Arabiyatuna
Jurnal Bahasa Arab

Vol. 10. No. 1, 2026,
P-ISSN: **2580-5045, E-ISSN: 2580-5053**
DOI: 10.29240/jba.v10i1.16265

The Effectiveness of AI Based Microlearning Platforms through Vlog Content to Improve Arabic Listening Skills

Ganjar Yusup Sofian[1], Sutaman[2], R. Taufiqurrochman[3], Ahmad Fadhel Syakir Hidayat[4], Nukman[5]
UIN Maulana Malik Ibrahim Malang[1,2,3], UIN Sultan Aji Muhammad Idris Samarinda[4], STIT Ibnu Rusyd Tanah Grogot[5]
ganjarys@gmail.com[1], sutaman@uin-malang.ac.id[2], taufiq@uin-malang.ac.id[3], ahmad.fadhel@uinsi.ac.id[4], nukmanyazid@gmail.com[5]

Cite this article:
Sofian, Ganjar Yusup., Sutaman, Sutaman., Taufiqurrochman, R., Hidayat, Ahmad Fadhel Syakir., & Nukman, Nukman. (2026). The Effectiveness of AI-Based Microlearning Platforms through Vlog Content to Improve Arabic Listening Skills. Arabiyatuna: Jurnal Bahasa Arab, 10(1), 1-14. doi: 10.29240/jba.v10i1.16265

Received: 30-01-2026	Revised: 31-03-2026	Accepted: 14-04-2026

Abstract

The rapid expansion of digital technology and Artificial Intelligence (AI) has significantly transformed learning practices in higher education, particularly in the development of foreign language listening skills. This quasi-experimental study examined the effectiveness of an AI-based microlearning platform integrating authentic Vlog content in improving Arabic listening comprehension. Sixty undergraduate students participated in a four-week, one-group pretest–posttest design. Data were collected through listening comprehension tests and classroom observations. The results revealed a statistically significant improvement in students' listening skills, with a large instructional effect, indicating a meaningful pedagogical impact. Although proportional learning gains were relatively low, this outcome reflected high initial proficiency levels rather than limited intervention effectiveness. Observation results confirmed high fidelity throughout the intervention. Overall, the findings support the integrating of microlearning, multimodal video input, and AI-driven adaptivity as a practical approach to enhancing Arabic listening skills in higher education.

Keywords: Microlearning; Artificial Intelligence (AI); Vlog; Arabic listening skills; higher education.

Introduction

Rapid advances in Artificial Intelligence (AI) and digital media have transformed language learning in higher education by enabling adaptive, multimodal approaches to developing receptive skills,[1] particularly listening comprehension. The UNESCO Global Education Monitoring Report (2023) indicates that more than 65% of students now engage with short videos and independent digital content, reflecting a shift toward flexible and technology-driven learning environments.[2] This shift is especially relevant to foreign language learning, including Arabic, which is often constrained by limited access to authentic input. Furthermore, Generation Z learners tend to prefer short, multimodal, and flexible learning formats that can be accessed on demand, which necessitates the use of structured and concise instructional strategies such as microlearning to support effective listening skill development.[3]

In this context, microlearning stands out as an approach due to its ability to present material in short units that minimize cognitive load, as explained by Cognitive Load Theory,[4] and has been proven to increase student retention and engagement.[5] Various studies in higher education also show that delivering material through short videos consistently increases motivation, learning focus, and learning effectiveness in both online and blended learning environments.[6]

---

[1] Rifqi Aulia Rahman et al., "The Dynamics of AI Technology Utilization in Arabic Language Skills Learning in the Merdeka Curriculum," *El-Syaker : Samarinda International Journal of Language Studies* 2, no. 3, August 1, 2025; Renti Yasmar et al., "Pemanfaatan ChatGPT Dalam Meningkatkan Keterampilan Menulis/Maharah Kitabah Berbasis 6C (Critical Thinking, Creativity, Collaboration, Communication, Computational and Compassion)," *Al-Jawhar : Journal of Arabic Language* 1, no. 2, December 22, 2023.

[2] Ahmad Zuhrudin, Anisa Alfurochmatin, and Winda Nur Lathifah, "The Development of a Digital Module on the Concept and Application of the Kurikulum Merdeka in Madrasas Based on Problem-Based Learning," *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 1 (2025): 393–412; Manos Antoninis et al., "Global Education Monitoring Report 2023: Technology in Education: A Tool on Whose Terms?," 2023; Noza Aflisia et al., "Pemanfaatan Aplikasi Kahoot Untuk Meningkatkan Penguasaan Unsur Bahasa Arab," in Al-Mu'tamar Ats-Tsanawi Li Al-Lughah Al-'Arabiyyah, vol. 1 (Prodi Pendidikan Bahasa Arab IAIN Curup, 2020), 1–17, http://prosiding.iaincurup.ac.id/index.php/musla/article/view/8..

[3] A L Cutillas et al., "Teaching Strategies and Activities across All Disciplines That Appeal to Gen-Z Learners," *Environment and Social Psychology* 10, no. 6 (2025): 1–16; Natasha Mohd Ishak, Harikrishnan Ranganathan, and Kamalambal Harikrishnan, "Learning Preferences of Generation Z Undergraduates at the University of Cyberjaya.," *Journal of Learning for Development* 9, no. 2 (2022): 331–39.

[4] John Sweller, "Cognitive Load Theory," in *Psychology of Learning and Motivation*, vol. 55 (Elsevier, 2011), 37–76.

[5] Imam Santosa, Ifan Iskandar, and Samsi Setiadi, "Adapting Language Learning Materials for Digital Native: Infusing CEFR Standards in English Procedural Texts on Microlearning Apps," *World Journal of English Language* 15, no. 4 (2025): 171; Magdalena Zavodna et al., "Microlearning: Innovative Digital Learning for Various Educational Contexts and Groups," in *European Conference on E-Learning*, vol. 23, 2024, 442–50.

[6] Bayan Alsaid et al., "Short Social Media Videos as a Supplementary Educational Resource in Neuroanatomy: A Nonrandomized Clinical Trial," *JAMA Network Open* 8, no. 9 (2025):

In addition to microlearning, video blogs (Vlogs) have emerged as a multimodal learning medium that provides authentic communicative contexts through visual and auditory narratives. These features enhance social presence, learner motivation, and active engagement in foreign language learning.[7] In Arabic language learning, Vlogs enrich learners' exposure to intonation, gestures, and culturally embedded expressions, which are essential for interpreting spoken meaning. This function aligns with Multimedia Learning Theory, which emphasizes that comprehension improves when verbal information is synchronized with relevant visual cues.[8]

At the same time, Artificial Intelligence (AI) supports listening development through adaptive and personalized mechanisms, including performance analysis, error detection, immediate feedback, and task-level adjustment.[9] Empirical studies in Arabic language learning have shown that AI-based instruction improves listening skills through adaptive feedback and speech recognition.[10] However, although microlearning, Vlog, and Artificial Intelligence (AI) have each demonstrated effectiveness in language learning, empirical studies integrating these three components into a single platform remain limited. Most prior research has focused on English or productive skills and has emphasized technological development rather than pedagogical effectiveness in Arabic listening comprehension.[11]

---

e2533971–e2533971; I Gede Budi Mahendra and Billy Killis, "Impact of Virtual Laboratory-Assisted Microlearning on Students' Motivation, Engagement, and Academic Success.," *Journal of Learning for Development* 12, no. 1 (2025): 1–16; German Jazmany Zambrano Verdesoto and María Fernanda Caicedo, "La Importancia Del Microaprendizaje En La Educación Superior," *European Public & Social Innovation Review* 10 (2025): 1–14.

