



Strengthening Religious Moderation through Digital Literacy: A Strategic Approach in Indonesian Islamic Educational Institutions

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ABSTRACT

This study explores the need of digital literacy integration with religious moderation values in madrasah as a challenge of the unfiltered religious information in the digital space which can influence students' views. It suggests that digital literacy is not value neutral and must be guided pedagogically to promote moderate, inclusive and contextual understanding of religion. Qualitative case study design was used and data were gathered through in-depth interviews, participant observation, and documentation and then analyzed using interactive model data condensation, data display and conclusion drawing, and validated by triangulation and member checking. The results indicate that digital literacy practices help students to access, select and critically analyze religious information, which contributes to developing religious moderation; digital literacy can be introduced into teaching by teachers by using a strategic approach as a facilitator and epistemological filter; and religious moderation and digital literacy can be synthesized in a pedagogical way by internalizing their values after students have explored and reflected on them. The study is one-institutional, which may impact generalizability, and was qualitatively interpreted with possible researcher subjectivity despite efforts of validation. This research is original in creating an integrative pedagogical model that refers to thesis, antithesis, synthesis dialectics in Islamic education, giving implications for teacher capacity strengthening, Islamic education digital literacy policies, and value-based learning ecosystems.

Keywords: Digital Literacy; Madrasah; Religious Moderation

INTRODUCTION

The development of digital technology has transformed the landscape of social life, including religious practices in society. This phenomenon is marked by the increased consumption of religious information through digital media, which is not always verified, potentially giving rise to extreme religious understandings. This occurs because the digital literacy of the public, especially the younger generation, is not yet fully capable of critically analyzing ideological and provocative content (Nurjanah, 2024; Salsabila et al., 2025). Several studies show that low digital literacy is correlated with the increasing spread of religious hoaxes and social media-based radicalism (Baitussalam et al., 2026; Habsi et al., 2025). In the context of Indonesia as a multicultural country, this condition poses a serious threat to social cohesion and the values of religious moderation that have long been upheld (Asmanah & Haryono, 2024; Sadik et al., 2025). Therefore, strengthening digital literacy is not only a technological necessity, but also a strategic instrument in building an inclusive and tolerant religious attitude in the midst of a digital society (Afriyanto & Mubarok, 2026; Parhan & Jais, 2026; Yustinus & Luis, 2026).

The general problem in improving the quality of education currently lies in the unpreparedness of the education system in responding to digital disruption comprehensively (Iswandi et al., 2026; Syakur & Ibrahim, 2026; Zahriyanto et al., 2026). Education has not yet fully integrated digital literacy as part of students' essential competencies, especially in the realm of religious education (Lumbangaol et al., 2026; Sari & Mardiyah, 2026). The curriculum tends to still be oriented towards the transfer of normative knowledge without providing critical space for the digital realities that students face every day (Nopitasari et al., 2026; Oei et al., 2026; Zainudin & Sohieb, 2026). As a result, there is a gap between formal religious knowledge and religious practices in the digital space (Irayanti et al., 2026; Jati et al., 2026). Some previous research studies show that many Islamic educational institutions do not yet have a systematic pedagogical strategy for internalizing the values of religious moderation through digital literacy (Muntu, 2026; Wahyuni & Rosadah, 2026; Wardiana & Hadi, 2026). In multicultural Indonesia, religious moderation is not only about interfaith tolerance but also about respecting intra-religious diversity, local cultures, and traditional traditions. As Mariyono (2024) points out, multicultural education is crucial for fostering tolerance and unity among various cultural groups. Therefore, integrating digital literacy with religious moderation must be understood within this broader multicultural framework, where education serves as a venue for negotiating diverse identities and worldviews. This condition indicates the need for a transformation of the educational paradigm that is not only oriented towards cognitive aspects, but also towards analytical and reflective abilities in dealing with complex digital information. (Ahmad, 2026; Najib & Yenuri, 2026).

