



The Effect of Quizizz-Assisted Gamification on Fourth-Grade Students' Learning Outcomes in Indonesian Language Subject: A Pretest-Posttest Study

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ABSTRACT

Despite the growing body of research on gamification in elementary education, empirical evidence specifically examining its effectiveness in Indonesian language instruction within the context of the Merdeka Curriculum remains limited. This study aimed to examine the effect of Quizizz-assisted gamification on fourth-grade students' learning outcomes in the Indonesian language subject at SDN 19 Tanjung Tengah, West Kalimantan, Indonesia. A quantitative pre-experimental method with a one-group pretest-posttest design was employed, involving 27 students selected through total sampling. The intervention consisted of six instructional sessions using Quizizz-based gamification activities incorporating points, leaderboards, badges, time limits, and immediate feedback. Data were collected using a validated 20-item multiple-choice test (Aiken's $V > 0.80$, Cronbach's $\alpha = 0.709$) measuring reading comprehension, vocabulary understanding, and language rule application. The findings revealed a significant improvement in learning outcomes, with mean scores increasing from 66.96 (SD = 6.636) in the pretest to 85.04 (SD = 5.080) in the posttest. The paired-sample t-test indicated a statistically significant difference, $t(26) = 3.05$, $p < .001$, with a very large effect size (Cohen's $d = 3.00$). Beyond academic achievement, Quizizz enhanced students' motivation, engagement, and active participation. These findings suggest that Quizizz-assisted gamification is a promising instructional strategy for improving elementary Indonesian language learning outcomes. However, the absence of a control group precludes causal attribution, and future research employing randomized controlled trials with larger, more diverse samples is recommended to establish causality and examine long-term knowledge retention.

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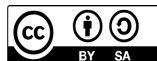
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INTRODUCTION

The rapid development of digital technology in the Fourth Industrial Revolution has posed significant challenges to Indonesian language instruction at the elementary level, particularly in fostering students' engagement, comprehension, and active

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participation. Traditional teacher-centered approaches are increasingly inadequate for digitally oriented learners, creating a growing need for innovative, technology-based strategies such as gamification. Previous studies have demonstrated that gamification can enhance students' motivation, engagement, and academic achievement (Akram et al., 2022; Ridhwan, 2023; Diana et al., 2024).

The Merdeka Curriculum, implemented in Indonesia, provides greater flexibility for teachers and students, emphasizing character development, competencies, and project-based learning (Harjun et al., 2026). However, in practice, many teachers still face challenges in integrating Information and Communication Technology (ICT) into teaching and learning activities, despite the wide availability of free educational platforms that can enhance student engagement and participation (Fitriyanti et al., 2023). The integration of gamified digital media offers strong potential to create more engaging, interactive, and outcome-oriented learning experiences (Fajri et al., 2024), as learning media function as essential tools that facilitate clearer, more structured, and engaging instruction (Azizah et al., 2025).

Classroom observations and interviews at SDN 19 Tanjung Tengah revealed that while Grade IV instruction generally follows the Merdeka Curriculum, several challenges persist. Approximately 60% of students demonstrated low concentration and off-task behavior, and the class is characterized by heterogeneous learner profiles requiring adaptive strategies. The school is equipped with adequate facilities such as Chromebooks, laptops, and projectors, which have the potential to support technology-based learning (Pardede et al., 2025).

Gamification refers to the integration of game-based elements into teaching and learning to create more interactive and meaningful experiences. Key elements include points, badges, leaderboards, challenges, feedback, and storytelling, which collectively enhance students' motivation and engagement (Hanifah et al., 2025). When implemented effectively, gamification supports self-regulated learning and transforms classrooms into interactive, student-centered environments (Safitri et al., 2025). Similar positive effects have also been reported in elementary science learning contexts (Aqtolina & Rohmani, 2025). According to Self-Determination Theory (SDT), intrinsic motivation is fostered when three basic psychological needs: autonomy, competence, and relatedness are

satisfied. In gamification contexts, elements such as points and challenges can support these needs, though excessive emphasis on extrinsic rewards may undermine intrinsic motivation (Min et al., 2025).

