



THE EFFECTIVENESS OF WEB KITARA IN IMPROVING ARABIC VOCABULARY WRITING SKILLS FOR BEGINNERS

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Abstract

This study aims to examine the effectiveness of the interactive web-based learning media, WEB KITARA, in improving Arabic vocabulary writing skills among beginner-level elementary students. A mixed-methods design with a quasi-experimental approach was used. The study involved two classes: Al-Aziz as the intervention group and Al-Mu'min as the control group. Data were collected through an Arabic vocabulary writing test, interviews with teachers and students, and qualitative thematic analysis. Results showed a statistically significant difference between the groups, with students using WEB KITARA achieving higher average scores and more consistent learning outcomes. Qualitative findings indicated increased motivation, active participation, and learning satisfaction due to the platform's interactive writing features. The study concludes that systematic integration of WEB KITARA effectively enhances Arabic vocabulary writing skills and creates a more engaging learning environment for beginner learners. This media is recommended as an innovative and practical tool for teaching Arabic in Islamic elementary schools.

Keywords: Web kitara; Web-based learning; Arabic writing skills

تجريد

تهدف هذه الدراسة إلى دراسة فاعلية وسيلة التعلم التفاعلية المعتمدة على الويب، "ويب كيتارا"، في تحسين مهارات كتابة المفردات العربية لدى تلاميذ المرحلة الابتدائية المبتدئين. استخدم البحث منهجًا مختلطًا بتصميم شبه تجريبي. شملت الدراسة فصلين: "العزیز" كمجموعة تجريبية و"المؤمن" كمجموعة ضابطة. جُمعت البيانات من اختبار كتابة المفردات العربية، ومقابلات مع المعلمين والطلاب، وتحليل موضوعي نوعي. أظهرت النتائج فروقًا ذات دلالة إحصائية بين المجموعتين، حيث حقق الطلاب المستخدمون لـ"ويب كيتارا" درجات أعلى ومخرجات تعلم أكثر استقرارًا. وأشارت النتائج النوعية إلى زيادة في الدافعية، والمشاركة الفاعلة، والرضا التعليمي بفضل الميزات التفاعلية للمنصة في مجال الكتابة. تخلص الدراسة إلى أن الدمج المنهجي لـ"ويب كيتارا" يعزز مهارات كتابة المفردات العربية ويخلق بيئة تعلم أكثر جذبًا للمتعلمين المبتدئين. وتوصي الدراسة باعتبار هذه الوسيلة ابتكارًا عمليًا وفعالًا لتعليم اللغة العربية في المدارس الإسلامية الابتدائية. الكلمات المفتاحية: ويب كيتارا؛ التعلم القائم على الويب؛ مهارة كتابة المفردات العربية.



INTRODUCTION

Arabic is one of the languages that holds a strategic role in religious, cultural, and academic spheres, especially within Islamic educational settings. At the beginner level, particularly in Integrated Islamic Elementary Schools (SDIT), the teaching of Arabic faces several challenges, especially in terms of students' mastery and writing (*kitābah*) skills of Arabic vocabulary¹. Mastering Arabic vocabulary writing is not merely a matter of memorization, but also a motoric and cognitive skill that requires consistent practice and learning methods aligned with the characteristics of young learners. These factors often become obstacles that lead to low learning motivation among children in studying Arabic, thereby indicating the need for innovative learning media capable of providing interactive and engaging learning experiences.

Technological advancements have opened significant opportunities for the integration of digital learning media, which are increasingly developed to enhance the quality of Arabic language instruction². Many studies have proved that application-based and interactive web-based learning media can effectively enhance students' motivation and language proficiency, such as vocabulary recognition, vocabulary mastery and writing skills. Digitally programmed practice features can offer repetition and constructive feedback that build students' motor memory of Arabic letters and word forms in the context of writing.

Although there are various digital media, there is a significant research gap concerning the use of web-based media that specifically presents Arabic vocabulary writing exercises for beginner learners in Integrated Islamic Elementary Schools (SDIT). Most previous studies focused on digital learning media in general without emphasizing writing practice features, which are central to Arabic language acquisition³.

Furthermore, studies examining the influence of digital learning media on learning motivation and outcomes in Arabic vocabulary writing among beginner learners in SDIT settings are still limited.⁴ This represents an important gap, as understanding the relationship between appropriate digital learning media and children's learning motivation is crucial for designing effective and efficient instructional strategies.

¹ Badrul Islam and Dony Handriawan, "Variasi Metode dalam Pembelajaran Qawaid Nahwu untuk Meningkatkan Efektivitas Penguasaan Tata Bahasa Arab," *El-Tsaqofah: Jurnal Jurusan PBA* 24, no. 2 (2025): 343–52, <https://doi.org/10.20414/tsaqafah.v24i2.14213>.

² Zetty Arifah et al., "Transformasi Pembelajaran Bahasa Arab Melalui Teknologi Digital dalam Pendidikan Islam," *Educatia: Jurnal Pendidikan dan Agama Islam* 15, no. 1 (2025): 1–22. <https://doi.org/10.69879/ks4f8466>

³ Fahrina Rahmasari et al., "Teori Belajar Kognitif: Urgensi dan Manfaatnya dalam Meningkatkan Pembelajaran Bahasa Arab," *Didaktika: Jurnal Kependidikan* 14, no. 3 (2025): 4987–98. <https://doi.org/10.58230/27454312.2387>

⁴ Niyaz Panakaje et al., "Scientific Writing Workshop and Academic Write-Ups: Do Analytical Skills and Personal Efforts Matter?," *Asian-Pacific Journal of Second and Foreign Language Education* 11, no. 1 (2026): 48, <https://doi.org/10.1186/s40862-026-00422-8>.

Interactive and enjoyable learning experiences are believed to increase persistence and practice frequency, ultimately contributing positively to vocabulary mastery⁵.

