



Utilizing Quizizz to Improve Conceptual Understanding in *Tsaqafah 'Arabiyah* among Undergraduate Students of the Arabic Language Education Program / Pemanfaatan Quizizz untuk Meningkatkan Pemahaman Konseptual *Tsaqafah 'Arabiyyah* pada Mahasiswa Program Studi Pendidikan Bahasa Arab

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Abstract: The development of educational technology requires learning innovations that are responsive to the characteristics of the digital generation, including in *Tsaqafah 'Arabiyah* learning, which is conceptual and often perceived as difficult by students. A common problem is the low level of students' conceptual understanding, influenced by the abstract nature of the material and learning approaches that are still dominated by lectures and memorization. Therefore, the use of interactive learning media is needed to increase cognitive engagement and strengthen students' comprehension more effectively. This study aims to examine the effectiveness of the Quizizz platform as a gamification-based learning medium in improving students' conceptual understanding in the *Tsaqafah 'Arabiyah* learning. This research employed a quantitative approach using a pre-test–post-test design involving 20 third-semester students of the Arabic Language Education Study Program at UIN Sunan Kalijaga. Data were analyzed using a paired sample t-test and N-Gain calculation. The results show a significant improvement in students' scores from 61.50 to 80.25, with $t = -7.471$ and $p = 0.000$. The average N-Gain value of 0.4627 indicates moderate effectiveness.

Abstrak: Perkembangan teknologi pendidikan memerlukan inovasi pembelajaran yang responsif terhadap karakteristik generasi digital, termasuk dalam pembelajaran *Tsaqafah 'Arabiyah* yang bersifat konseptual dan sering dianggap sulit oleh siswa. Masalah umum yang sering muncul adalah rendahnya tingkat pemahaman konseptual siswa, yang dipengaruhi oleh sifat abstrak materi dan pendekatan pembelajaran yang masih didominasi oleh ceramah dan hafalan. Oleh karena itu, penggunaan media pembelajaran interaktif diperlukan untuk meningkatkan keterlibatan kognitif dan memperkuat pemahaman siswa secara lebih efektif. Penelitian ini bertujuan untuk menguji efektivitas platform Quizizz sebagai media pembelajaran berbasis gamifikasi dalam meningkatkan pemahaman konseptual siswa pada mata kuliah *Tsaqafah 'Arabiyah*. Penelitian ini menggunakan pendekatan kuantitatif dengan desain pre-test–post-test yang melibatkan 20 mahasiswa semester ketiga Program Studi Pendidikan Bahasa Arab di UIN Sunan Kalijaga. Data dianalisis menggunakan uji t sampel berpasangan dan perhitungan N-Gain. Hasil menunjukkan peningkatan signifikan pada skor siswa dari 61,50 menjadi 80,25, dengan $t = -7,471$ dan $p = 0,000$. Nilai rata-rata N-Gain sebesar 0,4627 menunjukkan efektivitas moderat.



Introduction

The development of technology and information in the modern era has significantly transformed the face of Indonesian education, especially since COVID-19. Education, once known for its reliance on textbooks, is now required to adapt to the dynamic technological advancements of this century.¹ This educational transformation can be seen in learning facilities and infrastructure equipped with sophisticated electronic devices such as smart TVs, Interactive Flat Panels (IFPs), and smartboards, which we have recently encountered in educational institutions. Furthermore, interactive learning applications and platforms are no less varied.²

This interaction of technology in education presents a positive opportunity to improve the quality of the learning process, as has been seen in developed countries like Estonia, Finland, Hungary, and others. The use of digital platforms for online learning offers a myriad of conveniences for both students and lecturers.³ The presence of technology enables more flexible, innovative, and engaging learning. Through digital platforms, learning no longer has to be confined to a conventional classroom; anyone can access it from anywhere, transcending geographical and time boundaries.⁴

One common digital platform is Quizizz. Quizizz is a learning platform designed with a technology-based gamification approach to increase learning motivation and conceptual understanding, strengthen student engagement, and create an active and competitive learning environment.⁵ The Quizizz digital platform offers a variety of interactive quiz features that can be used as assessment tools, evaluation tools, and as a fun, interactive learning medium.⁶

In the context of the Arabic Language Education study program, particularly at UIN Sunan Kalijaga, the challenges faced by lecturers and students are not only language

¹ Desi Sandra Putri et al., "Sejarah Perkembangan Kurikulum di Indonesia," *Jurnal Ilmiah Wahana Pendidikan* 11, no. 1 (2025): 111–122.

² Siti Mutia Suryani dan Oktavia Hardiyantari, "Pengembangan Multimedia Pembelajaran Interaktif Berbasis Android pada Mata Pelajaran Dasar-Dasar Program Keahlian Kelas X TKJ," *Jurnal Pendidikan dan Teknologi Indonesia* 3, no. 5 (Juni 21, 2023).

