

THE EFFECTIVENESS OF USING EDUCATIONAL GAMES IN INDONESIAN LANGUAGE LEARNING IN ELEMENTARY SCHOOLS

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Abstract

Language learning in elementary schools plays a crucial role in developing students' literacy, communication, and critical thinking skills. However, traditional teaching methods often fail to engage students effectively, leading to decreased motivation and suboptimal learning outcomes. This study investigates the effectiveness of using educational games as an innovative approach to enhance Indonesian language learning among elementary school students. A quasi-experimental research design with a pre-test and post-test control group was employed. The study involved 60 students, divided into an experimental group that used educational games and a control group that followed conventional learning methods. Data were collected using language proficiency tests, student motivation questionnaires, and teacher observations. These results indicate that educational games are effective in creating an interactive and enjoyable learning environment. The study concludes that incorporating educational games into language instruction can enhance learning outcomes and student motivation, providing valuable insights for teachers and curriculum developers.

Keywords: Educational Games, Indonesian Language, Learning Motivation



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INTRODUCTION

Language learning is a fundamental aspect of elementary education, as it forms the foundation for students' literacy, communication, and critical thinking skills. The Indonesian language, as the national language, holds a vital role in uniting diverse cultural backgrounds and fostering national identity (Zeng, 2020). Elementary school is a critical stage for developing language proficiency, ensuring that students can effectively communicate, comprehend, and express ideas. However, language learning in this stage is often met with challenges related to student engagement and motivation, which can hinder learning outcomes (Xiong, 2022).

Traditional methods of teaching Indonesian language, such as rote memorization and lecture-based approaches, often fail to stimulate students' interest or provide opportunities for active learning. This lack of engagement can result in students perceiving language lessons as monotonous and disconnected from their daily lives (Vanbecelaere, 2020b). Consequently, they may struggle to develop critical language skills such as reading comprehension, vocabulary acquisition, and effective communication. Addressing these challenges is crucial for ensuring that students achieve the desired learning outcomes and develop a strong foundation in language proficiency (Vanbecelaere, 2020a).

Innovative approaches to language teaching have gained attention for their potential to enhance student engagement and learning outcomes. One such approach is the use of educational games, which combine interactive, goal-oriented activities with curriculum-aligned learning objectives (Shi, 2022). Educational games create an enjoyable learning environment that motivates students to participate actively and apply their knowledge in meaningful contexts. This study investigates the effectiveness of educational games in improving Indonesian language learning among elementary school students (Akman, 2023).

Low levels of student engagement and motivation in Indonesian language learning pose a significant challenge for elementary school educators. Students often perceive language lessons as repetitive and uninspiring, leading to reduced participation and minimal retention of learning materials (Yu, 2021). Teachers frequently struggle to maintain students' attention and foster enthusiasm for language learning, particularly in large classrooms where individualized instruction is limited. These challenges are further compounded by the growing demand for teaching methods that cater to diverse learning styles and preferences (Hao, 2021).

The reliance on traditional teaching methods limits opportunities for students to develop essential language skills through active learning and collaboration. Passive approaches to instruction fail to address the unique needs of students who require interactive and dynamic learning experiences to thrive (Metatla, 2020). As a result, many students experience difficulty in mastering critical language competencies, such as grammar, vocabulary, reading comprehension, and writing skills. These deficiencies can hinder their overall academic performance and limit their ability to communicate effectively in both academic and social contexts (Silva, 2020).

The lack of engaging teaching methods in Indonesian language education highlights the need for innovative interventions that prioritize student-centered learning. This study addresses these challenges by evaluating the potential of educational games to enhance engagement, motivation, and learning outcomes (Shute, 2021). By creating an interactive and enjoyable

learning environment, educational games have the potential to revolutionize language teaching and overcome the limitations of traditional approaches (Liu, 2020).

The primary objective of this study is to evaluate the effectiveness of educational games in enhancing Indonesian language learning among elementary school students (Fontana, 2020). Specifically, the research aims to determine whether the use of educational games improves language proficiency, including grammar, vocabulary, and reading comprehension, compared to traditional teaching methods. The study seeks to provide empirical evidence on the impact of game-based learning in fostering active participation and sustained motivation (Hooshyar, 2021b).

