

## School Digital Transformation and Principal Leadership in Improving Teacher Professionalism

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### Abstract

In this context, principals play a strategic role as key decision-makers who guide the direction of school innovation and ensure that digital initiatives are effectively implemented to improve educational quality. This study aims to analyze school digital transformation and principal leadership in improving teacher professionalism at SD Negeri 1 Rimpak in the 2025/2026 academic year. This study uses a qualitative case study approach involving the principal, teachers, and relevant stakeholders as research participants. Data were collected through interviews, classroom observations, and document analysis, then analyzed using an interactive model consisting of data reduction, data display, and conclusion drawing. The findings show that school digital transformation significantly contributes to improving teacher professionalism by enhancing digital literacy, pedagogical innovation, and instructional effectiveness. Furthermore, principal leadership plays a crucial role in driving this transformation through vision building, professional development programs, collaborative culture development, instructional supervision, and resource management. Although several challenges such as differences in teacher digital competence and limited infrastructure were identified, effective and adaptive leadership was found to help overcome these barriers. The study concludes that digital transformation and principal leadership are interrelated factors that jointly strengthen teacher professionalism and improve the overall quality of education in primary schools.

### Keywords

Improving Teacher Professionalism; Principal Leadership; School Digital Transformation



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## INTRODUCTION

School digital transformation has become one of the most significant priorities in contemporary educational reform, particularly in the era of rapid technological advancement and the increasing demand for 21st-century skills. Digital transformation in schools refers not only to the integration of technology into teaching and learning processes, but also to a broader systemic change that includes leadership,

culture, infrastructure, and human resource development. In this context, principals play a strategic role as key decision-makers who guide the direction of school innovation and ensure that digital initiatives are effectively implemented to improve educational quality. At SD Negeri 1 Rimpak, Academic Year 2025/2026, the implementation of digital transformation is closely linked to the leadership capacity of the principal in fostering teacher professionalism, especially in adapting pedagogical practices to digital-based learning environments. Effective leadership is therefore essential in bridging technological change with instructional improvement and teacher development (Fullan, 2013).

Teacher professionalism is a critical factor in determining the success of digital transformation in education. Professional teachers are expected to possess not only pedagogical competence but also digital literacy skills that enable them to design, implement, and evaluate technology-enhanced learning. In many educational settings, however, teachers often face challenges in adapting to digital tools due to limited training, resistance to change, or inadequate infrastructure support (Mulyono & Sulistyani, 2022). As a result, the role of the principal becomes increasingly important in providing continuous professional development, mentoring, and motivation to ensure that teachers are capable of integrating digital technologies into their classroom practices. Studies have shown that school leaders who actively support professional learning communities and provide structured digital training programs can significantly enhance teacher effectiveness and innovation in teaching (Leithwood, Harris, & Hopkins, 2020).

The concept of school digital transformation also emphasizes the importance of systemic alignment between leadership vision and instructional practice. A principal who demonstrates transformational leadership is able to create a shared vision for digital innovation, encourage collaboration among teachers, and build a culture of continuous improvement. At SD Negeri 1 Rimpak, such leadership practices are expected to contribute to the development of a digitally competent teaching workforce that can respond to the needs of modern learners. Furthermore, digital transformation is not merely about adopting technological tools such as learning management systems or digital assessment platforms, but also about reshaping teaching strategies to become more student-centered, interactive, and data-driven. According to research, effective digital leadership in schools is characterized by the ability to integrate technology into pedagogical goals while maintaining a strong focus on student learning outcomes (ISTE, 2018).

In addition, the relationship between principal leadership and teacher professionalism is influenced by organizational support, school culture, and access to digital resources. Principals who prioritize collaboration, open communication, and shared decision-making tend to create more positive environments for teacher growth and innovation. At SD Negeri 1 Rimpak, the success of digital transformation depends on how well the principal can manage these factors and ensure that teachers feel supported in their professional journey. This includes providing adequate training opportunities, encouraging experimentation with digital tools, and recognizing teacher achievements in technology integration. Empirical evidence suggests that leadership practices that emphasize empowerment and capacity building are strongly associated with increased teacher motivation and professional engagement (Hallinger & Liu, 2016).

Moreover, the urgency of digital transformation in education has been further accelerated by global disruptions such as the COVID-19 pandemic, which highlighted the importance of digital readiness in schools. This situation has reinforced the need for strong leadership that can guide schools through technological change and ensure continuity of learning under various conditions. In the case of SD Negeri 1 Rimpak, the academic year 2025/2026 represents a critical period for consolidating digital transformation efforts and strengthening teacher professionalism through sustained leadership initiatives (Saryanto et al., 2020). The principal's role in this process is not only administrative but also instructional and transformational, requiring a deep understanding of both educational technology and human resource development strategies. As noted in educational leadership literature, successful school transformation depends heavily on the principal's ability to align vision, resources, and teacher capacity in a coherent and sustainable manner (Kozma, 2011).