While previous studies have demonstrated the effectiveness of game-based learning, educational games, Quantum Learning methods, and digital interactive media in enhancing Arabic language learning outcomes, most of them primarily focused on general vocabulary acquisition, learning achievement, student engagement, or motivation.⁶ Limited attention has been given to the development of Arabic vocabulary writing skills, particularly among beginner learners at the elementary school level⁷. Moreover, existing studies rarely examine the use of a web-based platform that combines vocabulary writing practice with structured repetition and immediate feedback mechanisms.⁸ This study aims to fill in these gaps by exploring the effectiveness of WEB KITARA, a web-based learning media designed to combine interactive exercises of Arabic vocabulary writing with structured repetition features.

This research was conducted using a quasi-experimental method with beginner SDIT students to prove that WEB KITARA can improve students' vocabulary writing skills and the influence of students' learning motivation.⁹ The originality of this study is focusing on the writing competence of Arabic vocabulary, not the achievement of the language in general, and the use of a special web-based learning platform for beginner learners of Islamic elementary education.¹⁰ Therefore, the findings are expected to contribute significantly to the development of innovative, effective, and widely accessible Arabic learning media while providing empirical evidence regarding the role of web-based technology in strengthening Arabic vocabulary writing skills among young learners.

Previous the study *Integration of Educational Games in Arabic Language Learning: Analysis of Effectiveness, Challenges, and Implementation Strategies* revealed that educational games contribute positively to the improvement of Arabic language

⁵ Achmad Hafi et al., "Strategi Pembelajaran Bahasa Arab Melalui Psikolinguistik Generatif Transformatif dalam Meningkatkan Efektivitas Pembelajaran Bahasa Arab," *Tarbiyatuna: Jurnal Pendidikan Islam* 17, no. 1 (2024): 17–31. <https://doi.org/10.54471/tarbiyatuna.v17i1.2682>

⁶ Asma Almusharraf, "AI Chatbots in L2 Writing: Anxiety, Usefulness, and Writing Outcome," *Humanities and Social Sciences Communications* 13, no. 1 (2026): 393, <https://doi.org/10.1057/s41599-026-06816-w>.

⁷ Aisyah Restriana et al., "Shaut Al- ' Arabiyah Efektivitas Pembelajaran Bahasa Arab dengan Aplikasi Duolingo: Literature Review," *Shaut al Arabiyyah* 13, no. 1 (2025): 47–60, <https://doi.org/https://doi.org/10.24252/saa.v13i1.55578>.

⁸ Nashra Mujeeb et al., "Beyond Red Ink: AI Feedback and ESL Academic Writing Development in Higher Education," *Language Testing in Asia* 16, no. 1 (2026): 24, <https://doi.org/10.1186/s40468-026-00442-8>.

⁹ Mohamed Mekheimer and Eman Mahdy, "Fostering Creative Writing in EFL Learners: A Mixed-Methods Study of an Iterative e-Learning Model," *Asian-Pacific Journal of Second and Foreign Language Education* 11, no. 1 (2026): 33, <https://doi.org/10.1186/s40862-026-00409-5>.

¹⁰ Hafidzoh Dini Ichsani et al., "Pemanfaatan Platform Quizizz Sebagai Instrumen Penilaian dalam Pembelajaran Bahasa Arab di Madrasah Tsanawiyah," *Jurnal Ilmiah Ilmu Pendidikan* 8, no. 10 (2025): 11610–15. <https://doi.org/10.54371/jiip.v8i10.9515>



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skills, especially vocabulary mastery and student engagement during the learning process. In addition to increasing learning motivation, educational games encourage learners to study independently through challenging and enjoyable activities¹¹. The similarity between this study and the present research lies in the utilization of digital media as a means of enhancing Arabic language proficiency through innovative learning approaches.

Furthermore, The Effectiveness of the Quantum Learning Method in Learning Arabic for Seventh-Grade Students at MTs Najahiyah Palembang study shows that student-centered learning methods can significantly improve the results of learning Arabic.¹² The results suggest that instructional strategies that promote active participation and learner engagement can have a positive impact on academic performance. These results support the use of WEB KITARA as a learning medium that enables students to interact actively with the Arabic vocabulary material.¹³

Meanwhile, the study The Effectiveness of Digital Interactive Media in Arabic Language Learning for Islamic Elementary School Students showed that interactive digital media can improve students' learning interest, comprehension, and Arabic vocabulary mastery. Media that integrate visual, audio, and interactive elements make the learning process more effective than conventional teaching methods. Based on these previous studies, it can be concluded that digital technology and interactive media have a positive influence on Arabic language learning¹⁴. However, research specifically examining the effectiveness of WEB KITARA in improving Arabic vocabulary writing skills among beginner learners remains limited. Moreover, most previous studies focused on vocabulary acquisition, learning achievement, or student engagement rather than productive writing skills. Therefore, this study seeks to fill this gap by investigating the effectiveness of WEB KITARA as a web-based learning platform specifically designed to enhance Arabic vocabulary writing skills among beginner learners, thereby contributing to the growing body of research on technology-assisted Arabic language learning.

¹¹ Ittaqi Haitsumakunti et al., "Mengatasi Problematika Pembelajaran Bahasa Arab dengan Pendekatan Game Based Learning dalam Penguasaan Tata Bahasa Arab," *Jurnal Bahasa Arab dan Pendidikan* 6, no. 1 (2025): 68–77, <https://doi.org/10.33752/el-fusha.v6i1.7684>.

¹² Xinqiao Cen and Goodarz Shakibaei, "Enhancing Creative Writing through AI-Powered Co-Creation with Cognitive and Emotional Outcomes," *Scientific Reports* 16, no. 1 (2026): 4407, <https://doi.org/10.1038/s41598-025-34416-2>.

¹³ Fiqih Dwiky Yusfian and Moch. Bahak Udin by Arifin, "Efektivitas Permainan Bisik Berantai untuk Meningkatkan Kemampuan Istima' dalam Pembelajaran Bahasa Arab Siswa SMP Malang," *Jurnal Dedikasi Pendidikan* 9, no. 2 (2025): 589–604. <https://doi.org/10.30601/dedikasi.v9i2.5910>.

¹⁴ Baiq Istinaewati et al., "Efektivitas Penggunaan Media Pembelajaran Roda Putar dalam Meningkatkan Pemahaman Kosakata Bahasa Arab di MTS Nurul Karim NW Kebon Ayu," *Kilmatuna : Journal of Arabic Education* 03, no. 02 (2023): 85–97. <https://doi.org/10.55352/pba.v3i2.465>.