Empirical phenomena in madrasas show interesting dynamics related to student interaction with digital media (Ahmad, 2026; Najib & Yenuri, 2026). On the one hand, students have wide access to various sources of religious knowledge through digital platforms such as YouTube, TikTok, and Instagram (Kartini et al., 2026; Nasution, 2026). However, on the other hand, this access is not always balanced with adequate digital literacy skills (Andriansyah, 2026; Fikri et al., 2026). Case studies in several madrasas and at SMAN 01 Tiris, Probolinggo Regency, show that students tend to receive religious information textually without a critical verification process (Nasyomia & Pradana, 2026). In addition, teachers often do not have adequate pedagogical competence to guide students in sorting digital information that is in accordance with the values of religious moderation (Muchtar, 2026). This condition shows that there is a gap between the potential of digital technology as a learning medium and the reality of its implementation in the field (Nurbaiti et al., 2026).

A number of previous studies have examined the relationship between digital literacy and religious moderation in the context of Islamic education (e.g., Prawirosastro & Muchtar, 2026; Zubaidah, 2026), which emphasized that digital literacy can be a transformative

framework for character building in madrasah students. Prasetya et al. (2026) show that the integration of digital citizenship with religious moderation is able to form an inclusive character in distance education (Lisnawati & Sarnoto, 2026; Nurhalimah, 2026). Other research by Kaimudin et al. (2026) developed a digital-based Islamic legal literacy pedagogical model to strengthen religious moderation. On the other hand, studies by Novianti et al. (2026) emphasized that digital platforms can be an effective medium in building a moderate religious narrative if managed properly (Maharani, 2026). The contribution of these studies lies in the effort to connect the technological dimension with religious values, although most of them are still conceptual or model-based (Khoirunnifal et al., 2026).

Although previous research has made significant contributions, there are a number of research gaps that have not been optimally filled (Maharani, 2026). First, most studies still focus on conceptual or quantitative approaches, so they do not delve deeply into the empirical experiences of students and teachers in real contexts (Saputra & Supratama, 2026). Second, studies that specifically integrate digital literacy with religious moderation through the thesis-antithesis-synthesis dialectical approach are still very limited (Nasution et al., 2026). Third, case study-based research in madrasahs that highlights students' daily practices in accessing and interpreting digital content is still rarely conducted (Afriani, 2026). Therefore, this research takes the position of a case-based qualitative study that attempts to fill this gap by exploring the real practice of digital literacy in shaping religious moderation in the madrasah environment.

The novelty of this research lies in the use of a dialectical approach (thesis-antithesis-synthesis) in analyzing the relationship between digital literacy and religious moderation. The aim of this study refers to the view that digital literacy can strengthen religious moderation through broad and inclusive access to information. The antithesis is that digital literacy can actually become a means of spreading radicalism if not accompanied by critical skills. The synthesis offered is the integration of critical digital literacy based on the values of religious moderation into learning practices in madrasahs. Furthermore, this research also presents an in-depth case study approach to uncover the dynamics of students' interactions with digital media in their daily contexts. Thus, this research provides not only theoretical contributions but also practical implications for the development of Islamic education in the digital era. Based on the description above, the research problem formulations are:

1. How do students' digital literacy practices shape their understanding of religious moderation in madrasahs?
2. What is the role of teachers in integrating digital literacy in learning?
3. How can the synthesis between digital literacy and the value of religious moderation be constructed pedagogically?

The initial argument of this research is that digital literacy does not automatically produce a moderate attitude, but rather requires targeted and value-based pedagogical intervention. This research contributes to developing a conceptual and empirical model regarding the integration of digital literacy and religious moderation in madrasahs. In addition, this research is expected to serve as a reference for policy makers in designing educational strategies that are adaptive to the challenges of the digital era while remaining rooted in moderate Islamic values.

