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Innovative School Leadership and Digital Literacy of Islamic Education Teachers

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ABSTRACT

The rapid technological shift in education increasingly requires teachers to demonstrate strong digital literacy aligned with continuous curriculum reform processes. In Indonesia, the Merdeka Curriculum promotes learner-centred pedagogy and systematic technology integration; however, many Islamic Education teachers still struggle to effectively apply digital competencies in lesson planning, instructional delivery, and assessment practices. This qualitative case study examined how innovative school leadership supports and strengthens teachers' digital literacy development in a public secondary school in South Sumatra. Data were collected through semi-structured interviews, non-participant classroom observations, and document analysis involving principals, teachers, administrative staff, and students. The data were analysed thematically using iterative analytical procedures supported by trustworthiness strategies. The findings reveal that leadership practices such as shared vision building, mentoring, instructional supervision, and collaborative professional learning consistently embed digital competence within school planning and ongoing professional development. These practices enhance teachers' confidence, adaptability, and their use of digital tools in the classroom. Overall, leadership bridges curriculum reform objectives with teachers' digital readiness in Education contexts.

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1. INTRODUCTION

The acceleration of digital transformation in contemporary education has increased expectations for teachers to develop robust digital competencies as an integral component of their professional roles. In Indonesia, the implementation of the Merdeka Curriculum reinforces this orientation by promoting student-centred learning, project-based pedagogy, and the meaningful integration of digital technologies into instructional processes [1], [2]. Despite these policy directives, empirical studies indicate that many secondary school

teachers continue to experience difficulties in effectively utilising digital tools for lesson planning, classroom instruction, and assessment practices [3], [4]. This condition reflects a persistent gap between curriculum aspirations and teachers' readiness to operate within digitally mediated learning environments.

Digital literacy extends beyond technical proficiency with digital devices to encompass critical evaluation of information, ethical judgment, and reflective engagement with digital communication media [5], [6]. These competencies are particularly crucial for Islamic Education (PAI) teachers, as students increasingly access religious knowledge through online sources with varying degrees of academic credibility and theological reliability [7], [8]. Consequently, PAI teachers are expected not only to integrate digital technologies into instruction but also to guide learners in developing responsible, moderate, and contextually grounded religious understanding through technology-enhanced learning environments. However, empirical research examining the development of digital literacy within religious education contexts remains limited [4].

Educational leadership has been widely acknowledged as a central determinant of teachers' professional practices and instructional improvement. Innovation-oriented leadership, characterised by adaptability, collaboration, and sustained professional learning, has been associated with stronger institutional capacity for pedagogical renewal and digital integration [9], [10]. Previous studies suggest that school principals who cultivate supportive and innovation-driven school cultures tend to enhance teachers' willingness to adopt digital resources and instructional innovations [11], [12]. Nevertheless, much of the existing scholarship focuses on leadership styles or general teaching populations, offering limited insight into how innovative leadership practices concretely support teachers' digital literacy development, particularly within Islamic Education settings [13], [14].

Within the Indonesian context, existing studies predominantly address leadership effectiveness and managerial performance [10], while empirical analyses of leadership practices that directly facilitate teachers' development of digital competence under curriculum reform remain relatively scarce [15], [16]. Moreover, few investigations have examined how school leaders strategically employ professional development programs, supervision systems, organisational culture, and policy enactment to advance digital competencies in subject-specific domains such as PAI [4], [8]. This lack of evidence represents a significant research gap, especially given the distinct pedagogical and ethical challenges Islamic Education teachers face in navigating digitally mediated learning spaces [7].

Unlike previous studies that emphasise leadership typologies or broad instructional outcomes, this study provides empirical insights into how innovative school leadership practices concretely strengthen digital literacy among Islamic Education teachers within the Merdeka Curriculum framework. Accordingly, this research aims to explore leadership strategies that support digital capacity development, foster professional collaboration, and encourage pedagogical innovation aligned with the demands of curriculum reform [1], [2]. Using a qualitative case study approach, the study seeks to generate an in-depth understanding of leadership mechanisms that facilitate teachers' adaptation to digital teaching environments in faith-based instructional contexts.