[7] Nur'ain Novianty, Cecep Sobar Rochmat, and Adam Ja'far Shodik, "The Effectiveness of Visual Media in Improving Students' Arabic Language Learning According to Edgar Dale's Cone of Experience Model," *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 2 (2025): 613–30; Hui-Wen Huang et al., "EFL Learners' Perceptions of Vlog Projects to Facilitate Group Collaboration and Learning Participation," in *Proceedings of the 2020 4th International Conference on E-Education, E-Business and E-Technology*, 2020, 84–89; Miaosheng Zhan et al., "Vlog for Fluency: A Qualitative Case Study of Chinese Students' Motivation in Task-Based English Speaking," *Journal of Language Teaching and Research* 16, no. 3 (2025): 1013–22.

[8] Richard E Mayer, *The Cambridge Handbook of Multimedia Learning* (Cambridge University Press, 2021).

[9] Nurul Fitriah Alias and Rafiza Abdul Razak, "Revolutionizing Learning in the Digital Age: A Systematic Literature Review of Microlearning Strategies," *Interactive Learning Environments* 33, no. 1 (2025): 1–21; Klara Ida Katonane Gyonyoru and Jozsef Katona, "Student Perceptions of AI-Enhanced Adaptive Learning Systems: A Pilot Survey," in *2024 IEEE 7th International Conference and Workshop Óbuda on Electrical and Power Engineering (CANDO-EPE)* (IEEE, 2024), 93–98.

[10] Dedi Mulyanto et al., "Utilization of Artificial Intelligence with Text-to-Speech Technology Based on Natural Language Processing to Enhance Arabic Listening Skills for Non-Native Speakers," *Alsinatuna* 10, no. 1 (2024): 44–58.

[11] Abdulrahman Alahmadi et al., "Development of a Deep Learning-Based Arabic Speech Recognition System for Automatons," *Engineering, Technology & Applied Science Research* 14, no. 6

Based on these gaps, this study aims to examine the effectiveness of an AI-based microlearning platform, MicroAraby, which integrates authentic Vlog content to improve Arabic listening comprehension among higher education students. The study also contributes to theory by proposing an adaptive learning framework that integrates key concepts from microlearning, multimedia learning, cognitive load, and Artificial Intelligence in education. From a practical perspective, it offers an empirically tested technology-based learning model that is potentially scalable and adaptable across different linguistic and institutional contexts, thereby addressing the need for efficient, authentic, and adaptive pedagogical solutions for the development of receptive skills in foreign language learning.

Listening skills are fundamental receptive competencies in learning Arabic as a foreign language.[12] Unlike written text comprehension, oral comprehension requires simultaneous processing of sounds, vocabulary, sentence structure, dialectal variations, and the pragmatic context of native speakers. This oral comprehensions makes listening skills one of the most challenging areas for non-native learners to master. Shows that prospective Arabic language teachers experience serious obstacles in two aspects: (1) the speed of native Arabic speakers, and (2) phonological/dialectal variations that differ from the standard form (fuṣḥā).[13] These obstacles directly affect students' confidence and often lead to learning anxiety when dealing with authentic audio material.[14] These findings emphasize the importance of pedagogical interventions that not only provide Arabic-language input but also present it in a controlled, gradual, and repeatable manner, rather than simply exposing learners "directly" to complex natural discourse. The pedagogical consequence is clear: Arabic listening practice is insufficient when based solely on long audio recordings in class. A model for presenting listening material is needed that breaks the input into short units, provides visual context to aid comprehension, and allows learners to monitor their own progress. To address this need, instructional approaches such as microlearning, Vlog-based media, and Artificial Intelligence have been increasingly adopted in language-learning contexts.

(2024): 18439–46; Mohammad Hamad Al-khresheh et al., "Structural Equation Modelling of Teachers' Perspectives on Microlearning in Saudi EFL Instruction: Examining Predictors of Adoption and Implementation," *Asian-Pacific Journal of Second and Foreign Language Education* 10, no. 1 (2025): 33; Murad Al-Rajab et al., "AI Meets Linguistics SayItRight: A Platform for Personalized Language Learning and Pronunciation Enhancement," in *2025 International Conference on Artificial Intelligence, Computer, Data Sciences and Applications (ACDSA)* (IEEE, 2025), 1–7.

[12] Rendi Sabana et al., "Learning Istima'Based on Ibnu Tufail's Humanism Approach at Applied Islamic School Prof. Muhajrin Palembang," *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 1 (2025): 249–66.

[13] Meryem Güngencï and MUSA Yıldız, "Challenges in Listening and Speaking Skills for Arabic Language Pre-Service Teachers: A Correlational Study," *Novitas-Royal* 2, no. 18 (2024).

[14] Hussein Elkhafaifi, "Listening Comprehension and Anxiety in the Arabic Language Classroom," *The Modern Language Journal* 89, no. 2 (2005): 206–20.

Microlearning is an instructional strategy that delivers content in small, goal-oriented units designed to be completed in short learning sessions.[15] Unlike traditional lectures or lengthy instructional materials that require sustained attention, microlearning enables learners to access, repeat, and control learning content independently. In higher education contexts, this approach aligns well with the learning preferences of the digital generation, which favour visual–auditory interaction, flexibility, and mobile accessibility.[16] Empirical studies have shown that microlearning delivered through short digital modules enhances student engagement, focus, and motivation compared to linear instructional formats, as learners perceive learning tasks as more manageable and achievable.[17]

From a cognitive perspective, microlearning is widely associated with reducing cognitive load and supporting gradual information processing, which enhances learning efficiency.[18] Segmenting instructional content allows learners to focus on discrete learning objectives. At the same time repeated exposure contributes to long-term retention.[19] However, existing studies have largely emphasized its general impact on engagement and retention, with limited attention to its role in developing listening comprehension in foreign language contexts, particularly Arabic. This limitation is critical, as Arabic listening requires learners to simultaneously process phonological, lexical, and contextual information. Therefore, while microlearning offers a structured and cognitively manageable approach, its effectiveness remains insufficiently explored when applied to Arabic listening and when integrated with multimodal input and adaptive technologies.

Video blogs (Vlogs) offer a learning dimension that static audio materials cannot offer, as they present authentic communicative contexts through integrated visual and auditory narratives that reveal speakers, settings, gestures, and communicative intent. As a multimodal learning medium, Vlog enables learners not only to process linguistic input but also to interpret communicative events in context. In foreign language instruction at the higher education level, Vlogs have been shown to enhance intrinsic motivation, foster emotional engagement with learning content, and support active learner involvement through reflective and responsive activities, such as oral summaries or reflective Vlog tasks.

---

[15] M T Alshammari, "Design and Evaluation of Online Microlearning Tailored to Learning Styles," *Int. J. Adv. Appl. Sci.* 12 (2025): 213–24; Wali Khan Monib, Atika Qazi, and Rosyzie Anna Apong, "Microlearning beyond Boundaries: A Systematic Review and a Novel Framework for Improving Learning Outcomes," *Heliyon* 11, no. 2 (2025).

[16] Verdesoto and Caicedo, "La Importancia Del Microaprendizaje En La Educación Superior."

[17] Mahendra and Killis, "Impact of Virtual Laboratory-Assisted Microlearning on Students' Motivation, Engagement, and Academic Success."

[18] Sweller, "Cognitive Load Theory."

[19] Chris Kossen and Chia-Yi Ooi, "Trialling Micro-Learning Design to Increase Engagement in Online Courses," *Asian Association of Open Universities Journal* 16, no. 3 (2021): 299–310.

