

EFFORTS TO IMPROVE STUDENT LEARNING OUTCOMES THROUGH THE IMPLEMENTATION OF DIGITAL MEDIA IN GRADE V OF UPTD SDN 124398 JL. PERWIRA PEMATANGSIANTAR

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Abstract

This classroom action research was conducted as an effort to improve student learning outcomes through the application of digital media in the learning process at the UPT SD Negeri 124388 Jalan Perwira Pematangsiantar. The background of this research is based on the condition of low student learning outcomes influenced by the use of conventional learning methods that are less able to attract students' attention and active participation. The purpose of this research is to determine the effectiveness of the use of digital media in improving student learning outcomes and improving the quality of the learning process in the classroom. This research was conducted in two cycles, each of which includes the planning stage, action implementation, observation, and reflection. The digital media used included learning videos, interactive teaching materials, and technology-based visual media adapted to the learning material. The results of the study showed a gradual increase in student learning outcomes in each cycle, both in terms of material understanding, activeness in learning, and achievement of evaluation scores. In addition, the use of digital media was able to create a more interesting and enjoyable learning atmosphere, thus encouraging students to be more focused and motivated in participating in learning. Based on these findings, it can be concluded that the application of digital media has proven effective in improving student learning outcomes and is worthy of being used as an alternative learning strategy in elementary schools.

Keywords: Student Learning Outcomes, Digital Media, Classroom Action Research, Elementary School Learning

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1. Introduction

Education is a key pillar in creating a quality future generation capable of adapting to changing times. However, in practice, the quality of education in Indonesia, particularly in areas with limited access to technology, still faces various challenges. One of these is the low learning outcomes of elementary school students, caused by conventional learning methods, inadequate use of technology, and limited variety of learning media used in the classroom. This contributes to low student motivation and active engagement in learning. Currently, the learning process has penetrated digital technology so that it is no longer monotonous (Alfian et al., 2022). Realizing this, it is important to explore the potential of using digital media in learning, which can optimize the teaching and learning process in a more engaging and effective manner. The appropriate and innovative use of digital media in the teaching and learning process can lead students to achieve optimal learning outcomes, as evidenced in research by Pratiwi, Setiawan, and Mubarok (2019).

Education has a strategic role in forming quality human resources who are able to adapt to developments in science and technology. Fatimah (2021) stated that the application of digital media in the learning process in elementary schools is a concrete manifestation of innovation in learning. At the elementary school level, the learning process aims not only to transfer knowledge but also to continuously develop students' thinking skills, attitudes, and learning skills. Therefore, the quality of the learning process is a determining factor in student learning outcomes. However, learning practices in elementary schools often face various obstacles, one of which is low student learning outcomes, influenced by the use of insufficiently varied learning methods and media.

Along with the development of the digital era, the use of information technology in the world of education has become a necessity. Digital media can help educators and policy makers in designing learning strategies that are more effective and relevant to students' needs in the digital era (Ngongo et al., 2019; Wanda, 2019). Digital media is present as an innovative alternative that can provide more interesting, interactive, and contextual learning for students. Digital media such as learning videos, interactive teaching materials, and technology-based visual media can help students understand abstract material and increase active involvement in the learning process. The use of digital media is also in line with the characteristics of elementary school students who tend to prefer visual and audiovisual learning, so it can increase their motivation and interest in learning.

The phenomenon at the UPT SD N 124388 Jalan Perwira Pematangsiantar shows that despite efforts to improve the quality of learning, the use of technology in the learning process remains very limited. Some teachers at this school still rely on textbooks and lecture methods, resulting in students often feeling bored and disengaged. Furthermore, students' poor understanding of the material being taught is also a major obstacle that needs to be addressed. This creates a gap between expectations and reality in student learning outcomes, which could be more optimal with the use of more varied learning media. Diniyati et al. (2023) emphasized that digital media helps students in searching, analyzing, and utilizing information critically. Therefore, the use of digital media as a means to improve the quality of learning needs to be explored further.

Previous research has shown that the use of digital media, such as learning videos and interactive applications, can increase student participation and improve their understanding of learning materials. For example, research conducted by Widodo (2020) showed that the use of technology-based learning applications can accelerate student understanding in certain subjects, especially in elementary school students. Furthermore, research by Sari and Hidayat (2021) found that the use of educational games not only improves learning outcomes but also increases student motivation in elementary schools. However, the implementation of digital media in areas with limited access to technology, such as several schools in Pematangsiantar, remains minimal. This creates a gap between the potential that technology can exploit and the conditions on the ground, which still rely on traditional learning methods.

The purpose of this study is to examine in depth the application of digital media in improving student learning outcomes at the UPT SD N 124388 Jalan Perwira Pematangsiantar. This study aims to determine how the use of digital media, including interactive learning applications and educational games, can improve student learning outcomes and how these digital media can increase student engagement in the learning process. Advances in educational technology have enabled teachers to use interactive videos in the classroom. Media plays a crucial role as a link between teachers and students (Humairah et al., 2021). This research hopes to find practical solutions to improve the quality of education in areas with limited technological resources. The novelty of this research is the implementation of diverse, interactive, application-based digital media accessible with relatively simple devices, thus addressing the limitations inherent in regional schools.

