to investigate the effect of online versus face-to-face instruction on EFL students' listening comprehension through a quasi-experimental design. The findings ought to provide empirical evidence that may contribute to instructional decision-making, listening pedagogy, and the development of more effective EFL learning environments in higher education contexts.

METHOD

Research Design

This study used a pre-test–post-test non-equivalent control group design as part of a quasi-experimental research design. While still enabling researchers to investigate causal correlations between instructional treatments and learning outcomes, quasi-experimental approaches are thought to be suitable in educational contexts where naturally occurring courses are used. Two groups participated in the study: a control group that received in-person teaching and an experimental group that received online education. A pre-test was given to both groups prior to the therapy to assess their initial listening comprehension, and a post-test was given following the treatment to gauge learning progress and the relative efficacy of the teaching modalities.

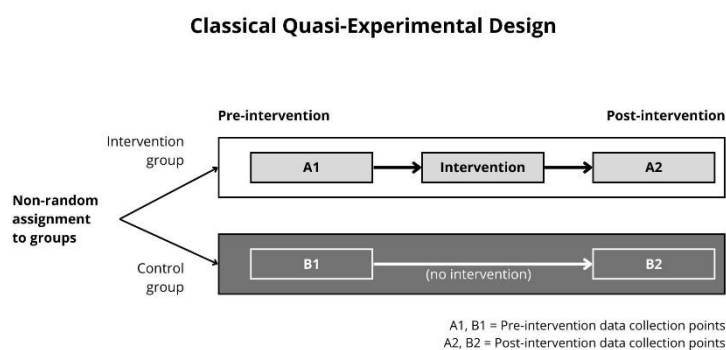


Figure 1. Quasi Experimental Design

Research Participants

The participants of this study were first-semester students of the English Language Education Department, Faculty of Culture, Management, and Business (FBMB), Mandalika University of Education (UNDIKMA), who were enrolled in the *Listening for General Communication* course during the academic year of the study. Because the researcher purposefully picked two entire classes with comparatively similar academic traits and listening competence levels based on institutional placement data and classroom observations, the sample was chosen using purposive sampling. One class was designated as the experimental group, which received education online, while the other class was designated as the control group, which received tuition in person. To keep the comparison procedure balanced, each group had a roughly equal number of pupils. Both groups took a pre-test to determine their initial equivalency in listening comprehension prior to the start of therapy. Prior to the instructional therapy, the two groups showed comparatively identical baseline proficiency, according to the pre-test results.

Instruments

A comprehension exam modified from standardized EFL listening materials and pertinent educational resources suitable for first-semester university students served as the study's instrument. The test was created to assess a number of listening comprehension, such as recognizing key concepts, comprehending particular details, finding suggested meaning, deciphering contextual meaning, and comprehending brief dialogues and monologues. Each multiple-choice question on the test had four possible answers. Each correct response was worth one point, while each incorrect response was worth zero. A standardized score scale was then created from the total score.

Expert judgment from listening instruction specialists and English language instructors established content validity. The experts assessed how well the exam items aligned with the learning objectives, listening indicators, language proficiency, and directions' intelligibility. Statistical item analysis was then used to perform item validity analysis. The majority of the items satisfied the acceptable validity standards, according to the results. Nevertheless, one item was found to be invalid, and another had borderline validity. The marginal item was altered linguistically and kept following expert evaluation since it still satisfied the minimal acceptable discrimination criterion, whereas the invalid item was eliminated from the final instrument prior to hypothesis testing. Cronbach's Alpha was used to quantify instrument reliability in order to assess the listening comprehension test's internal consistency. The reliability coefficient showed that the test items consistently assessed students' listening comprehension skills, indicating that the instrument attained an adequate degree of dependability.

There were multiple phases to the data collection procedure. 1. Pre-test; To ascertain the students' initial listening comprehension skills before to receiving treatment, a pre-test was given to both the experimental and control groups at the start of the study. The pre-test was administered in a controlled classroom setting with identical listening materials, audio quality, time allotment, and test guidelines for each group. 2) Treatment; Approximately six to eight instructive meetings comprised the treatment. Digital learning platforms, including online classroom management systems and video conferencing apps, were used to deliver online instruction to the experimental group. Online conversations, digital workbooks, audio-visual resources, video-based listening exercises, and independent listening assignments were among the learning activities. While feedback was given via online discussion boards, virtual classroom engagement, and digital task correction, students engaged with the lecturer through synchronous and asynchronous activities. The control group, on the other hand, got face-to-face a traditional classroom. Direct listening practice, lecturer explanations, group discussions, Q&A sessions, instant

clarification, and in-class listening exercises were all part of the classroom activities. During classroom learning exercises, the lecturer facilitated real-time interaction and gave direct oral feedback. Both instructional styles employed the identical listening materials, learning objectives, exercise subjects, and evaluation methods to guarantee equity and comparability between the two groups. The style of instruction delivery was the main distinction between the groups. 3) Post-test; Using the same testing methods as the pre-test, a post-test was given to both groups following the conclusion of the treatment sessions. The purpose of the post-test was to compare the efficacy of online versus face-to-face and to gauge how much students' listening comprehension had improved after receiving the instructional therapy.

