



IJOSE
International Journal of
Science Education
Affiliated with PERGUNU Lampung

Available online on the website:
<https://journal.pergunulampung.or.id/index.php/ijose>

IJOSE; International Journal Of Science Education
(p-ISSN: xxxx-xxxx | e-ISSN: xxxx-xxxx)
Volume 2, Issue. 01, 2026, pp. 216-221

Innovative Principal Leadership in Building a Digital Literacy Culture in Schools

Siti Galuh Nazhifah*¹,

¹ *Madrasah Aliyah Negeri 1 Lamongan*

e-mail: sitigaluhnazifah29@gmail.com

Submitted: 15-06-2026

Revised : 15-06-2026

Accepted: 15-12-2026

ABSTRACT. School principals' leadership plays a strategic role in responding to the challenges of digital transformation in education, particularly in building a culture of digital literacy within schools. Digital literacy is not merely understood as technical skills in using digital devices, but also includes critical thinking skills, digital ethics, and the wise use of technology in learning processes. Therefore, innovative, adaptive, and visionary school leadership is required to foster a sustainable digital literacy culture. This study aims to analyze the concept and role of innovative school principals' leadership in building a digital literacy culture in schools. The research method employed is a literature review by examining various sources, including books, national and international journal articles, and educational policy documents relevant to educational leadership and digital literacy. The findings indicate that innovative school principals' leadership is characterized by the ability to formulate a digital vision for the school, encourage the development of teachers' competencies, provide support for technological infrastructure, and create a school climate that is open to change and innovation. Furthermore, principals act as agents of change who are able to integrate digital literacy into school policies and daily learning practices. This study is expected to contribute theoretically to the development of educational leadership studies and serve as a practical reference for school principals in systematically and contextually building a digital literacy culture.

Keywords: school principal leadership, educational innovation, digital literacy



<https://dx.doi.org/10.32678/ijose.vxx0x.xxxx>

How to Cite

Name of Authors. (Year). Title of article. *IJOSE; International Journal Of Science Education, Volume* (Issue), 00-00. doi:10.32678/ijose.v5i01.0000.

INTRODUCTION

The rapid development of digital technology has brought significant changes to various aspects of life, including the field of education. Schools no longer function merely as spaces for conventional knowledge transfer, but as learning ecosystems that require digital literacy competencies for all members of the school community. Digital literacy has become an essential competence because it relates to the ability to access, understand, evaluate, and utilize digital information critically and responsibly in both learning contexts and students' social lives (Sutrisna, 2020). This condition requires schools to transform their learning culture to remain relevant to the demands of the digital era.

However, strengthening digital literacy in schools cannot be carried out optimally without strong and innovative leadership from school principals. Principals hold a strategic role as policy direction setters, change agents, and decision-makers in school management. Innovative school leadership

is needed to respond to the dynamics of technological change in an adaptive and visionary manner, so that digital literacy does not merely become a temporary program but develops into a sustainable school culture (Mulyasa, 2019).

A culture of digital literacy in schools is not limited to the use of technological devices in learning, but also includes the habituation of critical thinking, digital ethics, and the ability to filter information wisely. In this context, principals play a crucial role in creating a school climate that supports digital-based learning innovation through policies, internal regulations, and exemplary practices in the use of information technology (Sari & Astuti, 2021). Without leadership that encourages cultural change, digital literacy initiatives risk becoming merely administrative activities with minimal impact on learning practices.

Furthermore, innovative leadership by school principals directly influences teachers' readiness and competencies in implementing digital literacy. Teachers require support in the form of training, facilities, and pedagogical experimentation spaces to effectively integrate technology into learning. Innovative principals act as facilitators and motivators who encourage continuous professional development for teachers, enabling digital transformation in schools to proceed collaboratively and systematically (Rahmawati, 2022).

On the other hand, various studies indicate that there are still gaps in the implementation of digital literacy in schools, whether in terms of policy, human resources, or school organizational culture. Some schools continue to perceive digital literacy merely as the provision of technological infrastructure, without accompanying changes in leadership paradigms and learning culture. This condition suggests that the role of school leadership has not yet been fully optimized in building a digital literacy culture that is integrated with the school's vision and mission (Widodo & Prasetyo, 2020).