2. Method

This study employed a Classroom Action Research (CAR) approach aimed at improving student learning outcomes through the application of digital media in the classroom. CAR was selected because it emphasizes collaborative efforts between researchers and teachers to enhance the quality of the learning process within a real classroom context. The study utilized both qualitative and quantitative data. Qualitative data were obtained through observations of students' activities and interactions during the implementation of digital media in learning, as well as through interviews with teachers and students to explore their perceptions of the use of digital media. Quantitative data were derived from students' academic evaluation results, specifically pre-test and post-test scores administered before and after the implementation of digital media, which reflected changes in students' understanding of the learning material.

The data sources consisted of fifth-grade students at UPT SD N 124388 Jalan Perwira Pematangsiantar, totaling 20 students, the classroom teacher who acted as the implementer of digital media in the learning process, and relevant learning documents, including teaching materials used before and after the integration of digital media. The research was conducted in two cycles, each comprising four stages: planning, implementation of action, observation, and reflection, as proposed by Arikunto (2013). During the planning stage, the researcher and teacher collaboratively designed the learning activities and selected appropriate digital media, such as interactive learning applications, educational videos, and computer-based educational games. In the implementation stage, the planned digital media were applied in the teaching process, with materials presented in an engaging format tailored to students' abilities. The observation stage involved monitoring and recording students' participation, engagement, and interaction with the digital media, along with conducting interviews with the teacher to evaluate the instructional process. The reflection stage was carried out at the end of each cycle to assess the effectiveness of the actions taken and to determine necessary improvements for the subsequent cycle.

Data were collected through tests, observations, and interviews. Pre-tests and post-tests, consisting of multiple-choice and descriptive questions, were administered to measure students' conceptual understanding before and after the use of digital media. Observations were conducted to document changes in students' behavior and engagement during the learning activities, while interviews with teachers and selected students were conducted to gain deeper insights into the effectiveness of the digital media. Data analysis was carried out using both qualitative and quantitative techniques. Qualitative data from observations and interviews were analyzed descriptively by categorizing findings into themes such as student interaction, learning motivation, and the effectiveness of digital media. Quantitative data from pre-test and post-test results were analyzed using a t-test to determine whether there were statistically significant differences between students' scores before and after the implementation of digital media. To ensure validity, data triangulation was applied by comparing findings from tests, observations, and interviews to confirm consistency. The reliability of the research instruments was examined through pilot testing of the test items and interview questionnaires prior to their administration to the students.

3. Results and Discussion

The results of the study indicate that the use of digital media in the learning process has a significant impact on improving the learning outcomes of fifth-grade students at UPTD SDN 124398 Jalan Perwira Pematangsiantar. In the pre-cycle stage, the majority of students have not met the Minimum Completion Criteria (KKM), which reflects a low level of mastery of the initial material. This finding strengthens the initial condition of the study that learning that is still oriented towards conventional methods has not been able to optimally encourage student attention and active participation. However, after the implementation of digital media in Cycle I, there was an increase in students' average scores as a form of positive response to technology-based learning innovations.

Quantitatively, the increase in student learning outcomes is reflected in the comparison of pre-cycle, Cycle I, and Cycle II results, which show a continuous upward trend. The average class score increased along with the increasing percentage of learning completion in each cycle. This condition indicates that digital media not only serves as a supporting visual tool but also functions as a cognitive tool that strengthens the understanding of learning concepts. A summary of the quantitative data is presented in Table 1, which illustrates the development of student learning outcomes at each stage of the action.

Table 1. Development of Average Values and Student Learning Completion

Stage	Average Value	Completion (%)
Pre-Cycle	63.45	45.00
Cycle I	72.80	70.00
Cycle II	82.15	90.00

Source: Research data, 2025 (processed).

In addition to improved academic performance, observational data indicates positive changes in student learning behavior. In Cycle I, students began to show interest in the material presented through instructional videos and interactive visual media. Furthermore, in Cycle II, student engagement levels increased, demonstrated by active questioning, discussions, and the ability to complete assignments independently. These changes confirm that the use of digital media can create a more participatory and student-centered learning environment.



Figure 1. Graph of Improvement in Student Learning Outcomes in Each Cycle

Source: Research data, 2025 (processed).

The improvement in learning outcomes can be explained through a constructivist theoretical approach, which emphasizes that students actively construct knowledge through interactions with the learning environment. Digital media provides visual and audiovisual stimuli that enrich students' learning experiences, thus facilitating the

process of constructing deeper understanding. The results of this study align with the findings of Widodo (2020) and Sari and Hidayat (2021), who concluded that digital media significantly contributes to improving elementary school students' conceptual understanding and learning motivation.

