Vol. 24, No. 2, pp 212-224, 2025
AT-TA'LIM
Media Informasi Pendidikan Islam
e-ISSN: 2621-1955 | p-ISSN: 1693-2161
https://ejournal.uinfasbengkulu.ac.id/index.php/attalim

Digitalization of Islamic Religious Education Practices in Junior High Schools

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Article History:
Received: November 18, 2025; Revised: December 21, 2025; Accepted: December 26, 2025; Published: December 30, 2025

Abstract: Building Spiritual Intelligence within the Framework of Islamic Educational Philosophy: Reflections on the Lifestyle of Urban Communities

Objective: This study examines the development of spiritual intelligence among young people through the integration of three pillars: family, school, and community, and analyzes how collaboration between these elements forms a holistic model for spiritual development among urban youth in Yogyakarta. **Method:** Using a descriptive qualitative approach through literature analysis, contextual observation, and conceptual review of spiritual education patterns in three main environments. **Results:** Effective spiritual guidance requires the internalization of religious values within the family, the strengthening of moral structures through school curricula and culture, and the expansion of spiritual experiences through socio-religious activities in the community. This integration improves adolescents' inner balance, reflective abilities, and psychological resilience in the face of urban pressures. **Conclusion:** This collaborative model not only produces individuals who are ritually devout but also spiritually mature and capable of making wise moral decisions. **Contribution:** This study provides a framework for spiritual guidance that can be applied by Islamic educational institutions, families, and local communities continuously:

Keyword: Digitalization; Islamic Religious Education Practices; Junior High Schools

Abstract: Membangun Kecerdasan Spiritual dalam Bingkai Filsafat Pendidikan Islam: Refleksi atas Gaya Hidup mayarakat Urban.

Tujuan: Penelitian ini mengkaji pengembangan kecerdasan spiritual generasi muda melalui integrasi tiga pilar: keluarga, sekolah, dan masyarakat, serta menganalsisi bagaimana kolaborasi antarelemen tersebut membentuk model pembinaan spiritual yang holistik bagi remaja urban Yogyakarta. **Metode:** Menggunakan pendekatan kualitatif deskriptif melalui analisis literatur, observasi kontekstual, dan telaah konseptual terhadap pola pendidikan spiritual di tiga lingkungan utama. **Hasil:** Pembinaan spiritual yang efektif membutuhkan kesinambungan internalisasi nilai religius dalam keluarga, penguatan struktur moral melalui kurikulum dan budaya sekolah, serta perluasan pengalaman spiritual melalui aktivitas sosial-keagamaan di masyarakat. Integrasi ini meningkatkan keseimbangan lahir–batin, kemampuan reflektif, dan ketahanan psikologis remaja menghadapi tekanan urban. **Kesimpulan:** Model kolaboratif ini tidak hanya menghasilkan individu yang taat secara ritual, tetapi juga matang secara spiritual dan mampu membuat keputusan moral secara bijaksana. **Kontribusi:** Penelitian ini menawarkan kerangka pembinaan spiritual yang dapat diterapkan oleh lembaga pendidikan Islam, keluarga, dan komunitas lokal secara berkelanjutan.

Kata Kunci: Digitalisasi; Praktik Pendidikan Agama Islam; Sekolah Menengah Pertama

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To cite this article:

Puspita, S. D., & Febriana, L., & Syubli, S. (2025). Digitalization of Islamic Religious Education Practices in Junior High Schools. *At-Ta'lim: Media Informasi Pendidikan Islam, 24*(2), pp. 212-224. http://dx.doi.org/10.29300/attalim.v24i2.9445

A. INTRODUCTION

The integration of technology in Islamic education learning provides an excellent opportunity to expand access to education, improve the quality of learning, and support equal learning opportunities (Hakim & Yulia, 2024). However, this process also faces significant challenges, including infrastructure limitations, low digital literacy among teachers, and a lack of adaptive policy support. Recent research suggests that the success of Islamic Religious Education learning digitization depends not only on the availability of technology but also on the readiness of human resour-ces, particularly teachers, to integrate technology into learning effectively (Febriana et al., 2022; Pramodana et al., 2024). This competency includes not only a deep understanding of the subject matter but also the ability to adapt to changing times, including shifts in how students learn. Competent teachers can develop teaching methods that cater to students' needs and implement effective strategies to deliver meaningful learning content (Akhyar, 2025).