Data Analysis

Descriptive and inferential statistical techniques were used to statistically examine the data. Calculating mean scores, and standard deviations, scores for both pre-test and post-test findings were examples of descriptive statistics. To determine if the data satisfied the presumptions necessary for parametric statistical analysis, normality and homogeneity tests were performed prior to hypothesis testing. The findings showed that the homogeneity and normality assumptions were broken by the data. Because non-parametric statistical tests are more suitable for data that do not meet parametric assumptions and offer more reliable statistical interpretation in such circumstances, they were used (Bijma et al, 2025). Two non-parametric tests were used in this study: The Wilcoxon Signed-Rank Test was used to examine the difference between pre-test and post-test scores within each group and The Mann–Whitney U Test was used to compare post-test scores between the experimental group and the control group to determine whether a significant difference existed between online and face-to-face instruction. All statistical analyses were conducted using a significance level of 0.05.

RESULTS AND DISCUSSION

Results

This study's findings point to three main points. First, following the treatment, listening comprehension significantly improved for both the experimental group (online) and the control group (face-to-face). Second, both groups showed significant progress, as shown by the huge effect sizes. Third, the statistical analysis showed no significant difference between online and face-to-face teaching approaches, despite the experimental group's somewhat higher mean score. Although neither instructional mode showed statistically superior results, these data indicate that both instructional approaches were successful in raising students' listening comprehension.

The item validity analysis shows that the majority of the test items have r-count values higher than the r-table (0.334), indicating that they are valid. Only Item 5 is categorized as invalid, and Item 25 is considered marginal. Therefore, most items in the listening comprehension test are valid and appropriate for measuring students' listening comprehension. Invalid items should be revised or removed before further analysis. This finding or reliability implies that the listening comprehension test is valid and appropriate for gathering data. The study's findings show how students' listening comprehension scores differed between the experimental group—which received teaching online—and the control group—which received instruction face-to-face. The following is a summary of the descriptive statistics.

Table 1. Descriptive Statistics

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Pre-test Experimental Group	65	25.00	99.00	44.6769	2.29151	18.47474
Post-test Experimental Group	65	50.00	74.00	55.5231	.94541	7.62215
Pre-test Control Group	65	.00	93.00	45.7077	2.32055	18.70889
Post-test Control Group	65	.00	89.00	54.9846	1.47258	11.87236
Valid N (listwise)	65					

The findings demonstrate that both groups improved between the pre- and post-tests. While the control group's mean score increased from 45.70 to 54.98, the experimental group's improved from 44.67 to 55.52. Even though the experimental group's post-test mean score was somewhat higher, there wasn't much of a difference between the groups.

Table 2. Normality

		Kolmogorov-Smirnov			Shapiro-Wilk	
	Class	Statistic	df	Sig.	Statistic	df
Result	Experimental	.350	65	.000	.726	65
	Control	.315	65	.000	.841	65

Table 3. Homogeneity

		Levene Statistic	df1	df2	Sig.
Result	Based on Mean	16.193	3	256	.000
	Based on Median	10.579	3	256	.000
	Median Based on Median and with adjusted df	10.579	3	229.683	.000
	Based on trimmed mean	17.972	3	256	.000

Both groups' significant scores for the Kolmogorov-Smirnov and Shapiro-Wilk normality tests were less than 0.05, suggesting that the data were not regularly distributed. Significance values below 0.05 were also found using Levene's Test of Homogeneity, demonstrating uneven variances between groups. As a result, the presumptions needed for parametric testing were broken. Non-parametric statistical techniques were used for hypothesis testing because the data were neither homogeneous or regularly distributed.

Table 4. Wilcoxon Signed-Rank

Group	N	Z	p-value	Effect Size (r)	Interpretation
Control	65	-4.50	< .001	0.56	Large
Experimental	65	-4.60	< .001	0.57	Large

Both groups showed statistically significant improvement, according to the data. Both the experimental group ($Z = -4.60$, $p < .001$, $r = .57$) and the control group ($Z = -4.50$,

$p < .001$, $r = .56$) exhibited considerable improvement. The significant gains in listening comprehension in both teaching modalities are indicated by the large effect sizes.

