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# Islamic Neuro-Pedagogical Approach: Integration of Neuroscience in Strengthening Students' Spiritual Values

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### Abstract

*This study explores the influence of artificial intelligence (AI) algorithms and digital literacy-based pedagogical strategies on students' religious understanding, moderation, and the development of critical and digital spiritual awareness. The research addresses contemporary challenges in religious moderation education within the digital era, where algorithmic automation and content personalization may unintentionally shape biased or extreme religious perceptions. The study aims to identify the role of AI algorithms in shaping students' religious learning, evaluate the effectiveness of integrating digital literacy and moderation pedagogy, and analyze the empirical impact of interactive learning modules on students' reflective awareness. Using a qualitative case study design, data were collected through interviews with teachers and students, classroom observations, and documentation analysis of modules, quizzes, essays, and project reports. The findings reveal that AI algorithms exert a dual effect: they enhance access to diverse learning materials but potentially reinforce extremist narratives when unregulated. Integrative digital literacy and moderation strategies significantly foster critical thinking, empathy, and tolerance. This study highlights the urgency of embedding algorithmic literacy and religious moderation into educational curricula and positioning teachers as algorithmic mediators, offering both theoretical and practical contributions to digital-era Islamic education.*

### Keywords:

AI Algorithms, Digital Literacy, Religious Moderation

### Abstrak

*Studi ini mengeksplorasi pengaruh algoritma kecerdasan buatan (AI) dan strategi pedagogi berbasis literasi digital terhadap pemahaman agama, moderasi, dan pengembangan kesadaran spiritual kritis dan digital siswa. Penelitian ini membahas tantangan kontemporer dalam pendidikan moderasi agama di era digital, di mana otomatisasi algoritmik dan personalisasi konten dapat secara tidak sengaja membentuk persepsi keagamaan yang bias atau ekstrem. Studi ini bertujuan untuk mengidentifikasi peran algoritma AI dalam membentuk pembelajaran agama siswa, mengevaluasi efektivitas integrasi literasi digital dan pedagogi moderasi, serta menganalisis dampak empiris modul pembelajaran interaktif terhadap kesadaran reflektif siswa. Dengan menggunakan desain studi kasus kualitatif, data dikumpulkan melalui wawancara dengan guru dan siswa, observasi kelas, dan analisis dokumentasi modul, kuis, esai, dan laporan proyek. Temuan ini mengungkapkan bahwa algoritma AI memberikan efek ganda: meningkatkan akses ke beragam materi pembelajaran tetapi berpotensi memperkuat narasi ekstremis ketika tidak diatur. Strategi literasi digital dan moderasi integratif secara signifikan mendorong pemikiran kritis, empati, dan toleransi. Studi ini menyoroti urgensi menanamkan literasi algoritmik dan moderasi beragama ke dalam kurikulum pendidikan dan menempatkan guru sebagai mediator algoritmik, yang menawarkan kontribusi teoretis dan praktis bagi pendidikan Islam era digital.*

### Kata Kunci:

Algoritma AI, Literasi Digital, Moderasi Beragama, Algoritma AI

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## Introduction

The rapid development of Artificial Intelligence (AI) has transformed the way individuals access, process, and interpret information, including in educational and religious contexts. Digital platforms powered by algorithmic systems have increasingly become important sources through which students encounter religious knowledge, values, and perspectives. However, the same technological mechanisms that facilitate access to diverse sources of information may also expose students to misleading, biased, or extreme religious narratives. This condition creates a new educational challenge: ensuring that students possess not only digital competence but also the critical awareness required to evaluate information and maintain a balanced religious attitude in the algorithm-driven era (Karin et al., 2026). Data from the Pew Research Center (2024) shows that 64% of teenagers worldwide access religious content through digital platforms, while 39% are exposed to extreme or radical content (Tarek et al., 2023; Pérez-Escobar et al., 2025; Yani et al., 2025). Indonesian Ulema Council (MUI) noted a significant increase in the spread of inaccurate religious information on social media, impacting the perceptions and religious practices of the younger generation (Suyadi et al., 2020; Wahid et al., 2025). This situation highlights the urgency of developing educational strategies that equip students with digital literacy, critical thinking skills, and religious moderation, enabling them to become not only academically intelligent but also wise and tolerant in the era of algorithms.

Previous studies have highlighted the influence of digital technology on students' learning behavior, ethical development, and social interaction. Espino-Díaz et al (2020) show that the use of interactive technology in education can more effectively shape students' social and ethical values. Williamson et al (2025) emphasize that educational neuroscience and neuropedagogy can help design more adaptive and empathetic learning strategies in the digital age. Furthermore, Lunavictoria et al (2025) highlight how understanding time, attention, and cognitive reinforcement based on neuroscience principles can improve learning performance. This literature confirms that integrating modern AI, algorithms, and neuroscience with religious education or moral values has the potential to shape more critical, reflective, and moderate students. However, most existing studies have primarily focused on AI adoption, learning effectiveness, or digital competence, while limited attention has been given to how AI-mediated environments influence students' religious understanding and their ability to develop religious moderation.

