



Zep Quiz in Action: Empowering Students' Vocabulary through Gamified Learning

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Abstract

Gamification nowadays has emerged as powerful catalyst for transforming conventional learning into more dynamic and student-centered experience in learning vocabulary. This present study investigated the effectiveness of digital intervention using Zep Quiz, a gamified-learning platform, to empower eighth grade students' vocabulary mastery in Indonesian EFL settings. There were 29 students at SMP Negeri Satu Atap Gondoruso 01 incorporated as the subjects. This study was a quasi-experimental design with one-group pretest-posttest design. In addition, three-meeting intervention was employed using Zep Quiz to improve students' vocabulary mastery. The findings showed a statistically significant improvement in students' vocabulary academic performance. The mean score increased substantially from 68.10 in pretest to 73.97 in posttest, the paired-sample t-test -7.90, p-value <0.0001, and Cohen's d size 1.20 indicating that there was positive impact of digital intervention using Zep Quiz to promote students' vocabulary acquisition. In addition, digital-game intervention using Zep Quiz with its interactive and gamified elements, likely creates more engaging activities, and empowers vocabulary learning. To sum up, gamified learning using Zep Quiz in language learning can be viable and effective approach to overcoming students' challenge with limited vocabulary acquisition in Indonesian EFL settings.

Keywords: *Zep Quiz; Gamified Learning; Vocabulary Learning*

Introduction

Vocabulary has been a pivotal role in learning English as a foreign language to master in Indonesian EFL classroom settings. Among four-language skills; listening, reading, speaking, and writing, it is said to be a core aspect of language proficiency. Further, this vocabulary has been an essential element in learning English as foreign language (Putra, 2023; Shi, 2025). Learning vocabulary enables students to grasp the meaning within the text and deliver

ideas in meaningful interaction. In addition, inadequate vocabulary leads to students struggling to understand the words, communicate their ideas, and engage in EFL classroom activities (Li & Pei, 2024).

However, students' vocabulary acquisition remains a crucial challenge in Indonesian EFL classroom settings (Ramadhan et al., 2021; Rosyada-AS & Apoko, 2023). Most students in Indonesia frequently demonstrate limited vocabulary size in learning English as a foreign language. When it comes to language tasks in teaching-learning process, the students may struggle with understand the meaning within the text since they have inadequate vocabulary size (Pratama et al., 2024). This limitation can hinder students from participating in classroom interaction and completing language tasks.

Given this situation, most students tend to rely on passive learning such as dictionary-based learning and rote memorization. Nurfadhila et al., (2025) stated that rote memorization has limited long-term impact on the students' vocabulary acquisition. In addition, implementing conventional classroom instruction has become monotonous, led to learning disengagement, and failed to promote long-term retention (Tsai, 2020; Syawaluddin & Aeni, 2025). These gaps underscore the need for effective vocabulary learning strategies. Thus, teachers play a pivotal role in turning student-centered and more dynamic pedagogical approaches integrated into current trends in education.

Furthermore, these challenges also highlight the necessity of integrating interactive pedagogical strategies. Using these-days trends in education such as integrating ICT into EFL classrooms can be a promising solution to address these gaps. Given this context, ICT can assist teachers to transform their pedagogical methods with more interactive and innovative ones (Balaban et al., 2023). This ICT integration is said to be relevant to 21st century learning. In addition, using gamification in this era can be a promising method to improve pedagogical approaches and students' academic achievement (Zeng et al., 2024).

In the context of 21st-century classroom, gamification has emerged as powerful catalyst for transforming conventional learning into more dynamic and student-centered experience. Gamification refers to learning approach transferring game components into education context (Guerrero-Alcedo et al., 2022). On the other hand, Smiderle (2020) defines gamification as an approach incorporating game-based elements into pedagogical practice. This game-based approach can be an alternative-learning approach to implement in EFL classroom settings. Additionally, gamification has been an alternative media to boost students' vocabulary learning (Putra, 2023; Saptiany et al., 2024). This can be a planned attempt to promote learning, engage students, and motivate students during vocabulary learning activities.