RESEARCH METHOD

This study employs a mixed-methods approach with a qualitative quantitative sequential design to compare the Arabic writing abilities of Grade 2 Al-Aziz students who received writing practice interventions using the web-based KITARA media with those of Grade 2 Al-Mu'min students who learned without the media at SDIT Mulya Abadi, Morokrembangan, Surabaya. In the qualitative phase, data were collected through semi-structured interviews with students and teachers to explore learning experiences, motivation, and challenges encountered during instruction¹⁵. The qualitative analysis was conducted thematically to identify patterns of problems and advantages, which then served as the basis for selecting instruments and strategies for the subsequent phase.

The next stage was a quantitative study using comparative quasi-experimental design, with 30 students of Grade 2 Al-Mu'min and 31 students of Grade 2 Al-Aziz. Quantitative data were collected through a writing test of Arabic vocabulary administered to both classes after the intervention had been introduced to the Al-Aziz class, and were analysed using an independent sample t-test to find the significance of the difference between the mean scores of the groups. In addition, descriptive statistics such as mean, standard deviation, and standard error were incorporated in the data analysis for better interpretation.

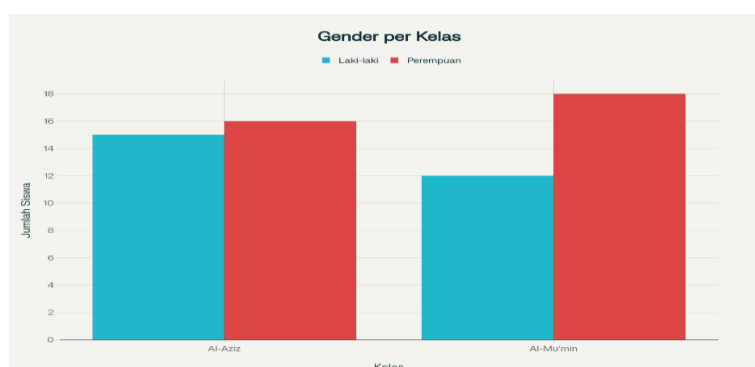
All research procedures were carried out sequentially at SDIT Mulya Abadi, Gang Lebar 3, Morokrembangan, Surabaya, beginning with qualitative exploration and ending with quantitative testing to produce credible, valid, and comprehensive findings on the effectiveness of the web-based learning media KITARA in teaching Arabic writing skills at the elementary school level.

RESULT AND DISCUSSION

A. RESULT

1. Characteristics of the Research Participants

Figure 1. School Students



¹⁵ Agung Widhi Kurniawan and Zarah Puspitaningtyas, *Metode Penelitian Kuantitatif*, ed. Agung W. Kurniawan (PANDIVA BUKU, 2016). <https://eprints.unm.ac.id/32439/1/1.%20Buku%20-%20Metode%20Penelitian%20Kuantitatif.pdf>



Aziz class, consisting of 31 students, 15 boys and 16 girls. The second group is the al-Mu'min class consisting of 30 students, 12 boys and 18 girls with an average age of 7-8 years. The classes were divided according to the school's need to balance the number of students, thus randomisation was not used.¹⁶ This setting supports the nature of the study as a comparative quasi-experimental design. The presentation of the characteristics of the subjects is essential in order to facilitate clear contextualisation of the research findings and to strengthen the external validity of the study. The credibility of the comparison between the two instructional methods as emphasised by Creswell and typical quasi-experimental designs in elementary schools was supported by the use of real classroom settings with similar distributions of gender and age. This approach is in line with the principle of participant representativeness, which is important for the generalisability of the results.

2. Qualitative Analysis

(a) Findings from Teacher and Student Interviews

The teacher first reported significant challenges in teaching Arabic writing skills to second grade students, as many students had not yet fully grasped basic letter forms and required vocabulary for early literacy development. Several conventional teaching methods were tried with little success since many students easily got bored and had difficulty remembering and writing new vocabulary especially due to their little experience with writing practice.¹⁷

But after applying a digital learning intervention via the WEB KITARA platform in the Al-Aziz class, there were noticeable positive changes. The teacher noticed an enhancement in learning motivation, student participation and writing improvement of some Arabic vocabulary items especially those related to the topic of animal names but the results were confined to specific contexts.

Also, the intervention group showed a consistent pattern of increased interest in digital based learning activities, which was not observed in the control group. This result stresses the effectiveness of interactive technological approaches as a main stimulus for teaching the Arabic language in the elementary school level.

¹⁶ Habibah Sholichah and Farikh Marzuki Ammar, "Efektivitas Penggunaan Media Aplikasi Mondly Arabic dalam Meningkatkan Keterampilan Menyimak Kosakata Bahasa Arab Kelas XI SMA Muhammadiyah 2 Sidoarjo," *Jurnal Dedikasi Pendidikan* 8848, no. 2 (2024): 791–99. <https://doi.org/10.21070/ups.4514>

¹⁷ Julhan Hukom et al., "Efektivitas Penggunaan Duolingo dalam Pembelajaran Bahasa Arab : Overall Effect Size dan Heterogenitas Julham Hukom Irfan Akmal Pendahuluan Perkembangan Teknologi Digital dalam Beberapa Dekade Terakhir Membawa," *Jurnal Ilmiah Al-Mashadir: Jurnal of Arabic Education and Literature* 05, no. 1 (2025): 29–50. <https://doi.org/https://doi.org/10.30984/almashadir.v5i1.1363>

(b) Discussion of Findings with Theory

This study showed that the dynamics of the implementation of digital learning media in the Arabic language education at the elementary level are still relevant to use a behaviouristic approach as a base to build the habit of repetition and also to develop the motor and cognitive skills of students especially in systematic writing exercises and memorising vocabulary. However, empirical findings indicate that repetition alone is not sufficiently effective in cultivating intrinsic motivation and learning interest, especially among learners with limited early literacy experience. A paradigm shift is needed through the strengthening of constructivist principles that emphasize the provision of new stimuli, the use of visual media, and the creation of exploratory learning experiences¹⁸.

