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A Mixed-Methods Needs Analysis for Interactive Multimedia-based Arabic Teaching Materials for Grade 8 at State Islamic Junior High School (MTsN) 17 Tanah Datar

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Abstract

This study aims to analyze students' needs for interactive multimedia-based Arabic teaching materials in grade 8 State Islamic Junior High School (MTsN) 17 Tanah Datar, West Sumatra. Arabic language learning uses textbooks that are still textual and monotonous without any accompanying teaching materials that are interesting and interactive. The approach used was a mixed method, data was collected from 36 students and teachers through interviews, classroom observations, and needs analysis questionnaires. The results of the interviews show that learning Arabic still faces obstacles in the form of conventional and less interesting teaching materials, exercises that have not touched listening and speaking skills, and limited access because it is only available in print form without the support of interactive technology. Observation data shows that Arabic learning is still dominated by teachers with lecture methods, students tend to be passive, interaction and language skills practice are minimal, and only rely on textbooks without media or supporting teaching materials. The results of the questionnaire showed that the majority of respondents (84.65%) strongly supported the development of Arabic teaching materials based on interactive

multimedia. This study recommends developing interactive multimedia-based Arabic teaching materials that combine text, audio, video, animation, and self-directed exercises, specifically designed based on students' real needs to support more engaging and interactive learning. As a practical implication, a prototype or unit template is proposed that integrates short texts, audio narration, micro-videos, and self-checking quizzes for the next stage of development.

Keywords: Teaching Materials; Arabic; Interactive Multimedia.

Introduction

Arabic is one of the subjects that must be taught at all madrasah levels and is a subject that develops communication skills both orally and in writing.[1] Learning Arabic aims to develop students' competencies in four language skills, namely listening (*maharah al-istima'*), speaking (*maharah al-kalam*), reading (*maharah al-qira'ah*), and writing (*maharah al-kitabah*). [2] Thus, to achieve the goals of learning Arabic which includes mastering the four language skills, it is necessary to support teaching materials that are adequate, relevant, and able to support the learning process optimally.

Teaching materials (including teaching materials) are very important in learning and are one of the factors that greatly affect the success or failure of learning Arabic.[3] The quality and suitability of teaching materials determine the success of learning,[4] so it is important to develop according to educational standards and student needs to increase the effectiveness of Arabic learning[5] in madrasas. Good teaching materials can also improve students' language skills.[6]

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[1] Imam Hasani and Eva Siti Faridah, "2013 Curriculum of Grade 8 Arabic Language Subjects at Madrasah Stanawiyah (Implementation, Analysis and Development)," *IHSANIKA: Journal of Islamic Religious Education* 2, no. 1 (2024): 259–72, https://doi.org/10.59841/ihsanika.v2i1.842.

[2] Arsyad Muhammad Ali Ridho, Ahmad Dika Purnama, and Hafidz Shiddiq Hamonangan, "The Urgency of Learning Arabic as a Means of Understanding Islam in the Scope of Islamic Higher Education," in *ICONTIES (International Conference Islamic Civilization and Humanities),* 2023, 590–601.

[3] Muhammad Syaifullah and Nailul Izzah, "A Theoretical Study of the Development of Arabic Language Teaching Materials," *Arabiyatuna : Journal of Arabic* Language 3, no. 1 (2019): 127–44, https://doi.org/10.29240/jba.v3i1.764.

[4] Noza Aflisia, Ahmad E Q Nurwadjah, and Andewi Suhartini, "Nilai Teologi Islam: Telaah Materi Ajar Bahasa Arab Madrasah Tsanawiyah," *An Nabighoh* 23, no. 1 (June 16, 2021): 17–32, https://doi.org/10.32332/an-nabighoh.v23i1.2993.

[5] Wlekly P. and M. Piwowarski, "The Usability of Eye Tracking in the Design of Digital Training Materials," in *Procedia Computer Science* (Elsevier B.V., 2022), 4180–89, https://doi.org/10.1016/j.procs.2022.09.481.

[6] Nur Amalia Ramadhani et al., "A Literature Study on the Importance of Teaching Material Development for Indonesian Language Learning in Elementary Schools," *Scientific Journal of Insan Mulia* 1, no. 2 (2024): 57–62.

