



The Effect of Using Interactive Games (Gamestolearnenglish.com) on Eleventh Graders' English Vocabulary Mastery at an Agricultural Vocational School

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Abstract: *This study explores the impact of interactive games on the English vocabulary mastery of grade XI Animal Nursing students at the Kupang State Agricultural Vocational School. Given the low level of vocabulary mastery in vocational high school students, the study aims to investigate how using Gamestolearnenglish.com, an interactive game-based platform, can enhance vocabulary skills. A quasi-experimental design with pre- and post-treatment assessments was implemented. The results showed a significant improvement in students' vocabulary mastery, with the average score rising from 73.70 to 83.52, an increase of 9.82 points. The Shapiro-Wilk test confirmed the normality of the data, and a paired-sample t-test revealed a significant difference between the pre- and post-assessment ($p = 0.000$). This suggests that the use of interactive games significantly contributes to the enhancement of students' ability to recognize, understand, spell, and use vocabulary. These findings highlight the effectiveness of game-based learning in improving English vocabulary skills among vocational high school students, particularly in agricultural fields.*

Keywords: Educational Technology; English Vocabulary Mastery; Interactive Games; Learning Innovations; SMK Students.

1. BACKGROUND

Vocabulary mastery is fundamental to English language learning because it directly influences listening, speaking, reading, and writing skills. Harahap (2024), limited vocabulary is a major obstacle to language comprehension. Silalahi (2020) also states that grammar cannot be used effectively if it is not supported by sufficient vocabulary. Thus, the importance of vocabulary requires special attention in the learning process, especially in education that emphasizes preparing students to be professionally ready before entering the workforce.

Vocational High Schools (SMK) are oriented towards development that is in line with the needs of the professional sector. At this level, English language learning is directed so that students are able to communicate in accordance with their field of expertise (Isnani & Mahmudah, 2025). This also applies to vocational schools in the field of agriculture, where students are required to understand and use terms related to the world of work and agricultural activities appropriately. However, many students still have difficulty remembering the meanings of words they have learned, distinguishing the use of words in sentences, and tend to translate words literally when reading simple texts, so they often depend on their teachers (Deviga & Ardhani, 2024). This condition causes a lack of confidence and makes them passive during English learning activities.

The English proficiency of students in Indonesia is still relatively low. Data from the EF English Proficiency Index 2022 released by EF Education First shows that Indonesia ranks 81st out of 111 countries and is in the low proficiency category (Rahmawati et al., 2025). These results indicate weaknesses in basic language skills, one of which is vocabulary mastery, because the ability to understand and use language is greatly influenced by the number of words a student knows. The empirical evidence obtained shows consistency with research of Safitri et al. (2022) which reports that many students are still at the minimum competency level in reading literacy, making it difficult for them to understand the meaning of English texts. This condition shows that mastery of basic language elements, especially vocabulary, is still a challenge in English language learning.

Limited vocabulary mastery in English language learning is related to a number of factors, one of which is a learning process that tends to focus on providing word lists and translation activities. Learning activities often place students in the position of memorizing the meanings of English vocabulary without using them in context (Solihah et al., 2025). As a result, the vocabulary that has been learned is easily forgotten due to a lack of meaningful repetition and practice in using the words (Lestari et al., 2025). This condition emphasizes the urgency of developing innovative and attractive learning models as an effort to improve vocabulary competence in English language learning.

Efforts to renew English language learning can be made by utilizing interactive game-based digital media that can create a fun learning atmosphere while facilitating meaningful vocabulary repetition. Through game activities such as matching words with pictures, spelling, listening to pronunciation, and using words in simple contexts, students can learn more actively and contextually (Soleha et al., 2025). The Gamestolearnenglish.com website is a game-based learning platform that provides various activities such as matching words, picture identification, spelling games, and listening activities, allowing students to practice vocabulary repeatedly in an engaging and meaningful way (Jihan et al., 2022). Research of Wirahmi et al. (2025) shows that a game-based approach to English language learning has positive implications for student motivation and engagement when compared to conventional learning models. In addition, research of Bustang & Usman (2025) also found that game-based media is effective in significantly improving students' vocabulary mastery.