In the context of language learning, this gamification has been shown to support vocabulary learning among EFL students (Sadeghi & Richards, 2021). Incorporating these game elements such as rewards, leaderboards, and interactive challenges creates a more engaging and effective learning

environment (Rodjanagosol, 2024). Game-based learning, in addition, offers a dynamic alternative allowing teachers to design interactive vocabulary acquisition (Nilubol & Sitthitikul, 2023). According to Waluyo and Bucol (2021), gamified learning has brought positive impacts on the students' vocabulary acquisition. In addition, this digital game-based learning demonstrates positive effects in promoting short-term and long-term vocabulary learning (Zou et al., 2019).

Further, gamification has potentially cultivated means of teaching-learning vocabulary and boosted student' vocabulary acquisition (Suja et al., 2024). In this case, gamified language learning has proven to be interesting and interactive since it provides students with challenges, points, badges, and leader boards within the gameplay. Game-like learning has created new opportunities for EFL teachers to transform monotonous-language learning into more dynamic learning activities. This innovative educational tool is not only to promote interactive-engaging activities but also to improve students' vocabulary acquisition (Andriani et al., 2024). Gamification, in this context, has been potential approaches to enhance both students' vocabulary retention and motivation (Yadira et al., 2024).

Zep Quiz specifically leverages game-alike features tailored to immediate, interactive quizzing, and unique visual game-based learning. Unlike other platforms primarily dealing with flashcards or multiple-choice formats, Zep Quiz integrates game elements such as real-time competitive challenges, adaptive questioning, and collaborative tasks with provided templates. Zep Quiz also provides AI-powered questions generation where users can automatically create questions by simply providing topic or uploading materials. In addition, this helps students rediscover the joy of learning and allows students to customize avatars and game features to make learning feel just playing (Ko et al., 2023).

Moreover, this tool like Zep Quiz is to integrate gamified learning making teaching-learning process more meaningful. Zep Quiz emerges as a promising gamified-learning platform with the potential to tailor students' vocabulary mastery in EFL classroom. Zep Quiz is a gamified e-learning platform designed to promote more engaging, meaningful, and joyful learning (Julia et al., 2025). This platform, in addition, allows teachers to design customised quizzes into more engaging and enjoyable learning experiences (Feriansyah & Titaley, 2025). Integrating game-alike elements such as points, and leaderboards can potentially foster deeper engagement during the lesson. Additionally, teachers can also customize questions format to design visual-stimulating vocabulary tasks catering to students' need.

Despite its potential, investigation on the use of Zep Quiz dealing with the students' vocabulary acquisition remains limited. The previous studies, in this case, have mostly examined gamification platform on vocabulary mastery. Additionally, the previous studies have predominantly focused on the broader gamification platforms for vocabulary mastery. To address this gap, this study

offers the novelty dealing with uniquely investigating the interventional effect of Zep Quiz on the students' vocabulary mastery in remote areas like SMP Negeri Satu Atap Gondoroso 01. Therefore, this study introduces a novel contribution to the pedagogical practice using Zep Quiz in improving students' vocabulary acquisition.

Furthermore, this study aims at investigating the effectiveness of Zep Quiz to empower students' vocabulary mastery in EFL classroom settings. To achieve this objective, hypotheses are formulated as follows:

H0: There is no significant effect of Zep Quiz to empower students' vocabulary acquisition.

Ha: There is a significant effect of Zep Quiz to empower students' vocabulary acquisition.

To sum up, by investigating its integration of Zep Quiz to improve students' vocabulary acquisition, this study offers a validated framework and practical-pedagogical implications for EFL teachers to incorporate Zep Quiz in Indonesian EFL classroom settings.

