

## UTILIZATION OF DIGITAL TECHNOLOGY IN THE LEARNING PROCESS OF STUDENTS AT AL-AZHAR PRIVATE HIGH SCHOOL MEDAN

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### Abstract

The use of digital technology in education has had a significant impact on students' learning processes. This article aims to examine the extent to which digital technology plays a role in improving the quality of learning, expanding access to information, and creating more interactive learning patterns. This research uses a literature review method by reviewing various relevant literature related to the use of digital technology in education. The results of the study indicate that digital technology can increase learning motivation, facilitate collaboration, and support 21st-century skills such as critical and creative thinking. However, there are also challenges faced, including the digital divide, lack of digital literacy among students, and limited infrastructure. Therefore, an active role is needed for teachers, schools, and the government in optimizing the use of digital technology to make the learning process more effective, equitable, and sustainable.

**Keywords:** *Digital technology, Learning Process*

### Introduction

The development of digital technology in the 21st century has had a far-reaching impact on various aspects of human life. One sector experiencing the most significant transformation is education. While in the past, the teaching and learning process was dominated by conventional, face-to-face classroom methods, today's learning has shifted to a more flexible approach supported by digital technology. The presence of the internet, computers, smartphones, and various online learning applications allows students to access information and learning materials quickly, easily, and without the constraints of space or time. This technology-based transformation in education has accelerated since the Covid-19 pandemic began in 2020. The government's Study From Home (SFH) policy made digital technology the primary learning tool. Teachers, students, and parents were forced to adapt to the use of video conferencing applications like Zoom and Google Meet, as well as online learning platforms like Google Classroom, Edmodo, and Moodle. While initially challenging, this situation has accelerated the digitalization of education in Indonesia.

For students, the use of digital technology brings numerous benefits. It provides broad access to information, accelerates the process of finding references, and provides opportunities for independent learning through various interactive media. Furthermore, technology enables global collaboration between students through online platforms, expanding students' horizons beyond local contexts to encompass international ones. Furthermore, the application of e-learning, blended learning, and gamification in education can enhance learning motivation, creativity, and critical thinking skills. However, on the other hand, digital technology also poses a number of challenges. The digital divide is a major issue, with not all students having adequate devices or internet access. This leads to unequal education quality between urban and rural areas. Furthermore, low digital literacy makes it difficult for some students to utilize technology optimally. Often, the use of devices in learning actually causes distractions, as students become more interested in entertainment media such as YouTube, TikTok, or online games. In fact, several studies have noted that the use of digital technology without proper guidance can potentially reduce concentration and weaken face-to-face social interactions between students. Within the context of national policy, the Ministry of Education, Culture, Research, and Technology (Kemendikbudristek) has promoted the use of digital technology as part of the implementation of the Independent Curriculum. This curriculum emphasizes the importance of project-based learning, digital literacy, and strengthening 21st-century skills, namely critical thinking, creativity, collaboration, and

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communication (the 4Cs). The use of digital technology is expected to support the vision of Golden Indonesia 2045 through the development of superior, adaptive, and technologically literate human resources.

Previous studies have extensively discussed the role of digital technology in improving the quality of learning. For example, research by Lovandri Dwanda Putra & Suci Zhinta (2023) concluded that digital media is effective in improving student understanding through a combination of text, audio, and visuals. Another study by Aulia & Leni (2024) showed that digital technology brings not only positive but also negative impacts, such as the digital divide and decreased student focus. Thus, the use of digital technology in education is a complex phenomenon: on the one hand, it opens up significant opportunities to improve the quality of learning, but on the other hand, it presents serious challenges that need to be addressed wisely. Based on this description, this research is crucial for a deeper examination of the use of digital technology in student learning. The focus of this research is not only to highlight the benefits and opportunities offered, but also to analyze the barriers and optimization strategies to ensure effective and sustainable use of technology in education.

