

# DIGITAL TRANSFORMATION AND ITS IMPLICATIONS FOR THE FUNCTIONS OF BASIC EDUCATION MANAGEMENT: A LITERATURE REVIEW

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## ***ABSTRACT***

*Digital transformation in elementary education is influenced by culture and ways of thinking. Change often hinders elementary education institutions, both in terms of organizational culture and individual perspectives. New perspectives and methods in elementary education are necessary for digital transformation. The purpose of this article is to explain how digital transformation and its implementation impact management in elementary education, using a keyword search for “digital transformation in education.” The research findings reveal that digital transformation brings significant benefits in improving operational efficiency, enhancing data accessibility, and elevating the quality of services provided to various stakeholders. However, significant challenges and obstacles are also encountered along this transformation journey. Resistance to change, data security challenges, financial constraints, and a lack of technical skills are some of the aspects that need to be carefully addressed. Through the development of robust policies, investment in data security, employee training, and effective management support, elementary schools can overcome these obstacles and maximize the benefits of digital transformation. In addition to facilitating the learning process, digital transformation has also become a strategic tool for planning, monitoring, and evaluating academic activities and management functions within educational*

*institutions. While it has been implemented in various forms, its implementation remains inconsistent across educational institutions.*

**Keywords:** *Digital Transformation, Educational Management, Literature Review*

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## INTRODUCTION

Digital transformation is a process of integrating digital technology into all aspects of an organization, which not only involves the adoption of new technologies but also brings about comprehensive changes in work processes, organizational structures, corporate culture, and customer interactions (Judijanto et al., n.d.). Rapid advances in information and communication technology have made changes in education in the digital age an inevitable phenomenon. All aspects of the education sector are impacted by these changes, which are shaping a new paradigm in the learning process. The use of technology in education involves more than just the use of hardware and software; it also requires significant adjustments to how education is delivered. Within the framework of modern education including K-12 education educational technology is becoming increasingly common. These technical advancements have a direct impact on hybrid and online learning approaches. Furthermore, given the rapid pace of educational technology advancements in recent years, the use of technology in the learning process has become increasingly prevalent. Interactive worksheets, Quizizz, puzzle creators, and other online learning platforms and applications are now accessible via various devices (Sugiyantoro, 2025).

Digital transformation in elementary education is influenced by culture and ways of thinking. Change often poses a challenge for educational institutions, both in terms of organizational culture and individual perspectives. New educational approaches and methods

are needed to drive this transformation. Economic, political, and digital readiness contexts influence the implementation of educational visions into actionable strategies. Many education systems still struggle to adopt basic digital technologies such as devices, qualified teachers, and internet connectivity, even though the global vision for universal education focuses on improving adoption, literacy, numeracy, student well-being, and future-ready skills. Evidence suggests that without significant changes to these three components, sustainable and effective transformation will be difficult to achieve if these factors interact in ways that exacerbate challenges and hinder digital transformation efforts. Some findings from a brief analysis of previous research related to this study's subject matter. A study by (Hermina, 2024). highlights the pandemic's impact in rapidly driving digital university transformation. However, it also points to deficiencies in infrastructure and human resources, indicating that digital leadership is crucial for addressing these issues.

However, the application of technology in basic education management also faces various challenges, such as the readiness of human resources, uneven infrastructure, and the digital divide between urban and rural areas. Therefore, education management must be able to develop appropriate strategies to overcome these obstacles. The development of globalization and technology demands innovative and flexible educational management. This is crucial for educational institutions to survive and compete in an increasingly competitive world. The focus should not only be on academic outcomes but also on character development, creativity, and life skills among students. Given these dynamics, it is essential to discuss how educational management can be designed and implemented effectively in today's era. This discussion is highly relevant for addressing the challenges of a fast-paced and digital age (Destiana et al., 2025).

On the other hand, various studies have shown that the effective implementation of digital transformation can improve the quality of educational management, in terms of operational efficiency, service quality, and the strengthening of decision-making systems. Therefore, it is important to comprehensively understand

how digital transformation affects educational management through a systematic and in-depth literature review.

Based on this discussion, this study focuses on analyzing digital transformation and its implications for the functions of basic education management through a literature review approach. This study is expected to contribute to enriching theoretical understanding and serve as a foundation for developing basic education management practices that are adaptive to the development of digital technology in the current era.