METHODS

Research Design

The research method used in this study was qualitative case study, with the purpose of exploring the digital literacy practices in the learning environment of the madrasah (Islamic school) to get a deeper understanding of the various ways of learning in the madrasah. It was decided to use this approach because it enables a holistic, contextual and grounded understanding of what is happening in life for the research subjects, going beyond the quantitative measure. This research

was conducted at a public high school in Probolinggo, East Java, Indonesia. Although the school operates under the Ministry of Education and Culture (as indicated by its designation 'SMAN'), it has a distinct Islamic emphasis, integrating Islamic values into its curriculum and daily practices. This unique characteristic makes it an 'Islamic-affiliated school' and a relevant location to investigate the link between digital literacy and religious moderation.

Data Collection and Analysis

The data were collected by using in-depth interviews, participant observation and documentation to get comprehensive and complementary data. Interviews were carried out with the madrasah principal, teachers, and students, observations were carried out on various aspects of learning, and documentation was conducted on various aspects of the curriculum, policies, and students' digital activities. The sampling in the study was purposive sampling because the participants were those who were directly involved in digital literacy activities in school. The inclusion criteria were that the participants had first-hand experiences of implementing digital literacy programs and learning activities that involved digital technology. To gain rich and relevant information from key stakeholders who had a significant amount of knowledge about the phenomenon being studied.

Proper data analysis was used with the interactive model of Miles et al. (2014), which consisted of data condensation, data reduction, data presentation, verification, and drawing conclusions. This process was used throughout the study with a continuous cycle of action and reflection to maintain an in-depth analysis. Data condensation and reduction was used to simplify the raw data, and data display was used to discover the pattern in data and to look for relationships between the categories; then systematic interpretation was used to confirm the pattern and relationships discovered. To ensure the validity of data, the following was used in this study: source triangulation (teacher, student, madrasah principal), technical triangulation (interviews, observation, documentation), and member checking to ensure that the researcher's interpretation matches reality. In qualitative research, this method is very important as it helps to further ensure the credibility, validity and reliability of the results.

Trustworthiness

This study used the criteria suggested by Lincoln and Guba, namely credibility, transferability, dependability and confirmability to ensure the findings are trustworthy. The triangulation of sources (principal, teachers, and students) and methods (interview, observation and document analysis) enhanced the credibility of the study. Additionally, member checking was undertaken to see if the researcher's interpretations echoed the participants' views. Transferability was enhanced by the detailed description of the research context, participant description and learning context that enabled readers to evaluate the applicability of the findings to similar contexts. Systematic documentation of research procedures and analytical processes ensured dependability, and interpretations were developed based on empirical data from various sources, which minimized researcher bias and increased confirmability.

Methodological Limitations

There are a number of caveats to consider. First, the study was conducted in a single school context, potentially due to which limits the generalizability of the findings to other school contexts. Secondly, the qualitative case study approach focuses on the depth rather than breadth so that the findings are context specific. Third, the answers of the participants may be subject to their personal perceptions and the social desirability effect. In spite of these constraints, the study is still able to give an insight into the role of digital literacy in supporting divers learning practices in the educational context in Indonesia and can be the basis of further research.

RESULTS

Students' Digital Literacy Practices in Shaping Understanding of Religious Moderation in School

Digital literacy practices in this study is defined as a student's ability to access, understand, evaluate, and use information from a religious perspective that is derived from the digital medium in his or her everyday life at the madrasah. Digital literacy is not just the ability and competency of using the devices, it's also the analytical ability to differentiate between moderate and non-extreme religious content. In this context, religious moderation is expressed in terms of tolerance of difference, inclusiveness and students' understanding of religious difference. Thus, students' digital literacy practices are significant cues of the contribution of digital media to a balance religious understanding. The research indicates that the use of digital media does not leave students' perspectives unaltered but rather is an active process that impacts on their perspectives of religious teachings. One student said:

"Before I look for sermons on YouTube, I used to consult with my teachers to make sure that the ustaz is legitimate and to cross-check against other sources to prevent confusion or misunderstandings."

This statement shows students' preliminary understandings about verifying digital information. The authors describe this activity as a step in the early development of critical digital literacy in that students are no longer passive recipients of information but are starting to choose and assess religious information. This is consistent with the results obtained in this study, which found that digital literacy had a positive influence on the formation of moderate attitudes, mediated by ability to sort information. Another participating teacher also said:

"We try not to let our students take the information at first hand, but connect it to classroom to get a balanced view."