The problem formulation in this research is as follows:

1. How can the use of digital technology increase the effectiveness of students' learning processes?
2. What are the challenges faced in implementing digital technology in the learning process?
3. What strategies can be implemented to optimize the use of digital technology to support student learning success?

The purpose of this research is to:

1. Examining the role of digital technology in improving the quality and effectiveness of learning.
2. Identifying challenges arising from the use of digital technology in education.
3. Providing recommendations for strategies to optimize the use of digital technology to support students' learning processes in a sustainable manner.

### Research methods

This research uses a library research approach. This method was chosen because the topic of digital technology utilization in student learning has been extensively studied in various literature, including scientific journals, articles, books, and research reports. The library research allows the author to examine, compare, and analyze previous findings relevant to the research focus. According to Zed (2004), a literature study is a series of activities related to library data collection methods, reading, recording, and processing research materials sourced from relevant literature. Therefore, this research does not involve direct field data collection, but rather relies on written sources for analysis. The stages carried out in this research include:

1. **Identification of problems:** examines general phenomena related to the use of digital technology in the world of education, especially for students.
2. **Collection of literature sources:** search and collect articles, journals, books, and research reports from various scientific databases such as Google Scholar, Sinta, and ResearchGate.
3. **Literature selection:** select literature that is relevant to the topic, especially that which discusses the benefits, challenges, and strategies for utilizing digital technology in learning.
4. **Content analysis (content analysis):** critically read the selected literature, then compare the findings between studies.
5. **Synthesis of results:** combining various information into a more comprehensive understanding, so that conclusions can be drawn that are in accordance with the problem formulation.

Through this method, it is hoped that a clear picture will be obtained regarding the extent to which digital technology can be utilized in the learning process, what challenges arise, and optimization strategies that can be applied.

### Discussion

#### 1. Utilization of Digital Technology to Improve the Learning Process

Research shows that digital technology offers significant opportunities for students to gain more effective and interactive learning experiences. Lovandri Dwanda Putra & Suci Zhinta (2023) revealed that the use of digital media can improve student understanding through a complementary combination of text, audio, and visuals. Similarly, research by Aulia & Leni (2024) found that digital technology helps students access information more easily, enhances creativity, and expands global collaboration through online platforms.

For students at the secondary school level, applications such as Google Classroom, Zoom, Quizizz, and Kahoot! have been proven to encourage student motivation and active engagement. Furthermore, gamification-

based technology can create a more enjoyable learning environment, resulting in more enthusiastic student participation.

## 2. The Use of AI in International Legal Policy Formulation

The literature review identified several key benefits of using digital technology in learning, including:

- **Fast and wide access to information**, so that students can search for learning references without being limited by space and time.
- **Increased motivation and engagement**, through interactive learning media based on visuals and audio.
- **Strengthening 21st century skills**, such as critical, creative, collaborative, and communicative thinking.
- **Learning efficiency**, because teachers can utilize various online platforms to deliver learning materials.

## 3. The Impact of AI Use from Various Perspectives

Despite providing many benefits, the study also found various obstacles faced by students in utilizing digital technology, including:

- **Digital divide**: not all students have adequate devices or internet access, especially in rural areas.
- **Lack of digital literacy**: Some students are not yet accustomed to using technology productively, so they are more often distracted by social media or online entertainment.
- **Limited school infrastructure**: there are still schools with minimal technological facilities, so the implementation of digital learning is not optimal.
- **Character and moral issues**: Unsupervised internet access can open up opportunities for negative content such as pornography or hate speech.

## 4. Opportunities and Challenges: The Influence of Artificial Intelligence in Legal Policy Formulation

To overcome these challenges, several strategies can be implemented:

1. **Strengthening students' digital literacy** through training and guidance from teachers and schools so that students are able to use technology wisely.
2. **Infrastructure equality** with government support, such as the provision of ICT devices, internet quota subsidies, and school Wi-Fi facilities.
3. **Integration of technology in the curriculum** which is in line with the Independent Curriculum, so that technology is not only a complement, but an integral part of the learning process.
4. **Parent and teacher support** in monitoring the use of technology, so that students avoid distractions and negative content.
5. **Utilization of locally based educational applications** which is in accordance with the Indonesian cultural context to maintain the relevance of learning.

