

MADRASAH DIGITAL TRANSFORMATION AND THE DEVELOPMENT OF DIGITAL RELIGIOUS LITERACY

Imron Rosady*¹, Sarwan²
Universitas Islam Negeri Kiai Haji Achmad Siddiq Jember, Indonesia
e-mail: imron.rosyadi@uinkhas.ac.id

DOI: <http://doi.org/10.69552/mumtaz.v6i2.3903>

Received: July 09, 2026	Revised: August 09, 2026	Accepted: August 23, 2026	Published: August, 2026
----------------------------	-----------------------------	------------------------------	----------------------------

*Corresponding author

Abstract

This study examines the forms of digital transformation at MAN 2 Jember and their contribution to students' digital religious literacy. Using a qualitative descriptive case-study design, the research was conducted from July to September 2025. It involved seven purposively selected informants: the head of the madrasah, vice principal for curriculum affairs, Islamic Education teacher, ICT teacher, e-learning operator, Islamic extracurricular supervisor, and an active student. Data were collected through semi-structured interviews, participant observation, and documentation analysis, then analyzed using the Miles, Huberman, and Saldaña interactive model. The findings show that the madrasah integrated Learning Management Systems, Google Classroom, E-Raport, digital da'wah platforms, and religious literacy programs, including Student Islamic Podcasts and the One Day One Ayat Challenge. These initiatives supported students' ability to access, evaluate, interpret, and communicate Islamic knowledge critically and responsibly in digital environments. The originality of this study lies in the concept of digital spiritualization, which positions technology as a medium for faith formation, ethical awareness, and religious engagement. This study contributes a contextual framework and practical guidance for integrating technological innovation with Islamic values in contemporary madrasah education.

Keywords: *Digital Transformation; Digital Religious Literacy; Islamic Education; Madrasah; Digital Spiritualization.*

Abstrak

Penelitian ini mengkaji bentuk transformasi digital di MAN 2 Jember serta kontribusinya terhadap literasi keagamaan digital siswa. Penelitian ini menggunakan desain studi kasus deskriptif kualitatif dan dilaksanakan pada Juli hingga September 2025 dengan melibatkan tujuh informan yang dipilih secara purposif, yaitu kepala



madrasah, wakil kepala bidang kurikulum, guru Pendidikan Agama Islam, guru TIK, operator e-learning, pembina ekstrakurikuler keagamaan, dan seorang siswa aktif. Data dikumpulkan melalui wawancara semi-terstruktur, observasi partisipan, dan analisis dokumentasi, kemudian dianalisis menggunakan model interaktif Miles, Huberman, dan Saldaña. Hasil penelitian menunjukkan bahwa madrasah mengintegrasikan Learning Management System, Google Classroom, E-Raport, platform dakwah digital, serta program literasi keagamaan, termasuk Student Islamic Podcasts dan One Day One Ayat Challenge. Inisiatif tersebut mendukung kemampuan siswa untuk mengakses, mengevaluasi, menafsirkan, dan mengomunikasikan pengetahuan Islam secara kritis serta bertanggung jawab dalam lingkungan digital. Kebaruan penelitian ini terletak pada konsep spiritualisasi digital, yang menempatkan teknologi sebagai media pembentukan keimanan, kesadaran etis, dan keterlibatan keagamaan. Penelitian ini berkontribusi berupa kerangka kontekstual dan panduan praktis untuk mengintegrasikan inovasi teknologi dengan nilai-nilai Islam dalam pendidikan madrasah kontemporer.

Kata Kunci: *Transformasi Digital; Literasi Keagamaan Digital; Pendidikan Islam; Madrasah; Spiritualitas Digital.*

INTRODUCTION

The rapid advancement of digital technology has transformed educational systems worldwide, including Islamic educational institutions such as madrasahs (Maryati et al., 2023; Santosa & Jazuli, 2022). Digital learning platforms, artificial intelligence, social media, mobile applications, and cloud-based systems have reshaped how knowledge is produced, disseminated, and accessed. For madrasahs, this transformation entails more than adopting new devices or applications. It requires integrating technological innovation with the preservation of Islamic identity and values (Juhairiah et al., 2024; Taufik et al., 2024). Digital transformation in madrasahs therefore encompasses learning activities, institutional management, communication, assessment, and the cultivation of religious values (Khoirohnissah, 2023; Mahsusi et al., 2024). Recent evidence from Indonesia also shows that technology-oriented management strategies can strengthen the quality and digital capacity of madrasahs, although their implementation requires continuous evaluation (Haddade et al., 2024).

At MAN 2 Jember, digital transformation has been initiated through Learning Management Systems, e-learning platforms, digital assessment systems, social media-based da'wah programs, and digital religious literacy activities (Mashudi & Hilman, 2025; Sanusi, 2024). These initiatives have created a learning environment in which students increasingly encounter religious knowledge through both institutional and online sources. However, the availability of digital facilities and

religious content does not automatically demonstrate that students possess adequate digital religious literacy. It is therefore necessary to examine how students access, assess, interpret, and use religious information when they encounter diverse and sometimes conflicting religious content in digital spaces.

The integration of technology into Islamic education has attracted increasing scholarly attention because it can expand access to learning resources, improve engagement, and support literacy development (Nassar & Khattab, 2024; Yunara & Yanti, 2025; Yusra & Sesmiarni, 2025). In Islamic educational settings, online learning platforms, mobile Qur'anic applications, virtual religious discussions, and digital da'wah media can broaden opportunities for religious learning (Fatmawati, 2025; Siskandar, 2020). Social media, multimedia resources, artificial intelligence, and other digital platforms may also facilitate the dissemination of Islamic values and learning materials (Trimulyo et al., 2026). Similarly, digital pedagogies, Islamic podcasts, digital Qur'an-learning platforms, and blended-learning approaches can promote participation, conceptual understanding, and spiritual engagement when they are pedagogically guided (Murad, 2026; Mursalova, 2026; Ramli et al., 2026; Zakariyah et al., 2025).

However, technology integration also generates urgent educational challenges. Studies have identified inadequate infrastructure, unequal access to digital resources, limited teacher competence, and varying levels of student digital literacy as persistent barriers (Restalia & Khasanah, 2024; Syukri & Rosyad, 2025). More importantly, the rapid circulation of religious content may expose students to misinformation, decontextualized interpretations, provocative narratives, and sources whose credibility is difficult to assess (Fahm, 2025; Trimulyo et al., 2026). Research on online religious learning further demonstrates that digital environments can reshape religious authority, as learners increasingly encounter and evaluate religious knowledge beyond conventional institutional settings (Berger & Golan, 2024). Therefore, technological adoption without ethical guidance, critical evaluation skills, and value-based learning may expand access to information without necessarily improving meaningful religious understanding.

In Indonesia, previous research on madrasah digitalization has mainly examined technology adoption, digital learning management, teacher readiness, institutional modernization, students' motivation, digital competence, and character development (Mahsusi et al., 2024; Putra et al., 2026; Sugianto, 2024; Wedi et al., 2025). Other studies have stressed teacher guidance in promoting responsible digital religious literacy and the importance of religious ethics in using digital media for da'wah and Islamic learning (Armita, 2025; Sugihyono, 2025). Although these studies provide valuable insights, their primary emphasis on

technological use, pedagogical delivery, or character formation tends to leave several issues insufficiently connected, including students' ability to verify religious information, their religious attitudes and practices in digital spaces, and the institutional conditions that shape these capacities. The literature therefore needs a more integrated account of how school-level digital transformation influences religious learning and conduct.