Low digital literacy among students, particularly in suburban schools, often restricts the use of technology to basic functions, without fully optimizing enrichment learning resources (Joshi et al., 2024). This situation is further complicated by socioeconomic factors that affect digital device ownership, internet connection stability, and students' ability to participate in online learning (Nadlir et al., 2024). In this context, Islamic Religious Education supervisors and school management are responsible for ensuring that the learning digitization policy is implemented evenly, through monitoring implementation, periodic supervision, providing teacher training in the use of technology, and providing adequate infrastructure (Sukana, 2024).

The rapid development of digital technology has transformed learning practices in Indonesian schools, including Islamic Religious Education. Digitalization presents opportunities to expand access to learning resources, enhance instructional quality, and facilitate more flexible learning models. However, in peripheral and suburban schools, the implementation of digital learning remains uneven due to limitations in infrastructure, digital literacy, and institutional capacity. These challenges are clearly reflected in the learning practices at SMPN 18 Talang Rio, Air Rami District, Mukomuko Regency, Bengkulu Province.

At SMPN 18 Talang Rio, the school has begun adopting digital learning practices as part of its efforts to respond to national education policies and post-pandemic learning demands. The school has received a limited number of digital devices, including 15 Chromebooks, which are primarily used to support information technology-based learning and evaluation activities. Teachers, particularly Islamic Religious Education teachers, have also begun to utilize basic digital platforms, such as Google Forms, for assessments and simple learning tasks. In addition, visual media such as mini projectors (Infocus Mini) are used alternately across classes to support instructional delivery.

Despite these efforts, the digitization of learning practices at SMPN 18 Talang Rio has not yet been implemented optimally. Limited device availability requires students to share devices, unstable internet connectivity frequently disrupts learning activities, and dependence on the electricity supply further constrains consistent technology use. Moreover, not all students own personal digital devices, which affects their ability to access learning materials outside school hours. These conditions create disparities in learning experiences among students and limit the effectiveness of technology integration in Islamic Religious Education learning.

In addition to infrastructural constraints, teacher readiness remains a critical issue. Islamic Religious Education teachers at SMPN 18 Talang Rio have expressed limited confidence in integrating digital technology into daily instruction due to insufficient training and guidance. As a result, digital tools are often used only for basic functions rather than for interactive or student-centered learning activities. Consequently, teachers frequently revert to conventional teaching methods when technical problems occur, reducing the consistency of digital learning implementation.

Changes in learning methods due to digitalization necessitate adjustments to the curriculum to accommodate technological innovation. The Islamic Religious Education curriculum must now develop critical thinking, digital skills, and ethical understanding. Digitalization is an important component of education that continues to evolve. Artificial intelligence and big data technologies will influence learning methods and teaching materials (Saprullah & Sirozi, 2024). The gap analysis reveals that research on Islamic Religious Education digitization remains dominated by studies conducted in urban schools or madrasahs with adequate facilities. In contrast, suburban schools, which face different challenges, have not received proportional attention. This gap leads to an incomplete understanding of Islamic Religious Education digitization and may result in policies that are not adaptable to the diverse range of school conditions.

This study aims to fill this gap by critically examining the digitalization access gap in Islamic Religious Education at SMPN 18 Talang Rio Village, Air Rami District, Mukomuko Regency. Based on the gap analysis presented, the main issues to be examined in this study include the form of access gap in the digitization of Islamic Religious Education learning in suburban schools, the factors causing this gap, and strategic solutions to overcome it. Specifically, the research questions to be answered are: (1) What are the forms of access gaps in the digitization of Islamic Religious Education learning at SMPN 18 Mukomuko? (2) What are the factors causing access gaps in the digitization of Islamic Religious Education learning at SMPN 18 Mukomuko? (3) What are the strategic solutions that can be applied to overcome these access gaps in Islamic Religious Education digitization?.