Based on the above discussion, a study on innovative school principals' leadership in building a digital literacy culture in schools is important to conduct. Through a literature review approach, this study seeks to comprehensively examine the concepts, characteristics, and roles of innovative school leadership in fostering a digital literacy culture. This study is expected to contribute theoretically to the development of educational leadership scholarship and serve as a practical reference for school principals in addressing educational challenges in the digital era.

METHOD

This study employed a literature review method to examine innovative school principals' leadership in building a digital literacy culture in schools. A literature review was chosen because it enables researchers to synthesize theoretical concepts, empirical findings, and policy perspectives related to educational leadership and digital literacy in a comprehensive and systematic manner (Zed, 2018). Through this approach, the study seeks to construct a conceptual understanding of how innovative leadership practices contribute to the development of digital literacy culture in educational institutions.

The data sources in this study consisted of secondary data, including books, peer-reviewed national and international journal articles, and relevant educational policy documents. The selected literature focused on key themes such as school leadership, innovative leadership models, digital literacy, school culture, and digital transformation in education. The inclusion criteria emphasized publications that are relevant to the research focus and have strong academic credibility, particularly those published within the last ten years to ensure contextual relevance to current educational challenges (Sugiyono, 2020).

The data collection technique was conducted through a systematic search of academic databases and digital libraries using keywords such as *school principal leadership*, *innovative leadership*, *digital literacy*, and *school culture*. The collected literature was then screened based on relevance, originality, and

contribution to the research topic. This process aimed to ensure that the analyzed sources provided both theoretical depth and empirical insights into the role of innovative school leadership in fostering digital literacy (Nazir, 2017).

Data analysis in this study was carried out using a descriptive-analytical approach. The selected literature was carefully read, categorized, and compared to identify recurring concepts, patterns, and relationships related to innovative leadership and digital literacy culture. The analysis focused on synthesizing key ideas rather than merely summarizing sources, allowing the researcher to develop a coherent conceptual framework regarding the strategic role of school principals as agents of digital transformation (Creswell, 2014).

To enhance the validity of the findings, the study applied source triangulation by comparing perspectives from various authors and disciplines. This strategy was used to reduce bias and strengthen the reliability of the conceptual conclusions drawn from the literature. The methodological rigor of this literature review is expected to provide a solid theoretical foundation and generate meaningful insights for future empirical research and practical implementation in schools (Miles & Huberman, 2014).

RESULT AND DISCUSSION

Result

ased on the literature review conducted, several key findings were identified regarding innovative school principals' leadership in building a digital literacy culture in schools. These findings are organized into thematic sub-sections to provide a systematic and comprehensive presentation.

1. Visionary and Innovative Leadership Orientation

The literature indicates that innovative school principals demonstrate a strong visionary orientation toward digital transformation. Principals with innovative leadership are able to formulate a clear and future-oriented vision that integrates digital literacy into the school's long-term development goals. This vision serves as a foundation for aligning policies, programs, and school culture with the demands of the digital era. Studies emphasize that without a clearly articulated digital vision from school leaders, digital literacy initiatives tend to be fragmented and lack sustainability (Mulyasa, 2019; Sutrisna, 2020).

2. Strategic Policy Support for Digital Literacy Development

Another significant finding highlights the role of school principals in developing strategic policies that support digital literacy. Innovative principals are actively involved in designing school regulations, academic guidelines, and operational policies that encourage the integration of digital tools in teaching and learning. These policies include the allocation of budgets for digital resources, the establishment of digital learning standards, and the incorporation of digital literacy into school programs. The literature shows that policy-driven leadership strengthens the institutionalization of digital literacy within the school system (Sari & Astuti, 2021).

3. Empowerment and Professional Development of Teachers

The reviewed studies consistently reveal that innovative school leadership plays a crucial role in enhancing teachers' digital competencies. Principals act as facilitators by providing continuous professional development opportunities such as training, workshops, and peer-learning communities focused on digital pedagogy. Teacher empowerment is considered a key factor in ensuring the effective implementation of digital literacy in classrooms. The findings suggest that schools led by innovative principals demonstrate higher levels of teacher readiness and confidence in integrating digital technologies into instructional practices (Rahmawati, 2022).

