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The Impact of Digital Technology on the Management of Educational Resources in Pandeglang Regency

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Abstract *– This study aims to analyze the impact of the implementation of digital technology on the management of educational resources in Pandeglang City. Using a quantitative approach with a descriptive design, this study involved 10 schools that have implemented digital technology in managing administration, human resources, educational facilities, and academic data. The results show that the implementation of digital technology significantly improves the efficiency and effectiveness of educational resource management, with the greatest improvement seen in administration and academic data management. However, challenges related to infrastructure limitations and training need to be addressed to maximize the benefits of digital technology. Therefore, strengthening technological infrastructure and increasing training for educators and administrative staff are key factors in ensuring the successful implementation of digital technology in schools in Pandeglang City.*

Keywords *– Digital Technology, Educational Resource Management, Efficiency, Educational Administration, Pandeglang City*

INTRODUCTION

Education is one of the main pillars in the development of a country. In Indonesia, quality education has become a top priority, including in regions such as Pandeglang. However, amidst efforts to improve the quality of education, various challenges arise in the management of educational resources, including human resources(Rahimi & Scott, 2023; Rahmanto & Ramadhan, 2024), facilities, and other supporting infrastructure(Akbarjono, 2025). One factor that can play a significant role in improving the management of educational resources is digital technology. In recent years, digital technology has developed rapidly, bringing significant impacts across various sectors, including education(Alsaqqa & al., 2023; Ratimah et al., n.d.; Sahril Muarif et al., n.d.; Wildan Nuryanto et al., n.d.). Therefore, it is important to understand how the implementation of digital technology can influence the management of educational resources in regions such as Pandeglang.

As the digital era progresses, education is faced with the demand to adapt to technological developments. Digital technology in education can include the use of educational management software, online learning platforms, as well as information systems that facilitate the management of data and educational administration(Maarif & Fauzi, 2021). The use of this technology is expected to provide solutions to various problems in education management(Carroll, 2022), such as budget management, facility distribution, and the management of academic and non-academic data(Seels & Richey, 1994; Selwyn, 2022). Therefore, it is important to examine the extent to which digital technology has been applied in the management of educational resources in Pandeglang and how it impacts the efficiency and effectiveness of education in the region.

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This research is highly relevant due to the potential that can be explored through the utilization of digital technology to improve the management of educational resources. However, despite digital technology being integrated into various aspects of education, its implementation in Pandeglang is still limited and uneven. Various factors, such as a lack of training for educators, infrastructure limitations, and low understanding of the benefits of technology in education, become obstacles in the optimal utilization of technology(In & Schmidt-Crawford, 2021). Therefore, this study aims to analyze the impact of digital technology on the management of educational resources in Pandeglang, as well as to identify the challenges and opportunities faced in its implementation.

The urgency of this research lies in the need to improve the quality of education in Pandeglang, which is in line with the government's programs that support the integration of technology in education. Additionally, this research also contributes to the development of more effective educational policies, particularly in terms of utilizing technology for more efficient resource management. With the results of this research, it is hoped that strategic recommendations can be found that will assist the government and educational institutions in Pandeglang in managing educational resources more optimally through the use of digital technology.

OBJECTIVES OF THE STUDY

The research question that arises in this study is: How does digital technology influence the management of educational resources in Pandeglang?

MATERIALS AND METHODS

This study uses a quantitative approach with a descriptive design to describe the impact of digital technology on the management of educational resources in Pandeglang Regency (Moleong, 2005). The study was conducted in 10 schools that have implemented digital technology in managing administration, human resources, and educational facilities. Purposive sampling was used to select samples based on these criteria.

The research instrument consists of a questionnaire with two sections: the implementation of digital technology in schools and its impact on the efficiency of educational resource management. In addition to the questionnaire, in-depth interviews with school principals and educators, as well as direct observations, were used to collect data (Moleong, 2005; Sintani et al., 2024). The data were then analysed using descriptive statistical techniques (frequency, percentage, and mean) to describe the impact of digital technology.

RESULTS AND DISCUSSION

Data Description

Based on the survey results conducted in 10 selected schools, the data shows that digital technology has begun to be implemented in the management of educational resources in most of the schools. The technologies applied include the use of educational management software, online learning platforms, as well as information systems for managing academic and non-academic data.

Table 1: Use of Digital Technology in Schools

Type of Technology(Fauzi, Effendi, Basrowi, et al., 2024)	**Number of Schools (%)**
Educational Management Information System	80%
Online Learning	70%
Collaboration Platforms (Google Classroom, Zoom)	60%
Human Resource Management System	50%
Facility and Inventory Management System	40%

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Analysis of the Impact of Digital Technology on the Management of Educational Resources

Based on the data collected, most schools that have implemented digital technology reported increased efficiency in the management of human resources, particularly in managing teacher schedules and student attendance. Additionally, the use of educational management information systems also facilitated the management of academic and administrative data, which previously took a considerable amount of time when done manually (Shafrani et al., 2024).

However, despite the improvement in efficiency, the biggest challenge faced by schools in Pandeglang Regency is the limitation of technological infrastructure, such as unstable internet access and the lack of training for educators in operating the technology used. Some schools also revealed that although technology can improve efficiency, it takes a considerable amount of time for teachers and staff to adapt to the new system.