This study is expected to contribute to the development of digital divide theory in the specific context of Islamic Religious Education learning in suburban schools, while providing practical recommendations for education stakeholders in designing sustainable and equitable digitization strategies, adding to the theory of IRE digitization focused on access in remote areas. The results can serve as guidelines for teachers and policy recommendations for the equitable distribution of educational technology. It also serves as a reference for future researchers on changes in Islamic Religious Education learning in the digital era. Additionally, the results will help educational institutions and policymakers plan training programs tailored to specific needs, thereby addressing the digital literacy gap between urban and suburban areas.

B. METHOD

This study employs a qualitative approach with a descriptive design, aiming to examine in-depth the phenomenon of the digital access gap in Islamic Religious Education in suburban schools. The qualitative approach was chosen because it enables a comprehensive understanding of the research subjects' meanings, experiences, and perspectives directly and holistically (Haryati et al., 2024). The research focused on aspects of digital access, including the availability of devices, internet connection quality, and supporting facilities, without discussing the quality of learning in detail. The research was conducted at SMPN 18 Talang Rio Village, Air Rami District, Mukomuko Regency, Bengkulu Province in 2025. This location was chosen purposefully because it represents a suburban school that faces the challenge of limited digital infrastructure. The research spanned two months, encompassing the stages of preparation, data collection, analysis, and reporting.

The research preparation stage, which took place over the first two weeks, consisted of submitting a research permit to the school, preparing research instruments that included observation guidelines and semi-structured interview guidelines, and coordinating with the principal to schedule research activities. The data collection stage involved three visits to the school to observe learning and conduct interviews with informants. The data analysis stage was conducted simultaneously with data collection to ensure data saturation was achieved.

The reporting stage was completed over the last two weeks and involved compiling interview transcripts, coding the data, and writing the research report.

Tabel 1. Research Subject

Research subject	Number	Description
School Principal	1	School Policy Maker
Islamic Education Teacher	2	Religius Education Subject Teacher
Students	6	Representatives From Grade VII, VIII and IX

Purposive sampling was employed to ensure that the subjects possessed knowledge and stories relevant to the study's focus. This produced good data and described the overall situation. The selection of subjects was carried out in stages. First, the principal provided tips on teachers who taught and used technology in the classroom. Then, the teachers provided tips on articulating to students, attended classes, and had various skills. Finally, the researcher spoke with the informants to explain the reasons for conducting this research, how the discussion would proceed, and asked if they were willing to participate. These steps ensured that the selected individuals were not only suitable but also willing to share their stories and cooperate.

Tabel 2. Data Collection Techniques

Technique	Description
Participatory observation	Observing infrastructure, internet networks, devices, and teacher-student interactions in digital learning.
In-depth Interviews	Semi-structured interviews were conducted with school principals, Islamic education teachers, and students to explore their experiences and obstacles in accessing digital technology.
Documentation	Collect supporting documents such as photos of facilities and infrastructure, lesson plans, school policies, and data on student device ownership.

Data analysis in this study used the interactive model developed by Miles, Huberman, and Saldaña (2014), which consists of several stages (Agustina, 2019). First, data collection was carried out by systematically organizing the results of observations, interviews, and documentation. Second, data reduction was carried out by sorting and coordinating relevant data according to the research focus, namely, integrating access to the digitization of Islamic Religious Education learning. Furthermore, the reduced data was presented in the form of Narratives, tables, and diagrams to facilitate an understanding of the patterns and relationships between the data. Finally, conclusions were drawn by interpreting the main findings and verifying the data's validity through triangulation and member checks.

