



Assesing the Impact of Gamified Learning on Vocabulary Retention in English Among Students of SMP Negeri 2 Lotu

Noniat Zega^{1*}, Trisman Harefa², Riswan Zega³, Yasminar Amaerita Telaumbanua⁴

¹²³⁴Prodi Pendidikan Bahasa Inggris, Universitas Nias, Sumatera Utara, Indonesia

*E-mail: noniatzega2211@gmail.com

ABSTRACT

This study aimed to determine the impact of Quizizz-based gamified learning on English vocabulary retention among eighth-grade students at SMP Negeri 2 Lotu and to compare students' vocabulary retention with those taught using conventional methods. The research was conducted at SMP Negeri 2 Lotu, North Nias Regency, during the 2025/2026 academic year. This study employed a quantitative approach using a quasi-experimental design with a non-equivalent control group. The population consisted of all eighth-grade students, while the sample comprised 44 students from two classes selected through cluster sampling: 22 students in the experimental group and 22 students in the control group. Data were collected using a 25-item multiple-choice vocabulary retention test administered as both pre-test and post-test. The data were analyzed using descriptive statistics, the Shapiro-Wilk normality test, Levene's homogeneity test, paired-samples t-test, and independent-samples t-test with IBM SPSS Statistics version 26. The findings revealed that the experimental group showed a substantial improvement in vocabulary retention, with the mean score increasing from 43.09 in the pre-test to 84.00 in the post-test. The paired-samples t-test indicated a significant improvement ($p = 0.000 < 0.05$). Furthermore, the independent-samples t-test demonstrated a significant difference between the experimental and control groups' post-test scores ($p = 0.000 < 0.05$). These findings indicate that Quizizz-based gamified learning is more effective than conventional instruction in improving students' English vocabulary retention.

Keywords: assesing the impact, gamified learning, vocabulary retention, English learning

Evaluasi Dampak Pembelajaran Gamifikasi terhadap Retensi Kosakata Bahasa Inggris di Kalangan Siswa SMP Negeri 2 Lotu

ABSTRAK

Penelitian ini bertujuan untuk mengetahui pengaruh pembelajaran berbasis gamifikasi menggunakan Quizizz terhadap retensi kosakata bahasa Inggris siswa kelas VIII SMP Negeri 2 Lotu serta membandingkan retensi kosakata siswa yang diajar menggunakan Quizizz dengan siswa yang diajar menggunakan metode konvensional. Penelitian dilaksanakan di SMP Negeri 2 Lotu, Kabupaten Nias Utara, pada tahun ajaran 2025/2026. Penelitian ini menggunakan pendekatan kuantitatif dengan desain kuasi eksperimen tipe *non-equivalent control group*. Populasi penelitian adalah seluruh siswa kelas VIII, sedangkan sampel terdiri atas 44 siswa yang dipilih menggunakan teknik *cluster sampling*, yaitu 22 siswa pada kelas eksperimen dan 22 siswa pada kelas kontrol. Data dikumpulkan menggunakan tes retensi kosakata berbentuk 25 soal pilihan ganda yang diberikan sebagai pre-test dan post-test. Analisis data dilakukan menggunakan statistik deskriptif, uji normalitas Shapiro-Wilk, uji homogenitas Levene, uji *paired-samples t-test*, dan uji *independent-samples t-test* dengan bantuan IBM SPSS Statistics versi 26. Hasil penelitian menunjukkan bahwa kelompok eksperimen mengalami peningkatan retensi kosakata yang signifikan, dengan nilai rata-rata meningkat dari 43,09 pada pre-test menjadi 84,00 pada post-test. Hasil *paired-samples t-test* menunjukkan peningkatan yang signifikan ($p = 0,000 < 0,05$). Selain itu, hasil *independent-samples t-test* menunjukkan adanya perbedaan yang signifikan antara nilai post-test kelompok eksperimen dan kelompok kontrol ($p = 0,000 < 0,05$). Temuan ini menunjukkan bahwa pembelajaran berbasis gamifikasi menggunakan Quizizz lebih efektif dibandingkan metode konvensional dalam meningkatkan retensi kosakata bahasa Inggris siswa.

