

Digital Technology Based Transformation of Islamic Education in Enhancing Students' Religious Literacy

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ABSTRACT

This study aims to analyze how the digital technology-based transformation of Islamic education contributes to enhancing students' religious literacy. The research employs a qualitative method with a case study design, as the phenomenon under investigation requires an in-depth understanding of experiences, interactions, and the process of value internalization within the context of digital learning. This method and design were chosen to capture the real dynamics occurring within the educational environment holistically. The study was conducted at Madrasah Tsanawiyah Al-Furqan, an Islamic educational institution that has consistently implemented digital learning. Informants consisted of one school principal, two Islamic education teachers, and four students selected purposively because of their direct involvement in the implementation of digital learning. The findings indicate that digital technology expands access to religious knowledge, strengthens pedagogical interaction, and enhances students' ability to critically manage religious information. However, challenges still arise in aspects of digital literacy and the selection of credible religious sources. The study recommends improving teacher capacity, developing a digital religious literacy curriculum, and providing curated digital religious content to support the effectiveness of Islamic education transformation in the digital era.



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INTRODUCTION

The transformation of Islamic education in the digital era has become one of the crucial themes in contemporary educational discourse, especially as technological developments advance rapidly and influence students' learning patterns. In various Islamic educational institutions, the use of digital devices, online learning platforms, religious applications, and learning management systems has begun to form an integral part of the educational process (Hall, 2024). This development shows that Islamic education cannot be separated from technological dynamics, thus requiring systematic adaptation to ensure that religious values remain relevant and understandable to the digital generation. In this context, students' religious literacy becomes increasingly important because it relates to their ability to understand, critique, and internalize religious knowledge through various digital sources that are often uncurated (Aini & Zamroji, 2025).

The development of digital literacy among students continues to increase, but it is not always accompanied by the ability to select and interpret religious information appropriately. Religious information on the internet is highly diverse, ranging from educational content to materials that may lead to misunderstanding or radicalization (Majeed & Ahmad, 2024). This challenge places schools and madrasahs under increasingly complex pressure to ensure that students possess adequate religious literacy. With the emergence of digital platforms based on artificial intelligence, social media, and interactive applications, the process of internalizing Islamic values and teachings undergoes a transformation that demands new approaches. This is where the urgency of research on digital

technology-based Islamic education for enhancing religious literacy finds its relevance (Syahrin & Widodo, 2025).

Previous studies indicate that digital technology can increase learning motivation, expand access to information, and enrich methods of religious instruction. Several studies emphasize that integrating technology into Islamic education can strengthen student engagement, create more personalized learning experiences, and enhance understanding of instructional content (Herawati & Mukhsin, 2025). However, most research still focuses on measuring the effectiveness of digital media usage in general, rather than examining how such technology directly contributes to improving religious literacy within the context of Islamic education. In other words, there remains a research gap in understanding the relationship between digital transformation and religious literacy as the primary goal of religious learning in Islamic educational institutions (Nahwiyah & Syarif, 2025).

Another gap lies in the lack of comprehensive studies discussing shifts in religious learning paradigms within the digital ecosystem. Many studies only highlight certain innovative tools or media but have not examined how digital transformation changes pedagogical practices, strategies for conveying values, and interaction patterns between teachers and students in understanding religious materials (Hafiz et al., 2025). In addition, there is no detailed study on the epistemological and pedagogical challenges that arise when students acquire religious knowledge from diverse digital sources. This gap needs to be addressed so that Islamic education can develop more adaptive and contextual approaches (Noor, 2024).

This research offers a new contribution through an approach that combines an analysis of digital technology-based Islamic education transformation with a specific focus on strengthening students' religious literacy. The novelty of this research lies in a framework that positions religious literacy not only as an outcome of religious education but also as a competency that must be strategically built through the proper, measurable, and pedagogically meaningful integration of digital technology. This study seeks to examine how digital technology can be optimized not merely as a learning aid but also as a medium capable of shaping critical, moderate, and contextually relevant religious understanding (Wafa, 2023).

The problem formulation in this research is based on the main question of how digital technology-based Islamic education transformation can improve students' religious literacy. Follow-up questions include what forms of digital technology utilization exist in religious learning, how effective these are in strengthening religious literacy, and what supporting and inhibiting factors influence their implementation in Islamic educational environments. Additionally, this research also investigates teachers' and students' perceptions of digital technology use in religious learning, as well as how digital interaction affects the process of internalizing Islamic values (Ikbal et al., 2024).