Quizizz is a game-based learning platform that enhances classroom interaction through points, leaderboards, and immediate feedback. However, its effectiveness depends on alignment with learning objectives and students' cognitive needs; without proper alignment, the platform may encourage superficial participation focused on speed rather than deep understanding (Salam et al., 2022). The platform's impact is largely influenced by the quality of question design, feedback relevance, and the teacher's ability to align its use with pedagogical objectives. Thus, Quizizz should be viewed as a pedagogical instrument whose effectiveness is shaped by instructional strategies, learner characteristics, and educational context (Rokhaniyah et al., 2025). The platform's features encourage students to become more motivated, making the learning process more active and engaging (Amalia & Ruja, 2025). This finding is consistent with research in elementary mathematics, where Quizizz similarly enhanced student interest and engagement (Azzahra & Pramudiani, 2022). In higher education contexts, Ridhwan (2023) similarly reported that Quizizz transforms assessment practices by increasing student participation and motivation in English language instruction.

Indonesian language instruction aims to equip students with the ability to use the language appropriately and accurately, cultivating pride in the national language while developing cognitive, emotional, and social competencies (Ali, 2020). Learning outcomes encompass not only numerical scores but also improvements in attitudes, knowledge, skills, and higher-order thinking abilities (Rizki et al., 2022; Lubis et al., 2023). The use of digital media such as Quizizz has been shown to exert a significant positive effect on learning outcomes while increasing interest and motivation (Listiyani & Yamin 2023). Empirical studies indicate that gamified learning platforms enhance motivation and learning outcomes through points, leaderboards, and immediate feedback, consistent with SDT (Kulkarni et al., 2022).

From a critical perspective, gamification may encourage surface learning when elements such as points and badges primarily promote extrinsic motivation and short-term achievement. To mitigate this limitation, the present study employed an assessment

instrument designed to measure higher-order thinking skills based on Bloom's Taxonomy, evaluating students' abilities to analyze, interpret, and apply language concepts rather than merely recall information (Arlinwibowo et al., 2023).

This study aims to examine the effect of Quizizz-assisted gamification on students' learning outcomes in Indonesian language instruction. Unlike previous studies that have predominantly focused on Mathematics and Science (Syuhada et al., 2023; Salam et al., 2022; Pardede et al., 2025), research on gamification in Indonesian language learning remains limited, highlighting the novelty and significance of the present study. Practically, this study provides an evidence-based strategy for teachers to enhance engagement and learning outcomes through Quizizz integration. Theoretically, it contributes to the existing literature by extending gamification research into technology-enhanced language learning. This study is limited to fourth-grade students at a single elementary school, focusing on reading comprehension skills during a four-week intervention, and employs a quantitative pre-experimental research design.

METHOD

This study employed a quantitative pre-experimental method using a one-group pretest-posttest design to measure students' learning outcomes before and after the intervention. This design enabled the identification of measurable changes in students' achievement following the treatment; however, the absence of a control group should be acknowledged as a methodological limitation, as it restricts the ability to attribute observed improvements exclusively to the gamification intervention.

The population of this study comprised all fourth-grade students at SDN 19 Tanjung Tengah, totaling 27 participants. Due to the relatively small population size, total sampling was employed, and all participants completed both the pretest and posttest without exclusion. The study was conducted during the odd semester of the 2024/2025 academic year.

The research procedure consisted of three stages. First, a pretest was administered to assess students' initial knowledge and learning outcomes in the Indonesian language. Second, the treatment was implemented through six instructional sessions using Quizizz-based gamification activities, incorporating elements such as points, leaderboards,

badges, time limits, immediate feedback, and engaging visual themes to enhance students' motivation and participation. During these sessions, students used digital devices to complete interactive quizzes and received immediate feedback on their performance. The study was conducted over four weeks, comprising a total of eight sessions (each lasting 2 × 35 minutes), with the pretest in the first session, six treatment sessions, and the posttest in the final session. Third, a posttest was administered to evaluate students' learning outcomes after the intervention and to determine any improvement compared to the pretest results (Zuhriyah & Julfa, 2026).

The test instrument consisted of 20 multiple-choice items designed to assess students' cognitive achievement based on the predetermined learning objectives in Indonesian language learning. Each item had four options with one correct answer and was scored dichotomously (1 for correct and 0 for incorrect), yielding a maximum score of 20. The test measured key competencies, including reading comprehension, identification of main ideas, contextual vocabulary understanding, and application of language rules. This format ensured an objective and standardized assessment of students' learning outcomes before and after the intervention. Content validity was established through expert judgment by two experts in educational assessment and Indonesian language education, with all items meeting the validity criterion (Aiken's $V > 0.80$). Reliability testing using Cronbach's Alpha indicated acceptable internal consistency ($\alpha = 0.709$).