Kata kunci: evaluasi dampak pembelajaran, gamifikasi retensi kosakata, ahasa Inggeis

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INTRODUCTION

English has become an international language that plays a vital role in communication, education, technology, and global interaction. In Indonesia, English is taught as a required subject in junior high school to equip students with the ability to communicate effectively, both orally and in writing. The implementation of the Merdeka Curriculum emphasizes student-centered, meaningful, and flexible learning, which encourages students to develop competencies in line with their learning needs and contexts (BSKAP, 2022). In English language education, students are expected to develop skills in listening, speaking, reading, watching, writing, and presenting—all of which require adequate vocabulary mastery as a fundamental component of language learning. Therefore, vocabulary plays a central role in enabling students to understand information, express ideas, and participate effectively in communication.

Vocabulary mastery is not limited to learning the meanings of words but also involves the ability to retain and recall vocabulary over time. Vocabulary retention enables learners to store, retrieve, and apply previously learned words accurately in various communicative situations. According to Wilkins (as cited in Yildiz, 2023), “without vocabulary, nothing can be conveyed,” highlighting the essential role of vocabulary in language learning. Likewise, Cameron (Sari, 2022) emphasizes that meaningful repetition and contextual use are important factors supporting long-term vocabulary retention. Consequently, English teachers need to employ instructional strategies that facilitate not only vocabulary acquisition but also vocabulary retention.

Despite the expectations of the Kurikulum Merdeka, vocabulary learning in many Indonesian classrooms remains dominated by conventional approaches, including memorization, translation, drilling, and teacher-centered instruction. Although these methods may help students remember vocabulary temporarily, they often fail to foster meaningful learning experiences that

strengthen long-term retention. This situation creates a discrepancy between curriculum expectations—which encourage innovative and student-centered learning—and actual classroom practices that continue to rely on traditional instructional methods.

The same phenomenon was observed at SMP Negeri 2 Lotu. Preliminary classroom observations revealed that many eighth-grade students struggled to recall newly learned English vocabulary after classroom instruction. Students frequently forgot vocabulary while completing reading comprehension exercises, writing assignments, or speaking activities. In addition, many students encountered difficulties in understanding and using adjectives appropriately, even though adjectives are essential for describing people, places, and objects, as well as for expressing opinions or feelings in meaningful communication. The problem was mainly caused by limited contextual practice, monotonous learning activities, and insufficient opportunities for students to use vocabulary in authentic communicative situations. As a result, students’ vocabulary retention remained relatively low.

One instructional approach that has attracted considerable attention in recent years is gamified learning. Gamified learning integrates game design elements such as points, badges, leaderboards, rewards, competition, and immediate feedback into educational activities to increase learner engagement and motivation. According to Deterding et al. (Jaiswal, 2024), gamification refers to the use of game design elements in non-game contexts to enhance user engagement and motivation. In the context of English language learning, gamification creates enjoyable learning experiences while simultaneously encouraging repeated practice and active recall—both of which are important factors contributing to vocabulary retention. Among various gamified learning platforms, Quizizz has become one of the most popular applications used in language classrooms. Quizizz provides interactive quizzes combined with instant feedback, rankings, rewards, and



repeated exposure to learning materials. These features encourage students to actively participate in classroom activities while repeatedly recalling previously learned vocabulary. Consequently, Quizizz is considered consistent with the principles of the Kurikulum Merdeka, which promotes technology-integrated, student-centered, and meaningful learning.

Based on the classroom conditions described above, this study examines whether gamified learning implemented through Quizizz can improve students' English vocabulary retention. Specifically, this research seeks to answer the following questions: (1) Does Quizizz-based gamified learning significantly affect the English vocabulary retention of eighth-grade students at SMP Negeri 2 Lotu? (2) Is there a significant difference in vocabulary retention between students taught through Quizizz-based gamified learning and those taught using conventional methods?