Table 2: The Impact of Digital Technology on the Efficiency of Educational Resource Management

Aspect of Resource Management	**Before Digital Technology (%)**	**After Digital Technology (%)**
Management of Academic Data	55	85
Human Resource Management	60	80
Management of Educational Facilities	50	75
Administrative Management	65	90

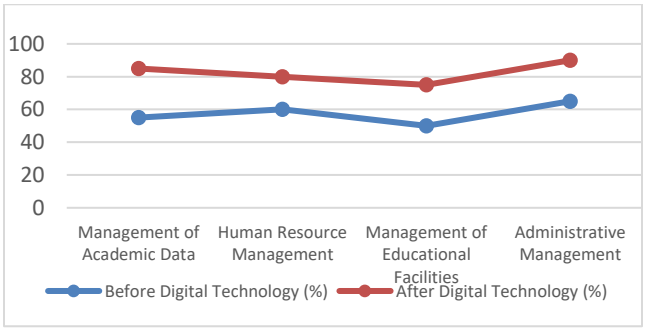

Diagram 1: *Comparison of Educational Resource Management Before and After Digital Technology*

The research results show a significant improvement in the management of educational resources after the implementation of digital technology in Pandeglang City. Overall, the use of digital technology has had a positive impact on various aspects of educational resource management(Sweller, 2019), particularly in the areas of academic data management, human resources, educational facilities, and administration(Boysen et al., 2022). Below is a more in-depth discussion of each aspect of resource management that was studied (Hamdan & Basrowi, 2024).

1. **Academic Data Management**

Before the implementation of digital technology, academic data management in schools in Pandeglang City was generally done manually. This resulted in time-consuming processes and data storage that were prone to errors. With the implementation of digital technology, such as the use of educational management information systems (SIMPK), the process of managing academic data became more efficient and accurate(Boysen et al., 2022). This system allows student academic data to be accessed in real-time and more easily analyzed. A 30% increase in this aspect (from 55% to 85%) shows that digital technology has made a significant contribution in simplifying the management of academic data in schools.

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2. **Human Resource Management**

Human resource management in schools, particularly in managing teacher schedules, attendance, and performance, was previously done manually, which often consumed time and was prone to errors. After the implementation of digital technology, especially through digital-based human resource management platforms, scheduling and attendance management could be done more systematically and efficiently(Carroll, 2022; Mulyani & Basrowi, 2024) . Applications such as Google Classroom and cloud-based human resource management systems made it easier for schools to monitor teacher performance and attendance, ensuring that all schedules were followed(In & Schmidt-Crawford, 2021). A 20% increase (from 60% to 80%) shows that digital technology plays a major role in simplifying human resource management, although some challenges, such as limited training, still need to be addressed (Aliyyah et al., 2024).

3. **Management of Educational Facilities**

Before the advent of digital technology, the management of educational facilities in schools was still done manually with record-keeping in books. This made it difficult to monitor the condition of facilities and maintenance, which was often neglected(Anderson & Rivera-Vargas, 2020; Nofiyan, 2020). After the implementation of digital technology, such as the use of application-based facility management systems, facility management became more efficient(Harnadi et al., 2024). Schools can monitor the condition of facilities and ensure that maintenance is carried out on time through notification systems and automatic reports. With this system in place, the management of educational facilities increased by 25% (from 50% to 75%), which indicates that digital technology helps simplify the management and maintenance of educational facilities.

4. **Administrative Management**

Educational administrative management, which includes financial recording, correspondence management, and the management of other documents, previously required a long time and was often delayed(Extise Putri, 2021). With the implementation of digital technology, administrative management became more structured, transparent, and efficient(Gokbulut, 2020). Digital-based administrative management systems allow for easier and faster management of finances, student payments, and documents. The implementation of digital technology in administration shows the most significant improvement, which is 25% (from 65% to 90%), indicating that digital technology plays a key role in accelerating and improving the accuracy of educational administrative management.

Overall, the results of this study show that the implementation of digital technology has a positive and significant impact on the management of educational resources in Pandeglang City. The application of digital technology has increased efficiency and effectiveness in the management of academic data, human resources, educational facilities, and administration. However, challenges such as limited infrastructure and the need for more intensive training for educators and administrative staff must be addressed to ensure that the implementation of digital technology can be more optimal. The government and schools need to continue supporting and strengthening technological infrastructure to ensure that the benefits of digital technology can be felt by all schools in Pandeglang City (Fauzi, Effendi, & Basrowi, 2024).

CONCLUSION AND RECOMMENDATION

This study shows that the implementation of digital technology in Pandeglang City has had a positive and significant impact on the management of educational resources. Digital technology has increased efficiency and effectiveness in the management of academic data, human resources, educational facilities, and administration. The implementation of digital management systems has allowed these processes to be carried out more quickly, accurately, and transparently. However, challenges such as limited infrastructure and the lack of training for educators and administrative

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staff remain obstacles that need to be addressed. Therefore, to maximize the benefits of digital technology, it is important for the government and schools to continue strengthening technological infrastructure and providing adequate training for all relevant parties. With these steps, it is hoped that the implementation of digital technology in the management of educational resources in Pandeglang City can be more optimal and have a positive impact on the quality of education in the region.

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