

Enhancing Students' Listening Comprehension through Interactive Multimedia Learning Using Mobile-Based Language Applications

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Abstract

This study aims to examine the enhancement of students' listening comprehension through the integration of interactive multimedia learning in English as a Foreign Language (EFL) classrooms. A descriptive qualitative approach was employed, involving 25 secondary school students as participants. Data were collected through observations, interviews, and field notes during the learning activities. The findings reveal that the use of interactive multimedia tools, such as audio-visual materials, animations, and application-based listening tasks, significantly improved student engagement, contextual understanding, and overall listening comprehension. Students demonstrated increased accuracy in identifying main ideas, essential vocabulary, and implicit messages within spoken texts. The learning process also became more dynamic and enjoyable, which contributed to higher learning motivation. Therefore, interactive multimedia learning can be considered an effective instructional strategy for improving students' listening comprehension in EFL contexts.

Keywords: Listening Comprehension; Interactive Multimedia; Learning Motivation; EFL

INTRODUCTION

Listening comprehension is a fundamental component in the process of acquiring a second or foreign language. In the context of English as a Foreign Language (EFL), listening serves as the basis upon which learners develop the ability to speak, read, and write effectively. Before learners can construct responses or express ideas in English, they must first be able to understand and interpret spoken input. However, listening is often considered one of the most complex skills to master because it not only involves the auditory perception of sounds but also the cognitive processing of meaning, context, and communicative intent (Underwood, 2019). In many EFL classroom practices, listening instruction is still dominated by teacher-centered and test-oriented approaches. Typically, teachers play prerecorded audio tracks from textbooks, and students are asked to answer comprehension questions afterward. This method encourages students to focus solely on accuracy and test results rather than on understanding the listening process itself. Moreover, such listening materials are often scripted and lack authenticity, failing to reflect natural language use, such as varying accents, colloquial expressions, speech speed, and natural rhythm. As a result, when faced with real-life or authentic English input, learners frequently experience difficulty, frustration, and listening anxiety (Goh & Vandergrift, 2018; Field, 2020).

The rapid advancement of digital technology has brought new opportunities to transform the way listening is taught. One of the most prominent innovations is interactive multimedia

learning, which integrates multiple modes of representation, including audio, visuals, text, and user interaction. According to Mayer's Cognitive Theory of Multimedia Learning, learning becomes more effective when information is presented using dual channels visual and auditory because learners can process meaning more efficiently while reducing cognitive overload (Mayer, 2021). Thus, multimedia resources do not merely make learning appealing they actively support the cognitive processes involved in comprehension.

Within this framework, mobile-based language learning applications have emerged as powerful tools for developing listening skills. Applications such as *BBC Learning English*, *ELLLO*, *Duolingo*, *VOA Learning English*, and *ListenEnglish* offer learners flexible access to authentic listening materials, enriched with visual cues, transcripts, playback controls, interactive quizzes, and instant feedback. These features allow learners to practice listening skills in personalized, self-paced, and engaging ways, both inside and outside the classroom environment (Teng, 2022).

In addition, the use of mobile applications promotes self-regulated learning, as learners can set their own goals, track progress, repeat listening tasks as needed, and reflect on their learning development. This autonomy supports increased motivation, confidence, and sustained engagement in learning activities (Rahimi & Miri, 2023). Previous studies have also reported similar benefits. For example, Zhang and Lin (2021) found that mobile-based multimedia materials significantly improved students' listening retention and reduced listening-related anxiety. Likewise, Nugroho and Hafifah (2022) highlighted that interactive language applications can strengthen learner autonomy and classroom participation by offering flexible and personalized learning pathways. Furthermore, Sari (2023) emphasized that multimedia supported listening activities help students concentrate more effectively on key auditory features, which leads to improved comprehension outcomes. However, despite these positive findings regarding the use of multimedia and mobile applications in language learning, there remains a lack of qualitative research focusing on learners' real experiences, challenges, and cognitive responses when using such tools in actual classroom contexts, particularly in Indonesian secondary schools. This gap indicates the need for a more in-depth exploration of how students interact with mobile-based multimedia learning and how these interactions contribute to the development of their listening skills in authentic learning environments. Therefore, this study aims to provide an in-depth description of how interactive multimedia learning through mobile-based language applications enhances students' listening comprehension and influences their learning attitudes, strategies, and engagement in EFL classrooms.