³ Iman Cahyanto, "Pemanfaatan Platform E-Learning Berbasis Cloud Computing Untuk Meningkatkan Efektivitas Pembelajaran Jarak Jauh," *Edum Journal* 6, No. 2 (2023).

⁴ Abdulrahman Al Motrif, "Digital learning in Saudi University: evaluating digital transformation post Covid-19," *Technology Analysis & Strategic Management* 36, no. 12 (2023): 4440–4454, <https://www.tandfonline.com/author/Al-Motrif%2C+Abdulrahman>.

⁵ Thulasirani A/P Munuyandi et al., "Effectiveness Of Quizizz in Interactive Teaching and Learning Malay Grammar," *Asian Journal of University Education* 17, no. 3 (2021): 109.

⁶ Virginia Hernanz, Cecilia Latorre Cosculluela, dan Cristina Suárez, "Comparing engagement and active participation with gamification in Quizizz applications: influences on the teaching-learning," *Technology, Pedagogy and Education* 34, no. 5 (2025): 659–674.

skills but also related to students' conceptual understanding of the abstract and theoretical course material. Conceptual understanding is a vital aspect because it is closely related to students' ability to relate the knowledge they have acquired in class in practical and applicable ways, especially in the Arabic Language course.

Arabic Language is a course in the Arabic Language Education study program at UIN Sunan Kalijaga. This course discusses Arab culture, including the elements, characteristics, and development of Arabic culture itself. The aim of this course is for students to be able to understand the concept of culture and the concept of Arab civilization, including language, religion, community culture, customs, education, and several other aspects, so that it is not uncommon for this course to be considered difficult by some students.

Students' difficulties in understanding Arabic language courses are not only due to the breadth of the topic but also to its conceptual nature. Students are required not only to memorize historical facts but also to understand the interrelationships between events, figures, and ideas that developed in the Arab world.⁷ When the learning process emphasizes memorization, students tend to have a shallow understanding and struggle to connect theoretical knowledge to actual reality.⁸ As a result, learning outcomes in this course are often suboptimal, particularly in critical and conceptual thinking, which are the primary goals of higher education.

This problem demands a new approach that is more relevant to the learning styles of digital generation students. One potential alternative is the use of interactive digital media such as Quizizz. This platform allows students to interact more actively with the material through game-based quizzes.⁹ The presence of competition, scoring, and engaging visualizations motivates students to participate in the learning process.¹⁰ Thus,

⁷ Fityani Perenia dan Nur Hasaniyah, "Perkembangan Peradaban Arab: Jejak Sejarah dan Tantangan di Era Globalisasi," *Jurnal Ilmu Sosial dan Budaya Indonesia* 3, no. 1 (2025): 41–49.

⁸ Tristan Rokhmawan et al., "A Meta-Synthesis Study of Forelearn Apperception Process: Strategy to Overcome Jetlag Issues in Early Learning Activities," *Bulletin of Pedagogical Research* 3, no. 2 (2023): 104–125.

⁹ Abdul Hakam Al-Karim dan Amin Fauzi, "The Effect Of The Quizizz Application Learning Media On Student Learning Outcomes In Fikih Class Xi At Madrasah Aliyah Negeri 14 Jakarta," *At Tuots : Jurnal Pendidikan Islam* 7, no. 2 (2025): 849–854.

¹⁰ Ainul Uyun, Darmawati, dan Herdah, "Pengembangan Media Pembelajaran Bahasa Arab Berbasis *Quizizz* di Universitas Islam As'adiyah Sengkang," *Loghat Arabi: Jurnal Bahasa Arab dan Pendidikan Bahasa Arab*, Vol. 6, No. 1, (2025).

Quizizz serves not only as an evaluation tool but also as a pedagogical strategy for building students' conceptual understanding of *Tsaqofah arabiyah* courses.¹¹

The main advantage of Quizizz lies in its ability to present learning activities through a gamification-based system that provides instant feedback to students. Through this mechanism, students can immediately determine whether their answers are correct or incorrect and strengthen their understanding of the concepts being studied.¹² For example, when students are studying the development of dynasties in Arab history, interactive questions on Quizizz can help them recall the chronology of events, recognize key figures, and understand the influence of these dynasties on the development of civilization.¹³ This repetitive yet engaging learning process ultimately strengthens memory and supports students' conceptual analysis skills.¹⁴

Furthermore, Quizizz offers flexibility that aligns with contemporary learning needs. Students can access quizzes anytime and anywhere, allowing the learning process to extend beyond the classroom. This flexibility also supports the principle of self-directed learning, which is an essential competency in the 21st century.¹⁵ By completing exercises independently and repeatedly, students can reinforce their understanding of the concept of *tsaqafah*, whether in historical, philosophical, or cultural contexts.