Therefore, the development of quality Arabic teaching materials in accordance with the needs of students is a crucial aspect in supporting learning success, so it needs to be reviewed based on real conditions in the field in order to answer the learning challenges faced today.

Based on preliminary studies conducted through interviews, observations, and questionnaires with Grade VIII students and teachers at State Islamic Junior High School (MTsN) 17 Tanah Datar, several problems were identified. The Arabic teaching materials currently used remain conventional, text-heavy, and lack visual and audio elements. They do not fully accommodate students' diverse learning needs. Teachers reported that the materials fail to provide sufficient variation to develop all four language skills equally, while students perceived them as monotonous, uncontextualized, less engaging, and disconnected from their daily lives. These findings reveal a clear gap between the available materials and the characteristics of today's digital-native learners, indicating the need for innovative, technology-supported teaching resources that are more interactive, adaptive, and relevant to the digital era.

One promising innovation is the integration of digital technology through interactive multimedia-based teaching materials.[7] Multimedia learning combines text, audio, video, animation, and graphics, creating multisensory experiences that enhance comprehension and learner engagement. Previous studies have shown that interactive multimedia can significantly improve learning motivation[8], participation[9], active collaboration[10], and students' understanding. [11] In the field of Computer-Assisted Language Learning (CALL), multimedia-based learning has been proven to support diverse learning styles and increase learners' cognitive engagement. However, most of these studies have focused on higher education or English as a Foreign Language (EFL) contexts in general, leaving a research gap in Arabic language learning at the junior Islamic secondary school level,

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[7] Noza Aflisia, "تطوير المواد التعليمية النحوية على أساس معرفة المحتوى التربوي التكنولوجي لتنمية مهارات التفكير العليا - لدى طلاب قسم تعليم اللغة العربية في جامعة جوروب الإسلامية الحكومية وجامعة فتماواتي سوكرنو الإسلامية الحكومية بنجكولو Digital Library UIN Sunan Gunung D" (2023), https://digilib.uinsgd.ac.id/71137/.

[8] Shook Chin Yap, Rahmita Wirza Rahmat, and Siti Khadijah Ali, "Influence of Different Form of Multimedia on Motivation and Topic Perception in Augmented Reality Learning Experiences," *Multimedia Tools and Applications* 84, no. 29 (2025): 36019–46, https://doi.org/10.1007/s11042-025-20649-w.

[9] Ruben Boluda-Ruiz et al., "Revolutionizing Electrical Engineering Education: A New Active Learning Method Based on Student-Generated Multimedia Content," *IEEE Access* 12 (2024): 92931–44, https://doi.org/10.1109/ACCESS.2024.3423334.

[10] Nicola Prin and Joaquin Fernandez, "Student Engagement Toward Multimedia in an English for Academic Purpose Class," *International Journal of Technologies in Learning* 27, no. 2 (2020): 37–49, https://doi.org/10.18848/2327-0144/CGP/v27i02/37-49.

[11] Satwika Trianti Ngandoh et al., "Artificial Intelligence-Integrated Interactive Multimedia to Improve Conceptual Understanding in Eighth-Grade Science Learning," *SciEnggJ* 18 (2025): 219–24, https://doi.org/10.54645/202518SupLQR-24.

particularly in local contexts such as West Sumatra, where infrastructure, student access, and teacher readiness vary considerably.

In this context, Arabic teaching materials play multiple pedagogical rolesas sources of linguistic input, communicative activities, and self-learning resources thus their design must be aligned with learners' needs, their digital habits, and the applicable curriculum standards.

According to Cunningsworth, teaching materials play a central role in foreign language learning, functioning as sources of presentation, practice, reference, ideas, and independent learning, as well as serving as a guide for teachers and a framework for the syllabus. These various functions emphasize that teaching materials are not merely repositories of linguistic content but instruments that mediate the learning experience through meaningful interaction, structure, and support.

