

The Role of Teachers' Digital Literacy in the Quality of Learning in the Independent Curriculum Era

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ABSTRACT

The development of digital technology has driven a paradigm shift in learning, requiring teachers to possess adequate digital literacy, particularly in the implementation of the Independent Curriculum, which emphasizes flexibility, differentiation, and student-centered learning. This study aims to analyze the role of teachers' digital literacy on the quality of learning in the Independent Curriculum era. The research approach used a qualitative method with a descriptive design to explore in-depth teachers' experiences, understandings, and practices in utilizing digital technology in the learning process. Research subjects were purposively selected from teachers who have implemented the Independent Curriculum. Data collection techniques included in-depth interviews, learning observations, and documentation studies, while data analysis was conducted through inductive thematic analysis. The results show that teachers' digital literacy plays a strategic role in improving the quality of the learning process through adaptive planning, interactive learning implementation, and continuous and authentic assessment. Digital literacy also encourages the transformation of teachers' roles as reflective and innovative learning facilitators. Challenges to strengthening digital literacy include competency gaps, limited access to technology, and individual teacher readiness. This research confirms that continuously strengthening teachers' digital literacy is a crucial prerequisite for achieving quality and relevant learning, in line with the demands of the Independent Curriculum.

Keywords: Learning Quality, Independent Curriculum, Teacher Digital Literacy

INTRODUCTION

The development of digital technology has significantly transformed education and impacted nearly every aspect of learning. The Independent Curriculum (Curriculum Merdeka) is a response to the need for learning that is relevant to the dynamics of the times and the characteristics of students. The role of teachers has shifted from conveying information to facilitating active and reflective learning. Digital literacy has become a key competency determining the effectiveness of this role. Mastery of digital literacy enables teachers to design more interactive and meaningful learning. The quality of learning is no longer measured solely by mastery of material, but by the ability to create contextual learning experiences (Liu & Xu, 2024). The integration of digital technology opens up opportunities for exploring a broader range of learning resources. The challenges of modern education place teachers' digital literacy as a strategic factor in improving the quality of learning.

The Independent Curriculum emphasizes freedom of learning tailored to students' needs and potential. A differentiated learning approach requires teachers to utilize technology as a tool for personalized learning. Digital literacy provides a foundation for teachers to select and adapt appropriate learning media. The use of digital platforms

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allows for more flexible learning processes, unconstrained by space and time. Learning quality improves when technology is used pedagogically, rather than simply administratively. Teachers' understanding of student characteristics becomes sharper through digital data and feedback. The process of learning reflection can be carried out continuously with the help of technology. The orientation of learning shifts to strengthening competencies and character through targeted digital use (Nugraha et al., 2025; Nor et al., 2025).

Teachers' digital literacy skills encompass integrated technical, cognitive, and pedagogical skills. Mastery of digital tools is the first step to effectively managing modern learning. A critical understanding of digital information helps teachers filter valid and relevant learning resources. Digital ethics plays a crucial role in creating a safe and responsible learning environment. Digital pedagogical competency encourages teachers to design collaborative and participatory learning activities. Teachers' creativity develops through exploration of various learning applications and media. The learning process becomes more engaging when technology is used innovatively. The positive impact of digital literacy is seen in increased student engagement and motivation.

The quality of learning is greatly influenced by how teachers utilize technology in the teaching and learning process. Appropriate use of digital media can clarify abstract and complex concepts. Learning interactions become more dynamic through the use of videos, simulations, and collaborative platforms. The learning assessment process can be carried out authentically and continuously with the help of digital technology. Learning feedback becomes faster and more accurate through digital systems. Student participation increases when learning is designed interactively and contextually. Meaningful learning experiences are formed through the integration of technology and appropriate pedagogical approaches (Rizqi et al., 2025). The quality of learning is reflected in the achievement of learning objectives holistically.