Method

This study incorporated a quantitative design. This quantitative study involved using numerical and statistical data analysis to test the objective theories (Ghanad, 2023). Incorporating a quantitative approach was chosen to provide the collection of measurable data, and statistically to identify trends and conclusions related to the topic of the study. In addition, this study dealt with quasi experimental using one-group pretest and posttest design. A quasi-experimental design was said to be more practical for school-based study since existing class was already in place (Miller et al., 2020). This more accurately measured the effectiveness of treatment by comparing students' performance before and after incorporating Zep Quiz as a digital intervention. Additionally, using this approach aimed at obtaining objective measurement of the effectiveness of incorporating Zep Quiz to improve students' vocabulary.

Table 1. One Group Design

Class	Pretest	Treatment	Posttest
VIII	Q1	X	Q2

Description:

Q1 : Students' pretest

X : Treatment using Zep Quiz

Q2 : Students' post test

This study involved 29 eighth-grade students at SMP Negeri Satu Atap Gondoroso 01 as the subject of study. To collect the data, testing was incorporated as the research instrument. Given this situation, test reliability was utilized using Cronbach's Alpha, yielding a coefficient of 0.81. This coefficient score indicated

highly consistent reliability. Meanwhile, test's validity was incorporated through content validity. Expert review was conducted by 1 lecturer and 1 English teacher. This consisted of target list, relevance, visual, and accuracy. Additionally, to measure the validity, pretest and posttest were designed and conducted in the same classroom conditions including test formats and time allocations. Meanwhile,

The instruments used in this study were pretest and posttest. During the intervention, incorporating Zep Quiz was conducted into three-meeting classroom activities, lasting for 45 minutes for each meeting. In the first meeting, the students were provided with finding vocabularies, dealing with present and past verbs. In this case, the students must choose the correct past verb forms. Meanwhile, in the second meeting, the students were provided with regular and irregular verbs. Given this situation, the students must categorize regular and irregular verbs. Lastly, the students at the third meeting were provided with several images and required to match the vocabulary words dealing with past verbs based on the images provided.

Following this intervention, a posttest was administered to see the effect of using Zep Quiz to improve students' vocabulary. In this context, posttest was conducted using Zep Quiz consisting of 20 questions: 10 multiple-choice questions and 10 true-false questions. During posttest, the students were required to play game templates using Zep Quiz. In this game, they must find "teacher" avatar to answer the questions. Once they answered correctly, they would get scores.

Regarding the ethical considerations, this study obtained ethical approval from Universitas Islam Malang and the school principal of SMP Negeri Satu Atap Gondoroso 01. There was no personal identifiable information to collect the data of this study. This was to ensure that students' performance data would be solely employed for the study. These data from pretest and posttest were analyzed using descriptive statistics including paired t-test (<0.0001) and Cohen's d (>0.8) to see the effect of digital intervention on students' vocabulary using Zep Quiz.

Results

This study was conducted at eighth grade students of SMPN Satu Atap Gondoroso 01, consisting of 29 students. Owing to the limitation of the resources, this study has dealt with one group pretest and posttest design to more accurately measure the effectiveness of treatment by comparing students' performance before and after using Zep Quiz as a digital intervention on students' vocabulary mastery. The results are presented in Table 2.

Table 2. Students' Pretest and Posttest Results

Students' Test	N	Mean	Median	Std. Deviation	Std. error
Pretest	29	68.10	70.00	4.66	0.87
Posttest	29	73.97	75.00	5.23	0.91

The statistical data above in Table 2 showed that students' average score in pretest was 68.10 with standard deviation of 4.66, and standard error was 0.87. In addition, the students' posttest results showed that students' average score was 73.97 with standard deviation of 5.23, and standard error was 0.91. Given this situation, it showed that there was an improvement in students' average score in pretest to posttest. In addition, the increase of mean and median indicated that intervention using Zep Quiz significantly improved the students' vocabulary mastery. To determine if the dataset was normally distributed, the normality test was conducted using Shapiro-Wilk test. The results of normality test were presented below.