It is clear in this statement that children need to be taught how to navigate the flow of digital information. Researchers see the role of teachers as very important in linking digital literacy and the importance of religious moderation. If left unguided, students may get their knowledge skewed by unregulated information.

Furthermore, based on observation, students often use their cellphones to look for other references to religion during learning activities, especially on YouTube and Google. In other words, students' ability to assess information retrieved is different from one another. Some students tend to take the content at face value, others start to contrast what they read with what they hear from other sources or ask their teacher(s). This situation further confirms the finding that the imbalanced digital literacy may affect the development of attitude towards religious moderateness in a different way.

Table 1. Interview Results

Participants	Interview Excerpt	Indicator
Student	"I compare sermons from several sources before believing them."	Information evaluation
Student	"Sometimes I immediately believe if the video is convincing."	Low digital literacy
Islamic Education Teacher	"Students must be guided to avoid misunderstand religious content."	Pedagogical guidance
Principal	"We support the use of digital tools, but they must still be supervised."	Institutional regulation

The findings of the interviews and observations confirm that the students' digital literacy in madrasah not only relates to the access to information, but also includes the ability to interpret religious content. Students with good digital literacy exhibit moderate level of understanding of religion, and students with low digital literacy acquire information in a text. Therefore, digital literacy is an important variable to form students' religious views in the digital era. As seen in Table 1, students' digital literacy behaviors vary from those who are already "information evaluators" to "passive" digital users. The teacher seems to be the one who dominates in helping the students to build critical digital literacy. In addition, the existence of policies in the madrasah is also a facilitating factor in establishing an environment that is conducive to strengthening religious moderation through digital media. This is consistent with previous studies highlighting the need to link digital literacy, the role of teachers, and institutional policies.

Overall, the trend is towards a continuum of low to high levels of digital literacy practices among students. The pattern is shaped by three factors namely: Abilities of the students, pedagogical interventions of teachers and institutional support of the madarasas. Intensive guidance helps pupils to acquire good evaluative skills and thus to attain moderate religious understanding. In contrast, those students who are less well guided are more vulnerable to the narrow understanding of religion. Thus, it could be concluded that the use of digital literacy in religious moderation education contributes to the development of a critical, inclusive and contextual approach to building religious understanding.

The Role of Teachers in Integrating Digital Literacy into Learning

In this study, the role of teachers is interpreted as their ability to design, guide and internalize Digital literacy in the learning process to facilitate the development of students' religious moderation. This role encompasses their role as facilitators, mediators and filters of the digital information that students access. Digital literacy is not just about using technology in learning but also about the systematic efforts made by teachers in order to instill moderate Islamic values in students with the process of selecting, verifying and reflecting the digital content. Therefore, teachers play an important role in connecting free flow of digital information and organized and contextualized religious values. An Islamic Education teacher stated:

"The internet is not forbidden for students, but we must lead students to the moderate Islamic teachings' content. This is evidence that the teachers are not narrow-minded with technology, but rather a learning and prevention-oriented strategy."

The researchers consider this strategy as representing a constructivist approach because students have space to explore, but still are guided by values. In addition, the madrasah principal added:

"Encourage teachers to relate learning materials with digital phenomena, not leaving students out of their realities,"

This illustrates institutional support to encourage digital literacy incorporation in learning. This is seen as an interaction between institutional policies and teachers' pedagogical practices, which adds to the effectiveness of the internalization of the value of religious moderation.

Two systematic stages with mediation of the role of the teacher in the process of integrating digital literacy are indicated in Figure 1. The first phase starts with students' free access to electronic information. Teachers then make choices of and check this content as part of their learning. This can be done in a gradual way to internalize moderate Islamic values. Therefore, teachers act as epistemological filters for the information their students receive in the digital world in relation to the values that shape religious moderation.