To ensure the accuracy of the data, maintaining data validity was crucial in this study. Several methods were employed to achieve this goal. First, the researchers combined various sources by checking details from the principal, teachers, and students to ensure that the information was consistent and correct. Second, sources were combined using observations, lectures, and notes so that the data were complete and accurate. Then, the researchers checked with the study participants by asking them whether their thoughts about the data aligned with the researchers' own thoughts, ensuring that the results reflected their own perceptions. Finally, researchers ask friends to review it by sharing what they found with mentors or friends to gather different perspectives and weaken our own biases. By employing these methods, we strive to make this research appear robust, practical, and verifiable.

C. RESULTS AND DISCUSSION

Result

This study employed in-depth interviews with the principal, Islamic Religious Education teachers, and students of SMPN 18 Mukomuko to address three primary research questions: the nature of the access gap in Islamic Religious Education learning digitization, the factors contributing to the access gap, and the strategic solutions implemented. Data were collected through interviews, learning observations, and documentation, which were then analyzed using a thematic approach. The analysis results identified three main themes that addressed the research questions. The first theme relates to the forms of digital access gaps, as manifested in the dimensions of infrastructure, socioeconomics, and competence. The second theme reveals the structural and individual factors causing the gaps. The third theme identifies strategic solutions that have been and can be implemented to overcome these gaps. These three themes will be described in detail in the following subsections.

1) Forms Of Digital Access Gaps in Islamic Religious Education Learning

Based on interview and observation data, several forms of digital access gaps were found, namely: 1) The availability of digital devices is limited and uneven across classes, with one device being used by several students; 2) Internet connection is unstable, highly dependent on electricity, which often goes out; 3) The availability of 15 Chromebooks for 25 students requires a device sharing system, so not all students can access digital learning at the same time; 4) Supporting facilities are limited, such as only one Infocus Mini unit that is used alternately; 5) Students' ownership of personal devices is still limited; the rest use borrowed or shared devices and still rely on borrowing devices at school; and 6) The use of digital platforms is still simple, limited to Google Forms for evaluation, and does not yet use interactive online learning platforms.

This digital access gap is interrelated, creating barriers to technology-based Islamic Religious Education learning. Only a few devices are used to share student learning systems, and web access, which requires an internet connection, often hinders the learning process. Observations show that teachers must use conventional methods when there is a power outage or web problems during learning. Unequal access to personal digital devices also creates a learning gap, as students who have their own cell phones can view learning materials at any time. In contrast, others can only study digital materials provided on school devices for a limited period.

Table 1. Condition of Facilities and Digital Access at SMPN 18 Mukomuko

Aspect	Description of Condition	Notes
student devices	1 device for 2 students	Uneven distribution across classes
Internet connection	Unstable, dependent on electricity	Frequent power outages and signal interference
Supporting facilities	Limited mini projectors	Shared use
Student cell phone ownership	Half of the students have personal cell phones	The rest borrow or share devices
Use of digital platforms	Google forms for evaluation	Not yet using online learning platforms

2) Factors Contributing to The Digital Access Gap

The main factors causing the digital access gap at SMPN 18 are: 1) Limited technological infrastructure, particularly devices and internet connections; 2) Students' socioeconomic conditions, which affect device ownership and internet access at home; 3) Lack of training and guidance for teachers in the use of learning technology; 4) Dependence on electricity,

which is often cut off, hindering internet access; and 5) Limited budgets and policy support for the development of digital facilities in suburban schools.

These five factors are interrelated and mutually reinforce one another. Infrastructure limitations are the most fundamental obstacle caused by limited school budgets. Socioeconomic factors also affect parents' ability to provide digital devices for their children, while a lack of teacher training leads to a lack of confidence in using learning technology. Dependence on electricity stability creates uncertainty in digital learning planning and requires teachers always to prepare backup plans for conventional learning, which reduces the consistency of technology use.

3) Strategic Solutions to Overcome the Digital Access Gap

Strategic solutions that have been and can be implemented include: 1) Procurement of additional devices and device lending programs for students who do not have them; 2) Utilization of visual learning media such as Infocus Mini to overcome device limitations; 3) Training and workshops for teachers to improve digital competence and adapt to blended learning methods; 4) Development of a learning community among teachers with the support of the Education Office; 5) Adjustment of learning methods to the blended learning model to accommodate limited digital access.

