

Game-Based Learning Berbantuan Wordwall Untuk Meningkatkan Hasil Belajar Ips Sekolah Dasar Dalam Kerangka Kurikulum Merdeka

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Abstract

The Merdeka Curriculum emphasizes student-centered and meaningful learning, yet classroom implementation in primary schools often remains teacher-dominated and less interactive. This study investigates the effectiveness of Wordwall-assisted Game-Based Learning (GBL) in improving fourth-grade students' learning outcomes in Integrated Science and Social Studies (IPAS) on the topic of Indonesian cultural diversity. Using Classroom Action Research (CAR) across three cycles with 24 students, data were collected through observation, interviews, documentation, and written tests. The results demonstrate a progressive improvement in mean scores from 60 in the pre-cycle phase to 78 in Cycle III, with classical mastery increasing from 25% to 83.33%. The findings indicate that digital game-based pedagogy enhances cognitive achievement, engagement, and motivation, supporting the implementation of the Merdeka Curriculum in primary education.

Keywords: Game-Based Learning, Wordwall, IPAS, Learning Outcomes, Merdeka Curriculum, Primary Education

1 INTRODUCTION

Technology plays a significant role in modern education, fueling students' enthusiasm for learning. In the digital age, educational curricula must continually transform to remain relevant, inclusive, and effective in facing future challenges. In Indonesia, adapting to technology is a strong foundation for education, as reflected in the Independent Curriculum (Niken Vioreza., et al 2025). The Independent Curriculum emphasizes in-depth, diverse, and student-centered learning, and encourages active, creative, and critical thinking. In science, students are encouraged to actively participate through hands-on activities to foster a scientific attitude. This attitude is crucial for addressing scientific issues and must be instilled from an early age. Learning should be tailored to students' thinking levels, in line with developments in national and regional education (Niken Vioreza., et al 2025).

The success of curriculum implementation depends not only on the design but also on teacher readiness, learning resources, and equitable distribution of facilities. Therefore, strategies to strengthen educator capacity and provide infrastructure are necessary to ensure optimal and sustainable implementation of the curriculum (Alam Slamet Barkah., et al 2025). Teachers need to choose appropriate learning strategies, methods, and techniques. The use of technology should be maximized to create a varied and enjoyable learning environment.

Learning in the Independent Curriculum, particularly the science content in elementary schools, requires engaging teaching media. Science plays a role in shaping the Pancasila Student Profile, an ideal representation of Indonesian learners. This content encompasses basic concepts of natural and social sciences, enabling students to understand natural and social phenomena around them and develop positive attitudes toward the environment and

society. Science learning also stimulates students' curiosity and sensitivity to the environment, both inside and outside the classroom (Dede Nurhamzah., et al 2025).

The topic of Indonesia's cultural richness is one of the topics taught in Natural and Social Sciences (IPAS) for fourth graders in the second semester. In this subject, students will learn about various aspects of Indonesian culture, such as art, language, traditions, and the diversity of ethnic groups within the country Indonesia. The goal is for students to understand the importance of this cultural richness, as well as to recognize and appreciate the various cultural heritages this country possesses. This learning is also expected to foster a sense of patriotism and pride in Indonesian culture (Amalia Fitri., et al 2021).

According to Benjamin Bloom, learning outcomes are generally classified into three domains, namely the cognitive domain, the affective domain, and the psychomotor domain (Ihwan Mahmudi., et al 2022). Student learning outcomes are an indicator of educational success, encompassing cognitive abilities, attitudes, values, skills, and behavioral changes. To improve these outcomes, teachers need to reinforce the material and select learning methods appropriate to the students' abilities and characteristics. These factors interact with each other and influence the extent to which students understand the material and achieve the desired learning objectives.

Researchers conducted observations and interviews in November 2024 in class IV MI RM Darul Abror, which consisted of 24 students. Only five students were active, while the others were passive because learning still used conventional methods such as lectures and questions and answers, and minimal use of technology. Interviews revealed that students preferred interactive and fun learning. To achieve maximum learning outcomes, activities in the teaching and learning process need to be well organized. Interesting learning methods can increase student engagement in lessons. Students who are involved tend to be more focused and work hard to understand the material and complete assignments well.

One interactive media that teachers can implement in learning activities is educational games, such as Wordwall. Educational games are a form of play that supports the teaching and learning process in a fun and creative way, and serve to provide instruction or increase knowledge through engaging media. Wordwall is a web-based application that provides a variety of interactive games that teachers can design as engaging learning media, learning resources, or online assessment tools for students. This media is a solution for improving learning outcomes through interactive game concepts (Ihfanti Fidya., et al 2021).

Based on the results of observations and interviews, researchers together with science teachers plan to conduct a study entitled "Efforts to Improve Science Learning Outcomes on Indonesian Cultural Wealth through Game Based Learning Methods Assisted by Digital Wordwall Media". The purpose of this study is to determine the improvement in science learning outcomes on Indonesian cultural wealth through Game Based Learning methods assisted by digital Wordwall media for fourth grade students of MI RM Darul Abror in the even semester of the 2024/2025 academic year.