Several previous studies have shown that the use of interactive digital media can improve student motivation and learning outcomes in various courses. However, studies that focus specifically on Arabic Language Studies remain limited. This course has distinctive characteristics that emphasize conceptual understanding rather than language skills alone. This research gap makes the present study important in examining the extent to which Quizizz can contribute to improving Arabic Language Education students' conceptual understanding of Arabic Language Studies.

¹¹ Siti Zuhriyah dan Bambang Widi Pratolo, "Exploring Students' Views in the Use of Quizizz as an Assessment Tool in English as a Foreign Language (EFL) Class," *Universal Journal of Educational Research* 8, no. 11 (2020): 5312–5317.

¹² Fitri Yeni dan Wahyu Kurniawati, "Efektivitas Penggunaan Aplikasi Quizizz Untuk Penilaian Pembelajaran," *Primary: Jurnal Pendidikan Guru Sekolah Dasar* 11, no. 3 (2022).

¹³ Metha Kusuma Dewi, Umi Hanifah, dan Wildanul Ihsan, "Embroidering Innovation in Madrasah Tsanawiyah Arabic Curriculum: Teacher's Perspective as Learning Architect," *Loghat Arabi: Jurnal Bahasa Arab dan Pendidikan Bahasa Arab*, Vol. 6, No. 2, (2025): 649-651.

¹⁴ Rica Wijayanti, Didik Hermanto, dan Zainudin, "Efektivitas Penggunaan Aplikasi Quizizz Pada Matakuliah Matematika Sekolah Ditinjau Dari Motivasi Dan Hasil Belajar Mahasiswa," *Jurnal Cendekia : Jurnal Pendidikan Matematika* 5, no. 1 (2021): 347–356.

¹⁵ Thomas Howard Morris et al., "Self-Directed Learning And Student-Centred Learning : A Conceptual Comparison," *Pedagogy, Culture & Society* 33, no. 3 (2025): 847–866, <https://doi.org/10.1080/14681366.2023.2282439>.

The urgency of this research is further strengthened by the need to develop learning methods that are adaptive to the digital era. Through Quizizz, learning activities can become more engaging while also supporting interactive evaluation. The results of quizzes can assist lecturers in identifying students' areas of difficulty, enabling subsequent teaching strategies to focus on aspects that require reinforcement.¹⁶ In this sense, Quizizz functions not only as a gamified learning medium that enhances motivation but also as an effective tool for formative assessment in Arabic language learning.

Based on the above explanation, this study aims to analyze the use of the Quizizz digital learning platform in improving the conceptual understanding of students in the Arabic Language Education Study Program in the *Tsaqāfah 'Arabiyyah* course, which is a course that covers the study of Arab culture. The research focuses on the effectiveness of using Quizizz as an interactive learning medium in helping students understand various concepts related to the social, cultural, and civilizational aspects of Arab society in a more systematic manner. Thus, this study positions digital technology not only as a learning evaluation tool but also as a pedagogical tool that supports the strengthening of students' conceptual understanding of Arab cultural material in the context of higher education.

Academically, this research is expected to enrich studies on the integration of digital technology in teaching Arab culture in higher education. In addition, this research also provides practical contributions in the form of alternative innovative technology-based learning models that can be utilized by lecturers in optimizing the learning process in courses related to Arab cultural studies so that the learning process in lectures does not seem monotonous. Therefore, the results of this study are expected to be a reference in developing learning strategies that are more adaptive, interactive, and relevant to the development of digital technology in the world of education. Therefore, the results of this study will not only benefit students and lecturers but also serve as a reference in developing Arabic Language Education policies that are more adaptive to the demands of the digital era.

¹⁶ Marsye Fera Kalahatu, "Persepsi Peserta Pelatihan Dasar Terhadap Penggunaan Quizizz Sebagai Metode Evaluasi Pembelajaran," *Akademika* 10, no. 1 (2021): 163–178.

Methods

This research methodology employed a quantitative approach with a pre-test–post-test design intended to measure the effectiveness of Quizizz in improving the conceptual understanding of Arabic Language Education students. This design was chosen because it provides an objective empirical representation of changes in student abilities before and after the technology-based learning intervention.¹⁷ The research was conducted in the Arabic Language Education (PBA) Study Program at UIN Sunan Kalijaga Yogyakarta. This design was purposively selected because this study program has received FIBAA international accreditation, thus being deemed to have established academic quality standards and is suitable for this research context. The research subjects consisted of third-semester students in one of the PBA classes. The class selection took into account schedule compatibility, accessibility, and the homogeneity of students' initial abilities in the related courses.

Data collection was conducted using two main instruments: a pre-test and a post-test. The pre-test was administered at the beginning of the study using the Google Forms platform to map students' conceptual understanding levels before the intervention. The use of Google Forms was deemed effective due to its ease of distribution, flexibility of access, and the ability to automate data recapitulation. After the Quizizz-based learning intervention was administered, a post-test was administered using the Quizizz platform. Quizizz was chosen based on its gamification characteristics, rapid feedback, and accurate result recording, allowing for a more comprehensive and responsive assessment process.

