

THE INFLUENCE OF THE QUIZLET APPLICATION ON THE PRODUCTIVE VOCABULARY OF STUDENTS AT SMAN 3 KOTA SERANG

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Abstract

This study aimed to determine the influence of the Quizlet application on the productive vocabulary of tenth-grade students at SMAN 3 Kota Serang. This research employed a quantitative method with a quasi-experimental, pre-test/post-test control group design. The sample consisted of two classes: an experimental group (n=35) which used the Quizlet application, and a control group (n=35) which used the conventional teaching method. The instrument used was a cued sentence completion test, adapted from the Productive Vocabulary Levels Test (PVLTL), administered as a pre-test and post-test. The collected data were analyzed using descriptive statistics and an Independent Samples T-Test. The results of the t-test on the post-test scores showed a statistically significant difference between the two groups, with a significance value of .032 ($p < 0.05$) in favor of the experimental group. This finding suggests that Quizlet's pedagogical model, which emphasizes retrieval practice and immediate feedback, was significantly more effective than the passive, teacher-centered model of the conventional method for improving students' productive vocabulary. The study concludes that Quizlet is an effective pedagogical resource that can significantly contribute to students' productive vocabulary acquisition.

Keywords: Technology-Assisted Vocabulary Learning (TAVL), Quizlet, Productive Vocabulary, English Language Teaching, Quasi-Experimental Design.

Abstrak

Penelitian ini bertujuan untuk mengetahui pengaruh aplikasi Quizlet terhadap kosakata produktif siswa kelas sepuluh di SMAN 3 Kota Serang. Penelitian ini menggunakan metode kuantitatif dengan desain kuasi-eksperimental, *pre-test/post-test control group*. Sampel terdiri dari dua kelas: kelompok eksperimen (n=35) yang menggunakan aplikasi Quizlet, dan kelompok kontrol (n=35) yang menggunakan metode pengajaran konvensional. Instrumen yang digunakan adalah tes melengkapi kalimat dengan petunjuk (*cued sentence completion test*), yang diadaptasi dari *Productive Vocabulary Levels Test* (PVLTL), yang diberikan sebagai *pre-test* dan *post-test*. Data yang terkumpul dianalisis menggunakan statistik deskriptif dan *Independent Samples T-Test*. Hasil uji-t pada skor *post-test* menunjukkan perbedaan yang signifikan secara statistik antara kedua kelompok, dengan nilai signifikansi 0,032 ($p < 0,05$) yang lebih unggul pada kelompok eksperimen. Temuan ini menunjukkan bahwa model pedagogis Quizlet, yang menekankan pada praktik pemanggilan kembali memori (*retrieval practice*) dan umpan balik langsung (*immediate feedback*), secara signifikan lebih efektif dibandingkan model pasif yang berpusat pada guru dalam metode konvensional untuk meningkatkan kosakata produktif siswa. Penelitian ini menyimpulkan

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bahwa Quizlet merupakan sumber pedagogis efektif yang dapat memberikan kontribusi signifikan terhadap pemerolehan kosakata produktif siswa. Kata Kunci: Pembelajaran Kosakata Berbantuan Teknologi (TAVL), Quizlet, Kosakata Produktif, Pengajaran Bahasa Inggris, Desain Kuasi-Eksperimen.	
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Introduction

English plays a pivotal role in the Indonesian education system, serving not only as a compulsory subject but also as a crucial tool for social and economic mobility in the global economy (Zein et al., 2020; Alrajafi, 2021). Central to mastering this language is vocabulary, which acts as the fundamental building block for communication, arguably surpassing grammar in its importance for conveying meaning and emotion (Mukhtar et al., 2023; Pipuš, 2021). Research suggests that to achieve functional proficiency, learners must acquire a threshold of approximately 2,000 to 3,000 word families (Nation & Hunston, 2013). However, attaining this benchmark remains a significant challenge in the Indonesian context. The 2024 Education First English Proficiency Index (EPI) places Indonesia in the "Low Proficiency" category, ranking 80th out of 113 countries (EF Education First, 2024), indicating a pervasive national deficit in vocabulary mastery.