The Independent Curriculum era demands that teachers adapt to educational changes and innovations. Digital literacy is a crucial tool to support this adaptation process. Teacher professional development is inseparable from the ability to utilize digital technology sustainably. Access to online training opens opportunities for independent competency improvement. Digital learning communities enable teachers to share best practices and reflect on learning. Collaboration between teachers is intensified through digital platforms. Learning innovation grows in line with increasing teacher digital literacy. Learning transformation goes hand in hand with improving the quality of teaching resources.

The digital literacy gap remains a real challenge in education. Differences in access to and technological capabilities impact the quality of instruction provided by teachers. A lack of digital literacy can potentially make learning monotonous and less relevant. Students risk missing out on contextual and meaningful learning experiences. The quality of the Independent Curriculum implementation depends on teachers' readiness to utilize technology. Policy support and facilities are crucial factors in strengthening teachers' digital literacy. Digital competency development needs to be systematic and sustainable. Efforts to improve the quality of learning must address digital literacy equality among teachers.

The strategic role of teachers as learning drivers places digital literacy as an essential competency. 21st-century learning demands critical, creative, and collaborative thinking skills. Digital technology is an effective medium for developing these skills. Teachers play a role in guiding students in using technology productively and responsibly. Students' digital character is shaped through teacher role models. The integration of values and technology creates holistic learning. Quality learning is achieved

when cognitive, affective, and psychomotor aspects develop in balance. Teachers' digital literacy directly contributes to the achievement of national education goals.

Optimizing teachers' digital literacy is a strategic step to improve the quality of learning. The Independent Curriculum provides ample room for innovation for teachers to be creative. Appropriate use of digital technology supports relevant and meaningful learning. Improving the quality of learning impacts students' readiness to face future challenges. Digitally literate teachers are able to create an adaptive and inclusive learning ecosystem. The learning process becomes a means of optimally developing students' potential. Educational transformation goes hand in hand with improving teacher competency. Teacher digital literacy is the main foundation for realizing quality learning in the Independent Curriculum era.

METHODS

This study uses a qualitative approach with a descriptive design to gain an in-depth understanding of the role of teachers' digital literacy on the quality of learning within the context of the Independent Curriculum. This approach was chosen because it allows researchers to explore the processes, meanings, and subjective experiences of teachers in utilizing digital technology as part of their learning practices. Teachers' digital literacy is understood as a social construct formed through the interaction between curriculum policies, professional competencies, and the learning context in schools. The research focuses on teachers' actual practices in designing, implementing, and evaluating digital literacy-based learning, including challenges and adaptation strategies implemented without any manipulation of research variables.

The research subjects consisted of teachers who had implemented the Independent Curriculum and were selected purposively based on their experience using digital technology in learning, achieving data saturation. Data collection was conducted through in-depth interviews, learning observations, and documentation studies to obtain comprehensive and complementary data. Data analysis employed thematic analysis techniques through the stages of reduction, presentation, and inductive conclusion drawing. Data validity was maintained through triangulation and tests of credibility, transferability, dependability, and confirmability, while upholding research ethics, subject confidentiality, and the objectivity of the research process.

RESULTS AND DISCUSSION

1. Teacher Digital Literacy as the Foundation for Learning Transformation in the Independent Curriculum

Teachers' digital literacy occupies a strategic position as the primary foundation for learning transformation in the Independent Curriculum era. Mastery of digital literacy enables teachers to understand the shifting learning paradigm that emphasizes flexibility and student learning independence. This shift encourages teachers to not only master technology technically but also understand the pedagogical implications of each digital device used. This ability influences how teachers design learning experiences relevant to students' needs. Learning transformation does not occur instantly, but rather through a continuous adaptation process influenced by digital literacy. Teachers with adequate digital literacy tend to be more open to learning innovations (Pratama et al., 2025). A reflective mindset develops as their understanding of educational technology increases. This condition strengthens teachers' role as agents of change in the implementation of the Independent Curriculum.