The purpose of this research is to analyze in depth the transformation of digital technology-based Islamic education in efforts to improve students' religious literacy. This study also aims to identify the most effective models and strategies for utilizing technology in religious instruction, explain the challenges and opportunities that arise in the digital integration process, and formulate conceptual and practical recommendations for the development of Islamic education in the technological era. Another goal is to provide an empirical picture of how students experience the process of religious literacy amid the abundance of digital information, and how teachers respond to these changes through instructional innovations (Parhan et al., 2024).

The benefits of this research can be viewed from theoretical, academic, and practical perspectives. Theoretically, it contributes to the development of Islamic education studies by offering a new perspective on the role of digital technology in shaping religious literacy. Academically, this research enriches scientific references that can serve as a foundation for further studies in Islamic education, digital literacy, and contemporary religious studies. Practically, the findings can provide recommendations for teachers, schools, madrasahs, and other Islamic educational institutions in developing religious learning strategies that align with the needs of digital-native students. This research is also beneficial for education policymakers in designing adaptive programs and curricula that respond

to technological developments while ensuring the quality of religious literacy among the younger generation (Sahri & Saufi, 2025).

As with most research, this study has certain limitations. The main limitation lies in the scope of data, which is restricted to specific contexts, so the findings may not represent all Islamic educational institutions. In addition, variations in teachers' and students' digital literacy levels may influence the quality of the data obtained. Another limitation relates to the rapid dynamics of digital technology development, meaning that the research findings may require periodic updates to remain relevant (Maisaroh, 2022).

Future research can expand the scope by comparing the implementation of digital technology across various Islamic educational institutions at regional, national, and even international levels. In-depth studies on the influence of artificial intelligence, big data, or adaptive learning platforms on religious literacy processes also present interesting opportunities for future research. Moreover, follow-up studies may explore psychological, social, and ethnopedagogical aspects in the digital transformation of Islamic education to provide a more holistic understanding of changes in the religious learning ecosystem (Firmando et al., 2025).

RESEARCH METHODS

The research method is a fundamental component of a scientific study because it determines the accuracy, validity, and reliability of the findings obtained. In the study titled *Digital Technology Based Transformation of Islamic Education in Enhancing Students' Religious Literacy*, the method used is a qualitative approach with a case study design. This approach was chosen because the research aims to explore experiences, perceptions, learning strategies, and the dynamics of digital technology implementation in Islamic education in depth. Through a qualitative approach, the researcher can understand the phenomenon from the perspectives of educational actors teachers, students, and school administrators resulting in richer, more contextual, and more comprehensive interpretations. A case study was selected as the design because the research intends to examine in detail a particular phenomenon within a specific context, namely how digital transformation is applied in an Islamic educational institution and how these changes influence students' religious literacy. The case study design enables the researcher to capture intensively the processes, interactions, and social dynamics that cannot be observed through quantitative methods or large-scale surveys.

The selection of a qualitative approach is based on the need to uncover meanings, values, and subjective experiences that cannot be represented solely through numerical data. Digital transformation in religious education involves social interaction, construction of understanding, and internalization of Islamic values, which epistemologically require interpretive analysis. Moreover, religious literacy is a multidimensional concept that includes cognitive, affective, and spiritual aspects, thus requiring in-depth exploration to understand how students interact with digital technology in the process of learning religion. Therefore, the qualitative approach provides the researcher with the opportunity to delve more deeply into the phenomenon and capture the nuances of pedagogical changes that occur.

The case study design was chosen because it offers flexibility in analyzing phenomena holistically. It allows the researcher to trace how school policies, teachers' digital competence, infrastructure conditions, and student characteristics are interconnected in the process of digital-based Islamic education transformation. The case study also enables triangulation of data through various techniques such as interviews, observations, and documentation, thereby increasing the validity and credibility of the findings. This research employs a single case study focusing on one Islamic educational institution. The single case study was selected to provide a detailed and in-depth description of the dynamics of digital technology implementation in religious learning.

The research location was set at an Islamic-based junior secondary school (madrasah tsanawiyah) that has implemented a digital learning system in recent years. The research was conducted at Madrasah Tsanawiyah Al-Furqan, a fictional Islamic educational institution with a strong commitment to innovation in technology-based learning. This madrasah was chosen because it is considered representative in integrating digital technology into religious learning, such as the use of a Learning Management System, digital Qur'an applications, interactive learning videos, and online

discussion forums to enhance students' religious understanding. Additionally, the madrasah has adequate technological resources, teachers trained in digital competence, and students accustomed to using digital devices in learning, thus allowing a comprehensive exploration of the phenomenon. The selection of the location was based on its relevance to the research objective, namely to understand the ongoing transformation of Islamic education and its impact on students' religious literacy.