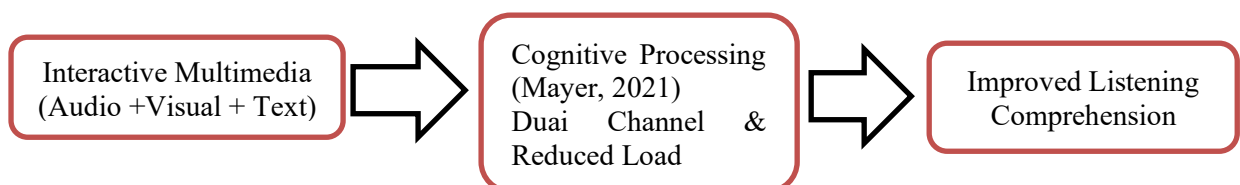


Figure 1. Conceptual Framework of the Study

METHOD

This study employed a qualitative descriptive research design to provide a detailed and contextualized account of students' learning experiences. A qualitative descriptive approach is

appropriate for studies aiming to describe phenomena in a straightforward manner and remain close to participants’ actual expressions and interpretations (Sandelowski, 2000). This design allows the researcher to capture students’ perspectives, challenges, and responses toward the use of interactive multimedia learning in a natural classroom setting. to investigate how interactive multimedia learning through mobile-based language applications enhances students’ listening comprehension in an EFL classroom. The qualitative descriptive approach was selected because it allows the researcher to describe participants’ experiences, behaviors, and perceptions naturally, without imposing experimental manipulation or predetermined theoretical constraints. The goal of this approach is to provide a rich, realistic, and context-grounded account of how students engage with multimedia listening activities during the learning process.

Research Setting and Participants

The research was conducted at a public senior high school in Indonesia during the 2024–2025 academic year. The participants consisted of 22 eleventh-grade students enrolled in an English course. The selection was based on purposive sampling, with the criteria that the students demonstrated challenges in listening comprehension but expressed motivation and willingness to participate in learning activities involving digital media. The English teacher of the class was also involved as a collaborative informant to provide insights regarding student behavior, classroom norms, and instructional context.

Learning Intervention

The intervention integrated interactive multimedia listening activities using two mobile-based language learning applications:

BBC Learning English

ELLLO (English Listening Lesson Library Online)

The intervention took place over **four weeks**, with two 90-minute instructional sessions per week. Each session followed a structured learning sequence:

- 1. Pre-Listening Activities**

- Activation of background knowledge through discussion prompts, images, or short previews from the multimedia content.
- Guided prediction of topic and vocabulary.

- 2. While-Listening Activities**

- Students listened to audio or video materials with visual and textual support (e.g., transcripts, subtitles, contextual images).
- Learners engaged in interactive tasks such as pausing, replaying segments, highlighting new vocabulary, and answering interpretive questions.

- 3. Post-Listening Activities**

- Students summarized content orally or in written form.
- Reflection journals were completed to document perceived learning progress, challenges, and strategy use.

This learning design emphasized learner autonomy, strategic listening, and active engagement, consistent with principles of interactive multimedia learning.

Data Collection Instruments

To ensure the richness and trustworthiness of qualitative data, four types of instruments were employed:

Instrument	Purpose	Data Form
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Classroom Observations	To observe learning behaviors, engagement, and interaction	Field Notes & Observation Sheets
Student Reflection Journals	To capture personal learning experiences and self-perceived development	Student Narratives
Semi-Structured Interviews	To gain deeper insights into students' perceptions, motivations, and challenges	Interview Transcripts
Teacher's Field Notes	To verify patterns and confirm student progress from the instructor's perspective	Descriptive Notes

Data Analysis

The data were analyzed using Miles, Huberman, and Saldaña (2019) qualitative analysis framework:

1. Data Reduction

Data were sorted, coded, and categorized to identify recurring patterns related to listening comprehension development, multimedia engagement, and learner attitudes.

