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THE IMPLEMENTATION OF CANVA AI AS A DIGITAL LEARNING MEDIUM IN PRIMARY SCHOOLS WITH LIMITED RESOURCES: A CASE STUDY THROUGH STUDENT OBSERVATION

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Abstrak

Ketika digunakan secara pedagogis, teknologi pembelajaran berbasis kecerdasan buatan (AI) di sekolah dasar memiliki potensi untuk meningkatkan keterlibatan siswa dan peluang belajar. Namun, saat ini sedikit sekali studi empiris yang memantau reaksi siswa terhadap penggunaan media berbasis AI di sekolah-sekolah yang kurang dana. Melalui observasi langsung di kelas, studi ini bertujuan untuk menentukan tingkat keterlibatan siswa dan reaksi belajar mereka sambil menyelidiki penggunaan Canva AI sebagai alat pembelajaran digital. Studi ini dilakukan pada tanggal 13 Desember 2025 di SD Negeri 02 Wangandowo, Kabupaten Pekalongan, menggunakan metodologi kualitatif dan metode studi kasus. Pengamatan langsung terhadap aktivitas siswa selama pembelajaran berbasis teknologi digital digunakan untuk mengumpulkan data, yang kemudian dianalisis secara tematik.Berdasarkan temuan studi, penggunaan Canva AI untuk visualisasi konten, interaktivitas, dan aktivitas pembelajaran berbasis permainan dapat meningkatkan keterlibatan kognitif dan afektif siswa. Selain itu, teknologi ini tidak menggantikan interaksi pedagogis di kelas karena digunakan secara proporsional dan sesuai dengan tujuan pembelajaran. Manajemen pembelajaran adaptif memastikan pembelajaran berhasil meskipun menghadapi keterbatasan perangkat dan jaringan internet. Menurut temuan studi, ketika dipadukan dengan teknik pedagogis yang sesuai, Canva AI dapat digunakan sebagai alat pembelajaran digital di sekolah dasar dengan dana terbatas.

Kata kunci : canva AI; pembelajaran digital; keterlibatan siswa; sekolah dasar; studi kasus

Abstract

When used pedagogically, artificial intelligence (AI)-based learning technology in primary schools has the potential to improve student engagement and learning opportunities. Nevertheless, there are presently few empirical studies that track students' reactions to using

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AI-based media in underfunded schools. Through in-person classroom observations, this study aims to assess student engagement and learning reactions while examining the use of Canva AI as a digital learning tool. The study was conducted on December 13, 2025, at SD Negeri 02 Wangandowo, Pekalongan Regency, employing a qualitative methodology and a case study approach. Direct observation of students' activities during digital technology-based learning was used to gather data, which was then subjected to thematic analysis.According to the study's findings, using Canva AI for content visualization, interactivity, and game-based learning activities can boost students' cognitive and affective engagement. Additionally, the technology does not replace pedagogical interactions in the classroom, as it is employed proportionately and in accordance with learning objectives. Adaptive learning management ensures that learning is successful even in the face of device and internet limitations. According to the study's findings, when paired with suitable pedagogical techniques, Canva AI can be used as a digital learning tool in elementary schools with low funding.

***Keywords**:* canva AI; digital learning; student engagement; elementary school; case study

I. Introduction

The use of technology in primary education is no longer understood solely as the use of digital devices, but rather as part of a pedagogical strategy to deliver meaningful learning centered on the learning experiences of students. Technological developments, particularly artificial intelligence (AI), open up opportunities for teachers to develop learning materials that are more responsive, interactive, and adaptive to students' learning needs. In this context, technology is transforming from a mere tool into an integral component that shapes the learning experience, student engagement, and the dynamics of classroom interaction.

A number of studies in the last decade have shown that the integration of digital technology in elementary schools contributes positively to learning motivation, student engagement, and conceptual understanding when used appropriately in learning. Digital-based learning media, including interactive applications and technology-assisted learning, have been proven to support visual, collaborative, and activity-based learning. However, most of these studies still focus on the use of digital technology in general, such as multimedia devices or conventional learning applications, without specifically examining the role of artificial intelligence (AI)-based learning media in the context of elementary school learning.

Other studies that specifically discuss AI in education tend to be conducted at the secondary and higher education levels, with an emphasis on adaptive learning systems, learning data analysis, or intelligent tutors. Meanwhile, empirical studies that directly observe how AI-based learning media are used in learning practices in elementary schools, particularly through direct student involvement in the classroom, are still relatively limited. This limitation is even more apparent in the context of elementary schools with inadequate resources and technological infrastructure, which represent the conditions of the majority of schools in rural areas.