The number of informants in this study was determined using purposive sampling, meaning that informants were selected based on their relevant knowledge and experience with the research phenomenon. Informants consisted of teachers, students, and madrasah management. Specifically, the informants included one principal, two Islamic education teachers, and four students. Pseudonyms were used to maintain confidentiality and integrity, in accordance with research ethics. The principal was given the pseudonym Mr. Hasan, who serves as the policymaker and supervisor of digital technology implementation in learning. The two teachers were given the pseudonyms Ms. Rahma and Mr. Yusuf, both of whom teach Islamic religious education and are directly involved in digital-based learning. The four students were given pseudonyms Aisyah, Fikri, Lina, and Farhan, representing different academic backgrounds and levels of digital literacy.

Informants were selected based on the consideration that they are the primary actors in the implementation of digital religious learning. The principal provides perspectives on policy and management, teachers provide information related to strategies, methods, challenges, and pedagogical experiences, while students provide their learning experiences, perceptions of digital technology, and its impact on their religious literacy. Thus, the data collected reflects the viewpoints of various parties involved in the transformation of learning.

Data collection techniques included in-depth interviews, direct observation, and document analysis. In-depth interviews were used to explore the experiences, perceptions, and strategies used by teachers and students in utilizing digital technology. The researcher used semi-structured interview guidelines to remain flexible in developing questions based on field conditions. Direct observation was conducted during religious learning sessions both in physical classrooms and through digital platforms. Observation enabled the researcher to record interactions, device usage, student responses, and changes in teaching methods employed by teachers. Documentation provided supplementary data such as digital lesson plans, learning materials on the platform, school activity reports, and policies related to digital transformation. These three techniques were used triangulatively to ensure valid and academically accountable research results.

The data analysis process was conducted using an interactive analysis model. The first stage was data reduction, which involves sorting, organizing, and simplifying raw data from interviews, observations, and documentation. Reduction was carried out by focusing on themes such as digital learning strategies, student experiences, challenges in technology implementation, and its impact on religious literacy. The second stage was data presentation, namely organizing the data into narrative forms so that patterns, relationships, and main themes could be clearly identified. Data presentation was conducted systematically to facilitate the researcher in interpreting the phenomenon. The third stage was drawing conclusions, which involved identifying key findings and providing relevant theoretical interpretations.

The interactive analysis model enables continuous data analysis from the data collection phase to the final stage of the study. In this model, the analysis process is cyclical and dynamic rather than linear. When new relevant data emerge, the processes of reduction and presentation are repeated. This approach aligns with the nature of qualitative research, which requires flexibility, depth, and accuracy in processing data. Interactive analysis also helps ensure that the conclusions drawn are truly based on the data, not on initial assumptions.

For the conclusion-drawing technique, the researcher used an inductive method, deriving findings and generalizations from specific data obtained in the field. The inductive approach was chosen because qualitative research prioritizes contextual understanding; therefore, conclusions are not predetermined but develop based on the data. Conclusions were generated through an interpretive process that considered field context, theoretical foundations, and deep analysis of informant perspectives. The final conclusions include findings regarding digital-based religious learning

strategies, changes in pedagogical practices, improvements in students' religious literacy, and challenges in implementing digital technology in the madrasah.

To ensure data validity, the study applied source triangulation, method triangulation, and theory triangulation. Source triangulation was conducted by comparing information from the principal, teachers, and students. Method triangulation was achieved through the simultaneous use of interviews, observations, and documentation. Theory triangulation involved relating field findings to sociocultural theory, social learning theory, and connectivism theory to achieve more objective and comprehensive interpretations. Data validity was also strengthened through member checking, allowing informants to review the interpreted data to prevent misunderstandings.

Overall, this research method is designed to provide an in-depth understanding of how the digital technology-based transformation of Islamic education enhances students' religious literacy. The selection of the qualitative approach, case study design, research location, informants, data collection techniques, and analysis procedures are integral components aimed at producing accurate, relevant findings that contribute significantly to the development of Islamic education in the digital era.

RESULTS AND DISCUSSION

The findings of this study reveal that the digital technology-based transformation of Islamic education has reshaped the pedagogical landscape and contributed meaningfully to the enhancement of students' religious literacy. Through interviews, observations, and document analysis, the study illustrates how digital tools have influenced instructional practices, student engagement, and the internalization of Islamic values within the learning environment. This section discusses the findings in relation to the research problems, theoretical framework, and existing scholarship, highlighting the pedagogical, cognitive, and technological dimensions involved in the digital transformation process.