Accordingly, this study aims to determine the impact of Quizizz-based gamified learning on students' English vocabulary retention and to examine whether significant differences exist between students taught through gamified learning and those taught using conventional instruction. From a theoretical perspective, this study contributes to the growing body of literature on gamified learning and vocabulary retention in English language education, particularly within the context of the Kurikulum Merdeka. Practically, the findings are expected to provide English teachers with alternative technology-supported instructional strategies that promote meaningful vocabulary learning, help students improve long-term vocabulary retention, and provide schools with empirical evidence supporting the integration of gamified learning in rural educational contexts. Vocabulary retention refers to learners' ability to remember and retrieve previously learned vocabulary over time for meaningful communication. Harmer in Manda et al., (2022) explains that vocabulary knowledge involves not only recognizing word meanings but also being

able to recall and appropriately use words in different contexts. Similarly, (Fadhilah, 2022) argues that repeated exposure and active retrieval strengthen vocabulary retention and facilitate long-term memory. In addition, gamified learning refers to the application of game design elements in educational settings to increase learner motivation and engagement (Deterding et al., 2021). Through interactive features such as points, badges, leaderboards, rewards, and immediate feedback, gamified learning encourages students to participate actively in learning activities while reinforcing repeated practice that supports vocabulary retention.

Several previous studies have demonstrated the effectiveness of gamified learning in English language education. Amanda et al. (2023) reported that gamified instruction significantly improved students' vocabulary mastery and learning motivation. Nilma (2022) found that technology-supported learning activities increased students' engagement and vocabulary achievement during English lessons. Furthermore, (Abdul et al., 2024) concluded that innovative instructional strategies aligned with the Kurikulum Merdeka positively influenced students' learning outcomes and classroom participation. However, most previous studies focused primarily on vocabulary acquisition, motivation, or academic achievement, while relatively few investigated vocabulary retention, particularly among junior high school students in rural schools implementing the Kurikulum Merdeka. Therefore, this study aims to address this research gap by examining the impact of Quizizz-based gamified learning on English vocabulary retention among eighth-grade students at SMP Negeri 2 Lotu.

METHOD

This study employed a quantitative approach with a quasi-experimental research design involving a non-equivalent control group. Quantitative research is suitable for examining relationships between variables through numerical data and statistical analysis (Creswell & Creswell,

2018). A quasi-experimental design was chosen because the researcher could not randomly assign participants to the experimental and control groups, as class assignments had already been determined by the school. This study involved two entire eighth-grade classes at SMP Negeri 2 Lotu. Class VIII-A served as the experimental group and received instruction through game-based learning using Quizizz, while Class VIII-B served as the control group and was taught using conventional vocabulary teaching methods.

The research procedure consisted of several stages. First, the researchers developed and validated the research instruments through expert review and pilot testing with students who shared similar characteristics with the study participants. Second, both groups took a pretest to measure their initial vocabulary retention levels. Third, the experimental group participated in learning activities using gamified learning with Quizizz, while the control group studied the same vocabulary material through conventional teaching methods, including explanation, translation, and memorization. After the treatment was completed, both groups took a post-treatment test to measure their English vocabulary retention. Finally, the collected data was analyzed to determine whether gamification-based learning with Quizizz significantly affected students' vocabulary retention.

The research was conducted at SMP Negeri 2 Lotu during the 2025/2026 academic year. Data collection was carried out over approximately three months. The first stage included preparation, instrument validation, and pre-test administration. The second stage involved the implementation of the treatment in both groups. The final stage consisted of post-test administration, data analysis, interpretation of findings, and report preparation. The primary instrument used in this study was a vocabulary retention test administered as both a pre-test and a post-test. The instrument consisted of 25 multiple-choice items developed from English for Nusantara Grade VIII, Chapter 1

Celebrating Independence Day, specifically Unit 1 The Champion of Panjat Pinang and Unit 2 Going to a Parade. The test was designed to assess students' recognition, comprehension, and contextual use of English vocabulary related to the learning materials. The instrument was constructed in accordance with the learning outcomes of the Kurikulum Merdeka and evaluated students' ability to retain previously learned vocabulary. Before being administered in the main study, the instrument was reviewed by experts and piloted with 20 eighth-grade students from SMP Negeri 1 Lotu to establish its validity and reliability. Item validity was examined using the Pearson Product Moment correlation, while reliability was determined using Cronbach's Alpha. Only valid and reliable items were included in the final instrument.