In teaching practice, the effectiveness of AI-based media is determined not only by technological sophistication but also by teachers' pedagogical strategies in managing

learning interactions, the availability of devices, and the characteristics of students. Field experience shows that when AI-based media are used for interactive, visual, and instructional game-based activities, students show more active learning responses and increased engagement. This indicates that AI-based media have the potential not only as a means of delivering material but also as a tool for observing students' learning responses more authentically in the context of real learning.

The national education policy through the Merdeka Curriculum encourages learner-centered, contextual, and experience-based learning. Within this framework, the integration of AI-based learning media has the potential to be a strategic alternative to support differentiated learning and encourage the development of higher-order thinking skills from elementary school onwards. However, the implementation of AI-based technology also requires teachers to be prepared to integrate technology, pedagogy, and learning content in a balanced manner, especially in schools with limited facilities.

State Elementary School 02 Wangandowo is one of the elementary schools that is trying to adapt the use of AI-based learning media in conditions of limited resources. This effort is supported by the collaboration of teachers across generations in managing technology-based learning. Through direct learning practices in the classroom and the involvement of researchers in learning activities with students, the use of AI-based media in this school has a dual function, namely as a learning medium and as a means to directly observe student engagement and learning responses.

However, to date, there is still a gap in research on how AI-based learning media is actually implemented in elementary schools with limited facilities through direct observation of students. Most previous studies have emphasized teachers' perceptions, technological readiness, or the quantitative effectiveness of media, thus failing to provide an in-depth picture of the dynamics of learning, student responses, and the challenges of implementing AI in the actual classroom context. This gap highlights the importance of research that focuses on student learning experiences through direct observation in the elementary school learning environment.

Based on this gap, this study is novel in its focus, which places students at the center of observation in the use of artificial intelligence-based learning media in elementary schools with limited resources. This study does not focus on technology evaluation or teacher perceptions, but rather on learning dynamics, student engagement, and learning responses that arise from the integration of AI-based media in real learning practices.

This study aims to explore in depth how artificial intelligence-based learning media are integrated into the learning process at State elementary school 02 Wangandowo through direct observation of students. In addition, this study aims to identify student learning responses, classroom learning adaptation strategies, and the challenges of implementing AI-based media in supporting meaningful learning. Scientifically, this study is expected to provide empirical contributions to the study of educational technology in elementary schools, particularly in enriching the understanding of AI implementation in the context of real learning and schools with limited facilities.

II. Research Method

This study uses a qualitative approach with a case study method to examine the use of digital learning technology through direct observation of students during the learning process in elementary schools. This approach was chosen to gain a contextual understanding of student engagement and the dynamics of technology-based learning that occur in the classroom. The study was conducted on December 13, 2025, at State Elementary School 02 Wangandowo, Pekalongan Regency. The research location was chosen based on the application of digital learning technology in teaching and learning activities at the school, making it relevant to the focus of the study.

The research subjects were elementary school students who actively participated in digital technology-based learning. Teachers were not included as research subjects and were not interviewed, but rather acted as learning facilitators during the learning process. The focus of the research was on student learning activities, patterns of student interaction with digital media, and student responses during learning. Data collection was carried out through direct observation in the classroom. The observation focused on how students used learning technology, the level of student engagement in learning, and the dynamics of interaction that arose during technology-based digital learning. The data obtained was descriptive qualitative data that described the actual learning conditions.

The aspects observed in this study include: the types of learning technologies used in the learning process; the frequency and duration of technology use by students; patterns of student interaction with digital media; the level of student engagement in learning activities; challenges that arise during technology use; and the impact of technology use on the effectiveness of classroom learning. Data validity was maintained through persistent observation and consistent focus throughout the research process, ensuring that the data obtained reflected the actual learning conditions. Data analysis was conducted using thematic analysis, which included reducing the observation data, grouping the data into main themes, analyzing the meaning of each theme, and drawing conclusions based on the digital learning framework in elementary schools.

III. Hasil dan Pembahasan

These research results were obtained through direct observation of students during the digital technology-based learning process at State Elementary School 02 Wangandowo. The observation data were processed and synthesized based on the observation aspects specified in the research method. A summary of the observation results is presented in **Table 1** below.

Table 1. Summary of Observation Results on the Use of Digital Learning Technology

Observation Aspects	Description of Oservation Findings
Types of learning technology	Digital media canva AI, digital material visualization, and instructional game-based activities displayed through classroom projection devices
Frequency and duration of use	Used periodically in a learning session with a duration that suits the learning objectives; not used continuously.
Patterns of student interaction with digital media	Students actively interact by answering questions, following digital instructions, and responding to feedback from the application.
Level of student engagement	There was an increase in student attention, enthusiasm, and participation during the use of digital media.
Challenges in using technology	Limitations of devices and instability of the internet network that affect the smooth running of learning
Impact of Learning	Learning becomes more interactive, participatory, and supports students' understanding of the material.