Data were analyzed quantitatively using descriptive statistics (mean, median, standard deviation, minimum, and maximum) to provide a preliminary overview of the data distribution. Prior to hypothesis testing, the Shapiro-Wilk test was conducted to assess data normality. Subsequently, a paired-sample t-test was employed to examine the significance of differences between pretest and posttest scores. To assess the magnitude of the effect, Cohen's d for paired samples was calculated by dividing the mean difference by the standard deviation of the differences. All statistical analyses were performed using IBM SPSS Statistics version 21 (Nandiyanto & Hofifah, 2024).

This study was conducted in accordance with established research ethics principles. Prior to its implementation, the researcher obtained formal approval from the students, their parents or guardians, and the school authority of SDN 19 Tanjung

Tengang. One consent form from a student and their parent or guardian is included to fulfill the administrative requirements in accordance with applicable research regulations.

RESULT AND DISCUSSION

Results

A descriptive statistical analysis was conducted to examine students' learning outcomes following the implementation of Quizizz-assisted gamification. This analysis provides a preliminary overview of the data distribution and differences between pretest and posttest scores without inferring causality. The statistical measures employed include the number of observations (N), mean, median, standard deviation, as well as minimum and maximum values, representing both central tendency and data dispersion. The data were analyzed using IBM SPSS Statistics version 21 and presented in tabular form to facilitate comparison. Nevertheless, the findings should be interpreted with caution, as the one-group pretest-posttest design does not adequately control for external variables that may influence the results. The descriptive statistics are presented in Table 1.

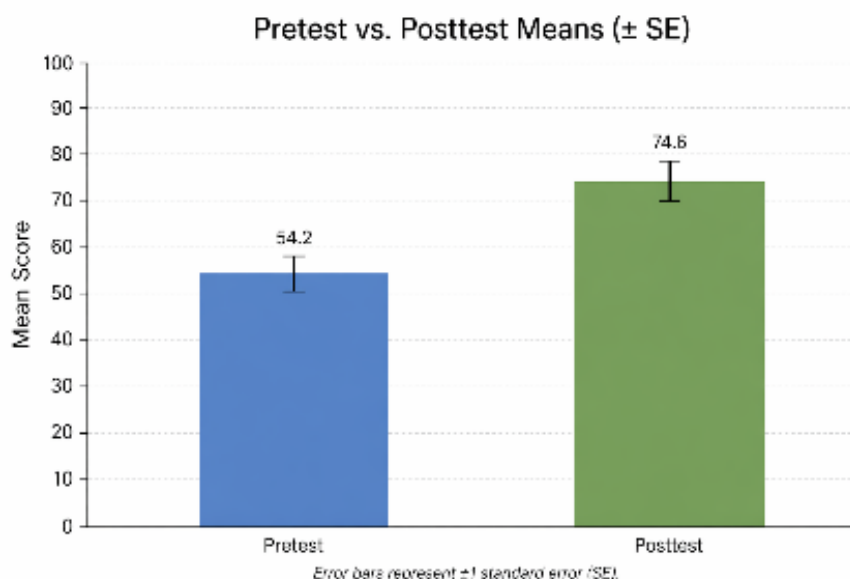
Table 1
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error
Pretest Scores	27	55	80	66.96	1.277
Posttest Scores	27	75	95	85.04	.978
Valid N (listwise)	27				

The results in Table 1 indicate an increase in the mean score from 66.96 on the pretest to 85.04 on the posttest. This improvement is further reflected in the higher minimum and maximum scores, as well as a reduction in the standard deviation, suggesting a more homogeneous distribution of student achievement. These findings point to a positive effect of the intervention. However, this interpretation remains preliminary, as it is based solely on descriptive statistics without the application of inferential significance tests. Moreover, the absence of a control group raises the

possibility of confounding variables, such as maturation and testing effects. Therefore, inferential statistical analysis is required to determine whether the observed improvement is statistically significant and can be confidently attributed to the intervention. Additionally, out of 27 students, 20 (74.07%) showed improvement in their scores, 5 (18.52%) demonstrated no change, and 2 (7.41%) experienced a decline. The following section presents a simple bar chart illustrating these results.

Figure 2
Pretest and Posttest Diagram



The results of the reliability test calculation are presented as follows.

