

# Digitalizing School Management: Achieving Excellence through Technology Integration in Primary Schools in Indonesia

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## ABSTRACT

The digitalization of school management represents a transformative shift from manual processes to technology-driven systems. This study examines the impact of school management digitalization on enhancing service quality in excellent schools. A descriptive qualitative research approach was employed. Data were collected using questionnaires, interview guidelines, and observation sheets. Instrument validity and reliability were confirmed through expert judgment. The study involved students, teachers, and parents as research participants. Findings indicate that successful school digitalization requires seamless system integration to optimize adaptation and usage. The digitalization process yielded significant improvements in three key areas: accessibility of information, service efficiency, and program evaluation accuracy. Performance indicators showed a 37% increase in service quality, rising from 40% to 77%, demonstrating substantial enhancements in service speed and effectiveness. The study highlights that the positive outcomes of digitalization stem from the integration and user-friendly design of school management systems. Schools that adopt a well-structured digital framework experience greater efficiency, transparency, and stakeholder satisfaction. Digital transformation in school management leads to improved accessibility, service speed, and program evaluation. The findings underscore the importance of an integrated and user-centric approach to digitalization, ensuring enhanced performance and streamlined school operations. Future research should explore long-term impacts and scalability in diverse educational settings.

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## 1. INTRODUCTION

School services are an important part of the process of achieving school goals, so excellent and effective school services can indirectly improve the performance achievements of all sectors (Cahyawati, 2017; Kiral, 2020; Zou, Harfitt, Carless, & Chiu, 2022). Schools are institutions that require excellent service because they are educational institutions that are directly related to the community through students and parents. School services include teaching services, administration, school facilities, and students. So, with these conditions, the speed and effectiveness of the services provided by schools have become crucial and important in the direction of quality schools. The era of technological development is an era that provides convenience for every individual or institution to help the work process and improve performance (Oyier, Odundo, Lilian, & Wangui, 2015; Sanoto, 2021; Wu, Zhou, & Li, 2023). The implementation of technology in various sectors becomes a bridge in an effort to accelerate the improvement of service capacity in society.

Today, the collaboration between technology and technology empowerment in the process of social life is known as digitalization. Digitalization is the process of changing from manual processes (analogue technology) to digital technology, which basically uses the Internet as the basic foundation of program development (Arisoy, 2022; Carlsson & Willermark, 2023). This is no exception in the aspect of school management. School management has a major role in the process of implementing learning that can run effectively and well (Kyereh, Addai-Amoah, & Owusu-Addo, 2023; Rauseo et al., 2023). The importance of digitalization in school management cannot be ignored in an increasingly digitally connected era. By utilizing information technology, schools can improve operational efficiency, information accessibility, communication, data analysis and learning experiences.

This condition shows that the role of technology through digitalization in school learning systems is a major component in the modern learning process, because the education process in the modern era requires technology as a learning foundation that accelerates the learning process and learning administration (Dvoretzkaya, 2018; Opria & Momanu, 2023). But in its application, the use of digital-based technology is still not widely implemented in several school institutions, due to several obstacles, namely limited human resources, limited technology owned, and low desire to adapt new technology (Cruz, Sousa, Brito, & Costa, 2023; Siljebo, 2024). This situation is an aspect that slows down the digitalization process from the aspect. The Covid-19 pandemic is basically a turning point in accelerating the utilization of digital technology in all aspects, especially in the field of education (Håkansson Lindqvist & Pettersson, 2019; Márquez-Ramos, 2021; Pettersson, 2021). Limited conditions result in the need for special adjustments in the scope of community services, prioritizing effectiveness and ease of access. So that the media that can facilitate all these needs is the need for digitalization.

The role of technology in education in the digital era is not only as a tool used in the implementation of learning, but is connected to the effectiveness of the learning implementation process through digital learning systems, as well as the management of education management carried out by school management. The part that has not been measured concretely is how the explicit impact of digitization on education, especially in basic education, from the point of view of students, teachers, school managers, and parents.