Based on Table 1, the use of digital learning technology in the classroom shows a pattern of planned and managed integration. Technology is used as part of a learning strategy to support student learning activities, not as the main objective of learning. The results of the observation show that students are actively involved in the learning process, especially in activities that involve direct interaction with digital media.

The results of this study show a strong relationship between interactive and visual media and higher levels of student engagement during digital technology-based learning. Students can receive quick feedback as well as visual and auditory stimulation through digital learning media, which encourages cognitive and affective engagement in the learning process. This condition supports the idea that meaningful and active learning experiences are necessary for student-centered learning. Observational findings also show that the use of technology is tailored to meet learning objectives rather than being excessive. This pattern reflects adaptive learning management, which uses technology to support conceptual knowledge rather than replacing pedagogical interactions in the classroom. This is important for maintaining students' attention to their studies and preventing cognitive fatigue due to excessive use of digital media.

Digital learning technology enables students to participate in learning more equally. When interacting with digital media, students who are usually passive in traditional learning appear to be more courageous in their participation. This condition shows how technology can serve as a pedagogical bridge that helps accommodate differences in student characteristics and learning styles. Another important factor in increasing student interest is the use of game-based learning activities. Students are motivated to complete learning tasks with more enthusiasm through challenges, scores, and instant feedback. Learning is now considered a fun and challenging experience rather than a boring task.

However, the results of this study also show that technical conditions and learning environment readiness have a significant impact on the effectiveness of technology-based learning. If alternative tactics are not used, device limitations and internet instability can disrupt the learning process. Therefore, key components in ensuring learning continuity are the role of educators in time management, media selection, and backup learning plans. The findings of this study are consistent with research (Rahayu, 2021), which found that pedagogical practices, not just the availability of gadgets, influence the success of technology integration in elementary school learning. The results of this study support the claim that the targeted and contextual use of digital learning tools during the learning process will make it successful.

Furthermore, the findings of this study are in line with the findings (Chatzea et al., 2024), which show that gamification in digital learning can increase students' affective and cognitive engagement. The increase in student engagement and enthusiasm during game-based learning activities recorded in this study is consistent with similar findings.

The results of this study are in line with the deep learning approach proposed by (Rosa et al., 2024), which states that when learning technology is well integrated, it can help develop higher-order cognitive skills. Technology is not only used to remember information, but also to understand, respond to, and solve basic problems in the context of learning, based on observations of student activities. However, this study also differs from a number of previous studies conducted in educational institutions with adequate technological resources. Despite having limited resources, State Elementary School 02 Wangandowo was still able to utilize technology effectively through adaptive learning management.

These results show that inadequate facilities are not a significant obstacle, but rather a problem that can be overcome with the right learning techniques. Therefore, by directly observing children in underfunded elementary schools, this study provides empirical contributions in the form of a real picture of the use of digital learning technology. By emphasizing the dynamics of learning in the classroom and providing useful implications for the development of contextual and sustainable digital learning, this contribution enriches the study of educational technology.

IV. Kesimpulan

This study concludes that inadequate facilities are not a significant obstacle, but rather a problem that can be overcome with the right learning techniques. Therefore, by directly observing children in underfunded elementary schools, this study provides empirical contributions in the form of a realistic picture of the use of digital learning technology. By emphasizing the dynamics of learning in the classroom and providing useful implications for the development of contextual and sustainable digital learning, this contribution enriches the study of educational technology.

Other findings indicate that teachers' management and pedagogical tactics have a significant impact on the effectiveness of digital learning. Technology proves to be more successful when used proportionally and in line with learning objectives than

when used excessively without careful preparation. This method maintains the crucial pedagogical relationship in the teaching and learning process while using technology to reinforce students' concepts and understanding.

Therefore, maximizing the benefits of digital learning technology requires adaptive learning management. In addition, this study shows how digital learning technology can create a more conducive environment for student participation. With the help of interactive digital media, students who previously tended to be passive in traditional learning can become more actively involved. These results show that technology can serve as a pedagogical bridge to accommodate differences in student characteristics, self-esteem, and learning preferences, making the educational process more inclusive and engaging.

Furthermore, it has been proven that incorporating game-based learning activities can increase student motivation and enthusiasm for learning. Students' perceptions of learning can be changed from boring tasks to fun and challenging learning experiences by incorporating elements such as challenges, scores, and instant feedback. However, this study also highlights that the readiness of the learning environment is closely related to the success of technology-based learning. Limitations on devices and internet networks remain challenges that must be anticipated through careful alternative preparations.

Overall, this study concludes that educators' ability to manage, adapt, and integrate technology pedagogically is more important for the success of digital learning in elementary schools than technological advances, especially in resource-limited environments. To create efficient and sustainable digital learning, these findings have practical implications for educators and educational institutions.

V. Daftar Pustaka

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