In Arabic language learning, the visual dimension of Vlog plays a critical role, as comprehension depends not only on phonological recognition but also on pragmatic meaning, politeness strategies, and culturally embedded cues. Empirical studies indicate that presenting listening materials in visually authentic contexts increases learners' perceived relevance and strengthens their sense of using Arabic in real communicative situations.[20] When combined with a microlearning approach, Vlogs function as multimodal microlearning units in the form of short, situation-specific video clips that integrate auditory input with contextual visual support. This design aligns with the principles of Segmentation, Coherence, and Modality in Multimedia Learning Theory, which posit that comprehension improves when information is presented in concise segments and supported by relevant visual cues.[21]

Artificial Intelligence (AI) introduces a high level of personalization in listening instruction by functioning as an adaptive agent capable of monitoring learner performance, identifying specific difficulties, and providing immediate, tailored feedback.[22] In language learning contexts, AI supports listening development by adjusting audio playback speed, enabling targeted repetition, highlighting missed vocabulary, and visualizing learning progress across sessions.[23] These adaptive features allow learners to engage with listening materials in a more responsive and individualized manner.

Furthermore, AI integrates technologies such as text-to-speech and speech recognition to simulate verbal interaction and deliver automated feedback on comprehension of sounds and meaning. Empirical studies have demonstrated that AI-supported instruction significantly improves Arabic listening skills by providing adaptive and responsive learning experiences.[24] Pedagogically, AI facilitates self-regulated learning by enabling students to practice independently, receive immediate feedback, and adjust learning strategies without constant instructor intervention. From an institutional perspective, this capability is particularly relevant for higher education settings characterized by large class

---

[20] Tawffeek Mohammed, "Designing an Arabic Speaking and Listening Skills E-Course: Resources, Activities and Students' Perceptions," *Electronic Journal of E-Learning* 20, no. 1 (2022): pp 53-68.

[21] Mayer, *The Cambridge Handbook of Multimedia Learning*.

[22] Al-khresheh et al., "Structural Equation Modelling of Teachers' Perspectives on Microlearning in Saudi EFL Instruction: Examining Predictors of Adoption and Implementation"; Al-Rajab et al., "AI Meets Linguistics SayItRight: A Platform for Personalized Language Learning and Pronunciation Enhancement."

[23] Dina Chabib Uluum, Keysa Tamami, and Muhammad Ramdhan Bin Mohamad, "Bridging Traditional Language Pedagogy and AI: Lessons from Arabic Language Programs in Indonesia," *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 2 (2025): 770–85.

[24] Mulyanto et al., "Utilization of Artificial Intelligence with Text-to-Speech Technology Based on Natural Language Processing to Enhance Arabic Listening Skills for Non-Native Speakers"; Umi Hijriyah et al., "How Effective Is SUNO. AI in Enhancing Arabic Listening Skills? An Evaluation of AI-Based Personalized Learning," *International Journal of Information and Education Technology* 15, no. 2 (2025): 391–407.

sizes, limited face-to-face instructional time, and the growing demand for distance learning.

Previous research shows that microlearning improves focus and retention.[25] At the same time vlog strengthens motivation and social presence,[26] and AI supports personalization and immediate feedback in Arabic listening exercises.[27] Most previous studies have examined microlearning, vlog, and Artificial Intelligence (AI) separately without integrating them into a comprehensive learning system. Microlearning studies generally focus on material segmentation without utilizing AI as an adaptive mechanism that provides automatic feedback.[28] Meanwhile, AI research in Arabic language learning has focused more on device development rather than pedagogical evaluation in real classrooms.[29] As a result, there is no empirical evidence on the effectiveness of a platform that simultaneously integrates vlog as multimodal input, microlearning as the material structure, and AI as an adaptive feedback mechanism. This gap creates a need for research that assesses how these three elements work together to improve Arabic listening skills. This study is designed to fill this gap by testing the effectiveness of the integrated platform and assessing its potential as a replicable learning model across various educational contexts.

---

[25] Mahendra and Killis, "Impact of Virtual Laboratory-Assisted Microlearning on Students' Motivation, Engagement, and Academic Success."

[26] Joan-Isaac Biel and Daniel Gatica-Perez, "Vlogcast Yourself: Nonverbal Behavior and Attention in Social Media," in *International Conference on Multimodal Interfaces and the Workshop on Machine Learning for Multimodal Interaction*, 2010, 1–4; Wei Ann Ong, Suyansah Swanto, and Asmaa Alsaqqaf, "Engaging in Reflective Practice via Vlogs: Experience of Malaysian ESL Pre-Service Teachers," *Indonesian Journal of Applied Linguistics* 9, no. 3 (2020).

[27] Al-Rajab et al., "AI Meets Linguistics SayItRight: A Platform for Personalized Language Learning and Pronunciation Enhancement"; Hijriyah et al., "How Effective Is SUNO. AI in Enhancing Arabic Listening Skills? An Evaluation of AI-Based Personalized Learning"; Mulyanto et al., "Utilization of Artificial Intelligence with Text-to-Speech Technology Based on Natural Language Processing to Enhance Arabic Listening Skills for Non-Native Speakers"; Gyonyoru and Katona, "Student Perceptions of AI-Enhanced Adaptive Learning Systems: A Pilot Survey"; Ying Ma, Xiao-Jian Tang, and Xin Huang, "AI-Powered Adaptive English Language Learning Systems: Leveraging Deep Learning Algorithms and Natural Language Processing for Personalized Teaching Approaches," *IEEE Access*, 2025.

[28] Al-khresheh et al., "Structural Equation Modelling of Teachers' Perspectives on Microlearning in Saudi EFL Instruction: Examining Predictors of Adoption and Implementation"; Tilman Dingler et al., "Language Learning On-the-Go: Opportune Moments and Design of Mobile Microlearning Sessions," in *Proceedings of the 19th International Conference on Human-Computer Interaction with Mobile Devices and Services*, 2017, 1–12; David Martínez Cerqueda, Alma Eloisa Rodriguez Medina, and Alonso Gómez Ortíz, "Educational Use of TikTok to Enhance Complex Grammatical Aspects of French: A Pilot Study," in *Latin American Conference on Learning Technologies* (Springer, 2023), 172–85.

[29] Alahmadi et al., "Development of a Deep Learning-Based Arabic Speech Recognition System for Automatons"; Fawzi Alghazali and Mohammed Alzyoudi, "Exploring Linguistic Paradigms in Language Applications to Augment Arabic Language Acquisition," *Novitas-ROYAL (Research on Youth and Language)* 19, no. 1 (2025): 241–51.

MicroAraby is an AI-based microlearning platform that integrates authentic Vlog content to improve Arabic listening skills through short, multimodal, and adaptive learning experiences. This platform combines Vlogs as a source of authentic linguistic input with an AI-based Learning Management System to create a contextual, interactive, and personalized learning process. Each learning unit is presented in a 3–to 10-minute video featuring authentic conversations in various real-life communication contexts, ranging from market interactions to social and procedural conversations, with difficulty levels adjusted from beginner to intermediate. Listening skills are assessed through the H5P (HTML5 Package) interactive video feature, which embeds audio-based questions within the vlog content. Each video includes interactive points that, when activated, play audio clips of conversations, monologues, or narrations, and students must answer comprehension questions after the audio plays. This design assesses students' ability to process verbal information without relying on visual cues, as correct answers can only be obtained through auditory comprehension. The visuals in the vlog still provide situational context, but key information, such as factual details, communicative intent, and pragmatic inferences, is only available in the audio.

Assessment questions cover three aspects of oral comprehension, namely literal, inferential, and pragmatic comprehension, so that the evaluation truly measures listening skills, not visual reading skills. After completing the learning video, students can continue practicing through various H5P interactive activities such as adaptive quizzes, voice recognition exercises for pronunciation assessment, and drag-and-drop vocabulary matching. Each activity is supported by a learning dashboard that displays students' performance in real time, including scores, completion rates, and response accuracy, enabling them to monitor their progress and adjust their learning strategies accordingly.