Overall, school digital transformation and principal leadership are deeply interconnected in shaping teacher professionalism and improving educational quality. The effectiveness of digital integration in schools such as SD Negeri 1 Rimpak relies on how leadership practices are translated into meaningful professional development experiences for teachers. By fostering a supportive, innovative, and technology-rich learning environment, principals can significantly enhance teacher competence and contribute to the overall improvement of student learning outcomes. Therefore, this study is essential to explore how principal leadership strategies influence teacher professionalism in the context of ongoing digital transformation in Indonesian primary education settings (UNESCO, 2021).

## **METHODS**

This study employs a qualitative case study design to explore school digital transformation and principal leadership in improving teacher professionalism at SD Negeri 1 Rimpak during the 2025/2026 academic year. The case study approach is considered appropriate because it allows an in-depth and contextualized understanding of leadership practices, teacher experiences, and the implementation of digital transformation within a real school setting. The participants of the study include the school principal, selected teachers, and relevant stakeholders who are directly involved in the school's digital learning initiatives. Data collection techniques consist of semi-structured interviews, classroom observations, and document analysis, including school policies, digital learning plans, and teacher professional development records. The data are analyzed using an interactive model of analysis involving data reduction, data display, and conclusion drawing to identify patterns related to leadership strategies and teacher professionalism in the digital era. To ensure the validity and credibility of the findings, triangulation of data sources and methods is applied, along with member checking to confirm the accuracy of interpretations. The study also emphasizes ethical considerations, including informed consent, confidentiality, and voluntary participation. Through this methodological framework, the research seeks to provide a comprehensive understanding of how principal leadership facilitates digital transformation and enhances teacher professionalism in primary education settings (Creswell & Creswell, 2018; Yin, 2018).

## **FINDINGS AND DISCUSSION**

### **School Digital Transformation at SD Negeri 1 Rimpak in the 2025/2026 Academic Year Influence the Development of Teacher Professionalism in Teaching and Learning Practices**

The digital transformation of education has emerged as a fundamental driver in reshaping teacher professionalism, particularly in primary education contexts where pedagogical adaptation is essential for meeting contemporary learning demands. At SD Negeri 1 Rimpak, the implementation of school digital transformation in the 2025/2026 academic year reflects a systemic effort to integrate technology into teaching and learning practices, thereby influencing how teachers design instruction, manage classrooms, and evaluate student outcomes. In this context, teacher professionalism is not only defined by traditional pedagogical competence but also by the ability to utilize digital tools effectively, integrate information and communication technology (ICT) into lesson planning, and create interactive and student-centered learning environments. Digital transformation encourages teachers to shift from conventional teacher-centered approaches toward more dynamic, collaborative, and technology-enhanced instructional models. As teachers engage with digital

platforms such as learning management systems, online assessment tools, and multimedia instructional resources, their pedagogical practices become more flexible, adaptive, and responsive to diverse student learning needs. This transformation aligns with the broader global trend that emphasizes digital literacy as a core component of teacher professionalism in the 21st century.

Furthermore, the influence of digital transformation on teacher professionalism is strongly connected to the concept of continuous professional development. Teachers at SD Negeri 1 Rimpak are increasingly required to participate in training programs, workshops, and peer collaboration activities that focus on improving digital competencies. These professional learning opportunities enable teachers to enhance their ability to integrate technology into classroom instruction in meaningful ways, rather than using it merely as a supplementary tool. According to Mishra and Koehler (2006), effective teaching with technology requires the integration of technological, pedagogical, and content knowledge (TPACK), which highlights the importance of balancing subject expertise with digital and instructional skills. In practice, this means that teachers must not only understand their subject matter but also know how to deliver it effectively through digital platforms in ways that enhance student engagement and comprehension. At SD Negeri 1 Rimpak, this integration process is facilitated through school-led initiatives that encourage experimentation with digital teaching strategies, collaborative lesson planning, and reflective teaching practices supported by technology.

In addition, digital transformation contributes to the professional identity of teachers by reshaping their roles within the educational ecosystem. Teachers are no longer positioned solely as knowledge transmitters but are increasingly recognized as facilitators, mentors, and learning designers who guide students through digitally enriched learning experiences. This shift requires a high level of adaptability, creativity, and openness to change, which are essential characteristics of professional educators in the digital era. The integration of digital tools into teaching practices also enhances teachers' ability to personalize learning, monitor student progress in real time, and provide timely feedback, thereby improving overall instructional quality. Studies have shown that technology integration in education can significantly enhance teacher effectiveness when it is supported by adequate training and institutional support (Voogt et al., 2013). At SD Negeri 1 Rimpak, the effectiveness of digital transformation depends largely on how well teachers are supported in developing confidence and competence in using digital tools for instructional purposes.

