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Enhancing Vocabulary By Using Duolingo : A Study At SMP N 1 Juwana

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Abstract

This article explores the effectiveness of the Duolingo application in improving English vocabulary acquisition among junior high school students. Conducted at SMPN 1 Juwana, the study employs a quasi-experimental design involving two eighth-grade classes: one as an experimental group using Duolingo, and the other as a control group receiving conventional instruction. The study utilizes pre-test and post-test instruments comprising multiple-choice, completion, and matching items, analyzed using SPSS version 25. Results show that the experimental class achieved a significantly higher post-test mean score compared to the control class (87.59 vs. 82.88), with a significance value of 0.000. The findings confirm that Duolingo positively influences vocabulary mastery and is recommended as an innovative tool for English language instruction.

Keyword: Vocabulary, Duolingo, English Learning

Introduction

Education is a fundamental aspect of human development and plays a vital role in preparing individuals to face the demands of the modern era. despite its importance, the education system in indonesia continues to face various challenges, including low student motivation, lack of family involvement, economic limitations, and disparities in educational facilities between urban and

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rural areas. teachers, as key agents in the learning process, also face problems such as low salaries and limited resources, which can negatively impact their teaching performance. these issues highlight the urgent need for effective and innovative learning strategies that can address the diverse needs of students.

The context of english language learning, one of the most persistent challenges is vocabulary mastery. vocabulary is the foundation of language skills and is essential for the development of reading, writing, speaking, and listening competencies. students with limited vocabulary often struggle to understand texts, express ideas clearly, and participate in communicative activities. traditional teaching methods may not be sufficient to support vocabulary acquisition, especially when they lack interactive and engaging elements. therefore, it is necessary to explore alternative methods, including the use of digital tools, to enhance students' vocabulary learning in a more effective and enjoyable way.

Duolingo is a digital language learning application that offers gamified and interactive learning experiences, making it an appealing tool for today's students. it provides various exercises to practice vocabulary, grammar, pronunciation, and comprehension through a user-friendly platform. this study, titled "enhancing vocabulary by using duolingo: a study at smpn 1 juwana," aims to examine the effectiveness of duolingo in improving students' vocabulary mastery. by integrating duolingo into classroom instruction, this research seeks to provide empirical evidence on the potential of technology-based learning in supporting english language acquisition, particularly among junior high school students.

Literature Review

technology plays a vital role in modern education, particularly in language learning. the use of digital media such as duolingo has been proven to increase students' learning motivation and engagement through gamification and adaptive learning approaches (febriana, 2025; chuang & jamiat, 2023). duolingo is a language learning application designed to simplify the learning process by offering exercises in reading, writing, listening, and speaking in an interactive and enjoyable format (rus et al., 2024). vocabulary mastery is a fundamental aspect of language acquisition as it

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affects students' ability to comprehend, express ideas, and communicate effectively (normurodovna, 2025). various elements of vocabulary, such as meaning, synonyms, antonyms, connotation, denotation, and collocation, are essential to ensure students can use language naturally and contextually (fitrah & afria, 2024). therefore, integrating vocabulary teaching strategies with digital media like duolingo is considered relevant and has the potential to significantly improve students' english learning outcomes.

English Vocabulary Mastery through Duolingo

Vocabulary is a fundamental component of english language learning, as it directly affects students' ability to understand, express ideas, and communicate effectively in both oral and written contexts. a strong vocabulary base correlates with improved reading comprehension and writing performance. mastering vocabulary involves not only understanding word meanings, but also recognizing synonyms, antonyms, connotations, denotations, collocations, and appropriate usage in context (riemer, 2019; fitrah & afria, 2024). however, many students still struggle with remembering and applying vocabulary due to limited exposure, lack of motivation, and traditional teaching approaches (rosyada, 2023). the integration of digital media, particularly duolingo, offers a promising solution to these challenges. duolingo is a widely used language-learning application that provides interactive, gamified experiences through structured skill trees, covering listening, speaking, reading, and writing tasks (ajisoko, 2020). according to Fitriani (2024), duolingo utilizes adaptive technology and real-time feedback that help students retain vocabulary more effectively. the platform also implements motivational tools such as experience points (xp), badges, and leaderboards, which foster continuous engagement and consistency in learning (rus et al., 2024; kazu & kuvvetli, 2024). research shows that students who use duolingo demonstrate increased motivation, improved vocabulary retention, and more positive attitudes toward language learning (suryanto, 2024; sari et al., 2022). furthermore, duolingo accommodates various learning styles, allowing students to learn at their own pace and revisit difficult material. given its accessibility, adaptability, and effectiveness, duolingo is a highly suitable tool to support english vocabulary acquisition, especially among junior high school learners. thus, integrating duolingo into the

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language curriculum is not only relevant to today's digital generation but also supported by empirical studies confirming its positive impact on learning outcomes.

