

APPLICATION OF TECHNOLOGY IN EDUCATIONAL ADMINISTRATION MANAGEMENT: CHALLENGES AND OPPORTUNITIES AT SDN PEKAYON JAYA VI BEKASI CITY

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ABSTRAK

Penerapan teknologi dalam manajemen administrasi pendidikan di era digital menjadi kebutuhan mendesak guna meningkatkan efisiensi dan kualitas layanan pendidikan. Penelitian ini bertujuan untuk mengidentifikasi dampak transformasi administrasi pendidikan melalui penerapan teknologi digital, serta untuk menganalisis metode penelitian yang efektif dalam memahami perubahan tersebut. Metode penelitian melibatkan survei, wawancara, dan analisis dokumentasi untuk mengumpulkan data dari berbagai lapisan stakeholder pendidikan. Hasil penelitian menunjukkan bahwa transformasi administrasi pendidikan di era digital dapat meningkatkan efisiensi operasional, mengurangi birokrasi, dan memberikan layanan yang lebih cepat dan terjangkau. Temuan penelitian ini mendukung urgensi penerapan teknologi digital dalam konteks administrasi pendidikan untuk mencapai tujuan efisiensi dan peningkatan kualitas layanan. Tantangan utama meliputi keterbatasan infrastruktur, kurangnya literasi digital di kalangan tenaga pendidik dan siswa, serta resistensi terhadap perubahan. Infrastruktur yang tidak memadai, terutama di daerah terpencil, menghambat penerapan teknologi secara merata. Selain itu, literasi digital yang rendah mengurangi efektivitas penggunaan teknologi dalam pembelajaran dan administrasi pendidikan. Resistensi terhadap perubahan juga menjadi hambatan karena beberapa pihak enggan mengadopsi metode baru yang lebih efektif. Namun, di sisi lain, peluang yang dihadirkan teknologi sangat besar. Teknologi memungkinkan akses ke sumber belajar yang lebih luas dan beragam, meningkatkan interaksi dan kolaborasi antara siswa dan guru, serta mempercepat proses administrasi. Untuk memaksimalkan manfaat teknologi dalam manajemen pendidikan, diperlukan strategi yang komprehensif, termasuk peningkatan infrastruktur, pelatihan literasi digital, dan perubahan budaya organisasi. Platform pembelajaran daring dapat menyediakan materi pendidikan yang up-to-date dan interaktif, sedangkan sistem manajemen pendidikan berbasis teknologi

memungkinkan pengelolaan data siswa yang lebih efisien dan akurat.

Kata Kunci : Teknologi, Manajemen, Administrasi, dan Pendidikan

ABSTRACT

The application of technology in the management of education administration in the digital era is an urgent need to improve the efficiency and quality of educational services. This study aims to identify the impact of educational administration transformation through the application of digital technology, as well as to analyze effective research methods in understanding these changes. The research method involves surveys, interviews, and documentation analysis to collect data from various layers of education stakeholders. The results of the study show that the transformation of education administration in the digital era can improve operational efficiency, reduce bureaucracy, and provide faster and more affordable services. The findings of this study support the urgency of applying digital technology in the context of education administration to achieve the goals of efficiency and improving service quality. Key challenges include limited infrastructure, lack of digital literacy among educators and students, and resistance to change. Inadequate infrastructure, especially in remote areas, hinders the equitable application of technology. In addition, low digital literacy reduces the effectiveness of the use of technology in learning and educational administration. Resistance to change is also an obstacle because some parties are reluctant to adopt new, more effective methods. However, on the other hand, the opportunities presented by technology are enormous. Technology enables access to a wider and more diverse learning resource, enhances interaction and collaboration between students and teachers, and speeds up administrative processes. To maximize the benefits of technology in education management, a comprehensive strategy is needed, including infrastructure improvements, digital literacy training, and organizational culture change. Online learning platforms can provide up-to-date and interactive educational materials, while technology-based education management systems allow for more efficient and accurate management of student data.

