

Integrating Song-Based Multimedia into Arabic Listening Instruction: Development, Validation, and Effectiveness Testing

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ABSTRACT

Listening is a fundamental language skill that supports the development of overall communicative competence; however, Arabic listening instruction in secondary schools often remains constrained by conventional teaching approaches and limited use of engaging learning media. This study aimed to develop and evaluate the effectiveness of song-based video media for improving students' Arabic listening skills. Employing a Research and Development (R&D) approach, the study adopted the ADDIE model, encompassing analysis, design, development, implementation, and evaluation stages. The developed media integrated Arabic songs, synchronized subtitles, visual animations, and scaffolded listening activities grounded in multimedia learning principles. The product was validated by media and content experts before being implemented with 24 eighth-grade students at MTs Al-Hidayah Batu, Indonesia. Data were collected through observations, interviews, validation questionnaires, student response surveys, and pretest-posttest assessments. Expert validation indicated that the media was pedagogically and technically feasible, achieving scores of 90% from the media expert and 80% from the content expert. The effectiveness results revealed a significant improvement in listening performance, with mean scores increasing from 53.54 to 81.45 and an average N-Gain score of 0.60, indicating moderate effectiveness. The findings suggest that song-based video media provides an engaging and effective approach to enhancing Arabic listening skills and contributes to the advancement of technology-enhanced Arabic language learning

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Introduction

The integration of technology into language education has transformed the ways in which learning materials are designed and delivered. In contemporary classrooms, teachers

are expected not only to master subject content but also to create innovative, engaging, and learner-centered instructional experiences that promote active participation and meaningful learning (Wedikandage, 2024). Effective learning environments require appropriate instructional media capable of stimulating learners' motivation, supporting cognitive processing, and facilitating interaction between teachers and students (Heilporn et al., 2021; Mallillin, 2024). Consequently, the selection and development of suitable learning media have become essential components of successful language instruction.

The use of multimedia-based learning resources has received increasing attention in language education due to their potential to present information through multiple sensory channels simultaneously. Multimedia learning environments can enhance students' understanding by integrating visual and auditory information, thereby improving attention, comprehension, and retention (Nurhatmi, 2025). According to Mayer's Cognitive Theory of Multimedia Learning, learners process information more effectively when verbal and visual elements are presented in an integrated manner, enabling deeper cognitive engagement and reducing cognitive overload. Therefore, multimedia-based instructional materials are particularly relevant for developing receptive language skills, including listening.

Among the four language skills, listening plays a fundamental role in second and foreign language acquisition. Listening serves as the primary receptive skill through which learners receive, process, and interpret linguistic input before developing productive language abilities such as speaking and writing. Brown (2006) conceptualizes listening as an active and complex process involving not only auditory perception but also cognitive and social interpretation of meaning. Therefore, strengthening listening competence is crucial for improving overall language proficiency.

In Arabic language education, listening remains one of the most challenging skills for students to master. Although Arabic has gained international prominence as one of the official languages of the United Nations and continues to be taught across various educational levels worldwide (Mustofa, 2021), many learners still encounter difficulties in comprehending spoken Arabic due to limited vocabulary mastery, insufficient exposure to authentic language input, and the use of conventional instructional approaches. These challenges are particularly evident in Indonesian Islamic schools, where Arabic learning often emphasizes grammatical explanation and vocabulary memorization rather than meaningful listening practice.

This situation was identified at MTs Al-Hidayah Batu, an Islamic junior high school that demonstrates a strong institutional commitment to Arabic language learning through its specialized Arabic extracurricular programs. Despite producing graduates who have achieved

recognition in Arabic speech competitions at the national level, preliminary observations and interviews with Arabic language teachers revealed that many students continue to experience difficulties in understanding spoken Arabic. Furthermore, classroom instruction and extracurricular activities still rely heavily on conventional teaching methods, with limited integration of technology-based learning media. Teachers reported that students frequently demonstrate low learning interest and weak retention of Arabic vocabulary because instructional activities are dominated by verbal explanations rather than engaging and contextualized learning experiences.