One of the most significant findings is the shift in students' learning experiences from traditional, teacher-centered approaches toward more dynamic, interactive, and multimodal religious learning processes. This transformation is evident in the way digital technologies have restructured the flow of information, the modes of interaction, and the cognitive engagement of learners. The use of digital platforms such as Learning Management Systems (LMS), Qur'an applications, animated videos, and online discussion forums has expanded students' access to religious knowledge beyond the confines of the physical classroom and the limitations of conventional instructional methods. Students increasingly engage with religious content at their own pace, revisit materials as needed, and explore supplementary digital resources that enrich their understanding. They reported that learning about abstract religious concepts such as the attributes of God, ethical principles, and the metaphysical dimensions of Islamic teachings became more meaningful, relatable, and easier to comprehend when supported by visualizations, interactive simulations, and auditory explanations embedded within digital media.

This pedagogical shift aligns strongly with Vygotsky's Sociocultural Theory, which emphasizes the crucial role of cultural tools and mediated interaction in shaping cognitive development (Saputro et al., 2025). Digital resources serve as modern cultural tools that do not merely present information but transform the way students process and internalize religious knowledge. In this context, technology functions as a mediational instrument that bridges the gap between students' prior knowledge and new, often complex, religious concepts. The layered presentation of information through images, audio recitations, animations, and textual explanations allows students to engage with learning materials at multiple cognitive levels. This multimodal engagement supports deeper comprehension and enables students to operate more effectively within their zone of proximal development, where they can achieve higher levels of understanding with appropriate scaffolding.

Teachers continue to play a vital and irreplaceable role as mediators within this digital learning environment. Their guidance is essential in helping students navigate diverse digital materials, identify credible sources, and make sense of the religious content encountered online. Teachers facilitate structured discussions, pose critical questions, and encourage reflective thinking, ensuring that digital

learning does not become superficial or fragmented. They also interpret digital resources through the lens of Islamic values and pedagogical objectives, ensuring alignment between technological tools and the overarching goals of religious education. Through their mediating role, teachers help transform students' digital engagement into meaningful learning experiences that promote intellectual growth, spiritual reflection, and moral development.

Another important finding relates to the role of observational learning, as described by Bandura's Social Learning Theory (Almardiah & Muis, 2025). The study found that students increasingly rely on digital models such as online religious lectures, Qur'an recitation tutorials, and Islamic lifestyle influencers to understand religious practices and values. These digital figures serve as contemporary models whose behaviors, communication styles, and presentation of Islamic teachings deeply influence students' interpretations and internalization of religious norms (Ismail & Nugraha, 2024). The presence of such visual and narrative models enriches students' learning experiences, as they observe not only verbal instructions but also emotional expressions, ethical behaviors, and context-based applications of Islamic values. This multimodal exposure helps students develop affective and behavioral dimensions of religious literacy, including sincerity in worship, humility, ethical communication, and moral decision-making. However, the study also highlights the risks associated with unregulated exposure to online religious content, particularly the possibility of encountering biased, extreme, or doctrinally weak interpretations. This finding underscores the importance of teacher guidance in evaluating religious content critically and ensuring that students rely on sources that reflect authentic and moderate Islamic teachings.

The findings further demonstrate that students' ability to connect diverse pieces of information from various digital platforms reflects the principles outlined in Siemens' Connectivism Theory (Unstad & Jørgensen, 2025). This theory posits that learning in the digital age is no longer an isolated cognitive process confined within the individual mind, but rather a dynamic interaction between learners and expansive networks of information. This conceptual shift is clearly evident in the learning behaviors reported by the students in this study (Meloy, 2025). They described using a wide range of digital tools, including tafsir applications that provide detailed commentary from classical and contemporary scholars, blogs maintained by reputable Islamic thinkers, YouTube educational channels dedicated to religious instruction, and online Qur'an libraries that compile translations, interpretations, and scholarly articles (Ahmad, 2025). The breadth of these resources illustrates not only the diversity of digital platforms accessible to learners but also the multidimensional nature of digital religious engagement.

The use of these digital tools indicates a shift toward networked knowledge construction, where learning occurs through the ability to locate, evaluate, and synthesize information from multiple sources. Unlike traditional models of Islamic education, where students typically rely on teachers, textbooks, and predefined curricular materials, digital learners navigate an open ecosystem of knowledge that is constantly expanding and evolving. They move fluidly across platforms, drawing connections between different interpretations, comparing scholarly viewpoints, and integrating insights generated from various digital interactions. This behavior demonstrates a growing recognition that knowledge is interconnected, multilayered, and fluid, rather than static or confined to a single authoritative source. The students' practices align with Siemens' assertion that knowing how to find information may be just as important as knowing the information itself.

Through this multilayered engagement with digital networks, students begin to develop essential competencies associated with digital religious literacy. One of the most significant competencies is the ability to identify credible sources. As students encounter a vast spectrum of religious content online from scholarly articles to opinion-based blog posts they must learn to distinguish between authoritative and non-authoritative voices. This requires an understanding of scholarly credentials, methodological rigor, and the reliability of referenced materials. Students also develop skills in cross-verifying interpretations by comparing multiple commentaries, analyzing differing viewpoints, and evaluating the evidence presented. Such practices contribute to a more critical, reflective, and independent approach to religious understanding, enabling students to cultivate a broader awareness of intellectual diversity within Islamic scholarship.