This research focuses on analyzing the implementation of technology in the digitalization process of school management. So that the process, constraints, and impacts obtained from the process of digitalization of school management can be known. Based on the description that has been explained previously, this research aims to find out the process of implementing digitalization in schools and the components of innovation developed in schools, then the achievements that can be obtained after using technology-based innovations in digitalizing school management.

## 2. METHODS

This study employs a qualitative research approach to explore the implications of digitalization in enhancing learning effectiveness. The research focuses on two main objectives: (1) understanding the

implementation process of school management system digitalization and (2) analyzing its impact on school management efficiency and educational outcomes.

The study was conducted at Satya Wacana Christian Elementary School, involving students, parents, and teachers as research participants. A combination of questionnaires, interview guidelines, and observation sheets was used for data collection. These instruments were designed to capture stakeholders' experiences, challenges, and perceptions regarding the digital transformation in school management.

The collected data underwent a data reduction process, where irrelevant or redundant information was eliminated to align the findings with the study's objectives. To ensure credibility and accuracy, triangulation was applied, integrating multiple data sources (observations, questionnaires, and interviews). This process allowed for data saturation, ensuring that the findings were comprehensive and representative of actual experiences.

Furthermore, the qualitative analysis aimed to uncover patterns, trends, and key themes emerging from the digitalization process. The study also considered the contextual factors influencing digital adoption, such as infrastructure readiness, stakeholder engagement, and ease of system use. By applying these qualitative techniques, the research provides in-depth insights into how digital school management systems influence learning effectiveness and administrative efficiency.

### 3. FINDINGS AND DISCUSSION

The research results in this study are divided into several aspects of discussion, including the following.

#### 3.1 School Management Digitalisation Implementation Process

School information services and school administration services at Satya Wacana Christian Elementary School are transforming from manual services to digital services. The change is based on fundamental needs related to service effectiveness and the need for fast and practical services. The initial step in transforming services into digital-based services begins with the activation of school website services and optimising the functionality of the school website. Website services that were previously limited to school information pages were changed by collaborating with other supporting features such as new student registration services, school facility information services, student learning activity information services, student extracurricular activity services and student parent consultation services. These services focus on the aspect of providing information and consultation between schools and parents and external parties.

While in terms of internal services, it is done by adding digital correspondence features, digital academic supervision services, and digital work attendance services. Optimisation is done by adding several applications that support digital services, so that services are more optimal, systematic and monitored by the system. The system implementation process requires several adaptation and assistance processes, so that both parents and teachers are able to optimise the benefits of the services provided. Here are some views of the digital system implemented at SD Kristen Satya Wacana.



Figure 1. School Website Initial View

Figure 1 shows the school's website, with a modern design that describes the condition and location of the school. This is intended to provide an overview of the school's condition. In addition, it is one of the ways to attract viewers to see more details of the school conditions virtually through the website. The purpose of the designed website is to promote and introduce the conditions, activities, and learning activities carried out at the school. Then, the features in the website are described in Figure 2 as follows.

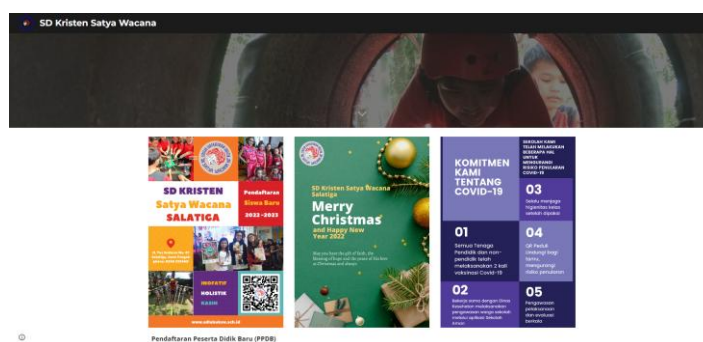


Figure 2. School Services and Information

Figure 2 is a detailed view of the school's services, which consists of school activities and extracurricular activities carried out by the school. In addition, there is an online school information and registration page. This is to make it easier for parents of students who will register the school can be done online and do not need to go to school directly, and just upload the registration data digitally.

