



Technology-Enhanced Arabic Listening Instruction and Its Learning Challenges: A Qualitative Study of Undergraduate Students

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Abstract

Technology-enhanced instruction has expanded opportunities for Arabic listening practice through authentic audiovisual materials, repeated exposure, collaborative learning, and digital assessment; however, students may continue to experience difficulties when technological resources are not aligned with their linguistic and cognitive readiness. This study aimed to analyze the implementation of technology-enhanced Arabic listening instruction and identify the linguistic, phonological, technical, cognitive, and affective challenges experienced by undergraduate students in an Arabic Language Education program. A descriptive qualitative design was employed in Class C at Maulana Malik Ibrahim State Islamic University of Malang. Data were collected through classroom observations, semi-structured interviews with students and the course lecturer, and analysis of instructional documents, including learning materials, video links, and assessment records. The data were analyzed through condensation, coding, categorization, thematic development, data display, and conclusion verification. The findings showed that listening instruction was organized through pre-class YouTube exposure, group presentations, classroom discussions, question-and-answer activities, and Quizizz-based formative assessment. Despite this structured integration, students encountered limited vocabulary, difficulty distinguishing Arabic phonemes with similar places of articulation, rapid native-speaker speech, dialect variation, unclear word boundaries, poor audio quality, anxiety, boredom, and reduced concentration. These challenges interacted and frequently disrupted students' ability to process spoken Arabic continuously and construct coherent meaning. The study concludes that digital technology alone is insufficient to improve Arabic listening proficiency. Effective instruction requires graded listening materials, explicit phonological training, vocabulary preparation, reliable audio resources, supportive classroom interaction, and diagnostic assessment aligned with learners' actual proficiency.

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INTRODUCTION

Listening constitutes a foundational component of Arabic language acquisition because it enables learners to recognize phonological patterns, retrieve lexical meanings, interpret grammatical relationships, and construct meaning from spoken discourse (Boulaares, 2026; Mizan et al., 2023). Unlike written texts, spoken input is transient and must be processed while the speaker continues producing subsequent information, leaving learners with limited time to revisit unfamiliar expressions. This condition makes listening an active cognitive process rather than a passive reception of sounds, particularly for non-native learners who have not developed automatic spoken-word recognition. In Arabic education, listening competence also supports the development of pronunciation, speaking fluency, vocabulary acquisition, and participation in authentic communication (Abdelgawad, 2022; Almelhes, 2024; Lazuardi & Syaheed, 2025; Zubair, 2025). Its development has therefore become increasingly relevant as Arabic learning moves beyond textbook-based instruction toward authentic, multimodal, and digitally mediated communication. Effective

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Arabic instruction must consequently treat listening as a central learning outcome that requires purposeful practice, appropriate scaffolding, and sustained exposure to meaningful spoken language.

The growing availability of YouTube videos, podcasts, mobile applications, and interactive assessment platforms has considerably expanded opportunities for Arabic listening practice. These resources provide learners with repeated access to authentic pronunciation, contextualized vocabulary, native-speaker discourse, and culturally situated communication that may be difficult to reproduce through conventional classroom explanation alone (Azka et al., 2024; Usman et al., 2026). Audiovisual materials can further support comprehension by connecting spoken expressions with facial movements, gestures, subtitles, images, and situational contexts (Al-Jumaily & Alazzawi, 2025; Perez, 2022; Widiatmoko & Endarto, 2018). Interactive platforms such as Quizizz can complement this exposure through immediate feedback, formative assessment, and game-based participation that encourages students to remain actively involved in learning activities (Aisyah et al., 2025; Rahmawati et al., 2023; Ramadhani et al., 2025). Nevertheless, broader access to digital media does not necessarily guarantee deeper listening comprehension, particularly when instructional materials exceed students' linguistic proficiency or cognitive processing capacity. The pedagogical value of technology therefore depends on how digital resources are selected, sequenced, mediated, and aligned with learners' actual readiness.