To address this limitation, this study defines digital religious literacy as students' capacity to access religious information through digital media, evaluate the credibility and relevance of its sources, interpret it in accordance with sound religious understanding, and enact ethical and responsible religious practices in digital spaces. This study further uses digital spiritualization as an analytical concept referring to the process through which digital technologies are purposefully integrated into madrasah learning and culture to support religious understanding, moral reflection, and responsible online conduct. This conceptualization is informed by research on digital religion, which emphasizes that emerging technologies reshape religious communication, authority, and practice rather than merely serving as neutral channels of information (Campbell & Evolvi, 2020). Accordingly, the study examines digital religious literacy through the interconnected dimensions of access, critical evaluation, interpretation, ethical awareness, and religious practice.

This study investigates how digital transformation at MAN 2 Jember contributes to the development of students' digital religious literacy. It seeks to: (1) describe the forms and strategies of digital transformation implemented at MAN 2 Jember; (2) analyze how these initiatives influence students' access to, evaluation of, interpretation of, and practice of religious knowledge in digital environments; and (3) identify the institutional, pedagogical, and individual factors that support or hinder this process. By positioning digital transformation as an educational and religious process rather than mere technological modernization, the study is expected to contribute a contextual framework for developing technologically competent, religiously literate, critically aware, and ethically responsible students in Islamic educational institutions.

RESEARCH METHODS

This study employed a qualitative descriptive case-study design to examine how digital transformation at MAN 2 Jember contributes to the development of students' digital religious literacy. This design was selected because the study investigates a contemporary phenomenon within its real educational setting and seeks to understand the perspectives, practices, and experiences of multiple

stakeholders. The analysis focused not only on the availability of digital technology but also on how digital transformation influenced students' religious understanding, critical evaluation of online religious information, ethical awareness, and religious practices in digital environments. This approach is consistent with studies that emphasize the importance of understanding educational digital transformation and technology-mediated religious learning from the perspectives of participants and institutional practices (Mursalova, 2026; Wedi et al., 2025).

The study was conducted at MAN 2 Jember, East Java, Indonesia, from July to September 2025. The site was purposively selected because it had implemented a range of digital transformation initiatives while maintaining its commitment to Islamic values and character education. These initiatives included Learning Management Systems, e-learning platforms, digital assessment systems, online religious learning activities, and social media-based da'wah programs. The setting provided an appropriate context for examining how institutional digital transformation was connected to students' digital religious literacy and religious conduct in both school-based and online learning environments.

Participants were selected through purposive sampling because they possessed direct knowledge of, or involvement in, the madrasah's digital transformation initiatives. Selection was based on participants' strategic roles in digital policy, curriculum implementation, religious education, digital learning administration, extracurricular programs, and student participation. Seven key informants were included to represent institutional, pedagogical, technical, and student perspectives. This diversity of roles enabled the study to compare policy intentions, implementation practices, and students' experiences across the digital transformation process.

Table 1. Research Informants

Informant code	Position or role	Role in the study	Reason for selection
IF1	Head of Madrasah	Main policymaker and decision-maker for digital transformation	Possessed strategic insight into digital policy and the integration of religious values at MAN 2 Jember
IF2	Vice Principal for Curriculum Affairs	Curriculum manager and implementer of digital learning innovation	Directly involved in designing and implementing the digital-based curriculum
IF3	Islamic Education teacher	Implementer of digital learning integrated with Islamic values	Understood how religious values were incorporated into digital learning media

IF4	ICT teacher	Facilitator for teachers and students using educational technology	Had technical expertise in managing digital learning platforms and the LMS
IF5	E-learning operator	Administrator of the madrasah's digital learning system	Managed digital learning operations and related administrative data
IF6	Islamic extracurricular supervisor	Adviser for digital-based religious activities	Supported religious values through digital religious programmes
IF7	Active student	Participant in digital religious learning activities	Represented students' experiences of using technology to develop digital religious literacy

Data were collected through semi-structured in-depth interviews, participant observation, and documentation analysis. Interviews explored four themes: forms of digital transformation; the use of digital technology in religious learning; changes in students' digital religious literacy and religious attitudes; and factors that supported or hindered implementation. Interviews were conducted face-to-face and, when necessary, through digital communication media. With participants' consent, interviews were audio-recorded and transcribed verbatim. Participant observation was conducted in classrooms, religious learning sessions, digital literacy activities, and extracurricular religious programs. Virtual observation focused on Learning Management Systems, Google Classroom, digital Qur'an applications, madrasah social media accounts, Islamic podcasts, online da'wah activities, and student-generated religious content. These observations enabled the researchers to compare participants' accounts with actual practices in technology-supported learning environments (Ramli et al., 2026; Wedi et al., 2025).

Documentation analysis complemented the interview and observation data. The documents included digital transformation policies, curriculum documents, digital-learning guidelines, LMS archives, students' digital religious literacy projects, records of online religious activities, social media publications, digital da'wah content, and official reports on digital learning implementation. These materials were examined to identify how digital transformation was institutionalized and how religious literacy activities were embedded in the madrasah's educational ecosystem.

The data collection and analysis were guided by three analytical dimensions: institutional digital transformation, digital religious literacy, and the integration of Islamic values into digital educational practices. Digital religious literacy was assessed qualitatively through evidence from interview accounts, observed

practices, and relevant documents. The assessment did not use numerical scores. Instead, the indicators were used to identify patterns of change, participant perceptions, and concrete examples of students' practices before, during, and after their engagement in digital religious learning activities.

Table 2. Qualitative Indicators for Assessing Digital Religious Literacy and Attitudes

Analytical dimension	Indicator	Observable or reportable evidence
Institutional digital transformation	Digital infrastructure and access	Availability and use of the LMS, internet access, e-learning platforms, digital assessment, and digital religious-learning facilities
Institutional digital transformation	Leadership and policy support	School policies, curriculum integration, teacher support, training, monitoring, and institutional programmes related to digital learning
Access to digital religious information	Ability to locate and use religious information	Students' use of credible websites, digital Qur'an applications, online learning platforms, podcasts, and school-managed religious content
Critical evaluation of religious information	Ability to verify source credibility	Students' practices of checking the author, institution, evidence, religious references, and consistency of online religious content before accepting or sharing it
Interpretation of religious information	Ability to understand content contextually	Students' capacity to relate digital religious content to Islamic teachings, teacher guidance, reliable references, and the learning context
Ethical digital behaviour	Responsible conduct in digital spaces	Careful sharing of religious content, respectful online communication, avoidance of harmful or provocative content, and protection of personal and institutional privacy
Religious attitudes	Religious responsibility and self-control	Students' awareness of the moral consequences of online activity, discipline in using digital media, and willingness to avoid misleading religious content
Religious attitudes	Respect and moderation	Students' respectful responses to religious differences, rejection of hate speech, openness to clarification, and avoidance of intolerant online behaviour
Religious practice	Application of religious values in digital activities	Use of digital media to support worship, religious learning, da'wah, positive peer interaction, and constructive religious participation

Supporting and inhibiting factors	Conditions affecting implementation	Availability of facilities, teacher competence, parental support, student motivation, digital access, internet quality, and risks of misinformation
-----------------------------------	-------------------------------------	---

Data analysis followed the interactive model proposed by Miles, Huberman, and Saldaña (2014), consisting of data condensation, data display, and conclusion drawing and verification. First, the researchers read the interview transcripts, observation notes, and documents repeatedly to become familiar with the data. Second, meaningful data segments were coded using both the predetermined analytical dimensions and codes that emerged from participants' accounts. Third, related codes were organized into themes concerning institutional digital transformation, access to religious information, source evaluation, interpretation, ethical awareness, religious attitudes, religious practices, and implementation challenges. The themes were then reviewed across data sources to identify convergences, differences, and contextual explanations. This systematic thematic procedure was used to ensure that the findings were grounded in the data and supported by a transparent coding process (Braun & Clarke, 2021; Kiger & Varpio, 2020).