Table 3. The Normality Test Results

Students' Test	N	W-Value	p-Value	Description
Pretest	29	0.96	0.23	Normally Distributed
Posttest	29	0.97	0.34	Normally Distributed

Based on the statistical data above, it showed that the datasets in pretest and posttest were normally distributed. W-value is to measure how well the data fits the normal distribution. The pretest indicated a W-value of 0.96 with a p-value of 0.23. Meanwhile, the posttest showed a W-value of 0.97 with a p-value of 0.34. It indicated data in pretest and posttest followed a normal distribution since both p-values were greater than 0.05. In addition, both W-values in pretest and posttest (0.96 and 0.97) were very close to 1, indicating that both scores were highly consistent with a normal distribution. Further, the results of paired t-test were presented in the following table.

Table 4. The Results of Paired t-test

Students' Test	Mean of Difference	Std. Deviation	Std. Error	t-value	p-value	df
Pretest-Posttest	5.87	4.90	0.74	-7.89	<0.0001	29

Based on the above statistical data, the students' average score improves by 5.87 from the pretest to posttest. In addition, the statistical data of std. deviation is 4.90, t-value is -7.89, and p-value is <0.0001. These reveal a statistically significant improvement in students' vocabulary scores after the digital intervention using Zep Quiz. Additionally, these indicate that incorporating Zep Quiz in vocabulary learning has positive and measurable effects on the students' vocabulary mastery. The following is the confidence interval to see the significant effect of digital intervention using Zep Quiz.

Table 5. The Confidence Interval

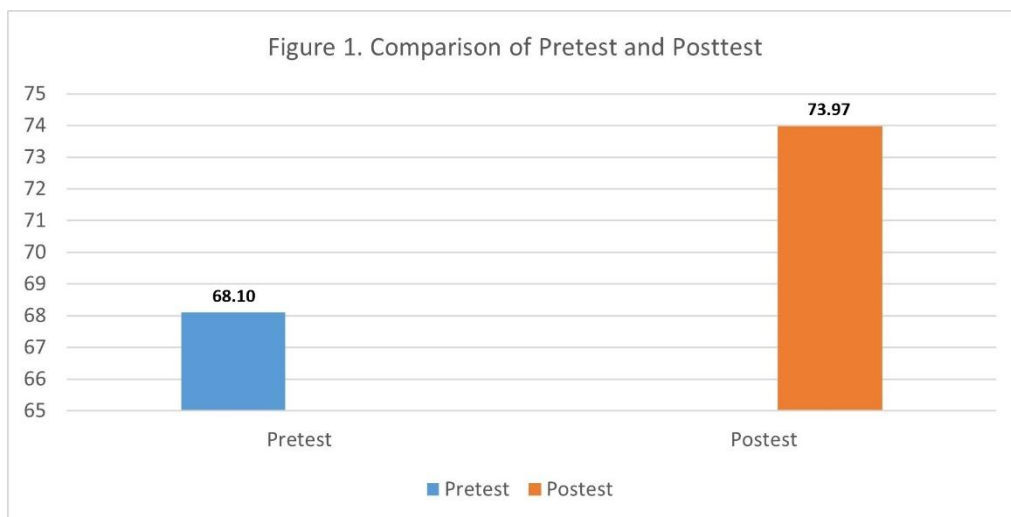
Mean Difference	Std. Error	p-Value	95% CI Lower	95% CI Upper
5.87	0.74	<0.0001	4.36	7.38

Based on the above data, it showed that the students' vocabulary score after digital intervention using Zep Quiz lies between 4.36 and 7.38 points. This indicated positive effect since the entire interval (4.36, 7.38) was above zero. The following is the effect size of digital intervention using Zep Quiz in the students' vocabulary mastery.