However, the influence of digital transformation on teacher professionalism is not without challenges. One of the main issues is the variation in teachers' digital literacy levels, which affects their ability to adopt and implement technology effectively in the classroom. Some teachers may experience difficulties in adapting to new systems or may resist change due to lack of confidence or insufficient training. This situation highlights the importance of structured professional development programs and ongoing technical support within the school environment. Additionally, infrastructure limitations, such as inadequate internet

connectivity or limited access to digital devices, can hinder the full implementation of digital transformation initiatives. Despite these challenges, schools that successfully manage the integration process often experience significant improvements in teaching quality and professional growth among teachers. As argued by Ertmer and Ottenbreit-Leftwich (2010), meaningful technology integration in education depends not only on access to resources but also on teachers' beliefs, attitudes, and readiness to change instructional practices.

Moreover, school culture plays a crucial role in shaping how digital transformation influences teacher professionalism. A supportive and collaborative school environment encourages teachers to share experiences, exchange ideas, and learn from one another in using digital tools effectively. At SD Negeri 1 Rimpak, the role of the principal is essential in fostering such a culture by promoting teamwork, encouraging innovation, and providing continuous feedback on teaching practices. Leadership support ensures that digital transformation is not implemented as a top-down policy but rather as a shared process of professional growth and institutional improvement. When teachers feel supported and valued in their efforts to integrate technology, they are more likely to develop a strong sense of professional identity and commitment to continuous improvement. This aligns with the findings of Fullan (2013), who emphasizes that sustainable educational change depends on the development of collaborative cultures and strong instructional leadership within schools.

In conclusion, the analysis of the first research question indicates that school digital transformation at SD Negeri 1 Rimpak has a significant influence on teacher professionalism by enhancing pedagogical practices, promoting continuous professional development, and reshaping teacher roles in the learning process. While challenges such as varying digital competencies and infrastructural limitations exist, the overall impact of digital transformation is positive when supported by effective leadership and a collaborative school culture. Teachers who actively engage in digital learning environments tend to demonstrate higher levels of adaptability, innovation, and instructional effectiveness, which are key indicators of professional growth in the digital age (Mishra & Koehler, 2006; Ertmer & Ottenbreit-Leftwich, 2010; Voogt et al., 2013; Fullan, 2013).

### **Principal Leadership at SD Negeri 1 Rimpak Implement Strategies to Support and Enhance Teacher Professionalism Through School Digital Transformation in the 2025/2026 Academic Year**

Principal leadership plays a decisive role in shaping the success of school digital transformation and in ensuring the continuous improvement of teacher professionalism. At SD Negeri 1 Rimpak, the implementation of digital transformation in the 2025/2026 academic year is closely associated with how the principal designs, communicates, and executes leadership strategies that support teachers in adapting to technological changes. Effective leadership in this context is not merely administrative but transformational, requiring the principal to act as a vision setter, change agent, instructional leader, and capacity builder. Through these roles, the principal influences

how teachers perceive digital transformation, engage with professional development opportunities, and integrate technology into their pedagogical practices. Leadership strategies such as providing clear digital vision, encouraging collaboration, facilitating training programs, and offering continuous supervision are essential in creating an environment where teacher professionalism can grow sustainably. As Leithwood, Harris, and Hopkins (2020) emphasize, successful school leadership significantly impacts teacher motivation, instructional quality, and student achievement, particularly when leaders focus on both organizational development and instructional improvement.

One of the primary leadership strategies in supporting teacher professionalism is the establishment of a clear and shared vision for digital transformation. At SD Negeri 1 Rimpak, the principal is responsible for communicating the importance of integrating technology into teaching and learning processes in a way that aligns with national education goals and global educational trends. A well-communicated vision helps teachers understand the purpose of digital transformation beyond technical adoption, emphasizing its role in improving student learning outcomes and enhancing instructional effectiveness. According to Hallinger (2011), instructional leadership requires school leaders to define goals, develop shared expectations, and align school practices with a clear educational vision. In practice, this means that the principal must ensure that teachers are not only aware of digital transformation policies but also actively engaged in interpreting and implementing them in classroom settings. This shared vision fosters collective responsibility among teachers and strengthens their professional identity as adaptive educators in a digital era.

In addition to vision building, professional development is a critical leadership strategy used to enhance teacher professionalism. The principal at SD Negeri 1 Rimpak facilitates various forms of training, workshops, and mentoring programs aimed at improving teachers' digital competencies. These programs are designed to address different levels of teacher readiness, ensuring that both novice and experienced teachers can develop the skills needed to integrate digital tools effectively into instruction. Leadership that prioritizes continuous professional development aligns with the concept of distributed leadership, where learning and improvement are shared responsibilities within the school community. Harris (2014) argues that distributed leadership enhances teacher capacity by encouraging collaboration, peer learning, and shared decision-making. Through structured professional development initiatives, teachers are encouraged to explore new teaching strategies, experiment

with digital platforms, and reflect on their instructional practices, thereby strengthening their overall professionalism.