Strategic solutions are categorized into quick and flexible solutions, as well as sustainable solutions that bring about lasting and significant changes. Quick solutions provide adaptable lending tools, along with the use of mini projectors, allowing the entire class to watch and learn together. Sustainable solutions aim to develop teachers' technological skills through stable classes and assistance in their use, as well as forming teacher groups and training teachers to improve their competencies. Combining face-to-face learning with online learning is the most effective solution, as it allows for both hands-on experience and critical thinking. Technology does help, but it does not do everything.

Discussion

The study's results show that a gap in access to digitalized Islamic Religious Education learning at SMPN 18 Mukomuko is evident in several interrelated forms. Based on interviews with the principal, it was explained that although the school had received 15 items of technological facilities for IT learning in the form of Chromebooks, the number of digital devices per student was still not optimal. The access gap is also evident in the ownership of personal devices by students, which indicates that not all students at SMPN 18 Mukomuko own personal devices, such as laptops or mobile phones. However, further exploration reveals a gap between their initial statements and the actual conditions they experience.

Students' ownership of personal devices shows a significant gap between their initial statements and their actual circumstances. Some students already have personal devices that they can use independently, but others still rely on borrowing devices from their parents or family members. This situation creates an access gap that affects student participation in digital learning, as students without personal devices face limitations in consistently engaging in technology-based learning activities (Rahmat, 2025). This gap in device ownership not only affects physical access to technology but also impacts students' learning opportunities and their active participation in digital learning activities designed by teachers.

Teachers' digital competence is a major internal factor contributing to the digital divide. Interviews with Islamic Religious Education teachers revealed a lack of confidence in using learning technology due to minimal training and facilities. Teachers stated that they were "not yet confident in using learning technology," and that the lack of training and facilities was also an obstacle. This situation has an impact on the development of digital learning innovations. The principal acknowledged that teachers have not undergone specific digital training, despite a mandatory program on home learning being implemented. These limitations have

resulted in digital learning not being optimized to its full potential (Murliati & Zubaidah, 2025).

Based on the study's results, several short-term strategies have been implemented by schools to address access gaps. The principal mentioned providing Chromebooks for students who do not yet have digital devices and using the Infocus Mini to make learning more interesting. Offline learning strategies were implemented as an alternative when technology was not available. Islamic education teachers developed blended learning strategies using simple media and easily accessible platforms. A program that allows students to borrow school devices on a rotating basis, along with scheduled use of computer labs, provides practical solutions to ensure more equitable access for students.

Developing teachers' digital competencies is a top priority in the long-term strategy. Islamic education teachers have expressed a desire to develop digital skills, particularly mastery of digital collaboration tools and the effective use of social media for educational purposes. Plans for training in the use of digital learning platforms and Islamic education software applications need to be implemented immediately. The development of more stable technological infrastructure and interactive digital learning content is a strategic necessity. Islamic education teachers describe ideal learning as interactive and personalized, using technology that can tailor material to students' ability levels and interests (Nkolika, 2025).

The study's results show that students have diverse learning preferences. Students prefer teachers to explain directly because they can ask questions spontaneously and receive immediate explanations. Meanwhile, others show enthusiasm for digital learning because technology provides access to materials, more attractive visualizations, and opportunities to learn independently at their own pace. These findings align with blended learning theory, which emphasizes that blended learning can accommodate diverse student learning styles. Students who prefer direct explanations require interactive and social elements in face-to-face learning, while those who prefer digital learning need technological stimulation and flexibility in their learning time (Rahmat, 2025).

The blended learning model is an optimal solution that accommodates this diversity of preferences. The blended learning strategy allows for a combination of face-to-face learning for material that requires direct modeling and emotional interaction, with digital learning for material that can be optimized through technology. Islamic education teachers have identified that practical, affective, and spiritual material requires direct modeling, while cognitive material can be delivered through interactive digital media (Putra & Amaliyah).