While Cunningsworth's framework remains fundamental, modern learning environments require its reinterpretation in the context of digital transformation. In the digital era, these theoretical roles can be translated into six practical parameters relevant to interactive multimedia–based Arabic learning. The first is multimodality, which integrates text, audio, video, animation, and graphics to create multisensory learning that enhances understanding and engagement. The second is interactivity, referring to learners' ability to respond, receive feedback, and manage their learning process, making materials more dynamic and participatory. The third is relevance and contextuality, which ensures that learning content reflects students' real-life experiences and cultural backgrounds, making it more meaningful. The fourth is curriculum relevance and material structure, which aligns the design and content of materials with the goals and competencies of the Arabic curriculum in *Madrasah Tsanawiyah*. The fifth is autonomy and accessibility, emphasizing learners' ability to study independently and access materials anytime and anywhere through digital devices. The sixth is media support and teacher role, which highlights the importance of multimedia tools and teacher facilitation in guiding, supporting, and enriching the learning process.

These parameters serve as analytical lenses in this study. Each observation code, interview question, and questionnaire item is mapped to one or more of these parameters, ensuring that the analysis remains theoretically grounded and empirically measurable. Based on these parameters, this study situates its analysis within the broader literature on Computer-Assisted Language Learning (CALL) and Arabic pedagogy.

These six parameters not only provide a theoretical foundation but also serve as operational criteria for evaluating the current state of Arabic teaching materials and identifying areas that require innovation. By bridging theory and classroom realities, this framework allows for a systematic needs analysis that connects pedagogical goals with learners' digital habits and cognitive preferences. Consequently, it ensures that the development of interactive multimedia-based

materials is both pedagogically sound and contextually responsive to the needs of Madrasah Tsanawiyah students.

Recent studies in CALL and Arabic pedagogy indicate that the integration of multimodality, interactivity, and mobile access in multimedia learning environments significantly enhances students' motivation[12], comprehension[13], and language skills. [14] However, despite the growing body of evidence, research within the local madrasah context remains limited—particularly regarding students' and teachers' perceptions of these dimensions, the infrastructural challenges they face, and their readiness to adopt multimedia-based teaching materials. Therefore, this study aims to address this gap by identifying a contextualized needs profile and design requirements that can guide the development of interactive multimedia–based Arabic teaching materials suitable for students' characteristics in the digital era.

In the context of learning Arabic at Madrasah Tsanawiyah, the role of teaching materials is not only a teaching tool, but also serves as the main guide in achieving the learning goals that have been set in the curriculum. By paying attention to the characteristics of students at the Madrasah Tsanawiyah level who are at a typical stage of cognitive and affective development, teaching materials must be able to present content that is communicative, contextual, interesting, and easy to understand. The absence of adequate teaching materials risks causing boredom, lowering learning motivation, and hindering the mastery of the four language skills that are the main targets of learning Arabic.

The use of interactive multimedia-based teaching materials can provide great opportunities to overcome these challenges. Interactive digital teaching materials can enhance learning effectiveness, motivation[15], and engagement by providing fun, challenging, and meaningful experiences. Interactive multimedia can also provide space for independent learning that allows students to learn according to their own pace and learning style. On the other hand, teachers also receive support in the form of well-structured materials, so that they are more confident and efficient in managing the learning process. Thus, the development of interactive multimedia-based Arabic teaching materials based on the results of

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[12] Zohra Yasin, Herson Anwar, and Buhari Luneto, "Multimedia Powerpoint-Based Arabic Learning and Its Effect to Students' Learning Motivation: A Treatment by Level Designs Experimental Study," *International Journal of Instruction* 14, no. 4 (2021): 33–50, https://doi.org/10.29333/iji.2021.1443a.

[13] Alsadika Ziaul Haq et al., "Technology Integration in Arabic Language Learning: A Literature Review on the Effectiveness of e-Learning and Mobile Applications," *Journal of Research in Instructional* 4, no. 2 (2024): 481–94, https://doi.org/10.30862/jri.v4i2.473.

[14] Yanan Tao et al., "Effect of Blended Teaching on College Students' EFL Acquisition," *Frontiers in Education* 9 (2024), https://doi.org/10.3389/feduc.2024.1264573.