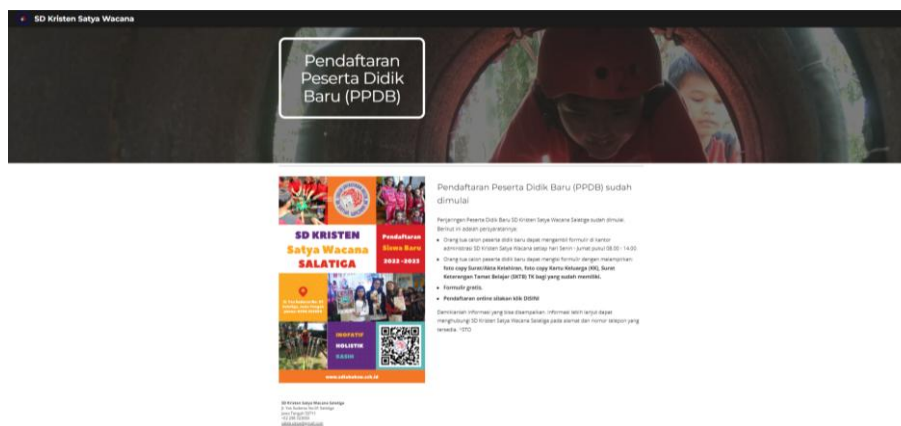


Figure 3. Online Admissions/Learner Registration Service

Through the online student registration service shown in Figure 3, new student registration information is systematically designed, so that parents of prospective students are easier to understand the registration requirements and easy to collect and register for school. Optimisation of the student registration system is done by having 1 special staff handling and synchronised with the offline student registration system at the school. Apart from the student service aspect, there is a system that specifically facilitates services for teachers and school staff in the aspects of correspondence administration and academic supervision, using the School Management Information System (SIM). The following is a view of the School SIM.



Figure 4. School SIM Application

The SIM School service is an integrated school administration service that consists of correspondence, attendance, and academic supervision services. Thus, SIM School facilitates the administration process digitally and replaces manual administration. The advantages of using SIM School are accelerating access to administrative services, systematically documented administrative services, and environmentally friendly because it minimises the use of paper because it is replaced digitally. The SIM School service has a systematic system flow so that principals can monitor school service activities, school learning activities and can directly monitor workload in a more factual and data-based manner.

Another aspect developed in the school digitisation process is that all school activities are documented with social media such as the school Instagram, which is able to publicise school activities. This helps the school in the realm of promotion and introduction of the school to the general public. The following is a view of the school's social media account Instagram.

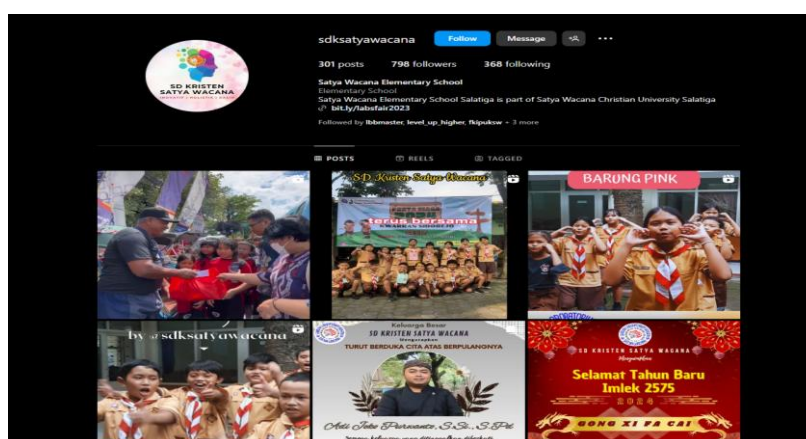


Figure 5. School Instagram

The school's Instagram social media account is one of the media utilised by the school to showcase the learning activities in the school. In addition, it is a form of school accountability to parents regarding the services and activities organised at the school. On the other hand, as a private school, it needs promotional media to attract new prospective students, by showing learning activities, extracurricular activities, and achievements obtained by the school.