Keywords: Technology, Management, Administration, and Education

INTRODUCTION

The implementation of technology in educational administration management is a crucial step. Education administration can experience increased efficiency through the application of technology. By using technology, the administration process can be carried out faster and more efficiently. This will help reduce the bureaucracy and time required in recording and processing information. Thus, it can focus more on core tasks that support improving the quality of education (Febrianti et al, 2023). By adopting technology, education can become more inclusive, adaptive, and relevant to the demands of the times. It is important for the education administration to have a role in the implementation of technology in education management. The duties of education administration include the arrangement and management of learning activities, supervision of teachers and students, and the management of data and information related to educational activities. The use of technology in educational administration management allows the administrative process to be faster, more efficient, and more accurate.

Introducing the importance of technology in the development of education is a very relevant step. Technology aims to improve students' conceptual understanding and develop students' ability to communicate in carrying out their roles both in the world of education and in society (Kamsina, 2020). In addition, technology can also facilitate wider access to education, overcoming geographical and physical constraints. Information technology now has a very important role in speeding up and improving the process of a job.

Jika penerapan teknologi dalam manajemen administrasi pendidikan tidak dilakukan, sekolah akan menghadapi berbagai masalah seperti inefisiensi, keterlambatan informasi, dan kesulitan dalam pengelolaan data. Hal ini dapat menghambat proses pembelajaran, mengurangi kualitas layanan pendidikan, dan pada akhirnya menghambat perkembangan sekolah secara keseluruhan. Administrative processes such as filing, reporting, and disseminating information will take longer and require more effort. This can hinder the operational effectiveness of the school. Application of technology in educational

administration management By adopting technology, schools can overcome various challenges and create a better learning environment for students.

According to research conducted by Arifin and Kusnandar (2020), the use of SMIS (School Management Information System / SMIS) reduces administrative errors by up to 30% and accelerates access to academic information. Student Data Management The implementation of SMIS allows for the recording of student data digitally. In addition, a study conducted by Rachmawati (2021) shows that the use of LMS increases student engagement and makes it easier to monitor academic progress more objectively. Curriculum Management and Technology Learning supports curriculum planning, implementation, and evaluation through the Learning Management System (LMS) platform. Likewise, research conducted by Susanto, 2019 where the Financial Administration of IT-based financial systems increases transparency in school budget management. For example, the Nurul Fikri Integrated Islamic School in Depok has adopted a digital payment system that allows real-time recording of transactions, thereby increasing accuracy in the preparation of financial statements.

Previous studies have shown that most studies still focus on aspects of structured evaluation models. This research offers a new approach by integrating various digital technologies into a holistic education workforce management system. Previously, many studies focused on a single aspect, such as administration or teaching. However, this research expands the scope by combining the applications of technology, management, administration, education, and professional development in one unified framework. It provides a more comprehensive view of how technology can be applied simultaneously to optimize all aspects of educational administration management.

From this description, there is a research gap that needs to be filled, namely the lack of technological innovation in improving the efficiency of education administration management and community service. They show that technology can be an effective tool to overcome various obstacles faced in education management, such as resource limitations and complex bureaucracy. With the right innovations, technology can simplify the administrative process and improve the quality of educational services. Overall, the implementation of technology in

education management in the digital age offers a great opportunity to improve the quality of education, but it also presents challenges that need to be overcome with the right strategy. With strong commitment and good cooperation from all relevant parties, technology can be effectively integrated to create a more modern, efficient, and inclusive education system.

This study aims to identify and describe the challenges and opportunities for technology implementation in educational administration management at SDN Pekayon Jaya VI based on existing research and literature. The descriptive qualitative method allows researchers to explore and understand complex phenomena in depth through the analysis of content from various sources. This process involves coding the data, categorizing themes, and interpreting findings based on the context and objectives of the research. This analysis aims to provide a comprehensive overview of how technology affects education management as well as the factors that support and hinder its implementation.