This challenge is clearly observable at the local level, specifically among tenth-grade students at SMAN 3 Kota Serang. Preliminary observations and interviews indicate that many students enter senior high school lacking an adequate vocabulary foundation. Consequently, their written production is often limited and repetitive, relying heavily on a small set of basic words. Conventional, teacher-centered methods currently employed appear insufficient in providing the active, repetitive practice required to transition knowledge from passive recognition to active production (Halim & Halim, 2019).

To address the need for more engaging and effective vocabulary instruction, educational technology offers promising solutions. Among these, the Quizlet application stands out for its potential to support a full learning cycle. Quizlet facilitates the transition from receptive understanding—through modes like Flashcards and Learn—to productive use via its ‘Test’ mode. This process aligns with the "testing effect" theory, where the act of retrieval strengthens memory retention (Nguyen & Le, 2023). Previous studies have highlighted that students respond positively to Quizlet’s gamified features, which enhance engagement and retention (Bayaksud et al., 2024).

However, a review of existing literature reveals a specific gap. While numerous studies confirm Quizlet's efficacy in enhancing retention (Nguyen & Le, 2023) and receptive vocabulary mastery (Thi Thu, Huong Ho, & Kawaguchi, 2023), research explicitly measuring its impact on productive vocabulary the ability to actively utilize words in context, such as sentence completion remains scarce. Most existing research focuses primarily on passive recognition.

Addressing this gap, the current study employs a quasi-experimental design to investigate the influence of the Quizlet application on students’ productive vocabulary. Specifically, it aims to determine whether integrating Quizlet as a digital learning aid provides a statistically significant improvement in students’ ability to effectively apply vocabulary in written contexts compared to conventional instructional methods. The findings of this research are expected to offer theoretical insights into digital-assisted vocabulary acquisition and provide practical strategies for educators aiming to enhance student-centered learning in the digital age.

Literature Review

Productive Vocabulary in Descriptive Writing

Acquiring vocabulary is a fundamental challenge in English language education, particularly for foreign language students who must master thousands of word families for proficient communication (Schmitt, 2008). Within this domain, a critical distinction exists between receptive and productive vocabulary. While receptive vocabulary involves recognizing words during listening or reading, productive vocabulary requires learners to actively employ words in speech and writing (Li & Hafner, 2021). A persistent issue in EFL contexts is the "receptive-productive gap," where students possess extensive passive comprehension yet struggle to utilize that vocabulary accurately in their own output (Zhong, 2018; Faraj, 2015).

In the specific context of this research, productive vocabulary is operationalized through the requirements of Descriptive Text. To describe people, places, and things effectively, learners must master specific grammatical functions, particularly adjectives and nouns (Nation & Hunston, 2013). Adjectives serve as the primary descriptive component, modifying nouns to specify qualities or distinctions (Merriam-Webster, n.d.). Mastery of these components enables the transition from simple sentence construction to rich, detailed descriptions. Therefore, narrowing the gap between receptive knowledge and productive use specifically in using adjectives for description is essential for writing proficiency.

Quizlet as a Tool for Technology-Assisted Vocabulary Learning (TAVL)

To bridge the receptive-productive gap, Technology-Assisted Vocabulary Learning (TAVL) offers flexible and personalized solutions (Simonnet et al., 2024). Among various digital tools, Quizlet has emerged as a prominent platform. Created by Andrew Sutherland, Quizlet supports learning through digital flashcards, interactive games, and quizzes. Its primary strength lies in its adaptability to various learning styles via modes like Flashcards, Learn, and Match, which reinforce understanding through gamification and multimedia support (Bayaksud et al., 2024).

