



**THE EFFECTIVENESS OF USING VOCABULARY.COM WEBSITE ON
STUDENTS' VOCABULARY MASTERY AT SECOND SEMESTER UNIVERSITAS
BHINNEKA PGRI**

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ABSTRAK

Penguasaan kosakata merupakan salah satu komponen dasar dalam pembelajaran bahasa Inggris yang mendukung kemampuan mahasiswa untuk berkomunikasi secara efektif dan mengembangkan keterampilan berbahasa lainnya. Namun, keterbatasan kosakata masih menjadi tantangan yang umum dihadapi oleh pembelajar bahasa Inggris sebagai bahasa asing (EFL), sehingga diperlukan media pembelajaran berbantuan teknologi yang inovatif. Penelitian ini bertujuan untuk menganalisis efektivitas penggunaan situs web Vocabulary.com dalam meningkatkan penguasaan kosakata mahasiswa semester II di Universitas Bhinneka PGRI. Penelitian ini menggunakan pendekatan kuantitatif dengan desain *pre-experimental one-group pretest-posttest*. Partisipan penelitian terdiri atas 32 mahasiswa semester II yang dijadikan sebagai sampel penelitian. Data dikumpulkan melalui tes kosakata pilihan ganda sebanyak 20 butir yang diberikan sebelum dan sesudah perlakuan. Data yang diperoleh dianalisis menggunakan statistik deskriptif dan *Paired Samples t-Test* dengan bantuan SPSS versi 25. Hasil penelitian menunjukkan adanya peningkatan yang cukup besar pada pencapaian kosakata mahasiswa, dengan nilai rata-rata meningkat dari 72,34 pada *pretest* menjadi 85,78 pada *posttest*. Hasil analisis statistik menunjukkan nilai signifikansi sebesar 0,000 ($p < 0,05$), yang menunjukkan adanya perbedaan yang signifikan antara kemampuan kosakata mahasiswa sebelum dan sesudah penggunaan Vocabulary.com. Hasil penelitian menunjukkan bahwa platform tersebut efektif meningkatkan penguasaan kosakata melalui pengalaman belajar yang kontekstual, adaptif, dan interaktif yang mendorong keterlibatan aktif mahasiswa. Dengan demikian, Vocabulary.com dapat dipertimbangkan sebagai media pembelajaran digital yang efektif untuk mendukung pembelajaran kosakata pada pendidikan tinggi.

Kata Kunci: *Pembelajaran Digital, Kosakata Bahasa Inggris, Penguasaan Kosakata, Vocabulary.Com*

ABSTRACT

Vocabulary mastery is a fundamental component of English language learning that supports students' ability to communicate effectively and develop other language skills. However, limited vocabulary remains a common challenge among English as a Foreign Language (EFL) learners, highlighting the need for innovative technology-assisted learning media. This study aimed to investigate the effectiveness of the Vocabulary.com website in improving the vocabulary mastery of second-semester students at Universitas Bhinneka PGRI. A quantitative approach employing a *pre-experimental one-group pretest-posttest* design was applied. The participants consisted of 32 second-semester students selected as the research sample. Data were collected through a 20-item multiple-choice vocabulary test administered before and after the treatment. The collected data were analyzed using descriptive statistics and a *Paired Samples t-Test* with SPSS version 25. The findings revealed a substantial improvement in



students' vocabulary achievement, with the mean score increasing from 72.34 on the pretest to 85.78 on the posttest. Statistical analysis demonstrated a significance value of 0.000 ($p < 0.05$), indicating a significant difference between students' vocabulary performance before and after the implementation of Vocabulary.com. The findings suggest that the platform effectively enhances vocabulary mastery by providing contextualized, adaptive, and interactive learning experiences that encourage active student engagement. Therefore, Vocabulary.com can be considered an effective digital learning medium for supporting vocabulary instruction in higher education.

Keywords: *Digital Learning, English Vocabulary, Vocabulary Mastery, Vocabulary.Com*

INTRODUCTION

English has become increasingly important in higher education, particularly as universities expand the use of English-medium instruction, making English proficiency an important competence for university students (Santoso et al., 2024). Among the various components of language learning, vocabulary plays a fundamental role because it enables learners to understand and express meaning effectively. Aswad et al. (2022) emphasized that while grammar contributes to language structure, communication cannot occur without sufficient vocabulary. Likewise, Nation (2022) explains that vocabulary mastery involves understanding the meaning, form, and appropriate use of words in different contexts. Students with limited vocabulary often experience difficulties in reading comprehension, speaking fluently, writing accurately, and understanding spoken English, indicating that vocabulary knowledge is important for developing all language skills (Schmitt & Schmitt, 2020). These difficulties highlight the importance of providing learning experiences that present vocabulary through multiple forms of representation to support learners' understanding and processing of new words (Mayer, 2024).