This study is expected to contribute both theoretically and practically. Conceptually, it advances educational leadership discourse by linking innovation-oriented leadership with teachers' digital literacy development in Islamic Education contexts [9], [10], [12]. Practically, the findings are anticipated to inform school leaders, policymakers, and teacher educators in designing leadership strategies that enhance teachers' digital competencies and promote technology-supported religious instruction that remains pedagogically rigorous and ethically grounded [6], [15]. Ultimately, the study aims to support the development of educational practices that are digitally responsive while remaining anchored in strong moral and cultural values [1], [5].

2. METHOD

This study employed a qualitative descriptive design using a case study approach to examine how innovative school leadership facilitates the development of digital literacy among Islamic Education teachers. Qualitative inquiry is appropriate for investigating educational phenomena within natural settings and for generating rich, contextualised descriptions of participants' experiences and perspectives [17], [18]. The case study strategy enabled an in-depth, holistic exploration of leadership practices, professional interactions, and the contextual dynamics shaping teachers' development of digital competence within a specific institutional setting [19], [20].

2.1 Research Site and Timeline

The study was conducted at SMA Negeri 2 Sekayu, located in Musi Banyuasin Regency, South Sumatra, Indonesia. This site was purposively selected due to its active engagement in curriculum reform initiatives and its leadership-driven approach to teacher professional development under the Merdeka Curriculum. The school's organisational culture and leadership orientation provided a relevant context for examining innovative leadership practices in relation to teachers' digital literacy development.

Data collection was conducted over two months, from November to December 2025. The research process involved three sequential stages: preparation (obtaining research permissions, conducting preliminary observations, and developing research instruments), data collection (interviews, observations, and document analysis), and initial analysis with verification. This timeline aligns with qualitative research standards emphasising sustained engagement and iterative analytical processes [17], [29].

2.2 Participants and Data Sources

In qualitative research, data are derived from participants' experiences, behaviours, and institutional records, illuminating the phenomenon under investigation [21]. This study utilised both primary and secondary data sources to enhance analytical credibility through triangulation [22].

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2.2.1 Primary Data

Primary data were collected from individuals directly involved in implementing the Merdeka Curriculum, including the school principal, vice principals, Islamic Education teachers, administrative staff, and selected students. Participants were selected using purposive sampling based on their institutional roles, professional experience, and involvement in curriculum planning and instructional implementation [23], [19].

Data were collected through semi-structured interviews and non-participant observations to capture participants' interpretations of leadership practices, professional learning processes, and digital literacy development. These techniques enabled the researcher to obtain in-depth, contextually grounded insights into leadership mechanisms and instructional innovation [24], [20].

2.2.2 Secondary Data

Secondary data consisted of institutional documents, including school development plans, curriculum implementation guidelines, supervision reports, professional development records, and official government regulations related to the Merdeka Curriculum. Relevant scholarly literature on educational leadership, digital literacy, and curriculum reform was also reviewed to support analytical interpretation and data triangulation [19], [30].

2.3 Research Procedure

The research followed a systematic and iterative sequence in accordance with qualitative inquiry standards [24], [20], as illustrated in Figure 1. The procedure included: (1) formulation of research questions and development of interview and observation protocols; (2) data collection through interviews, observations, and document analysis; (3) organization of data through transcription, coding, and categorization; (4) thematic analysis and iterative pattern interpretation; (5) validation through member checking, triangulation, and peer debriefing; and (6) synthesis and reporting of findings aligned with the research objectives.

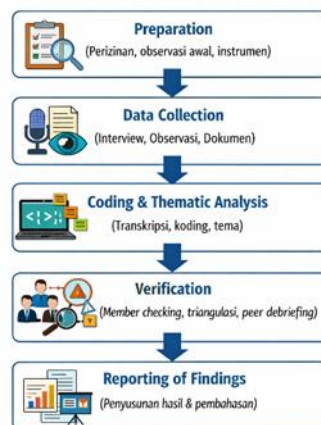


Figure 1. Research Procedure Flow

As shown in Figure 1, the study progressed through interconnected stages that enabled iterative refinement of data collection and analysis to enhance the trustworthiness of the findings.

2.4 Data Collection Techniques

Three complementary data collection techniques were employed: interviews, observations, and documentation. The integration of these methods enhanced data credibility and analytical rigour through triangulation [17], [22].

