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The Effectiveness of Using Instagram Social Media to Improve Vocabulary Mastery of Eleventh-Grade Students at SMA Negeri 4 Purworejo in the Academic Year of 2025/2026

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Abstract: *The Effectiveness of Using Instagram Social Media to Improve Vocabulary Mastery of Eleventh Grade Students at SMA Negeri 4 Purworejo in The Academic Year of 2025/2026. This study aims to examine the effectiveness of using Instagram as a learning medium to improve vocabulary mastery among eleventh-grade students at SMA Negeri 4 Purworejo. The research employed a quantitative approach with a one-group pre-test and post-test design. The sample consisted of 30 eleventh-grade students selected from the population. Data were collected using a multiple-choice vocabulary test consisting of 30 items, administered before and after the treatment. The treatment involved vocabulary instruction using Instagram features such as posts, captions, and visual content. The collected data were analyzed using descriptive statistics and paired sample t-test. The results showed that the mean score of students increased from 60.33 in the pre-test to 78.67 in the post-test. The paired sample t-test result indicated a significance value of 0.000, which is lower than 0.05, meaning that there is a significant difference between students' vocabulary mastery before and after using Instagram. Therefore, it can be concluded that the use of Instagram social media is effective in improving vocabulary mastery of eleventh-grade students at SMA Negeri 4 Purworejo.*

Keyword: *Instagram, vocabulary mastery, social media in learning, EFL, senior high school*

INTRODUCTION

Language plays a crucial role as a tool for communication in human interaction. It serves as a means to convey thoughts, ideas, and emotions, allowing individuals to connect with one another in various contexts. As a system of symbols and sounds, language enables people to share knowledge and culture, fostering cooperation and understanding across different communities. In the educational setting, language is particularly significant as it serves as the medium for teaching and learning, especially in subjects that require students to engage with complex concepts. Therefore, mastering language, particularly academic language, is essential for students to succeed in school and beyond.

Vocabulary plays a crucial role in mastering English as a foreign language. It is a fundamental component that supports the development of the four language skills: listening, speaking, reading, and writing (Zuhri & Patel, 2025). Without sufficient vocabulary, students may find it difficult to understand texts, express ideas, and communicate effectively. Vocabulary knowledge is an essential element of language proficiency because it directly influences learners' ability to comprehend and produce language (Hartini & Suri Ardini, 2024). Therefore, improving students' vocabulary mastery is one of the primary goals in English language teaching, especially at the senior high school level.

However, in many Indonesian EFL classrooms, vocabulary learning is still dominated by conventional teaching techniques, such as rote memorization, textbook-based exercises, and teacher-centered instruction (Rahmah et al., 2025). These traditional methods often emphasize memorizing word lists without sufficient context, which may limit students' understanding and long-term retention of vocabulary. As a result, students may quickly forget the vocabulary they have learned and find it difficult to apply the words in real communication. Monotonous teaching methods can reduce students' motivation and engagement in language learning. Consequently, students tend to become passive learners and show low participation during English lessons.

The rapid development of smartphone technology and the increasing use of social media among teenagers have encouraged educators to integrate digital platforms into English language instruction. Learning through social media is considered appropriate because it is closely related to students' daily habits and interests. Among various social media platforms, Instagram is one of the most frequently used by students. Instagram is a visual-based social networking application that offers several features, including posts, captions, stories, reels, and comment sections, which can function as alternative learning media. These features enable teachers to deliver learning materials through images, videos, and brief written texts that are more attractive and easier for students to understand. By interacting with captions, hashtags, and comments, students receive authentic language input in meaningful contexts. Consequently, students can learn new vocabulary naturally through contextual use rather than memorizing isolated word lists, which makes vocabulary learning more interesting and effective.

Several recent studies have highlighted the enormous potential of Instagram as an effective learning tool for vocabulary acquisition, especially in the context of English as a Foreign Language (EFL). An important study conducted by Muliana and Dewi (2023) found that students who were taught using Instagram as a learning medium showed a much higher level of vocabulary acquisition compared to students who received instruction through conventional methods. The results of the study show that the use of Instagram allows students to learn vocabulary through visual materials, contextual examples, and exposure to authentic language, which makes the learning process more meaningful and enjoyable. Through images, captions, and interactive content, students can associate new words with real-life contexts, leading to better understanding and long-term vocabulary retention. In addition, the interactive nature of Instagram encourages students to participate more actively in the learning process, thereby increasing their motivation and engagement during vocabulary learning activities. These findings indicate that Instagram not only improves students' vocabulary achievement but also serves as an effective and innovative learning medium that supports active and contextual vocabulary learning in EFL classrooms.