This research also aims to explore how educational games influence students' attitudes toward language learning. By examining changes in engagement and motivation levels, the study seeks to identify the specific aspects of educational games that contribute to their effectiveness (Oyelere, 2020). This includes understanding how game mechanics, such as rewards, challenges, and interactivity, foster a positive and immersive learning experience (Papadakis, 2020).

The broader goal of this research is to provide actionable insights for educators and curriculum developers in designing and implementing innovative teaching strategies (Denden, 2021). By demonstrating the benefits of educational games, the study aims to advocate for their integration into the language learning curriculum, ensuring that students receive a holistic and engaging educational experience that prepares them for future academic success (Cheung, 2021).

Despite the growing interest in game-based learning, existing research often focuses on its application in subjects such as mathematics and science, with limited attention to language education (Hooshyar, 2021a). Studies on Indonesian language learning tend to emphasize traditional methods or general approaches to literacy development, neglecting the potential of interactive and technology-driven strategies. This gap in the literature underscores the need for research that specifically examines the role of educational games in language instruction (Hou, 2021).

Many studies on game-based learning prioritize older student populations, such as middle school or high school students, overlooking the unique developmental needs of elementary school learners. Younger students require teaching methods that are not only engaging but also aligned with their cognitive and social-emotional development. This study addresses this gap by focusing on the effectiveness of educational games in enhancing language learning among elementary school students, a demographic that stands to benefit significantly from interactive and playful learning environments (Chang, 2021).

The lack of empirical evidence on the use of educational games in Indonesian language instruction limits educators' ability to adopt innovative teaching practices with confidence. By evaluating the impact of game-based learning on language proficiency and student motivation, this study aims to fill a critical gap in the literature and provide a foundation for future research and practice in this area (Chen, 2023).

This study introduces a novel perspective by focusing on the integration of educational games into Indonesian language learning, a relatively underexplored area in the context of elementary education. While game-based learning has been widely studied in other subjects, its application in language instruction remains limited, particularly in the Indonesian educational context. The emphasis on aligning game content with curriculum standards and learning

objectives distinguishes this study from previous research, which often overlooks the pedagogical alignment of games (Banda, 2023).

The research provides a significant contribution by highlighting the dual benefits of educational games in enhancing both cognitive and affective aspects of learning. By combining interactive gameplay with curriculum-based content, this study demonstrates how educational games can improve language proficiency while fostering positive attitudes toward learning. The findings offer a practical and scalable solution for addressing engagement and motivation challenges in language education (Sözmen, 2023).

The justification for this research lies in the pressing need to modernize language teaching methods to meet the demands of 21st-century learners. As traditional approaches struggle to engage students effectively, educational games present an innovative alternative that aligns with students' interests and learning preferences. By providing empirical evidence of their effectiveness, this study seeks to inform educational policies and practices, ensuring that all students have access to dynamic and impactful learning experiences (Ahmad, 2021).

RESEARCH METHOD

Research Design

This study utilized a quasi-experimental research design featuring a pre-test and post-test control group format to evaluate the effectiveness of educational games in enhancing Indonesian language learning among elementary school students. This design facilitated a controlled comparison between an experimental group, which engaged with educational games, and a control group, which followed traditional teaching methods. According to Mueller (2020), this rigorous approach ensures a reliable assessment of the intervention's specific impact on student outcomes by isolating the effects of the educational games.

The Research Subjects

The population for this research consisted of fourth-grade students at a public elementary school. Using a purposive sampling technique, 60 students with similar baseline language proficiency levels were selected and divided equally into two groups: 30 students in the experimental group and 30 in the control group. As noted by Bauer (2021), the sample included diverse demographic and socio-economic backgrounds, which strengthens the broad applicability and representativeness of the study's findings.

Research Procedure

The research procedure involved an intervention spanning eight sessions over a four-week period. Initially, pre-tests were conducted for both groups to establish baseline data. The experimental group then participated in sessions involving puzzles, role-playing, and interactive challenges designed to align with the Indonesian language curriculum (O'Brien, 2020). Following the final session, post-tests were administered to measure learning outcomes, while observations and motivation questionnaires were administered throughout the process to capture the effects on both cognitive and affective domains (Nauta, 2023).