According to engagement theory, students supported by digital technology tend to participate more actively, demonstrate creativity, and show greater initiative in their learning processes. The channels of intrinsic motivation described in self-determination theory are more easily formed when the learning environment offers interactive experiences, adaptive choices, and educational responses aligned with students' needs. Correspondingly, meta-analyses by Sari and studies published in *Mimbar Akademika* highlight that digital media particularly interactive web-based applications consistently enhance learning motivation, literacy skills, and academic performance in foreign language instruction at the elementary level.

On the other hand, Wahyuni the proposed solution involves the application of digital scaffolding and step-by-step interactive visualization, which has been empirically shown to overcome traditional limitations associated with digital technology use in primary schools. Thus, the synthesis of technology-enhanced learning (TEL) offers an innovative collaboration in digitized learning, producing a competitive, responsive, and exploration-friendly environment that effectively improves student motivation and learning outcomes¹⁹.

The debate between conventional and innovative approaches finds empirical support through the success of WEB KITARA as a digital solution in Arabic language education. This interactive web-based media has been shown to spark enthusiasm, strengthen students' intrinsic motivation, improve writing skills, and create enjoyable and pedagogically meaningful learning experiences. Therefore, the implementation of interactive learning technologies such as WEB KITARA is highly recommended in

¹⁸ Diajeng Tiara Anjani and Abd Rahman, "Efektivitas Penggunaan Aplikasi Duolingo Sebagai Media Pembelajaran Berbasis Game Edukasi dalam Meningkatkan Penguasaan Kosakata Bahasa Arab di Maitreechit Wittayathan School," *Journal of Teacher Education* 5, no. 3 (2024): 280–87. <https://doi.org/10.31004/jote.v5i3.26981>

¹⁹ Dimas Zonseta Tosan, "Efektivitas Pendekatan Roleplay dalam Meningkatkan Partisipasi Siswa pada Pembelajaran Bahasa Arab di MTsN 1 Lamongan," *AN-NAHDLOH: Journal of Education and Islamic Studies* 1, no. 2 (2026): 253–65. <https://doi.org/10.58788/jeis.v1i2.21>



curriculum development, teacher training programs, and the design of adaptive classroom management strategies in the digital era of Islamic elementary education.

3. Quantitative Analysis

(a) Description of the Writing Test and Basic Statistics

Figure 2

Table 1 Group Descriptives

Group Descriptives

	Group	N	Mean	SD	SE	Coefficient of variation
Keterampilan Menulis	al-aziz	31	88.00	2.049	0.368	0.023
	al-mu'min	30	46.03	2.539	0.464	0.055

The Group Descriptives Table presents the descriptive statistical results of the writing skills of the two groups, namely the Al-Aziz and Al-Mu'min classes. The Al-Aziz class consisted of 31 students, while the Al-Mu'min class consisted of 30 students. The mean writing score of the Al-Aziz class was 88.00 with a standard deviation (SD) of 2.049, a standard error (SE) of 0.368, and a coefficient of variation (CV) of 0.023. Meanwhile, the Al-Mu'min class had a mean score of 46.03, an SD of 2.539, an SE of 0.464, and a CV of 0.055. The interpretation of these data shows that the Al-Aziz group demonstrated very high and more consistent writing scores (a small CV indicates low data variability) whereas the Al-Mu'min group had much lower mean scores with greater variability (indicated by the higher CV). The substantial difference in mean scores strongly suggests that the intervention applied to the Al-Aziz class such as the use of web-based learning media had a significant impact on improving writing ability compared to the control group, Al-Mu'min. The high average score and low coefficient of variation in the Al-Aziz group reflect the success of the interactive approach in producing more standardized and evenly distributed learning outcomes among students.

(b) Uji Statistik dan Validitas

Figure 3

Table 2 Assumption Cheks

Assumption Checks

Test of Normality (Shapiro-Wilk)

Residuals	W	p
Keterampilan Menulis	0.965	.081

Note. Significant results suggest a deviation from normality.

Test of Equality of Variances (Levene's)

	F	df ₁	df ₂	p
Keterampilan Menulis	0.982	1	59	.326

This is confirmed by the Shapiro–Wilk normality test, which resulted in a W value of 0.965 with $p = 0.081$. The residuals are assumed to have a normal distribution as $p > 0.05$, which means that there is no significant deviation. In addition, the Levene’s test for homogeneity of variances showed the value of $F=0.982$ and $p=0.326$, which means $p>0.05$ and thus confirms that there is no significant variance difference between groups.²⁰ The result shows that the writing skills data are homogenous in the two groups.

Figure 4
Table 3 Independent Sampel T-Test

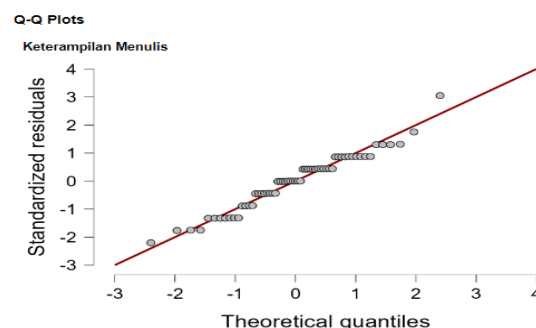
<i>Independent Samples T-Test</i>					
	t	df	p	Cohen's d	SE Cohen's d
Keterampilan Menulis	71.15	59	< .001	18.22	2.328

Note. Student's t-test.

The independent samples t-test results indicate that the writing skills of the two groups differ at a highly significant statistical level. A t-value of 71.15, with 59 degrees of freedom (df) and $p < 0.001$, demonstrates that the difference in mean writing scores between the two groups is not due to chance but is statistically significant. The Cohen’s d value of 18.22 reflects an exceptionally strong intervention effect far exceeding the conventional threshold for a “large effect” commonly cited in educational research literature. The standard error of Cohen’s d ($SE = 2.328$) provides an indication of the precision of the effect size estimate.²¹

Academically, these findings indicate that the intervention involving the use of the web-based learning media KITARA significantly improved writing skills in the experimental group compared to the control group. This difference is not only statistically meaningful but also substantial in practical terms, making the results highly relevant as a foundation for recommending the development of similar learning media within the context of Arabic language education at the elementary school level.