Recent studies indicate that Quizlet significantly improves vocabulary acquisition and retention in EFL settings. Nguyen and Le (2023) found that students using Quizlet achieved significantly higher retention rates compared to traditional methods. Similarly, Montaner-Villalba (2018) reported statistically significant increases in vocabulary scores among A2-level students using the mobile application. The platform's effectiveness is attributed to its ability to provide immediate feedback and foster engagement, making it a viable alternative to conventional rote memorization (Chaikovska & Zbaravska, 2020).

Theoretical Framework: Retrieval Practice and the Testing Effect

The theoretical basis for using Quizlet to enhance productive vocabulary is grounded in the principles of retrieval practice and the testing effect. Unlike input-based methods that focus on introducing new material, retrieval practice involves the active recall of previously learned information, a process proven to enhance long-term memory (Strong, 2023; Marin-Garcia et al., 2021).

Quizlet's features, particularly the 'Test' mode, operationalize this theory by compelling students to actively recall and type words from memory rather than merely recognizing them. This aligns with the findings of Ajogbeje (2023), who emphasized the importance of immediate feedback in correcting errors and guiding the learning process. By facilitating a consistent cycle of active retrieval and real-time correction, Quizlet theoretically supports the cognitive processes required to convert passive vocabulary knowledge into active production.

Previous Studies and Research Hypotheses

While the efficacy of Quizlet is well-documented, a review of previous studies reveals a specific research gap. Thi Thu, Huong Ho, and Kawaguchi (2023) and Montaner-Villalba (2018)

focused primarily on receptive vocabulary and general acquisition. Other studies, such as Bayaksud et al. (2024), concentrated on students' perceptions and motivation, while Rasya (2025) examined motivation as a mediating variable. Research explicitly measuring the direct influence of Quizlet on productive vocabulary in writing specifically for senior high school students in the Indonesian context remains limited.

Addressing this gap, this study posits that the active retrieval mechanisms within Quizlet will directly influence writing performance. Consequently, the research hypothesis (H1) states that there is a significant difference in students' productive vocabulary in writing between those taught using the Quizlet application and those taught using conventional methods.

Research Methodology

Research Design

This study employed a quantitative approach utilizing a quasi-experimental design, specifically the non-equivalent control group design. This design was selected to evaluate the causal relationship between the instructional media and learning outcomes in an educational setting where random assignment of individual students was impractical. The participants were assigned to two pre-existing groups: an experimental group, which received vocabulary instruction integrated with the Quizlet application, and a control group, which was taught using conventional, teacher-centered methods.

Participants

The research was conducted at SMAN 3 Kota Serang involving tenth-grade students during the 2025 academic year. From a total population of 582 students, a sample of 70 students was selected using convenience sampling technique based on accessibility and class availability. The sample was divided equally into two groups: 35 students in the experimental group and 35 students in the control group.

Instrument

The primary instrument used to measure productive vocabulary was a written test utilizing a cued sentence completion format, adapted from the Productive Vocabulary Levels Test (PVLТ). This format required students to complete sentences by writing the correct target word based on a partial cue (e.g., the first few letters), ensuring the assessment measured active recall rather than passive recognition. The instrument consisted of 25 items administered as both a pre-test and a post-test.

To ensure instrument quality, content validity was established through expert judgment by an experienced English teacher at SMAN 3 Kota Serang to verify alignment with the curriculum and Descriptive Text materials. Furthermore, empirical validity was tested using Cronbach's Alpha, yielding a coefficient of 0.824, which indicates that the instrument possesses high reliability and consistency for data collection.

Data Collection and Analysis

Data collection followed a three-phase procedure: (1) a pre-test to establish the baseline productive vocabulary proficiency of both groups; (2) a treatment phase spanning four meetings where the experimental group utilized Quizlet (Flashcards, Learn, Match, and Test modes) while the control group utilized conventional methods; and (3) a post-test to measure learning gains.