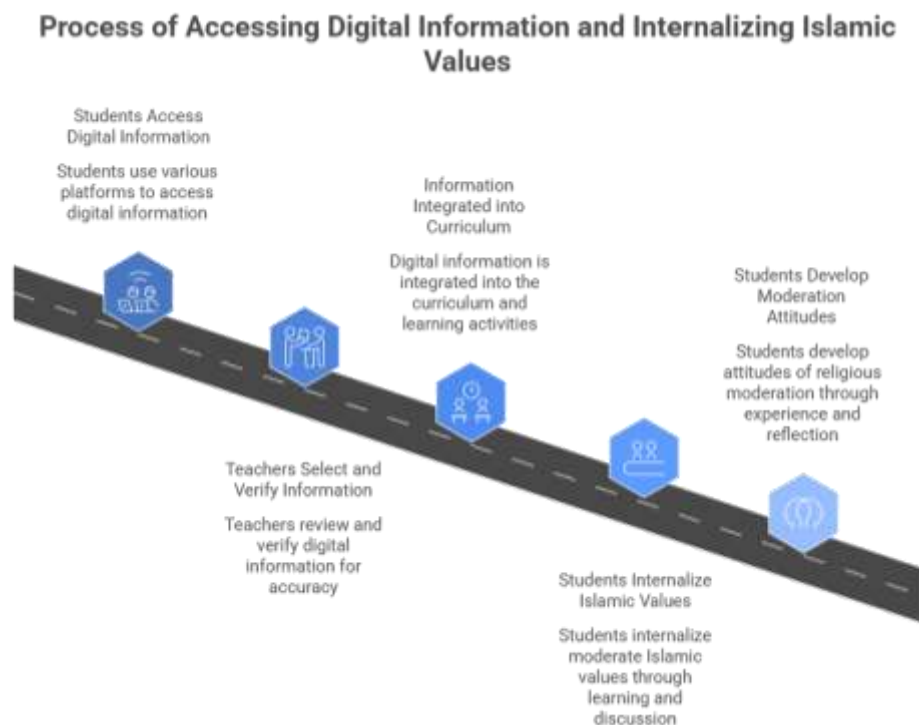


Figure 1. Information Access Process: Integrating Digital Literacy in Learning

Observations indicate that teachers are engaged in the use of digital media in the learning process, such as instructional videos, online articles and online learning platforms. Teachers are not just conventional teachers but also teachers who help students critically assess the digital information. For instance, in a class, students are asked to watch two video lectures from different angles, and then reflect on the principles of moderation in each lecture. This practice is seen as an indication of the shift in the teacher's role from information provider to facilitator of critical learning. This is also a reflection of how digital literacy integration can enhance students' engagement and boost their contextual religious understanding. From the results of interviews and observations, it can be noted that teachers' role is of great importance in integrating digital literacy into the learning process. Teachers have a dual role as both teacher and guide, helping students to understand and assess digital information. By integrating this, students will not only learn about religion but also develop the skills to react to the information spread in digital media. Hence, the function of teachers is an important factor in the success of fostering religious moderation in the field of digital literacy.

The data suggest that the successful integration of digital literacy in learning has much to do with three critical factors, which are pedagogical competence of the teacher, institutional support, and students' active engagement. Teachers with good digital skills are more likely to be able to develop interactive and reflective learning. Moreover, the support of policies for madarasas contributes to the implementation of digital based learning strategies. The figure shows a synergic relationship between the teacher, the institution, and the student in the creation of a learning ecosystem that will support religious moderation. Digital literacy integration, therefore, is not a technical integration, but a pedagogical process that is complex and continuous.

Synthesis of Digital Literacy and the Value of Religious Moderation in Pedagogical Construction

The synthesis of digital literacy and the importance of religious moderation in the study are

carried out in the form of a pedagogical process, namely the implementation of skills in accessing, analyzing and evaluating digital information as well as internalizing moderate Islamic values that include tolerance (*tasamuh*), balance (*tawazun*), and justice (*i'tidal*). This synthesis is not merely in the cognitive dimension, but also in the affective and practical aspects in students' life at the madarasah. The teachers in practice act in the role of facilitators who help students to understand the text in digital content not only textually, but also critically and contextually (Putra et al., 2026). Therefore, this pedagogical architecture can be considered as a bridge between the speed of information in digital and the moderate values of Islam.