Trustworthiness was established through triangulation of data sources and methods, prolonged engagement in the research setting, member checking with key informants, and an audit trail documenting the stages of data collection and analysis. Credibility was strengthened by comparing interview accounts with observation records and documentary evidence. Transferability was supported through detailed descriptions of the setting, participants, digital programs, and analytical context. Dependability and confirmability were enhanced by retaining records of coding decisions, thematic development, and the relationship between interpretations and supporting empirical evidence. These procedures follow established guidance for rigorous and transparent thematic analysis (Nowell et al., 2017) and are consistent with qualitative studies of digital transformation in Islamic educational settings (Wedi et al., 2025; Zakariyah et al., 2025).

All procedures followed ethical research principles. Participants received information about the study's purpose, their rights as participants, and the confidentiality procedures before data collection began. Written and verbal consent was obtained from all informants. Participants' identities were anonymized through informant codes, and the data were used exclusively for academic purposes and stored securely throughout the research process. Through these procedures, the study sought to produce credible and contextually rich findings regarding the

relationship between madrasah digital transformation and the development of students' digital religious literacy.

RESULTS AND DISCUSSION

Results

Digital Transformation Practices at MAN 2 Jember

The findings show that digital transformation at MAN 2 Jember involves more than adopting educational technology. It represents an institutional process that integrates managerial, pedagogical, administrative, and religious dimensions. Evidence from interviews, observations, and institutional documents indicates that the madrasah has incorporated digital technology into learning management, administrative services, internal communication, assessment, and religious literacy programs. This integration reflects an institutional effort to respond to digital change while maintaining Islamic educational values.

The Learning Management System, Google Classroom, and E-Raport constitute the main digital infrastructure supporting daily educational activities. These platforms enable teachers and students to access learning materials, submit assignments, monitor academic progress, and conduct online assessments. Observations showed that the platforms were used not only during classroom instruction but also in extracurricular and religious activities. This pattern indicates that digital technology has become part of the madrasah's broader learning environment rather than a tool used only for administrative purposes.

The Head of Madrasah explained that digital transformation was guided by an educational vision that combines technological competence with Islamic morality and ethics. He stated:

"We use technology as a medium to instill Islamic values. Students must learn to live in the digital world while maintaining proper manners and ethics." (IF1)

This statement demonstrates that the madrasah frames technology as a value-oriented educational medium. In this view, digital competence is expected to develop alongside students' moral responsibility, religious awareness, and ethical conduct in online spaces. Therefore, the institutional purpose of digital transformation extends beyond technical efficiency and includes character formation.

The Vice Principal for Curriculum Affairs described the implementation process as gradual and supported by institutional planning and teacher capacity-building activities. He stated:

"We conduct digital teaching workshops every semester so that teachers can adapt to digital platforms, such as creating learning content, interactive videos, and app-based evaluations." (IF2)

Field observations supported this account. Teachers participated in professional development activities involving digital content creation, interactive instructional design, and technology-enhanced assessment. Classrooms were equipped with projectors, digital displays, and internet connectivity, allowing teachers to integrate multimedia resources into daily instruction. These findings indicate that the transformation process was supported by efforts to improve teachers' practical capacity, which was essential for translating institutional policy into classroom practice.

The integration of digital technology into Islamic Religious Education represented another important aspect of the transformation process. The PAI teacher stated:

"Now we integrate every subject with technology. Students can directly read Qur'anic interpretations from their phones, and we discuss them together in class." (IF3)

Observations showed that students used digital Qur'an applications, online tafsir resources, Islamic educational websites, and collaborative platforms such as Padlet during learning activities. These resources expanded students' access to Islamic references and encouraged them to participate more actively in discussion. However, the observations also showed that access to multiple sources required teacher guidance so that students could distinguish reliable materials from unverified online content. In this context, technology altered the learning process by shifting students from passive recipients of information to active participants who searched for, discussed, and reflected on religious knowledge.

The ICT teacher emphasized the importance of collective technology adoption across the institution:

"We want technology to become a shared culture, not just something managed by ICT teachers." (IF4)

This statement was reflected in observation data. Teachers from different subject areas used infographics, interactive quizzes, digital storytelling, prophetic history videos, and collaborative discussion platforms. Students participated actively in these activities, particularly when learning involved visual materials, group discussion, and digital content creation. The findings suggest that a shared

digital culture emerged when technology use was supported across academic subjects rather than being confined to the ICT unit.

Digital transformation also influenced administrative management. The E-Learning Operator stated:

"Now all teacher reports can be accessed digitally, including lesson plans, grades, and attendance records. This makes it easier for the principal to monitor progress." (IF5)

Documentation analysis confirmed that digital systems were used to archive institutional documents, learning reports, and student performance records. These practices improved the accessibility of information and supported more systematic monitoring of academic activities. The administrative dimension was therefore linked to the pedagogical dimension because the availability of organized data enabled the madrasah to monitor the implementation of digital learning more effectively.

Students also described a change in their learning experience. One student stated:

"Learning has become more interesting. Before, we just listened to lectures, but now we can watch videos, discuss on Padlet, and even create digital da'wah content." (IF6)

This account indicates that students experienced digital learning as more participatory and creative than conventional lecture-based instruction. The student's statement also shows that technology created opportunities for students to move beyond consuming learning materials. They were encouraged to discuss, collaborate, and produce digital religious content. Thus, digital transformation influenced both the form of classroom interaction and students' opportunities to express religious knowledge through digital media.

Observations further identified digital religious programs, including Kelas Dakwah Online, Digital Santri Podcasts, and Creative Video Sermon Competitions. The Islamic Extracurricular Supervisor stated:

"We want students to understand that da'wah is not limited to the pulpit; it can also be spread through positive digital media." (IF7)

These programs extended religious engagement beyond formal classroom learning. Students were positioned as creators and disseminators of Islamic messages through digital platforms. This finding shows that digital transformation at MAN 2 Jember connected religious learning with students' everyday digital

practices and encouraged them to use digital media for constructive religious communication.