Table 2
Reliability Test

Reliability Statistics	
Cronbach's Alpha	N of Items
.709	20

As presented in the table above, the Cronbach's Alpha coefficient of 0.709 exceeds the commonly accepted threshold of 0.70, indicating that the instrument demonstrates an acceptable level of internal consistency. Therefore, the data collected can be considered sufficiently reliable for subsequent statistical analysis. However, reliability alone does not guarantee that the data meet the assumptions required for parametric testing. To address this, a normality test was conducted using the Shapiro-Wilk method in SPSS

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Statistics 21 with a significance level of 0.05. This procedure aimed to determine whether the data were normally distributed and to ensure the suitability of further inferential statistical analyses. The results of the normality test are presented as follows.

Table 3
Shapiro-Wilk normality test

	Statistic	Shapiro-Wilk	
		df	Sig.
Pretest	.158	27	.172
Posttest	.170	27	.053

Based on the results of the normality test, both the pretest and posttest datasets yielded significance values (Sig.) greater than 0.05. This indicates that the assumption of normality was satisfied, suggesting that the score distributions for both measurements did not significantly deviate from a normal distribution. However, although the posttest significance value ($p = .053$) meets the normality assumption, it approaches the threshold, suggesting that the distribution is nearly non-normal. Consequently, the data were considered appropriate for further parametric analysis. The Shapiro-Wilk test conducted on the difference scores (posttest – pretest) indicated that the data were normally distributed, $W(27) = 0.944$, $*p* = 0.153$. The results of the hypothesis test are as follows:

Table 4
Hypothesis Test Using Paired Sample t-test

	Paired Differences					t	df	sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% CI of the Difference				
				Lower	Upper			
Pair 1 Pretest – Posttest	21.15	7.04341	1.35549	-23.93689	-18.36311	3.05	26	.000

The results of the paired samples t-test indicate a statistically significant difference between pretest and posttest scores. The mean difference of 21.15 suggests that posttest scores were higher than pretest scores, which is further supported by the 95% confidence interval ranging from -23.93689 to -18.36311, entirely in the negative direction. The

standard deviation of 7.04341 reflects a moderate level of variability in the difference scores, while the standard error mean of 1.35549 indicates a relatively low estimation error. Furthermore, the obtained t-value of 3.05 with 26 degrees of freedom and a significance level of 0.000 ($p < 0.05$) confirms that the difference is statistically significant. Therefore, it can be concluded that the treatment had a significant effect on improving students' learning outcomes.

To assess the magnitude of the effect, Cohen's d for paired samples was calculated by dividing the mean difference by the standard deviation of the differences ($d = 21.15 / 7.04341 = 3.00$). The obtained Cohen's d value of 3.00 is categorized as a very large effect size, indicating that the treatment had a very strong impact on improving students' learning outcomes. Table 5 presents the descriptive statistics of students' learning outcomes before and after the intervention.

Table 5
Students' Learning Outcomes

Information	Average Value
Pretest	66.96
Posttest	85.04
Improvement	18.08

As shown in Table 5, the increase in students' mean scores from pretest (66.96) to posttest (85.04) indicates a positive effect of Quizizz on learning outcomes. In practical terms, the observed improvement of 18.08 points is not only statistically significant but also highly meaningful in an educational context. This finding suggests that Quizizz may have enhanced students' engagement and understanding of the material.

Based on the interview data, several challenges were identified in implementing Quizizz in a blended learning setting. Technical issues, such as unstable internet connections and limited access to digital devices, occasionally disrupted student participation. In addition, some students did not demonstrate significant improvement in their scores, indicating variations in engagement and learning readiness. Teachers also experienced difficulties in managing instructional time and ensuring smooth implementation for all students. These findings suggest that the effective use of Quizizz requires adequate infrastructure as well as careful instructional planning.

Discussion

The findings of this study demonstrate that Quizizz-assisted gamification positively influenced fourth-grade students' learning outcomes in Indonesian language instruction. The statistical significance ($p < .001$) and very large effect size (Cohen's $d = 3.00$) indicate that the observed improvement is not merely a function of sample size but represents a substantively meaningful educational gain. This section interprets these results in relation to theoretical frameworks, previous empirical studies, and the practical constraints of the research design.

The finding that students' mean scores increased from 66.96 (pretest) to 85.04 (posttest) aligns with the core tenets of Self-Determination Theory (SDT), which posits that intrinsic motivation is fostered when three basic psychological needs, autonomy, competence, and relatedness are satisfied (Min et al., 2025). In the context of Quizizz, autonomy is supported through self-paced learning, where students can progress through questions according to their individual speed and comfort level. Competence is reinforced through immediate feedback and scoring mechanisms that allow students to recognize their achievements and identify areas for improvement. Relatedness is cultivated through interactive and competitive features, such as leaderboards and real-time performance comparisons, which create a sense of social presence and healthy peer competition. Consequently, the improvement in learning outcomes observed in this study can be reasonably attributed to the satisfaction of these three psychological needs, which collectively enhanced students' intrinsic motivation and academic engagement.