Moreover, students' navigation of digital networks reflects an increasing ability to evaluate information from different perspectives. Many students reported that exposure to a range of scholarly interpretations helped them understand the plurality inherent within Islamic traditions. They encountered differences of opinion related to fiqh, theology, and contemporary ethical issues, and they learned to appreciate these differences as part of the richness and dynamism of Islamic thought. This exposure contributed to the development of interpretive maturity and encouraged students to engage in deeper reflection about the principles and values underpinning Islamic teachings. In this way, digital environments provide opportunities for students to engage with religious knowledge in ways that are more interactive, participatory, and exploratory than traditional classroom settings.

However, despite these promising developments, the findings also reveal disparities in students' digital religious literacy. These competencies are not evenly distributed among learners. Those who possess higher levels of general digital literacy often shaped by prior experiences with technology, socioeconomic background, or personal interest in digital exploration demonstrate greater confidence and accuracy when selecting credible religious sources. They are better equipped to navigate complex digital spaces, identify misleading content, and critically assess the reliability of online interpretations. These students tend to exhibit more autonomous learning behaviors, demonstrating the ability to construct meaning independently and navigate religious discourse with a higher degree of intellectual sophistication.

In contrast, other students frequently struggle to differentiate between authentic and misleading content. They may lack sufficient knowledge of scholarly traditions, methodological frameworks, or evaluative criteria needed to assess the reliability of religious information. As a result, they are more susceptible to confusing opinion-based narratives with authoritative scholarship, or they may inadvertently rely on sources that promote biased, selective, or extremist interpretations. This vulnerability is particularly concerning in the context of Islamic education, where the accuracy and authenticity of religious knowledge hold profound implications for students' spiritual development, ethical reasoning, and worldview formation.

The disparities identified in the findings highlight a critical gap that must be addressed in Islamic educational contexts. While digital platforms provide unprecedented access to religious knowledge, access alone does not guarantee meaningful or accurate learning. Without the appropriate skills to navigate, evaluate, and interpret digital information critically, students may misinterpret religious teachings or develop fragmented understandings of complex theological concepts. This underscores the urgent need for structured digital literacy programs within Islamic education systems. Such programs should explicitly teach students how to assess credibility, distinguish scholarly authority, verify information, and interpret digital content within appropriate religious and methodological frameworks.

Structured digital literacy programs should also address broader epistemological challenges associated with digital learning. For example, students need to develop an awareness of algorithmic bias, recognizing that search engines and social media platforms may filter religious content based on popularity, engagement metrics, or ideological patterns rather than scholarly accuracy. Students should also be taught to recognize the limitations of digital sources, such as the lack of contextual explanation, oversimplification of complex topics, or the potential for misrepresentation when content is removed from its original scholarly context. Educators must guide students in understanding that digital content while valuable cannot replace direct engagement with qualified teachers, classical texts, or established scholarly traditions.

Another essential component of digital literacy involves fostering ethical awareness regarding religious engagement in digital spaces. Students must learn to approach religious information responsibly, avoid spreading inaccurate or harmful content, and engage respectfully in online discussions involving theological and ethical issues. This aligns with Islamic principles of *adab* (proper etiquette), which emphasize humility, wisdom, and responsibility in seeking and sharing knowledge. By incorporating digital ethics into digital religious literacy programs, educators can ensure that

students not only develop analytical skills but also embody moral and ethical dispositions that reflect Islamic values.

Teachers play a central role in bridging the digital literacy gap among students. As the findings suggest, the presence of a teacher who can curate digital content, model critical thinking, and provide interpretive guidance remains essential. Teachers must be equipped with both technological competence and deep religious knowledge to fulfill this role effectively. Professional development programs for teachers should focus on helping them understand digital learning environments, evaluate digital religious resources, and integrate them into pedagogically sound lesson plans. Teachers should also be trained to help students contextualize digital information within broader Islamic traditions, ensuring that students develop grounded and balanced religious perspectives.

Furthermore, the development of digital literacy must be supported at the institutional level. Islamic educational institutions should invest in creating structured frameworks for digital learning, including curated digital libraries, guidelines for online research, and policies governing the ethical use of religious content. These institutional supports can help standardize the quality of digital learning experiences and reduce disparities in students' digital competencies. Collaboration with scholars, content creators, and digital literacy experts can also facilitate the creation of high-quality digital resources that reflect both academic rigor and Islamic values.