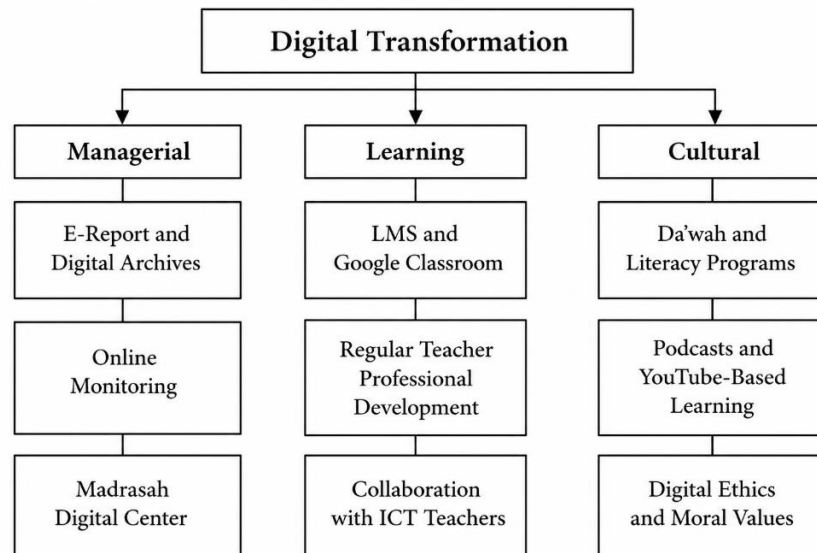


Figure 1. Digital Transformation at MAN 2 Jember

Documentation analysis further confirmed that MAN 2 Jember managed official YouTube channels, Instagram accounts, and Digital E-Library services as platforms for educational communication, religious dissemination, and literacy promotion. Collaboration with universities and the Ministry of Religious Affairs also supported the development of the Madrasah Digital Center. Taken together, the findings indicate that digital transformation at MAN 2 Jember was multidimensional. It combined technological infrastructure, teacher development, administrative systems, digital learning practices, and Islamic educational values within a continuing institutional process.

Development of Students' Digital Religious Literacy

The findings indicate that digital transformation contributed to students' digital religious literacy in several interconnected ways. In this study, digital religious literacy includes students' ability to access religious information through digital media, evaluate its credibility, interpret it in relation to Islamic teachings, and use it ethically in digital environments. The findings show that students' engagement with digital religious resources was accompanied by changes in how they searched for, discussed, and communicated religious knowledge.

Observations showed that students used digital Qur'an applications, online tafsir platforms, Islamic educational websites, podcasts, and digital da'wah videos as supplementary resources. This practice marked a shift from reliance on printed

texts and teacher explanations alone to more interactive and multimodal learning. Students could access religious information independently, but they still needed guidance to assess the credibility and contextual relevance of the materials they encountered.

The PAI teacher explained this changing role of students and teachers:

"Now they don't just listen, but they also search for verses and hadiths themselves through digital applications. The teacher's task is to ensure they use reliable sources." (IF3)

This statement demonstrates a change in the pedagogical relationship between teachers and students. Teachers remained important sources of guidance, but their role increasingly included helping students identify reliable religious sources, compare information, and avoid misinformation. Observations supported this statement, showing that students compared interpretations from digital tafsir applications and discussed their findings collaboratively. These practices reflect the development of critical digital religious literacy because students were not only accessing information but also beginning to assess and interpret it with guidance.

A student participant described both the benefit and the challenge of digital learning:

"When learning religion through videos and apps, I understand faster. But sometimes it's hard to focus when there are phone notifications." (IF7)

This statement highlights the dual nature of technology use in religious learning. Digital media increased accessibility and engagement, particularly through visual and interactive resources. At the same time, mobile devices introduced distractions that could reduce students' concentration. Observations confirmed that several students used digital tools effectively for religious learning, while others were occasionally distracted by unrelated applications and social media notifications. The finding suggests that digital religious literacy requires not only information skills but also self-regulation and responsible technology use.

Beyond classroom instruction, the madrasah implemented Student Islamic Podcasts, Weekly Digital Sermons, Digital Qur'anic Reflection Activities, and the One Day One Ayat Challenge Program. Documentation showed that students created digital da'wah content, recorded religious podcasts, and shared Islamic messages through institutional social media platforms. These activities enabled students to practice communicating religious messages in public digital spaces rather than only receiving religious instruction.

The Islamic Activity Supervisor stated:

"We want students not only to be technologically skilled but also wise in using it for beneficial and devotional purposes." (IF6)

This statement indicates that the programs were designed to link digital competence with religious responsibility. Participation in digital religious activities provided students with opportunities to develop information literacy, communication skills, ethical awareness, and religious understanding simultaneously. Students were expected to evaluate, produce, and disseminate Islamic messages responsibly, particularly when using institutional social media channels.

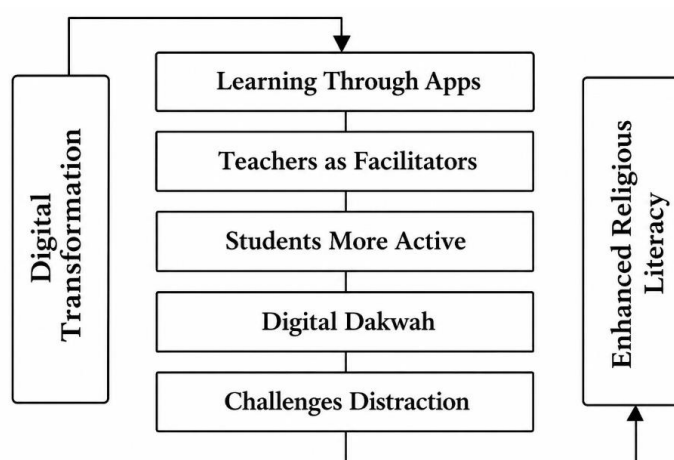


Figure 2. Impact of Digital Transformation

Observations demonstrated that students increasingly showed critical awareness when encountering religious information online. They compared sources, discussed interpretations, and sought teacher guidance before accepting or sharing religious content. Participation in digital religious activities also appeared to strengthen students' religious identity, sense of responsibility, and spiritual engagement. Overall, the findings indicate that digital transformation supported a contextual, reflective, critical, and interactive form of religious literacy. However, its effectiveness depended on continued teacher guidance, ethical instruction, and students' ability to regulate their use of digital media.

Madrasah Strategies for Strengthening Digital Religious Literacy Through Islamic Values

The findings show that MAN 2 Jember implemented several strategies to ensure that digital transformation remained aligned with Islamic values and contributed to students' character development. These strategies linked

technological use with spiritual formation, digital ethics, critical awareness, and religious responsibility. Rather than treating technology as a neutral instrument, the madrasah incorporated Islamic values into the rules, activities, and supervision of digital learning.

One strategy involved digital literacy training for teachers and students. Observations showed that these activities addressed technological skills, digital ethics, religious moderation, media literacy, and the critical evaluation of online religious content. Documentation confirmed the involvement of PAI teachers, ICT teachers, and student representatives. This approach suggests that the madrasah sought to prevent digital learning from focusing only on technical competence by incorporating ethical and religious considerations into training activities.

The Head of Madrasah explained the value-based orientation of this strategy:

"If technology is left without values, the results can be negative. But if guided properly, it can become a powerful tool for da'wah." (IF1)

This statement reflects the madrasah's concern that digital access without ethical guidance may produce harmful outcomes. Observations showed that teachers regularly emphasized digital honesty, academic integrity, responsible online behavior, and respect for intellectual property. These practices positioned Islamic values as practical guidelines for students' everyday interactions with digital media.

Another initiative was the establishment of the Islamic Digital Literacy Team. The PAI teacher stated:

"We want our students to be creative and at the same time wise in spreading da'wah through digital media." (IF3)

The team involved students interested in digital content creation, Islamic communication, graphic design, and online da'wah. Their activities included producing Islamic posters, short motivational videos, Qur'anic reflections, and hadith-based educational content. Documentation indicated that several productions received recognition from educational stakeholders and were shared through official social media accounts of the Ministry of Religious Affairs. This initiative demonstrates that the madrasah provided students with a structured space to practice creativity while remaining accountable for the accuracy and ethical quality of the religious content they produced.