2.4.1 Interviews

Semi-structured interviews were conducted to explore participants' experiences and interpretations of leadership practices and digital literacy development. This format allowed flexibility while maintaining alignment with predefined research themes [18],[19]. Interviews were conducted face-to-face, audio-recorded with participants' consent, and transcribed verbatim for analysis.

2.4.2 Observations

Non-participant observations were carried out to document leadership activities, classroom practices, staff meetings, and professional learning interactions. Observations enabled the capture of naturally occurring behaviours and contextual dynamics that might not emerge through interviews alone [24], [20].

2.4.3 documentation

Document analysis involved reviewing school profiles, curriculum plans, supervision reports, professional development records, and official policy documents related to the Merdeka Curriculum. Documentary evidence strengthened interpretive validity by corroborating interview and observational findings [19].

2.5 Data Analysis

Data analysis followed an iterative process consisting of data condensation, data display, and conclusion drawing, as outlined in established qualitative analytical frameworks [30]. This cycle enabled the systematic identification of thematic patterns and the interpretation of relationships among leadership practices, organisational processes, and teachers' development of digital literacy.

2.5.1 Data Condensation

Interview transcripts, observation notes, and documentary data were reviewed and inductively coded into thematic categories: leadership strategies, innovation practices, professional development mechanisms, and digital literacy outcomes. This process reduced data volume while preserving analytical meaning [17].

2.5.2 Data Display

Condensed data were organised into narrative matrices, thematic tables, and conceptual diagrams to facilitate comparison and pattern recognition across data sources and analysis stages [25].

2.5.3 Conclusion Drawing and Verification

Interpretive conclusions were developed through continuous comparison between empirical findings and relevant theoretical frameworks. Verification procedures included member checking, triangulation across data sources and techniques, and peer review to ensure analytical rigour and trustworthiness [26].

2.6 Trustworthiness

To enhance methodological rigour, the study employed prolonged engagement, triangulation of data sources and techniques, member checking, and peer debriefing. These strategies contributed to the credibility, transferability, dependability, and confirmability of the findings in accordance with established qualitative research standards [23].

3. RESULTS AND DISCUSSION

3.1 Results

The results indicate that innovative school leadership at SMA Negeri 2 Sekayu plays a crucial role in fostering digital literacy among Islamic Education teachers. Leadership initiatives were systematically integrated into school planning documents, academic programs, and professional development agendas aligned with the implementation of the Merdeka Curriculum [1], [2]. A summary of leadership practices and their impacts on teachers' digital literacy is presented in Table 1.

Table 1. Summary of Leadership Practices and Digital Literacy Outcomes

No	Leadership Practice	School Program/Action	Impact on PAI Teachers	Evidence Source
1	Vision building	Digital literacy embedded in school plans	Increased awareness of the importance of ICT	Principal interview
2	Mentoring and coaching	Guidance on LMS and digital media	Higher confidence in using digital tools	Teacher interviews
3	Digital-based supervision	Supervision focusing on digital media use	More frequent use of videos & interactive PPT	Classroom observation
4	Collaborative professional learning	Peer discussion and sharing of best practices	Stronger collaboration and experimentation	Documents & observation
5	Provision of ICT infrastructure	Internet access and instructional devices	Improved access to digital resources	School documents

As shown in Table 1, innovative leadership practices were institutionalised through planning, supervision, mentoring, and collaborative professional learning, which

collectively strengthened teachers' confidence and classroom use of digital tools. These practices were further reflected in daily instructional activities, as described in the following findings.

The school principal consistently promoted digital literacy as an essential component of instructional quality improvement. This commitment was reflected in the inclusion of digital competence objectives within school work plans, supervision programs, and teacher professional development activities. Leadership support extended beyond policy formulation to practical facilitation, including the provision of digital infrastructure such as internet connectivity, instructional devices, and access to digital learning platforms.

Interviews and observational findings show that Islamic Education teachers increasingly use digital tools for lesson planning, classroom instruction, and assessment. Various digital media, including instructional videos, interactive presentations, and online learning applications, were employed to enhance student engagement and conceptual understanding. Teachers reported improved confidence and reduced apprehension toward technology use as a result of sustained leadership encouragement and mentoring.

In addition, leadership-driven professional development activities fostered collaborative learning among teachers. Peer discussions, mentoring sessions, and informal knowledge-sharing practices contributed to a supportive professional environment that encouraged experimentation and instructional innovation. These leadership practices collectively shaped a school culture that positioned digital literacy as a shared institutional responsibility rather than an individual initiative.