The research procedure was systematically designed, starting with instrument development and validation, pre-test administration, Quizizz learning intervention, and post-test administration.¹⁸ The quantitative data obtained were analyzed using paired sample t-tests using SPSS software to test the significance of differences in pre- and post-treatment scores.¹⁹ Furthermore, N-Gain analysis was used to more deeply measure the effectiveness of improving conceptual understanding, categorizing the results into low,

¹⁷ J W Creswell, “Research Design: Qualitative, Creswell, J. W. (2014). . Research Design Qualitative Quantitative And Mixed Methods Approaches.” *Research Design Qualitative Quantitative And Mixed Methods Approaches* (2014).

¹⁸ Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*, (Bandung: Alfabeta, 2017), h. 121.

¹⁹ Sakhiyyah Afifah, Ahmad Mudzakir, dan Asep Bayu Dani Nandiyanto, “How to Calculate Paired Sample t -Test using SPSS Software : From Step-by-Step Processing for Users to the Practical Examples in

medium, or high based on the ratio of improvement relative to the ideal maximum score.²⁰ This statistical analysis was used to determine the significance of differences in pre-test and post-test scores, thus concluding whether Quizizz had a meaningful impact on improving students' conceptual understanding. This entire methodology was designed to produce valid, reliable, and scientifically accountable findings, in accordance with quantitative research principles.

The criteria for improving learning outcomes in this study were analyzed using N-Gain scores to determine the level of improvement in students' conceptual understanding after the implementation of learning. The N-Gain score categorization refers to three levels, namely low category if the N-Gain score is < 0.3 , moderate category if it is in the range of $0.3-0.7$, and high category if the N-Gain score is > 0.7 . In addition, the level of effectiveness of the learning method was also analyzed based on the percentage of student learning outcomes. The interpretation of effectiveness was classified into four categories, namely effective if the percentage of achievement was $> 76\%$, quite effective if it was in the range of $56-75\%$, less effective if it was in the range of $40-55\%$, and ineffective if the percentage of achievement was $< 40\%$. This analysis was conducted on the pre-test and post-test data obtained from all 30 respondents in the Arabic Language Education Study Program. The results of this analysis were used to identify the level of improvement in students' conceptual understanding and to assess the effectiveness of the use of learning media in the learning process.

Results and Discussion

t-Test

This study aims to analyze the effectiveness of the applied learning model in improving students' conceptual understanding by comparing pre-test and post-test results. The testing was conducted using a paired sample t-test as the primary analytical method, considering that this approach is capable of assessing changes that occur before and after treatment is administered. The data analyzed came from 20 students who became the research sample, and all data have met the basic assumptions for parametric testing.

the Analysis of the Effect of Application Anti-Fire Bamboo Teaching Materials on Student Learning Outcomes," *IJOTIS* 2, no. 1 (2022): 81–92.

²⁰ Gustati et al., "N-Gain Sebagai Alat Ukur Pemahaman Mahasiswa Pada Akuntansi Keuangan Lanjutan 1," *Jurnal Ekonomi dan Bisnis Dharma Andalas* 27, no. 1 (2025): 11–24.

Thus, the results obtained can be interpreted comprehensively in accordance with the provisions of inferential statistics.

Table 1. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test	61.5000	20	10.77277	2.40887
	Post Test	80.2500	20	7.34041	1.64136

Descriptively, this study found a quite striking difference between the average pre-test and post-test scores. The average pre-test score of 61.50 with a standard deviation of 10.77 indicates that students' initial ability in the material was moderate, with considerable variation among participants. This score suggests that some students already had a basic understanding, while others still struggled to grasp the concepts being tested.

Conversely, the average post-test score showed a significant increase, reaching 80.25 with a standard deviation of 7.34. The decrease in the standard deviation in the post-test indicates that student abilities became more evenly distributed after participating in the learning process, indicating a more equitable distribution of understanding among students.²¹ This change demonstrates that the learning intervention was able to improve learning outcomes while reducing the ability gap between students.

The average difference of 18.75 points between the pre-test and post-test is a preliminary finding that confirms a substantial improvement in student learning outcomes. This improvement is not only numerical but also pedagogically relevant, demonstrating that the learning activities provided a strong stimulus for expanding students' cognitive understanding. This change is an important indicator in assessing the success of the learning model used.