This limitation is evident in university Arabic classrooms, where students may have studied grammar and vocabulary for several years but still struggle to understand naturally produced speech. Common difficulties include distinguishing phonemes with adjacent articulation points, identifying word boundaries, retrieving vocabulary rapidly, following long utterances, and maintaining comprehension when native speakers use unfamiliar speech rates or dialectal features (Owaida, 2016; Rahman et al., 2024). Such problems become more pronounced when online videos contain background noise, inconsistent recording quality, limited contextual support, or linguistic varieties that differ from the Modern Standard Arabic presented in textbooks. Students may initially concentrate on individual sounds or unfamiliar words, but this effort can prevent them from processing later information and constructing the overall meaning of the text. Repeated comprehension failure may subsequently generate anxiety, frustration, boredom, and withdrawal, even when the learning activity uses visually attractive media. These classroom realities show that the problems of Arabic listening instruction emerge from the interaction of linguistic, phonological, technological, cognitive, and emotional conditions rather than from a single deficiency in the learner.

Investigating these interconnected conditions is urgent because listening difficulties can restrict students' ability to participate in discussions, understand academic explanations, respond appropriately, and develop communicative confidence. Technology-enhanced instruction may provide more flexible and personalized exposure, yet poorly calibrated materials can increase rather than reduce the burden placed on working memory. Research on mobile-assisted and multimodal language learning indicates that learner control, repeated access, project-based activities, and contextual support can improve listening and oral communication when technology is integrated into a coherent instructional design (Benlaghrissi & Ouahidi, 2024; Martínez et al., 2025; Wenji et al., 2026; Zhao et al., 2026). Conversely, gamified tools may direct attention toward scores, speed, and competition when pedagogical goals are not made explicit, thereby producing engagement that does not necessarily reflect meaningful learning (Hadi Mogavi et al., 2022; Leung et al., 2023; Tabassum et al., 2025). Arabic listening pedagogy therefore requires more than the adoption of popular applications; it requires careful attention to input difficulty, phonological preparation, task design, feedback, learner emotions, and opportunities for reflection. Examining how these elements operate in an actual classroom is essential for developing technology-supported instruction that remains responsive to students' linguistic and psychological needs.

Recent studies have generally reported positive outcomes from digital and audiovisual media in Arabic language education (Faiqoh et al., 2025; Hanik et al., 2025; Seyidov & Çitil, 2024; Wahyuni et al., 2025). YouTube-based instruction has been associated with wider access to authentic materials and more flexible listening practice, although students continue to report difficulties involving vocabulary, speech rate, pronunciation, and technical quality (Bui & Le, 2026; Hasan, 2025; Iswara et al., 2025). Research on subtitled videos, audiovisual materials, Arabic news platforms, and interactive applications likewise suggests improvements in comprehension, motivation, contextual understanding, and exposure to natural language use (Alabsi, 2020; Gouleti, 2023; Thahir, 2024).

Beyond Arabic education, mobile-assisted language learning has been shown to support listening and speaking by enabling learners to control access to materials and engage in more autonomous practice (Alisoy & Sadiqzade, 2024; Alzieni, 2020). Studies of Quizizz and comparable gamified systems have also emphasized immediate feedback, classroom participation, motivation, and formative assessment as their dominant benefits (Ameen, 2025; Bolat & Taş, 2023; Zainudin & Zulkiply, 2023). Collectively, this literature demonstrates substantial interest in the affordances of particular technologies, with effectiveness commonly evaluated through achievement, engagement, motivation, or learner perceptions.