Adaptive AI features adjust difficulty levels, provide recommendations for advanced material, and generate learning analytics to identify intervention needs. The platform also provides a learning community feature through BuddyBoss, allowing students to discuss and upload reflective vlogs. The platform's development is based on the principles of Multimedia Learning Theory[30] and Cognitive Load Theory[31] which emphasize the importance of audio-visual integration, material segmentation, and cognitive load reduction through contextual visualization. From a technical design perspective, this platform integrates BuddyBoss LMS, H5P Interactive Learning Modules, and Generative AI into a single learning ecosystem accessible on computers and mobile devices. Overall, MicroAraby combines BuddyBoss LMS, H5P, and Generative AI into a single ecosystem accessible on computers and mobile devices, providing interactive, personalized, and continuous learning. See the image below:

[30] Mayer, *The Cambridge Handbook of Multimedia Learning*.
[31] Sweller, "Cognitive Load Theory."

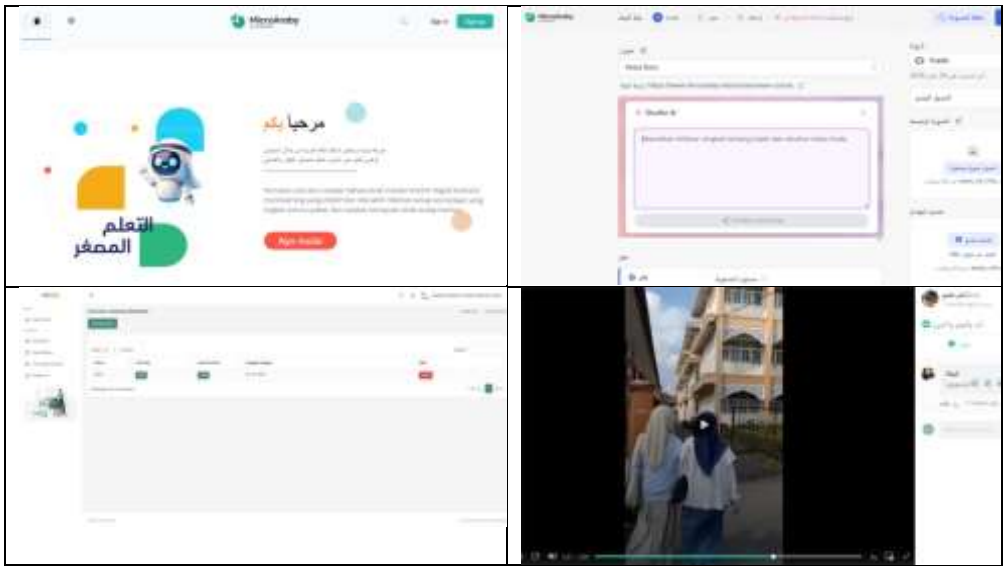

Figure 1. MicroAraby Platform

This study employed a quasi-experimental one-group pretest–posttest design to examine within-subject changes in students' Arabic listening skills following the implementation of an AI-based microlearning platform integrating Vlog content. The design was adopted as part of an exploratory evaluation of a newly developed instructional platform, aimed at assessing instructional effectiveness under authentic classroom conditions rather than establishing causal comparisons between groups. By measuring learner performance before and after the intervention within the same group, each participant served as their own reference point, thereby reducing inter-individual variability in listening proficiency. Although no control group was included, this approach is methodologically appropriate for early-stage educational technology research focused on identifying meaningful learning gains before large-scale experimental validation.[32]

The study's population consisted of all students in the Arabic Language Education Study Program at KH. Ruhiat Cipasung Islamic University Indonesia which was enrolled in the Maharah Istima' (Arabic Listening) course, totalling 150 students. The sampling technique used was purposive sampling with the following criteria: (1) active third-semester students who had completed at least one Basic Arabic Language Skills course, and (2) students willing to participate in the entire four-week intervention program. Based on these criteria, a total of 60 students were selected and divided into two classes (Class A and Class B). This study employed a one-group pretest–posttest design without a control group, as it aimed to evaluate the initial effectiveness of a newly developed instructional

[32] Jack R Fraenkel and Norman E Wallen, *How to Design and Evaluate Research in Education.* (ERIC, 1990).

platform in an authentic classroom setting. Such a design is considered appropriate in exploratory educational research where the primary focus is to identify within-subject learning gains prior to conducting more rigorous controlled experimental studies.

To collect data, two types of instruments were used, both of which were self-developed and designed to measure students' listening skills and their engagement with the AI-based microlearning platform through Vlog content. Listening Skills Test: 1) The listening test was developed using the H5P (HTML5 Package) interactive video feature, which embeds audio-triggered questions within Vlog content. The audio material consisted of three types of authentic spoken Arabic texts: (1) dialogues in real communicative situations (e.g., markets, classrooms, or restaurants); (2) monologues in the form of personal narratives or procedural explanations; and (3) descriptive narratives about events or objects. The test items were presented in multiple-choice (four options) and short-answer formats, measuring three levels of comprehension: literal, inferential, and pragmatic understanding. The test design ensured that correct responses could only be achieved through auditory comprehension, while visual elements served solely as contextual support. 2) Observation Sheet: an observation checklist containing indicators of instructor behaviour in using the AI-based microlearning platform through Vlog content.

Data collection in this study was conducted through two primary sources, namely listening skill tests and observation. The listening skill test was used to measure the effectiveness of the AI-based microlearning platform integrating Vlog content in improving students' listening skills before and after the intervention. This test enabled researchers to objectively quantify changes in students' abilities after participating in the learning process. To ensure the quality of the instrument, the listening test was developed based on established indicators of listening comprehension, including literal, inferential, and pragmatic understanding, and was validated by experts in Arabic language education and educational technology to ensure content validity. In addition, a reliability test was conducted using Cronbach's alpha, which yielded a coefficient of 0.82, indicating good internal consistency of the instrument.

In addition, observations were conducted to ensure that lecturers' implementation of the platform was aligned with the planned intervention design. One independent observer conducted the observations using a structured observation sheet covering six main aspects: class preparation and management, Vlog material presentation, utilisation of adaptive AI features, facilitation of student interaction, time management, and compliance with learning guidelines. These aspects were adapted from established frameworks on instructional implementation and technology-enhanced learning to capture key dimensions of effective classroom practice and implementation fidelity. Each indicator in the observation sheet was assessed using a four-point rating scale ranging from "not implemented" (1) to "very good" (4). The use of a four-point scale was intended

to avoid neutral responses and to encourage more discriminative judgments of instructional performance, which is commonly applied in observational studies of teaching practice. The data obtained from the observation results were analysed descriptively to assess the level of intervention implementation (implementation fidelity). The results of this analysis provide supporting evidence that the improvement in listening skills observed in the study was associated with the consistent and procedural application of the platform in the classroom.

Data analysis in this study was conducted using a quantitative and descriptive approach, which aimed to test the effectiveness of using the AI-Based Microlearning Platform through Vlog Content on improving students' listening skills, as well as to assess the implementation of the platform by lecturers in the classroom.

Quantitative data from listening skill tests (pretest and posttest) were analysed using a paired-samples t-test to determine whether there was a significant difference in average scores between the pretest and posttest. The paired-samples t-test was employed because the data were obtained from the same group of participants and the study aimed to assess within-subject changes in students' listening skills following the intervention. Before conducting the t-test, a prerequisite test was performed: a normality test using the Kolmogorov–Smirnov method to ensure the data distribution met the assumptions required for parametric analysis. Since the normality test indicated that the data were normally distributed, the analysis proceeded using a paired-samples t-test in IBM SPSS Statistics 27.