The findings of this study indicate that the digitalization of Islamic education learning at SMPN 18 multidimensional access gaps, including infrastructural, socio-economic, and competency-related limitations, characterize Talang Rio. These findings can be theoretically explained using the digital divide framework proposed by Van Deursen & Van Dijk (2019), which conceptualizes digital inequality not merely as a lack of physical access, but as a layered gap encompassing access to devices, skills, and practical usage. In this context, the limited availability of devices and unstable internet connectivity at SMPN 18 Talang Rio reflect a firstlevel digital divide. In contrast, the limited digital competence of teachers represents a secondlevel divide that affects the quality of technology integration in learning.

The infrastructural constraints identified in this study, such as device-sharing systems, unstable electricity-dependent internet connections, and limited supporting facilities, are consistent with previous research on digital learning in peripheral schools. Barikzai et al. (2024) emphasize that inadequate infrastructure remains the most fundamental barrier to educational digitalization in developing regions, as technology-based learning heavily depends on stable electricity and connectivity. Similar findings were reported by Dayagbil et al. (2021), who found that infrastructure limitations directly affect students' participation and continuity in digital learning activities. These studies reinforce the present findings that technological

access at SMPN 18 Talang Rio remains uneven and structurally constrained rather than a result of individual choice or motivation.

Socio-economic disparities among students further intensify the digital access gap. The finding that not all students own personal digital devices aligns with Gu (2021), who argues that family economic capacity significantly determines students' access to digital learning resources outside school. According to Kormos & Wisdom (2023), unequal device ownership creates differentiated learning opportunities, where students with personal devices can engage in independent and extended learning, while others remain dependent on limited school facilities. This supports the conclusion that digital inequality at SMPN 18 Talang Rio operates not only within the classroom but also beyond school hours, affecting learning continuity and equity.

Teacher digital competence emerged as a critical internal factor influencing the effectiveness of digitalizing Islamic education. This finding is supported by Şen & Yildiz (2022), who argue that teachers' self-efficacy and professional competence strongly determine their willingness and ability to integrate technology meaningfully into instruction. Similarly, Stumbrienė et al. (2024) highlight that without systematic training and institutional support, teachers tend to use digital tools only for basic administrative purposes rather than pedagogical innovation. In line with these studies, the limited use of digital platforms at SMPN 18 Talang Rio—primarily Google Forms for evaluation—reflects a constrained level of pedagogical technology integration rather than resistance to innovation.

The preference of some students for direct teacher explanation, alongside others' enthusiasm for digital learning, can be theoretically explained through the concept of blended learning. Van Der et al. (2024) assert that blended learning is effective in accommodating diverse learning preferences by combining face-to-face interaction with technology-mediated instruction. In the context of Islamic Religious Education, Plass & Kaplan (2016) emphasize that affective and spiritual learning objectives often require direct modeling and interpersonal interaction, while cognitive content can be effectively supported through digital media. These theoretical perspectives reinforce the study's finding that a blended learning approach is the most realistic and pedagogically appropriate solution for Islamic education learning in resource-limited suburban schools.

The strategic solutions implemented by SMPN 18 Talang Rio, such as device lending programs, shared use of visual media, and adaptive blended learning practices, align with best practices identified in previous studies. Castañeda et al. (2025) note that gradual and context-sensitive digitalization strategies are more sustainable than complete digital transformation in schools with limited resources. Moreover, Mhlanga (2024) argues that blended learning serves as a transitional model that allows schools to integrate technology without exacerbating existing inequalities. Therefore, the strategies identified in this study should be understood not as temporary compromises, but as rational institutional responses to structural limitations.

The discussion demonstrates that the digitalization challenges at SMPN 18 Talang Rio are not the result of individual shortcomings, but rather systemic constraints shaped by infrastructure, socio-economic conditions, and institutional capacity. By situating the findings within established theories and previous empirical research, this study strengthens the argument that equitable digitalization of Islamic education learning requires integrated policy support, continuous teacher development, and adaptive learning models tailored to local contexts.