Despite these contributions, existing research remains fragmented in several respects. Many studies examine a single medium or report its general effectiveness without closely analyzing how technological affordances interact with phonological discrimination, lexical access, speech rate, dialect variation, concentration, anxiety, and classroom pedagogy. Research on automated Arabic speech and pronunciation systems has advanced the detection of phonemic errors and dialectal variation, but its emphasis is predominantly computational rather than grounded in students' everyday listening experiences (Algabri et al., 2022; Fanoush et al., 2025; Markl, 2023; Nasution et al., 2025). Similarly, studies of digital platforms often foreground engagement or measurable improvement while giving limited attention to unsuccessful comprehension, emotional exhaustion, technical disruption, and the pedagogical decisions that shape learners' responses (Alsarayreh, 2025; Rathnasekara et al., 2025; Tick & Ling, 2025). Existing Arabic listening studies are also frequently conducted through surveys, experiments, content analyses, or general descriptions, leaving limited qualitative evidence regarding how learning procedures and difficulties unfold within the same university classroom (Afyuddin & Maarif, 2023; Rawa, 2023). Consequently, a critical gap remains in understanding why students continue to experience listening difficulties within technology-rich instruction and how those difficulties emerge from the relationship between learners, digital materials, assessment practices, and classroom interaction. Addressing this gap requires an integrated analysis that moves beyond determining whether technology is effective and instead examines the conditions under which it supports or constrains Arabic listening development.

Against this background, the present study aims to analyze the implementation of technology-enhanced Arabic listening instruction and identify the linguistic, phonological, cognitive, affective, technical, and pedagogical challenges experienced by undergraduate students in an Arabic Language Education program. It specifically examines how YouTube-based materials, audiovisual presentations, classroom discussions, and Quizizz-mediated assessment are organized within the instructional process and how students respond to these practices. Theoretically, the study contributes to research on technology-enhanced Arabic learning by conceptualizing listening difficulty as a multidimensional phenomenon produced through the interaction between digital input, learner readiness, and pedagogical mediation. It also extends discussions of Arabic listening beyond a technology-centered interpretation by highlighting the importance of phonological processing, lexical accessibility, cognitive load, emotional responses, and contextual variation. Practically, the findings are expected to help lecturers select graded materials, improve audio and task quality, provide explicit listening-strategy instruction, and use digital assessment as a diagnostic rather than merely competitive activity. By linking classroom procedures with students' actual difficulties, this study offers an evidence-based foundation for designing Arabic listening environments that are technologically relevant, cognitively manageable, and pedagogically responsive.

METHOD

This study employed a descriptive qualitative design to examine the implementation of technology-enhanced Arabic listening instruction and the learning challenges experienced by undergraduate students in their natural classroom setting. This design was selected because the study aimed to explore instructional practices, student experiences, and the interaction among linguistic, phonological, cognitive, affective, technical, and pedagogical factors rather than quantify relationships among variables. A qualitative approach enabled the researchers to capture how digital media were integrated into listening activities and how students interpreted the difficulties they encountered during the learning process. It also supported an in-depth examination of classroom

dynamics that could not be adequately represented through numerical data alone. This methodological choice is consistent with Dörnyei (2007), who emphasizes the value of qualitative inquiry for investigating complex human and educational phenomena, and with Creswell (2012), who highlights its relevance for understanding experiences within authentic contexts.

The study was conducted in the Arabic Language Education Department at Maulana Malik Ibrahim State Islamic University of Malang over approximately three months, including research preparation, institutional permission, fieldwork, data organization, and analysis. The setting was selected because Arabic listening instruction in the class involved the use of YouTube videos, audiovisual presentations, classroom discussions, and Quizizz-based formative assessment. The participants consisted of students from Class C and the lecturer responsible for the listening course. Purposive sampling was used to obtain participants who had direct experience with the instructional process and could provide relevant information about its implementation and challenges. Student participants were selected to represent different levels of classroom participation and listening ability, while the lecturer was included to provide information about instructional planning, media selection, task design, and assessment practices. This sampling strategy followed the principle that qualitative participants should be chosen on the basis of their knowledge and experience of the phenomenon under investigation (Palinkas et al., 2015).

Data were collected through classroom observation, semi-structured interviews, and document analysis. The observation guide focused on the sequence of listening instruction, the use of YouTube and Quizizz, student engagement, lecturer feedback, classroom interaction, and observable linguistic, technical, and affective difficulties. The semi-structured interview guide explored students' experiences in recognizing Arabic sounds, understanding vocabulary, following native-speaker speech, responding to dialect variation, maintaining concentration, and using digital media during listening tasks. Interviews with the lecturer addressed the selection of learning materials, instructional objectives, perceived student difficulties, classroom strategies, and the use of digital assessment. Relevant documents, including course plans, instructional materials, presentation files, video links, and assessment records, were examined to support and contextualize the observational and interview data. These instruments were developed from the research objectives and refined through methodological review before field implementation.