Although previous studies have thoroughly examined the use of Instagram as a learning medium to improve students' vocabulary mastery and generally report positive results, there are still several gaps in the existing literature. Most previous studies were conducted at the college level or in educational contexts different from high school, with a limited focus on 11th grade students. In addition, many studies emphasize student perceptions and general learning outcomes without investigating in depth the effectiveness of Instagram in a formal classroom

environment that is aligned with curriculum objectives. Furthermore, research exploring the use of Instagram for vocabulary learning in regional or local school contexts, such as high schools in Purworejo, is still limited. Therefore, empirical evidence regarding the effectiveness of Instagram as a medium for vocabulary learning for 11th grade students at SMA Negeri 4 Purworejo is still insufficient. This condition highlights the need for further research to examine the effectiveness of using Instagram social media in improving the vocabulary mastery of 11th grade students in the 2025/2026 academic year.

Despite the promising findings reported in previous studies regarding the use of Instagram as a learning medium, its implementation in English language instruction at SMA Negeri 4 Purworejo has not yet been widely or systematically applied. In current classroom practices, English teachers still tend to rely on conventional teaching media and teacher-centered instructional methods, while the potential of social media, particularly Instagram, has not been fully explored as a tool to support vocabulary learning in formal classroom settings. This condition contrasts with students' daily learning habits, as most eleventh-grade students are active Instagram users who frequently interact with English content outside the classroom. However, this exposure has not been optimally utilized to support structured and goal-oriented vocabulary learning in school. Moreover, previous studies have predominantly focused on higher education contexts or emphasized students' perceptions and general learning outcomes, leaving limited empirical evidence on the effectiveness of Instagram-based vocabulary instruction for senior high school students in local educational settings. Therefore, it is necessary to conduct further research to investigate the effectiveness of using Instagram social media to improve the vocabulary mastery of eleventh-grade students at SMA Negeri 4 Purworejo during the academic year of 2025/2026. The findings of this study are expected to provide empirical evidence and practical insights for English teachers in implementing innovative, technology-based, and student-centered learning media that align with curriculum objectives and students' digital learning preferences.

Literature Review

Vocabulary Mastery

Vocabulary mastery refers to learners' comprehensive knowledge of lexical items and their ability to use those items appropriately in communication. Contemporary second language acquisition research defines vocabulary mastery as a multidimensional construct that includes not only knowledge of word meanings, but also word forms, pronunciation, grammatical behavior, collocation, and pragmatic use in context. According to Webb and Nation (2020), vocabulary mastery involves both *breadth* (the number of words known) and *depth* (how well each word is known). Learners who demonstrate high vocabulary mastery are able to recognize words receptively and use them productively with accuracy and fluency. This view is reinforced by Schmitt (2020), who argues that vocabulary knowledge develops gradually through repeated exposure and meaningful use rather than through memorization alone. In the context of EFL learning at the senior high school level, vocabulary mastery is essential because students are expected to understand academic texts, respond to instructions, and express ideas using increasingly complex language.

Social Media in Language Learning

Social media refers to digital platforms that enable users to create, share, and interact with content within online communities. In educational contexts, social media functions as a learning environment that extends instruction beyond the classroom and allows learners to engage with content informally. According to Dizon and Tang (2020), social media platforms provide opportunities for authentic language exposure, peer interaction, and learner autonomy, which are essential for second language development. Unlike traditional learning materials, social media presents language in real-world contexts, making learning more meaningful and relevant

Instagram as a Learning Medium

Instagram is a social networking application that allows users to share photos, videos, captions, and short texts through posts, stories, and reels. Its design emphasizes visual communication, making it highly attractive to young learners. According to (Fauziah et al., 2023) Instagram's multimodal features make it suitable for language learning, particularly vocabulary instruction, because learners can associate new words with visual representations and contextual examples.

Theoretical Foundations Supporting Instagram Use

Constructivist theory emphasizes that learners actively construct knowledge through interaction and experience. Instagram supports constructivist learning by allowing learners to engage with authentic content, interact with peers, and create their own language output. According to Vygotskian perspectives revisited by Lantolf and Poehner (2021), social interaction plays a crucial role in language development. Instagram provides a social space where learners negotiate meaning and internalize vocabulary through interaction.