## **METHOD**

This study employs a qualitative method using a systematic literature review (SLR) approach to analyze Digital Transformation and its implications for the functions of elementary education management. Data collection was conducted using documentation techniques, combined with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework to ensure a systematic literature search and selection process (Sastypratiwi & Nyoto, 2020). Literature collection was conducted through access to academic databases, digital libraries, and leading journals in the fields of education, management, and information technology (Chandra, 2021).

Literature selection criteria will consider publications from the past five years, relevance to digital transformation, and a focus on aspects of digital transformation within elementary education institutions. Once the relevant literature has been collected, the next step is the analysis and categorization of the literature. This analysis will involve a deep understanding of the key findings in the literature regarding digital transformation in the context of elementary education. The results of the literature analysis will be synthesized to form a comprehensive conceptual framework (Westari & Sumarsono, 2023). Through this synthesis, this study will provide a comprehensive understanding of the impact of digital transformation on elementary education management. Using this method, it is hoped that this literature review will make a valuable contribution to understanding and describing the role of digital transformation in the context of education management.

## **RESULTS AND DISCUSSION**

### **The concept of digital transformation in the context of elementary education based on the scientific literature**

Digital transformation offers significant benefits in improving operational efficiency, enhancing data accessibility, and improving the quality of services provided to various stakeholders. However, significant challenges and obstacles are also encountered along this transformation journey. Resistance to change, data security challenges, financial constraints, and a lack of technical skills are some of the issues that need to be carefully addressed. Through the development of robust policies, investments in data security, employee training, and effective management support, elementary schools can overcome these obstacles and maximize the benefits of digital transformation. A deeper exploration of specific data security aspects, the impact of digital transformation on student learning experiences, and the evaluation of training program effectiveness. By understanding the challenges, embracing the benefits, and taking concrete steps to overcome obstacles, elementary education institutions can design a holistic and sustainable digital transformation strategy. Through collaboration, continuous training, and ongoing evaluation, elementary education institutions can achieve a vision of a connected, efficient future focused on better quality elementary education for all stakeholders. Thus, digital transformation in elementary education is not only a necessity but also an opportunity to create elementary schools that are more adaptive and responsive in this digital age (Ahyani & Dhuhani, 2024).

Organizational aspects have also undergone significant shifts. The organizational structure of basic education is required to be more flexible in supporting cross-unit collaborative work through digital platforms. The use of cloud-based internal communication systems, the integration of performance management platforms for teachers and basic education staff, and the formation of a basic education digitization team have become crucial components of modern management implementation. This transformation requires an update to organizational capacity focused on digital competencies. The delivery of basic education activities with technological support provides flexibility in managing the teaching and learning process. Learning management systems enable basic

education managers to monitor the progress of learning, ensure student engagement, and provide rapid feedback. Additionally, technology-based systems streamline academic administrative services, such as student registration, grade entry, and reporting to relevant agencies.

In terms of oversight, technology facilitates the continuous monitoring of performance. The implementation of digital systems enables the evaluation of programs and individual performance to be conducted in a transparent, objective, and measurable manner. Monitoring dashboards equipped with key performance indicators have been widely used by educational institutions particularly in elementary education to oversee program implementation comprehensively and promote managerial accountability. However, the digital implementation of elementary education management still faces a number of challenges. Some of these include limited technological infrastructure in rural areas, digital disparities across regions, and low digital literacy among some primary education staff in rural areas. Therefore, the success of implementation depends not only on the availability of technology but also on the readiness of human resources and transformative leadership in designing gradual and measurable changes.

The implementation of basic education management in the era of digital transformation is an inevitability that demands comprehensive changes in the planning, implementation, and evaluation of basic education through the optimal use of information technology. The digitization of basic education management has opened up opportunities for greater efficiency and effectiveness, but it also faces challenges such as infrastructure limitations, digital competency gaps, and resistance to change (Adam et al., 2025).