The credibility and consistency of the instruments and findings were strengthened through expert judgment, methodological triangulation, and data-source triangulation. The observation and interview guides were reviewed by academics with expertise in Arabic language education and qualitative research to assess the clarity, relevance, and alignment of each item with the research questions. Revisions were made to remove ambiguous prompts, improve sequencing, and ensure that the instruments covered linguistic, phonological, cognitive, affective, technological, and pedagogical dimensions. During data collection, information obtained through interviews was compared with classroom observations and instructional documents to identify convergence, inconsistency, or missing evidence. The researchers also maintained field notes and an organized record of coding decisions to support transparency throughout the analytical process. The use of multiple methods and data sources was intended to enhance the trustworthiness of the findings through triangulation (Cohen et al., 2002).

Data collection began with institutional permission and coordination with the course lecturer, followed by repeated classroom observations conducted without altering the normal instructional process. After the observations, selected students and the lecturer participated in semi-structured interviews, which were recorded with permission, transcribed verbatim, and anonymized. The data were analyzed using the interactive model proposed by Miles et al. (2014), which involved data condensation, data display, and conclusion drawing and verification. The researchers first read the transcripts, observation notes, and documents repeatedly, then assigned initial codes to meaningful units related to instructional procedures and learning challenges. Related codes were grouped into categories and developed into broader themes, including digital instructional practices, phonological and lexical barriers, speech-rate and dialect difficulties, technical constraints, cognitive load, and affective responses. Emerging interpretations were continuously compared across data sources until coherent themes were established and no substantially new category appeared. Throughout the study, participants were informed about the purpose of the research, their voluntary involvement, and their right to withdraw, while

confidentiality and anonymity were protected through coded identities and secure data handling; these procedures supported sustained engagement with the research context and an in-depth understanding of learning dynamics (Tisdell et al., 2025).

RESULTS AND DISCUSSION

Results

The findings show that Arabic listening instruction in Class C was organized through a technology-enhanced and interactive learning sequence. Before the classroom session, the lecturer distributed YouTube video links featuring native Arabic speakers so that students could listen to the material in advance. This preparatory activity allowed students to become familiar with the topic, vocabulary, pronunciation, and general content before participating in classroom activities. During the lesson, students presented the assigned video content in groups using audiovisual equipment, followed by discussion and question-and-answer sessions. The instructional sequence ended with a formative assessment through Quizizz, which provided immediate results and encouraged active participation. Although this learning design combined pre-class preparation, collaborative presentation, classroom interaction, and digital assessment, students continued to encounter substantial difficulties in comprehending spoken Arabic.

Table 1 summarizes the principal components of the listening instruction observed during the study. The learning materials were primarily obtained from YouTube and featured spoken Arabic produced by native speakers. These materials integrated pronunciation, vocabulary, grammatical structures, and contextual meaning within dialogue-based or situational content. The learning objectives emphasized students' ability to identify vocabulary, recognize pronunciation, understand dialogue, and interpret meaning in context. Instruction was delivered through group presentations, guided discussions, question-and-answer activities, and Quizizz-based formative evaluation. YouTube, loudspeakers, multimedia projectors, and digital applications served as the main learning media, while the challenges observed were grouped into linguistic, phonological, speaker-related, technical, and psychological dimensions.