The rapid development of educational technology has changed the way English is taught and learned. Conventional vocabulary instruction, which mainly depends on textbooks and memorization, has gradually shifted toward technology-enhanced learning environments that promote learner autonomy and active participation. In this context, web-based learning platforms provide flexible access to learning materials, feedback, and interactive learning experiences that can encourage students to practice independently (Li & Ni, 2024). Multimedia learning also facilitates deeper cognitive processing because learners receive information through multiple representations, including text, audio, and visual elements (Mayer, 2024). Moreover, technology-supported learning encourages students to become more responsible for their own learning process while improving motivation and engagement (Dooly & Vinagre, 2022). These advantages have made digital learning increasingly relevant for vocabulary instruction in higher education.

One digital platform that specifically supports vocabulary learning is Vocabulary.com. Unlike conventional dictionaries, Vocabulary.com combines contextual word explanations, adaptive learning algorithms, interactive quizzes, pronunciation support, and immediate feedback to help learners acquire vocabulary more effectively. The adaptive learning system continuously adjusts the level of difficulty according to students' previous performance, allowing learners to receive personalized vocabulary practice (Nishioka, 2020). This learning approach is consistent with Nation (2022), who emphasizes that effective vocabulary acquisition requires repeated exposure, contextual understanding, and meaningful practice.



Therefore, Vocabulary.com offers opportunities for learners to strengthen both receptive and productive vocabulary through continuous interaction with authentic language use.

Although digital learning media have been increasingly integrated into English language instruction, vocabulary mastery remains one of the major challenges for EFL learners, particularly during the early stages of university education. Students frequently encounter difficulties in understanding word meanings, recognizing vocabulary in different contexts, selecting appropriate lexical items, and using new vocabulary accurately in communication (Nation, 2022). These challenges indicate that conventional teaching approaches may not sufficiently support students in developing sustainable vocabulary knowledge. Consequently, integrating interactive digital platforms into vocabulary instruction has become an important alternative for improving students' learning outcomes.

Several previous studies have reported positive findings regarding technology-assisted vocabulary learning. Wiharja and Cahyadi (2022) found that Vocabulary.com effectively improved vocabulary acquisition among first-year university students through interactive online activities. Similarly, Syafutra et al. (2023) reported that the British Council for Teens website significantly enhanced students' vocabulary mastery by providing meaningful digital learning experiences. Furthermore, Wei-Xun and Jia-Ying (2024) concluded that AI-driven language learning applications positively influenced vocabulary acquisition by promoting adaptive, personalized, and technology-supported learning. Although these studies consistently demonstrate the benefits of digital learning, most were conducted in different educational contexts and involved different digital platforms or learner characteristics.

Based on these considerations, limited evidence is available regarding the effectiveness of Vocabulary.com for improving vocabulary mastery among second-semester university students in the Indonesian higher education context. This study investigates the effectiveness of using Vocabulary.com on the vocabulary mastery of second-semester students in the English Education Department at Universitas Bhinneka PGRI. The novelty of this study lies in examining the implementation of an adaptive web-based vocabulary platform within the context of Indonesian higher education, particularly among beginning university students who are developing their academic English competence. Using a quantitative pre-experimental one-group pretest-posttest design, this research is expected to provide empirical evidence regarding the contribution of Vocabulary.com to vocabulary mastery while offering practical recommendations for integrating digital learning technologies into English language instruction.

RESEARCH METHODS

This study employed a quantitative approach using a pre-experimental one-group pretest-posttest design to examine the effectiveness of the Vocabulary.com website on students' vocabulary mastery (Creswell, 2014). The research design was selected because the study involved one group of students who received a treatment through the Vocabulary.com website. The design enabled the researcher to examine changes in students' vocabulary mastery following the implementation of the treatment. The research focused on determining whether the use of Vocabulary.com contributed to an improvement in students' vocabulary mastery.

The research was conducted at the English Education Department of Universitas Bhinneka PGRI during the 2025/2026 academic year. The participants consisted of 32 second-semester students, who were selected because they represented beginner-level university learners in English language learning. The independent variable was the use of the



Vocabulary.com website as a web-based learning medium, while the dependent variable was students' vocabulary mastery, which included understanding word meanings, recognizing word forms, and using vocabulary appropriately in context.