The positive effect of Quizizz on learning outcomes is consistent with previous empirical studies. For instance, Diana et al. (2024) found that gamification enhances students' motivation, engagement, and academic achievement in digital learning environments. Similarly, Akram et al. (2022) reported that technology integration exerts a positive influence on academic achievement, corroborating the present findings. More specifically, Agustina et al. (2024) demonstrated that gamification-based learning using digital platforms can significantly improve student learning outcomes, a result that directly supports the present study's observation that Quizizz may have enhanced students' engagement and understanding of the material. However, whereas Agustina et al. focused on the Gimkit platform, the present study extends the evidence base by

specifically examining Quizizz in the context of elementary Indonesian language instruction.

The practical significance of the findings is further underscored by the effect size analysis. A Cohen's d value of 3.00 is exceptionally large compared to typical effect sizes in educational interventions (where $d = 0.20$ is considered small, 0.50 medium, and 0.80 large). This suggests that the Quizizz-assisted gamification intervention not only produced statistically significant improvements but also yielded educationally meaningful gains that would be perceptible in classroom practice. The improvement of 18.08 points from pretest to posttest represents a substantial increase in students' mastery of Indonesian language competencies, including reading comprehension, identification of main ideas, contextual vocabulary understanding, and application of language rules.

Nevertheless, the study also identified several implementation challenges consistent with those reported in prior research. Based on interview data, technical issues such as unstable internet connections and limited access to digital devices occasionally disrupted student participation. Arnov et al. (2025) similarly found that the effective use of Quizizz requires adequate infrastructure as well as careful instructional planning. In addition, some students did not demonstrate significant improvement in their scores, indicating variations in engagement and learning readiness. This finding resonates with Rokhanyah et al. (2025), who noted that the platform's impact on learning outcomes is largely influenced by the quality of question design, the relevance of the feedback provided, and the teacher's ability to align its use with broader pedagogical objectives. Therefore, the mere presence of technology does not guarantee improved outcomes; rather, success depends on thoughtful integration and responsive instructional strategies.

From the perspective of the Merdeka Curriculum, the use of Quizizz aligns with the framework's emphasis on flexible, student-centered, and technology-enhanced learning experiences (Harjun et al., 2026). The platform's ability to provide immediate feedback and individualized pacing supports the curriculum's goal of accommodating diverse student needs and developmental stages. This aligns with earlier findings that Quizizz effectively supports online formative assessment and reading competency development (Puspitayani et al., 2020). However, as noted by Fitriyanti et al. (2023), many teachers are still not sufficiently proficient in integrating Information and

Communication Technology (ICT) into teaching and learning activities, a challenge that was also reflected in the present study's finding that teachers experienced difficulties in managing instructional time and ensuring smooth implementation for all students.

The interview data further revealed that Quizizz was perceived as an engaging learning tool that introduced a novel classroom atmosphere and supported students' understanding of the material. This positive perception is consistent with the findings of Amalia and Ruja (2025), who reported that Quizizz encourages students to become more motivated in completing each question, Ridhwan (2023) similarly noted that Quizizz transforms the assessment landscape by bridging the gap between student apprehension and active participation, thereby making the learning process more active, interactive, and engaging. However, it is important to acknowledge that these positive perceptions may be partially influenced by the novelty effect, students' initial enthusiasm for technology-based learning. As noted by Sasmita et al. (2025), the long-term impact of technology-based gamification on students' learning retention and higher-order thinking skills requires further investigation, as short-term performance gains may not necessarily indicate sustained deep learning. Therefore, while the present study demonstrates immediate improvements, future research should examine whether such benefits can be maintained over extended periods.

A critical methodological consideration is the study's use of a one-group pretest-posttest design without a control group. This design, while practical for initial investigations in naturalistic classroom settings, does not adequately control for confounding variables such as maturation (students naturally improving over time), testing effects (familiarity with the test format), or history (external events that may have influenced learning). Consequently, although the observed improvements are statistically significant and practically meaningful, causal attribution of these gains solely to the Quizizz intervention must be made with caution. Future research employing randomized controlled trials or quasi-experimental designs with control groups is necessary to establish more definitive causal evidence (Nurhayati et al., 2025).