2. Data Display

Themes and relationships were organized into tables and narrative matrices to support interpretation.

3. Conclusion Drawing and Verification

Emerging interpretations were compared across multiple data sources through method triangulation to ensure credibility and confirmability.

Trustworthiness of the Study

Several strategies were applied to enhance the trustworthiness of the research findings:

Triangulation (observations, interviews, journals, teacher notes)

Member Checking (participants confirmed interpretations)

Thick Description (detailed contextual explanation)

Peer Debriefing (discussion with the collaborating teacher)

The researcher informed participants about the purpose, scope, and procedures of the study. Written consent was obtained, participation was voluntary, and pseudonyms were used to ensure confidentiality. The learning activities aligned with the school curriculum, minimizing disruption to instructional routines.

RESULTS AND DISCUSSION

Results

The analysis of the data was carried out through classroom observations, student reflective journals, and interviews with both students and the teacher. The findings indicate a noticeable improvement in students' listening comprehension after the implementation of interactive multimedia learning. At the beginning of the study, students experienced difficulty maintaining attention while listening to audio materials. They often appeared passive and easily distracted, and many expressed uncertainty about what information they needed to focus on. After the integration of interactive multimedia tools such as *BBC Learning English* and *ELLLO*, the classroom atmosphere changed significantly. Students showed higher levels of concentration, followed the lesson flow more steadily, and made visible efforts to understand the content of

the listening material. Some students explained that visual aids helped them follow the context of the conversation more clearly, which prevented them from losing focus easily.

Student reflections included statements such as

“I usually struggled to understand audio, but the visual elements helped me follow what was happening” (Student 4)

“I did not feel bored because the video was interesting. I could pay attention longer” (Student 12)

A shift also occurred in how students processed information while listening. Before the intervention, students listened without any clear strategy. As the lessons progressed, they gradually began to identify key words, take notes on unfamiliar vocabulary, replay portions of the audio, and infer meaning from contextual visual cues. The teacher also observed that students who were previously silent began to demonstrate independent attempts to interpret meaning from the listening tasks.

Teacher interview excerpt:

“They are now aware of what to pay attention to while listening. They no longer just wait for the answers; they are actively trying to process what they hear”

Another important finding is the increase in students’ confidence. Students who previously hesitated to speak or provide responses became more willing to express their understanding and participate in class discussions. Their improved comprehension appeared to support this confidence, allowing them to feel more secure when contributing their interpretations.

A student expressed:

“Now I feel confident with my answers because I truly understand the video content” (Student 8)

Overall, these findings suggest that interactive multimedia learning not only enhances listening comprehension but also supports emotional and cognitive engagement, promoting a more active and confident learning environment.

Table 1. Summary of the Main Findings

Theme	Description	Evidence Source	Instructional Impact
Increased Concentration and Engagement	Students became more focused and involved during listening activities	Classroom observations and student journals	The classroom environment became more active and supportive
Development of Listening Strategies	Students independently used structured listening strategies such as identifying key words and taking notes	Teacher notes and interview responses	Learners demonstrated greater autonomy and cognitive processing
Increased Confidence in Understanding Listening Material	Students expressed a stronger sense of certainty in their understanding and participated more in discussions	Student interviews and class participation	Motivation and willingness to engage improved noticeably

Table 2. Comparison of Student Behavior Before and After Multimedia Learning

Aspect	Before Multimedia	After Multimedia
Focus	Easily distracted	More consistent focus

Learning Attitude	Passive and hesitant	Active and responsive
Listening Strategy Use	No clear strategy	Replaying, note-taking, meaning prediction
Confidence	Fear of being wrong	Willing to speak and share understanding
Comprehension Ability	Difficulty catching meaning	Able to grasp main ideas and context