Furthermore, the standard error mean for the pre-test, 2.41, and the post-test, 1.64, indicate a decrease in the average estimation error after using Quizizz. This

²¹ Cohen-Mercedes Carmen Arrieta, Luz Angela Torres Arizal, dan Ricardo León Gómez Yepes, "Evaluating the Impact of an Educational Intervention Using Project-Based Learning on Postpandemic Recovery in Rural Colombia," *Education Sciences* 14, no. 12 (2024): 1341, <https://www.mdpi.com/2227-7102/14/12/1341>.

decrease reflects that students' scores on the post-test were more consistent than those on the pre-test. In other words, after Quizizz-based learning, students demonstrated more stable performance in mastering the material.

The significant improvement between pre-test and post-test scores demonstrates that the use of Quizizz has a significant pedagogical impact on students' conceptual understanding. The mean difference of 18.75 points demonstrates that the gamification-based intervention not only improved assessment scores but also facilitated substantial changes in students' cognitive processes. This improvement confirms that interactive, technology-based learning can encourage active student engagement, ultimately contributing to a deeper understanding of the abstract and conceptual material on Arabic grammar.²²

The decrease in the standard deviation from 10.77 in the pre-test to 7.34 in the post-test, as noted in the statistical findings, indicates an improvement in ability distribution after the intervention. This indicates that Quizizz not only improved individual student scores but also narrowed the competency gap between students. This improvement is important in the context of higher education because it demonstrates that interactive digital media can provide more inclusive and equal access to learning for all students, regardless of differences in initial ability.²³

Table 2. Paired Samples Correlations

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre Test & Post Test	20	.278	.236

The results of the paired samples correlation analysis showed a relationship between pre-test and post-test scores for the 20 students who participated in the study. The correlation value was 0.278, indicating a positive but weak relationship between pre- and post-treatment scores. This positive correlation indicates that students with better

²² Cok Istri et al., "Optimizing Student Engagement in Primary Science and Social Learning: The Feasibility of Contextual Interactive Video Media" 12, no. 2 (2024): 372–379.

²³ Abid Haleem et al., "Understanding the role of digital technologies in education: A review," *Sustainable Operations and Computers* 3, no. February (2022): 275–285, <https://doi.org/10.1016/j.susoc.2022.05.004>.

initial understanding tended to still achieve higher scores after participating in Quizizz-based learning, although the strength of the relationship was not significant.

A significance value of 0.236, which is higher than $\alpha = 0.05$, indicates that the correlation is not statistically significant. Therefore, there is insufficient evidence to conclude that there is a consistent linear relationship between students' pre-test and post-test scores. This condition indicates that the increase in post-test scores is not strongly dependent on students' initial abilities but is more likely a result of the learning intervention using Quizizz.

The absence of a significant correlation between the pre-test and post-test ($r = 0.278$; $p = 0.236$) strengthens the argument that improved learning outcomes are not influenced by students' initial abilities, but rather by the effectiveness of the intervention itself. This weak correlation indicates that Quizizz-based learning provides a relatively equitable learning experience, allowing even students with low abilities to achieve substantial improvement.²⁴ This finding aligns with the concept of an equitable learning environment, where learning technology can reduce disparities in academic performance.²⁵

This low and non-significant correlation has the important implication that Quizizz-based learning can provide relatively equal opportunities for all students to improve their conceptual understanding, regardless of their initial abilities. In other words, students who initially scored low still had the potential to experience substantial improvement after receiving the same learning intervention. This reinforces the view that the use of evaluative technology like Quizizz can reduce performance gaps between students.

This finding also confirms that the increase in post-test scores is not a direct reflection of the initial scores, but rather a result of the effectiveness of the learning media used. The methodological implication is that differences between pre-test and post-test scores are more appropriately analyzed using paired samples t-tests rather than correlations, as this low correlation suggests that the change in scores is a result of the intervention, not a continuation of the initial score pattern. Thus, these results

²⁴ Pei-lin Liu, Chiu-jung Chen, dan Chih-yu Huang, "Evaluating the Effectiveness of Quizizz for Enhancing English Vocabulary Acquisition and Engagement Among Rural Elementary Students," *Sage Open* 15, no. 4 (2025): 1–15.

²⁵ Catherine Nabiem et al., "Impact Of Online Learning On Student ' S Performance And Engagement : A Systematic Review," *Discover Education*, 3.205 (2024), doi:10.1007/s44217-024-00253-0.

consistently support the argument that Quizizz plays a significant role as a pedagogical instrument in improving the conceptual understanding of Arabic Language Education students.

Table 3. Paired Samples Test

Paired Samples Test

	Paired Differences			95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1 Pre Test - Post Test	-18.75000	11.22439	2.50985	-24.00317	-13.49683	-7.471	19	.000

The paired samples t-test analysis revealed a highly significant difference between students' pre-test and post-test scores after participating in Quizizz-based learning. The mean difference of -18.75 indicates that post-test scores increased substantially compared to pre-test scores. The negative sign on the difference indicates that post-test scores were higher than pre-test scores, thus reinforcing the finding that students' conceptual abilities improved after the intervention.