Gamified Vocabulary Acquisition through Duolingo

By examining the structure of language learning in junior high school students, it becomes clear that motivation, repetition, and contextual exposure play a central role in vocabulary acquisition. In this stage, students are not only absorbing words but also beginning to actively use and recall vocabulary based on stimuli and reinforcement. The Duolingo application provides a learning environment that aligns well with this phase of cognitive and linguistic development. The app delivers input through visual prompts, listening exercises, and interactive tasks that encourage students to connect word meanings with their usage. Like children drawn to the audiovisual stimulation of YouTube, students respond positively to Duolingo's colorful interface, rewarding system, and bite-sized lessons. The gamification features—such as XP points, streaks, and badges—stimulate consistent participation and elevate their interest in engaging with English vocabulary on a regular basis. In the receptive stage of language development, Duolingo supports vocabulary intake through listening and reading tasks. Students repeatedly encounter target words in varying contexts, allowing their brains to store these patterns in long-term memory. At the expressive stage, Duolingo challenges them to produce language through typing, speaking, and sentence construction tasks that mirror real communication. Over time, these activities influence not only students' vocabulary mastery but also their pronunciation, grammar, and confidence in using English. Duolingo thus serves as a structured yet playful environment where learners are guided toward independent language use. However, as with any digital tool, unsupervised use may lead to over-reliance or shallow learning if students only aim to "win" the game rather than absorb the meaning. Thus, when used intentionally with guidance, Duolingo has the potential to significantly enhance vocabulary development and foster positive language learning habits among young learners. Research findings from this study also confirmed that students exposed to Duolingo outperformed their peers in traditional classrooms, indicating that such platforms can meaningfully shape the trajectory of language development at this formative educational stage.

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Research Methodology

A quantitative quasi-experimental methodology was implemented in this study, with tests serving as the primary data source. to determine the effectiveness of the duolingo application in improving vocabulary mastery, pre-tests and post-tests were administered to both the experimental and control groups. the experimental group received instruction using duolingo, while the control group was taught using conventional methods. the research subjects were selected from eighth-grade students at smpn 1 juwana, consisting of 64 students divided equally into two groups of 32. data were gathered through vocabulary tests comprising multiple choice, completion, and matching questions. the results from these instruments were then analyzed using spss version 25, applying descriptive statistics, normality and homogeneity tests, as well as paired and independent samples t-tests. this approach enabled the researcher to assess the extent of vocabulary improvement in each group and to determine whether the use of duolingo significantly influenced students' vocabulary acquisition.

Findings

This research was executed in two phases. The first phase involved pre-test administration to both experimental and control groups to determine students' initial vocabulary proficiency. The second phase consisted of the learning intervention—where the experimental group used the Duolingo application, and the control group continued with conventional teaching methods. Both phases concluded with a post-test to evaluate the extent of vocabulary improvement.

During the treatment phase, the researcher observed the impact of Duolingo's interactive features on students' engagement and vocabulary retention. The students in the experimental class used Duolingo regularly as part of their classroom activities. They engaged in vocabulary-based exercises including matching, fill-in-the-blank, and multiple choice tasks embedded within

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Duolingo's gamified learning environment. Students received immediate feedback, visual prompts, and sound-based reinforcement throughout their use of the application.

The data showed that 100% of students in the experimental group completed both pre- and post-tests. The average pre-test score in the experimental class was 73.69, while the post-test average rose to 87.59, indicating a significant improvement. In comparison, the control group's average pre-test score was 70.09, increasing to 82.88 in the post-test. This reflects a smaller gain than the experimental class. The statistical analysis via SPSS 25 confirmed a significant difference in outcomes, with a sig. (2-tailed) value of 0.000, affirming the effectiveness of Duolingo. The Duolingo group outperformed the control group by an average of 4.719 points.

Additionally, classroom observations revealed that Duolingo contributed to a more enthusiastic learning atmosphere. Students appeared more motivated and less anxious when encountering new vocabulary. Many students were also able to recall and pronounce English words more confidently by the end of the intervention. Words frequently retained and repeated included basic nouns (e.g., cat, apple, school), verbs (e.g., run, eat, play), and common expressions (e.g., I want to eat, Let's go). The findings also highlight that Duolingo's design aligns well with early stages of language acquisition. Similar to early childhood language development stages observed in visual and auditory learning, students paid close attention to sounds and symbols on the app. This behavior mirrors early listening and imitation patterns, which are foundational to vocabulary learning. As such, Duolingo not only facilitated vocabulary growth but also stimulated cognitive language processes related to memory, recognition, and contextual usage.

Conclusion

As a result of this study, it has been demonstrated that students who were taught using the Duolingo application experienced significantly greater improvement in their English vocabulary mastery compared to those who received conventional instruction. The interactive features, gamified learning environment, and regular engagement provided by Duolingo served as an effective

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stimulus for enhancing vocabulary retention and student motivation. The consistency and frequency of using this digital tool contributed positively to the students' language development. However, while Duolingo has clear educational benefits, its effectiveness can be limited if not supported by proper teacher guidance or student discipline. Without structured use, students may treat the app merely as a game rather than a learning platform. Consequently, the role of educators and school management is essential in integrating Duolingo into the classroom as a formal learning tool and in monitoring its use. Further research is recommended to explore the long-term impacts of gamified language learning tools like Duolingo on broader language competencies such as grammar, pronunciation, and communication skills.

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