The school's digitalization process is an ongoing development, continuously evolving to meet emerging needs. The implemented system is designed as an integrated platform, ensuring seamless data connectivity across various school operations. Data integration plays a crucial role in this framework, as the insights gathered from the digital service system enable school administrators and the foundation to make well-informed decisions. By leveraging real-time data, school leaders can design policies and programs that are precisely aligned with contemporary educational demands and societal expectations, fostering a more responsive and efficient learning environment.

### 3.2 Implications of School Digitalisation on Service Outcomes

The implementation of digital systems in school services presents several challenges and obstacles, including system readiness, the preparedness of human resources to effectively use the technology, and the need for a cultural shift in work practices. At Satya Wacana Christian Elementary School, the adaptation process followed a structured approach, beginning with program development and followed by socialization efforts aimed at teachers, staff, students, and parents. To facilitate a smooth transition, users were provided with guidance and technical assistance to ensure they could navigate and utilize the system efficiently. A trial period was conducted, allowing the school to identify potential issues and make necessary adjustments before full-scale implementation. After two months, the system became effectively integrated into daily operations.

Following the first year of full implementation, several key findings and implications emerged. The research highlighted improvements in three critical areas that contributed to the success of digitalizing school management. First, digitalization significantly enhanced access to information, making it easier for students, parents, and school staff to retrieve necessary data in a timely manner. Second, the system improved service speed, streamlining administrative tasks and reducing wait times for various school-related processes. Lastly, the digital transformation enabled more effective evaluation of school services, allowing administrators to assess performance, identify inefficiencies, and implement targeted improvements. These findings underscore the importance of a well-integrated digital system in enhancing overall school management and operational efficiency, as detailed further in Table 1.

**Table 1.** Outcomes of School Management Digitalisation Implementation

Aspects	Sub-aspect	Before	After	Description
		Digitisation (%)	Digitisation (%)	
Easy Access to Information	Ease of getting school information	30	70	Website and social media services help to obtain information
	Ease of registration process	40	85	There are two ways to register new students: offline and online.
	Ease of parent services	45	75	Parents can monitor student activities and consult online
Speed of Service	Speed of school enrolment service	60	78	Through online registration, parents are

				able to register and pay online faster.
	Speed of administrative services (correspondence)	35	75	Optimised mail services with digital mail and digital signature services
	Evaluation of learning services through e-supervision	25	76	The supervision process can be done digitally from the aspect of assessment and collection of assessment files
School Service Evaluation	Evaluation of school administration services	38	72	There is a service assessment form that can show the achievements of school services
	Evaluation of student activities (extracurricular, out-of-class activities, and interest talent mentoring)	40	82	Extracurricular activities can be tailored to the interests and needs of students by adopting feedback from students and parents facilitated online.
	Average Achievement	40	77	An increase of 37%

The results of the transformation from manual-based services to digital-based services show an increase in achievements obtained from the results of questionnaires given to students, parents, teachers, staff, and principals. Quantitatively, there was an increase of 37% from the previous 40% to 77%. The increase of 37% is an implication of the use of technology that is manifested in the digitalisation of school management in an integrated and systematic manner. The resulting achievement is an increase in services that can be felt by students, parents, teachers, and school staff. The data obtained becomes the basis for the principal or school management to design school programmes that are more comprehensive and in accordance with the needs.

One of the most noticeable impacts of school management digitalization is the ease of access to information. With a well-integrated system, stakeholders can obtain detailed insights into school activities and programs without unnecessary delays. This increased accessibility enhances communication between schools, students, and parents, ensuring greater transparency in academic and administrative processes.

Another significant improvement is the speed and efficiency of school services. Digitalization has streamlined various administrative tasks, making them faster, more flexible, and time-efficient. A clear example is the student enrollment process, which no longer requires physical visits to the school. Prospective students can simply submit the required documents online, complete the registration process within the system, and track their progress through an automated interface. This eliminates long queues and manual paperwork, allowing for a seamless admission experience.

In terms of quality assurance and evaluation, digital tools such as the e-supervision program facilitate teacher performance assessments and system-based evaluations. Instead of printing assessment documents and evaluation instruments, all records are digitized and accessible through the platform, simplifying monitoring and review processes for teachers and school administrators. This shift not only reduces paperwork but also enhances efficiency in performance tracking.