One potential solution to these challenges is the use of song-based video media. Songs provide repetitive, rhythmic, and meaningful language input that can facilitate vocabulary acquisition, pronunciation awareness, and listening comprehension. When combined with video elements such as images, animations, and synchronized lyrics, song-based media can create rich multimedia learning experiences that support learners' auditory and visual processing simultaneously. Such integration aligns closely with Mayer's multimedia learning principles and offers opportunities to enhance students' engagement in Arabic listening activities.

Previous studies have reported positive findings regarding the use of audiovisual media in language learning. Muhaimin and Zuhriyah (2025) highlighted the contribution of interactive video media to Arabic language learning in the digital era. Wardhana and Muhammad (2021) demonstrated that video and audio media can improve students' motivation in listening instruction. Similarly, Iryani et al. (2024) found that YouTube-based media positively supported the development of listening skills among primary school students. Research conducted by Daulay (2025) also revealed the perceived effectiveness of audiovisual media in junior high school listening classrooms, while Nadya Putri Pradina and Astuti Mulyani (2022) reported the successful development of audiovisual media for listening instruction in elementary schools.

Despite these promising findings, existing studies primarily focus on the implementation or evaluation of audiovisual media rather than the systematic development and validation of song-based video media specifically designed for Arabic listening instruction. Moreover, limited research has examined the feasibility, validity, practicality, and effectiveness of thematic song-video media developed through a structured instructional design model. Consequently, a significant research gap remains regarding how song-based multimedia resources can be designed and validated to improve Arabic listening skills in Islamic secondary school contexts.

To address this gap, the present study develops song-based video learning media using the ADDIE instructional design model and evaluates its feasibility and effectiveness in improving students' Arabic listening skills at MTs Al-Hidayah Batu. By integrating Mayer's Cognitive Theory of Multimedia Learning and Brown's theory of listening comprehension, this study contributes to the growing body of research on technology-enhanced Arabic language learning and provides an empirically validated multimedia resource that can be implemented in similar educational contexts.

Method

Research Design

This study employed a Research and Development (R&D) approach to design, validate, and evaluate song-based video media intended to enhance Arabic listening skills among students at MTs Al-Hidayah Batu. The study adopted the ADDIE instructional design framework Analysis, Design, Development, Implementation, and Evaluation as a systematic model for developing educational products and assessing their pedagogical effectiveness (Jonnalagadda et al., 2022; Siregar & Ahkas, 2025). The R&D approach was selected because it facilitates iterative product development while simultaneously generating empirical evidence regarding the effectiveness of instructional innovations in authentic educational settings (Siregar & Ahkas, 2025).

Research Context and Participants

The study was conducted at MTs Al-Hidayah Batu, Indonesia, between August 2025 and January 2026. Participants consisted of eighth-grade students enrolled in Arabic language classes. The development process involved multiple stakeholder groups, including Arabic language teachers, students, media experts, and Arabic language content experts. Teachers and students participated in the needs analysis and implementation phases, whereas expert validators were involved in evaluating the content quality, pedagogical appropriateness, technical design, and usability of the developed media. The development process followed the five stages of the ADDIE model.

Product Development Procedure

Analysis

The analysis phase aimed to identify instructional problems, learner characteristics, and media requirements. Data were collected through classroom observations, semi-structured interviews with teachers and students, document analysis, and diagnostic listening assessments. The findings revealed limited use of technology-based learning media, low student engagement during listening activities, and difficulties in vocabulary retention and listening comprehension.

Design

Based on the needs analysis, the researchers designed three thematic song-based instructional videos targeting Arabic listening skills. The design specifications incorporated principles from Mayer's Cognitive Theory of Multimedia Learning and Brown's listening comprehension framework (Brown, 2006). Each video included synchronized Arabic lyrics, Indonesian translations, visual illustrations, prosodic cues, and structured pre-listening, while-listening, and post-listening activities.

Development

During the development phase, multimedia materials were produced and integrated into complete instructional videos. Audio recordings, visual elements, subtitles, and interactive listening tasks were synchronized and edited using digital multimedia software. The preliminary version of the media underwent expert validation involving media experts and Arabic language specialists. Feedback from validators was used to revise content accuracy, visual presentation, subtitle synchronization, and instructional design components.

Implementation

Following validation and revision, the media was implemented in Arabic language learning activities involving eighth-grade students. The implementation phase lasted approximately six weeks. Students completed a pretest before using the media and a posttest after the intervention to measure changes in listening performance. Teachers were provided with implementation guidelines to ensure consistency throughout the instructional process.