Despite these limitations, the study makes several important contributions. Theoretically, it extends gamification research into the domain of Indonesian language instruction, which has received less attention compared to subjects such as Mathematics

and Science (Syuhada et al., 2023; Salam et al., 2022; Pardede et al., 2025). Practically, it provides an evidence-based strategy for teachers to enhance student engagement and learning outcomes through Quizizz integration, while also offering insights for schools and curriculum developers seeking to incorporate digital learning tools that align with students' needs in the digital era (Listiyani & Yamin 2023). Furthermore, the study's assessment instrument was designed to measure higher-order thinking skills based on Bloom's Taxonomy, evaluating students' abilities to analyze, interpret, and apply language concepts in meaningful contexts rather than merely recall information (Arlinwibowo et al., 2023). This design choice mitigates the risk that gamification may encourage only surface-level learning focused on speed and competition.

In conclusion, the discussion confirms that Quizizz-assisted gamification has a positive and substantial effect on elementary students' Indonesian language learning outcomes, as evidenced by significant statistical results, a very large effect size, and consistency with theoretical predictions and prior empirical research. However, the effectiveness of this approach depends critically on adequate technological infrastructure, thoughtful instructional design, and teacher facilitation. The challenges identified in this study, technical issues, student engagement variations, and time management difficulties highlight the importance of systematic implementation planning. Future research should prioritize longitudinal designs, control groups, and diverse educational contexts to further validate and extend these findings.

CONCLUSION

This study examined the effect of Quizizz-assisted gamification on fourth-grade students' learning outcomes in Indonesian language instruction. The findings demonstrate a statistically significant improvement in student performance, with mean scores increasing from 66.96 (pretest) to 85.04 (posttest). The paired-sample t-test revealed a significant difference between pretest and posttest scores ($p < .05$), and the effect size (Cohen's $d = 3.00$) indicates a very large educational impact. Beyond academic achievement, the intervention enhanced students' motivation, engagement, and active participation, facilitated by gamification features such as points, leaderboards, and immediate feedback. These results suggest that Quizizz-based gamification can foster a

more interactive, student-centered learning environment conducive to improved language learning outcomes. Nevertheless, these findings must be interpreted in light of the study's primary limitation: the use of a one-group pretest-posttest design without a control group, which precludes causal attribution of the observed gains solely to the intervention.

Based on these findings and limitations, several recommendations are proposed. Practically, teachers are encouraged to integrate Quizizz as a gamification-based learning tool to enhance student engagement and academic performance, while schools should ensure adequate technological infrastructure such as devices and internet access to support consistent implementation. Theoretically, the findings contribute to the growing literature on gamification in primary education by highlighting Quizizz's potential as an interactive instructional medium; future theoretical developments should consider how gamification mechanics such as real-time feedback and competition interact with elementary students' language learning processes. For future research, scholars are advised to employ more rigorous experimental designs, preferably randomized controlled trials, to establish causality. This includes replicating the study with larger and more diverse samples across multiple schools, including control groups to compare Quizizz-assisted instruction with traditional methods, and examining additional outcome variables such as learning motivation, interest, and long-term knowledge retention. Although the current findings are contextually limited to a single school, they indicate the potential effectiveness of Quizizz-assisted gamification in similar elementary settings; however, broader generalizability requires replication across varied educational contexts, grade levels, and linguistic subjects.

REFERENCES

- Agustina, T. H., Rienovita, E., & Emilzoli, M. (2024). Pembelajaran berbasis gamifikasi: Pemanfaatan platform Gimkit untuk meningkatkan hasil belajar siswa. *Jurnal Pendidikan Pembelajaran Indonesia*, 4(4), 1475-1484. <https://doi.org/10.53299/jppi.v4i4.766>
- Akram, H., Abdelrady, A. H., Al-Adwan, A. S., & Ramzan, M. (2022). Teachers' perceptions of technology integration in teaching-learning practices: A systematic review. *Frontiers in Psychology*, 13, 1-9. <https://doi.org/10.3389/fpsyg.2022.920317>
- Ali, M. (2020). Pembelajaran bahasa Indonesia dan sastra (Basastra) di sekolah dasar. *Pernik: Jurnal Pendidikan Anak Usia Dini*, 3(1), 35-44. <https://doi.org/10.31851/pernik.v3i2.4839>