Discussion

The findings of this study indicate a clear improvement in students’ listening comprehension after the implementation of interactive multimedia learning. Before the intervention, many students struggled with understanding spoken English due to limited vocabulary, lack of exposure to authentic pronunciation, and low motivation to engage in listening activities. After interactive multimedia was introduced, students demonstrated increased comprehension, confidence, and enthusiasm toward learning. These results highlight the importance of utilizing technology-enhanced instruction in EFL listening classrooms. This improvement aligns with Mayer’s (2021) Cognitive Theory of Multimedia Learning, which explains that learners process information more effectively when verbal information (audio) is paired with meaningful visual input. The dual-channel processing system visual and auditory reduces cognitive load and helps learners form stronger mental connections. In this study, videos and animations supported students in understanding context and meaning more easily than audio-only materials. Additionally, the results support Goh and Vandergrift’s (2018) view of listening as an active cognitive process that requires constructing meaning, predicting, and monitoring understanding. Interactive multimedia encourages these cognitive strategies by presenting visual cues, clear speech models, and scaffolded contexts that guide comprehension.

Students’ motivation also increased throughout the lessons. This supports Hockly (2019) and Teng (2022) who argue that the use of digital media in language learning aligns with students' current digital lifestyles, making learning more engaging and relatable. When students are emotionally engaged, they invest more effort in understanding input, which further enhances learning outcomes. Furthermore, this study is consistent with Wang (2022) and Li & Liu (2023) who found that multimedia learning environments help learners retain information longer by providing repeated exposure to meaningful audio-visual contexts. The positive results also align with Rahmawati & Wahyudi (2021) who reported that multimedia helps students reduce anxiety during listening tasks because it provides clear context and reduces ambiguity.

The classroom observations also showed that interactive multimedia promoted a more student-centered learning environment, where students asked more questions, interacted with peers, and participated actively. Although this study did not specifically incorporate collaborative learning strategies, the increased interaction suggests that multimedia could further support communicative and cooperative learning frameworks in future lessons. However, it is important to acknowledge that the effectiveness of multimedia depends on how it is integrated. As Shadiev & Yang (2020) note, multimedia tools should not be used as entertainment but must be purposefully aligned with clear learning objectives. In this study, multimedia was carefully selected and accompanied by structured comprehension activities, which contributed to its effectiveness.

Overall, the use of interactive multimedia serves not only as a supplementary resource but as a transformative instructional approach that enhances cognitive processing, emotional

engagement, and learning outcomes in EFL listening comprehension. Considering these findings, teachers are encouraged to incorporate multimedia strategically into their instructional practices to enrich students' learning experiences and improve comprehension performance.

CONCLUSION

This study concludes that the integration of interactive multimedia learning significantly enhances students' listening comprehension in English as a Foreign Language (EFL) classrooms. The combination of visual and auditory input provided by multimedia resources helps learners process spoken language more efficiently by reducing cognitive load and offering contextual support that clarifies meaning. As a result, students are better able to interpret speech, identify key information, and construct understanding from the listening material.

Prior to the use of interactive multimedia, many students struggled with listening due to limited vocabulary, unfamiliar pronunciation patterns, and low motivation. However, after the implementation of multimedia-based learning, students demonstrated improved comprehension, increased engagement, and greater self-confidence. This indicates that interactive multimedia supports not only cognitive development but also affective factors such as motivation and emotional involvement in the learning process.

The findings reinforce the idea that multimedia should not merely serve as supplemental instructional material but as a strategic pedagogical tool that encourages active, student-centered learning. When multimedia is used purposefully, aligned with instructional goals, and accompanied by structured learning activities, it has the potential to transform the listening learning environment into a more meaningful, collaborative, and engaging experience. Nevertheless, the success of multimedia-based instruction relies on careful media selection, teacher competence, and thoughtful instructional design. Future research may explore comparative effectiveness across different types of multimedia, learner proficiency levels, or the integration of collaborative learning models to further understand its long-term impact. Overall, interactive multimedia learning proves to be a powerful approach to improving listening comprehension and should be considered a valuable component of contemporary EFL pedagogy.

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