

Synergizing Human Resource Management and Information Technology to Enhance School Management Performance in the Digital Era

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Abstract: This study aims to provide an in-depth analysis of the synergy between human resource (HR) management and the use of information technology (IT) in improving school management performance in the digital era. Digital transformation in education requires schools not only to provide adequate technological infrastructure but also to ensure the readiness and competence of their human resources in operating, managing, and optimizing technology-based systems. This research employs a descriptive qualitative approach, using in-depth interviews with principals, teachers, and administrative staff as key informants. The collected data were analyzed through thematic analysis to identify patterns of collaboration, implementation challenges, and strategic efforts to strengthen the integration of HR and IT within school governance. The results reveal that the integration of IT into school management significantly enhances administrative efficiency, accelerates academic services, improves data accuracy, and increases communication transparency among schools, students, and parents. Digital competence, leadership capacity, and a collaborative work culture emerge as essential factors influencing the successful implementation of digital initiatives. However, several obstacles remain, including limited technological infrastructure, varying levels of technological proficiency among staff, and the lack of continuous professional development programs. This study concludes that strengthening digital competencies, fostering visionary leadership, and developing more comprehensive information systems are crucial strategies for creating modern, adaptive, and sustainable school management practices. Effective synergy between HR and IT not only improves the quality of educational services but also enhances the school's competitiveness in navigating rapid technological advancements.

Keywords: Human Resource Management; Information Technology; School Management; Digital Transformation; Performance Improvement

The rapid advancement of science and technology has driven continuous innovation, transforming various aspects of modern society. In the digital era, information technology has become an indispensable component of everyday life, enabling fast, integrated, and data-driven systems across multiple sectors. In education, information technology has evolved beyond its traditional role as a communication tool to become a fundamental element supporting both teaching and learning processes as well as school management (Hafizi et al., 2025). In Indonesia, the education sector has increasingly adopted digital technologies to improve organizational efficiency and operational effectiveness. The integration of

information technology into educational management is expected to contribute to the enhancement of national educational quality (Suriansyah, 2014). Consequently, society places high expectations on educational institutions to produce competent, innovative, and globally competitive human resources.

A high-quality education system plays a strategic role in strengthening a nation's global competitiveness (Khalidah et al., 2025). Furthermore, education serves as the primary mechanism for developing human capital by preparing future generations and cultivating prospective leaders capable of addressing increasingly complex societal challenges (M. N. Oktaviani et al., 2025). Consequently, educational institutions must continuously adapt to the rapid development of digital technologies and information systems. The integration of information technology has enabled teaching, learning, and school management processes to become more flexible, efficient, and transparent. Teachers, principals, and administrative staff are now able to access digital learning resources and administrative systems remotely, thereby improving both organizational effectiveness and the quality of educational services (Hafizhah et al., 2025). Therefore, schools are encouraged to optimize the utilization of information technology to strengthen governance practices and enhance instructional quality.

The digital transformation of education has also reshaped school management by requiring more effective and strategic management of organizational resources. Within this context, the synergy between Human Resource Management (HRM) and Information Technology (IT) has emerged as a critical factor in improving school management performance (Andini et al., 2024). Information technology provides substantial benefits for human resource management, including more transparent teacher data management, greater efficiency in recruitment and performance evaluation, and more effective supervision through digital management systems (Andini et al., 2024). In addition, teachers have greater opportunities to improve their professional competencies through various online professional development platforms tailored to their learning needs (Satriya & Rindaningsih, 2024). Despite these advantages, many schools have not yet fully utilized the potential of digital technologies. Common challenges include limited digital competencies among teachers, inadequate technological infrastructure, and weak coordination in implementing information technology-based management systems (Camarini et al., 2024). Additional barriers include unequal internet accessibility across regions and teachers' limited time to participate in digital training programs (Triwahyuni et al., 2025).

To address these challenges, schools must strengthen the synergy between human resource management and information technology to effectively respond to the demands of digital transformation. School management plays a strategic role in fostering collaboration among educators, administrative personnel, and integrated technological systems to improve organizational performance and managerial effectiveness (Mirnawati et al., 2025). However, in practice, such synergy has often not been fully realized due to limited coordination and insufficient awareness of the importance of digital transformation in school management. Against this background, this study aims to analyze the synergy between Human Resource Management (HRM) and Information Technology (IT) in enhancing school management performance in the digital era.

METHOD

This study employed a descriptive qualitative research approach to gain an in-depth understanding of the synergy between Human Resource Management (HRM) and Information Technology (IT) utilization in enhancing school management performance in the digital era. The study focused on the perspectives and experiences of school principals, vice principals, teachers, and administrative staff, who serve as the key actors in school management and the implementation of technology-based systems. Data were collected through in-depth interviews with participants who had direct experience in managing human resources and implementing information technology systems within the school environment. Semi-structured interview guidelines were employed to provide flexibility in exploring participants' experiences while ensuring that the discussions remained aligned with the research objectives. The collected data were analyzed using thematic analysis by organizing the findings into major themes representing patterns of synergy, implementation challenges, and management strategies related to the integration of Human Resource Management and Information Technology in improving school management performance. To ensure the trustworthiness of the findings, source triangulation was employed by comparing information obtained from different participants. In addition, member checking was conducted by confirming the interview findings with the participants to ensure the accuracy and credibility of the interpretations.