The standard deviation of the difference, 11.22 , indicates moderate variation in score improvement across students. However, the standard error of the mean, 2.51 , indicates that the estimated average difference is quite precise. The 95% confidence interval ranges from -24.00317 to -13.49683 , which excludes the value of zero. This confirms that the score increase was not a random fluctuation, but rather a systematic effect of the learning treatment.

The t-statistic of -7.471 with 19 degrees of freedom (df) indicates a strong effect. The large t-value reflects that the difference between the pre-test and post-test is not only practically significant but also statistically significant. In other words, the effectiveness of using Quizizz in improving students' conceptual understanding can be categorized as very strong based on inferential statistical parameters.

Furthermore, the 2-tailed significance value (Sig.) of 0.000 , which is well below the $\alpha = 0.05$ threshold, confirms that the difference in pre- and post-treatment scores is statistically significant. This finding provides a strong empirical basis that the integration of Quizizz into the learning process significantly contributes to improving students'

academic achievement.²⁶ Thus, these results confirm the effectiveness of technology-based learning models in comprehensively improving the conceptual understanding of Arabic Language Education students.

The paired sample t-test results, with a t value of -7.471 and a significance level of $p = 0.000$, indicate that the score improvement occurred consistently and was not random. The strength of the effect in this finding confirms that the integration of Quizizz in Arabic language learning has a statistically and pedagogically significant impact. Therefore, this medium can be categorized as an effective learning tool for conceptual materials, given its ability to provide instant feedback, review material, and automatically map learning difficulties.

This study aims to analyze the effectiveness of the applied learning model in improving students' conceptual understanding by comparing pre-test and post-test results. The testing was conducted using a paired sample t-test as the primary analytical method, considering that this approach is capable of assessing changes that occur before and after treatment is administered. The data analyzed came from 20 students who became the research sample, and all data have met the basic assumptions for parametric testing. Thus, the results obtained can be interpreted comprehensively in accordance with the provisions of inferential statistics.

Table 4. Descriptive Statistical Analysis of N-Gain Scores

N-Gain

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Ngain_Score	20	.00	.86	.4627	.21759
Ngain_Persen	20	.00	85.71	46.2720	21.75926
Valid N (listwise)	20				

Descriptive statistical analysis of N-Gain scores indicates that utilizing Quizizz improved the conceptual understanding of Arabic Language Education students. Across 20 respondents, N-Gain scores ranged from 0.00 to 0.86, with an average of 0.4627 and a standard deviation of 0.21759. This range indicates variation in each student's achievement after participating in Quizizz-based learning.

²⁶ T D D Nainggolan dan Kadek Sintya Dewi, "The Effectiveness Of Quizizz On Tenth Grade Efl Students ' Achievement In English Learning Process," 5.2 (2022), h. 60–69.

The average N-Gain of 0.4627 falls within the moderate category according to Hake's criteria, indicating that using Quizizz was quite effective in improving conceptual understanding. The maximum score of 0.86 indicates that some students experienced significant improvement, while the minimum score of 0.00 indicates that some students experienced no improvement at all.

Viewed as a percentage, the average N-Gain_Percent score of 46.27% indicates that students overall achieved nearly half of their maximum potential improvement. These results confirm that integrating Quizizz into the learning process can positively contribute to students' conceptual understanding.²⁷

Further N-Gain analysis provides insight into the effectiveness of these improvements. The average N-Gain score of 0.4627, which falls into the moderate category according to Hake's criteria, indicates that students achieved nearly half of their maximum potential improvement after participating in Quizizz-based learning. This finding confirms that the improvement in understanding is not only statistically significant but also quite strong in the context of conceptual learning. However, the wide variation in scores (range 0.00–0.86) suggests that the effectiveness of digital media is still influenced by individual factors such as motivation, learning focus, and learning style preferences.²⁸

This varied N-Gain achievement provides pedagogical implications: although Quizizz can provide meaningful improvements in understanding, its effectiveness will be more optimal if supported by complementary teaching strategies. For example, integrating discussions, reinforcing concepts through contextual examples, and facilitating learning reflection can strengthen the impact of gamification on conceptual deepening. Thus, the role of lecturers remains crucial in guiding learning activities so that they focus not only on cognitive aspects but also on strengthening critical and analytical thinking.

Overall, the findings of this study confirm that Quizizz is an effective learning medium for improving the conceptual understanding of Arabic Language Education students. The significant increase in post-test scores, reinforced by the results of the t-test

²⁷ Aldona Aqtoina, "Media Analysis of the Quizizz Application in Elementary School Science Learning : A Systematic Literature Review," *Indonesian Journal Of Educational Research And Review* 8, no. 20 (2025): 55–69.