Interview results indicate that teachers actively promote students' use of different online sources to prevent being caught up in one particular religious point of view. Students are directed to use a variety of digital resources to develop a wider and broader understanding, which is not exclusive to the Islamic faith, an Islamic Religious Education teacher said. Moreover, pupils explained that in the process they learnt that Islam has various opinions, which meant it was not easy to categorically condemn different opinions. The principal also highlighted that the embedding of digital literacy in learning is in line with the objective of strengthening the importance of moderation in religion. Moreover, students also said that the use of digital content in discussions enables them to understand the differences deeply and to not be affected by extreme content on social media. The results of the study suggest that the construction of digital literacy and religious moderation is a learning process where critical and reflective thinking skills are emphasized. In the teacher's attempt to present several digital sources to students, one can see a pedagogical approach which does not claim to be dogmatic but rather dialogical. Digital literacy in this sense is more than a tool, it is an epistemological approach to understanding the range of viewpoints in Islam (Ni'mah et al., 2024). Inclusive attitudes toward religion can be fostered when the level of digital skills is high, and this implies a decrease of the tendency towards exclusivism.

Additionally, students' statements demonstrating a change in attitudes towards diversity show that the learning experience has been effective in moving religious understanding from normative to contextual. This synthesis shows the importance of individual teachers, but also of institutional policies which facilitate the integration of digital literacy in the educational process, as the support of the principal of the madrasah demonstrated. Based on this pedagogical construction, researchers interpret it as systemic, the success of the synthesis relies on the interaction among the educator as mediator, student as an active subject, and institution as a place to provide the value framework (Hermawan et al., 2025; Aziz, 2025). This is supported by observations in the field which demonstrate that the integration of digital literacy activities in discussion-based learning is regular in teachers. Students are encouraged to critique the religious content of digital sources and to then discuss in small groups the values presented in them. This process not only develops analytical skills of the students but also helps to develop the concept of respecting other opinions. Asrori and Khaled (2026) view this practice as a real application of pedagogical synthesis that does not isolate digital literacy from the value of religious moderation, but rather embeds it into the learning process.

The findings from interviews and observations can be confirmed that the integration of digital literacy and religious moderation values will occur through an integrative process from the exploration of digital information, critical reflection and internalization of values. Digital literacy is a tool for comprehending and assessing information and religious moderation is a normative construct for interpreting information. So they complement each other in creating a moderate knowledge of religion.