The research procedure consisted of three stages (Creswell, 2014). First, a pretest was administered to measure students' initial vocabulary mastery. Second, students received vocabulary instruction through the Vocabulary.com website using contextual learning activities, interactive quizzes, synonym and antonym exercises, and pronunciation practice. Finally, a posttest was conducted using the same assessment format to measure students' vocabulary mastery after the treatment. Both tests consisted of 20 multiple-choice items covering vocabulary meaning, contextual word usage, synonyms, antonyms, and word recognition. Prior to data collection, the instrument was validated by an expert, and validity and reliability analyses confirmed that all test items were appropriate for use in the study.

The collected data were analyzed using IBM SPSS Statistics version 25. Descriptive statistics were employed to summarize students' pretest and posttest performance, while instrument quality was examined through validity and reliability testing. The normality test was conducted to ensure that the data met the assumptions required for parametric analysis. To determine whether the implementation of Vocabulary.com significantly improved students' vocabulary mastery, a Paired Samples t-Test was performed with a significance level of 0.05.

RESULTS AND DISCUSSION

Results

Students' Vocabulary Mastery Before and After the Treatment

The study involved 32 second-semester students of the English Education Department at Universitas Bhinneka PGRI. Students' vocabulary mastery was measured using a pretest administered before the implementation of Vocabulary.com and a posttest conducted after the treatment. The pretest and posttest results were compared to identify changes in students' vocabulary mastery following the implementation of Vocabulary.com.

The descriptive statistics revealed an improvement in students' vocabulary achievement after using Vocabulary.com. The mean score increased from 72.34 on the pretest to 85.78 on the posttest, indicating an average improvement of 13.44 points. Before the treatment, students' scores ranged from 35 to 95, whereas after the treatment the scores increased to a range of 60 to 100, suggesting an overall enhancement in vocabulary mastery. The pattern of students' vocabulary performance before and after the implementation of Vocabulary.com can be seen in Table 1, which presents the descriptive statistics of the pretest and posttest scores.

Table 1. Descriptive Statistics of Students' Vocabulary Scores

Test	N	Minimum	Maximum	Mean
Pretest	32	35	95	72.34
Posttest	32	60	100	85.78

Table 1 shows an improvement in students' vocabulary performance after the implementation of Vocabulary.com. The mean score increased from 72.34 in the pretest to 85.78 in the posttest, while the minimum score increased from 35 to 60 and the maximum score increased from 95 to 100. This pattern indicates that the improvement occurred not only in the average score but also in the lower end of students' achievement, suggesting that



Vocabulary.com may have supported students with lower initial vocabulary performance in achieving better scores after the treatment.

Instrument Testing

Prior to hypothesis testing, the research instrument was examined through validity and reliability analyses to ensure its appropriateness for measuring students' vocabulary mastery. The validity test was conducted using the Pearson Product-Moment Correlation after the instrument had undergone expert judgment by an English lecturer from Universitas Bhinneka PGRI. The instrument consisted of 20 multiple-choice items for both the pretest and posttest. The results indicated that all items met the validity criterion, with the obtained *r*-values exceeding the critical *r*-table value of 0.349. In the pretest instrument, the item correlation coefficients ranged from 0.539 to 0.839, while those of the posttest ranged from 0.423 to 0.673. Since all correlation coefficients were higher than the minimum requirement, all twenty items in both instruments were classified as valid and were considered appropriate for measuring students' vocabulary mastery.

The reliability of the research instrument was assessed using Cronbach's Alpha through IBM SPSS Statistics version 25. The analysis showed that the pretest instrument obtained a Cronbach's Alpha coefficient of 0.938, indicating excellent internal consistency, whereas the posttest instrument achieved a Cronbach's Alpha coefficient of 0.842, indicating high reliability. Both coefficients exceeded the acceptable threshold for reliability, demonstrating that the instruments consistently measured students' vocabulary mastery. Therefore, both the pretest and posttest instruments were considered reliable and suitable for subsequent statistical analysis.

Homogeneity Testing

The homogeneity test was conducted to determine whether the variance of the data between the groups was homogeneous. The results of the homogeneity of variance test are presented in Table 2. As shown in Table 2, the significance values obtained from all four testing methods are greater than 0.05, indicating that the data have homogeneous variances.

Table 2. Homogeneity of Results

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Hasil	Based on Mean	.506	1	62	.480
	Based on Median	.278	1	62	.600
	Based on Median and with adjusted df	.278	1	53.205	.600
	Based on trimmed mean	.545	1	62	.463

The results of the homogeneity test are presented in Table 2. The homogeneity test was conducted using Levene's Test to examine the equality of variance between the pretest and posttest data. As presented in Table 2, the significance value based on the mean was 0.480, which was higher than the significance level of 0.05. Furthermore, the significance values based on the median (0.600), adjusted median (0.600), and trimmed mean (0.463) also exceeded 0.05.