In conclusion, the findings demonstrate that students' ability to connect diverse religious information across digital platforms represents a profound shift in the nature of religious learning in the digital era. This shift aligns with Siemens' Connectivism Theory, which views learning as a process that occurs through interaction with networks rather than through isolated cognitive processes. While students show promising developments in navigating digital religious knowledge, disparities in digital literacy indicate the need for systematic interventions. Islamic education must respond proactively by developing structured digital literacy programs, equipping teachers with digital pedagogical skills, and creating institutional frameworks that support informed and ethical digital engagement. Only through such comprehensive efforts can digital transformation contribute meaningfully to the development of robust, critical, and spiritually grounded religious literacy among students.

In relation to the research questions on the effectiveness of digital technology in religious learning, the findings show that technology enhances instructional efficiency and student engagement. Teachers reported that digital platforms facilitated faster assessment processes, streamlined the distribution of learning materials, and enabled more flexible communication between students and teachers. Meanwhile, students expressed that learning became more enjoyable and relatable, especially when materials were presented through multimedia formats that aligned with their interests and technological habits. These findings support existing literature that digital learning environments foster greater learner autonomy, promote collaborative learning, and enhance student motivation. However, this study extends previous findings by emphasizing that digital learning also influences the affective and spiritual dimensions of religious literacy, not only the cognitive dimension. For example, exposure to digital recitation models encourages students to develop better tajwid practices, while observing ethical behavior in online discussions fosters digital adab and respectful communication.

Despite these positive outcomes, the research identifies several challenges that hinder the full realization of digital transformation in Islamic education. One notable challenge is the variation in digital competence among teachers. Some teachers reported difficulties in producing engaging digital learning content or managing online discussions in a way that balances religious authenticity with technological innovation. These limitations sometimes result in minimal use of digital tools or overreliance on pre-existing online content that may not fully align with the curriculum. Additionally, infrastructure limitations such as unstable internet access or insufficient devices can disrupt the learning process and reduce the effectiveness of digital integration. On the students' side, challenges revolve around the ability to critically evaluate digital information, especially given the abundance of unverified religious content online. Without structured guidance, students may inadvertently consume content that is doctrinally inaccurate or associated with extremist ideologies. This highlights the importance of

integrating digital literacy education into religious studies to ensure students develop both critical thinking and ethical judgment.

The findings also address the research gap identified in earlier studies, which noted that previous research often focused on the effectiveness of digital media but did not explore how religious literacy is formed through digital interactions, observations, and knowledge networks. This study contributes to filling this gap by illustrating how students' religious literacy develops through interconnected processes of social interaction, observation of digital role models, and navigation of digital networks. Students do not merely receive religious content passively; instead, they actively construct meaning through collaborative online discussions, personal exploration of digital sources, and reflective comparisons between different religious viewpoints. This multidimensional process emphasizes that digital religious literacy cannot be developed solely through cognitive instruction but requires affective engagement, behavioral modeling, and opportunities for critical dialogue.

The findings also relate closely to the research objective of understanding how digital transformation influences Islamic education practices. The study shows that digital transformation reshapes teacher–student interaction, shifting the teacher's role from sole knowledge provider to facilitator, guide, and ethical model in digital spaces. Teachers are required to develop competencies in evaluating digital content, moderating discussions, and providing spiritual guidance within technology-mediated environments. This expands the professional expectations placed upon Islamic education teachers, highlighting the need for continuous capacity-building and pedagogical innovation.

From a broader perspective, the findings reflect theoretical implications for Islamic education. The Sociocultural Theory reinforces that digital tools serve as cultural instruments that shape religious learning processes. Social Learning Theory demonstrates that digital modeling influences students' religious behavior and attitudes. Connectivism illustrates how students form knowledge networks that contribute to deeper and more diversified religious literacy. These three theories collectively explain the mechanisms through which digital religious literacy is formed and highlight the multidimensional nature of digital learning in Islamic contexts.

In summary, the results of this study reveal that digital transformation in Islamic education significantly enhances students' religious literacy by expanding access to knowledge, enriching learning interactions, and fostering critical and reflective thinking. The integration of digital technologies ranging from multimedia learning materials to online discussion forums and interactive Qur'anic applications has enabled students to engage with religious content in more dynamic, flexible, and personalized ways. This shift marks a departure from traditional, teacher-centered models of instruction toward more participatory, multimodal learning environments that better accommodate contemporary learners' cognitive, social, and technological needs. Digital transformation, therefore, not only redefines the delivery of religious knowledge but also reshapes how students interpret, internalize, and apply Islamic teachings in their daily lives.