Table 5. Mann-Whitney U

Comparison		N	Z	p-value	Effect Size (r)	Interpretation
Control Experimental	vs	65	-4.50	< .001	0.56	Large

The experimental and control groups did not differ statistically significantly, according to the Mann-Whitney U Test ($p = .143 > .05$). There was little difference between the two teaching modes, as indicated by the tiny effect size ($r = .13$). As a result, the alternative hypothesis (H_a) was rejected and the null hypothesis (H_0), which claims that there is no discernible difference between pupils taught online and those taught face-to-face, was accepted.

Discussion

The results of this study offer significant understanding of how well face-to-face versus online training might help EFL students improve their listening comprehension. There was no discernible difference between the two instructional techniques, despite the fact that both instructional groups showed statistically substantial improvement. These findings imply that the development of hearing comprehension may depend more on how learning experiences are planned, how students interact with listening information, and how well instructional procedures support comprehension development than on the actual mode of instructional delivery. Theories of listening comprehension and second language learning can be used to explain the notable improvement seen in both groups. Repetitive exposure to intelligible auditory input and learners' capacity to meaningfully process spoken language are essential components of listening development. Language acquisition happens when learners are regularly vulnerable to comprehensible language that is just a little bit above their current skill level, according to input-based theories. Both groups in this study were given opportunity to frequently digest spoken language, systematic practice, and meaningful listening exposure. As a result, listening comprehension considerably improved for students in both learning situations.

From a cognitive standpoint, listening comprehension entails intricate mental operations such as top-down and bottom-up processing. While processing speech in real time, learners must concurrently decode sounds, recognize vocabulary, analyse grammatical structures, activate existing knowledge, and create meaning. By enhancing lexical recognition, attentional control, and auditory processing efficiency, repeated listening exercises may have reinforced these cognitive processes in both groups. This view lends credence to the idea that cognitive processing practice, rather than only instructional mode, is directly linked to listening development. The lack of a statistically significant difference between face-to-face and online education points to what could be called the two instructional modalities' functional equivalency. To put it another way, both learning environments seemed to be able to support the development of listening comprehension when they offered sufficient student involvement, structured learning activities, and relevant input. This result suggests that the quality of instruction may have a greater impact than the method of instruction delivery.

Cognitive Load Theory, which emphasizes that learning efficiency depends on how information is cognitively processed rather than just how it is provided, offers one explanation. Similar learning outcomes would logically result if both instructional modes were able to effectively regulate cognitive load through clear instructions, doable listening

tasks, suitable pacing, and encouraging learning activities. Therefore, regardless of whether learning takes place online or face-to-face, the results suggest that careful instructional design that supports learners' processing capacity is necessary for effective listening training (Topping et al, 2024). Constructivist approaches on learning can also be used to interpret the results. Constructivism emphasizes on how students actively produce knowledge by engagement, experience, reflection, and participation in educational activities (Graham & Poter, 2026; Stickler et al, 2020). Through active engagement with listening materials, classroom interaction, and meaning-making processes, children in both instructional environments most likely gained listening comprehension. Constructivist approaches on learning can also be used to interpret the results. Through active engagement with listening materials, classroom interaction, and meaning-making processes, children in both instructional environments most likely gained listening comprehension (Chang, 2024).

The results of this study are mostly conforming to earlier studies showing that, when properly planned, both online versus face-to-face can successfully enhance language learning (Kamaruzzaman, et al 2023). Online learning settings can offer flexibility, accessibility, and exposure to a variety of multimedia input that favourably assist language acquisition, according to several studies. However, prior research highlighting the benefits of face-to-face training has emphasized the significance of direct communication, prompt feedback, and classroom involvement. Both the supremacy of traditional face-to-face instruction and the excellence of online learning are not entirely supported by the current research. Rather, they build on earlier studies by arguing that learner engagement, input exposure, and learning design quality may be more important factors in determining an instructional mode's efficacy than modality alone (Suwandi, 2023).

These results also add to the larger discussion on innovative teaching methods in language learning. It is frequently believed that educational innovations will inevitably result in better learning outcomes. However, the current study indicates that innovation in technology (Ma & Lee, 2021) or training does not always translate into statistically higher performance. Rather, it seems that meaningful learning experiences, understandable input, high-quality interactions, and consistent learner participation are more important for effective listening training.