The transformation of basic education through digitalization and skills development is crucial for advancing basic education in the digital age. Teaching skills such as critical thinking, communication, teamwork, and information and communication technology can help students face future global challenges. Developing a competency-based curriculum and teaching methods that integrate these skills into the learning process can enhance the effectiveness of learning and help students develop these skills. The use of technologies such as online learning and educational apps can also improve learning

effectiveness and help students develop these skills (Yusuf et al., 2023). Furthermore, these technologies not only facilitate the learning process but also serve as strategic tools for planning, monitoring, and evaluating academic activities in basic education.

The field of digital-based elementary education administration enables the integration of various key functions such as finance, human resources, and academics into a single integrated system. Academic information systems and Education Enterprise Resource Planning (ERP) serve as effective solutions for efficiently managing student, teacher, scheduling, and financial data. This system also facilitates reporting to external parties such as the government and accreditation agencies (Adam et al., 2025).

### **The implications of digital transformation on management functions in elementary education (planning, organizing, implementing, and supervising)**

Based on a review of the literature, management functions in elementary schools have been implemented in various forms, but their implementation remains inconsistent across educational institutions. The four main management functions planning, organizing, directing, and controlling are generally recognized in almost all elementary schools or madrasah Ibtidaiyah. However, in practice, the effectiveness of implementing each function is greatly influenced by leadership capacity and the availability of resources.

Planning in elementary education is the application of rational and systematic analysis in the process of developing elementary education, aimed at enhancing the effectiveness and efficiency of elementary education in its efforts to meet needs and achieve educational goals both those related to students and the community (Harbes et al., 2024). The planning function in basic education institutions includes the formulation of vision and mission statements, the setting of short- and long-term goals, and the development of strategic programs such as curriculum development, teacher quality improvement, and the utilization of technology. Challenges at this stage include the lack of accurate data and insufficient involvement of all stakeholders in the planning process.

In the organizing function, the school's organizational structure plays a crucial role in determining the flow of responsibilities and coordination among work units. Elementary

schools with flexible and communicative structures tend to be more adaptable to change. In the organizational function, the school's organizational structure plays a crucial role in determining the flow of responsibilities and coordination among work units. However, many elementary schools have not yet delegated tasks optimally, leading to uneven workloads and slow program implementation. Organization within elementary schools still exhibits limitations in structural flexibility and task distribution. In fact, a dynamic primary education organization requires clear role division and efficient coordination channels to respond quickly to changes. Without effective organization, even good planning is difficult to implement optimally (Nasution et al., 2025).

The directing function, or actuating, is closely related to the ability of school principals or institutional leaders to motivate and mobilize all elements of the organization in basic education. Leaders who are inspiring, communicative, and participatory have been shown to create a positive work environment. However, authoritarian leadership that is closed to new ideas remains a challenge in some schools, particularly in the context of learning innovation.

The supervisory function serves as a crucial tool in maintaining accountability and the effectiveness of basic education programs. Accountability practices in elementary schools highlight the importance of transparency and the responsibility of basic education institutions in managing resources and learning outcomes. Data analysis indicates that elementary schools implementing robust accountability systems such as regular reporting, parental involvement, and internal audits tend to enjoy higher levels of public trust. However, several obstacles, such as the lack of an adequate monitoring system and limited understanding of the importance of accountability, remain major challenges. A combination of effective evaluation and strong accountability can serve as a primary education management strategy capable of improving the overall quality of learning (Mardiati et al., 2025).

Monitoring is typically carried out through program evaluations, classroom supervision, and budget accountability reports. However, monitoring is often merely administrative in nature, without any meaningful follow-up actions to address

shortcomings. This diminishes the positive impact of the monitoring function itself (Nasution et al., 2025).

## CONCLUSION

Digital transformation brings significant benefits to basic education by improving operational efficiency, enhancing data accessibility, and improving the quality of services provided to various stakeholders. However, significant challenges and obstacles are also encountered along the path of this transformation in basic education. Resistance to change, data security challenges, financial constraints, and a lack of technical skills are some of the aspects that need to be carefully addressed. Through the development of robust policies, investment in data security, training for teachers and staff, and effective management support, basic education institutions can overcome these obstacles and maximize the benefits of digital transformation. Furthermore, the four primary functions of management planning, organizing, directing, and controlling have generally aided in implementing digital transformation and its implications for management functions in elementary education. However, in practice, the effectiveness of implementing each function is significantly influenced by leadership capacity and the availability of resources.

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