- Amalia, A. N., & Ruja, I. N. (2025). Meningkatkan semangat belajar dan motivasi siswa melalui platform gamifikasi Quizizz dan refleksi pembelajaran digital berbasis Google Form. *Jurnal Pengabdian Masyarakat dan Riset Pendidikan*, 4(2), 9174-9182. <https://doi.org/10.31004/jerkin.v4i2.3122>
- Aqtolina, A., & Rohmani, R. (2025). Media analysis of the Quizizz application in elementary school science learning: A systematic literature review. *Indonesian Journal of Educational Research and Review*, 8(1), 55-69. <https://doi.org/10.23887/ijerr.v8i1.86468>
- Arlinwibowo, J., Ishartono, N., Linguistika, Y., Purwoko, D., & Suprpto, S. (2023). Gamification in STEM domain subjects: A prospective method to strengthen teaching and learning. *Jurnal Pendidikan IPA Indonesia*, 12(4), 564-574. <https://doi.org/10.15294/jpii.v12i4.48388>
- Arnov, Y., Sukardi, S., Gitman, G., & Irfan, D. (2025). The effect of using Quizizz as a quizzing platform on motivation and learning outcomes of students in informatics subjects. *Jurnal Penelitian Pendidikan IPA*, 11(9), 191-196. <https://doi.org/10.29303/jppipa.v11i9.12237>
- Azizah, F. A., Nawir, M., & Nasir, N. (2025). Pengaruh media Genially berbasis gamifikasi terhadap hasil belajar kognitif siswa ilmu pengetahuan alam SDN 170 Rumpia Kabupaten Wajo. *JagoMIPA: Jurnal Pendidikan Matematika dan IPA*, 5(2), 428-438. <https://doi.org/10.53299/jagomipa.v5i2.1544>
- Azzahra, M. D., & Pramudiani, P. (2022). Pengaruh Quizizz sebagai media interaktif terhadap minat belajar siswa pada pelajaran matematika kelas V di sekolah dasar. *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 6(3), 3203-3213. <https://doi.org/10.31004/cendekia.v6i3.1604>
- Diana, A., Azani, M. Z., Mahmudulhassan, M. (2024). The concept and context of Islamic education learning in the digital era: Relevance and integrative studies. *Profetika: Jurnal Studi Islam*, 25(1), 33-44. <https://doi.org/10.23917/profetika.v25i01.4239>
- Fajri, N., Sriyati, S., & Rochintaniawati, D. (2024). Global research trends of digital learning media in science education: A bibliometric analysis. *Jurnal Penelitian Pendidikan IPA*, 10(1), 1-11. <https://doi.org/10.29303/jppipa.v10i1.6248>
- Fitriyanti, N., Bahri, B. S., & Kristanto, A. (2023). Comics as instructional media in education journals across Indonesia: A systematic literature review. *Jurnal Teknologi Pendidikan*, 8(1), 84-93. <https://doi.org/10.33394/jtp.v8i1.6059>
- Hanifah, H., Suastika, I. N., & Sanjaya, D. B. (2025). A systematic review of gamification-based learning resources in civic education: Enhancing student engagement and civic competence. *Jurnal Profesi Pendidikan*, 4(1), 115-131. <https://doi.org/10.22460/jpp.v4i1.27520>
- Harjun, H., Jumatin, J., & Hubaib, I. M. (2026). Kurikulum Merdeka pada proses pembelajaran di sekolah. *Jurnal Ilmiah Multidisiplin*, 2(3), 3785-3793. <https://doi.org/10.63822/jcw86r43>