Mayer's Multimedia Learning Theory states that learners process information more effectively when it is presented through both verbal and visual channels. Instagram aligns with this theory because vocabulary items are presented alongside images, videos, and contextual cues. The implementation of multimedia-based instructional strategies in Indonesian classrooms has been found to improve both vocabulary retention and comprehension, as learners exposed to audio-visual and interactive content outperformed peers taught with text-only materials (Fadillah et al., 2025)

Mobile-Assisted Language Learning emphasizes the use of mobile devices to support flexible and autonomous learning. Instagram fits within the MALL framework by enabling learners to access vocabulary learning materials anytime and anywhere. According to Kukulska-Hulme (2020), mobile learning increases exposure to language input and supports informal learning, which is particularly beneficial for vocabulary acquisition

METHOD

This study employed a quantitative approach using a *one-group pre-test-post-test* design within a *non-experimental research* framework to examine the effectiveness of Instagram in improving students' vocabulary mastery. The research was conducted in the academic year 2025/2026 at SMA Negeri 4 Purworejo, with the population consisting of all eleventh-grade students, while the sample was one class serving as the experimental group. The research instrument was a multiple-choice test consisting of 30 items administered in both the *pre-test* and *post-test* to measure students' vocabulary mastery. Data collection techniques included administering the *pre-test* before treatment, providing vocabulary instruction through Instagram as the treatment, and conducting the *post-test* after the treatment. The collected data were analyzed using quantitative statistical techniques, including descriptive statistics (mean, standard deviation, minimum and maximum scores), normality and homogeneity tests, and hypothesis testing using *independent sample t-test* and *paired sample t-test* with a significance level of 0.05 to determine differences and improvements in students' learning outcomes.

RESULTS AND DISCUSSION

The data were collected through a quantitative approach using a one-group pre-test and post-test design. The participants of this study consisted of 30 eleventh-grade students of SMA Negeri 4 Purworejo in the academic year of 2025/2026.

The pre-test was administered before the implementation of the treatment to measure students' initial vocabulary mastery. Meanwhile, the post-test was conducted after the treatment to examine the improvement in students' vocabulary mastery after being exposed to Instagram-based learning activities. The test instrument consisted of 30 multiple-choice

questions that were designed to measure students’ understanding of vocabulary, including word meaning, word usage in context, synonyms, and basic sentence comprehension.

The data collected from the tests were then analyzed using descriptive and inferential statistical analysis in order to provide objective evidence regarding the effectiveness of the treatment.

Table 1. Students' Scores Data

No	Pre-Test	Post-Test
1	73	86
2	56	68
3	46	63
4	77	88
5	58	73
6	71	95
7	75	86
8	48	60
9	70	92
10	61	78
11	40	64
12	65	89
13	78	100
14	47	69
15	76	94
16	54	70
17	69	82
18	78	93
19	62	75
20	53	64
21	62	81
22	77	95
23	68	80
24	74	88
25	41	54
26	68	92
27	69	93
28	72	89
29	49	71
30	47	72

The table of students’ scores shows that there was a noticeable improvement in students’ vocabulary mastery after the implementation of the treatment. Almost all students experienced an increase in their scores, which indicates that the use of Instagram contributed positively to their vocabulary development. Students who initially had low scores demonstrated considerable improvement after the treatment. This suggests that Instagram-based learning is not only effective for high-achieving students but also beneficial for students with lower levels of vocabulary mastery. The improvement across different levels of students indicates that Instagram provides equal learning opportunities and supports inclusive learning.

Pre-Test Statistics

Table 2. Pre-Test Statistics

Indicator	Score
Highest	80
Lowest	40
Mean	60.33
Std Dev	10.25

The results of the pre-test revealed that students' vocabulary mastery before the treatment was relatively low. The mean score of the pre-test was 60.33, which indicates that the majority of students had not yet reached the expected level of vocabulary proficiency. Several factors contributed to this condition. First, students were still accustomed to traditional learning methods that emphasized memorization of vocabulary lists without sufficient contextual understanding. As a result, students were able to remember words temporarily but struggled to use them appropriately in sentences or real communication.