Figure 4 Q-Q Plots



²⁰ Nurhilaliah Fitri Sholehah et al., “Efektivitas Pendekatan Bilingualisme (Al- Suna ’ Iyyah Al - Lughawiyyah) dalam Pembelajaran Bahasa Arab di Indonesia : Tinjauan Literatur,” *DEIKTIS: Jurnal Pendidikan Bahasa dan Sastra* 5, no. 3 (2025): 1601–11.<https://doi.org/10.53769/deiktis.v5i3.1793>

²¹ Moch Farkhan Yuangga Al Farisi et al., “Efektivitas Pembelajaran Berbasis Permainan dalam Meningkatkan Hasil Belajar Bahasa Arab,” *El-Syaker : Samarinda International Journal of Language Studies* 2, no. 1 (2025): 1–16.<https://doi.org/10.64093/esijls.v2i1.281>



Most data points are near the diagonal reference line, indicating that the residuals are normally distributed. This indicates that the writing skill scores of the students from both groups (al-Aziz and al-Mu'min) have no significant deviation from the normality assumption.

This pattern indicates that the normality requirement for parametric statistical analysis has been met satisfactorily in academic terms.

This assumption needs to be met to validate the use of parametric tests such as the independent samples t-test. If the points in the plot are near a straight line, it can be assumed that the residuals are normally distributed. This guarantees that the t-test results are valid and are not distorted by distributional irregularities. The Q–Q plot thus offers a visual confirmation of the Shapiro–Wilk normality test already reported in your study.

B. DISCUSSION

Critical Connection Between Theory and Empirical Findings

The quantitative findings of this study reveal a highly significant difference between the intervention group (Al-Aziz, mean = 88.00, SD = 2.049) and the control group (Al-Mu'min, mean = 46.03, SD = 2.539), supported by $t = 71.15$, $df = 59$, $p < 0.001$, and Cohen's $d = 18.22$. The results not only confirm statistical effectiveness, but also critically interrogate foundational theoretical assumptions underlying Arabic vocabulary instruction at the elementary level. The very small coefficient of variation of the intervention group ($CV = 0.023$) confirms that WEB KITARA not only achieved higher scores but also led to more fair and standardised learning results among different learners.²²

From a behaviourist point of view, vocabulary learning is mainly based on repetitive stimulus-response patterns and reinforcement mechanisms (Skinner, 1957). WEB KITARA uses systematic repetition by means of interactive writing exercises, but the effect size is very large (Cohen's $d = 18.22$) and is unlikely to be explained by repetition alone. This suggests the platform is effective beyond behaviourist mechanisms, aligning more closely with constructivist principles articulated by Vygotsky (1978) where learners are active constructors of meaning through interactive, scaffolded experiences rather than passive receivers of stimuli.

Additional evidence for these findings is provided by engagement theory, which posits that meaningful learning occurs when students are cognitively, emotionally, and collaboratively involved with digital tools. This is evidenced by the qualitative evidence

²² Muhammad Ryan Kurniawan, "Efektivitas Model Pembelajaran AIR (Auditory , Intellectually , Repetition) Berbantuan Kahoot Dapat Meningkatkan Motivasi dan Kreativitas Belajar Bahasa Arab di MTsN 1 Kota Bima," *Jurnal Ilmiah Profesi Pendidikan* 10, no. 3 (2025): 3005–15, <https://doi.org/https://doi.org/10.29303/jipp.v10i3.3651>.

that indicates an increased motivation and active participation of Al-Aziz students.²³ Overall, the empirical findings indicate that WEB KITARA operates as a nexus between behaviourist habit formation and constructivist meaning-making, a synthesis that is especially effective for beginner learners confronting the orthographic and phonological demands of Arabic script.

Comparison with Previous Research

The findings of this study are broadly consistent with, yet in several respects extend beyond, the existing body of literature on technology-enhanced language learning (TELL) at the primary school level. Meta-analyses of the use of interactive digital media in foreign language classrooms have found consistent moderate to large effect sizes for vocabulary acquisition and writing proficiency. The Cohen's *d* of 18.22 found in the present study is, however, strikingly greater than Cohen's *d*'s usually reported in similar studies. This calls for a critical reflection on the contextual conditions and the methodological factors that may have led to this result.²⁴

Prior studies on web-based Arabic learning tools in Islamic elementary schools in Indonesia, such as those conducted by Wahyuni and Sari published in *Mimbar Akademika*, reported significant improvements in Arabic literacy through digital media, yet these gains were generally modest and context-dependent.²⁵ The present study diverges from these findings in that the effect was not only statistically significant but practically substantial, suggesting that the specific design features of WEB KITARA including its adaptive feedback mechanisms, visual scaffolding, and vocabulary contextualization within thematic units such as animal names may represent a meaningful advancement over previously studied platforms. This positions WEB KITARA as a more pedagogically refined intervention than generic web-based tools previously documented in the literature.

Meanwhile, the present study aligns with international research emphasising that digital scaffolding is particularly effective with learners with limited prior literacy experience.²⁶ The teacher's qualitative comments about students' initial lack of familiarity with Arabic letter forms echo the challenges described in similar studies of

²³ Muhammad Qadafi et al., "Efektivitas Metode Pembelajaran Tahfidz dalam Meningkatkan Kosa Kata Bahasa Arab pada Siswa di MA Sejahtera," *Al-Ubudiyah: Jurnal Pendidikan dan Studi Islam* 6, no. 1 (2025): 272–81, <https://doi.org/https://doi.org/10.55623>.

²⁴ Limah Nurlatipah, "Efektivitas Metode As-Sam'iyah As-Syafawiyah dalam Meningkatkan Pembelajaran Bahasa Arab Siswa Kelas VI MIS Islamiyah," *DIAJAR: Jurnal Pendidikan dan Pembelajaran* 3, no. 3 (2024): 362–70, <https://doi.org/10.54259/diajar.v3i3.2927>.