Table 1. Components of Technology-Enhanced Arabic Listening Instruction

Component	Description Based on the Data
Learning materials	The materials were mainly derived from YouTube videos featuring native Arabic speakers. They included phonological, lexical, grammatical, and semantic aspects of spoken Arabic.
Learning objectives	The instruction aimed to develop students' understanding of vocabulary, pronunciation, dialogue content, and contextual meaning while supporting curriculum outcomes through the integration of information technology.
Teaching method	The learning process involved pre-class video viewing, group presentations, classroom discussions, question-and-answer activities, and immediate formative assessment through Quizizz.
Learning media	YouTube videos, loudspeakers, multimedia projectors, and digital applications were used to provide audiovisual input, facilitate repeated exposure, and support classroom assessment.
Linguistic challenges	Students had limited vocabulary and difficulty understanding long or structurally complex utterances.
Phonological challenges	Students experienced difficulty distinguishing Arabic sounds with similar places of articulation, particularly /ħ/ and /h/, /ʃ/ and /s/, and /q/ and /k/.
Speaker-related challenges	Students had difficulty following the rapid speech of native speakers, identifying word boundaries, and understanding variations in Arabic dialects.
Technical challenges	Poor recording quality, unclear loudspeaker output, and background noise occasionally interfered with students' comprehension.
Psychological challenges	Students reported reduced concentration, anxiety, boredom, frustration, and loss of confidence when they were unable to understand extended listening materials.

The most prominent difficulties were related to vocabulary and phonological discrimination. Students frequently failed to associate the spoken forms they heard with their meanings because their vocabulary knowledge was insufficient for immediate lexical recognition. When unfamiliar vocabulary appeared, they tended to pause mentally and concentrate on determining the meaning of a single word. Meanwhile, the recording continued, causing them to miss subsequent information and lose the continuity of the message. Students also had difficulty distinguishing Arabic phonemes with closely related places of articulation, including /ħ/ and /h/, /ʃ/ and /s/, and /q/ and /k/. In some cases, inaccurate recognition of a single sound changed the perceived form of a word and disrupted their understanding of the surrounding sentence.

The speech characteristics of native speakers presented another major challenge. Students reported difficulty following rapid speech, particularly when words were pronounced continuously and individual word boundaries were not clearly perceptible. Stress, intonation, assimilation, and connected speech made the input sound like an uninterrupted stream, preventing some students from identifying where one word ended and another began. The difficulty increased when listening materials contained long sentences or unfamiliar expressions. Variations in Arabic dialects also caused confusion because students were more accustomed to the standardized forms of Arabic encountered in textbooks and structured classroom exercises. Consequently, grammatical and morphological knowledge acquired through written instruction did not always help them understand naturally occurring spoken language.

Technical and environmental factors further affected the quality of the listening activities. Some YouTube recordings contained unclear audio, background noise, or inconsistent volume, while the classroom loudspeakers did not always reproduce the sound with sufficient clarity. These conditions made it more difficult for students to distinguish similar sounds and identify unfamiliar vocabulary. Visual elements in the videos, including facial expressions, gestures, and situational settings, helped some students infer meaning when the audio content was unclear. Repeated access to the videos before and during the lesson also allowed students to review difficult segments. Nevertheless, visual support and repeated exposure did not fully resolve comprehension difficulties when the audio quality was poor or the linguistic content was considerably above the students' listening level.

The classroom activities produced different patterns of student engagement. Group presentations encouraged students to explain the content of the videos to their classmates and participate in collaborative interpretation. Classroom discussions and question-and-answer activities helped clarify unfamiliar expressions and sections of the recordings that students had misunderstood. Quizizz generated greater visible participation and concentration than conventional paper-based evaluation because students received immediate results and could compare their performance during the activity. The lecturer was also able to identify items that were answered incorrectly by a substantial number of students and provide direct clarification. However, some students experienced anxiety when they were required to respond quickly or when they feared making mistakes during presentations and digital assessment.

Psychological responses were closely associated with repeated comprehension difficulties. Students reported that they gradually lost concentration when listening to long or complex recordings, particularly after missing several words or sentences. Their inability to regain the meaning of the ongoing discourse frequently resulted in frustration and reduced willingness to continue listening. Boredom was more apparent during extended listening activities in which the students understood only a limited portion of the content. Some participants also expressed reduced confidence when they compared their comprehension with that of classmates who responded more quickly during discussions or Quizizz activities. Overall, the findings demonstrate that the observed listening difficulties were not limited to one aspect of learning but emerged simultaneously from vocabulary limitations, phonological confusion, rapid speech, dialectal variation, technical interference, and affective responses.