The One Day One Ayat Challenge Program was another significant strategy. The program encouraged students to read one Qur'anic verse each day, write a

reflection, and upload their responses through digital platforms. The extracurricular supervisor stated:

"Through this activity, students become accustomed to interacting with the Qur'an while also learning how to use technology for beneficial and rewarding purposes." (IF6)

Documentation showed growing student participation and deeper reflections over time. The program combined routine Qur'anic engagement with digital interaction, encouraging students to use technology as a medium for reflection rather than distraction. The finding suggests that repeated and guided digital religious activities can support disciplined technology use and reflective religious practice.

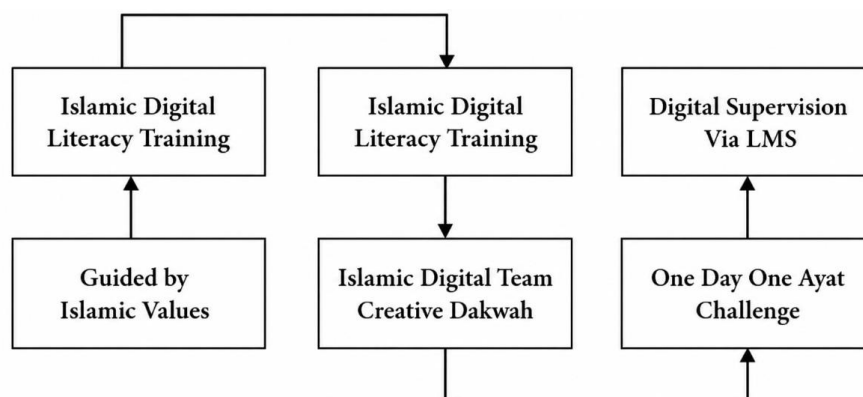


Figure 3. Strategies for Digital Transformation Based on Islamic Values

The madrasah also implemented a digital supervision system through collaboration between the Vice Principal for Curriculum Affairs and the E-Learning Operator. This system monitored student activities within the LMS and helped ensure that digital learning content remained aligned with Islamic values and educational objectives. The supervision mechanism complemented the literacy programs by providing institutional guidance and monitoring rather than relying only on individual student responsibility.

Overall, the findings show that MAN 2 Jember developed a holistic strategy that combined technological innovation, digital literacy, religious education, and character formation. Digitalization was not treated as a threat to religious identity. Instead, it was used as an opportunity to strengthen Islamic values, encourage ethical digital citizenship, and develop students' digital religious literacy. In this context, digital transformation can be understood as a process of digital spiritualization, in which technology serves not only as an educational tool but also

as a medium for cultivating faith, morality, and responsible participation in contemporary digital society.

Discussion

Digital Transformation at MAN 2 Jember

The digital transformation implemented at MAN 2 Jember represents a multidimensional institutional change rather than a simple adoption of technological tools. The findings show that the integration of Learning Management Systems, Google Classroom, digital religious applications, E-Raport, and digital administrative services reshaped learning practices, institutional governance, and religious educational activities. This finding supports studies arguing that contemporary madrasahs need to integrate technological innovation with Islamic educational values to remain relevant in the digital era (Halimah et al., 2024; Qoyyumillah et al., 2025). However, the present study adds that technological integration becomes meaningful only when it is embedded in a shared institutional culture that connects infrastructure, teacher capacity, leadership, and value-based learning.

The case of MAN 2 Jember is consistent with the principles of twenty-first-century learning, which emphasize digital competence, collaboration, critical thinking, and creativity as essential educational outcomes (Bai & Song, 2018; Peña-Ayala, 2021). The findings show that technology functioned as part of instructional design rather than as a supplementary tool. Students used digital tafsir applications, online Islamic resources, and collaborative platforms to access and discuss religious knowledge, while teachers used digital media to create more interactive learning experiences. This pattern is important because the transformation affected both the availability of learning resources and the roles of teachers and students within the learning process.

The findings corroborate Wedi et al. (2025), who found that successful digital transformation in Indonesian madrasahs requires integrating digital infrastructure, stakeholder collaboration, teacher professional development, and value-based learning systems. The present study extends this argument by showing how these components interacted at the school level. The availability of digital platforms alone would not have produced the observed changes without institutional planning, recurring teacher workshops, administrative support, and teachers' willingness to incorporate digital resources into daily learning activities. This confirms that digital transformation is a whole-school process involving leadership, pedagogy, infrastructure, and organizational culture.

Teacher competence was particularly important in translating institutional policy into meaningful learning activities. Falloon (2020) argues that digital competence includes not only technical skills but also the ability to use technology for communication, collaboration, critical evaluation, and knowledge construction. This perspective helps explain why teacher workshops at MAN 2 Jember were significant. The workshops supported teachers in producing digital content, using interactive assessment, and designing learning activities that encouraged student participation. The findings therefore suggest that digital infrastructure is most effective when teachers possess the pedagogical capacity to use it critically and purposefully.

Leadership also played a central role in shaping the direction of transformation. The principal's vision of developing a Character-Based Digital Madrasah reflects transformational leadership, in which a clear institutional vision promotes shared commitment and guides organizational change. This finding is consistent with Umah et al. (2023), who found that digital leadership influences the success of transformation through the development of digital culture, effective technology management, and collaborative working environments. Similarly, Haddade et al. (2024) emphasized that madrasah reform initiatives are more successful when leaders strategically integrate digital innovation into governance and learning processes. At MAN 2 Jember, leadership was evident not only in the introduction of technology but also in the effort to link technology use with Islamic morality, educational responsibility, and student character development.

The use of online religious content, digital da'wah programs, and official social media channels further demonstrates that digital transformation at MAN 2 Jember extended beyond formal classroom learning. This finding is consistent with Connectivism Theory, which views learning as a networked process in which knowledge is distributed across digital environments and social interactions (Dziubaniuk et al., 2023). Students and teachers participated in wider networks of learning, religious communication, and knowledge sharing. However, these networks also changed the conditions under which religious knowledge was accessed and evaluated. Campbell and Evolvi (2020) argue that emerging technologies reshape religious communication, authority, and practice. Thus, digital transformation in the madrasah created both new opportunities for religious learning and a greater need for institutional guidance regarding the credibility and ethical use of online religious sources.

Although the findings show substantial progress, they also indicate that digital transformation remains vulnerable to infrastructure limitations, uneven digital access, and the rapid pace of technological change. Similar barriers have been

identified by Ismail et al. (2025), who reported that inadequate facilities, limited technological resources, and resistance to change can hinder digital transformation in Islamic educational institutions. The findings from MAN 2 Jember therefore support Abubakari's (2025) argument that digital transformation in Islamic education should be understood as a long-term strategy for building sustainable learning cultures. Its success depends on the continuing interaction of visionary leadership, reliable infrastructure, teacher readiness, institutional support, and Islamic values.

The Impact of Digital Transformation on Students' Digital Religious Literacy

The findings indicate that digital transformation contributed to students' digital religious literacy by expanding access to Islamic knowledge and encouraging more active engagement with religious content. In this study, digital religious literacy includes the capacity to access, evaluate, interpret, communicate, and apply Islamic knowledge responsibly in digital environments. This understanding goes beyond the ability to read religious texts or operate digital devices. It involves students' ability to make informed judgments about religious information and to behave ethically when engaging with digital media.