The use of digital technology in learning demonstrates a shift from a teacher-centered approach to student-centered learning. Digital literacy enables teachers to facilitate more interactive and participatory learning. Students gain space to explore knowledge independently through digital learning resources. The learning process becomes more contextual because technology provides diverse representations of material. Teachers act as guides, guiding this exploration process in a structured manner. Learning success depends on teachers' ability to integrate technology with appropriate pedagogical strategies. Digital literacy serves as a bridge between curriculum objectives and classroom learning practices. This integration creates meaningful learning experiences oriented toward competency development.

Students' cognitive, affective, and psychomotor aspects develop simultaneously through digital literacy-based learning. Teachers who understand digital literacy are able to design learning activities that stimulate critical thinking. Digital media supports the visualization of abstract concepts, deepening student understanding. Digital interactions enrich the communication process between teachers and students. The development of independent learning characteristics is fostered through the use of digital learning platforms. Teachers guide the use of technology to ensure it aligns with educational values. The learning process becomes a space for developing 21st-century competencies. Teachers' digital literacy contributes to the holistic achievement of educational goals.

Learning transformation is also influenced by teachers' ability to critically manage digital information. Digital literacy includes the ability to filter valid and relevant information for learning. Teachers play a crucial role in preventing the spread of inaccurate information to students. A critical attitude toward digital sources fosters a healthy academic culture. Research- and data-based learning is supported by access to extensive digital information, with teachers utilizing technology to develop problem- and project-based learning (Dewi & Sunarni, 2024). This approach aligns with the principles of the Independent Curriculum. Digital literacy strengthens the quality of exploration- and reflection-based learning processes.

Sustainable learning transformation requires systematically strengthening teachers' digital literacy. Continuous professional development is a key requirement in navigating the dynamics of digital education. Digital literacy is not static, but rather constantly evolving with technological innovation. Adaptive teachers are able to adapt their learning practices to these changes. The process of reflection is an integral part of improving the quality of learning. Learning transformation occurs gradually through real-world classroom practice. Digital literacy is a key asset for teachers in maintaining the relevance of learning. This foundation strengthens the sustainable implementation of the Independent Curriculum.

2. The Role of Teacher Digital Literacy in Improving the Quality of the Learning Process

The quality of the learning process is greatly influenced by teachers' ability to manage digital technology pedagogically. Digital literacy enables teachers to design structured, goal-oriented lessons. The use of digital media enriches the variety of learning methods used. The learning process becomes more dynamic through the integration of videos, simulations, and collaborative platforms. Teachers utilize technology to increase student engagement. Learning interactions take place more intensively through digital communication. The quality of the learning process is reflected in increased active student participation. Teachers' digital literacy plays a key role in improving this quality.

Digital literacy-based learning planning demands analytical and creative skills from teachers. Teachers develop learning materials by considering student characteristics.

Digital technology is used to support learning differentiation. The planning process becomes more flexible through the use of digital learning resources and the adjustment of learning strategies based on diverse learning needs (Rofiah et al., 2024). The quality of learning improves when planning is carried out systematically. Digital literacy provides a clear framework for teachers. Thorough planning impacts the effectiveness of learning implementation.

Implementing technology-based learning requires adaptive classroom management. Digital literacy helps teachers manage learning interactions effectively. Digital platforms enable collaboration between students. Teachers guide learning activities to maintain focus on learning objectives. The use of technology expands learning spaces beyond the physical classroom. The learning process becomes more flexible and sustainable. Teachers utilize technology to facilitate discussion and reflection. The quality of learning improves through the active involvement of all students.

Learning assessment has undergone significant changes through the use of digital technology. Digital literacy enables teachers to implement authentic and continuous assessments. The assessment process is conducted transparently and objectively. Digital technology provides rapid and accurate feedback. Teachers utilize assessment data to improve learning. Students gain a clearer understanding of learning outcomes. Assessment becomes an integral part of the learning process, and teachers' digital literacy improves the overall quality of learning evaluations (Dewanto et al., 2024).