DISCUSSION

Based on the results of research conducted at SDN Pekayon Jaya VI regarding the application of technology in educational administration management, the findings identified can be studied in more depth using various theories that are relevant in technology and educational administration management. This discussion will examine findings based on theory. Some of the main sources analyzed include journals such as "Jurnal Tinta: Journal of Teacher Training and Education", "Community Development Journal: Journal of Community Service", and "Journal of West Science Education" learning, as well as relevant theories of educational administration management.

1. Benefits of Implementing Digital Technology in Education:

Research conducted by Subroto et al., (2023) found that 82% of educators stated that technology has succeeded in increasing student involvement in the learning process. In addition, 76% of educators believe that technology has helped improve students' digital literacy skills, which is critical to students' readiness for the future workforce. Digital technology in the world of education has made a great contribution to improving the learning experience. This technology provides access

to a wider range of educational resources, makes it easier to find information, and facilitates communication and collaboration between students and teachers.

In addition, digital technology also allows the application of more interactive learning methods (Fatimah et al., 2023).

a) Wider Accessibility.

Digital technology allows access to a wider range of educational resources without being limited by time and geographic location. The elearning platform and online learning app allow students to access lesson materials, video tutorials, and other resources anytime and anywhere

b) Personalization of Learning. Digital technology allows for more personalized and adaptive learning. Artificial intelligence (AI)-based learning systems and adaptive applications can adjust subject matter according to each student's needs, learning speed, and learning style.

c) Increased student involvement. The use of digital technologies such as interactive videos, gamification, and simulations can increase student engagement in the learning process.

d) Efficiency and Productivity. Digital technology helps in classroom management and educational administration.

e) Wider Accessibility. Digital technology allows students to access learning materials from anywhere and anytime.

f) Better Collaboration and Communication. Digital collaboration tools such as online forums, chat rooms, and project-based apps allow students and teachers to communicate and work together more effectively.

g) Project-Based Learning and Research. Digital technology allows students to access a wide range of information sources and tools necessary to conduct research and projects.

h) Digital Skills Development. The use of digital technology in education helps students develop digital skills that are essential for students' futures.

i) Lifelong Learning. Digital technology supports the concept of lifelong learning by providing access to educational resources that can be accessed at any time.

2. Obstacles to the Implementation of Digital Technology in Education:

- a) **Digital Divide.:** The digital divide is one of the biggest obstacles in the implementation of digital technologies in Education. This gap is especially noticeable between urban and rural areas, as well as between different socioeconomic groups.
- b) **Lack of Teacher Training and Skills.** Many teachers do not have enough skills and knowledge to effectively integrate digital technology in the learning process.
- c) **Costs and Infrastructure.** The implementation of digital technologies requires significant investment in hardware, software, and network infrastructure.
- d) **Security and Privacy.** The use of digital technology in education raises data security and privacy concerns. Students' personal data must be well protected to prevent misuse and invasion of privacy
- e) **Resistance to Change.** Some teachers, students, and parents may show resistance to changes and adoption of digital technologies in education. This can be due to a lack of understanding of the benefits of technology, concerns about its effectiveness, or an unwillingness to change traditional teaching and learning methods.
- f) **Quality of Digital Content.** The quality of the digital content available can be a bottleneck. Not all digital resources are of good quality and in accordance with the curriculum or student needs.
- g) **Dependence on Technology.** Over-reliance on technology can be a problem in the event of a technical glitch or system failure.
- h) **Lack of Technical Support.** Successful implementation of digital technology requires adequate technical support.

Subroto et al., (2023) explained that there are two obstacles that are passed through in the implementation of digital technology in education:

- 1) **Infrastructure Challenges:** Limited funds and budgets hinder the acquisition and maintenance of modern technology in many educational institutions.

Schools in rural and remote areas have great difficulty in providing adequate internet connectivity and access to digital devices.

- 2) **Teacher Readiness and Training:** Many educators state the importance of thorough and ongoing training to increase students' confidence and competence in using technology effectively in teaching. Lack of awareness and concerns about technology integration are cited as barriers to adopting innovative teaching methods.