The test results were interpreted based on the following criteria: 1) If the significance value (Sig. 2-tailed) < 0.05, there is a statistically significant difference between the pretest and posttest scores. 2) If the significance value (Sig. 2-tailed) ≥ 0.05, then there is no statistically significant difference between the pretest and posttest scores.

In addition to the significance test, the following calculations were also performed to provide a more comprehensive evaluation of the intervention effect: 1) Effect Size (Cohen's d), to measure the strength of the treatment effect beyond statistical significance. Effect size was used as the primary indicator of instructional impact to describe the practical magnitude of learning improvement, with the following interpretation criteria: ($d \geq 0.8$ = large effect, $0.5 \leq d < 0.8$ = moderate effect, $d < 0.5$ = small effect). 2) N-Gain Score, to determine the level of improvement in student learning outcomes relative to the maximum possible gain. This analysis was used as a complementary indicator to describe proportional learning improvement, with the following effectiveness criteria: (N-Gain ≥ 0.7 = High effectiveness, $0.3 \leq$ N-Gain < 0.7 = Moderate effectiveness, N-Gain < 0.3 = Low effectiveness)

The t-test results, Effect Size (Cohen's d), and N-Gain were used to assess the effectiveness of the AI-Based Microlearning Platform through Vlog Content in improving students' Arabic listening skills.

Observation data were obtained from the learning implementation observation sheet (Implementation Observation Checklist) filled out by two independent observers. Each indicator was observed and assessed using a scale of 1–4, with the following categories: (1 = Not implemented, 2 = Poor, 3 = Good, 4 = Very good).

The scores from both observers were averaged to obtain the final score for each indicator. The average score for each aspect was then categorized as follows: (3.26–4.00 = Very good (implementation is very appropriate), 2.51–3.25 = Good (implementation is appropriate), 1.76 – 2.50 = Fair (partially compliant implementation), 1.00 – 1.75 = Poor (implementation not appropriate).

The observation data were analysed descriptively by calculating the percentage of implementation for each aspect. These results were used to assess the fidelity of implementation or the level of suitability of the platform's application by lecturers in the classroom. This analysis ensured that the improvement in student learning outcomes was due to the implementation of the AI-Based Microlearning Platform through Vlog Content, in accordance with the intervention procedure.

Findings and Discussion

Observation of MicroAraby Platform Implementation

The observation was conducted to assess the level of implementation of the AI-based Microlearning Platform through Vlog Content by lecturers during the learning process. Six aspects were observed, namely: (1) class preparation and management, (2) presentation of Vlog material, (3) utilisation of adaptive AI features, (4) facilitation of student interaction, (5) time management, and (6) compliance with learning guidelines. The observation was conducted by researchers in each learning session in two parallel classes (Class A: 30 students and Class B: 30 students), with a total of 8 observation sessions (4 meetings × 2 classes).

Each performance indicator was assessed using a scale of 1 to 4, with the following criteria: 1 = not implemented (0-25% of time), 2 = poor (26-50% of time), 3 = good (51-75% of time), and 4 = very good (76-100% of time). Table 1 below shows the observation scores for both classes during the four weeks of implementation.

Table 1. Results of MicroAraby Platform Implementation Observations

No	Aspect	Performance Indicator	Meeting Score								Average	
			1		2		3		4		Grade	
			A	B	A	B	A	B	A	B	A	B
1	Class Preparation and Management	Instructors prepare the MicroAraby platform before the lesson begins and	4		4		4		4		**4**	**4**

		ensure that all students can log in.						
2	Presentation of Material	The lecturer shows a 2–3 minutes VLOG related to the microlearning topic and provides listening practice instructions.	4	4	4	4	**4**	**4**
3	Use of AI Features	*Adaptive feedback* and *speech recognition* features are activated and used during learning.	4	3	3	4	**3.5**	**3.75**
4	Facilitating Student Interaction	Instructors guide students in responding to AI feedback and encourage reflection on learning outcomes.	4	4	3	4	**3.75**	**3.75**
5	Time Management & Technical	Learning time is in line with the duration of microlearning, without significant technical disruptions.	3	3	3	3	**3**	**3.5**
6	Compliance with Intervention Guidelines	Implementation follows the validated Learning Plan (RPS/intervention).	4	4	3	4	**3.75**	**3.75**
		Average total					**3.66**	**3.79**

The results of the observation indicate that the platform implementation went very well and was consistent with the intervention design. Lecturers were able to make optimal use of key features such as Vlog videos, speech recognition, and AI feedback. The aspects of time management and student interaction facilitation also scored highly, indicating that the platform can be well integrated into classroom activities. This observation data confirms that the improvement in student learning outcomes was not due to variations in implementation, but rather to the platform's effectiveness when run in accordance with learning procedures.

Effectiveness of AI-Based Microlearning Platform through Vlog Content on Arabic Listening Skills

Before conducting a paired-sample t-test, normality and homogeneity tests were performed on the pretest and posttest data to ensure that the parametric assumptions were met.

First, Normality Test

The normality test using the Kolmogorov–Smirnov method showed the results as shown in Table 2 below:

Table 2: Normality Test

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.052	60	.200*	.990	60	.893
Posttest	.099	60	.200*	.987	60	.774

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the results of the Kolmogorov–Smirnov test, the significance value (Sig.) was 0.200 for both the pretest and posttest data. This value is greater than 0.05, indicating that both data sets are typically distributed.

Thus, the pretest and posttest data on students' listening skills are statistically normally distributed. This condition indicates that the distribution of student scores is relatively balanced around the mean, with minimal extreme deviations, thereby satisfying the basic assumption for conducting an inferential analysis using the paired-sample t-test.

Second, T-test

To determine the effectiveness of the Microlearning Platform, equipped with Artificial Intelligence (AI) Features, on improving students' listening skills, a paired-samples t-test was conducted on pretest and posttest scores. The results of the analysis are shown in Table 3 below:

Table 3: T-test Results

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest - Posttest	-3.85000	3.26162	.42107	-4.69256	-3.00744	-9.143	59	.000

Based on the results of the paired-sample t-test, the mean difference between the pretest and posttest scores was 3.85. The statistical test shows a t(59) value of –9.143 and a p-value of $p < 0.001$, indicating a very significant difference between the pretest and posttest scores of students after participating in learning using the AI-Based Microlearning Platform through Vlog Content. Thus, these results confirm that the intervention provided is effective in statistically improving students' listening skills.

Thirth, Effect Size Test (Cohen's d)

An effect size test using Cohen's d was conducted to determine the magnitude of the effect of applying the AI-Based Microlearning Platform via Vlog Content on students' listening skills. Based on the results of the paired-sample t-

test analysis, a mean difference of 3.85 was obtained, while the standard deviation of the score difference (SD_difference) was 3.26162.

The effect size calculation was performed using the following formula:

$$d = \frac{M_{\text{difference}}}{SD_{\text{difference}}}$$

Therefore, the following calculations were made:

$$d = \frac{3.85}{3.26162} = 1.18$$

Thus, Cohen's d = 1.18 was obtained, which falls into the large effect category. This value indicates that the difference between the pretest and posttest scores is not only statistically significant but also has a strong influence on learning practices.

This finding confirms that the use of Microlearning through Vlog Content Equipped with Artificial Intelligence (AI) Features has a tremendous impact on improving students' listening skills. This substantial effect demonstrates that integrating microlearning-based video media with Artificial Intelligence that provides adaptive feedback can create a more interactive, practical, and student-centred learning experience. Thus, the application of this platform has been proven not only to improve learning outcomes quantitatively but also to have significant practical value for Arabic language-learning innovation in higher education.