Furthermore, digitalization empowers students and parents to participate in school decision-making through interactive features. The system allows them to provide feedback on optional programs, both academic and non-academic, directly through the school's website. By leveraging these insights, schools can design more effective and student-centered learning programs that align with the needs and expectations of the school community.

Efforts in establishing quality and excellent schools start from good school management, in terms of learning services, administrative services and relevant school programmes. Digital transformation, especially in education services, is a must to accelerate the service process and support school programmes that must always be in line with the times (Thasai, Sirisuthi, & Aksornsua, 2023). Satya Wacana Christian Elementary School is one example of an elementary school that has adopted digitalisation in several aspects of school governance. The process of digitisation of school management is basically a series of processes in an effort to increase the capacity and achievement of services provided by the school to the school community (Khurniawan, Sailah, Muljono, Indriyanto, & Maarif, 2021a). The results of research at Satya Wacana Christian Elementary School show that in the process of digitalising school management, it is necessary to integrate several aspects, namely the readiness of supporting technology, the readiness of users/human resources, and a common desire that facilitates the process of implementation and socialisation to all school members. This is basically also stated in several studies which state that a change in the managerial element requires collaboration from every line/section of the institution that has the same vision, mission and goals (Alanezi, 2021; Khurniawan, Sailah, Muljono, Indriyanto, & Maarif, 2021b; Khurniawan et al., 2021a; Roos & Guenther, 2020; Sakala & Chigona, 2020).

The digitalization of school management at Satya Wacana Christian Elementary School has demonstrated a significant quantitative impact, particularly in enhancing administrative efficiency and stakeholder engagement. This transformation has been well received by the school community, as reflected in the smooth and optimal implementation of digital policies. Notable improvements are observed in access to information, service speed, and the regular evaluation of school services, all of which have become more streamlined and continuous. The transition to digital management directly benefits users, particularly students, parents, and staff, by providing a more efficient and accessible system (Håkansson Lindqvist & Pettersson, 2019; Maunula & Lähdesmäki, 2022).

The findings of this study indicate that the digitalization process has been successfully implemented across all school management systems, ensuring that all stakeholders can easily adapt to the new framework. The adoption of an interconnected digital system facilitates seamless communication and operational efficiency. Moreover, the active leadership of the principal and school foundation has played a crucial role in guiding and supporting the digitalization process. Their involvement ensures that programs are strategically developed and optimally executed, leading to tangible improvements within the first year of implementation. The sustainability of digital transformation in school management depends largely on the commitment of authorized leadership, which helps maintain focus and measure progress effectively (Arısoy, 2022; Bastos, Oliveira, & Caggiano, 2021; Dirckinck-Holmfeld et al., 2019; Ghamrawi & Tamim, 2022).

Overall, the digitalization of school management at Satya Wacana Christian Elementary School has achieved optimal results, both in the implementation of technology and the benefits derived from its use. These achievements have been largely influenced by the strategic interventions of the school leadership and the relevance, usability, and direct impact of the digital innovations introduced. Research by Samuelsson & Lindström (2022) supports the notion that successful system implementation depends on designing innovations that align with users' needs and are easy to use (García-Pérez, García-Garnica, & Olmedo-Moreno, 2021; Timotheou et al., 2023; Vasilyevich et al., 2020; Willermark & Gellerstedt, 2022). The findings of this study reinforce that well-structured digital integration, supported by strong leadership and relevant innovation, leads to a more effective, user-friendly, and sustainable school management system.

#### 4. CONCLUSION

Digitalization of school management is a process of transformation from manual school management to using technology as the basis for implementation. The digitization process requires collaboration from every member of the school community. Collaboration in school management requires a system design that is integrated with each other, making it easier to use and making the usefulness of an innovation more optimal. The achievements of the school management digitization process were obtained in three main aspects, namely easy access to information, speed of service, and more precise program evaluation. The findings of this study show that the positive achievements are due to all digital systems in schools being designed in an integrated manner and easy to use. Suggestions for further research are the integration of learning systems connected to social media, which can be designed in a one-based system to get information and notifications from school information. So, with a good system's usefulness value, it supports the creation of excellent services in schools.

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