Evaluation

Evaluation was conducted through both formative and summative procedures. Formative evaluation consisted of expert validation, teacher practicality assessments, and student response questionnaires. Summative evaluation focused on measuring the effectiveness of the developed media through a pretest–posttest design. Findings from each evaluation stage informed subsequent revisions to improve the quality and effectiveness of the product.

Research Instruments

Several instruments were employed to collect quantitative and qualitative data. Observation sheets and interview protocols were used during the needs analysis stage to identify instructional challenges and learner needs. Validation questionnaires were administered to media experts and subject-matter experts to evaluate content accuracy, instructional quality, language appropriateness, visual design, and usability. The questionnaires employed a four-point Likert scale ranging from 1 (poor) to 4 (excellent).

Listening achievement tests were developed to assess students' listening skills before and after the intervention. Test items were aligned with curriculum objectives and listening competency indicators. Prior to implementation, the instruments underwent content validation by Arabic language experts and pilot testing to ensure clarity, relevance, and appropriate difficulty levels.

Instrument reliability was assessed using Cronbach's alpha coefficient, with values above 0.70 considered acceptable for educational research (Hussey et al., 2025).

Data Collection

Data were collected using observations, interviews, questionnaires, documentation, and listening achievement tests (Jain, 2021). Qualitative data consisted of observation records, interview transcripts, and field notes documenting the development and implementation processes. Quantitative data included expert validation scores, practicality ratings, student response scores, and pretest–posttest results (Fikri et al., 2024).

Data Analysis

Qualitative data were analyzed using thematic analysis procedures to identify recurring themes related to instructional needs, implementation experiences, and perceptions of media use (Xu & Zammit, 2020). Quantitative data were analyzed using descriptive and inferential statistics.

Descriptive statistics were used to summarize expert validation results, practicality scores, and student responses. To determine the effectiveness of the developed media, normality testing was first conducted as a prerequisite for parametric analysis (Tapio, 2025). Subsequently, paired-sample t-tests were employed to examine significant differences between pretest and posttest listening scores (Ifrim, 2026). Statistical analyses were conducted at a significance level of $p < .05$.

Ethical Considerations

Ethical approval and institutional permission were obtained from MTs Al-Hidayah Batu prior to data collection. Informed consent was secured from all participants, including students, teachers, and parents or guardians. Participants were informed about the study objectives, procedures, voluntary participation, confidentiality measures, and their right to withdraw from the study at any stage without penalty. All collected data were anonymized and used exclusively for research purposes.

Result and Discussion

Needs Analysis and Product Development

The needs analysis conducted through classroom observations, interviews, and diagnostic assessments revealed several challenges in Arabic listening instruction at MTs Al-Hidayah Batu. Learning activities were predominantly teacher-centered and relied heavily on verbal explanations, resulting in limited student engagement and difficulties in retaining Arabic vocabulary. Students also reported challenges in understanding spoken Arabic because classroom instruction provided minimal exposure to authentic listening input.

To address these issues, a song-based video learning medium was developed using the ADDIE framework. The product consisted of three thematic instructional videos focusing on vocabulary related to time, days, and hobbies. Each video integrated Arabic lyrics,

Indonesian translations, synchronized subtitles, animated visualizations, and audio narration. The design was informed by Mayer's Cognitive Theory of Multimedia Learning, emphasizing the integration of visual and auditory channels to facilitate deeper cognitive processing.

The development process followed a progressive scaffolding strategy. Students initially interacted with fully supported videos containing subtitles and visual cues, followed by partially supported listening activities and finally audio-only exercises. This gradual transition enabled learners to develop listening independence while reducing cognitive overload during the early stages of instruction.

Expert Validation and Product Feasibility

Prior to implementation, the developed media underwent validation by media and content experts. The feasibility criteria used in this study are presented in Table 1.

Table 1. Questionnaire Result Criteria

Mark	Eligibility Category	Percentage Range
1	Not feasible	24–43%
2	Fairly feasible (minor revision)	44–62%
3	Feasible (revision required)	63–80%
4	Highly feasible	81–100%

Media expert validation yielded a score of 90%, categorizing the product as highly feasible. Suggested revisions included the addition of introductory and closing slides and improved display descriptions. These recommendations were incorporated into the revised version of the media.