Discussion

The first major finding is that Arabic listening instruction in Class C was implemented through a structured sequence combining pre-class exposure, collaborative classroom activities, and digital formative assessment. YouTube videos were used before class to provide students with initial access

to spoken Arabic, while group presentations, discussions, and Quizizz-based evaluation extended the learning process during classroom interaction. This arrangement indicates that digital media functioned not merely as supplementary tools but as part of an integrated instructional design. Such a pattern supports the view that technology becomes pedagogically meaningful when it is aligned with clear learning stages and supported by active learner participation. Similar findings have been reported in studies showing that audiovisual media and digital platforms can increase access to authentic Arabic input, provide repeated exposure, and strengthen learner engagement (Azka et al., 2024; Habibi et al., 2024). Ritonga et al. (2022) likewise demonstrated that digital language-learning platforms can promote learner autonomy and participation, although their study focused primarily on speaking rather than listening. The present study extends these findings by showing that technological integration is most effective when pre-learning preparation, classroom mediation, and formative feedback operate as a connected pedagogical cycle.

The second finding concerns the dominant role of vocabulary limitations and phonological discrimination in students' listening difficulties. Students were often unable to connect spoken forms with their meanings quickly enough, especially when unfamiliar words appeared in long or continuous utterances. At the same time, difficulty distinguishing Arabic sounds with adjacent places of articulation disrupted word recognition and weakened sentence-level comprehension. This finding confirms that listening comprehension depends on the interaction between lexical accessibility and accurate phonological decoding rather than on exposure alone. Abdelgawad (2022) and Arta et al. (2025) similarly identified limited vocabulary and phonological confusion as persistent barriers among non-native Arabic learners. Zubair (2025) also emphasized the need for carefully designed listening materials that correspond to learners' actual proficiency levels. The current study adds a more integrated explanation by showing that phonological confusion does not remain at the level of sound recognition; it interrupts lexical retrieval and prevents learners from constructing coherent meaning from the ongoing discourse.

A third major finding is that rapid native-speaker speech, unclear word boundaries, and dialectal variation substantially increased the difficulty of listening comprehension. Students struggled not only with individual words but also with connected speech, stress, intonation, and the continuous flow of naturally produced Arabic. Once they failed to identify where one word ended and another began, their attention shifted from understanding meaning to segmenting the sound stream. This shift reduced their ability to follow subsequent information and often caused a complete breakdown in comprehension. Azka et al. (2024) reported comparable difficulties involving speech rate, native pronunciation, and the use of YouTube materials in Arabic listening instruction. Arta et al. (2025) likewise found that students experienced problems when spoken texts contained complex structures and unfamiliar linguistic features. These results reinforce the argument that authentic materials should not be rejected, but their use must be pedagogically graded. The present study therefore modifies the common assumption that authentic exposure is always beneficial by demonstrating that authenticity becomes productive only when speech rate, dialectal complexity, and lexical demands are introduced progressively.

Technical quality also emerged as a significant condition influencing students' comprehension. Poor recording quality, background noise, unstable volume, and unclear loudspeaker output made it more difficult for students to distinguish similar Arabic sounds and recognize unfamiliar vocabulary. This finding demonstrates that the effectiveness of digital learning is inseparable from the quality of the auditory input delivered through the technology. Research on audiovisual Arabic instruction has generally emphasized improved engagement, contextual understanding, and access to varied language input (Habibi et al., 2024). However, the present findings provide a more critical perspective by showing that visual support cannot fully compensate for weak or distorted audio in a listening-focused activity. Gestures, facial expressions, and situational cues helped students infer meaning, but they did not resolve comprehension problems when the sound signal remained unclear. This suggests that technological innovation should not be evaluated only by the novelty of the platform used, but also by the technical reliability and linguistic suitability of the materials delivered through it.