Digital literacy-based learning reflection strengthens the quality of the teaching and learning process. Teachers continuously evaluate learning practices. Digital technology supports the documentation and analysis of the learning process. Data-driven reflection helps teachers identify areas for improvement. The reflective process encourages learning innovation. Teachers develop new strategies based on the results of reflection. The quality of learning improves through a systematic cycle of reflection. Digital literacy is a crucial tool in developing effective learning practices.

3. Challenges and Strategies for Strengthening Teachers' Digital Literacy in the Implementation of the Independent Curriculum

The implementation of digital literacy for teachers faces various structural and cultural challenges. Disparities in access to technology are a major obstacle. Differences in digital competency among teachers impact the quality of learning. These challenges impact the consistency of the Independent Curriculum implementation. Teachers need support to improve digital literacy equitably. This situation demands responsive education policies. Strengthening digital literacy is a strategic agenda for education. These challenges need to be addressed through a systematic and sustainable approach.

Individual teacher readiness also influences the strengthening of digital literacy. Attitudes toward technology determine the success of digital integration in learning. Highly motivated teachers tend to be more adaptable to innovation, with independent learning being a crucial part of improving digital competence (Prabandari et al., 2024). A supportive school environment strengthens teacher readiness. A collaborative learning culture encourages the exchange of knowledge between teachers. Digital literacy develops through shared practice and reflection. Individual and environmental readiness mutually influence the quality of learning implementation.

Strategies to strengthen digital literacy require relevant and ongoing training. Professional development programs need to be tailored to teachers' needs. Practice-based training provides a more tangible impact. Teachers gain hands-on experience utilizing learning technology. Mentoring is a crucial factor in the process of strengthening

digital literacy. Professional learning communities support this process. Collaborative strategies accelerate the development of digital competencies. Strengthening digital literacy is effective through a participatory approach.

The role of school leadership is crucial to the success of strengthening teachers' digital literacy. Principals play a crucial role in creating a climate of innovation in learning. School policies that support the use of technology strengthen the implementation of the Independent Curriculum. Facilities and infrastructure are essential prerequisites for strengthening digital literacy. Managerial support encourages teachers to experiment with digital learning. Visionary leadership accelerates learning transformation. Digital literacy develops with adequate structural support and synergy between school elements, improving the quality of learning (Sari et al., 2025).

Sustainable digital literacy strengthening requires ongoing evaluation and reflection. Teachers need to systematically monitor the development of digital competencies. Data-driven evaluation helps identify needs for further development. The reflection process encourages improvements in learning practices. Digital literacy is an integral part of teacher professionalism. Optimal implementation of the Independent Curriculum (Kurikulum Merdeka) is achieved through improved teacher competency. Strategies for strengthening digital literacy contribute to improving the quality of education. Quality learning is achieved through synergy between digital literacy and education policy.

CONCLUSIONS

Teachers' digital literacy has proven to be a fundamental factor determining the quality of learning in the implementation of the Independent Curriculum. Teachers' ability to integrate digital technology with pedagogical strategies encourages the creation of adaptive, interactive, and student-centered learning. Learning transformation occurs progressively through the targeted and reflective use of technology. The quality of the learning process improves along with teachers' ability to design, implement, and evaluate digital literacy-based learning. Strengthening digital literacy expands students' learning spaces through access to varied and contextual learning resources. The role of teachers as learning facilitators is further strengthened through critical and creative technology management. Structural and cultural challenges indicate that developing digital literacy requires policy support, school leadership, and a collaborative learning culture. A sustainable digital literacy strengthening strategy encourages systematic improvement in teacher professionalism. The integration of digital literacy with the principles of the Independent Curriculum strengthens learning's orientation toward developing 21st-century competencies. The sustainability of learning transformation is determined by teachers' readiness to respond to the dynamics of educational technology. Teachers' digital literacy contributes directly to improving the quality of education holistically. Synergy between teachers' digital competencies and curriculum policies is a key prerequisite for achieving quality learning that is relevant to the demands of the times.

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