These findings indicate that the data had homogeneous variances and satisfied the assumption of homogeneity, making them suitable for further statistical analysis.

Linearity Testing

The linearity test was conducted to determine whether there was a linear relationship between the pretest and posttest scores. The results of the linearity test are presented in Table 3. The test results show that the significance value of the deviation from linearity was 0.521, which was greater than 0.05, indicating that the relationship between the pretest and posttest scores was linear.

Table 3. Linearity Testing
ANOVA Table

			Sum of Squares	df	Mean Square	F	Sig.
Pretest *	Between	(Combined)	2841.778	7	405.968	5.108	.001
Posttest	Groups	Linearity	2420.024	1	2420.024	30.449	.000
		Deviation from Linearity	421.754	6	70.292	.884	.521
	Within Groups		1907.440	24	79.477		
	Total		4749.219	31			

A linearity test was performed using ANOVA to examine the relationship between the pretest and posttest scores. As shown in Table 3, the significance value for Linearity was 0.000 ($p < 0.05$), indicating a significant linear relationship between the two variables. Moreover, the significance value for Deviation from Linearity was 0.521, which exceeded 0.05, indicating no significant deviation from linearity. Therefore, the data met the assumption of linearity and were appropriate for subsequent statistical analysis.

Normality Testing

The normality test was conducted to determine whether the pretest and posttest scores were normally distributed. The results of the normality test are presented in Table 4. The test results show the significance values of the pretest and posttest scores based on the Shapiro-Wilk test were 0.099 and 0.056, respectively, which were greater than 0.05.

Table 4. Normality Result
Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre Test	.138	31	.129	.944	31	.099
Post Test	.165	31	.026	.936	31	.056

a. Lilliefors Significance Correction

Based on the data presented in Table 4, the normality assumption can be assessed using the Shapiro-Wilk test. The normality of the data was tested using Shapiro-Wilk test, which is considered more accurate for small to medium sample sizes ($n \leq 50$), showed significance values of 0.099 for the Pre-Test and 0.056 for the Post-Test. Based on these findings, the

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assumption of normality was fulfilled, and the data were appropriate for further analysis using a parametric test, namely the paired samples t-test

Hypothesis Testing

The hypothesis test was conducted to determine whether there was a significant difference between students' vocabulary scores before and after the implementation of Vocabulary.com. A paired samples t-test was used to compare the pretest and posttest scores. The statistical findings are presented in Table 5.

Table 5. Hypothesis Result

Variable	Mean Difference	t-value	df	Sig. (2-tailed)
Pretest- Posttest	-13.437	-8.690	31	0.000

Based on the data shown in Table 5, the significance value (Sig. 2-tailed) was 0.000. The significance value was lower than 0.05 ($0.000 < 0.05$). Therefore, the alternative hypothesis (H1) was accepted and the null hypothesis (H0) was rejected. The result indicated that there was a significant difference between students' pretest and posttest scores after receiving treatment using Vocabulary.com. The mean difference value was -13.437, which indicated that the posttest scores were higher than the pretest scores. The negative value appeared because the calculation was conducted by subtracting pretest scores from posttest scores.

Furthermore, the t-value obtained from the analysis was -8.690 with degree of freedom (df) 31. This result showed that the improvement in students' vocabulary mastery after the implementation of Vocabulary.com was statistically significant. In addition, the mean score of the pretest was 72.34, while the mean score of the posttest increased to 85.78. The increase in the mean score indicated that students achieved better vocabulary mastery after learning through Vocabulary.com. Based on the result of the hypothesis testing above, it could be interpreted that the use of Vocabulary.com gave a significant effect on students' vocabulary mastery at the second semester of UBHI.

Discussion

The findings of this study demonstrate that the implementation of Vocabulary.com significantly improved students' vocabulary mastery. The increase in the mean score from 72.34 in the pretest to 85.78 in the posttest, together with the paired samples t-test result ($p = 0.000 < 0.05$), indicates that the use of Vocabulary.com positively influenced students' vocabulary achievement. This finding suggests that integrating digital learning platforms into vocabulary instruction can facilitate more effective vocabulary acquisition by providing students with repeated exposure, contextual learning, and immediate feedback. These features enable learners to understand not only word meanings but also their appropriate use in different communicative contexts, which is considered essential for successful vocabulary development (Alahmadi et al., 2023; Hao et al., 2021; Nation, 2022).