The findings further show that collaborative presentation, discussion, and Quizizz-based assessment increased visible classroom participation, although higher participation did not always indicate stronger comprehension. Group discussions helped students compare interpretations,

clarify unclear expressions, and reconstruct the meaning of difficult sections collectively. Quizizz also generated immediate feedback and allowed the lecturer to identify common errors more efficiently. These results are broadly consistent with studies showing that digital platforms can promote motivation, interaction, and active involvement in Arabic learning (Ritonga et al., 2022). Nevertheless, the present study also revealed that rapid-response tasks and visible score comparisons created pressure for students who processed spoken input more slowly. This means that gamified assessment can support learning while simultaneously intensifying anxiety when speed and competition become more prominent than comprehension. Therefore, the pedagogical value of Quizizz lies less in its competitive features than in its diagnostic capacity to identify lexical, phonological, and comprehension gaps requiring immediate instructional response.

Affective responses constituted another important dimension of the findings. Students reported anxiety, boredom, frustration, reduced concentration, and declining confidence when they repeatedly failed to understand long or rapidly delivered listening materials. These emotional reactions were not separate from the linguistic difficulties but emerged as consequences of repeated comprehension breakdown. Abdelgawad (2022) similarly noted that listening problems among non-native Arabic learners involve both linguistic and psychological dimensions. The current findings extend this perspective by showing that emotional disengagement can occur even in technology-rich learning environments when the input is not aligned with learners' readiness. In other words, visually attractive media and interactive applications do not automatically sustain motivation if students repeatedly perceive themselves as unsuccessful. This interpretation is important because it reframes boredom not as a lack of interest in Arabic learning, but as a response to excessive difficulty, limited comprehension, and reduced self-confidence. Consequently, effective listening instruction must address emotional readiness alongside vocabulary, phonology, and task design.

Taken together, the findings support a shift from a technology-centered model toward a learner-responsive model of Arabic listening instruction. The study does not question the usefulness of YouTube, audiovisual media, or Quizizz, but it demonstrates that their instructional value depends on vocabulary preparation, phonological training, graded input, reliable audio quality, reflective discussion, and emotionally supportive assessment. This perspective fills a gap in earlier studies that often examined digital tools, listening difficulties, or learner motivation as separate issues (Abdelgawad, 2022; Azka et al., 2024; Habibi et al., 2024; Ritonga et al., 2022). Conceptually, the study positions listening difficulty as a multidimensional outcome produced through the interaction among learner readiness, linguistic input, technological conditions, and pedagogical mediation. Practically, the findings indicate that lecturers should pre-teach essential vocabulary, train students to distinguish similar Arabic phonemes, sequence listening texts from adapted to authentic forms, and use digital assessment to diagnose rather than merely rank performance. This integrated interpretation gives the study a distinct contribution within the wider literature on technology-enhanced Arabic education. It explains not only whether digital tools are useful, but also why they succeed under certain instructional conditions and remain limited under others.

CONCLUSION

This study concludes that technology-enhanced Arabic listening instruction in Class C was implemented through YouTube-based materials, collaborative presentations, classroom discussions, and Quizizz-assisted assessment, yet students continued to face interconnected linguistic, phonological, technical, cognitive, and affective challenges. Limited vocabulary, difficulty distinguishing similar Arabic phonemes, rapid native-speaker speech, dialect variation, poor audio quality, anxiety, boredom, and reduced concentration collectively hindered students' ability to process spoken Arabic accurately and continuously. These findings show that digital technology alone does not guarantee effective listening development unless it is aligned with learners' actual proficiency and cognitive readiness. Therefore, Arabic listening instruction should combine carefully graded materials, explicit phonological training, vocabulary preparation, reliable audio resources, supportive classroom interaction, and diagnostic assessment. Such an approach is expected to improve students' comprehension of authentic spoken Arabic while reducing cognitive and emotional barriers during the learning process.

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AUTHOR CONTRIBUTIONS STATEMENT

Syofia Fadila Nesti contributed to the conceptualization of the study, research design, product development, data analysis, and preparation of the original manuscript. Diana Fitri Aimmah contributed to field investigation, data collection, classroom implementation, and research documentation. Ammar Zainuddin supervised the research process, provided methodological guidance, and critically reviewed the manuscript. All authors read and approved the final version of the manuscript.

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