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From an educator's perspective, the use of digital media facilitates the delivery of abstract learning materials. Teachers become more effective in managing their classes because students' attention is more focused on learning activities. Reflections conducted at the end of Cycle I indicated the need to reorganize the duration of media use and the variety of learning activities, which were further refined in Cycle II. This confirms that improved learning outcomes are determined not only by media use but also by appropriate pedagogical strategies in their implementation.

Overall, the research results and discussion indicate that the use of digital media significantly contributes to improving the quality of learning. Digital media serves as a link between teaching materials and more contextual and engaging learning experiences for students. Improved learning outcomes, student engagement, and motivation indicate that digital media is a suitable alternative learning strategy in elementary schools, especially in schools adapting to developments in educational technology.

4. Conclusion

Based on the results of the classroom action research that has been carried out, it can be concluded that the application of digital media is effective in improving the learning outcomes of fifth-grade students at UPTD SDN 124398 Jalan Perwira Pematangsiantar. The use of digital media not only has an impact on improving academic achievement, but also can increase student activity, motivation, and the quality of interaction in the learning process. These findings strengthen empirical evidence that technology integration in elementary school learning is a strategic step in addressing the challenges of education in the digital era.

As a recommendation, teachers are expected to continue developing competencies in the use of digital media, while schools need to provide adequate facilities and infrastructure. Furthermore, further research is recommended to examine the effectiveness of digital media in different subjects or use broader research designs to obtain stronger generalizability of the findings.

BIBLIOGRAPHY

- Akbar, FS, & Burhan, SNA The Effect of Implementing Digital-Based Learning Media on the Learning Outcomes of Fourth Grade Students at UPT SPF SDN Tamalanrea, Makassar City.
- Hidayat, Rahmat. (2022). The influence of digital media on elementary school students' learning outcomes. *Journal of Elementary Education*, 6(2), 123–130.
- Ismaya, R., Salshabila, S., & Ariyani, ID (2024). The effect of using digital learning media on elementary school students' learning outcomes. *Journal of Education and Teaching Review*, 7(4), 13779–13785
- Ivanka, W., & Cahaya Nurani, D. (2025). The effect of digital media on elementary school students' ecoliteracy development. *EduStream: Jurnal Pendidikan Dasar*, 9(1), 105–

112.

- Ministry of Education and Culture of the Republic of Indonesia. (2020). Online Learning Guide. Jakarta: Ministry of Education and Culture.
- Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia. (2022). Independent Curriculum. Jakarta: Ministry of Education, Culture, Research, and Technology.
- Novela, D., Suriani, A., & Nisa, S. (2024). Implementation of innovative learning through digital media in elementary schools. *Journal of Practice Learning and Educational Development*, 4(2), 100-105.
- Nurhosen, N., Sayyinul, S., Iskandar, R., Balqis, M., & Surur, M. (2024). Analysis of the application of Canva-based learning media on student learning outcomes in thematic learning in elementary schools. *Journal of Educational and Cultural Research Studies*, 2(2), 81-96.
- Octaviani, EM, Humairah, H., & Khasanah, LAIU (2024). Application of interactive video media in mathematics learning to improve student learning outcomes on fractions in fifth grade elementary school. *JagoMIPA: Journal of Mathematics and Science Education*, 4(2), 219-226.
- Pratama, Andi. (2023). Application of digital learning media in improving student learning outcomes. *Journal of Educational Innovation*, 5(1), 45–52.
- Putri, Siska. (2021). The effectiveness of using digital media in learning in elementary schools. *Journal of Education and Learning*, 8(3), 210–218.
- Rusdi, H., Ervianti, R., & Zulkarnaini, AP (2023). The influence of digital learning media on elementary school students' learning motivation. *Pendas: Scientific Journal of Elementary Education*
- Rusman. (2021). *Information and Communication Technology-Based Learning*. Jakarta: Raja Grafindo Persada.
- Sari, DP, & Hidayat, R. (2021). The effect of using educational games on the motivation and learning outcomes of elementary school students. *Journal of Educational Innovation*, 13(1), 67–76.
- Sugiyono. (2021). *Educational Research Methods*. Bandung: Alfabeta
- Suryani, Nunuk., & Agung, Leo. (2020). *Teaching and Learning Strategies*. Yogyakarta: Ombak.
- Topuha, OK, Rizal, R., Aqil, M., Gagaramusu, YBM, & Fasli, M. (2025). The Influence The Use of Digital Media on Student Learning Outcomes in Subjects Indonesian in Elementary School. *Attadrib: Journal of Madrasah Teacher Education Elementary School*, 8(1), 174-183.
- Widodo, A. (2020). Utilization of technology-based learning media to improve elementary school students' learning outcomes. *Journal of Elementary Education*, 11(2), 145–154.
- Wulandari, Dini. (2022). Improving learning outcomes through digital-based interactive media. *Journal of Educational Technology*, 4(2), 67–75.
- Yaumi, Muhammad. (2021). *Learning Media and Technology*. Jakarta: Prenada Media.