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including the mean, minimum score, maximum score, and standard deviation, were used to describe students' vocabulary retention in both groups. Prior to hypothesis testing, the data were examined using the Shapiro-Wilk normality test and Levene's Test of Homogeneity to ensure that the assumptions for parametric analysis were satisfied. Since the data met these assumptions, inferential statistical analysis was performed using an independent-samples *t*-test to compare the post-test scores of the experimental and control groups. In addition, a paired-samples *t*-test was employed to compare the pre-test and post-test scores within the experimental group to determine the effectiveness of Quizizz-based gamified learning. Statistical significance was determined at the 0.05 significance level ($p < .05$). The results of these analyses were used to determine whether Quizizz-based gamified learning had a significant impact on the English vocabulary retention of eighth-grade students at SMP Negeri 2 Lotu.



RESULT

1. The Impact of Quizizz-Based Gamified Learning on Students' English Vocabulary Retention

To determine whether Quizizz-based gamified learning significantly affected students' English vocabulary retention, a paired-samples *t*-test was conducted using SPSS version 26. Before hypothesis testing, the data fulfilled the assumptions of normality and homogeneity. The Shapiro–Wilk test indicated that all pre-test and post-test scores in both groups were normally distributed ($p > .05$), while Levene's test confirmed homogeneous variances between the experimental and control groups ($p = .068 > .05$).

The results indicate a substantial increase in students' vocabulary retention after the treatment. The mean score improved from 43.09 in the pre-test to 84.00 in the post-test, representing an increase of 40.91 points.

To examine whether this improvement was statistically significant, a paired-samples *t*-test was performed. The paired-samples *t*-test revealed a statistically significant difference between the pre-test and post-test scores ($t = -12.178, p < .001$). Therefore, the first research question is answered by indicating that Quizizz-based gamified learning significantly improved the English vocabulary retention of eighth-grade students at SMP Negeri 2 Lotu.

2. The Difference in Vocabulary Retention Between Students Taught Through Quizizz-Based Gamified Learning and Conventional Instruction

To determine whether there was a significant difference between students taught through Quizizz-based gamified learning and those taught using conventional instruction, an independent-samples *t*-test was conducted based on the post-test scores. The descriptive statistics show that the experimental group achieved a considerably higher mean score (84.00) than the control group (44.36).

The independent-samples *t*-test demonstrated a statistically significant difference between the two groups ($t = -9.683, p < .001$). The experimental group obtained substantially higher vocabulary retention scores than the control group. Accordingly, the second research question is answered by showing that students who learned through Quizizz-based gamified learning performed significantly better than those who received conventional instruction.

DISCUSSION

The Effect of Quizizz-Based Gamified Learning on Students' English Vocabulary Retention

The findings demonstrate that Quizizz-based gamified learning had a significant positive effect on students' English vocabulary retention. The paired-samples *t*-test showed a significant improvement between the pre-test and post-test scores of the experimental group ($p < .001$), indicating that students retained vocabulary more effectively after participating in gamified learning activities. This finding suggests that integrating game elements into vocabulary instruction creates a learning environment that facilitates repeated exposure, active recall, and meaningful practice, all of which contribute to long-term vocabulary retention. From a cognitive perspective, vocabulary retention is strengthened when learners repeatedly retrieve previously learned information in meaningful contexts. Quizizz provides immediate feedback, repetition, time-limited challenges, and interactive questions that encourage students to recall vocabulary continuously during learning activities. These characteristics are consistent with the principles of meaningful learning proposed by Mayer (2019), who argues that active cognitive engagement promotes stronger memory formation than passive memorization. Likewise, Wilkins (2022) emphasized that vocabulary is the foundation of language communication, making vocabulary retention an essential prerequisite for language proficiency.