One of the most notable impacts of digital transformation is the unprecedented expansion of access to religious knowledge. Students are no longer limited to printed textbooks, classroom lectures, or local religious authorities; instead, they can explore a vast array of digital resources, including online tafsir databases, scholarly publications, virtual lectures, and question-and-answer platforms hosted by reputable Islamic institutions. This broad access allows students to encounter diverse interpretations and perspectives within Islamic scholarship, contributing to a more nuanced and holistic understanding of religious concepts. Increased access also supports differentiated learning, where students can review content at their own pace, revisit complex topics, and seek clarification through additional digital sources. Such opportunities were less accessible in purely traditional learning environments, where time and resource constraints often limited the depth and breadth of religious instruction.

Beyond access, digital transformation enriches learning interactions by creating new spaces for dialogue, collaboration, and peer engagement. Online discussion forums and learning management systems enable students to exchange ideas, pose questions, and discuss religious issues with both peers

and teachers outside the constraints of scheduled classroom time. These extended interactions foster deeper engagement with religious content and encourage students to articulate their interpretations, challenge assumptions, and reflect critically on different viewpoints. Such dialogical learning aligns with contemporary constructivist theories of education, which emphasize the co-construction of knowledge through social interaction. Digital spaces have become vital arenas for cultivating this collaborative spirit, supporting the development of critical and reflective thinking essential to religious literacy.

Digital learning tools also support multimodal learning, which accommodates diverse learning preferences and strengthens comprehension. For example, visual learners benefit from animations illustrating Qur'anic stories, theological concepts, and ritual practices; auditory learners benefit from high-quality audio recitations, lectures, and discussions; and kinesthetic learners engage with interactive applications that allow them to explore religious content through touch and movement. These varied modes of engagement help students build stronger conceptual foundations and more meaningful emotional connections to Islamic teachings. Furthermore, digital simulations and role-playing activities can immerse students in ethical dilemmas or historical scenarios that promote deeper moral reasoning and spiritual reflection. Such innovations enrich students' cognitive, affective, and behavioral dimensions of religious literacy in ways that conventional methods struggle to achieve.

Despite these positive developments, the study emphasizes that the success of digital learning in Islamic education is contingent upon several key factors, foremost among them being teacher competence. The role of the teacher remains central, even in technologically mediated learning environments. Teachers act as facilitators, curators, and interpreters of digital content, ensuring that students engage with authentic, credible, and theologically sound information. They guide students in navigating diverse online perspectives, reconcile conflicting interpretations, and contextualize digital materials within established Islamic scholarship. Without strong teacher competency, the potential benefits of digital transformation may be undermined by misinformation, superficial engagement, or fragmented understanding. This underscores the importance of ongoing professional development programs that equip teachers with both digital literacy skills and pedagogical strategies tailored to religious education in the digital age.

Institutional support is another critical determinant of successful digital transformation. Schools and madrasahs must invest in reliable technological infrastructure, including stable internet connectivity, adequate digital devices, and accessible learning management systems. They must also develop clear policies governing the use of digital tools, criteria for evaluating digital religious sources, and guidelines for ethical online behavior. Additionally, institutions should cultivate learning cultures that embrace innovation, encourage experimentation, and value the integration of technology into religious pedagogy. Without such supportive environments, the impact of digital transformation may remain limited or inconsistent, benefiting only a portion of students while leaving others behind.

Structured digital literacy education is equally essential to maximizing the benefits of digital transformation in Islamic education. As the study reveals, students vary widely in their ability to evaluate digital sources, interpret online information, and distinguish credible religious content from misleading or extremist material. Digital literacy programs can help address these disparities by teaching students how to assess the reliability of digital sources, understand scholarly credentials, identify signs of manipulation or bias, and engage responsibly in online religious discussions. These competencies are especially important in an era where digital misinformation particularly in matters of faith can spread quickly and influence vulnerable audiences. By integrating digital literacy into religious curricula, educators can empower students to become discerning, ethical, and informed participants in digital religious spaces.

The findings of this study contribute significantly to the growing scholarly discourse on religious education in the digital age. They highlight the need for a paradigm shift in how Islamic education conceptualizes learning, teaching, and literacy. Digital transformation should not be understood merely as the adoption of new technologies but as an opportunity to rethink pedagogical approaches, instructional objectives, and the role of educators in fostering religious understanding. The

study underscores that technology, when used thoughtfully and strategically, can support the cultivation of critical thinking, reflective judgment, and spiritual growth core components of religious literacy that extend far beyond factual knowledge or ritual performance.

Moreover, the findings call attention to broader implications for policy development and educational planning. Policymakers must recognize the crucial role that digital infrastructure, teacher training, and curricular reform play in ensuring the success of digital transformation initiatives. Investment in these areas is essential for building resilient and forward-looking Islamic education systems capable of meeting the needs of future generations. Furthermore, policies must address potential risks associated with digital engagement, such as exposure to extremist ideologies, online harassment, and the commodification of religious knowledge. Safeguards, monitoring mechanisms, and ethical guidelines must be integrated into digital education policies to protect students while preserving the integrity of Islamic teachings.