²⁸ Mosharrof Hosen et al., "Individual Motivation And Social Media Influence On Student Knowledge Sharing And Learning Performance: Evidence From An Emerging Economy," *Computers & Education*, 172 (2021), doi:<https://doi.org/10.1016/j.compedu.2021.104262>.

and N-Gain analysis, indicates that gamification can be an adaptive, engaging, and quality-oriented learning strategy. Continued integration of this platform into Arabic Language courses has the potential to enhance students' learning experiences, reduce cognitive load, and create a more participatory and evidence-based learning process.

Conclusion

This study concludes that the use of Quizizz as a gamified learning medium can improve the conceptual understanding of students majoring in Arabic language education in the *Tsaqofah Arabiyah* course. The findings show an increase in student learning outcomes after the implementation of Quizizz, indicating that the integration of interactive digital media can support students' cognitive processes in understanding material concepts in a more systematic and interesting way. Thus, Quizizz has proven to be an effective alternative learning medium in supporting Arabic language learning in higher education, especially in courses that require strong conceptual understanding.

Theoretically, this study contributes to the development of Arabic culture learning studies in higher education by emphasizing the relevance of the gamification approach in improving the quality of technology-based learning. Practically, the results of this study recommend the use of interactive digital platforms such as Quizizz as an innovative strategy to increase student engagement and understanding in learning. Therefore, lecturers in Arabic language education programs and lecturers who teach Arabic culture courses in higher education can integrate gamification-based learning media as part of a learning design that is adaptive to technological developments and the characteristics of the digital learner generation.

References

- Afifah, Sakhiyyah, Ahmad Mudzakir, dan Asep Bayu Dani Nandiyanto. "How to Calculate Paired Sample t -Test using SPSS Software: From Step-by-Step Processing for Users to the Practical Examples in the Analysis of the Effect of Application Anti-Fire Bamboo Teaching Materials on Student Learning Outcomes." *IJOTIS* 2, no. 1 (2022): 81–92.
- Al-karim, Abdul Hakam, dan Amin Fauzi. "The effect of the quizizz application learning media on student learning outcomes in fikih class xi at madrasah aliyah negeri 14 jakarta." *At Tuots : Jurnal Pendidikan Islam* 7, no. 2 (2025): 849–854.
- Aqtoina, Aldona. "Media Analysis of the Quizizz Application in Elementary School Science Learning: A Systematic Literature Review." *Indonesian Journal of Educational Research and Review* 8, no. 20 (2025): 55–69.

- Arrieta, Cohen-Mercedes Carmen, Luz Angela Torres Arizal, dan Ricardo León Gómez Yepes. "Evaluating the Impact of an Educational Intervention Using Project-Based Learning on Postpandemic Recovery in Rural Colombia." *Education Sciences* 14, no. 12 (2024): 1341. <https://www.mdpi.com/2227-7102/14/12/1341>.
- Cahyanto, Iman. "Pemanfaatan Platform E-Learning berbasis Cloud Computing untuk Meningkatkan Efektivitas Pembelajaran Jarak Jauh." *Edum Journal* 6, no. 2 (2023).
- Creswell, J W. "Research Design: Qualitative, Creswell, J. W. (2014). . Research design Qualitative quantitative and mixed methods approaches." *Research design Qualitative quantitative and mixed methods approaches* (2014).
- Dewi, Metha Kusuma, Umi Hanifah, dan Wildanul Ihsan, "Embroidering Innovation in Madrasah Tsanawiyah Arabic Curriculum: Teacher's Perspective as Learning Architect," Vol. 6, No. 2, (2025).
- Gustati, Fera Sriyuniati, Ferdawati, dan Dita Maretha Rissi. "N-Gain Sebagai Alat Ukur Pemahaman Mahasiswa Pada Akuntansi Keuangan Lanjutan 1." *Jurnal Ekonomi dan Bisnis Dharma Andalas* 27, no. 1 (2025): 11–24.
- Haleem, Abid, Mohd Javaid, Mohd Asim, dan Rajiv Suman. "Understanding the role of digital technologies in education: A review." *Sustainable Operations and Computers* 3, no. February (2022): 275–285. <https://doi.org/10.1016/j.susoc.2022.05.004>.
- Hernanz, Virginia, Cecilia Latorre Cosculluela, dan Cristina Suárez. "Comparing engagement and active participation with gamification in Quizizz applications: influences on the teaching-learning." *Technology, Pedagogy and Education* 34, no. 5 (2025): 659–674.
- Hosen, Mosharrof, Samuel Ogbeibu, Beena Giridharan, Tat-Huei Cham, Weng Marc Lim, dan Justin Paul. "Individual motivation and social media influence on student knowledge sharing and learning performance: Evidence from an emerging economy." *Computers & Education* 172 (2021).
- Istri, Cok, Dian Natharani, Anak Agung, Gede Agung, dan Didith Pramunditya Ambara. "Optimizing Student Engagement in Primary Science and Social Learning : The Feasibility of Contextual Interactive Video Media" 12, no. 2 (2024): 372–379.
- Kalahatu, Marsye Fera. "Persepsi Peserta Pelatihan Dasar Terhadap Penggunaan Quizizz Sebagai Metode Evaluasi Pembelajaran." *Akademika* 10, no. 1 (2021): 163–178.
- Liu, Pei-lin, Chiu-jung Chen, dan Chih-yu Huang. "Evaluating the Effectiveness of Quizizz for Enhancing English Vocabulary Acquisition and Engagement Among Rural Elementary Students." *Sage Open* 15, no. 4 (2025): 1–15.
- Morris, Thomas Howard, Nicholas Bremner, Nozomi Sakata, Thomas Howard, Nicholas Bremner, Nozomi Sakata Self-, Thomas Howard Morris, dan Nicholas Bremner. "Self-directed learning and student-centred learning : a conceptual comparison." *Pedagogy, Culture & Society* 33, no. 3 (2025): 847–866. <https://doi.org/10.1080/14681366.2023.2282439>.
- Al Motrif, Abdulrahman. "Digital learning in Saudi University: evaluating digital transformation post Covid-19." *Technology Analysis & Strategic Management* 36, no. 12 (2023): 4440–4454. <https://www.tandfonline.com/author/Al-Motrif%2C+Abdulrahman>.