- Kulkarni, P., Gokhale P., Satish, Y., Tigadi, B. (2022). An empirical study on the impact of learning theory on gamification-based training programs. *Organization Management Journal*, 19(5), 170-188. <https://doi.org/10.1108/OMJ-04-2021-1232>
- Listiyani, I., & Yamin, M, N. (2023). Pengaruh gamifikasi Quizizz dan keaktifan belajar terhadap hasil belajar pendidikan agama Islam (PAI) SD Muhammadiyah Mlangi tahun pelajaran 2022/2023. *G-Couns: Jurnal Bimbingan dan Konseling*, 7(3), 773-786. <https://doi.org/10.31316/gcouns.v7i03.5029>
- Lubis, L, H., Febriani, B., Yana, R. F., Azhar, A., & Darajat, M. (2023). The use of learning media and its effect on improving the quality of student learning outcomes. *International Journal of Education, Social Studies, and Management*, 3(2), 7-14. <https://doi.org/10.52121/ijessm.v3i2.148>
- Min, S., Atan, N. A., & Habibi, A. (2025). Gamification with self-determination theory to foster intercultural communicative competence and intrinsic motivation. *International Journal of Evaluation and Research in Education*, 14(3), 1985-1994. <https://doi.org/10.11591/ijere.v14i3.29858>
- Nandiyanto, A. B. D., & Hofifah, S. N. (2024). How to conduct paired t-test using SPSS: Comprehension in adsorption with bibliometric. *International Journal of Evaluation and Research in Education*, 13(1), 151-158. <https://doi.org/10.11591/ijere.v13i1.27541>
- Nurhayati, A., Nurparid, A. M., Nurafifah, T. S., Nurhayati, R., & Faisal, M. G. (2025). Pelatihan pemanfaatan Gemini AI dan Quizizz dalam penyusunan perangkat dan evaluasi pembelajaran: Panduan praktis untuk guru di gugus 2 Citalem. *Berdaya: Jurnal Pendidikan dan Pengabdian Kepada Masyarakat*, 7(1), 133-144. <https://doi.org/10.36407/berdaya.v7i1.1494>
- Pardede, R. B., Siregar, W. M., Gandamana, A., Faisal, F., & Sirait, A. P. (2025). Pengaruh gamifikasi melalui Quizizz terhadap hasil belajar pendidikan Pancasila kelas V SDN 175820 Batu Nabolon T.A. 2024/2025. *Jurnal Ilmiah Pendidikan Dasar*, 5(4), 3763-3771. <https://doi.org/10.37081/jipdas.v5i4.3187>
- Puspitayani, D. M. A., Putra, I. N. A. J., & Santosa, M. H. (2020). Developing online formative assessment using Quizizz for assessing reading competency of tenth-grade students in Buleleng Regency. *Jurnal Ilmiah Pendidikan dan Pembelajaran*, 4(1), 36-47. <https://doi.org/10.23887/jipp.v4i1.24169>
- Ridhwan, M. (2023). Transformation of assessment in teaching English at higher education: Leveraging Quizizz to enhance student participation and motivation. *Edukasi*, 11(1), 44-51. <https://doi.org/10.61672/judek.v11i1.2603>
- Rizki, E. N., Haryanto, H., & Kurniawati, W. (2022). The use of Quizizz applications and its impact on higher order thinking skills of elementary school teacher education students in elementary science learning. *International Journal of Elementary Education*, 6(2), 282-289. <https://doi.org/10.23887/ijee.v6i2.47686>
- Rokhaniyah, H., Ardiyanti, D., & Hidayat, N. (2025). Quizizz-online gamification on learning engagement and outcomes in English lecturing process. *International*

- Journal of Evaluation and Research in Education*, 14(2), 1408-1416.
<https://doi.org/10.11591/ijere.v14i2.29992>
- Safitri, N. E., Budiono, B., Subali, B., & Widiyatmoko, A. (2025). Gamification approaches to enhance critical thinking skills in elementary education: A literature review (2020–2025). *Jurnal Penelitian Ilmu Pendidikan*, 18(1), 13-22.
<https://doi.org/10.21831/jpip.v17i1.91205>
- Salam, M. Y., Mudinillah, A., & Agustina, A. (2022). Aplikasi Quizizz berpengaruh atau tidak untuk meningkatkan motivasi belajar dan hasil belajar. *Jurnal Basicedu*, 6(2), 2738-2746. <https://doi.org/10.31004/basicedu.v6i2.2467>
- Sasmita, A., Iskarni, P., & Hermon, D. (2025). The use of Quizizz-based gamification to enhance student satisfaction in learning. *Jurnal Penelitian Pendidikan IPA*, 11(12), 579-585. <https://doi.org/10.29303/jppipa.v11i12.13400>
- Syuhada, H., Hidayat, S., Mulyati, S., & Persada, A. G. (2023). Pengembangan gamifikasi pada pelajaran matematika SD dengan metode ADDIE untuk meningkatkan minat belajar siswa. *Rabit: Jurnal Teknologi dan Sistem Informasi Univrab*, 9(1), 1-14. <https://doi.org/10.36341/rabit.v9i1.466>
- Zuhriyah, A., & Julfa, S. (2026). Improving environmental literacy through problem-based learning e-modules: A pre-experimental study in Islamic senior high schools Bekasi, Indonesia. *Asatiza: Jurnal Pendidikan*, 7(1), 1-15.
<https://doi.org/10.46963/asatiza.v7i1.2993>