This finding is consistent with Papakostas' (2024) concept of Digital Religion Literacy, which emphasizes that religious understanding increasingly develops through online interactions, mediated religious experiences, and digital learning environments. Students at MAN 2 Jember accessed Qur'anic interpretations, Islamic articles, podcasts, and religious videos more independently than in conventional learning settings. However, the findings also show that access alone did not guarantee meaningful religious understanding. Students required teacher guidance to identify trustworthy sources, compare interpretations, and avoid accepting unverified content uncritically.

The findings are also compatible with Berger and Golan's (2024) study of online religious learning, which shows that digital environments require learners to negotiate epistemic authority when deciding which religious sources to trust. In the context of MAN 2 Jember, teachers continued to play an important role as guides who helped students assess the credibility of online religious materials. This demonstrates that digital learning did not replace teachers' religious authority. Instead, it transformed their role from primary providers of information into facilitators who supported students' critical sourcing, contextual interpretation, and ethical use of religious knowledge.

The shift from passive reception to active participation is another important finding. Similar evidence was reported by Sopandi et al. (2023), who found that

digital capability and innovation positively influence student performance and learning outcomes in Madrasah Aliyah. At MAN 2 Jember, students not only consumed digital religious content. They participated in discussions, created digital da'wah materials, recorded podcasts, and reflected on Qur'anic verses through online activities. These practices encouraged students to engage with religious knowledge as active contributors rather than passive recipients.

The findings further demonstrate that digital transformation can strengthen students' critical religious thinking. Students were encouraged to compare interpretations, verify sources, and evaluate the credibility of religious information before accepting or sharing it. This finding is consistent with Nassar and Khattab (2024), who concluded that digital literacy improves academic engagement and learning effectiveness by strengthening students' ability to navigate digital information critically. In the present study, this critical capacity was particularly important because religious content in digital spaces can be abundant, persuasive, and uneven in credibility.

Programs such as Student Islamic Podcasts, Weekly Digital Sermons, Digital Qur'anic Reflection Activities, and the One Day One Ayat Challenge also supported creative religious expression. These activities positioned students as producers of digital da'wah content rather than only consumers of religious messages. This finding aligns with Ramli et al. (2026), who found that Islamic podcasts can enhance student engagement, conceptual understanding, emotional involvement, and spiritual connection in Islamic Religious Education. It also supports Putra et al. (2026), who argued that digital literacy can contribute to character education when students use digital media to communicate, reflect on, and apply moral values.

Nevertheless, the findings reveal that digital transformation also introduces challenges. Students reported difficulty maintaining concentration because of social media notifications and entertainment content. This reflects the tension between educational opportunities and distractions inherent in mobile technology use. Similar concerns were identified by Hendarsih et al. (2026), who found that digital literacy initiatives may be constrained by low intrinsic motivation and competition from non-educational digital content. The findings therefore suggest that digital religious literacy must include self-regulation, responsible media use, and the ability to maintain attention when engaging with religious learning online.

Overall, digital transformation at MAN 2 Jember should be understood as both an opportunity and a challenge. It enhanced access to Islamic knowledge, encouraged active participation, and supported critical engagement with digital religious content. At the same time, its effectiveness depended on teacher guidance,

digital ethics education, institutional supervision, and students' ability to regulate their own technology use.

Madrasah Strategies for Optimizing Digital Transformation Based on Islamic Values

The findings demonstrate that MAN 2 Jember adopted a value-based approach to digital transformation. Rather than separating technology from spirituality, the madrasah integrated digital literacy initiatives with religious education, character formation, and ethical development. This approach is significant because it positioned Islamic values as practical standards for how technology should be used in learning, communication, and the production of online religious content.

The first strategic component was continuous professional development for teachers. This finding supports Human Resource Management Theory in Education, which emphasizes that educational quality is closely related to the competence and adaptability of educational personnel (Qutni et al., 2021). At MAN 2 Jember, teacher development did not focus solely on technological proficiency. It also addressed digital ethics, instructional design, and the integration of Islamic values into technology-supported learning. This pattern is consistent with Gusli et al. (2025), whose meta-analysis concluded that leadership and teacher capacity-building are among the strongest factors supporting digital literacy in Islamic educational institutions.

The establishment of the Islamic Digital Literacy Team represented a second strategic component. Through the production of Islamic posters, digital sermons, inspirational videos, Qur'anic reflections, and religious social media content, students were encouraged to become creative and responsible digital citizens. This finding supports Widodo's (2025) argument that digital learning environments become more transformative when technological innovation is intentionally linked with religious values and moral development. In the present study, the team provided an institutional structure through which students could practice content creation while receiving guidance on accuracy, ethics, and the responsible communication of religious messages.

The One Day One Ayat Challenge illustrates a third strategy that connected digital technology with spiritual discipline. By encouraging students to read one Qur'anic verse daily, write a reflection, and upload their responses through digital platforms, the program integrated cognitive, affective, and spiritual dimensions of learning. This finding supports Wahyuni et al. (2026), who argued that sustainable digital transformation requires integrated learning ecosystems that involve students in meaningful activities. At MAN 2 Jember, the program used technology

not simply to deliver information but to support routine reflection, disciplined participation, and sustained engagement with the Qur'an.

Digital supervision through the LMS was another important strategy. Collaboration between the Vice Principal for Curriculum Affairs and the E-Learning Operator enabled the madrasah to monitor digital learning activities and ensure that content remained consistent with educational objectives and Islamic values. This approach resonates with Ismail et al. (2025), who emphasized that Islamic education in the era of technological disruption requires continuous guidance, supervision, and contextual pedagogical adaptation. The findings suggest that digital ethics is more likely to be practiced when it is reinforced through institutional procedures as well as classroom instruction.

Taken together, the findings support the concept of digital spiritualization. In this study, digital spiritualization refers to the intentional integration of technology, religious literacy, ethical awareness, and spiritual formation within madrasah life. It differs from technology adoption because it evaluates digital transformation not only through the availability of platforms or the frequency of use, but also through students' capacity to access religious information responsibly, evaluate its credibility, interpret it in an Islamic educational context, and communicate it ethically. This conceptual contribution extends previous studies by explaining how technological innovation can be systematically connected with spiritual values, moral responsibility, and institutional culture.

This study has two limitations. First, it examined one public madrasah and therefore does not claim that all Indonesian madrasahs experience digital transformation in the same way. Second, the study used qualitative evidence and did not measure longitudinal changes in students' digital religious literacy. Future research may compare public and private madrasahs, include students from different regions, and combine qualitative evidence with longitudinal or mixed-method assessment of digital religious literacy, religious attitudes, and online ethical behavior. Such research would help test the applicability of digital spiritualization across diverse Islamic educational contexts.

CONCLUSION

This study found that digital transformation at MAN 2 Jember has a broader impact on students' religious literacy than is commonly assumed. Its impact extends beyond the use of Learning Management Systems, digital assessment, and online learning platforms. Digital transformation also supports students' ability to access, evaluate, interpret, and disseminate Islamic knowledge through digital media. Digital da'wah programs, Islamic digital literacy activities, and value-based

technology use further strengthened students' religious character, ethical awareness, and responsible participation in digital spaces. These findings challenge the conventional assumption that digitalization primarily serves administrative and instructional purposes, and they open a broader discussion of its role in supporting religious learning and spiritual development in madrasahs.