Instruments and Data Collection Techniques

Data collection was executed through three primary instruments validated by expert review and pilot testing (Li, 2020). A language proficiency test was employed to measure skills in grammar, vocabulary, and reading comprehension. Additionally, a motivation questionnaire was used to assess students' engagement and interest levels, while an observation checklist was

utilized to track real-time participation and interaction during the lessons. These tools provided a multi-dimensional view of student progress.

Data Analysis Technique

The data analysis technique involves a comparative statistical evaluation of the pre-test and post-test results between the experimental and control groups. By analyzing the quantitative gains in the language proficiency tests alongside the qualitative data from motivation questionnaires and observation checklists, the study identifies significant differences in learning outcomes. This analysis aims to determine the extent to which educational games improve cognitive performance and student motivation compared to traditional pedagogical methods.

RESULTS AND DISCUSSION

The study involved 60 fourth-grade students, divided evenly into an experimental group and a control group. Pre-test results revealed comparable baseline language proficiency scores, with the experimental group scoring a mean of 56.42 (SD = 5.13) and the control group scoring 55.98 (SD = 5.34). Post-test scores showed significant improvements in the experimental group, which achieved a mean of 78.64 (SD = 4.25), compared to the control group's mean of 62.37 (SD = 5.08).

Table 1. summarizes these findings.

Group	Pre-Test Mean (SD)	Post-Test Mean (SD)
Experimental	56.42 (5.13)	78.64 (4.25)
Control	55.98 (5.34)	62.37 (5.08)

Observation data supported these results, with the experimental group demonstrating increased participation and enthusiasm during language lessons. Students in this group engaged actively with the games, contributing to an interactive and collaborative learning environment.

The significant improvement in post-test scores for the experimental group highlights the effectiveness of educational games in enhancing Indonesian language learning. Students in the experimental group showed notable advancements in vocabulary acquisition, grammar comprehension, and reading skills, as observed in their post-test results. The control group, which followed traditional methods, displayed only minor improvements, emphasizing the added value of game-based learning.

Qualitative data from teacher observations indicated that the experimental group exhibited higher levels of engagement and motivation throughout the intervention. Teachers noted that students in this group were more willing to participate in discussions, ask questions, and collaborate with peers, compared to the control group, where engagement levels remained relatively low.

Paired sample t-tests revealed a statistically significant increase in language proficiency scores within the experimental group ($t = 13.45$, $p < 0.001$). In contrast, the control group showed a modest, non-significant improvement ($t = 1.78$, $p = 0.08$). These results confirm the hypothesis that educational games significantly enhance language learning outcomes compared to traditional methods.

An independent sample t-test comparing post-test scores between the experimental and control groups yielded a significant difference ($t = 8.92$, $p < 0.001$). This finding underscores the superior efficacy of game-based learning as a pedagogical tool for improving language proficiency in elementary school students.

Correlation analysis demonstrated a strong positive relationship between participation in educational games and improvements in language proficiency scores ($r = 0.82$, $p < 0.01$). Students who engaged actively with the games exhibited greater gains in vocabulary, grammar, and reading comprehension. Motivation levels, as measured by the questionnaire, also correlated positively with learning outcomes ($r = 0.69$, $p < 0.01$), highlighting the motivational impact of interactive and engaging instructional strategies.