- Munuyandi, Thulasirani A/P, Salina Husain, Mohd Azidan Abdul Jabar, dan Zuraini Jusoh. "Effectiveness Of Quizizz in Interactive Teaching and Learning Malay Grammar." *Asian Journal of University Education* 17, no. 3 (2021): 109.
- Nabiem, Catherine, Akpen Stephen, Asaolu Sunday, Atobatele Hilary, dan Okagbue Sidney. "Impact of online learning on student 's performance and engagement : a systematic review." *Discover Education* 3, no. 205 (2024). <https://doi.org/10.1007/s44217-024-00253-0>.
- Nainggolan, T D D, dan Kadek Sintya Dewi. "The Effectiveness of Quizizz on Tenth Grade Efl Student's Achievement In English Learning Process" 5, no. 2 (2022): 60–69.
- Perenia, Fityani, dan Nur Hasaniyah. "Perkembangan Peradaban Arab: Jejak Sejarah dan Tantangan di Era Globalisasi." *Jurnal Ilmu Sosial dan Budaya Indonesia* 3, no. 1 (2025): 41–49.
- Putri, Desi Sandra, D Marzelni, M Delastri, Y Anggraini, D Demina, dan D Darmansyah. "Sejarah Perkembangan Kurikulum di Indonesia." *Jurnal Ilmiah Wahana Pendidikan* 11, no. 1 (2025): 111–122.
- Rokhmawan, Tristan, Lailatul Fitriyah, Ahmad Fikri, Ab Rahmani, May Dwi, Universitas Nurul, Jadid Paiton, Dinas Pendidikan, dan Kebudayaan Kota Pasuruan. "A Meta-Synthesis Study of Forelearn Apperception Process: Strategy to Overcome Jetlag Issues in Early Learning Activities." *Bulletin of Pedagogical Research* 3, no. 2 (2023): 104–125.
- Sugiyono. *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta, 2017.
- Suryani, Siti Mutia, dan Oktavia Hardiyantari. "Pengembangan Multimedia Pembelajaran Interaktif Berbasis Android pada Mata Pelajaran Dasar-Dasar Program Keahlian Kelas X TKJ." *Jurnal Pendidikan dan Teknologi Indonesia* 3, no. 5 (Juni 21, 2023).
- Uyun, Ainul, Darmawati, dan Herdah, "Pengembangan Media Pembelajaran Bahasa Arab Berbasis *Quizizz* di Universitas Islam As'adiyah Sengkang," *Loghat Arabi: Jurnal Bahasa Arab dan Pendidikan Bahasa Arab*, Vol. 6, No. 1, (2025).
- Wijayanti, Rica, Didik Hermanto, dan Zainudin. "Efektivitas Penggunaan Aplikasi Quizizz Pada Matakuliah Matematika Sekolah Ditinjau Dari Motivasi Dan Hasil Belajar Mahasiswa." *Jurnal Cendekia : Jurnal Pendidikan Matematika* 5, no. 1 (2021): 347–356.
- Yeni, Fitri, dan Wahyu Kurniawati. "Efektivitas Penggunaan Aplikasi Quizizz untuk Penilaian Pembelajaran." *Primary: Jurnal Pendidikan Guru Sekolah Dasar* 11, no. 3 (2022).
- Zuhriyah, Siti, dan Bambang Widi Pratolo. "Exploring Students' Views in the Use of Quizizz as an Assessment Tool in English as a Foreign Language (EFL) Class." *Universal Journal of Educational Research* 8, no. 11 (2020): 5312–5317.