This study reinforces previous findings on the positive role of digital transformation in Islamic education, particularly in improving access, participation, and digital competence. At the same time, it questions the adequacy of approaches that assess digital transformation only in terms of technological adoption or learning efficiency. The study introduces the concept of digital spiritualization, which explains how technology can function not only as a learning tool but also as a medium for strengthening faith, ethical awareness, religious engagement, and character formation. This concept enriches scholarly discussion on the relationship between technological innovation, digital religious literacy, and Islamic educational values.

This study is limited by its focus on one madrasah and a small number of participants; therefore, its findings cannot be generalized to all madrasahs or Islamic educational institutions with different social, cultural, and organizational contexts. Further research involving larger samples, multiple research sites, and mixed-methods or longitudinal designs is needed to provide a more comprehensive understanding of the relationship between digital transformation and students' religious literacy. Madrasah leaders, policymakers, and educators are recommended to strengthen digital infrastructure, improve teachers' digital competence, and develop sustainable digital religious literacy programs that integrate Islamic values with technological innovation. Future studies should also examine the roles of digital leadership, institutional policy, parental involvement, and emerging technologies, including artificial intelligence, in students' religious literacy and character development.

ACKNOWLEDGMENT

The authors gratefully acknowledge Universitas Islam Negeri Kiai Haji Achmad Siddiq Jember, Indonesia, for its academic support. Special appreciation is extended to the Head of MAN 2 Jember, teachers, staff, and students for their valuable participation, cooperation, and support throughout this study.

REFERENCES

Abubakari, M. S. (2025). *Digital Technologies Adoption in Islamic Education for Fostering Lifelong Learning Culture: Pilot Survey Preliminary Insights*. IGI

- Global Scientific Publishing. (digital-technologies-adoption-in-islamic-education-for-fostering-lifelong-learning-culture).
<https://doi.org/10.4018/979-8-3373-1681-9.ch005>
- Armita, P. (2025). Digital Da'wah and Quranic Interpretation: Opportunities, Distortions, and Ethics in the Spread of Interpretations on Social Media. *International Journal of Islamic Thought and Humanities*, 4(1), 154–164.
<https://doi.org/10.54298/ijith.v4i1.421>
- Bai, B., & Song, H. (2018). 21st century skills development through inquiry-based learning from theory to practice: By Samuel Kai Wah Chu, Rebecca B. Reynolds, Nicole J. Tavares, Michele Notari and Celina Wing Yi Lee, Singapore, Springer, 2017, 204 pp., €89.99 (hardback), ISBN 978-981-10-2479-5. *Asia Pacific Journal of Education*, 38(4), 584–586.
<https://doi.org/10.1080/02188791.2018.1452348>
- Berger, A., & Golan, O. (2024). Online religious learning: Digital epistemic authority and self-socialization in religious communities. *Learning, Media and Technology*, 49(2), 274–289.
<https://doi.org/10.1080/17439884.2023.2169833>
- Braun, V., & Clarke, V. (2021). One size fits all? What counts as quality practice in (reflexive) thematic analysis? *Qualitative Research in Psychology*, 18(3), 328–352. <https://doi.org/10.1080/14780887.2020.1769238>
- Campbell, H. A., & Evolvi, G. (2020). *Contextualizing current digital religion research on emerging technologies*. 2(1), 5–17. <https://doi.org/10.1002/hbe2.149>
- Dziubaniuk, O., Ivanova-Gongne, M., & Nyholm, M. (2023). Learning and teaching sustainable business in the digital era: A connectivism theory approach. *International Journal of Educational Technology in Higher Education*, 20(1), 20. <https://doi.org/10.1186/s41239-023-00390-w>
- Fahm, A. O. (2025). *Gender, Marginalization, and Digital Technology in Islamic Learning: A Nigerian Perspective*. 27(3), 1–13.
- Falloon, G. (2020). From digital literacy to digital competence: The teacher digital competency (TDC) framework. *Educational Technology Research and Development*, 68(5), 2449–2472. <https://doi.org/10.1007/s11423-020-09767-4>

- Fatmawati, E. (2025). Digitalization of Ramadan da'wah: Effective strategies for Islamic education in the technological era. *Indonesian Journal of Studies on Humanities, Social Sciences and Education*, 2(1), 14–32.
<https://doi.org/10.54783/e8q2va80>
- Haddade, H., Nur, A., Achruh, A., Rasyid, M. N. A., & Ibrahim, A. (2024). Madrasah management strategies through Madrasah Reform program: An evidence from Indonesia. *International Journal of Educational Management*, 38(5), 1289–1304. <https://doi.org/10.1108/IJEM-05-2023-0236>
- Halimah, S., Yusuf, A., & Safiudin, K. (2024). Pesantren Education Management: The Transformation of Religious Learning Culture in the Age of Disruption. *Nidhomul Haq : Jurnal Manajemen Pendidikan Islam*, 9(3), 648–666.
<https://doi.org/10.31538/ndhq.v9i3.16>
- Hendarsih, N., Lyesmaya, D., Abdurahman, A., & Suryani, H. (2026). Madrasah Tsanawiyah students' preferences for digital storybooks: An evaluative study of reading interest in the digital era. *AIP Conference Proceedings*, 3432(1), 020035. <https://doi.org/https://doi.org/10.1063/5.0327885>
- Ismail, I., Parinduri, M. A., & Ibarra, F. P. (2025). Strengthening the ideology of Islamic religious education in the era of technological disruption. *Jurnal Ilmiah Ilmu Terapan Universitas Jambi*, 9(2), 465–473.
<https://doi.org/10.22437/jiituj.v9i2.41841>
- Juhairiah, S., Yuwono, D., & Kinasih, Q. Y. (2024). Digital transformation in Islamic education: Opportunities, challenges, and its impact on Islamic values. *Journal of Vocational Education and Educational Technology Innovations*, 1(1), 1–6.
- Khoirohnissah, D. (2023). Digital Transformation in Indonesian Religious Education: A Case Study of Madrasah Management at Kemenag Sleman. *Journal of Islamic Education Management Research*, 1(2), 189–197.
<https://doi.org/10.14421/jiemr.2023.12-10>
- Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE Guide No. 131. *Medical Teacher*, 42(8), 846–854.
<https://doi.org/10.1080/0142159X.2020.1755030>

- Mahsusi, Hudaa, S., Fahmi, M., Kusen, Haryanti, N. D., & Wajdi, M. B. N. (2024). Achieving excellence: The role of digital transformation in madrasah management and Islamic culture. *Cogent Arts & Humanities*, 11(1), 2304407. <https://doi.org/10.1080/23311983.2024.2304407>
- Maryati, S., Lestari, L., Idi, A., & Samiha, Y. T. (2023). MADRASAH AS AN INSTITUTION OF ISLAMIC EDUCATION AND SOCIAL CHANGE. *Jurnal Konseling Pendidikan Islam*, 4(2), 317–326. <https://doi.org/10.32806/jkpi.v4i2.11>
- Mashudi, M., & Hilman, C. (2025). Digital-Based Islamic Religious Education: A New Orientation in Enhancing Student Engagement and Spiritual Understanding. *The Journal of Academic Science*, 2(1), 53–65. <https://doi.org/10.59613/66eafx60>
- Miles, M. B., Huberman, A. M., & Saldana, J. (2014). *Qualitative data analysis: A methods sourcebook*.
- Murad, R. (2026). Smart Learning for Underserved Communities: A Web-Based App Approach to Sustainable Islamic Education in Rural Areas. *Asia-Pacific Journal of Information Technology and Multimedia*, 15(01), 308–319. <https://doi.org/10.17576/apjitm-2026-1501-19>
- Mursalova, A. (2026). Digital pedagogy and religious education: Integration of technologies, ethics and development perspectives. *Scientific Work*, 20(3), 101–107. <https://doi.org/https://doi.org/10.36719/2663-4619/127/101-107>
- Nassar, S., & Khattab, S. (2024). The Effect of Digital Literacy on the Academic Performance of Islamic University Students in Gaza During COVID-19. In R. E. Khoury & N. Nasrallah (Eds.), *Intelligent Systems, Business, and Innovation Research* (pp. 967–978). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-36895-0_81
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic Analysis: Striving to Meet the Trustworthiness Criteria. *International Journal of Qualitative Methods*, 16(1), 1609406917733847. <https://doi.org/10.1177/1609406917733847>