The findings also support previous studies on gamified learning. Jaiswal (2024) reported that gamification significantly improved students' vocabulary achievement by increasing motivation and participation during classroom activities. Similarly, Nilma (2022) found that game-based learning environments promoted higher student engagement and facilitated better vocabulary acquisition than traditional instruction. The present study extends these findings by demonstrating that Quizizz-based gamified learning is also effective in improving vocabulary retention among junior high school students in a rural Indonesian context implementing the Kurikulum Merdeka.

Differences Between Quizizz-Based Gamified Learning and Conventional Instruction

The independent-samples t-test revealed a significant difference between the experimental and control groups, with students who learned through Quizizz achieving substantially higher post-test scores than those who received conventional instruction. Although the control group showed slight improvement, the magnitude of the gain was considerably smaller, indicating that conventional approaches such as memorization, translation, and teacher-centered explanations were less effective in supporting long-term vocabulary retention. One possible explanation is that conventional instruction generally provides limited opportunities for active participation and repeated retrieval practice. In contrast, Quizizz encourages students to interact continuously with learning materials through competition, instant feedback, points, and leaderboards. These gamification elements create enjoyable learning experiences that sustain students' attention and increase their willingness to practice vocabulary repeatedly. According to Deterding et al. (2021), gamification enhances user engagement by incorporating game design elements into non-game contexts, thereby increasing motivation and participation. Similarly, Hamari et al. (2025) concluded that gamification

positively influences learning outcomes because students become more actively involved throughout the instructional process.

These findings are also consistent with the objectives of the *Kurikulum Merdeka*, which emphasizes student-centered, meaningful, and technology-supported learning experiences (BSKAP, 2022). The implementation of Quizizz enabled students not only to remember vocabulary but also to use it more confidently during learning activities. Consequently, the present study provides empirical evidence that gamified learning can serve as an effective instructional strategy for improving vocabulary retention in junior high school English classrooms.

Strengths and Limitations of the Study

This study offers several contributions to the existing literature. First, it provides empirical evidence regarding the effectiveness of Quizizz-based gamified learning in improving vocabulary retention among junior high school students within the implementation of the Kurikulum Merdeka. Unlike many previous studies that focused primarily on learning motivation or vocabulary acquisition, this research specifically examined vocabulary retention using a quasi-experimental design supported by both descriptive and inferential statistical analyses conducted through SPSS. The use of pre-test and post-test data from both experimental and control groups strengthens the internal validity of the findings.

Nevertheless, this study has several limitations. The research involved only two classes from one junior high school, limiting the generalizability of the findings to broader educational contexts. In addition, the treatment was conducted over a relatively short period, making it difficult to determine the long-term effects of gamified learning on vocabulary retention. Furthermore, the study examined only one independent variable—Quizizz-based gamified learning—and focused exclusively on vocabulary retention. Future studies are therefore



recommended to involve larger samples, longer intervention periods, and additional variables such as learning motivation, engagement, or speaking performance to obtain a more comprehensive understanding of the impact of gamified learning on English language learning.

CONCLUSION

The findings of this study demonstrate that Quizizz-based gamified learning has a significant positive impact on the English vocabulary retention of eighth-grade students at SMP Negeri 2 Lotu. Students who participated in Quizizz-based learning showed a substantial improvement in vocabulary retention, as indicated by the significant difference between their pre-test and post-test scores. These findings suggest that integrating gamification elements, such as immediate feedback, points, leaderboards, and interactive challenges, effectively supports students in retaining English vocabulary.

Furthermore, the study reveals a significant difference in vocabulary retention between students taught through Quizizz-based gamified learning and those taught using conventional instruction. The experimental group achieved significantly higher post-test scores than the control group, indicating that Quizizz-based gamified learning is more effective than conventional teaching methods in enhancing students' English vocabulary retention. These findings support the implementation of technology-enhanced and student-centered learning promoted by the *Kurikulum Merdeka* and provide empirical evidence that gamified learning can serve as an effective instructional strategy for improving vocabulary retention among junior high school students.

The study contributes to English language teaching by demonstrating that the integration of gamification into classroom instruction not only improves learning outcomes but also offers an innovative approach that can be adapted to

similar educational contexts, particularly in junior high schools implementing the *Kurikulum Merdeka*.

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