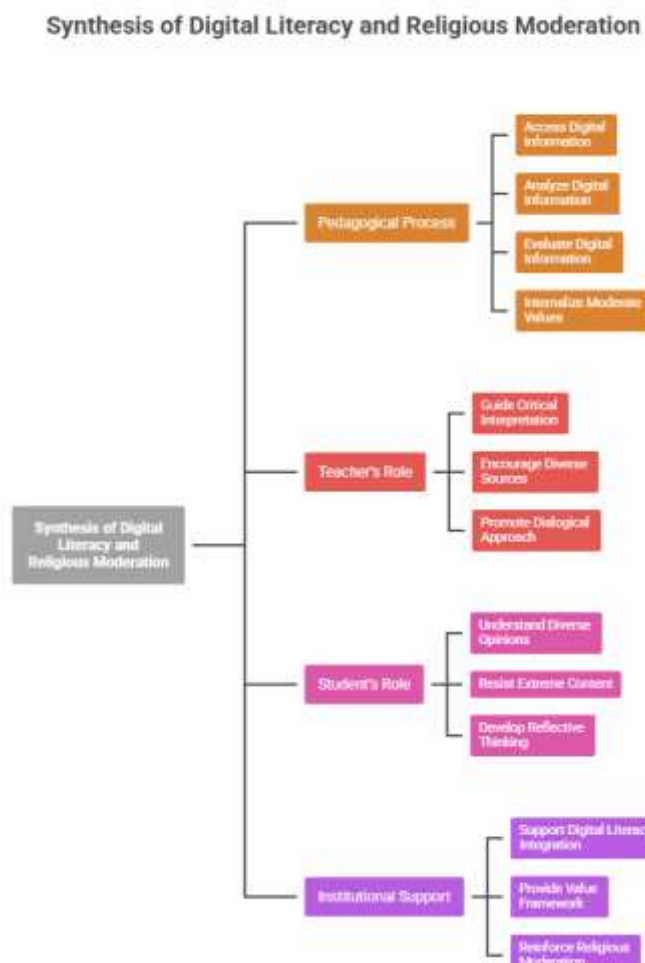


Figure 2. Synthesis of Digital Literacy and Religious Moderation

The pattern that arises from the data (see Figure 2) suggests that the pedagogical construction of this synthesis runs in cyclical phases: digital information delivery, critical reflection (with teacher support) and internalization of values (a moderate attitude) in students. The pattern illustrates that a digital literacy integration with religious moderation is not just a learning approach; it is a learning paradigm which prioritizes a learner's cognitive side and character development. For this reason, this synthesis is an important basis in developing Islamic education that is adaptive, inclusive and relevant in the challenges of the digital era.

DISCUSSION

The results of the studies suggest that students' experiences of digital literacy influence the understanding of religious moderation, especially in their capacity to choose and assess religious information. The result is consistent with the critical digital literacy theory which emphasizes that information literacy requires reflective thinking capabilities, which are important aspects in developing a moderate attitude (Homaidi et al., 2024) and the research conducted by Qomaro et al. (2025) indicated that students in madrasah who have good digital literacy are more open to differences and understand the diversity in an inclusive manner. This study, however, revealed that not all students come equipped with such skills and abilities, as there were differences in digital literacy among the students. This supports the claim that digital literacy is not just a technical ability but a cognitive and social ability that needs to be

deliberately cultivated in the educational process.

In addition, the study results on the role of the teacher as a mediator in digital literacy integration support constructivist learning theory, which is a learning theory that emphasizes on the role of teachers as facilitators who play a role in guiding students to construct knowledge. This is in accordance with the research of Qoyyumillah and Aziz (2026) which states that the pedagogical competence of teachers is one of the factors that can promote religious moderation in the digital era. The need for a pedagogical model that focuses on digital literacy in Islamic education to avoid narrow religious understanding has been pointed out by Caixia et al. (2025). This study shows, however, that the teacher is not just a facilitator, but also serves as an "epistemological filter" that filters digital information before it reaches the student. The result reflects the ideas of previous research and introduces the new dimension of information curation into the competencies of teachers in the digital age. The differences are also observed if compared with the research of Setyaningsih (2022) which focuses on introducing digital citizenship into formal learning. This study reveals that the incorporation of digital literacy in madarasas is not always formal but contextual, and that it is built up in the daily pedagogical practices. This means that there is a disconnect between what has been written about the ideal concept and how it is applied in the field. Moreover, the study of Muntaz (2024) showed that integration of digital literacy can have a positive influence on religious moderation directly, while this study revealed that it has positive influence on religious moderation indirectly and mediated by teachers and institutional environment. So digital literacy and religious moderation are complicated and non-linear. Although this study focuses on Islamic-affiliated schools in Indonesia, its findings resonate with broader international debates. For example, research in other multi-religious contexts, such as the United Kingdom, also highlights the challenge of balancing religious identity formation with the development of critical digital citizenship skills (Hanafi et al., 2024; Utami, 2024). However, a key difference lies in the epistemic foundation of the pedagogical approach. In the Indonesian context, the synthesis of digital literacy and religious moderation is explicitly framed within the state-sponsored discourse of religious moderation, which aims to manage religious diversity for the sake of national unity (Harjatanaya, 2025; Rukiyanto et al., 2025).