- Papakostas, C. (2024). Faith in Frames: Constructing a Digital Game-Based Learning Framework for Religious Education. *Teaching Theology & Religion*, 27(4), 137–154. <https://doi.org/10.1111/teth.12685>
- Peña-Ayala, A. (2021). A learning design cooperative framework to instill 21st century education. *Telematics and Informatics*, 62, 101632. <https://doi.org/10.1016/j.tele.2021.101632>
- Putra, P., Ilias, M. F., Hartono, R., Burhanuddin, B., Saputra, N., & Barsihanor, B. (2026). Digital Literacy as a Transformative Framework for Character Education: A Case Study in Madrasah Ibtidaiyah. *Nazhruna: Jurnal Pendidikan Islam*, 9(1), 33–51. <https://doi.org/10.31538/nzh.v9i1.429>
- Qoyyumillah, N. I., Huril'in, H., & Anam, S. (2025). Accelerating Islamic Learning in the Digital Era: Contemporary Strategies for Building a Knowledgeable, Charactered, and Adaptive Generation Amidst Global Transformation. *JURNAL RISET RUMPUN ILMU PENDIDIKAN*, 4(2), 427–437. <https://doi.org/10.55606/jurripen.v4i2.5684>
- Qutni, D., Kristiawan, M., & Fitriani, Y. (2021). Human Resource Management in Improving The Quality of Education. *Edunesia : Jurnal Ilmiah Pendidikan*, 2(2), 354–366. <https://doi.org/10.51276/edu.v2i2.132>
- Ramli, M., Rahajeng, C. T., & Wayeh, H. (2026). Integrating Islamic Podcasts to Enhance Student Engagement in Islamic Religious Education Learning. *Munaddhomah: Jurnal Manajemen Pendidikan Islam*, 7(2), 527–538. <https://doi.org/10.31538/munaddhomah.v7i2.2584>
- Restalia, W., & Khasanah, N. (2024). Transformation of Islamic education in the digital age: Challenges and opportunities. *Tadibia Islamika*, 4(2), 85–92. <https://doi.org/10.28918/tadibia.v4i2.8964>
- Santosa, S., & Jazuli, M. F. (2022). The Digital Madrasah as an Idea of IT-Based Islamic Education. *Nazhruna: Jurnal Pendidikan Islam*, 5(2), 379–391. <https://doi.org/10.31538/nzh.v5i2.2121>
- Sanusi, M. (2024). Transforming Islamic education in the digital age: Challenges and opportunities for the young generation. *Attractive: Innovative Education Journal*, 6(3), 206–215.

- Siskandar, S. (2020). The role of religious education and utilization of digital technology for improving the quality of sustainable madrasahs. *JURNAL TARBIYAH*, 27(1). <https://doi.org/10.30829/tar.v27i1.675>
- Sopandi, E., Anwar, S., Habibah, N., Manurung, S., Alia, N., & Hendrawati, S. (2023). The Role of Digital Literacy and Its Relation with Performance of Madrasah Aliyah Students. *Eurasian Journal of Educational Research (EJER)*, (104), 16.
- Sugianto, E. (2024). The Role of Islamic Religious Education in The Development of Students Spirituality and Morality in The Digitalization Era: Case Study of Students at Universitas Pertiba Pangkalpinang. *Jurnal Sustainable*, 7(2), 412–422. <https://doi.org/10.32923/kjmp.v7i2.5135>
- Sugihyono, S. (2025). The Role of Christian Education in Developing Responsible Digital Literacy Among Adolescents. *JURNAL TRANSFORMASI: Jurnal Teologi Dan Kepemimpinan*, 4(1), 50–58. <https://doi.org/10.66551/jt.v4i1.77>
- Syukri, M. D. A., & Rosyad, A. (2025). Integrating modern technology in islamic religious education: Challenges and opportunities for teachers. *The Journal of Academic Science*, 2(4), 1148–1156.
- Taufik, H., Thursina, F., & Rusdi, M. (2024). Teachers Challenges and Strategies in Facing the Digitalization Era in Islamic Education in Madrasahs in West Java Region. *West Science Islamic Studies*, 2(04), 184–190. <https://doi.org/10.58812/wsiss.v2i04.1348>
- Trimulyo, A., Kodri, A., Aldiyansah, M., Anas, A., Basith, A., Yahya, A., Haq, M. A., Afriansyah, D., Al Husna, L., & Mukarom, A. M. (2026). *Educational technology for disseminating Islamic values: A systematic literature review and bibliometric analysis*. 7(2). <https://doi.org/https://doi.org/10.58256/0ha3hq85>
- Umah, E. C., Imron, A., Hadi, S., & Praherdhiono, H. (2023). Madrasah principal digital leadership innovation in digital learning transformation. *Revista de Gestao Social e Ambiental*, 17(3), 1–16.
- Wahyuni, I., Azis, A., Afiyah, N., & Afandi, A. A. (2026). Digital Transformation of Arabic Learning Environments in Islamic Higher Education. *Jurnal Pendidikan Islam*, 12(1), 202–216. <https://doi.org/10.15575/jpi.v12i1.54404>

- Wedi, A., Mardiana, D., & Umiarso, U. (2025). Digital Transformation Model of Islamic Religious Education in the AI Era: A Case Study of Madrasah Aliyah in East Java, Indonesia. *International Journal of Learning, Teaching and Educational Research*, 24(8).
<https://ijlter.org/index.php/ijlter/article/view/14356>
- Widodo, H. (2025). An AI-gamification-religiosity learning model to enhance critical literacy in private Islamic universities. *Islamic Quarterly*, 69(1), 75–120.
- Yunara, L., & Yanti, J. D. (2025). Pendidikan Agama Islam dalam transformasi digital: Penggunaan e-learning, LMS, dan media interaktif. *Pendas: Jurnal Ilmiah Pendidikan Dasar*, 10(03), 287–299.
- Yusra, & Sesmiarni, Z. (2025). Pemanfaatan Platform Digital dalam Meningkatkan Mutu Pendidikan. *Dirasah : Jurnal Studi Ilmu Dan Manajemen Pendidikan Islam*, 8(1), 393–405. <https://doi.org/10.58401/dirasah.v8i1.1624>
- Zakariyah, Z., Muhid, A., & Arifin, M. (2025). Transformation of Al-Qur'an Memorization Learning in the Digital Age through the Blended Learning Flipped Classroom Approach. *Nazhruna: Jurnal Pendidikan Islam*, 8(3), 594–606. <https://doi.org/10.31538/nzh.v8i3.193>