2 RESEARCH METHODS

The research method used in this study is Classroom Action Research (CAR), based on the model developed by Kemmis and McTaggart, which consists of four stages: planning, action, observation, and reflection (Suharsimi Arikunto et al., 2021). This study aims to improve the effectiveness of education or educational management systems, serving as a problem-solving strategy to take appropriate actions in order to enhance and improve the learning process (Atmazaki et al., 2023). The research was conducted on fourth-grade students at MI RM Darul Abror. The instruments used to collect valid data included observation, interviews, practice test questions, documentation, and field notes.

Each cycle in the learning process is designed to show improvement, both in terms of the learning process itself and student learning outcomes. These cycles serve as reflective and evaluative stages that are interconnected and continuous. If, during the

implementation of Cycle I, there is no significant improvement observed in student participation, motivation, or academic performance, then the teacher and researcher must revise the learning strategy in Cycle II. These revisions may include adjustments to the teaching methods, instructional approaches, or learning media used. Furthermore, if the expected improvements are still not achieved in Cycle II, additional enhancements and innovations will be applied in Cycle III to ensure meaningful progress is made.

Each cycle consists of two learning sessions. The first session focuses on delivering the learning material in an engaging and interactive way, aiming to build students' initial understanding of the topic. The second session is dedicated to practice activities and material reinforcement through the use of interactive digital games using Wordwall. In this session, students are encouraged to apply the knowledge they have acquired in the form of enjoyable educational games, which serve not only to assess their understanding but also to increase their active participation in the learning process.

During the implementation of each cycle, several key aspects are systematically observed. These aspects include students' attitudes toward learning, their level of interest and motivation, learning outcomes, as well as their understanding of and engagement with the use of interactive digital media such as Wordwall. The data collected from these observations serve as a basis for reflection to assess the success of each cycle and to inform improvements in the next one. Thus, this approach focuses not only on the final outcomes but also on fostering a sustainable and adaptive learning process that meets the needs of the students.

3 RESULT AND DISCUSSION

This research was conducted in Grade IV at MI RM Darul Abror, located in Jatisampurna, Bekasi. The class consisted of 24 students, comprising 14 boys and 10 girls. Based on the initial observations carried out by the researcher, it was found that the learning process for the IPAS subject, particularly on the topic of *Indonesia's Cultural Wealth*, had not been running optimally and was still ineffective in achieving the expected learning objectives. The teacher continued to use conventional teaching methods, such as lectures and one-way question-and-answer sessions, which tended to create a monotonous classroom atmosphere and failed to stimulate students' interest in learning. As a result, student participation remained low, with many appearing passive, unenthusiastic, and disengaged from discussions and other learning activities.

This situation was further reflected in the results of the daily test, where the average student score was only 60. Moreover, only 6 out of 24 students managed to meet the Minimum Learning Mastery Criteria (KKTP), which was set at a score of 75. These low results indicated that the majority of students had not yet understood the material adequately. Therefore, it became clear that there was a need for innovation in the learning approach—one that could create a more engaging, interactive environment and foster greater student involvement. One potential solution is the use of a *Game-Based Learning* method supported by digital media such as Wordwall, which can provide a fun, technology-integrated learning experience while still delivering meaningful educational content.



Figure 1. Wordwall Game Display



Figure 2. Example of a Wordwall Question

3.1 Analysis of Learning Outcomes

The results of the written test analysis showed that many students had not fully understood the basic concepts of the topic on Indonesia's cultural wealth. This is suspected to be due to an unengaging classroom atmosphere that failed to spark students' enthusiasm and attention toward the lesson being delivered. To address this issue, the planned research action involves the use of the Game-Based Learning method supported by the digital media Wordwall to improve learning outcomes in the IPAS subject.

3.1.1 CYCLE I

The researcher began implementing the Game-Based Learning method supported by the digital media Wordwall. At this stage, the teacher conducted the lesson using digital educational games to introduce the concept of Indonesia's cultural wealth in an enjoyable way. Observation results showed an increase in student engagement and attention, although some students still faced difficulties adapting to the use of digital media. The average student learning score increased to 63.75, with a classical mastery level of 41.67%. Reflection results indicated that students had started to show interest in the learning process; however, improvements were needed in time management, familiarization with the use of Wordwall, and variation in the games to create a more dynamic learning environment.

3.1.2 CYCLE II

The teacher improved the learning implementation by adding more game variations, strengthening group work, and increasing student engagement through small competitions. Students' learning activities significantly increased, and the classroom atmosphere became more conducive. The teacher received an observation score of 85, categorized as excellent. The average student learning score also rose to 72.80, with a

classical mastery level of 66.67%. Reflections from this cycle indicated that students had understood how to play using the Wordwall platform and began to show active and enthusiastic attitudes, although further reinforcement of concept understanding was still needed.

3.1.3 CYCLE III

The teacher carried out the learning process optimally, using Wordwall in a more varied and interactive manner. The students appeared highly enthusiastic and actively participated in the learning activities. The teacher acted as a facilitator, guiding the flow of the games, while the students demonstrated good teamwork and a deeper understanding of the topic on Indonesia's cultural wealth. The average student learning score reached 78, with a classical mastery level of 83.33%, which exceeded the research success indicator of at least 80%. Therefore, the study was concluded in Cycle III, as the target for improving learning outcomes had been achieved.