Fourth, N-Gain Test

The N-Gain test is used to assess the effectiveness of improving students' listening skills relative to the maximum improvement possible. This analysis identifies the extent of improvement after students participate in microlearning through Vlog content equipped with Artificial Intelligence (AI) features.

The N-Gain calculation results show that the students' N-Gain values range from -0.12 to 0.64, with an average value of 0.1595 and a standard deviation of 0.1422. In percentage terms, the N-Gain values ranged from -12.13% to 64.48%, with an average of 15.95%. This average value falls into the low effectiveness category, indicating that the observed improvement was limited relative to the maximum available improvement opportunity.

The low N-Gain value does not negate the significant findings of the paired-samples t-test. The relatively high average pretest scores of students limit the scope for proportional improvement, so that N-Gain values tend to be smaller even though the absolute improvement remains significant. Thus, these N-Gain results are consistent with the t-test and effect size findings, which indicate a real improvement in listening skills after using the AI-based microlearning platform.

Table 4 below presents a statistical summary of the students' N-Gain values:

Table 4: Average N-Gain Score Values

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
N-Gain Score	60	–0.12	0.64	0.1595	0.1422
N-Gain Percentation	60	–12.13	64.48	15.95	14.22
Valid N (listwise)	60				

Table 4 above shows that, in general, learning through the AI-Based Microlearning Platform using Vlog Content increased listening skills in the low category, with an average N-Gain of 0.1595. The range of student N-Gain values was –0.12 to 0.64, indicating that some students experienced a proportional increase in their abilities, albeit to a limited extent. This low average score was influenced by the students' relatively high pretest scores, which narrowed the maximum room for improvement and resulted in a low overall N-Gain score.

Although the N-Gain score was in the low range, this result was consistent with the paired-samples t-test, which showed a significant improvement in listening skills after participating in technology-based learning. Several students also obtained N-Gain scores in the middle range, indicating that features such as microlearning segmentation, the use of contextual Vlog, and AI-based adaptive feedback effectively facilitated learning for some participants. Thus, Microlearning through Vlog Content equipped with Artificial Intelligence features continues to make a positive contribution to improving student learning outcomes.

The findings of this study demonstrate that implementing an AI-based microlearning platform integrating Vlog content significantly improves students' Arabic listening skills. This improvement is evidenced by a statistically significant difference between pretest and posttest scores, $t(59) = -9.143$, $p < .001$, accompanied by a large effect size ($d = 1.18$), indicating a substantial instructional impact.[33] These results suggest that the intervention not only produces statistically significant gains but also yields meaningful pedagogical benefits for the development of receptive listening skills in foreign-language learning contexts.

Although the absolute improvement was considerable, the average N-Gain score (0.1595) reflects a relatively low proportional increase. This outcome can be explained by the ceiling effect, whereby relatively high initial proficiency levels constrain the potential for proportional improvement.[34] Accordingly, the low N-Gain value should not be interpreted as a limitation of the intervention, but rather as a consequence of participants' baseline scores and the bounded nature of short-term instructional gains.

[33] Jacob Cohen, *Statistical Power Analysis for the Behavioral Sciences* (routledge, 2013).
[34] Cohen.

From a pedagogical perspective, the effectiveness of the MicroAraby platform aligns with existing evidence on microlearning, which demonstrates that segmenting instructional content into short units enhances learner focus, engagement, and retention.[35] This segmentation reduces extraneous cognitive load, as described in Cognitive Load Theory,[36] enabling learners to process auditory input more efficiently. In addition, the concise unit structure supports repeated exposure and practice, which contributes to long-term memory consolidation.[37]

The integration of Vlog content further strengthens listening comprehension by providing authentic input that combines visual and auditory cues.[38] This approach is consistent with Multimedia Learning Theory, which emphasises that synchronising verbal and visual information facilitates the construction of mental representations.[39] Exposure to pragmatic and social contexts through Vlog allows learners to interpret spoken Arabic in meaningful communicative situations, thereby enriching their understanding of utterance use. Previous studies have similarly reported that authentic video-based input enhances learner motivation and social presence, which are known to support listening comprehension.[40]

In addition, the platform's Artificial Intelligence component enhances learning effectiveness through adaptive feedback and speech recognition, providing real-time, automated responses to learner performance. These features support self-regulated learning by enabling learners to identify errors, adjust their learning strategies, and independently personalise the pace and difficulty levels of their learning. This finding is consistent with prior research demonstrating improvements in Arabic listening skills through AI-supported instruction.[41]

---

[35] Alias and Razak, "Revolutionizing Learning in the Digital Age: A Systematic Literature Review of Microlearning Strategies"; Santosa, Iskandar, and Setiadi, "Adapting Language Learning Materials for Digital Native: Infusing CEFR Standards in English Procedural Texts on Microlearning Apps."

[36] Sweller, "Cognitive Load Theory."

[37] Muhammad Haddad Richard and Anisatu Thoyyibah, "Qurtub. My. Id: Website Innovation as a Nahw Learning Media at Ar-Rohmah Integral High School of Malang," *Arabiyatuna: Jurnal Bahasa Arab* 8, no. 1 May (2024): 147–68; Kossen and Ooi, "Trialling Micro-Learning Design to Increase Engagement in Online Courses."

[38] Biel and Gatica-Perez, "Vlogcast Yourself: Nonverbal Behavior and Attention in Social Media"; Zhan et al., "Vlog for Fluency: A Qualitative Case Study of Chinese Students' Motivation in Task-Based English Speaking."

[39] Mayer, *The Cambridge Handbook of Multimedia Learning*.

[40] Asep Maulana and Ahmad Tarajjil Ma'suq, "The Development of Google Sites-Based Learning Multimedia to Enhance Studentsâ€™ Competence in Vocabulary Translation," *Arabiyatuna: Jurnal Bahasa Arab* 8, no. 1 May (2024): 115–46; Biel and Gatica-Perez, "Vlogcast Yourself: Nonverbal Behavior and Attention in Social Media"; Zhan et al., "Vlog for Fluency: A Qualitative Case Study of Chinese Students' Motivation in Task-Based English Speaking."

[41] Hijriyah et al., "How Effective Is SUNO. AI in Enhancing Arabic Listening Skills? An Evaluation of AI-Based Personalized Learning"; Mulyanto et al., "Utilization of Artificial

Moreover, the high level of implementation fidelity (average scores ranging from 3.66 to 3.79) strengthens the study's internal validity by indicating consistent alignment between the instructional design and classroom implementation.

Conceptually, this study contributes to the literature by empirically demonstrating the synergistic integration of Microlearning Theory, Multimedia Learning Theory, Cognitive Load Theory, and the Artificial Intelligence in Education (AIED) framework within a single instructional platform. While previous studies have tended to examine these components in isolation,[42] the present findings highlight the pedagogical value of their combined application for Arabic listening instruction. Accordingly, MicroAraby represents a scalable and replicable technology-based learning model that can be adapted to other foreign-language contexts through content and cultural modifications

Conclusion

This study demonstrates that an AI-based microlearning platform integrating vlog content significantly improves students' Arabic listening skills. The substantial increase in pretest–posttest scores, supported by a large effect size and high intervention feasibility, confirms that the synergy of microlearning structures, authentic video contexts, and adaptive feedback creates a practical learning experience. These findings align with the principles of Cognitive Load Theory, Multimedia Learning Theory, and Microlearning Theory, which emphasise the importance of material segmentation, multimodality, and learner-centred design. Theoretically, this study reinforces the existing literature on integrating microlearning, vlog media, and Artificial Intelligence into Arabic language learning. The resulting adaptive learning model illustrates how cognitive theory can be operationalised through data-driven, intelligent instructional design. From a practical perspective, the MicroAraby platform serves as a viable model for technology-enhanced learning in blended contexts, supporting independent practice, providing automated feedback, and offering adaptability for other foreign languages with relevant cultural content. For lecturers and instructional developers, this platform presents opportunities to enhance personalisation, instructional efficiency, and student motivation.