[15] Berlian Nestia Agustin, Evi Muzaiyidah Bukhori, and Mokhammad Miftakhul Huda, "Integration of Interactive Lumio Media for the Development of Arabic Listening Skills in Islamic Senior High Schools," *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 1 (2025): 1–26, https://doi.org/10.29240/jba.v9i1.12441.

needs analysis can be one of the strategic steps in improving the quality of learning at Madrasah Tsanawiyah. By providing teaching materials that are relevant, interesting, and adaptive to technological developments and student needs, it is hoped that they will be able to make a real contribution to improving overall Arabic language competence.

This study aims to analyze students' needs for interactive multimedia–based Arabic teaching materials. The analysis covers the roles of teaching materials as sources of linguistic input, communicative exercises and interactions, grammar and vocabulary references, classroom activity stimuli, syllabus frameworks, independent learning media, and teacher support tools. By systematically mapping students' needs, the development of Arabic teaching materials can be better aligned with learners' characteristics and curriculum objectives, ultimately fostering more engaging, relevant, and effective Arabic learning experiences in the digital era.

This study employed a mixed-methods approach, integrating both qualitative and quantitative procedures to obtain a comprehensive understanding of the needs for interactive multimedia–based Arabic teaching materials in State Islamic Junior High School (MTsN) 17 Tanah Datar, West Sumatra. The qualitative strand explored the learning context, challenges, and existing practices through interviews and classroom observations, while the quantitative strand described the level and pattern of students' needs using a structured questionnaire.

The participants consisted of one Arabic language teacher and 36 eighth-grade students. The students' ages ranged from 13 to 15 years, with a balanced gender distribution (22 boys and 14 girls). All students had completed at least one year of Arabic language learning at the madrasah. The teacher involved had 18 years of experience teaching Arabic and was responsible for the target class in this study. Participants were selected using purposive sampling, ensuring that only students actively engaged in Arabic learning were included.

Data were collected through semi-structured interviews, classroom observations, and a needs analysis questionnaire. Interviews were conducted with the Arabic teacher and six representative students (three boys and three girls). Each session lasted approximately 20–30 minutes and explored challenges in learning Arabic, perceptions of the teaching materials currently used, and expectations regarding multimedia-based materials. Sample questions included: "What difficulties do you usually face when learning Arabic?" and "What types of media or activities help you better understand the material?" All interviews were recorded, transcribed, and analyzed thematically. Observations were conducted during three Arabic lessons (each lasting 40 minutes) using an observation sheet that focused on teaching methods, student engagement, media use, and skills coverage (listening, speaking, reading, and writing).

The questionnaire consisted of 14 statements distributed to the 36 students. This instrument measured students' perceptions and needs across six parameters:

multimodality, interactivity, relevance and contextuality, curriculum relevance and material structure, autonomy and accessibility, and media support and teacher role. Responses were recorded using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) and reviewed by two Arabic language education experts to ensure content validity and clarity of language.

The data analysis process is carried out through two approaches. Quantitative data from the questionnaire were processed descriptively to obtain an overview of the students' response tendencies, which were then presented in the form of diagrams and percentages. Meanwhile, qualitative analysis was carried out to interpret the findings in more depth, by going through the stages of data reduction, presentation, and conclusion drawn. The final results of this study are expected to provide a comprehensive overview of the actual conditions of Arabic language learning in madrasas as well as the direction of developing teaching materials that are tailored to the needs of students.

Findings and Discussion

This section presents findings derived from interviews with Arabic teachers and Grade VIII students, classroom observations, and a needs analysis questionnaire distributed to 36 students at State Islamic Junior High School (MTsN) 17 Tanah Datar.

The analysis is structured around six parameters that represent the operational dimensions of interactive multimedia–based Arabic learning: multimodality, interactivity, relevance and contextuality, curriculum alignment and material structure, autonomy and accessibility, and media support and teacher role.

First, Multimodality

The current teaching materials are still highly text-dependent and lack engagement. Teachers described the materials as "too textual and conventional," while students reported difficulty maintaining focus because the books are filled with text and contain minimal color or illustrations. Questionnaire data showed that 90.52% of students agreed that lessons are easier to understand when presented through a combination of audio, visual, oral, and written formats. In addition, the majority of students indicated the need for examples of Arabic conversations in both oral and written forms (83.15%) as well as voice and text features to aid vocabulary acquisition and pronunciation (85.78%). These findings underscore the importance of designing teaching materials that integrate multiple sensory modalities, including images, animations, and audio narration, to reduce cognitive load and enhance student engagement.