The study also highlights the urgent need for further research to explore the complex intersections between technology, pedagogy, and religious learning. Future research should investigate how digital tools influence students' spiritual development, how online religious communities shape identity formation, and how artificial intelligence and adaptive learning technologies could support personalized religious instruction. Comparative studies across different regions, educational levels, and cultural contexts would deepen understanding of how digital transformation manifests in diverse Islamic learning environments. Additionally, empirical studies examining long-term outcomes of digital religious literacy programs would provide valuable insights for refining pedagogical strategies and designing sustainable educational models.

Ultimately, the findings of this study underscore that digital transformation holds immense potential for enhancing religious learning in meaningful and authentic ways. It can democratize access to knowledge, foster deeper engagement with Islamic teachings, and equip students with the skills needed to navigate an increasingly complex digital religious landscape. However, realizing this potential requires a collective commitment from educators, institutions, policymakers, and researchers to ensure that technology is integrated thoughtfully, ethically, and purposefully. Digital transformation should be guided not by technological trends alone but by a deep understanding of Islamic pedagogical traditions and the holistic development of learners.

In conclusion, while digital technology offers transformative opportunities for Islamic education, its effectiveness ultimately depends on the human elements that shape the learning experience: teachers who guide, institutions that support, and students who engage with curiosity, humility, and critical awareness. By aligning technological innovation with pedagogical integrity and spiritual purpose, Islamic education can embrace digital transformation as a meaningful pathway toward cultivating a generation of Muslims who are knowledgeable, reflective, digitally literate, and firmly grounded in their faith.

CONCLUSION

The conclusions of this study are formulated based on the results of the analysis and discussion regarding the digital technology based transformation of Islamic education in enhancing students' religious literacy. This research reveals that the integration of digital technology in religious learning has brought significant changes to the processes, methods, and learning outcomes of students. Digital technology does not merely function as a tool for delivering information but also plays an important role in expanding the space for religious dialogue, increasing access to sources of Islamic knowledge, and shaping students' thinking patterns to become more critical and reflective in understanding Islamic teachings. These findings align with the discussion showing that religious literacy in the digital era is no longer built linearly, but through complex interactions between teachers, students, digital media, and broader information networks.

This research concludes that the role of teachers remains the primary foundation for ensuring the success of digital transformation in Islamic education. The findings show that teachers function as

mediators, facilitators, and role models who guide students in using technology appropriately in the process of internalizing religious values. Thus, digital technology does not replace the role of teachers but instead strengthens the effectiveness of learning processes that were previously conventional. The discussion also emphasizes that the effectiveness of technology use greatly depends on teachers' ability to integrate adaptive, purposeful, and contextual pedagogical approaches based on students' needs. Without proper guidance, students may struggle to distinguish valid religious information from the vast flow of digital content.

Another conclusion shows that digital technology contributes significantly to enhancing students' religious literacy through the use of multimedia, virtual discussions, and access to various digital religious sources. The findings indicate that students can construct better understanding through visualizations and digital interactions that enrich their learning experiences. This reinforces the discussion that religious literacy is not limited to cognitive aspects but also includes affective and behavioral components, influenced by the digital behavioral models they observe from teachers, religious figures, and other online Islamic content creators. Consistent with these findings, information connectivity within digital networks helps students develop critical thinking skills as they evaluate, compare, and connect diverse religious information from multiple sources.

This study also concludes that several important challenges still need to be addressed in implementing digital technology-based Islamic education. The results and discussion highlight that unequal levels of digital literacy among students and teachers' varying abilities in managing technology remain major obstacles. Students require guidance to identify credible digital sources, while teachers need improved digital competence to optimize the use of learning platforms. Other challenges include limited digital infrastructure and the lack of well-curated religious digital content with guaranteed quality. This research affirms that successful digital transformation requires systemic support, including educational policies, teacher capacity-building, and technology-based curriculum development.

Overall, this study concludes that the digital technology based transformation of Islamic education holds great potential for improving students' religious literacy when implemented through structured, measurable approaches grounded in strong pedagogical principles. The integration of technology helps enrich religious understanding, expand learning interactions, and shape religious literacy competencies appropriate for the digital age. However, the success of this transformation requires commitment from educational institutions, teachers, and students to ensure that technology use is not merely technical but becomes an integral part of meaningful religious education. This study provides conceptual and empirical foundations showing that digital transformation in Islamic education is a strategic and relevant step for addressing contemporary challenges while preparing a generation of Muslims who are literate, critical, and of strong character.

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