²⁵ Neneng Nurjannah, "Efektivitas Media Pembelajaran Bahasa Arab Berbasis Video dalam Meningkatkan Kemampuan Maharah Al Istima' dan Maharah Al Kalam Siswa Kelas VII MTS Daarul Mustaqiem Pamijahan Bogor," *Shawtul 'Arab* 3, no. 2 (2024): 109–23. <https://doi.org/10.51192/sa.v3i2.767>

²⁶ Clarissa Devani and Azmy Ali Muchtar, "Efektivitas Media Kartu Talk or Dare Dalam Meningkatkan Keterampilan Berbicara Bahasa Arab Siswa Kelas XI di MA Al Wathoniyah 43 Jakarta Utara," *Muhadasah: Jurnal Pendidikan Bahasa Arab* 7, no. 1 (2025): 18–32. <https://doi.org/10.51339/muhad.v7i1.3878>



beginning learners of non-Latin scripts.²⁷ The uniqueness of the results of this study is the consistent improvement experienced by students with different abilities at the beginning. This is indicated by the low standard deviation and CV in the intervention group. This has not been widely reported in previous studies on Arabic digital learning media based in Indonesia..

Limitations of the Study

The present study is encouraging but has several methodological and contextual limitations that should be openly acknowledged in the interest of scholarly integrity. The quasi experimental design is suitable for naturalistic classroom settings, but does not permit random assignment of participants to conditions.²⁸ The selection of classes was determined by the school administration, rather than randomisation, which means that pre-existing differences between the Al-Aziz and Al-Mu'min classes in terms of previous exposure to digital tools, teacher effectiveness or parental support cannot be entirely ruled out as confounding variables. Future studies may want to consider adding pre-test measures or propensity score matching to enhance causal inference.

Secondly, the study was conducted at SDIT Mulya Abadi Surabaya with 61 second-grade students aged 7–8 years. This setting offers ecological validity in the context of Islamic elementary education in urban East Java, but it restricts the generalisability of the findings to other school types, geographic regions, or socioeconomic contexts. Because of the cultural and institutional specificity of the sample, care should be taken in generalising the results to rural madrasah settings, schools with limited digital infrastructure, or learners from diverse linguistic backgrounds.²⁹

Third, the study's outcome measure focused exclusively on Arabic vocabulary writing skills as assessed through a single post-intervention test, without a longitudinal component to evaluate the durability of learning gains over time.³⁰ Without a delayed post-test, it is not clear whether the improvements observed in the intervention group are due to deep, transferable learning or short-term performance effects driven by novelty

²⁷ Fadilah Al Azmi et al., "Al-Muyassar: Journal of Arabic Education Peranan Game Based Learning Dengan Aplikasi Quizizz Dalam Meningkatkan Pembelajaran Bahasa Arab," *Al-Muyassar: Journal of Arabic Education* 2, no. 1 (2023): 50–66, <https://doi.org/10.31000/al-muyassar.v1i1.6678>.

²⁸ Moh. Mofid and Bilghis Lu'luil Malihatus Sya'bah, "Efektivitas Media Canva Dalam Pembelajaran Bahasa Arab Guna Meningkatkan Penguasaan Mufrodat Siswa Kelas VII SMP Sunan Kalijogo 2 Jabung Malang," *Muhadasah: Jurnal Pendidikan Bahasa Arab* 6, no. 1 (2024): 98–118. <https://doi.org/10.51339/muhad.v6i1.2536>

²⁹ Muhammad Fahri Harizona, "Efektivitas Aplikasi Mondly Arabic dalam Meningkatkan Keterampilan Menyimak Kosakata Bahasa Arab Kelas X SMA Darul Faizin Caringin," *Journal of Artificial Intelligence and Digital Business (RIGGS)* 5, no. 1 (2026): 12046–52. <https://doi.org/10.31004/riggs.v5i1.7720>

³⁰ Dede Rizal Munir and Siti Nurlatifah, "Efektivitas Metode Tebak Kata untuk Meningkatkan Penguasaan Mufrodat dalam Pembelajaran Bahasa Arab" *Jurnal Ilmiah Research Student (JIRS)* 1, no. 2 (2023): 01–13. <https://doi.org/10.61722/jirs.v1i2.42>

and first enthusiasm toward the digital platform. Future research should include follow-up assessments weeks or months after the intervention to assess retention, and should expand the outcome measures to include reading comprehension, oral production, and communicative competence in Arabic.

CONCLUSION

Statistical calculations and empirical data obtained during the study show that the use of the KITARA web-based learning media has a significant and positive impact on students' skills in writing Arabic. Before the main analysis, normality and homogeneity tests confirmed that all required statistical assumptions were sufficiently met, which validated the application of the t-test procedure. The results of the t-test showed a significant difference in the mean scores of both groups, which is also corroborated by a very high Cohen's *d* value. This implies that the KITARA-based intervention is statistically significant and has high practical significance for Arabic language learning at the elementary school level.

The findings support the fact that well-planned integration of web-based learning technology has real potential as an innovative way of enhancing language skills, especially in the area of writing. That said, the study is not without its limitations, especially with regard to the breadth of the participant sample and the narrowness of the language skill investigated. Future research is thus encouraged to expand its scope in terms of participant diversity and the range of language competencies assessed, in order to build a richer and more complete picture of how digital media can be most effectively integrated into Arabic language instruction.