Second, Interactivity

The current teaching materials and learning practices provide minimal interaction. Observations revealed a teacher-centered approach, where students primarily listen and take notes, and teachers themselves acknowledged that interactive exercises are rarely used, leaving students to respond only to written

questions. A total of 84.73% of students reported that interactive exercises such as quizzes or discussions make lessons more engaging, while 92.63% emphasized the need for activities that allow them to actively practice speaking and listening. This indicates a clear need to integrate interactive components, such as self-checking quizzes, role-play dialogues, and real-time feedback mechanisms, so that teaching materials can become a two-way learning environment that encourages active student participation.

Third, Relevance and Contextualization

Current teaching materials have addressed everyday life topics. However, the context remains general and rarely tailored to students' specific experiences. As a result, some students perceive the materials as not closely connected to their personal experiences. A total of 81.57% of respondents stated that incorporating real-life activities that are more socially and culturally relevant can enhance motivation, and 82.10% agreed that teaching materials would be more engaging if linked more specifically to their daily lives. Observations also indicated that most examples are still taken directly from textbooks, with minimal contextual adaptation. Therefore, future teaching materials should broaden and deepen the integration of social and cultural contexts, for instance, through activities that are more authentic and personalized for students, to strengthen meaning and motivation in Arabic language learning.

Fourth. Curriculum Relevance and Content Structure

Currently, the textbooks only partially align with the Madrasah Tsanawiyah Arabic curriculum, particularly regarding the integration of skill-based objectives and grammar structures. Teachers reported that some topics do not follow the sequence of the latest curriculum, and grammar explanations are often too brief. A total of 85.26% of students requested more detailed explanations of grammar and sentence structures, 80.52% emphasized the importance of curriculum alignment, and 81.57% highlighted the need to explain learning objectives at the beginning of each unit. Therefore, interactive multimedia-based teaching materials should be designed with a clear modular structure in accordance with curriculum standards, ensuring that each unit systematically and coherently addresses specific linguistic competencies and learning outcomes.

Fifth, Learner Autonomy and Accessibility

Arabic language learning is still limited due to the absence of digital teaching materials that support independent learning outside the classroom. Teachers reported that all materials are only available in print, while students complained about this limitation—for example, when they forget to bring their books, they cannot study. In this study, 84.73% of students emphasized the importance of device-based access, and 81.05% valued materials that allow independent study at home. This underscores the need to integrate digital platforms compatible with mobile devices, enabling flexible learning, supporting learner autonomy, and aligning with students' technology habits.

Sixth, Media Support and the Teacher's Role

Teachers face difficulties in implementing technology-based learning due to the limited availability of multimedia teaching materials and supporting media. Observations indicate minimal use of audio, video, or visual aids in the classroom, with teachers relying entirely on printed textbooks. In this study, 81.05% of students reported that engaging, media-supported materials help them better understand lessons, while 90.52% emphasized that teacher guidance in using interactive materials makes learning more structured. Therefore, effective multimedia teaching materials should also function as pedagogical tools for teachers, providing structured guides, media integration tutorials, and flexible learning pathways to enhance teacher confidence and the quality of instruction.

Overall, these findings indicate that Arabic language learning at State Islamic Junior High School (MTsN) 17 Tanah Datar is still dominated by conventional, text-based teaching materials, with minimal interactivity, limited contextual relevance, and inflexible access. Both teachers and students demonstrate strong interest in adopting interactive, multimodal materials that are easily accessible via digital devices. The development of interactive multimedia-based teaching materials is therefore an urgent need to bridge the gap between conventional resources and students' digital learning habits, thereby enhancing engagement, comprehension, and overall Arabic language competence.

The findings reveal several critical issues in Arabic language learning at State Islamic Junior High School (MTsN) 17 Tanah Datar, primarily related to the conventional, text-heavy, and less engaging nature of teaching materials. Students described their experiences as monotonous, while teachers acknowledged that the existing materials failed to stimulate students' motivation or support balanced development of all four language skills.