RESULTS AND DISCUSSION

RESULTS

The findings provide a comprehensive understanding of how schools are navigating the challenges of digital transformation. The in-depth interviews revealed that the integration of Information Technology (IT) extends beyond a purely technical process and represents an organizational transformation that significantly influences both educators and administrative staff. The findings indicate that a strong synergy between Human Resource Management (HRM) and Information Technology has become a key driver of improved school management performance. First, in terms of administrative management, all participants acknowledged that information technology has fundamentally transformed their daily work practices. Administrative tasks that were previously time-consuming and labor-intensive have become more efficient, accurate, and manageable. Teachers reported that the reduced administrative workload enabled them to devote greater attention to instructional activities. The implementation of digital attendance systems, automated student assessment, and application-based reporting illustrates the transition toward a more modern and efficient management system.

Second, digital competence emerged as a critical determinant of successful technology integration. Participants with prior technological experience demonstrated greater confidence and willingness to adopt digital innovations. In contrast, some educators experienced difficulties in adapting to newly introduced systems due to limited digital competencies. Nevertheless, collaborative learning among colleagues enabled most teachers to gradually strengthen their digital skills while fostering a supportive professional learning

environment. Third, school leadership was identified as a fundamental factor in the successful integration of information technology. Participants consistently described visionary leadership as essential in facilitating digital transformation by providing strategic direction, continuous support, and opportunities for professional development. Such leadership encouraged teachers and staff to embrace innovation and actively participate in organizational change. Fourth, several challenges continue to affect the implementation of digital transformation, including inadequate technological infrastructure, unstable internet connectivity, and variations in digital competencies among school personnel. Despite these constraints, participants demonstrated a strong commitment to adapting to technological change and continuously improving their professional capabilities to enhance educational services.

DISCUSSION

The findings demonstrate that the synergy between Human Resource Management and Information Technology contributes not only to greater efficiency in school management but also to the successful implementation of organizational change. These results reinforce the view that digital transformation in education requires both technological readiness and human resource capacity to achieve sustainable improvements in organizational performance. The findings support change management theory, which argues that the success of organizational innovation depends not only on the availability of technology but also on the readiness and competencies of human resources. Consistent with the findings of Andini et al. (2024), this study confirms that teachers' digital literacy serves as a fundamental prerequisite for successful technology integration. Furthermore, the study suggests that continuous professional development and collaborative learning significantly facilitate the development of digital competencies among educators. The strategic role of school leadership identified in this study is consistent with Hafizi et al. (2025), who emphasized the importance of transformational leadership in educational organizations. However, the present findings extend previous research by demonstrating that effective leadership encompasses not only strategic planning but also the provision of continuous professional support, encouragement, and an organizational climate that facilitates successful digital transformation.

The infrastructure limitations and disparities in digital competencies identified in this study are also consistent with the findings of Camarini et al. (2024). Nevertheless, this study highlights that the challenges associated with digital transformation extend beyond technical issues and include organizational readiness for change. When these challenges are addressed through systematic training, mentoring, and effective leadership, digital transformation can strengthen collaboration, organizational learning, and institutional adaptability within schools. Overall, the findings confirm that the synergy between Human Resource Management and Information Technology represents a comprehensive organizational transformation involving both technological and human dimensions. This synergy not only enhances school management performance but also promotes the development of a more adaptive, resilient, and innovation-oriented organizational culture. Consequently, the digitalization of school management should be viewed as a

strategic process that strengthens governance while fostering sustainable organizational development in response to the evolving demands of contemporary education.

CONCLUSION AND SUGGESTION

CONCLUSION

This study demonstrates that the synergy between Human Resource Management (HRM) and Information Technology (IT) plays a strategic role in enhancing school management performance in the digital era. The findings indicate that schools have shown a strong commitment to digital transformation by integrating information technology into various aspects of school management, including administration, communication, and academic services. The successful implementation of digital technologies largely depends on the readiness and competencies of human resources. Supported by effective school leadership, continuous professional development, and a collaborative organizational culture, schools are able to establish management systems that are more efficient, transparent, and responsive to the evolving demands of the digital age. This synergy not only improves operational efficiency and data accuracy but also strengthens relationships among schools, students, and the wider community. Overall, the integration of Human Resource Management and Information Technology has contributed positively to school governance by promoting more modern, participatory, and quality-oriented management practices. These findings highlight the importance of aligning technological innovation with human resource development to achieve sustainable improvements in educational management.

SUGGESTION

Schools should continue to strengthen the digital competencies of teachers and administrative staff through ongoing professional development programs, including workshops, seminars, and specialized training. School leaders are encouraged to develop digital leadership capabilities that foster collaboration among school personnel as well as partnerships with external stakeholders. In addition, school information systems should be continuously updated and integrated to improve the effectiveness and efficiency of management processes. Finally, cultivating an innovative and adaptive organizational culture is essential to ensure that technological advancement contributes sustainably to the continuous improvement of educational quality.

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