Declaration of Generative AI

The author used Artificial Intelligence (AI) tools as an auxiliary tool during the preparation of the manuscript mainly for the review of sentence structure and to improve the flow of the text. All artificial intelligence generated outputs were rigorously reviewed, edited and verified by the author for their accuracy and academic standards. AI was not used to develop research concepts, data processing, analytical procedures, and interpretation of findings. Author's integrity of data, the data analysis, the study design, the conclusions and recommendations



BIBLIOGRAPHIES

- Almusharraf, Asma. "AI Chatbots in L2 Writing: Anxiety, Usefulness, and Writing Outcome." *Humanities and Social Sciences Communications* 13, no. 1 (2026): 393. <https://doi.org/10.1057/s41599-026-06816-w>.
- Anjani, Diajeng Tiara, and Abd Rahman. "Efektivitas Penggunaan Aplikasi Duolingo Sebagai Media Pembelajaran Berbasis Game Edukasi dalam Meningkatkan Penguasaan Kosakata Bahasa Arab di Maitreechit Wittayathan School." *Journal of Teacher Education* 5, no. 3 (2024): 280–87. <https://doi.org/10.31004/jote.v5i3.26981>
- Arifah, Zetty, Mustolikh Khabibul Umam, and Ricy Fatkhurrokhman. "Transformasi Pembelajaran Bahasa Arab Melalui Teknologi Digital dalam Pendidikan Islam." *Educatia: Jurnal Pendidikan dan Agama Islam* 15, no. 1 (2025): 1–22. <https://doi.org/10.69879/ks4f8466>
- Azmi, Fadilah Al, Himmatul Adzimah, Muhammad Afiq Aminullah, and R. Taufiqurrochman. "Al-Muyassar: Journal of Arabic Education Peranan Game Based Learning Dengan Aplikasi Quizizz dalam Meningkatkan Pembelajaran Bahasa Arab." *Al-Muyassar: Journal of Arabic Education* 2, no. 1 (2023): 50–66. <https://doi.org/10.31000/al-muyassar.v1i1.6678>.
- Cen, Xinqiao, and Goodarz Shakibaei. "Enhancing Creative Writing through AI-Powered Co-Creation with Cognitive and Emotional Outcomes." *Scientific Reports* 16, no. 1 (2026): 4407. <https://doi.org/10.1038/s41598-025-34416-2>.
- Devani, Clarissa, and Azmy Ali Muchtar. "Efektivitas Media Kartu Talk or Dare dalam Meningkatkan Keterampilan Berbicara Bahasa Arab Siswa Kelas XI di MA Al Wathoniyah 43 Jakarta Utara." *Muhadasah: Jurnal Pendidikan Bahasa Arab* 7, no. 1 (2025): 18–32. <https://doi.org/10.51339/muhad.v7i1.3878>
- Farisi, Moch Farkhan Yuangga Al, Mustamin, and Muhammad Ihsanuddin Masdar. "Efektivitas Pembelajaran Berbasis Permainan Dalam Meningkatkan Hasil Belajar Bahasa Arab." *El-Syaker: Samarinda International Journal of Language Studies* 2, no. 1 (2025): 1–16. <https://doi.org/10.64093/esijls.v2i1.281>
- Hafi, Achmad, Izzatun Naimah, and M. Yunus Abu Bakar. "Strategi Pembelajaran Bahasa Arab Melalui Psikolinguistik Generatif Transformatif dalam Meningkatkan Efektivitas Pembelajaran Bahasa Arab." *Tarbiyatuna: Jurnal Pendidikan Islam* 17, no. 1 (2024): 17–31. <https://doi.org/10.54471/tarbiyatuna.v17i1.2682>
- Haitsumakunti, Ittaqi, Ahmad Faizi, and Siti Aisyah. "Mengatasi Problematika Pembelajaran Bahasa Arab dengan Pendekatan Game Based Learning dalam Penguasaan Tata Bahasa Arab." *Jurnal Bahasa Arab dan Pendidikan* 6, no. 1 (2025): 68–77. <https://doi.org/https://doi.org/10.33752/el-fusha.v6i1.7684>.
- Harizona, Muhammad Fahri. "Efektivitas Aplikasi Mondly Arabic dalam Meningkatkan Keterampilan Menyimak Kosakata Bahasa Arab Kelas X SMA Darul Faizin Caringin." *Journal of Artificial Intelligence and Digital Business (RIGGS)* 5, no. 1 (2026): 12046–52. <https://doi.org/10.31004/riggs.v5i1.7720>
- Hukom, Julhan, Irfan, and Akmal. "Efektivitas Penggunaan Duolingo dalam Pembelajaran Bahasa Arab: Overall Effect Size dan Heterogenitas Julham Hukom Irfan Akmal Pendahuluan Perkembangan Teknologi Digital dalam Beberapa Dekade Terakhir Membawa." *Jurnal Ilmiah Al-Mashadir: Jurnal of*