The dominance of textual materials limits multimodal learning, which is essential for comprehension and memory formation. According to Mayer's cognitive theory of multimedia learning[16] and Paivio's dual coding theory[17], combining verbal and visual information enhances comprehension and long-term retention. In the context of Arabic language learning, this integration is particularly significant because Arabic requires learners to process both script and sound simultaneously—connecting orthographic symbols with their phonological representations. When students are exposed to text supported by audio narration, images, or short animations, they can form stronger associations between meaning, pronunciation, and usage. This dual-channel processing reduces cognitive overload, allowing learners to focus on understanding rather than decoding unfamiliar symbols. Moreover, multimodal materials promote deeper engagement and sustained attention, which are essential for developing listening

[16] Richard E. Mayer, *Multimedia Learning* (Camridge: Cambridge University Press, 2009).

[17] James M Clark and Allan Paivio, "Dual Coding Theory and Education," *Educational Psychology Review* 3, no. 3 (1991): 149–210.

and speaking skills that are often neglected in traditional textbook-based instruction. Therefore, adopting a multimodal approach not only supports cognitive efficiency but also aligns with the communicative goals of Arabic pedagogy, enabling students to internalize the language more naturally and effectively.

Moreover, audio plays a vital role in Arabic learning by strengthening phonological awareness and pronunciation accuracy, both crucial for vocabulary retention and oral fluency. This aligns with Hanif[18] and Mahdi[19], who found that multimedia-based Arabic materials significantly improve pronunciation and listening comprehension. Thus, integrating text, visuals, and sound is not merely aesthetic it represents a mechanism that strengthens the dual encoding of linguistic input.

The second major issue is the passivity of practice activities, which mainly emphasize written responses. Students rarely engage in speaking or listening activities. In contrast, interactive multimedia allows learners to respond, receive feedback, and control their learning pace transforming materials from static texts into dynamic two-way environments.

Research in Computer-Assisted Language Learning (CALL) confirms that interactivity promotes attention and retention by sustaining cognitive engagement and reducing extraneous load.[20] Chen & Wang found that interactive digital quizzes and games significantly increased time-on-task and intrinsic motivation.[21] In addition, timely feedback in interactive exercises significantly enhances learning outcomes, motivation, and self-regulation.[22] These findings highlight that learning becomes more meaningful when students are not merely passive recipients of information but active participants who construct understanding through response and feedback cycles. In the context of Arabic language learning, interactivity allows students to practice pronunciation, listening comprehension, and sentence construction in a dynamic and low-pressure environment. For example, when learners receive immediate feedback on their pronunciation or grammar, they can quickly correct errors and reinforce accurate forms, leading to more durable learning. Interactive activities also foster learner autonomy by

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[18] Huzaefah El Hanif, "Development of Interactive Multimedia-Based Arabic Language Teaching Materials for Class V MTs Ta'Mirul Islam Masaran Sragen," *JUPE : Journal of Mandala* Education 7, no. 2 (2022): 473–83, https://doi.org/10.58258/jupe.v7i2.3548.

[19] Dawood Ahmed Mahdi, "Improving Speaking and Presentation Skills through Interactive Multimedia Environment for Non-Native Speakers of English," *SAGE Open*, 2022, https://doi.org/10.1177/21582440221079811.

[20] Robert Blake, "Technology and the Four Skills," *Language Learning and Technology* 20, no. 2 (2016): 129–42, https://doi.org/10.64152/10125/44465.

[21] Na Wang et al., "Blended Learning for Chinese University EFL Learners: Learning Environment and Learner Perceptions," *Computer Assisted Language Learning* 34, no. 4 (2021): 297–323, https://doi.org/10.1080/09588221.2019.1607881.

[22] John Hattie and Helen Timperley, "The Power of Feedback," *Review of Educational Research* 77, no. 1 (2007): 81–112, https://doi.org/10.3102/003465430298487.

enabling students to monitor their progress and take responsibility for their own learning pace. From a pedagogical perspective, such engagement transforms traditional teacher-centered instruction into a learner-centered environment where digital interaction bridges the gap between theory and practice. Therefore, interactivity not only enhances cognitive processing but also nurtures affective and motivational dimensions that are essential for sustained language acquisition.