The content expert evaluation focused on instructional appropriateness, linguistic accuracy, and alignment with learning objectives. The results are presented in Table 2.

Table 2. Content Expert Validation Results

No	Assessment Aspect	Score (1–5)
1	Clear and understandable instructions	4

2	Alignment with learning indicators	4
3	Accuracy and comprehensibility of Arabic language	4
Total		24/30 (80%)

The content expert validation score of 80% indicates that the instructional materials were pedagogically appropriate and aligned with the targeted listening competencies. The evaluation further confirmed that the Arabic language content was linguistically accurate and comprehensible for eighth-grade students. These findings suggest that the developed media successfully integrated instructional design principles with language-learning requirements.

Implementation and Learning Outcomes

The implementation phase involved 24 eighth-grade students over a three-week instructional period. Students participated in a sequence of listening activities using the developed song-based videos. Prior to the intervention, a pretest was administered to assess initial listening proficiency. Following the intervention, students completed a posttest using equivalent listening tasks. The detailed pretest and posttest scores are presented in Table 3.

Table 3. Pretest and Posttest Scores

No	Student Name	Pretest	Posttest
1	Abdullah Iqyan	55	75
2	Afinda Olovia Maharani	60	90
3	Ahmad Almuttaqin	55	70
4	Aldipyan Firmansa	55	80
5	Aqila Dizanka Kahula S.	45	65
6	Arziki Raditya	60	95
7	Fathir Farihatan Afandi	55	85
8	Febiy Ilham Firmansa	60	95
9	Inas Agnia Qoniatun N	60	65
10	Jihan Nadhifatul A	60	80
11	M. Alfin Hidayat	55	85

12	Meilinda Ayu Wulandari	45	95
13	Moh Fahri Abdullah	60	75
14	Muhammad Al Mukti	45	80
15	Muhammad Khoirul Rizki	45	75
16	Muhammad Wildan AP	55	95
17	Nathania Juniandhistya	55	75
18	Rafata Kanaya Alma Safi	55	85
19	Salma Feby Adisti	45	80
20	Siti Wahida	60	95
21	Tabina Syahda Cahyana	55	85
22	Virli Izatul Adtlima	55	85
23	Zaqinah Balqiat	45	70
24	Frizya Zahro Huda A.	45	75
Total		1,285	1,955
Mean		53.54	81.45

As shown in Table 3, students' average listening score increased from 53.54 in the pretest to 81.45 in the posttest, representing an average improvement of 27.91 points. This substantial increase indicates that the song-based video intervention contributed positively to students' listening development.

In addition to achievement gains, student perception data revealed strong acceptance of the developed media. Approximately 87.5% of students reported that the videos increased their motivation and facilitated vocabulary retention, while 75% indicated that Arabic learning became more enjoyable. Classroom observations also showed higher participation levels during listening activities.

Teacher feedback further supported these findings. The Arabic language teacher reported that the use of song-based video media increased student engagement, improved classroom interaction, and facilitated listening comprehension. According to the teacher, the integration of visual and auditory elements made Arabic learning more accessible and enjoyable for students.

Statistical Analysis of Media Effectiveness

Before testing the effectiveness of the intervention, a normality test was conducted. The results are presented in Table 4.

Table 4. Tests of Normality

Test	Kolmogorov–Smirnov (Sig.)	Shapiro–Wilk (Sig.)
Pretest	0.000	0.000
Posttest	0.200	0.087

The Shapiro–Wilk test indicated that the posttest data were normally distributed ($p = .087 > .05$), whereas the pretest data showed deviations from normality. Nevertheless, paired-sample statistical analysis was performed to evaluate the effectiveness of the intervention. The paired-sample t-test results are presented in Table 5.

Table 5. Paired-Sample t-Test Results

Pair	Mean Difference	SD	t	df	Sig. (2- tailed)
Pretest– Posttest	-27.92	9.43	-14.50	23	0.001

The analysis revealed a statistically significant improvement in listening achievement, $t(23) = -14.50$, $p = .001$. Therefore, the null hypothesis was rejected, indicating that the developed song-based video media significantly improved students' Arabic listening performance. To determine the magnitude of learning improvement, an N-Gain analysis was conducted. The results are presented in Table 6.