The collected data were analyzed using IBM SPSS Statistics software. The analysis included descriptive statistics (mean and standard deviation) and prerequisite tests, namely the Shapiro-Wilk test for normality and Levene's test for homogeneity. To test the hypothesis, an Independent Samples T-Test was conducted to determine the significance of the difference

between the post-test scores of the two groups. Additionally, Cohen's *d* was calculated to measure the effect size, determining the magnitude of the treatment's impact

Result and Discussion

Results

The data analysis began with a prerequisite examination to ensure the validity of the statistical procedures. The Normality Test using Shapiro-Wilk indicated that data distributions for both groups were normal ($p > .05$), and the Homogeneity Test using Levene's Test confirmed that the variances were homogeneous ($p = .829$). Furthermore, a baseline equivalence test performed on the pre-test scores revealed no significant difference between the experimental and control groups ($p = .801$), establishing that both groups shared a comparable starting level of vocabulary proficiency prior to the intervention.

Descriptive Statistics Table 1 presents the descriptive statistics for productive vocabulary scores. The experimental group showed a marked improvement from a pre-test mean of 50.74 to a post-test mean of 58.51. In comparison, the control group showed a smaller increase from 49.71 to 53.49. Notably, the standard deviation in the experimental group decreased in the post-test (from 16.14 to 9.20), suggesting that the students' scores became more uniform after the Quizlet treatment.

Table 1 Descriptive statistic

Groups	Test	N	Minimum	Maximum	Mean	Std. Deviation
Experiment	Pre-Test	35	28	92	50.74	16.145
	Post-Test	35	44	76	58.51	9.208
Control	Pre-Test	35	28	80	49.71	13.934
	Post-Test	35	24	72	53.49	9.945

Hypothesis Testing To determine the significance of the intervention, an Independent Samples T-Test was conducted on the post-test scores. As shown in Table 2, the analysis yielded a significant value (Sig.(2-tailed)=.032), which is lower than the alpha level of 0.05. Consequently, the null hypothesis (H_0) is rejected.

Table 2 Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference Lower Upper
Post-test Score	Equal variances assumed	.047	.829	2.195	68	.032	5.029	2.291	.457 9.600
	Equal variances not assumed			2.195	67.601	.032	5.029	2.291	.457 9.601

The results confirm that there is a statistically significant difference in productive vocabulary mastery between students taught using Quizlet and those taught using conventional methods. Furthermore, the effect size calculation using Cohen's *d* resulted in a value of 0.52, which falls into the "medium effect" category. This indicates that the use of Quizlet had a moderate but meaningful practical impact on students' writing performance.

Discussion

The primary finding of this study demonstrates that the integration of the Quizlet application significantly enhances students' productive vocabulary compared to conventional instruction. The experimental group achieved a significantly higher mean score ($M = 58.51$) than the control group ($M = 53.49$), answering the research problem affirmatively.

This finding aligns with previous research by Nguyen & Le (2023) and Thi Thu et al. (2023), who established Quizlet's efficacy in vocabulary retention. However, while prior studies predominantly focused on receptive vocabulary (recognition), this study contributes new

empirical evidence regarding productive vocabulary in a written context. The significant improvement observed can be attributed to two core cognitive mechanisms facilitated by the platform: retrieval practice and immediate feedback.

First, the "testing effect" theory played a crucial role. Unlike the control group, which relied on passive note-taking, the experimental group engaged with Quizlet's 'Test' and 'Write' modes. These features compelled students to actively recall and produce words from memory, a process known to strengthen long-term retention (Strong, 2023). This explains why the experimental group not only scored higher but also demonstrated better consistency (lower standard deviation).

Second, the immediacy of feedback provided by the application allowed for real-time error correction. In conventional classrooms, feedback is often delayed, weakening the link between error and correction. Quizlet's instant validation allowed students to self-correct immediately, fostering a more efficient learning loop (Ajogbeje, 2023).