Another theme concerns the lack of contextual relevance. Students found that materials were disconnected from daily life, making it difficult to apply language in meaningful contexts. Vygotsky's constructivist perspective emphasizes that social and situational contexts facilitate deeper language internalization.[23] Language is best acquired when learners engage with authentic situations that mirror real communication, because meaning is constructed through interaction with one's environment and peers. When Arabic learning materials fail to reflect familiar settings—such as home, school, or local culture—students struggle to link linguistic forms with real experiences, resulting in superficial comprehension and low motivation. Contextualized learning, therefore, is not merely about adding examples from daily life but about embedding linguistic input in purposeful tasks that stimulate social interaction and cultural awareness. Through contextual relevance, language becomes functional, personal, and emotionally engaging, helping learners internalize vocabulary and structures more naturally.

Building on this principle, immersive technologies such as Virtual Reality (VR) and Augmented Reality (AR) create authentic and engaging environments where learners can practice language in simulated real-world contexts—such as markets, schools, or cafés—safely and confidently. This simulation-based learning not only enhances students' receptive skills[24] and speaking abilities[25], but also encourages active participation, motivation, and the courage to communicate without the pressure of real-life situations. By operationalizing contextualization, these technologies serve as boundary examples of how interactive multimedia can extend communicative practice beyond the classroom, bridging the gap between traditional text-based learning and meaningful, real-world language use.

Teachers also reported that grammar explanations and curriculum alignment remain inconsistent. This issue is closely related to how the content is structured within the teaching materials. When lessons are not systematically sequenced, students may experience cognitive overload because they are exposed to complex linguistic elements without sufficient scaffolding. Conversely, well-

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[23] L. S. Vygotsky, *Mind in Society: The Development of Higher Psychological Processes* (Harvard University Press, 1978).

[24] Antonina A. Andreeva, "Interactive Scenarios: Online Dialogue Simulators for Communication Skills," in *Lecture Notes in Networks and Systems* (Springer Science and Business Media Deutschland GmbH, 2024), https://doi.org/10.1007/978-3-031-76800-2_18.

[25] Mahdi, "Improving Speaking and Presentation Skills through Interactive Multimedia Environment for Non-Native Speakers of English."

organized materials that gradually progress from simple to complex concepts enable learners to build understanding step by step—from recognizing linguistic input to producing accurate language output. A coherent structure thus plays a crucial role in supporting comprehension, retention, and the balanced development of all four language skills in Arabic learning.

This principle aligns with Sweller's Cognitive Load Theory, which emphasizes that instructional design must manage the amount of information processed by working memory. When content is sequenced logically, it minimizes extraneous load and allows learners to focus on essential linguistic patterns.[26] Similarly, Richards[27] highlights that curriculum and syllabus design should ensure a progression from controlled input to communicative output, providing continuous scaffolding for language use. In Arabic pedagogy, this structured approach helps learners internalize grammatical rules through meaningful exposure rather than rote memorization, leading to more sustainable competence. Therefore, aligning grammar explanations with a well-sequenced curriculum is not only a matter of organization but also a pedagogical strategy grounded in cognitive and linguistic learning theory.

Limited access to print-only materials emerged as a structural barrier. Digital learning platforms and mobile-friendly e-books offer flexibility and continuity of learning, especially when physical attendance or textbook availability is restricted. In this study, 84.73% of students emphasized the importance of mobile access, while 81.05% valued opportunities for independent learning.

From the perspective of learning economics, access to learning through mobile devices can reduce the opportunity cost because it allows students to utilize their spare time—such as while traveling or during breaks—for productive activities in the form of continuous exposure to the Arabic language. Thus, previously unutilized time can be transformed into additional learning opportunities, whether by listening to vocabulary, reviewing dialogues, or practicing pronunciation through interactive applications.

This mechanism is consistent with the time-on-task theory, which emphasizes the importance of effective planning and management of classroom activities to maximize task engagement time, thereby leading to better learning outcomes. [28] The longer and more consistently students interact with the Arabic language, the greater their chances of improving comprehension and language skills effectively.