The implementation of technology in education administration is not only limited to tools, but also includes the transformation of work culture. Educational institutions that are able to make good use of technology will see significant improvements in operations and academic outcomes. In this article, we will discuss the various benefits offered by technology, as well as the challenges that educational institutions may face

Overall, digital technology brings many benefits in education, helping to create a more inclusive, personalized, and efficient learning environment. However, to maximize these benefits, it is important to address existing challenges and barriers, such as the digital divide and lack of teacher training.

3. Significant changes in the administration of Education thanks to technology

- a) **Data Management:** One of the most significant impacts of technology is in data management. Data management systems allow educational institutions to track student information, scheduling, and academic outcomes more efficiently.
- b) **Online Learning:** Online learning platforms have opened the door to more flexible and affordable learning. Students can access lecture materials from anywhere, increasing educational accessibility.
- c) **Financial Administration:** Online financial and payment software has increased transparency and efficiency in the financial administration of educational institutions.

- d) **Communication and Collaboration:** Technology facilitates communication and collaboration between staff, faculty, and students. It helps in overcoming geographical barriers and improving interaction in an educational context.

4. Application of technology in educational administration

- a) **Learning Management Systems (LMS):** LMSs such as Moodle, Blackboard, and Canvas enable online teaching and evaluation. They help lecturers to create interactive learning content and students to access it easily.
- b) **Electronic Administration:** Electronic administration systems assist in the management of student admissions, registration, and academic track records.
- c) **Big Data Analytics:** Big data analytics is used to identify trends in student performance and help institutions to provide better support.
- d) **Financial Management Systems:** Systems such as Oracle and SAP help agencies manage budgets, payments, and financial reporting more efficiently.

5. Benefits of technological innovation in educational administration

- a) **Operational Efficiency:** Technology reduces administrative burden, cuts costs, and speeds up administrative processes.
- b) **Increased Accessibility:** Online learning allows for wider and more flexible access to education, especially for those with geographical or time constraints.
- c) **Improved Quality of Teaching:** Technology allows for more customized learning approaches, more accurate evaluations, and improved responsiveness to student needs.
- d) **Improved Communication:** Online collaboration facilitates communication between students, faculty, and staff, building a strong academic community.
- e) **The Central Role of Technology**
- f) The main findings of the research show that technology plays a key role in the transformation of education administration in the digital era.

Technology is not only considered as an auxiliary tool, but also as the main driver of changes in the structure and operation of educational institutions (Supriyonodkk., 2016).

g) Data Management Transformation

The results of the study reflect a significant change in the approach to education data management. Data digitization is the main focus, allowing educational institutions to manage, store, and access information more efficiently (Fauzi & Irvansyah, 2022; Ratih et al., 2019).

h) Integrated Information System Implementation

The research highlights the implementation of integrated information systems as an integral part of the transformation of ad-administration. The adoption of this system brings a change in the way educational institutions manage academic, financial, and human resource information, by minimizing information silos (Prihanarko & Hidayati, 2023).

i) Adoption of Online Education Platform

A significant finding of the research is the increasing adoption of online education platforms. Educational institutions are beginning to utilize technology to provide more interactive and flexible learning, changing the traditional paradigm of learning (Sa'diyah, 2021).

6. Strategies to overcome challenges and capitalize on opportunities

A comprehensive and coordinated strategy is needed. Some strategies that can be taken include:

a) Improvement of Technology Infrastructure

The government and educational institutions need to work together to improve technological infrastructure, especially in areas that are still underdeveloped.

b) Digital Literacy Training and Development

Digital literacy training for teachers and students must be a priority. This includes technical training on the use of devices and applications, as well as the development of broader skills such as information literacy and critical thinking skills in the use of technology.

c) **Organizational Culture Change**

To overcome resistance to change, there needs to be a change in organizational culture that supports innovation and technology adoption. This includes building awareness of the benefits of technology, encouraging active participation from all parties, and providing adequate support for those who are struggling to adapt to new technologies.

d) **Development of a Robust Data Security System**

The development of robust data security protocols should be a priority to protect students' data and maintain their privacy.

e) **Diversification of Funding Sources**

To overcome budget constraints, educational institutions can look for various sources of funding, including cooperation with the private sector, grant applications, and the use of CSR (Corporate Social Responsibility) funds. Qurtubi et al. (2024) emphasizes the importance of cooperation between governments, educational institutions, and the private sector in providing the resources and support needed for technology implementation.