Based on the various issues discussed, this study was conducted to examine the effect of using interactive games through the Gamestolearnenglish.com website on the English vocabulary competence of grade XI Animal Nursing students at the Kupang State Agricultural Vocational School. The results of this study are expected to serve as a reference in the

development of more adaptive and effective learning media to improve students' vocabulary skills.

2. LITERATURE REVIEW

Vocabulary Mastery in English Language Learning

Vocabulary mastery is an essential prerequisite for the development of students' ability to understand information and express ideas orally and in writing. Vocabulary plays an important role as the basis for language skill development, so that limited vocabulary can hinder understanding and communication of information (Nurhayati & Hilmi, 2025). Vocabulary mastery indicators include understanding word meanings, spelling ability, correct pronunciation, and appropriate word usage in context (Rikmasari et al., 2025). For vocational high school students, mastering vocabulary is becoming increasingly important because they are required to be able to use English in accordance with their field of expertise as preparation for entering the workforce (Aryawan, 2023).

Game-Based Learning Media (Interactive Games)

Learning media refers to supporting tools used to facilitate the educational interaction process between educators and students (Permana et al., 2024). One form of media that has developed alongside the transformation of language learning is interactive games, which are game-based media designed to actively engage students through activities that require responses, immediate feedback, and continuous participation (Pakudu et al., 2024). In English language learning, interactive games allow students to learn through direct experience, meaningful repetition, and the use of language in more interesting contexts (Yuwana et al., 2025). The advantages of this medium include increasing student motivation, active participation, and memory retention of the material, while the disadvantages include dependence on technological facilities, potential distractions, and the need for good time management to ensure that the game remains focused on the learning objectives (Sari & Suyadi, 2024).

Gamestolearnenglish.com as a Learning Medium

Gamestolearnenglish.com is a web-based learning medium used in the form of a web-based vocabulary game to help improve students' vocabulary mastery (Jihan et al., 2022). This media provides various types of games related to objects around students and is developed to create a more dynamic learning atmosphere and reduce student boredom in learning vocabulary (Jihan et al., 2022). The use of web-based games makes the learning process more interesting, encourages active student participation, and facilitates students in understanding and

remembering the vocabulary they have learned (Jihan et al., 2022). Thus, *Gamestolearnenglish.com* falls under the category of interactive learning media designed to support the development of students' vocabulary skills.

3. RESEARCH METHOD

This research was conducted using a quantitative approach with a quasi-experimental design focused on testing the effect of using interactive games through the *Gamestolearnenglish.com* website on students' vocabulary mastery. The research was conducted at the Kupang State Agricultural Vocational School in the even semester of the 2025/2026 academic year, involving 27 students from the 11th grade Animal Nursing class as study participants. The sample was determined using purposive sampling, considering the uniformity of class abilities and their relevance to the study requirements. This study used a one-group design with pre-treatment (pretest) and post-treatment (posttest) assessments, the scheme of which is shown in Table 1.

Table 1. One-Group Design with Pre-Treatment and Post-Treatment Assessments.

Group	Pretest	Treatment	Posttest
Grade 11 (Experimental)	O ₁	X	O ₂

Description:

O₁ : Pre-test of students' vocabulary mastery before learning using interactive games.

X : Learning using interactive games through the *Gamestolearnenglish.com* website.