4. Provision and Optimization of Digital Infrastructure

The literature also highlights that innovative principals prioritize the provision and effective utilization of digital infrastructure. This includes ensuring access to adequate hardware, software, internet connectivity, and digital learning platforms. However, the findings emphasize that infrastructure alone is insufficient without strong leadership that encourages meaningful and pedagogically sound use of technology. Innovative principals are reported to optimize existing resources by promoting collaborative use and aligning technological facilities with instructional objectives (Widodo & Prasetyo, 2020).

5. Creation of a Supportive Digital School Culture

Another important result concerns the role of innovative leadership in fostering a supportive digital school culture. Principals contribute to building a culture that values innovation, collaboration, critical thinking, and ethical digital practices. This culture is developed through role modeling, open communication, and the encouragement of experimentation in teaching and learning. The literature suggests that schools with strong digital cultures are more likely to sustain digital literacy initiatives and adapt to ongoing technological changes (Sutrisna, 2020).

6. Principals as Agents of Change in Digital Transformation

Finally, the results show that innovative school principals function as agents of change in driving digital transformation. They actively lead change processes by managing resistance, motivating stakeholders, and continuously evaluating digital literacy initiatives. The literature emphasizes that principals who adopt a change-oriented leadership approach are better positioned to guide schools through the complexities of digital transformation and ensure the long-term integration of digital literacy into school practices (Mulyasa, 2019).

Discussion

The findings of this literature review confirm that innovative school principals' leadership plays a central role in building and sustaining a digital literacy culture in schools. In the context of rapid digital transformation, school leadership is no longer limited to administrative and managerial functions, but extends to visionary and transformative roles that shape school culture and learning orientation. The literature consistently emphasizes that principals who possess a clear digital vision are better positioned to align school policies, programs, and practices with the demands of the digital era, thereby ensuring that digital literacy becomes an integral part of the school's long-term development rather than a short-term initiative (Mulyasa, 2019).

Furthermore, the discussion highlights that innovative leadership is closely linked to the ability of principals to translate abstract digital visions into concrete policies and practices. Policy support, such as integrating digital literacy into school regulations, curriculum guidelines, and operational programs, strengthens the institutionalization of digital literacy within schools. This finding is in line with previous studies that argue leadership-driven policy frameworks are crucial for embedding innovation into school culture, as they provide structural legitimacy and continuity for digital initiatives (Sari & Astuti, 2021). Without such policy support, digital literacy efforts tend to rely heavily on individual teacher initiatives, which may result in inconsistency and limited sustainability.

Another important aspect emerging from the discussion is the role of principals in empowering teachers as the main actors in implementing digital literacy in classrooms. The literature suggests that innovative principals act as facilitators of professional growth by providing access to training, encouraging collaborative learning communities, and creating safe spaces for pedagogical experimentation. This approach not only enhances teachers' digital competencies but also fosters a sense of ownership and confidence in using technology for instructional purposes. Rahmawati (2022) emphasizes that continuous professional development supported by school leadership

significantly influences teachers' readiness to integrate digital tools into learning, which ultimately impacts students' digital literacy development.

The discussion also reinforces the idea that digital infrastructure, while essential, is not sufficient on its own to build a strong digital literacy culture. The reviewed literature shows that innovative leadership determines how effectively technological resources are utilized in pedagogical contexts. Principals who actively encourage meaningful and ethical use of technology are more likely to ensure that digital tools support critical thinking, creativity, and responsible digital behavior among students. This finding aligns with Widodo and Prasetyo (2020), who argue that the absence of leadership guidance often leads to the underutilization or superficial use of digital infrastructure in schools.

Moreover, innovative school leadership contributes significantly to the formation of a supportive digital school culture. Such a culture is characterized by openness to change, collaboration among school stakeholders, and an emphasis on digital ethics and responsibility. Principals play a key role in modeling positive digital practices and promoting values that guide the responsible use of technology. Sutrisna (2020) notes that when digital literacy is embedded within the broader school culture, it becomes a shared value rather than a technical skill limited to specific subjects or activities.