Despite the positive outcomes, it is acknowledged that the "novelty effect" of using a digital tool might have contributed to students' engagement. Additionally, the measurement was limited to cued sentence completion. Future research is recommended to explore whether these productive gains transfer effectively to free-writing tasks such as essay composition.

Conclusion

This study concludes that the integration of the Quizlet application significantly enhances the productive vocabulary mastery of tenth-grade students at SMAN 3 Kota Serang. The statistical analysis yielded a p-value of .032 ($p < .05$) and a medium effect size (Cohen's $d = 0.52$), confirming that students taught using Quizlet outperformed those taught using conventional methods. These findings provide empirical evidence that Quizlet is not merely a tool for passive memorization; when leveraged specifically through its 'Test' and 'Write' modes, it effectively bridges the gap between receptive knowledge and active production by facilitating consistent retrieval practice and immediate feedback.

Pedagogically, this study suggests that technology should be utilized as a strategic supplement rather than a replacement for classroom instruction. Teachers are encouraged to adopt a blended learning approach where Quizlet is used for initial vocabulary reinforcement and active retrieval, followed by contextual application tasks such as sentence construction. For students, the findings highlight the superiority of active recall over passive review; engaging with modes that require typing answers from memory is proven to be more effective for long-term retention than traditional rote learning.

Future research should address the limitations of this study by expanding the scope of measurement. While this research utilized cued sentence completion to ensuring objectivity, subsequent studies are recommended to investigate the transfer of these skills to authentic, free-form writing tasks such as essay composition. Additionally, longitudinal studies are needed to determine if the learning gains persist after the "novelty effect" of the technology wears off, and to explore the application's effectiveness across more complex lexical categories beyond descriptive adjectives.

References

- [1] E. Simonnet, M. Loiseau, and É. Lavoué, "A Systematic Literature Review of Technology-Assisted Vocabulary Learning," *Computer Assisted Learning*, vol. 41, no. 1, p. e13096, Feb. 2025, doi: [10.1111/jcal.13096](https://doi.org/10.1111/jcal.13096).
- [2] O. J. Ajogbeje, "Enhancing Classroom Learning Outcomes: The Power of Immediate Feedback Strategy," *International Journal of Disabilities Sports and Health Sciences*, vol. 6, no. 3, pp. 453-465, Oct. 2023, doi: [10.33438/ijdsbs.1323080](https://doi.org/10.33438/ijdsbs.1323080).