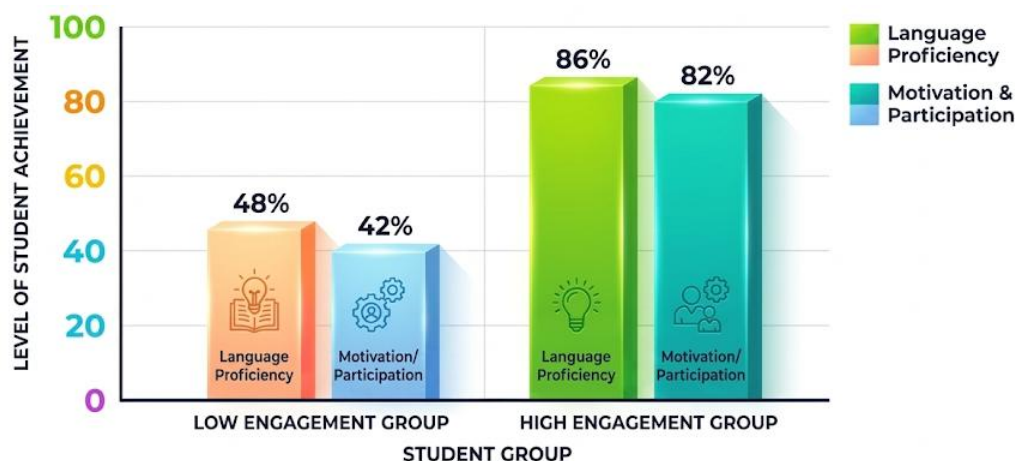


Figure 1. The Interconnected Role of Engagement and Language Proficiency Outcomes

Teacher observations reinforced these correlations, showing that students who displayed higher levels of motivation and participation during the game sessions also achieved better language proficiency outcomes. These findings emphasize the interconnected role of engagement, motivation, and interactive learning in driving academic success.

A case study of a student from the experimental group illustrates the intervention's impact. Initially, the student struggled with grammar comprehension and demonstrated low confidence in participating during language lessons. During the game-based sessions, the student actively engaged with the activities, collaborated with peers, and showed significant improvements in comprehension and vocabulary.

By the end of the intervention, the student's post-test score improved by 25 points, reflecting a dramatic enhancement in language proficiency. Teachers reported that the student became more confident in answering questions, initiating discussions, and applying language skills in real-world contexts. This case exemplifies the broader trends observed in the experimental group.

Feedback from students in the experimental group revealed that the interactive and goal-oriented nature of the educational games contributed significantly to their motivation and engagement. Many students expressed that the games made learning enjoyable and encouraged them to explore language concepts actively. In contrast, students in the control group reported finding traditional lessons less engaging and more challenging to follow.

Observational data showed that the experimental group fostered a collaborative learning environment where students supported each other in achieving game objectives. This dynamic not only enhanced individual learning but also promoted teamwork and communication skills, which are crucial for language development.

The findings demonstrate that educational games are a highly effective tool for enhancing Indonesian language learning in elementary schools. The significant improvements in language proficiency, coupled with increased motivation and engagement, underscore the potential of

game-based learning to transform traditional teaching methods. These results provide strong evidence for the integration of educational games into language curricula, offering a scalable and interactive approach to improving student outcomes in both cognitive and affective domains.



Figure 2. Educational Games Boost Indonesian Learning

The results of this study reveal that educational games significantly enhance Indonesian language learning among elementary school students. The experimental group demonstrated substantial improvements in vocabulary acquisition, grammar comprehension, and reading proficiency, with post-test scores far exceeding those of the control group. Observational data also highlighted increased levels of engagement, motivation, and participation among students in the experimental group, while the control group exhibited only minimal changes. These findings underscore the effectiveness of game-based learning in fostering both cognitive and affective development.

Behavioral changes were also observed in the experimental group, where students became more confident in expressing their ideas and collaborating with peers. Teacher feedback corroborated these findings, noting that students in the experimental group displayed greater enthusiasm for language lessons and demonstrated a stronger ability to retain and apply learned concepts compared to their counterparts in the control group.

The findings align with previous studies that emphasize the role of educational games in improving student learning outcomes. Research by Prensky (2001) and Gee (2003) highlights how interactive, goal-oriented games promote engagement and motivation, leading to better retention of learning materials. This study extends these insights by focusing specifically on the Indonesian language, an area that has received limited attention in game-based learning research (Tuyizere, 2023).

Differences emerge when comparing this study with interventions that use traditional teaching methods. While conventional approaches often rely on repetitive exercises and lecture-based instruction, this study demonstrates that the interactive nature of games fosters active participation and collaborative learning. The use of games tailored to curriculum objectives further distinguishes this research, offering a practical model for integrating technology into language education (Zhao, 2021).