Intelligence with Text-to-Speech Technology Based on Natural Language Processing to Enhance Arabic Listening Skills for Non-Native Speakers."

[42] Alias and Razak, "Revolutionizing Learning in the Digital Age: A Systematic Literature Review of Microlearning Strategies"; Muh Hanif, Mar'atul Qudsiyyah, and Naura Dina Syamila Hanifah, "Integrating Information Technology in Islamic Education: A Qualitative Study Using Richard Mayer's Multimedia Learning Theory," *AL-ISHLAH: Jurnal Pendidikan* 17, no. 2 (2025); Kim Ouwehand et al., "Cognitive Load Theory: Emerging Trends and Innovations," *Education Sciences* 15, no. 4 (2025): 458; Sarah Elaine Eaton, "Global Trends in Education: Artificial Intelligence, Postplagiarism, and Future-Focused Learning for 2025 and beyond–2024–2025 Werklund Distinguished Research Lecture," *International Journal for Educational Integrity* 21, no. 1 (2025): 12.

At the higher education policy level, the results align with the digital transformation agenda, including the Merdeka Belajar–Kampus Merdeka and Higher Education Digital Transformation initiatives. These findings provide an empirical basis for universities to incorporate AI-based microlearning platforms into their Learning Management Systems (LMS) to strengthen personalisation and learning analytics. However, interpreting these findings requires caution due to several methodological limitations. Primarily, the absence of a control group limits the generalizability of causal claims, as potential confounding variables cannot be ruled out entirely. Additionally, the study relied on a relatively small sample size (N = 60) and a short intervention duration. Despite these constraints, the substantial effect size (d = 1.18) suggests that the intervention produced a robust improvement in listening proficiency, maintaining inferential validity within the specific context of this study. This magnitude of effect indicates that the observed changes were not merely trivial, even if causal attribution must be tentative. To establish more definitive evidence, future research should employ a randomised controlled trial (RCT) design with a larger, multi-institutional cohort. Furthermore, subsequent studies could integrate more advanced AI capabilities, such as semantic analysis or machine learning-based prediction models, to further enhance the effectiveness of cross-language and cross-cultural understanding.

References

Aflisia, Noza, Asri Karolina, Eka Yanuarti, and Muhammad Raihan. "Pemanfaatan Aplikasi Kahoot Untuk Meningkatkan Penguasaan Unsur Bahasa Arab." In Al-Mu'tamar Ats-Tsanawi Li Al-Lughah Al-'Arabiyyah, 1:1–17. Prodi Pendidikan Bahasa Arab IAIN Curup, 2020. http://prosiding.iaincurup.ac.id/index.php/musla/article/view/8.

Al-khresheh, Mohammad Hamad, Rim Al Basheer Ben Ali, Mayez Almayez, Shatha Fahad Alruwaili, and Aisha Fadl Almola Mohammed Alimam. "Structural Equation Modelling of Teachers' Perspectives on Microlearning in Saudi EFL Instruction: Examining Predictors of Adoption and Implementation." *Asian-Pacific Journal of Second and Foreign Language Education* 10, no. 1 (2025): 33.

Al-Rajab, Murad, Samia Loucif, Mousa Herzallah, Fares Zaki, Abdulwahed Zraik, Suhail Odeh, and Ahmed Amer. "AI Meets Linguistics SayItRight: A Platform for Personalized Language Learning and Pronunciation Enhancement." In *2025 International Conference on Artificial Intelligence, Computer, Data Sciences and Applications (ACDSA)*, 1–7. IEEE, 2025.

Alahmadi, Abdulrahman, Ahmed Alahmadi, Eman Alduweib, Waseem Alromema, and Bakil Ahmed. "Development of a Deep Learning-Based Arabic Speech Recognition System for Automatons." *Engineering, Technology & Applied Science Research* 14, no. 6 (2024): 18439–46.

Alghazali, Fawzi, and Mohammed Alzyoudi. "Exploring Linguistic Paradigms in Language Applications to Augment Arabic Language Acquisition." *Novitas-*

ROYAL (Research on Youth and Language) 19, no. 1 (2025): 241–51.

Alias, Nurul Fitriah, and Rafiza Abdul Razak. "Revolutionizing Learning in the Digital Age: A Systematic Literature Review of Microlearning Strategies." *Interactive Learning Environments* 33, no. 1 (2025): 1–21.

Alsaid, Bayan, Ahmad Al-Bitar, Layla Mousa, Hossam Al-Mardini, Mhd Moanes Almaradni, Hisham Alhomsi, Dana Al-Masalma, and Mohammad Bashar Izzat. "Short Social Media Videos as a Supplementary Educational Resource in Neuroanatomy: A Nonrandomized Clinical Trial." *JAMA Network Open* 8, no. 9 (2025): e2533971–e2533971.

Alshammari, M T. "Design and Evaluation of Online Microlearning Tailored to Learning Styles." *Int. J. Adv. Appl. Sci.* 12 (2025): 213–24.

Antoninis, Manos, Benjamin Alcott, Samaher Al Hadheri, Daniel April, Bilal Fouad Barakat, Marcela Barrios Rivera, Yekaterina Baskakova, Madeleine Barry, Yasmine Bekkouche, and Daniel Caro Vasquez. "Global Education Monitoring Report 2023: Technology in Education: A Tool on Whose Terms?," 2023.

Aulia Rahman, Rifqi, Ahmad Fadhel Syakir Hidayat, Amrulloh Khoirul Ma, Zulfi Irkhamni, Universitas Sains Al-Qur, an Jawa Tengah, Stit Ibnu Rusyd Tanah Grogot, and Universitas Islam Negeri Sultan Aji Muhammad Idris Samarinda. "The Dynamics of AI Technology Utilization in Arabic Language Skills Learning in the Merdeka Curriculum." *El-Syaker : Samarinda International Journal of Language Studies* 2, no. 3 (August 1, 2025): 146–62. https://doi.org/10.64093/ESIJLS.V2I3.529.

Biel, Joan-Isaac, and Daniel Gatica-Perez. "Vlogcast Yourself: Nonverbal Behavior and Attention in Social Media." In *International Conference on Multimodal Interfaces and the Workshop on Machine Learning for Multimodal Interaction*, 1–4, 2010.

Cohen, Jacob. *Statistical Power Analysis for the Behavioral Sciences*. routledge, 2013.

Cutillas, A L, E E Balili, E C Rellin, and M J S Pangandoyon. "Teaching Strategies and Activities across All Disciplines That Appeal to Gen-Z Learners." *Environment and Social Psychology* 10, no. 6 (2025): 1–16.

Dingler, Tilman, Dominik Weber, Martin Pielot, Jennifer Cooper, Chung-Cheng Chang, and Niels Henze. "Language Learning On-the-Go: Opportune Moments and Design of Mobile Microlearning Sessions." In *Proceedings of the 19th International Conference on Human-Computer Interaction with Mobile Devices and Services*, 1–12, 2017.

Eaton, Sarah Elaine. "Global Trends in Education: Artificial Intelligence, Postplagiarism, and Future-Focused Learning for 2025 and beyond–2024–2025 Werklund Distinguished Research Lecture." *International Journal for Educational Integrity* 21, no. 1 (2025): 12.

Elkhafaifi, Hussein. "Listening Comprehension and Anxiety in the Arabic Language Classroom." *The Modern Language Journal* 89, no. 2 (2005): 206–20.

Fraenkel, Jack R, and Norman E Wallen. *How to Design and Evaluate Research in*

Education. ERIC, 1990.