- [3] T. Aliyeva, "Innovative Approaches to Foreign Language Learning: A Study of Methods Including Duolingo and Beyond," *Global Spectrum of Research and Humanities*, vol. 1, no. 2, pp. 73-80, Oct. 2024, doi: [10.69760/3twd9f85](https://doi.org/10.69760/3twd9f85).
- [4] D. Pipuš, "Introducing Vocabulary in the EFL Classroom," in *Proceedings of The 3rd International Academic Conference on Teaching, Learning and Education*, GLOBALKS, July 2021. doi: [10.33422/3rd.tleconf.2021.07.150](https://doi.org/10.33422/3rd.tleconf.2021.07.150).
- [5] I. S. P. Nation and S. Hunston, *Learning Vocabulary in Another Language*, 2nd ed. Cambridge University Press, 2013. doi: [10.1017/CBO9781139858656](https://doi.org/10.1017/CBO9781139858656).
- [6] E. Marin-Garcia, A. T. Mattfeld, and J. D. E. Gabrieli, "Neural Correlates of Long-Term Memory Enhancement Following Retrieval Practice," *Front. Hum. Neurosci.*, vol. 15, p. 584560, Feb. 2021, doi: [10.3389/fnhum.2021.584560](https://doi.org/10.3389/fnhum.2021.584560).
- [7] B. Strong, "Retrieval, repetition, and retention: unveiling vocabulary acquisition strategies for ESL learners," *AHOAJ*, vol. 5, no. 3, pp. 185-190, Oct. 2023, doi: [10.15406/ahoaj.2023.05.00206](https://doi.org/10.15406/ahoaj.2023.05.00206).
- [8] N. Schmitt, "Review article: Instructed second language vocabulary learning," *Language Teaching Research*, vol. 12, no. 3, pp. 329-363, July 2008, doi: [10.1177/1362168808089921](https://doi.org/10.1177/1362168808089921).
- [9] T. Hao, Z. Wang, and Y. Ardasheva, "Technology-Assisted Vocabulary Learning for EFL Learners: A Meta-Analysis," *Journal of Research on Educational Effectiveness*, vol. 14, no. 3, pp. 645-667, July 2021, doi: [10.1080/19345747.2021.1917028](https://doi.org/10.1080/19345747.2021.1917028).
- [10] O. Chaikovska and L. Zbaravska, "THE EFFICIENCY OF QUIZLET-BASED EFL VOCABULARY LEARNING IN PREPARING UNDERGRADUATES FOR STATE ENGLISH EXAM," *AE*, vol. 7, no. 14, pp. 84-90, May 2020, doi: [10.20535/2410-8286.197808](https://doi.org/10.20535/2410-8286.197808).
- [11] S. M. Haidari, S. Baysal, and S. Kanadli, "THE IMPACT OF DIGITAL TECHNOLOGY-MEDIATED FOREIGN LANGUAGE INSTRUCTION ON VOCABULARY LEARNING: A META-ANALYTIC REVIEW," *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, vol. 20, no. 1, pp. 236-251, Mar. 2020, doi: [10.17240/aibuefd.2020.20.52925-552769](https://doi.org/10.17240/aibuefd.2020.20.52925-552769).
- [12] H. P. Mukhtar, Z. Ali, and R. Amal, "The Importance of Vocabulary in Reading Among EFL Learners," presented at the International Conference of Research on Language Education, Sept. 2023, pp. 681-691. doi: [10.15405/epes.23097.61](https://doi.org/10.15405/epes.23097.61).
- [13] L. Q. Nguyen and H. V. Le, "The Role of Quizlet Learning Tool in Learners' Lexical Retention: A Quasi-Experimental Study," *Int. J. Emerg. Technol. Learn.*, vol. 18, no. 03, pp. 38-50, Feb. 2023, doi: [10.3991/ijet.v18i03.34919](https://doi.org/10.3991/ijet.v18i03.34919).
- [14] G. Alrajafi, "The use of English in Indonesia: Status and Influence," *SIGEH*, vol. 1, no. 1, pp. 1-10, Mar. 2021, doi: [10.36269/sigeh.v1i1.355](https://doi.org/10.36269/sigeh.v1i1.355).
- [15] N. Bayaksud, Putu Dian Danayanti Degeng, and Khairil Azwar Razali, "The Use of Quizlet for Vocabulary Learning: A Lesson from Innovative Application," *JOLLS. Lang. Liter. Studies*, vol. 4, no. 1, pp. 244-255, Mar. 2024, doi: [10.36312/jolls.v4i1.1823](https://doi.org/10.36312/jolls.v4i1.1823).
- [16] S. Montaner-Villalba, "The use of Quizlet to enhance vocabulary in the English language classroom," in *CALL and complexity - short papers from EUROCALL 2019*, 1st ed., Research-publishing.net, 2019, pp. 304-309. doi: [10.14705/rpnet.2019.38.1027](https://doi.org/10.14705/rpnet.2019.38.1027).
- [17] S. Halim and T. Halim, "Usefulness and Learnability in Teaching Vocabulary to ESL/EFL Students," *GRHE*, vol. 2, no. 1, p. 65, Jan. 2019, doi: [10.22158/grhe.v2n1p65](https://doi.org/10.22158/grhe.v2n1p65).