Furthermore, the principal's leadership is also reflected in the creation of a collaborative school culture that supports innovation and experimentation. At SD Negeri 1 Rimpak, collaboration among teachers is encouraged through professional learning communities (PLCs), peer mentoring, and collaborative lesson planning sessions. These collaborative structures provide opportunities for teachers to share experiences, discuss challenges, and develop joint solutions related to digital integration in teaching. A collaborative culture is essential for sustaining digital transformation because it reduces teacher isolation and promotes collective problem-solving. According to DuFour and Fullan (2013), professional learning communities are effective in improving teacher effectiveness when they are focused on student learning and supported by strong leadership. The principal plays a key role in facilitating these communities by allocating time, providing resources, and fostering an atmosphere of trust and openness.

Another important leadership strategy is the provision of continuous supervision and instructional support. The principal at SD Negeri 1 Rimpak regularly monitors teaching and learning processes to ensure that digital tools are being used effectively in the classroom. This supervision is not intended as a form of control but rather as a supportive mechanism to guide teachers in improving their instructional practices. Constructive feedback is provided to help teachers refine their use of technology, enhance lesson delivery, and address any challenges encountered during the learning process. Sergiovanni (2009) emphasizes that effective supervision in schools should focus on professional growth rather than inspection, promoting reflective practice and continuous improvement. Through ongoing feedback and mentoring, teachers become more confident and competent in using digital technologies, which directly contributes to their professional development.

Moreover, the principal's leadership also involves managing resources and infrastructure to support digital transformation. This includes ensuring that schools are equipped with adequate technological tools, stable internet access, and relevant digital learning platforms. Without sufficient resources, even well-designed leadership strategies may fail to produce meaningful improvements in teacher professionalism. Therefore, resource management becomes an essential aspect of instructional leadership. According to OECD (2021), equitable access to digital resources is a key factor in ensuring the success of technology integration in schools. At SD Negeri 1 Rimpak, the principal's ability to coordinate with stakeholders,

including local education authorities and community partners, plays an important role in addressing resource limitations and supporting sustainable digital development.

However, implementing leadership strategies in digital transformation also presents challenges. Resistance to change among teachers, differences in digital literacy levels, and limited infrastructure can hinder the effectiveness of leadership efforts. In response, the principal must adopt adaptive leadership approaches that are flexible, responsive, and sensitive to contextual constraints. Adaptive leadership, as described by Heifetz, Grashow, and Linsky (2009), emphasizes the importance of mobilizing people to tackle complex challenges and adjust to changing environments. At SD Negeri 1 Rimpak, this means that the principal must continuously adjust strategies, provide individualized support to teachers, and create an inclusive environment where all educators feel supported in their professional growth journey.

In conclusion, the analysis of the second research question demonstrates that principal leadership plays a central role in supporting teacher professionalism through school digital transformation. Through strategies such as vision building, professional development, collaborative culture development, instructional supervision, and resource management, the principal at SD Negeri 1 Rimpak facilitates meaningful changes in teaching practices and professional growth among teachers. Despite existing challenges, effective leadership ensures that digital transformation becomes a sustainable process that enhances teacher capacity and instructional quality. As supported by multiple scholars, leadership that is visionary, collaborative, and adaptive is essential in driving successful educational change in the digital era (Hallinger, 2011; Harris, 2014; DuFour & Fullan, 2013; Sergiovanni, 2009; Heifetz et al., 2009; OECD, 2021; Leithwood et al., 2020).

## CONCLUSION

The digital transformation at SD Negeri 1 Rimpak during the 2025/2026 academic year has a significant impact on improving teacher professionalism through the integration of technology in teaching and learning practices, while principal leadership plays a central role in ensuring the success of this transformation. The findings indicate that digital transformation enhances teachers' pedagogical competence, digital literacy, and instructional innovation, enabling them to deliver more interactive, student-centered, and effective learning experiences. At the same time, the principal's leadership strategies—such as establishing a clear vision, providing continuous professional development, fostering collaboration, supervising instruction, and managing digital resources—are essential in supporting teachers to adapt to educational changes. Although challenges such as varying levels of digital

competence and limited infrastructure still exist, strong and adaptive leadership helps minimize these obstacles and promotes a culture of continuous improvement. Therefore, it can be concluded that school digital transformation and principal leadership are interdependent factors that collectively strengthen teacher professionalism and contribute to the overall improvement of educational quality in primary education settings.

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