Overall, there was an improvement in students' learning outcomes from the pre-cycle to Cycle III, with the average score increasing from 60 to 78. Classical mastery also rose from 25% in the pre-cycle to 83.33% in Cycle III. These results indicate that the implementation of the Game-Based Learning method supported by the digital media Wordwall had a positive impact on improving students' learning outcomes in the IPAS subject.

3.2 Discussion of Research Results

The implementation of the Game-Based Learning method supported by the digital media Wordwall has proven effective in enhancing students' learning outcomes in the IPAS subject, specifically on the topic of Indonesia's Cultural Heritage. The improvement in scores across each cycle indicates that students were able to better understand the material through interactive, enjoyable, and meaningful learning activities. The use of digital games via Wordwall helped create a non-monotonous learning atmosphere, provided immediate feedback, and motivated students to engage in healthy competition.

The success of this method lies in the increased interaction between teachers and students during the learning process. Wordwall offers a variety of game formats such as quizzes, random wheels, and crossword puzzles, which encourage students to think critically and collaborate in groups. This aligns with constructivist theory, where students actively build their own knowledge through direct experience. The teacher is no longer the sole source of information but serves as a facilitator, guiding students toward a deeper understanding of the material.

At the beginning of the study, some students appeared unfamiliar with using digital media. However, as the learning process progressed through each cycle, their engagement and learning motivation increased significantly. The reflection process conducted after each cycle provided opportunities for the teacher and researcher to improve the teaching strategies, making the implementation of the following cycles more effective.

The results of this study are also in line with the findings of Lovandri Dwanda Putra (2024), which showed that the use of Wordwall in the Game-Based Learning model can improve students' learning outcomes through active participation and a fun learning environment. In addition, this research supports the findings of Syifa Sadiyah (2023), who stated that the implementation of Game-Based Learning assisted by Wordwall can enhance students' critical thinking skills and conceptual understanding.

Thus, the implementation of the Game-Based Learning method supported by the digital media Wordwall not only improves students' learning outcomes in the IPAS subject but also fosters motivation, creativity, and active participation in the learning process. Game-based learning provides meaningful learning experiences, nurtures a strong enthusiasm for learning, and helps students understand the material thoroughly and enjoyably.

Table 1. Analysis of Student Learning Outcomes

No	Siklus	Rata-rata
1	Siklus I	63,75
2	Siklus II	72,08
3	Siklus III	78,00

Table 2. Analysis of Student Learning Outcomes

No	Siklus	Tuntas	Tidak Tuntas
1	Siklus I	10 siswa	14 siswa
2	Siklus II	16 siswa	8 siswa
3	Siklus III	20 siswa	4 siswa

The consistent improvement in learning outcomes in each cycle indicates that the integration of Game-Based Learning with the aid of Wordwalls has a positive impact on student academic achievement. This finding aligns with research by Huang, Hew, and Lo (2021), which states that digital game-based learning environments can improve concept retention through instant feedback mechanisms and gradual challenges. The immediate feedback provided in Wordwalls allows students to correct errors in real time, thereby strengthening the encoding and retrieval processes in long-term memory.

From a learning engagement perspective, this finding supports the student engagement framework proposed by Fredricks et al. (2021), which divides engagement into behavioral, emotional, and cognitive dimensions. Game-based learning simultaneously enhances all three. Behaviorally, students are more active in answering questions and participating in discussions. Emotionally, students demonstrate enthusiasm and enjoyment during learning. Cognitively, students are able to understand the material more deeply and systematically.

Within the Merdeka Curriculum framework, this pedagogical approach supports student-centered learning and meaningful technology integration. Digital game-based instruction is not merely a variation of method but a structured pedagogical innovation that creates an interactive and adaptive learning ecosystem. It strengthens digital literacy while promoting critical thinking and collaboration, which are essential competencies for twenty-first-century learners.

Nevertheless, this study has limitations. The sample size was relatively small, and no control group was included for experimental comparison. Additionally, the measurement focused primarily on cognitive outcomes without comprehensive affective assessment. Future research employing quasi-experimental designs and inferential statistical analysis is recommended to strengthen empirical validation.

4 CONCLUSION

The implementation of the Game-Based Learning method using the digital media Wordwall in Grade IV at MI RM Darul Abror, Jatisampurna, Bekasi, during the even semester of the 2024/2025 academic year has been proven to improve student learning outcomes. This is evident from the increasing percentage of learning mastery in each cycle. In the initial stage (pre-cycle), the mastery level was only 25%. After Cycle I, mastery increased to 41.67%. The improvement continued in Cycle II, reaching 66.67%, and by Cycle III, it reached 83.33%. This mastery refers to the Minimum Learning Achievement Criteria

(KKTP) with a minimum standard of 75. Therefore, the implementation of the Game-Based Learning method through Wordwall media has positively impacted the improvement of student learning outcomes.

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