Table 6. The Cohen's *d* Effect

Students' Test	Mean of Difference	Std. Deviation	Cohen's <i>d</i>
Pretest-Posttest	5.87	4.90	1.20

Based on the statistical data above, it shows that the effect size for the observed difference between pretest and posttest is substantially 1.20. It indicates that using Zep Quiz has strong-practical effect on the students' vocabulary mastery. Coupled with the significant p-value <0.0001 from the paired sample t-test, indicating both significant increase and considerable-practical significance. The following figure visualizes the results comparing the pretest and posttest score, as follows:



Based on the above figure, it presents a comparison of the students' pre-test and post-test score. It indicates that the students' average score increased from before digital intervention to after intervention using Zep Quiz. This, in addition, is highly likely no unusual cases significantly skewing the results. The evidence strongly suggests that digital intervention using Zep Quiz had a profoundly meaningful and strong effect on the students' vocabulary acquisition.

Discussion

The findings highlight the effectiveness of gamified learning tool using Zep Quiz in empowering students' vocabulary mastery among Indonesian EFL students. This was conducted from August 11th to August 28th with a total of 29-eighth grade students at SMP Negeri Satu Atap Gondoruso 01. The findings indicate that gamified learning using Zep Quiz in EFL classroom can promote students' vocabulary learning. This aligns with (Suja et al., 2024) proving that gamified-enhanced vocabulary is said to be better than implementing conventional teaching approaches.

Furthermore, this is also consistent with the previous study (Attaiya et al., 2025) that mobile-based tools such as Zep Quiz can improve students' autonomy more effectively compared to conventional teacher-centered approaches. This gamification strategically applies game-based elements to activate students' vocabulary learning. These game-based elements within Zep Quiz potentially activate students' interest in vocabulary learning. Hence, vocabulary learning should promote students' interest through including game-design elements into language classrooms (Sadeghi & Richards, 2021).

These findings also align with the statistical data showing clear advancement, indicating the increase score in students' pretest score 68.10 to 73.97 in the posttest. This improvement is also consistent with constructivist learning (Vygotsky, 1986), emphasizing active learning and engagement. When the students are actively engaged in the learning process, through interactive activities such as gamified learning and quizzes, they are more likely to develop their deeper understanding upon related concepts (Adipat et al., 2021; Salim et al., 2025). This aligns with the previous studies that gamification have a moderately positive effect on the students' performance (Zeng et al., 2024). Additionally, well-designed gamified learning can foster students' deeper learning and enhance their vocabulary acquisition (Chen et al., 2021; Rodjanagosol, 2024; Hanik, 2025).

Furthermore, the paired-sample t-test affirms these findings. It shows that statistically significant p-value is <0.0001 , confirming that the students' enhancement in vocabulary acquisition is said to be a direct result of the Zep Quiz intervention. This also supports the previous studies on the effectiveness of Mobile Assisted Language Learning (MALL) that integrating MALL in language learning can have a significant impact on the students' academic vocabulary (Al Shihri et al., 2025; Sabani, et al., 2025). In this case, digital-game intervention using Zep Quiz with its interactive and gamified elements, likely creates more

engaging activities and empower vocabulary learning among EFL students (Ariestiara, 2025).

This finding, in addition, offers convincing practical evidence for the effectiveness of Zep Quiz to empower students' vocabulary acquisition. The effect size Cohen's $d = 1.20$ after three-week interventions using Zep Quiz have profoundly indicated that Zep Quiz has strong-practical effect on the students' vocabulary mastery. This aligns with Saumi et al. (2025) stated that Cohen's d value of 0.8 or above indicating a large effect. With notable post-test outcomes (Cohen's $d = 1.20$) also reports that integrating MALL into vocabulary learning among EFL students are consistent with broader studies that MALL has strong-practical effect to improve students' vocabulary acquisition (Al Shihri, 2025).