D. RESEARCH IMPLICATIONS AND CONTRIBUTIONS

1. Research Implications

a) Theoretical Implications

The digital divide theory, developed by Van Dijk, is reinforced by the findings of this study in the context of Islamic Religious Education learning in suburban schools (Farhatin,

2023). The study's results confirm that the digital divide extends not only to access to technology but also to the quality of technology use in religious education. The study's findings regarding students' diverse preferences align with the blended learning theory proposed by Graham, which suggests that a combination of face-to-face and digital learning can optimize the learning process. This has been proven to be relevant in Islamic Education subjects that require direct role models (Baig, 2023). Research data on the limited number of devices and low device ownership among students confirms that equal access to digital technology is a prerequisite for educational transformation in the digital age. This gap has the potential to create inequalities in learning opportunities among students (Santoso, 2025). This study contributes to filling the literature gap on the digitization of religious education in disadvantaged areas, which has been limited in academic studies.

b) Practical Implications

In practical terms, this study provides a blueprint for schools in rural areas to develop realistic and sustainable strategies for digitizing Islamic education. Findings regarding the dependence of internet access on electricity stability indicate the need to develop basic infrastructure as a prerequisite for the digitization of education (Caroline & Aslan, 2025). The blended learning strategy recommended in this study can serve as a practical model for Islamic education teachers in integrating technology while upholding the essential values of direct, exemplary behavior in religious education. For the development of the Islamic education curriculum, this study shows the need to adapt learning materials and methods that accommodate technological limitations in suburban schools (Anggraeni & Nuraini, 2022). The study's results provide practical guidance on selecting digital platforms suitable for limited infrastructure conditions, such as the use of Google Forms for evaluations, which have been proven to be easily accessible to students. The implementation of device lending programs and the use of shared facilities are practical solutions that other schools with similar conditions can adopt.

c) Managerial Implications

The educational management perspective of this study yielded policy recommendations for enhancing the digital competencies of Islamic education teachers through ongoing training programs. Findings regarding teachers' low confidence in using learning technology indicate the need for long-term investment in human resource development (Sulistiani & Dewi, 2024). School principals, as education managers, need to develop optimal resource allocation strategies to ensure equitable access to technology across classes. This study also provides insights for the Education Office in designing targeted supervision and mentoring programs for schools in remote areas. The community of practice model recommended for Islamic education teachers in this study can be an effective knowledge management strategy for optimizing learning from existing limitations. Another managerial aspect is the need for cross-sector coordination between schools, village governments, and PLN to ensure the stability of the infrastructure supporting the digitization of learning.

d) Methodological Implication

Methodologically, this study employs a comprehensive data triangulation approach to examine the digital divide in religious education. The combination of in-depth interviews with multiple stakeholders (school principals, teachers, students), participatory observation, and documentation provides strong data validity in the context of qualitative research in suburban schools. The purposive sampling technique used in this study was effective in identifying key informants who could provide a holistic perspective on the phenomenon of the digital divide (Amananti, 2024). The Miles-Huberman-Saldaña interactive analysis model, as applied in this study, can serve as a methodological reference for other researchers examining similar issues in different geographical contexts (Zulfirman, 2022). The data validity

strategy, which includes member check and peer debriefing, used in this study contributes to the development of a qualitative research protocol on the digitization of religious education. This study also proves the effectiveness of the mini-ethnography approach in exploring the reality of digital learning in schools with limited research time.

2. Research Contribution

This study makes a significant contribution to the development of science, particularly in the field of contemporary Islamic education. First, this study enriches the scientific knowledge about the transformation of Islamic education in the digital era with a focus on the context of suburban schools that have previously received little academic attention. The theoretical contribution of this study lies in the development of a specific digital divide framework for religious education that integrates aspects of technology, pedagogy, and spiritual values. Second, this study contributes to expanding the discourse on equity and inclusion in digital Islamic education. Findings on the heterogeneity of student access to technology and the adaptive strategies developed by teachers provide a new perspective on how Islamic values of justice can be implemented through inclusive education digitization policies.