O₂ : Posttest of students' vocabulary mastery after treatment

Research data in the form of pre-treatment (pretest) and post-treatment (posttest) assessment scores were analyzed using the SPSS program. The initial stage of analysis used descriptive statistics to calculate the mean, minimum value, maximum value, and standard deviation of the pre-treatment and post-treatment assessment scores, in order to display an overall picture of the students' vocabulary mastery levels before and after treatment. Next, data normality was tested using the Shapiro–Wilk method to assess the suitability of the data for normal distribution. The data was considered normal if the Sig. value was > 0.05, while a Sig. value < 0.05 indicated that the data deviated from normal distribution. After the data distribution met the normality requirement, hypothesis testing was conducted using a paired-sample t-test to determine whether there was a significant difference between the pre-treatment and post-treatment assessment scores. The test decision was based on a Sig. (2-tailed) value < 0.05, thus confirming that the use of interactive games through *Gamestolearnenglish.com* had an effect on students' vocabulary mastery.

4. RESULTS AND DISCUSSION

Research Results

Before proceeding to inferential testing, pre-treatment and post-treatment assessment scores were presented through descriptive statistical analysis. The minimum, maximum, mean, and standard deviation values were presented as an overview of the initial conditions and the results after the following intervention.

	N	Minimum	Maximum	Mean	Std. Deviation
Pretest	27	60.00	90.00	73.7037	8.83531
Posttest	27	65.00	100.00	83.5185	9.17928
Valid N (listwise)	27				

Figure 1. Distribution of pretest and posttest vocabulary mastery scores.

Descriptive analysis revealed that before the use of interactive games, the average vocabulary mastery score of students was 73.70, with the lowest score being 60 and the highest being 90, and a standard deviation of 9.18. After the intervention through the Gamestolearnenglish.com website, the average score increased to 83.52, with a range of 65–100 and a standard deviation of 8.84. Data processing showed an increase in the average score of 9.82 points after the treatment.

The next stage involved examining the data distribution to ensure that the pre-treatment and post-treatment assessment scores were normally distributed. This normality test was used as a reference in determining the suitability of the data for parametric assumptions.

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.151	27	.117	.943	27	.147
Posttest	.231	27	.001	.928	27	.063

a. Lilliefors Significance Correction

Figure 2. Results of the Shapiro–Wilk test for pretest and posttest scores .

The Shapiro–Wilk normality test showed a Sig. value of 0.147 for the pre-treatment assessment scores and 0.063 for the post-treatment assessment scores. With both values > 0.05 , the students' vocabulary mastery data was considered to be normally distributed and ready for analysis using parametric tests, including the paired t-test.

After confirming the data distribution, the next step was to test the difference between the pre-treatment and post-treatment assessment scores using a paired t-test. This analysis was

used to determine the extent to which the learning media had a significant impact on students' vocabulary mastery.

		Paired Samples Test							
				Paired Differences					
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pretest - Posttest	-9.81481	5.27722	1.01560	-11.90241	-7.72722	-9.664	26	.000

Figure 3. Results of the paired sample t-test on pretest and posttest scores.

The paired sample t-test showed a t-value of -9.664, df 26, and Sig. (2-tailed) 0.000 (< 0.05), indicating a significant difference between the pre-treatment and post-treatment scores after the intervention through *Gamestolearnenglish.com*. The average difference of 9.81 points with a 95% confidence interval (7.73–11.90) marks a consistent increase in vocabulary scores and is in line with the average increase from 73.70 to 83.52. Thus, this interactive learning medium has been proven effective in improving students' vocabulary mastery.

Discussion

This study reports that the use of game-based learning media through the *Gamestolearnenglish.com* website has a significant effect on the vocabulary mastery of grade XI Animal Nursing students at the Kupang State Agricultural Vocational School. These findings show an increase in the average score from 73.70 in the pre-treatment assessment to 83.52 in the post-treatment assessment. These findings confirm that the use of game-based media can significantly improve students' vocabulary mastery. Although the study only involved one class, the difference in scores before and after treatment was quite clear.