The pedagogical implications of this study are significant for EFL listening instruction. First, teachers should prioritize the quality of listening input, task design, learner interaction, and feedback mechanisms rather than focusing exclusively on instructional modality. Whether instruction is delivered online or face-to-face, students require meaningful exposure to authentic listening materials and opportunities to engage actively with spoken language. Second, the findings support the integration of mix learning strategies that integrate the advantages of online versus face-to face. Online environments may provide flexibility, repeated listening exposure, and multimedia resources, while face-to-face settings may facilitate immediate clarification, social interaction, and direct feedback. Combining these strengths may create more balanced and effective listening instruction. Third, the findings highlight the importance of listening strategy instruction and learner engagement. Teachers should help students develop metacognitive listening strategies such as predicting content, monitoring comprehension, identifying key information, and reflecting on listening difficulties. Supporting students' active cognitive engagement may improve listening performance more effectively than changing instructional mode alone.

Several limitations should also be acknowledged. First, the duration of treatment may not have been long enough to produce stronger differences between groups. Longer instructional periods might reveal different patterns of learning development over time. Second, although the study controlled several instructional variables, learner engagement

and independent practice outside the classroom could not be fully monitored. Third, the study relied primarily on quantitative data; therefore, students' cognitive listening processes, learning experiences, and perceptions were not explored in depth.

Future research may therefore benefit from employing longer treatment duration, more controlled learning conditions, and mixed-method approaches combining quantitative and qualitative data. Future studies may also investigate the influence of learner motivation, metacognitive listening strategies, self-regulated learning, and technology-supported interaction on listening comprehension development. In addition, further research on blended learning models may provide valuable insights into how online versus face-to-face instructional elements can be integrated effectively in EFL listening classrooms.

The current study adds to the expanding corpus of research on instructional modality in EFL learning by demonstrating that both online versus face-to-face instruction can effectively improve listening comprehension when supported by meaningful input, appropriate instructional design, and active learner engagement. The findings suggest that the effectiveness of listening instruction depends not primarily on delivery mode, but on the quality of learning experiences that enable learners to process, interpret, and engage with spoken language meaningfully.

CONCLUSION

This study investigated whether there was a significant difference between online instruction versus face-to-face instruction on EFL students' listening comprehension at the English Language Education Department of FBMB UNDIKMA. The findings revealed that both instructional groups demonstrated significant improvement in listening comprehension after the treatment. However, the Mann-Whitney U Test indicated that there was no statistically significant difference between students taught through online instruction and those taught through face-to-face instruction. Therefore, the null hypothesis (H_0) was accepted, while the alternative hypothesis (H_a) was rejected. These findings suggest that both online versus face-to-face instruction can effectively support listening comprehension development when supported by meaningful listening input, appropriate instructional design, and active learner engagement. The results also indicate that instructional delivery mode alone may not be the primary determinant of listening achievement within the context of this study.

The study contributes to EFL listening research by providing quasi-experimental evidence from an Indonesian higher education context, particularly regarding the comparative effectiveness of online versus face-to-face instruction in listening comprehension classes. The findings highlight the importance of focusing on input quality, interaction, feedback, and learner engagement rather than emphasizing instructional modality alone. Nevertheless, the findings should be interpreted within the limitations of the study, including the specific institutional context, treatment duration, and participant characteristics. Therefore, broader generalizations regarding the equivalence of instructional modalities should be made cautiously. Future research is recommended to employ longer treatment periods, mixed-method approaches, and broader participant populations to gain deeper understanding of listening comprehension development across different instructional environments.

RECOMMENDATION

The findings of this study open several directions for future research. Given that no statistically significant difference was found between instructional modes, future studies should move beyond modality comparisons and investigate the underlying mechanisms that drive listening comprehension development. In particular, further research is recommended to explore the role of learner-related variables such as cognitive strategies,

metacognitive awareness, motivation, and prior knowledge, which may exert a stronger influence on learning outcomes than instructional mode itself. Additionally, future studies should consider implementing a longer treatment duration and more intensive intervention. The relatively short exposure in the present study may have limited the potential to detect significant differences between groups. A longitudinal design could provide deeper insights into how instructional approaches influence listening development over time. Another important direction is the integration of mixed learning models, combining the strengths of both online and face-to-face instruction. Rather than treating instructional modes as competing variables, future research should examine how these modes can complement each other to optimize learning effectiveness.

This study also faced several limitations that may have influenced the results. First, the variability of students' initial proficiency levels may have contributed to overlapping score distributions between groups, thereby reducing statistical sensitivity. Second, external factors such as learners' motivation, engagement, and learning environment were not fully controlled, which may have affected the consistency of learning outcomes. Third, the use of a single measurement instrument may not have fully captured the multidimensional nature of listening comprehension. Future research is therefore encouraged to employ mixed-method approaches, incorporating both quantitative and qualitative data, to gain a more comprehensive understanding of listening processes. The inclusion of process-oriented data, such as think-aloud protocols or learner reflections, could provide deeper insights into how students engage with listening tasks.

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