Finally, the discussion underscores the role of school principals as agents of change in managing the complexities of digital transformation. Innovative principals are described in the literature as leaders who are capable of navigating resistance to change, motivating teachers and staff, and continuously evaluating the effectiveness of digital literacy initiatives. This change-oriented leadership approach enables schools to adapt to evolving technological landscapes while maintaining alignment with educational goals and values. In this sense, innovative leadership functions as a driving force that connects vision, policy, teacher empowerment, infrastructure, and culture into a coherent strategy for building sustainable digital literacy in schools (Mulyasa, 2019).

Overall, the discussion suggests that innovative school principals' leadership is a multidimensional construct that significantly influences the success of digital literacy initiatives. By integrating visionary thinking, strategic policymaking, teacher empowerment, and cultural transformation, principals can effectively position schools to meet the challenges and opportunities of the digital era. These findings contribute to the growing body of literature on educational leadership by emphasizing the importance of innovation-oriented leadership in fostering meaningful and sustainable digital literacy cultures in schools.

CONCLUSION

This study concludes that innovative school principals' leadership plays a crucial and strategic role in building a sustainable digital literacy culture in schools. In the context of ongoing digital transformation, principals are required to move beyond traditional managerial roles and adopt visionary, adaptive, and innovation-oriented leadership approaches. Through a clear digital vision, principals are able to align school policies, programs, and practices with the demands of the digital era, ensuring that digital literacy becomes an integral component of school development.

Furthermore, the findings indicate that innovative leadership contributes significantly to the institutionalization of digital literacy through strategic policy support and teacher empowerment. Principals who actively facilitate professional development, encourage collaborative learning, and provide pedagogical support enable teachers to integrate digital tools effectively into classroom practices. This leadership approach not only enhances teachers' digital competencies but also strengthens their readiness to implement meaningful and ethical digital learning.

The study also highlights that the availability of digital infrastructure must be accompanied by strong leadership to ensure its optimal and pedagogically relevant use. Innovative principals foster a supportive digital school culture characterized by openness to change, critical thinking, collaboration, and responsible digital behavior. By acting as agents of change, principals are able to manage resistance, motivate school stakeholders, and sustain digital literacy initiatives over time.

Overall, this literature review demonstrates that innovative school principals' leadership is a key determinant in the success of building a digital literacy culture in schools. These findings offer important theoretical contributions to the field of educational leadership and provide practical insights for school leaders seeking to navigate the challenges of digital transformation in education. Future studies are encouraged to further explore this topic through empirical research to validate and expand upon the conceptual findings presented in this study.

BIBLIOGRAPHY

- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: SAGE Publications.
- Miles, M. B., & Huberman, A. M. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). Thousand Oaks, CA: SAGE Publications.
- Mulyasa, E. (2019). *Menjadi kepala sekolah profesional*. Bandung: Remaja Rosdakarya.
- Nazir, M. (2017). *Metode penelitian*. Bogor: Ghalia Indonesia.
- Rahmawati, Y. (2022). School principals' leadership in improving teachers' digital competencies in the era of 21st-century learning. *Jurnal Manajemen Pendidikan*, 14(2), 123–135.
- Sari, D. P., & Astuti, R. (2021). The role of school principals' leadership in developing a digital literacy culture. *Jurnal Kepemimpinan dan Supervisi Pendidikan*, 6(1), 45–56.
- Sugiyono. (2020). *Metode penelitian kualitatif, kuantitatif, dan R&D*. Bandung: Alfabeta.
- Sutrisna, I. P. (2020). Digital literacy movement in improving learning quality. *Jurnal Ilmiah Pendidikan dan Pembelajaran*, 4(3), 456–467.
- Widodo, H., & Prasetyo, Z. K. (2020). Challenges in implementing digital literacy in secondary schools. *Jurnal Pendidikan dan Kebudayaan*, 25(2), 189–202.
- Zed, M. (2018). *Metode penelitian kepustakaan*. Jakarta: Yayasan Obor Indonesia.