In terms of content, this study extends the thesis-antithesis-synthesis dialectical model in the way of understanding the relationship between digital literacy and religious moderate. The thesis that digital literacy strengthens religious moderation is evident in students' ability to critically evaluate information. The opposite position however can be seen in the potential of the spread of extremist ideas and ideologies in unfiltered digital media (Pahlawan & Dafina, 2025). The combination of these two perspectives underlines the need for systematic pedagogical interventions to combine the values of religious moderation with digital literacy. In addition, these findings offer several actionable implications for policy and practice: first, national digital literacy policy: Policymakers should go beyond technical skills and mandate the integration of ethical and critical digital literacy, explicitly linked to the values of multiculturalism and religious moderation, into the national curriculum. Second, teacher professional development: Teacher training programs should be redesigned to equip educators with the competencies to act as 'epistemological filters.' This includes training on how to manage digital content, facilitate critical discussions on sensitive religious topics, and design values-based learning activities. Third, curriculum development: A values-based learning ecosystem should be developed, where religious moderation is not taught as a separate subject but is integrated as a cross-curricular theme, particularly in digital literacy and citizenship education.

CONCLUSION

This study yields three main findings. First, students' digital literacy practices, specifically their

ability to access, select, and evaluate religious information, contribute meaningfully to their understanding of religious moderation. Second, teachers play a dual role as both facilitators and "epistemological filters" in guiding students toward moderate religious understanding. Third, the pedagogical synthesis of digital literacy and religious moderation values can be operationalized through three sequential stages: exploring information, reflecting critically, and internalizing values. The findings underscore that digital literacy is not value-neutral; it requires deliberate value-based pedagogical intervention to foster a moderate, inclusive, and contextual understanding of religion. This research contributes a thesis-antithesis-synthesis integrative model to Islamic education discourse, demonstrating that the relationship between digital literacy and religious moderation is complex and mediated by both pedagogical and institutional factors. While these findings offer empirical and theoretical contributions, the single-case design limits generalizability, and the absence of quantitative measures constrains broader validation. Future research should expand to multiple sites, employ mixed methods, and examine the roles of families, communities, and educational policies in strengthening the digital literacy ecosystem for religious moderation.

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DATA AVAILABILITY STATEMENT

The data created and used in this research includes anonymous identifiers and qualitative responses from education stakeholders; therefore, the data is not available for public release to protect the anonymity and confidentiality of the participants. The data summaries are de-identified, the research instruments as well as the analytical framework are available upon reasonable request from the corresponding author, and are available under the terms of a data sharing agreement. Within the article there are aggregated results and key summary tables to support the findings.

CONFLICT OF INTEREST

The authors have no competing financial interests or personal relationships that could have biased their interpretation of the results of the work reported in this paper. The research was carried out in an academic setting where there were no conflicts of interests related to the findings and conclusions of the study, and the affiliation to Institut Badri Mashduqi and Huaqiao University did not create any conflicts of interest with the findings and conclusions of this study.

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ETHICAL APPROVAL STATEMENT

This study was conducted in accordance with established ethical principles for educational research. Prior to data collection, permission was obtained from the school administration, and all participants were informed about the objectives, procedures, and voluntary nature of the study. Informed consent was obtained from each participant before their involvement in interviews and observations. Participants were assured that their identities would remain confidential and anonymous, and pseudonyms were used in reporting the findings. All collected data were securely stored and used solely for academic purposes. Participants were also informed of their right to withdraw from the study at any stage without any negative consequences. The researchers ensured that the study caused no harm and respected the privacy, dignity, and rights of all participants throughout the research process.

DISCLOSURE THE USE OF AI TECHNOLOGIES

The authors acknowledge the use of artificial intelligence (AI)-assisted tools for language editing, translation, and text refinement while completing this study. After using these tools, the authors carefully reviewed, revised, and verified the content as necessary and take full responsibility for the accuracy, integrity, and final content of the publication.

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