7. Leveraging Data for Decision Making

Educational institutions must develop data management systems that allow for the effective collection, analysis, and use of data. Data-driven decision-making can help in designing more precise and effective strategies to improve the quality of education. Arum (2023) notes that effective use of data can help in identifying problems and designing more accurate and evidence-based solutions.

a. **Positive Effects on Efficiency and Effectiveness.**

The use of technology helps reduce administrative workload and allows for greater focus on the teaching and learning aspects.

b. **Improving the Quality of Learning**

The discussion highlighted how the adoption of online education platforms contributes to improving the quality of learning

c. **Challenges in Security**

d. **The Need for Professional Development.**

e. **Relevance to Education Policy**

Five important elements of the benefits of applying technology in education administration, in order to create an adaptive, efficient, and competitive education ecosystem, towards a Golden Indonesia 2045:

- a) **Cloud-Based Student Data Management;** Cloud-based systems allow schools to efficiently store and manage student data, including academic grades, attendance, and educational history. Platforms like Google Workspace for Education or Microsoft Teams make it easy to access data anytime, anywhere. With this implementation, young teachers and education staff can reduce administrative time and focus more on student learning.
- b) **Digital Human Resource Management;** Technology can be used to manage human resources in the educational environment, such as recording the attendance of teachers and education personnel, performance evaluation, and administrative reporting. Digital management systems help principals to monitor staff performance in real-time, so decision-making can be made faster and more accurately.
- c) **School Budget Planning and Management;** Technology-based financial applications, such as e-budgeting or accounting software, allow schools to efficiently formulate and monitor budgets. This system can assist school leaders in making transparent and accountable financial reports. With a well-managed budget, schools can more easily allocate funds for the development of educational facilities and programs.
- d) **Automation of administrative processes;** The application of technology also allows for the automation of administrative processes, such as the registration of new students, the management of lesson schedules, and the preparation of annual reports. This automation not only saves time, but also reduces the risk of human error. Young teachers involved in administration can gain training to operate this system optimally.
- e) **Monitoring and Evaluation of Education Programs;** Technology allows for real-time monitoring and evaluation of educational programs. Using educational analytics apps, principals can monitor program success, identify problems, and make data-driven improvements. For example, an analytics

dashboard can show trends in student grades or the effectiveness of a particular teaching program.

The application of technology in education administration is a strategic step to create a more efficient and competitive education ecosystem. Digital systems help education stakeholders, from principals to young teachers, to optimize time and resources for student development

CONCLUSION

The application of technology in educational administration management offers transformative opportunities to improve the efficiency, effectiveness, and accessibility of learning resources. With the use of technology, institutions can make data-driven decision-making and create more personalized and interactive learning. This positions technology as the main pillar in modernizing the education system to remain responsive to the needs of the times. However, the success of this implementation is faced with crucial challenges such as digital infrastructure access gaps between regions. In addition, low digital literacy among educators and students demands a continuous training program. Another obstacle arises from resistance to change, where organizational culture and visionary leadership are needed to motivate staff to switch from traditional to digital methods. The security and privacy of student data is also a priority that requires a strong protection system. Overall, these challenges can be mitigated through strategic collaboration between governments, educational institutions, and the private sector. With a shared commitment to strengthening literacy and infrastructure, the huge opportunities that technology offers can be optimized. This step will ensure a more inclusive, transparent, and high-quality education future for all levels of society.

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