- Arabic Education and Literature* 05, no. 1 (2025): 29–50. <https://doi.org/https://doi.org/10.30984/almashadir.v5i1.1363>.
- Ichsani, Hafidzoh Dini, Umi Hanifah, and Ach Lilik Hayati. “Pemanfaatan Platform Quizizz Sebagai Instrumen Penilaian dalam Pembelajaran Bahasa Arab di Madrasah Tsanawiyah.” *Jurnal Ilmiah Ilmu Pendidikan* 8, no. 10 (2025): 11610–15. <https://doi.org/10.54371/jiip.v8i10.9515>
- Islam, Badrul, and Dony Handriawan. “Variasi Metode dalam Pembelajaran Qawaid Nahwu untuk Meningkatkan Efektivitas Penguasaan Tata Bahasa Arab.” *El-Tsaqofah: Jurnal Jurusan PBA* 24, no. 2 (2025): 343–52. <https://doi.org/10.20414/tsaqafah.v24i2.14213>.
- Istinawati, Baiq, Santika, Syauqi Miftahul Karim, and Suparmanto. “Efektivitas Penggunaan Media Pembelajaran Roda Putar dalam Meningkatkan Pemahaman Kosa Kata Bahasa Arab di MTS Nurul Karim NW Kebon Ayu.” *Kilmatuna : Journal of Arabic Education* 03, no. 02 (2023): 85–97. <https://doi.org/10.55352/pba.v3i2.465>
- Kurniawan, Agung Widhi, and Zarah Puspitaningtyas. *Metode Penelitian Kuantitatif*. Edited by Agung W. Kurniawan. PANDIVA BUKU, 2016. <https://eprints.unm.ac.id/32439/1/1.%20Buku%20-%20Metode%20Penelitian%20Kuantitatif.pdf>
- Kurniawan, Muhammad Ryan. “Efektivitas Model Pembelajaran AIR (Auditory , Intellectually , Repetition) Berbantuan Kahoot Dapat Meningkatkan Motivasi dan Kreativitas Belajar Bahasa Arab di MTsN 1 Kota Bima.” *Jurnal Ilmiah Profesi Pendidikan* 10, no. 3 (2025): 3005–15. <https://doi.org/https://doi.org/10.29303/jipp.v10i3.3651>.
- Mekheimer, Mohamed, and Eman Mahdy. “Fostering Creative Writing in EFL Learners: A Mixed-Methods Study of an Iterative e-Learning Model.” *Asian-Pacific Journal of Second and Foreign Language Education* 11, no. 1 (2026): 33. <https://doi.org/10.1186/s40862-026-00409-5>.
- Mofid, Moh., and Bilghis Lu’luil Malihatus Sya’bah. “Efektivitas Media Canva dalam Pembelajaran Bahasa Arab Guna Meningkatkan Penguasaan Mufrodat Siswa Kelas VII SMP Sunan Kalijogo 2 Jabung Malang.” *Muhadasah: Jurnal Pendidikan Bahasa Arab* 6, no. 1 (2024): 98–118. <https://doi.org/10.51339/muhad.v6i1.2536>
- Mujeeb, Nashra, Muhammad Arfan Lodhi, Aqib Ali, Wali Khan Mashwani, Samih M. Mostafa, and Abdullah Ali H. Ahmadini. “Beyond Red Ink: AI Feedback and ESL Academic Writing Development in Higher Education.” *Language Testing in Asia* 16, no. 1 (2026): 24. <https://doi.org/10.1186/s40468-026-00442-8>.
- Munir, Dede Rizal, and Siti Nurlatifah. “Efektivitas “Metode Tebak Kata “Untuk Meningkatkan Penguasaan Mufrodat dalam Pembelajaran Bahasa Arab.” *Jurnal Ilmiah Research Student (JIRS)* 1, no. 2 (2023): 01–13. <https://doi.org/10.61722/jirs.v1i2.42>
- Nurjannah, Neneng. “Efektivitas Media Pembelajaran Bahasa Arab Berbasis Video dalam Meningkatkan Kemampuan Maharah Al Istima’ dan Maharah Al Kalam Siswa Kelas VII MTS Daarul Mustaqiem Pamijahan Bogor.” *Shawtul ‘Arab* 3, no. 2 (2024): 109–23. <https://doi.org/10.51192/sa.v3i2.767>
- Nurlatipah, Limah. “Efektivitas Metode As-Sam’iyah As-Syafawiyah dalam Meningkatkan Pembelajaran Bahasa Arab Siswa Kelas VI MIS Islamiyah.” *DIAJAR: Jurnal Pendidikan dan Pembelajaran* 3, no. 3 (2024): 362–70. <https://doi.org/10.54259/diajar.v3i3.2927>.



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- Panakaje, Niyaz, S. M. Riha Parvin, Abhinandan Kulal, et al. "Scientific Writing Workshop and Academic Write-Ups: Do Analytical Skills and Personal Efforts Matter?" *Asian-Pacific Journal of Second and Foreign Language Education* 11, no. 1 (2026): 48. <https://doi.org/10.1186/s40862-026-00422-8>.
- Qadafi, Muhammad, Aliyatul Jannah, and Syarifullah. "Efektivitas Metode Pembelajaran Tahfidz dalam Meningkatkan Kosa Kata Bahasa Arab pada Siswa di MA Sejahtera." *Al-Ubudiyah: Jurnal Pendidikan dan Studi Islam* 6, no. 1 (2025): 272–81. <https://doi.org/https://doi.org/10.55623>.
- Rahmasari, Fahrina, Abdul Hafidz Zaid, and Rahmat Hidayat Lubis. "Teori Belajar Kognitif: Urgensi dan Manfaatnya dalam Meningkatkan Pembelajaran Bahasa Arab." *Didaktika: Jurnal Kependidikan* 14, no. 3 (2025): 4987–98. <https://doi.org/10.58230/27454312.2387>.
- Restriana, Aisyah, Umi Hijriyah, and Koderi. "Shaut Al- ‘ Arabiyah Efektivitas Pembelajaran Bahasa Arab Dengan Aplikasi Duolingo : Literature Review." *Shaut al Arabiyyah* 13, no. 1 (2025): 47–60. <https://doi.org/https://doi.org/10.24252/saa.v13i1.55578>.
- Sholehah, Nurhilaliah Fitri, Dinda Ramdani, Riskiyatul Hasanah, Astri Khodimatus Sholihah, and Nanang Kosim. "Efektivitas Pendekatan Bilingualisme (Al-Suna’ Iyyah Al -Lughawiyyah) dalam Pembelajaran Bahasa Arab di Indonesia : Tinjauan Literatur." *DEIKTIS: Jurnal Pendidikan Bahasa dan Sastra* 5, no. 3 (2025): 1601–11. <https://doi.org/10.53769/deiktis.v5i3.1793>.
- Sholichah, Habibah, and Farikh Marzuki Ammar. "Efektivitas Penggunaan Media Aplikasi Mondly Arabic dalam Meningkatkan Keterampilan Menyimak Kosakata Bahasa Arab Kelas XI SMA Muhammadiyah 2 Sidoarjo." *Jurnal Dedikasi Pendidikan* 8848, no. 2 (2024): 791–99. <https://doi.org/10.21070/ups.4514>.
- Tosan, Dimas Zonseta. "Efektivitas Pendekatan Roleplay dalam Meningkatkan Partisipasi Siswa pada Pembelajaran Bahasa Arab di MTsN 1 Lamongan." *AN-NAHDLOH: Journal of Education and Islamic Studies* 1, no. 2 (2026): 253–65. <https://doi.org/10.58788/jeis.v1i2.21>.
- Yusfian, Fiqih Dwiky, and Moch. Bahak Udin by Arifin. "Efektivitas Permainan Bisik Berantai untuk Meningkatkan Kemampuan Istima’ dalam Pembelajaran Bahasa Arab Siswa SMP Malang." *Jurnal Dedikasi Pendidikan* 9, no. 2 (2025): 589–604. <https://doi.org/10.30601/dedikasi.v9i2.5910>.