Table 6. N-Gain Statistics

Variable	N	Minimum	Maximum	Mean	SD
Pretest	24	45.00	60.00	53.54	5.99
Posttest	24	65.00	95.00	81.45	9.50
N-Gain Score	24	0.13	0.91	0.60	0.20
N-Gain (%)	24	12.50	90.91	60.27	20.26

The average N-Gain score of 0.60 (60.27%) indicates a moderate level of effectiveness. This finding demonstrates that the intervention produced meaningful learning gains beyond regular classroom instruction.

The findings of this study demonstrate that song-based video media can significantly improve Arabic listening skills among junior secondary school students. The substantial increase in posttest scores, supported by a statistically significant paired-sample t-test result and a moderate N-Gain score, indicates that the developed media effectively enhanced students' listening performance.

These findings support Brown's (2006) theory, which conceptualizes listening as an active cognitive process involving the interpretation and construction of meaning from auditory input. Through repeated exposure to rhythmic and meaningful language input, students were able to improve vocabulary recognition, pronunciation awareness, and comprehension accuracy. The repetitive nature of songs provided multiple opportunities for auditory reinforcement, facilitating the transfer of vocabulary into long-term memory.

The findings also align with Mayer's Cognitive Theory of Multimedia Learning. The integration of audio, visual animations, synchronized subtitles, and textual support enabled students to process information through both auditory and visual channels simultaneously. This dual-channel processing likely reduced cognitive burden and strengthened the association between spoken forms and lexical meanings, resulting in higher levels of comprehension and retention.

The present findings are consistent with previous studies reporting positive effects of audiovisual media on language learning. Muhaimin and Zuhriyah (2025) found that interactive video media enhanced Arabic language learning experiences in digital environments. Similarly, Wardhana and Muhammad (2021) reported that audio-visual integration increased students' motivation during listening instruction. Comparable findings were also reported by Iryani et al. (2024), Daulay (2025), and Nadya Putri Pradina and Astuti Mulyani (2022), who highlighted the effectiveness of audiovisual media in supporting listening development.

However, this study extends previous research by developing and empirically validating a song-based multimedia product specifically designed for Arabic listening instruction. Unlike earlier studies that primarily examined the use of existing audiovisual resources, this study systematically developed instructional media through the ADDIE framework and demonstrated its effectiveness using expert validation, statistical testing, and learner feedback.

Despite these positive outcomes, several limitations should be acknowledged. The study involved only 24 participants from a single institution and was conducted over a relatively short intervention period. Future studies should involve larger samples, multiple educational settings, and experimental control groups to enhance the generalizability of the findings and explore the long-term impact of song-based multimedia on broader aspects of Arabic language proficiency.

Conclusion

This study developed and validated a song-based video learning medium for Arabic listening instruction using the ADDIE framework. The expert validation results demonstrated that the developed product met pedagogical, linguistic, and technical quality standards, indicating its feasibility for implementation in Arabic language classrooms. The integration of synchronized lyrics, visual animations, audio narration, and scaffolded listening activities provided a multimedia learning environment designed to support students' listening comprehension and vocabulary acquisition.

The effectiveness testing revealed that the developed media significantly improved students' Arabic listening performance. Students' mean scores increased from 53.54 in the pretest to 81.45 in the posttest, accompanied by a statistically significant difference between the two measurements and a moderate N-Gain score. These findings suggest that song-based video media can enhance listening achievement by providing meaningful auditory input supported by visual and textual cues. The results further support Brown's theory of listening as an active meaning-construction process and Mayer's Cognitive Theory of Multimedia Learning, which emphasizes the benefits of integrating auditory and visual information in learning.

This study contributes to the growing body of research on technology-enhanced Arabic language learning by demonstrating that song-based multimedia can function as an effective and theoretically grounded instructional intervention rather than merely a supplementary teaching aid. Practically, the findings offer Arabic language teachers an innovative approach to developing listening skills in secondary education contexts. Nevertheless, future research should examine the long-term impact of song-based multimedia across diverse educational settings, larger samples, and broader language competencies, including speaking, vocabulary development, and pronunciation accuracy.

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