The improvement in students' vocabulary mastery can also be explained by the characteristics of Vocabulary.com as an adaptive learning platform. Unlike conventional vocabulary instruction that mainly depends on memorization and teacher explanation, Vocabulary.com provides personalized learning activities based on students' performance. The



platform continuously adjusts the level of difficulty while offering contextual examples, pronunciation support, and interactive quizzes that encourage students to learn independently. Such learning experiences are consistent with the cognitive theory of multimedia learning, which emphasizes that meaningful learning occurs when learners actively process information presented through multiple forms of representation, such as text, audio, and interactive activities (Mayer, 2024). Therefore, the interactive features available in Vocabulary.com may have contributed to the improvement in students' vocabulary mastery observed in this study.

The findings are also consistent with the view presented by Hanafiah et al. (2022), who emphasized that learners cannot communicate effectively without sufficient vocabulary knowledge. This perspective is further supported by Schmitt and Schmitt (2020), who explain that vocabulary mastery involves both receptive and productive knowledge, enabling learners not only to recognize words but also to use them appropriately in various contexts. The significant improvement shown by the participants indicates that continuous practice through contextualized digital learning helped students strengthen both aspects of vocabulary knowledge. Consequently, students became more capable of understanding vocabulary meaning, recognizing word usage, and applying vocabulary appropriately during learning activities (Zhu et al., 2024).

The present findings are in agreement with several previous studies on technology-assisted vocabulary learning. Wiharja and Cahyadi (2022) reported that Vocabulary.com significantly enhanced university students' vocabulary acquisition by providing interactive and adaptive learning experiences. Likewise, Syafutra et al. (2023) found that web-based vocabulary instruction effectively improved students' vocabulary mastery because learners were able to access learning materials flexibly while receiving immediate feedback during practice. Furthermore, Wei-Xun and Jia-Ying (2024) concluded that AI-supported language learning applications contributed positively to vocabulary acquisition by promoting personalized and learner-centered instruction. The consistency between the present findings and previous studies strengthens the evidence that digital learning platforms have considerable potential to improve vocabulary learning among EFL students (Kashefian-Naeeni et al., 2024; Rezai et al., 2026).

Although the results indicate a significant improvement, this study contributes additional evidence by examining the effectiveness of Vocabulary.com in the context of Indonesian higher education, particularly among second-semester students of the English Education Department at Universitas Bhinneka PGRI. Most previous studies have focused on secondary school students or different digital learning applications, whereas the present study specifically investigated the implementation of an adaptive web-based vocabulary platform in university-level English instruction. Therefore, this study extends previous findings by demonstrating that Vocabulary.com is not only suitable for independent vocabulary practice but also effective as a complementary instructional medium in higher education. These findings imply that English lecturers may integrate adaptive digital learning platforms into classroom instruction to enhance students' vocabulary mastery and encourage more autonomous learning (Putri & Akhriyah, 2024; Putri et al., 2025).

Overall, the findings confirm that Vocabulary.com provides meaningful learning experiences through adaptive practice, contextual vocabulary exposure, and immediate feedback, which collectively support students' vocabulary development. The significant improvement observed in this study indicates that technology-assisted vocabulary learning can serve as an effective instructional strategy for English language teaching, particularly in higher



education where students are expected to develop both academic vocabulary and independent learning skills (Aisy et al., 2026; Fadhillah & Marsuki, 2026; Umayah & Maruf, 2026).

CONCLUSION

This study found that the implementation of Vocabulary.com significantly improved the vocabulary mastery of second-semester students in the English Education Department at Universitas Bhinneka PGRI. The students' mean vocabulary score increased from 72.34 in the pretest to 85.78 in the posttest, with a significance value of 0.000 ($p < 0.05$). These findings indicate that Vocabulary.com can support vocabulary learning through adaptive, contextualized, and interactive learning experiences. The study also provides empirical evidence of the use of a web-based vocabulary learning platform in the context of Indonesian higher education, suggesting that digital learning media can complement conventional English vocabulary instruction.

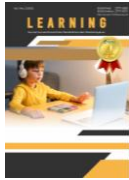
Despite these findings, this study was limited to one group of 32 second-semester students at a single university and employed a pre-experimental one-group pretest-posttest design, which limits the generalizability of the findings. Future research is recommended to employ experimental or quasi-experimental designs with larger and more diverse samples to provide broader evidence of the effectiveness of Vocabulary.com. Further studies could also examine the long-term effects of Vocabulary.com on other aspects of English language proficiency, such as reading comprehension, writing, speaking, and learner motivation.

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