Before the inferential test, the analysis prerequisites were examined using Shapiro–Wilk. The pre-treatment scores produced a significance value of 0.147, while the post-treatment scores produced a value of 0.063, both of which were above the threshold of 0.05, indicating that the data were normally distributed and met the parametric assumptions. A paired sample t-test analysis was then conducted to assess the impact of using game-based media on vocabulary mastery. A significance value of 0.000 (< 0.05) confirmed a significant increase in vocabulary mastery after using game-based learning media through the *Gamestolearnenglish.com* website.

The use of *Gamestolearnenglish.com* has been proven to make students more active and motivated in learning vocabulary. Activities such as completing sentences with comparative and superlative forms, correcting misspelled words, choosing the right words through multiple-choice quizzes, and filling in short answers provide opportunities for students to learn

vocabulary interactively through direct experience and fun repetition. This method differs from the conventional approach, which only emphasizes memorization and translation, which tends to make vocabulary quickly forgotten and reduces motivation to learn. With game media, students not only memorize words, but also understand the use of words in a more realistic context, thereby increasing their memory and understanding of vocabulary.

The results of this research are in line with research of Alexandre et al. (2023) which indicates that the use of educational games such as Gamestolearnenglish.com can enhance the English learning experience through engaging and intuitive interactions. Most users rated the information presented in the game as memorable and satisfying for learning, although some evaluations pointed to the need for adjustments in difficulty level and content clarity for more proficient users. In addition, the interoperability, visual appeal, and entertainment elements in the game contribute to better learning motivation and knowledge retention. Thus, these findings emphasize that Gamestolearnenglish.com is an effective, interactive, and enjoyable learning medium, capable of providing an adaptive learning experience and facilitating English language mastery for users of various skill levels.

Research conducted by Putri et al. (2025) revealed that the use of web-based learning media, particularly Gamestolearnenglish.com, can significantly improve the vocabulary mastery of sixth-grade elementary school students. This website helps students recognize, understand, and use vocabulary in relevant contexts, such as terms related to health and hospitals, through interactive activities such as guessing words, constructing sentences from pictures, and other vocabulary games. The research findings show that the average student score increased from 74.48 before the treatment to 92.76 after the treatment, while also building students' motivation, confidence, and active participation in English learning. Thus, Gamestolearnenglish.com successfully functions as a fun interactive learning medium, while strengthening students' vocabulary mastery and engagement.

In addition to what has been mentioned, evidence from Jihan et al. (2022) This indicates that the use of web-based learning media through Vocab Game at gamestolearnenglish.com can improve the vocabulary mastery of seventh-grade students. Game activities encourage students to learn interactively and enjoyably, making it easier for them to remember new vocabulary while actively participating in learning activities. Therefore, these findings also reinforce the argument that game-based learning media using the gamestolearnenglish.com website is effective in increasing students' motivation, participation, and vocabulary mastery skills.

The overall results of this study prove that the use of game-based learning media through Gamestolearnenglish.com is effective in improving the vocabulary mastery of agricultural vocational school students. This media can function as an interactive and creative learning alternative to support English language learning and help students develop communication skills relevant to their field of expertise.

5. CONCLUSION AND RECOMMENDATIONS

The use of interactive game-based learning media through Gamestolearnenglish.com has been proven to have a significant impact on the vocabulary skills of Grade XI Animal Nursing students at SMK Pertanian Pembangunan Negeri Kupang. This is supported by a paired sample t-test, which shows a significance value of 0.000 (< 0.05), confirming a significant difference between pre-treatment and post-treatment assessment scores. Thus, the use of web-based interactive game media such as Gamestolearnenglish.com can improve students' abilities through activities such as completing sentences with comparative and superlative forms, correcting misspelled words, choosing the right words through multiple-choice quizzes, and filling in short answers, making learning more accurate, meaningful, and enjoyable. Therefore, English teachers are advised to utilize game-based learning media in an integrated manner to improve students' vocabulary mastery. Furthermore, future research should involve a broader sample, an experimental design with a control group, and testing of other language skills to produce more comprehensive results with strong generalizability.

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