## 5. Study Synthesis

Overall, the use of digital technology has been proven to have a positive impact on improving the quality of students' learning. However, these benefits will only be maximized if barriers such as disparities in access, low digital literacy, and limited infrastructure are addressed. With the right strategy, digital technology can be a crucial instrument in creating effective, inclusive, and sustainable learning processes in Indonesia.

## Closing

### A. Conclusion

Based on the results of the literature review and the distributed questionnaire, it can be concluded that the use of digital technology plays a very significant role in improving the quality and effectiveness of the learning process among students. Digital technology serves not only as a tool but also as a bridge to a more independent, flexible, and innovative learning style. Through digital devices and internet access, students can access a variety of learning resources quickly, broadly, and easily, anytime and anywhere. This demonstrates the crucial role of digital technology in creating a learning ecosystem that is no longer limited by space and time.

A questionnaire we distributed to respondents revealed that the majority of students found digital technology helpful in their learning. Learning no longer requires direct instruction from teachers, as students

can independently search for and study materials through various online learning platforms, educational videos, and other digital resources. Data quotas and internet access are no longer major barriers, as most students are accustomed to managing digital resources to support their learning needs.

Furthermore, the survey results also show that digital technology can increase student motivation and engagement in the learning process. Interactive learning applications such as Google Classroom, Quizizz, and Kahoot! provide a more engaging and competitive learning environment, making students more active and enthusiastic. Digital technology has also been shown to support various student learning styles, including visual, auditory, and kinesthetic, allowing each individual to adapt learning methods to their individual characteristics and needs. Thus, the use of digital technology not only improves learning outcomes but also strengthens critical, collaborative, and creative thinking skills, which are essential 21st-century skills.

However, the use of digital technology in learning also faces various challenges. A digital divide persists between students in urban and rural areas, limited technological infrastructure in schools, and low digital literacy among students prevent some from optimally utilizing technology. Furthermore, distractions from social media and online entertainment content also pose challenges that can reduce students' focus on learning.

Therefore, the use of digital technology in education needs to be balanced with appropriate strategies and support from various parties. Teachers and schools play a crucial role in directing technology use toward productive outcomes through project-based learning, gamification, and digital literacy training. Parents also need to be actively involved in guiding and supervising the use of digital devices at home. Meanwhile, the government must continue to strengthen digital infrastructure and ensure equitable internet access, even in remote areas.

Overall, digital technology has opened up significant opportunities for educational transformation in Indonesia. With proper management, collaboration between stakeholders, and awareness of the need to utilize technology wisely, digital technology can become a crucial foundation for realizing an effective, inclusive, and sustainable learning system, leading to a generation of students who are intelligent, adaptive, and ready to face future challenges.

## B. Suggestion

The use of digital technology in education will be more optimal if all parties involved can work together synergistically. Students should continue to improve their digital literacy so that technology use is not merely entertainment-oriented but truly supports learning activities. Meanwhile, teachers play a crucial role in integrating technology into learning in creative, innovative, and relevant ways to meet students' needs, while also providing support to prevent students from being easily distracted by less useful digital content. Schools are also expected to provide supporting facilities, both in the form of technological devices and adequate internet connections, so that digital-based learning can be implemented more equitably. Parents have an equally important role, namely supervising and guiding their children when using digital devices at home, ensuring that technology is truly used positively and purposefully. Furthermore, the government, through education policies, must ensure equitable access to technology even in remote areas, strengthen digital infrastructure, and provide digital literacy mentoring programs for students and teachers. With these steps, digital technology can be continuously optimized as a vital instrument in creating an education that is effective, inclusive, and adaptive to changing times.

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