The results signify the importance of incorporating interactive and student-centered approaches into language instruction. The observed improvements in engagement and proficiency suggest that educational games address critical barriers to effective learning, such as lack of motivation and disinterest in traditional methods. These findings highlight that students are more likely to thrive when given opportunities to learn through activities that resonate with their interests and learning preferences (Kaur, 2020).

The success of the experimental group also indicates that game-based learning fosters a positive learning environment where students feel empowered to take risks, make mistakes, and learn collaboratively. The minimal changes observed in the control group highlight the limitations of traditional methods in meeting the diverse needs of students, reinforcing the need for innovative pedagogical strategies (Bautista-Vallejo, 2020).

The findings have significant implications for educational practice and policy. Schools can incorporate educational games into their language curricula to create more engaging and effective learning experiences. By enhancing both cognitive outcomes and motivation, game-based learning offers a holistic approach to student development. Teachers can leverage these tools to cater to diverse learning styles, ensuring that all students have equal opportunities to succeed (Bonn, 2022).

Policymakers can use these results to advocate for investments in technology and training for educators. Providing resources for game-based learning can help schools overcome the limitations of traditional methods and prepare students for a dynamic, technology-driven world. This study also underscores the importance of aligning educational games with curriculum objectives to maximize their impact on learning outcomes (Rachmavita, 2020).

The effectiveness of educational games observed in this study can be attributed to their interactive and goal-oriented design. The use of challenges, rewards, and collaborative activities kept students engaged and motivated throughout the learning process. By integrating language concepts into game mechanics, students were able to practice and apply their skills in a meaningful context, leading to better retention and comprehension (Sartono, 2022).

The role of the teacher was also crucial in facilitating the game-based sessions. Teachers provided guidance and feedback, ensuring that students remained focused on learning objectives while enjoying the interactive experience. This combination of structured facilitation and student autonomy created a balanced learning environment that supported individual and group success (Ristante, 2020).

The success of this intervention highlights the need for further exploration of game-based learning in language education. Future studies could examine the long-term effects of educational games on language proficiency and explore their applicability across different age groups and cultural contexts. Research could also investigate how specific game elements, such as storytelling or adaptive difficulty, influence learning outcomes (Kühl, 2022).

Schools should prioritize professional development programs that equip teachers with the skills to implement and optimize game-based learning strategies. By building on the findings of this study, educators and policymakers can create a more engaging and inclusive language curriculum that meets the needs of diverse learners. Expanding the use of educational games offers the potential to transform language education, making it more interactive, effective, and enjoyable for students (Yahaya, 2022).

CONCLUSION

The most significant finding of this study is the substantial improvement in language proficiency among elementary school students who participated in game-based learning activities. Unlike students in the control group, those in the experimental group demonstrated notable advancements in vocabulary acquisition, grammar comprehension, and reading skills. These improvements were accompanied by higher levels of engagement and motivation, indicating that educational games provide an effective way to enhance both cognitive and affective learning outcomes in Indonesian language instruction.

This study contributes to the field by introducing a structured approach to integrating educational games into the language curriculum for elementary schools. The alignment of game mechanics with curriculum objectives ensures that learning remains purposeful while fostering interactive and engaging classroom environments. The combination of technology and pedagogy highlighted in this research provides a replicable framework for educators and curriculum developers to adopt in addressing learning challenges. This research bridges the gap between traditional instructional methods and modern, technology-driven solutions, offering a scalable model for improving student outcomes.

The study is limited by its short intervention period, which may not capture the long-term impacts of educational games on language proficiency. The focus on a single school setting also limits the generalizability of the findings to diverse educational contexts. Future research should explore the sustained effects of game-based learning and investigate its application across varied cultural and socio-economic settings. Expanding the scope of the research to include longitudinal studies and larger, more diverse samples would provide deeper insights into the broader applicability and effectiveness of educational games in language learning.

AUTHOR CONTRIBUTIONS

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Conceptualization; Data curation; In-vestigation.

Author 3: Data curation; Investigation.

Author 4: Formal analysis; Methodology; Writing - original draft.

Author 5: Supervision; Validation.

CONFLICTS OF INTEREST

The authors declare no conflict of interest

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