Besides, these large effect size (Cohen's $d = 1.20$) and (p -value = <0.0001) demonstrate substantial improvement in vocabulary acquisition and compelling practical implications for EFL teachers. Suja et al. (2024) and Attaiya et al. (2025) on the benefits of gamified and mobile-based tools, and crucially, provides concrete numerical evidence that Zep Quiz translates into significant, real-world learning gains for Indonesian EFL students. Gamifying learning using Zep Quiz is not merely engaging novelty but potentially effective pedagogical approach for vocabulary learning. Additionally, this digital intervention can provide access to more quality, engaging, and meaningful learning in this 21st century learning environment.

However, there have been several factors that limit the generalizability of the findings. This study employs one-group pretest-posttest design concerning the small sample size in a single school. This has led to the lack of control group dealing with receiving conventional instruction rather than Zep Quiz intervention. In addition, three-week intervention conducted in sample size with no control group may affect the generalizability of the findings to broader population, long-term retention gain, and educational context.

To improve robust findings, it would be essential to extend the intervention duration over a full semester to provide long-term vocabulary retention. Future studies are recommended to employ control group in quasi-experimental design with larger samples would also strengthen the generalizability of the results. In addition, addressing cost-effectiveness and challenges can be also crucial for further comprehensive analysis. These include evaluating subscription fees for more features and availability of internet access and sufficient devices.

In short, these findings demonstrate that integrating Zep Quiz application into pedagogical practice is a highly potential approach to enhance students' vocabulary learning. The significant increase in students' scores, and statistical analysis indicates positive and measurable effects of digital intervention using Zep Quiz. In addition, this study highlights the evidence supporting the integration of MALL into language classroom and highlighting its potential to

make learning vocabulary more effective, engaging and relevant to deep learning practices.

Conclusion

This study incorporated a one-group pretest-posttest design in investigating the effectiveness of Zep Quiz platform to promote eighth-grade students' vocabulary acquisition. The evidence strongly suggests that digital intervention in language learning using Zep Quiz had a positive and potential effect on the students' vocabulary learning. The descriptive statistics reveal a notable improvement, with the mean vocabulary score rising from 68.10 in the pretest to 73.97 in the posttest. In addition, the large effect size (Cohen's $d = 1.20$) and ($p\text{-value} = <0.0001$) convince statistical effective improvement in vocabulary acquisition and compelling practical implications for EFL teachers. These findings highlight a causal relationship between the integration of Zep Quiz and the measurable advancement in students' vocabulary retention and size.

Furthermore, the magnitude of the effect size (Cohen's $d = 1.20$) profoundly strengthens the claim. Previous studies have proven that gamified vocabulary learning is better than conventional-vocabulary learning. Yet, this study offers novelty in addressing unique intervention of Zep Quiz, an application whose specific pedagogical features conducted in Indonesian EFL classroom in a remote area (SMP Negeri Satu Atap Gondoruso 01). Therefore, this study not only contributes by concerning a novel tool but also by validating its profound effect in challenging EFL environment.

This study has the absence of control group and intervention period probably affecting the long-term vocabulary retention. In this case, further studies are recommended to employ control group in longer intervention periods. This study provides strong empirical justification for EFL teachers to integrate Zep Quiz in language classroom. Besides, school administrators and educational policy makers should recognize and embrace digital platforms like Zep Quiz to enhance students' learning motivation and outcomes in this 21st century learning.

To conclude, the results emphasize the theory of Mobile-Assisted Language Learning (MALL) and gamification supporting the clear evidence on language learning. These potentially address the objective of the study, suggesting that Zep Quiz intervention during vocabulary learning at 8th grade of SMP Negeri Satu Atap Gondoruso 01 is viable and effective approach to overcoming students' challenge with limited vocabulary acquisition in Indonesian EFL settings. Additionally, this study contributes the viable approaches supporting the strategic integration of Mobile-Assisted Language Learning (MALL) and gamified learning using Zep Quiz to improve students' performance and motivation in vocabulary acquisition.

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