3.2 Discussion

The findings confirm that innovative school leadership functions **as a key enabling factor in the development of** teachers' digital literacy. Leadership that articulates a clear vision, allocates resources strategically, and embeds digital competence into supervision and professional development structures creates conditions conducive to sustainable instructional innovation. This result is consistent with leadership theories emphasizing visionary and collaborative leadership in educational change processes [11], [9].

The integration of digital literacy into academic supervision aligns with previous studies suggesting that leadership practices influence teachers' pedagogical behaviours through structured evaluation and feedback mechanisms [3], [27]. By positioning digital competence as an indicator of instructional quality, school leaders effectively motivate teachers to adopt and refine digital instructional practices. This supports the argument that leadership-mediated accountability plays a significant role in shaping instructional transformation [28].

Furthermore, the emphasis on mentoring and collaborative professional learning reflects research highlighting the importance of collegial support in strengthening teachers' digital confidence and innovation capacity [29], [15], [30]. Emphasises that professional learning environments that encourage self-directed and collaborative learning enhance teachers' adaptability to educational innovation. In the present study, such collaborative mechanisms were particularly important for Islamic Education teachers, who must integrate digital tools while maintaining pedagogical and ethical considerations.

The observed changes in teachers' instructional practices support perspectives that conceptualise educational change as a culturally embedded, leadership-driven process [11]. Rather than focusing solely on technical skill acquisition, innovative leadership at SMA Negeri 2 Sekayu facilitated changes in teachers' mindsets, professional identities, and instructional orientations. This finding aligns with research indicating that sustainable digital innovation requires coherence between leadership vision, organisational culture, and professional learning systems [6], [4].

From a contextual standpoint, this study contributes empirical evidence to the limited body of research on digital literacy development within Islamic Education contexts. Previous studies have noted that subject-specific traditions and values influence teachers' responses to digital innovation. The findings of this study demonstrate that innovative leadership can mediate these contextual complexities by fostering supportive environments that respect pedagogical values while encouraging adaptive and technology-enhanced instructional practices [5].

Overall, the discussion underscores the central role of innovative school leadership in bridging the demands of curriculum reform with teachers' professional capacities. By integrating digital literacy into institutional planning, supervision, and collaborative learning processes, school leaders can support meaningful, context-sensitive, and sustainable digital transformation in educational practice [11], [4].

This study extends existing leadership and digital literacy research by providing empirical evidence from an Islamic Education context within the Merdeka Curriculum, which has been underexplored in previous studies.

4. CONCLUSION

This study concludes that innovative school leadership is a key determinant in fostering the development of digital literacy among Islamic Education teachers within the Merdeka Curriculum framework. The findings demonstrate that leadership practices characterised by clear vision, strategic planning, supportive supervision, and continuous professional development enable teachers to adapt to digital transformation while maintaining pedagogical integrity. These findings confirm the expectations articulated in the Introduction, demonstrating the central role of leadership in bridging the demands of curriculum reform with teachers' professional capacities.

The study implies that school leaders should position digital literacy as an integral component of instructional quality rather than as an auxiliary skill. Embedding digital competence into institutional planning, supervision systems, and collaborative professional learning can strengthen teachers' confidence and sustainability in adopting digital instructional practices. These implications are particularly relevant to school leadership development programs and policy initiatives that support curriculum implementation in digitally evolving educational environments.

Despite its contributions, this study has several limitations. The research was conducted in a single secondary school and focused specifically on Islamic Education teachers, which may limit the generalizability of the findings to other subjects or educational

contexts. In addition, the qualitative case study approach emphasises depth of understanding rather than measurement of causal relationships or broader statistical patterns.

Future research may expand on these findings by involving multiple schools, employing comparative or mixed-method designs, and examining the long-term impact of innovative leadership on instructional quality and student learning outcomes. Further studies may also explore the integration of emerging digital technologies in Islamic Education to address pedagogical, ethical, and cultural dimensions of digitally mediated learning. Beyond academic contributions, this study offers practical insights for school leaders, teachers, and policymakers by highlighting leadership strategies that can support meaningful, context-sensitive digital literacy development and enhance educational practices across the wider school community.

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