This study also strengthens the argument for the importance of a contextual approach in the development of national education policy. Third, the methodological contribution of this study lies in the development of a qualitative research protocol to examine the phenomenon of digitization in areas with limited access. The developed data triangulation model can be a reference for other researchers studying similar issues in disadvantaged, frontier, and outermost (3T) regions. Practically, this research contributes to providing evidence-based recommendations for the development of sustainable and equitable Islamic education digitization programs. Fourth, this research contributes to the development of the literature on teacher professional development in the context of the digitization of religious education.

The resulting framework for developing the digital competencies of Islamic education teachers can serve as a reference for designing training programs tailored to the needs and challenges of teachers in suburban schools. Thus, this research not only contributes to the academic aspect but also has a practical impact on improving the quality of religious education in Indonesia.

E. RECOMMENDATIONS FOR FUTURE RESEARCH DIRECTIONS

Further research can expand the study not only on the aspect of access, but also on the quality of technology integration in Islamic education learning, for example, the effectiveness of interactive digital platforms or artificial intelligence-based applications. To determine the impact of digitization on students' motivation, achievement, and religious character development, a mixed-method or quantitative approach can also be used. To provide a broader picture of digital literacy, comparative research can be conducted between schools in urban, suburban, and 3T areas. The development of a digital competency training model for Islamic education teachers to meet the needs of suburban schools is also an important focus. In addition, educational policy research is needed to understand how the government, schools, and other stakeholders contribute to the equitable distribution of digital Islamic education learning. Thus, this research can contribute to both academic and practical knowledge regarding the digitalization of Islamic education in suburban schools. This will be the basis for discussions on Islamic education policy in the digital era.

F. CONCLUSION

This study reveals three main dimensions of the digital learning access gap in Islamic Religious Education at SMPN 18 Mukomuko, namely the infrastructure access gap characterized by limited device ratios (one device for every two students), unstable internet connectivity, and a lack of supporting facilities; a socio-economic access gap reflected in dispa-

rities in student ownership of personal devices; and a competency access gap indicating limited digital literacy among Islamic education teachers, with platform utilization still restricted to Google Forms. The contributing factors include limitations in technological infrastructure, the diverse socio-economic conditions of students, the lack of teacher training, dependence on electricity stability, and limited budgets and policy support for suburban schools.

The recommended strategic solutions include the procurement of additional devices through a loan program, the use of visual learning media, ongoing training for teachers, the development of learning communities with the support of the Education Office, and the implementation of a blended learning model that integrates face-to-face learning for practical, affective, and spiritual material with digital learning for cognitive material. This research provides a theoretical contribution to enriching the study of specific digital gaps in Islamic education learning in suburban schools, as well as a practical contribution in the form of evidence-based recommendations for strategic policies to achieve sustainable and equitable digital access in contemporary Islamic education.

ACKNOWLEDGMENTS

The author would like to express sincere gratitude to the supervising lecturer, who provided guidance, direction, and encouragement throughout the research process, culminating in the final stage of writing. Thanks also go to Muhammadiyah University Bengkulu for the academic support provided during this study. Equally important, the author would like to express his deepest gratitude to his beloved parents for their prayers, love, and unwavering support. The author would also like to thank his fellow students and loved ones, who have always provided encouragement, motivation, and a meaningful presence at every step of this journey. May all the kindness that has been given be rewarded by Allah SWT.

AUTHOR CONTRIBUTIONS STATEMENT

All authors discussed the results and contributed to the final manuscript. SPP: Conceptualization, Methodology, Writing - Original Draft, Formal analysis. LF: Conceptualization, Writing - Review & Editing. SB: Conceptualization, Writing - Review & Editing

DECLARATION OF COMPETING INTEREST

The authors declare that they have no significant competing financial, professional or personal interests that might have influenced the performance or presentation of the work described in this manuscript.

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