Güngenci̇, Meryem, and MUSA Yıldız. "Challenges in Listening and Speaking Skills for Arabic Language Pre-Service Teachers: A Correlational Study." *Novitas-Royal* 2, no. 18 (2024).

Gyonyoru, Klara Ida Katonane, and Jozsef Katona. "Student Perceptions of AI-Enhanced Adaptive Learning Systems: A Pilot Survey." In *2024 IEEE 7th International Conference and Workshop Óbuda on Electrical and Power Engineering (CANDO-EPE)*, 93–98. IEEE, 2024.

Hanif, Muh, Mar'atul Qudsiyyah, and Naura Dina Syamila Hanifah. "Integrating Information Technology in Islamic Education: A Qualitative Study Using Richard Mayer's Multimedia Learning Theory." *AL-ISHLAH: Jurnal Pendidikan* 17, no. 2 (2025).

Hijriyah, Umi, Relit Nur Edi, Muhammad Aridan, Haida Umiera Hashim, E Erlina, and G C Kesuma. "How Effective Is SUNO. AI in Enhancing Arabic Listening Skills? An Evaluation of AI-Based Personalized Learning." *International Journal of Information and Education Technology* 15, no. 2 (2025): 391–407.

Huang, Hui-Wen, Nixuan Wu, Ye Jiang, and Yongxing Li. "EFL Learners' Perceptions of Vlog Projects to Facilitate Group Collaboration and Learning Participation." In *Proceedings of the 2020 4th International Conference on E-Education, E-Business and E-Technology*, 84–89, 2020.

Ishak, Natasha Mohd, Harikrishnan Ranganathan, and Kamalambal Harikrishnan. "Learning Preferences of Generation Z Undergraduates at the University of Cyberjaya." *Journal of Learning for Development* 9, no. 2 (2022): 331–39.

Kossen, Chris, and Chia-Yi Ooi. "Trialling Micro-Learning Design to Increase Engagement in Online Courses." *Asian Association of Open Universities Journal* 16, no. 3 (2021): 299–310.

Ma, Ying, Xiao-Jian Tang, and Xin Huang. "AI-Powered Adaptive English Language Learning Systems: Leveraging Deep Learning Algorithms and Natural Language Processing for Personalized Teaching Approaches." *IEEE Access*, 2025.

Mahendra, I Gede Budi, and Billy Killis. "Impact of Virtual Laboratory-Assisted Microlearning on Students' Motivation, Engagement, and Academic Success." *Journal of Learning for Development* 12, no. 1 (2025): 1–16.

Martínez Cerqueda, David, Alma Eloisa Rodriguez Medina, and Alonso Gómez Ortíz. "Educational Use of TikTok to Enhance Complex Grammatical Aspects of French: A Pilot Study." In *Latin American Conference on Learning Technologies*, 172–85. Springer, 2023.

Maulana, Asep, and Ahmad Tarajjil Ma'suq. "The Development of Google Sites-Based Learning Multimedia to Enhance Studentsâ€™ Competence in Vocabulary Translation." *Arabiyatuna: Jurnal Bahasa Arab* 8, no. 1 May (2024): 115–46.

Mayer, Richard E. *The Cambridge Handbook of Multimedia Learning*. Cambridge university press, 2021.

Mohammed, Tawffeek. "Designing an Arabic Speaking and Listening Skills E-Course: Resources, Activities and Students' Perceptions." *Electronic Journal of E-Learning* 20, no. 1 (2022): pp53-68.

Monib, Wali Khan, Atika Qazi, and Rosyzie Anna Apong. "Microlearning beyond Boundaries: A Systematic Review and a Novel Framework for Improving Learning Outcomes." *Heliyon* 11, no. 2 (2025).

Mulyanto, Dedi, Muhammad Wahyudi, Arsyad Muhammad Ali Ridho, and Muhammad Zaki. "Utilization of Artificial Intelligence with Text-to-Speech Technology Based on Natural Language Processing to Enhance Arabic Listening Skills for Non-Native Speakers." *Alsinatuna* 10, no. 1 (2024): 44–58.

Novianty, Nur'ain, Cecep Sobar Rochmat, and Adam Ja'far Shodik. "The Effectiveness of Visual Media in Improving Students' Arabic Language Learning According to Edgar Dale's Cone of Experience Model." *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 2 (2025): 613–30.

Ong, Wei Ann, Suyansah Swanto, and Asmaa Alsaqqaf. "Engaging in Reflective Practice via Vlogs: Experience of Malaysian ESL Pre-Service Teachers." *Indonesian Journal of Applied Linguistics* 9, no. 3 (2020).

Ouwehand, Kim, Florence Lespiau, André Tricot, and Fred Paas. "Cognitive Load Theory: Emerging Trends and Innovations." *Education Sciences* 15, no. 4 (2025): 458.

Richard, Muhammad Haddad, and Anisatu Thoyyibah. "Qurtub. My. Id: Website Innovation as a Nahw Learning Media at Ar-Rohmah Integral High School of Malang." *Arabiyatuna: Jurnal Bahasa Arab* 8, no. 1 May (2024): 147–68.

Sabana, Rendi, Hisyam Zaini, Agung Nurcholis, Shockley Mark Daniel, and Nurul Hidayah. "Learning Istima'Based on Ibnu Tufail's Humanism Approach at Applied Islamic School Prof. Muhajrin Palembang." *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 1 (2025): 249–66.

Santosa, Imam, Ifan Iskandar, and Samsi Setiadi. "Adapting Language Learning Materials for Digital Native: Infusing CEFR Standards in English Procedural Texts on Microlearning Apps." *World Journal of English Language* 15, no. 4 (2025): 171.

Sweller, John. "Cognitive Load Theory." In *Psychology of Learning and Motivation*, 55:37–76. Elsevier, 2011.

Uluum, Dina Chabib, Keysa Tamami, and Muhammad Ramdhan Bin Mohamad. "Bridging Traditional Language Pedagogy and AI: Lessons from Arabic Language Programs in Indonesia." *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 2 (2025): 770–85.

Verdesoto, German Jazmany Zambrano, and María Fernanda Caicedo. "La Importancia Del Microaprendizaje En La Educación Superior." *European Public & Social Innovation Review* 10 (2025): 1–14.

Yasmar, Renti, Aidillah Suja, and Ahmad Fadhel Syakir Hidayat. "Pemanfaatan ChatGPT Dalam Meningkatkan Keterampilan Menulis/Maharah Kitabah Berbasis 6C (Critical Thinking, Creativity, Collaboration,Communication, Computational and Compassion)." *Al-Jawhar : Journal of Arabic Language* 1, no. 2 (December 22, 2023): 87–104. https://doi.org/10.69493/ajoal.v1i2.28.

Zavodna, Magdalena, Michaela Mrazova, Jakub Poruba, Tomas Javorcik, Jan Guncaga, Tatiana Havlaskova, Daniel Tran, and Katerina Kostolanyova. "Microlearning: Innovative Digital Learning for Various Educational Contexts and Groups." In *European Conference on E-Learning*, 23:442–50, 2024.

Zhan, Miaosheng, Nagaletchimee Annamalai, Rongrong Huang, and Chuhan Niu. "Vlog for Fluency: A Qualitative Case Study of Chinese Students' Motivation in Task-Based English Speaking." *Journal of Language Teaching and Research* 16, no. 3 (2025): 1013–22.

Zuhrudin, Ahmad, Anisa Alfurochmatin, and Winda Nur Lathifah. "The Development of a Digital Module on the Concept and Application of the Kurikulum Merdeka in Madrasas Based on Problem-Based Learning." *Arabiyatuna: Jurnal Bahasa Arab* 9, no. 1 (2025): 393–412.

This page belongs to the Arabiyatuna: Jurnal Bahasa Arab