Teachers expressed difficulty implementing interactive learning because textbooks offer no media support. Without supplementary multimedia resources,

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[26] John Sweller, Paul Ayres, and Slava Kalyuga, *Cognitive Load Theory* (New York: Springer, 2011), https://doi.org/https://doi.org/10.1007/978-1-4419-8126-4.

[27] Jack C. Richards, *Curriculum Development in Language Teaching* (Camridge: Cambridge University Press, 2001).

[28] Lorin W. Anderson, "Instruction and Time-on-Task: A Review," in *Time and School Learning: Theory, Research and Practice*, 2018, 143–63, https://doi.org/10.4324/9780203701447.

teachers struggle to create engaging learning experiences and often rely solely on verbal explanations and written exercises. This lack of technological and visual support limits opportunities for student participation and reduces the effectiveness of communicative activities in the classroom. As Cunningsworth[29] note, teaching materials must function both as input sources and as frameworks for classroom management.

Therefore, multimedia design should position the teacher as a facilitator rather than a transmitter of information. This shift aligns with the active learning paradigm, in which teachers act as facilitators who guide students through the learning process rather than serving as the primary source of information. Teachers help students develop critical thinking and problem-solving skills through interaction and discussion.[30] In this context, teachers are no longer the sole source of knowledge but act as mentors who assist students in using various learning media to construct meaning, practice communication, and develop Arabic language competence both independently and collaboratively.

Across all six parameters: multimodality, interactivity, contextual relevance, curriculum structure, accessibility, and teacher-mediated media support the findings collectively suggest that Arabic teaching at the junior secondary level requires reconceptualization toward interactive, student-centered digital design. To operationalize these insights, the following design heuristics are proposed:

1. Each unit should include: text, audio, micro-video, and a self-checking quiz.
2. Minimum composition: at least 30% listening and 30% speaking tasks to support productive competence.
3. Accessibility principle: materials must be usable both online and offline across multiple devices.
4. Contextual anchoring: each unit should connect to students' real-life situations (e.g., hobbies, school routines, family).
5. Teacher facilitation: include a short guide for teachers to integrate multimedia with communicative classroom activities.

These results must be interpreted within local constraints. Infrastructure disparities, inconsistent digital literacy among teachers and students, and limited institutional policies supporting digital integration can hinder implementation. Future studies should test the effectiveness of the developed materials under these boundary conditions to identify scalable models for Arabic teaching innovation in Indonesian *madrasahs*.

Conclusion

This study analyzed students' and teachers' needs for interactive multimedia–based Arabic teaching materials at State Islamic Junior High School

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[29] Alan Cunningsworth, *Choosing Your Coursebook* (Australia: Macmillan Education, 1995).

[30] Selvakumar P. et al., "Learning Methods: Techniques for Disadvantaged Learners," in *Mitigating Learner Disadvantages in Teaching and Learning* (IGI Global, 2025), 207–30, https://doi.org/10.4018/979-8-3693-8623-1.ch008.

(MTsN) 17 Tanah Datar. The findings revealed that Arabic language learning remains dominated by conventional, text-heavy materials with limited interactivity, contextual relevance, and accessibility. Based on the analysis across six parameters—multimodality, interactivity, contextual relevance, curriculum alignment, learner autonomy, and media-supported teacher facilitation—the study identified the need for a reconceptualization of Arabic language teaching toward a more digital, student-centered design.

Interactive multimedia offers a pedagogical solution by integrating text, audio, video, and animation to enhance comprehension, motivation, and active participation. It also supports mobile-based learning that can reduce opportunity costs, extend learning time, and promote learner autonomy. Furthermore, positioning teachers as facilitators rather than mere transmitters of information aligns with the active learning paradigm, enabling students to construct meaning, practice communication, and develop language competence collaboratively.

The results of this study provide a design framework that can guide the development of interactive multimedia-based Arabic materials. Each unit should integrate multimodal elements (text, audio, micro-video), interactive exercises with feedback, and contextual tasks linked to students' real-life experiences, supported by teacher guidance materials. Future research should focus on developing and validating prototypes based on these parameters, testing their effectiveness in improving students' Arabic language competence, and providing professional development for teachers to ensure sustainable digital integration in madrasah learning environments.

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