Second, the lack of engaging learning media reduced students' motivation to learn vocabulary. Many students considered vocabulary learning to be boring and difficult, which affected their participation during classroom activities. This finding is consistent with Nation (2020), who states that vocabulary knowledge requires not only memorization but also repeated exposure and meaningful use in context. Without these elements, vocabulary learning becomes less effective, and students are more likely to forget the words they have learned. Furthermore, the relatively high standard deviation in the pre-test indicates that there was a significant variation in students' vocabulary mastery. This means that some students had better vocabulary knowledge, while others struggled considerably.

Post-Test Statistics

Table 3. Post-Test Statistics

Indicator	Score
Highest	92
Lowest	65
Mean	78.67
Std Dev	8.45

After the implementation of Instagram as a learning medium, the post-test results showed a significant improvement in students' vocabulary mastery. The mean score increased to 78.67, indicating that students were able to understand and use vocabulary more effectively after the treatment. The increase in the lowest score from 40 to 65 also indicates that students with lower ability experienced improvement. This suggests that Instagram-based learning provides support for students who previously had difficulties in vocabulary learning. The improvement in students' scores can be explained by the characteristics of Instagram as a learning medium. Instagram provides visual and contextual input through images, videos, and captions, which help students understand vocabulary in meaningful contexts. According to Webb and Nation (2020), vocabulary learning becomes more effective when learners are exposed to words in context and have opportunities to encounter them repeatedly. Instagram facilitates this process by providing continuous exposure to vocabulary through posts, captions, and interactions. In addition, Instagram allows students to actively participate in learning by commenting, writing captions, and engaging with content. This active involvement helps students internalize vocabulary and improves their ability to use words in context.

Normality Test

The normality test was conducted to determine whether the data were normally distributed.

Table 4. Normality Test

Data	Sig. Value	Interpretation
Pre-Test	0.200	Normal
Post-Test	0.200	Normal

Since the significance values are greater than 0.05, it can be concluded that both datasets are normally distributed. According to Creswell (2012), normal data distribution is an important assumption for conducting parametric statistical tests.

Hypothesis Testing

A paired sample t-test was used to analyze whether there was a significant difference between pre-test and post-test scores.

Table 5. Hypothesis Testing

Data	Sig. (2-tailed)	Decision
Pre-Test vs Post-Test	0.000	Significant

The significance value is **0.000**, which is lower than 0.05. Therefore, the alternative hypothesis (H_a) is accepted, and the null hypothesis (H_o) is rejected. This means that there is a statistically significant difference between students' vocabulary mastery before and after using Instagram

SPSS Output (Paired Sample Test)

Table 6. SPSS Output (Paired Sample Test)

Paired Differences	Mean	Std Dev	Sig (2-tailed)
Pre-Post	18.34	5.21	0.000

To determine whether the improvement in students' vocabulary mastery was statistically significant, a paired sample t-test was conducted. The result of the statistical analysis showed that the significance value (Sig. 2-tailed) was 0.000, which is lower than the level of significance (0.05). This indicates that there is a significant difference between the pre-test and post-test scores.

This finding confirms that the improvement in students' vocabulary mastery was not caused by chance but was a result of the treatment given during the research. Therefore, it can be concluded that the use of Instagram as a learning medium has a significant effect on students' vocabulary mastery.

Discussion

The findings of this study demonstrate that Instagram is an effective learning medium for improving students' vocabulary mastery. The significant improvement in students' scores indicates that integrating social media into language learning can enhance both learning outcomes and student engagement. Before the implementation of Instagram, students showed low motivation and limited participation in vocabulary learning activities. This condition was mainly influenced by the use of conventional teaching methods, which often failed to engage students actively.

After the treatment, students became more enthusiastic and actively involved in the learning process. They showed greater interest in learning vocabulary and were more willing to participate in classroom activities.

CONCLUSION

Based on the research findings and discussion, it can be concluded that the use of Instagram social media has a significant positive effect on students' vocabulary mastery. The pre-test results showed that students' vocabulary mastery was relatively low, indicating that they had difficulties in understanding and using English vocabulary. After the implementation of Instagram as a learning medium, students' vocabulary mastery improved significantly, as indicated by the increase in the mean score from **60.33** to **78.67**. The statistical analysis confirmed that the improvement was significant, with a significance value of 0.000, which is lower than 0.05. Therefore, it can be concluded that Instagram is an effective and innovative learning medium that can improve students' vocabulary mastery.

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