The issue becomes particularly significant in Indonesia, where religious education plays an important role in shaping students' values, identity, and social responsibility. The increasing use of algorithm-based platforms has changed the way young people encounter religious discourse, shifting knowledge acquisition from traditional educational institutions toward personalized digital environments (Marzuki et al., 2025). Although previous research has examined digital literacy, online religious narratives, and the risks of religious extremism, these studies have rarely explored the intersection between AI algorithms, pedagogical strategies, and religious moderation within formal education settings. Consequently, there remains a gap in understanding how educational institutions can respond to algorithmic influences while transforming AI from a potential source of disruption into a tool for strengthening critical thinking, tolerance, and responsible religious engagement. Therefore, this study does not merely reinforce existing discussions on digital transformation but extends them by proposing an integrated framework that connects algorithm awareness, digital literacy, and religious moderation within educational practice.

Based on this research gap and theoretical position, this study aims to analyze the challenges and strategies of using AI technology in education to strengthen religious moderation among students. Specifically, this study seeks to explore how digital algorithms influence religious understanding and practice, and how pedagogical strategies can build critical awareness and tolerance. Based on these objectives, three research questions are formulated: (1) How do AI and digital algorithms influence how students understand religious teachings and the value of moderation? (2) What educational strategies are effective in equipping students with moderate and critical digital literacy? (3) How can education prevent the spread of religious

disinformation through understanding algorithms? This study is expected to produce strategic recommendations for teachers and curriculum makers to proactively face the challenges of the digital era, while instilling the values of religious tolerance and moderation.

This study assumes that exposure to AI and digital algorithms has a dual impact on students: it can broaden their horizons, but it can also increase the risk of exposure to extreme content and religious bias. The basic argument of this study is that education that integrates digital literacy, algorithm understanding, and religious moderation can balance the negative and positive influences of technology. The tentative hypothesis states that adaptive, technology-based pedagogical strategies can strengthen students' critical awareness, empathy, and internalization of the value of moderation. In other words, through the right curriculum and methods, AI is not only a challenge but also a tool for shaping students who are tolerant, reflective, and digitally and religiously responsible.

This study offers an integrative approach as a response to the digital emergency and the risk of radicalization in the algorithm era, while also providing a model for innovative educational solutions. The contribution of this study lies in offering a conceptual model for educators and curriculum developers to address the challenges of religious discourse in AI-mediated environments and to promote a form of digital citizenship that is both technologically capable and ethically grounded.

## Methods

This research uses a qualitative case study design to analyze the implementation of religious moderation education strategies in the era of algorithms and AI. The unit of analysis is located at the Al-Masduqiyah Islamic Boarding School, which is a modern Islamic boarding school with innovative practices in utilizing digital technology and AI literacy in teaching religious values and moderation. This research focuses on the implementation of pedagogical strategies that integrate digital literacy, algorithms, and religious moderation into teaching and learning activities. The case study approach was chosen because it allows researchers to explore the phenomenon in depth, gain a comprehensive understanding of the interactions between technology, teachers, and students, and assess the impact of pedagogy on the formation of critical awareness, empathy, and the internalization of moderation values. This design also allows researchers to explore the specific context that influences the effectiveness of educational strategies, thus providing a substantial empirical contribution to the development of religious moderation education models in the digital era.

The primary source of information for this study was respondents directly involved in the learning process at the institution used as the case study. Respondents comprised three categories: (1) Religious Education teachers/educators, who designed and implemented digital literacy and algorithm-based moderation strategies; (2) students, who were the recipients of pedagogical strategies and observations of moderation understanding; and (3) principals or curriculum managers, who were responsible for technology integration policies and moderation strategies at the institution. In addition, secondary sources such as curriculum documents, syllabi, learning modules, activity recordings, and evaluation reports were used to complement the primary data. Respondents were selected using purposive sampling, specifically targeting individuals with experience, knowledge, and direct involvement in relevant educational practices. By combining primary and secondary data, this study was able to provide a comprehensive picture of the challenges, practices, and impacts of religious moderation education strategies in the algorithm era.

Data collection was conducted through three main techniques: in-depth interviews, participant observation, and documentation. Interviews were conducted with teachers, principals, and students to explore their experiences, perceptions, and challenges in implementing AI literacy and religious moderation. Observations were conducted during the teaching and learning process to capture interactions between teachers and students, as well as the direct use of digital technology. Documentation included curricula, modules, evaluation reports, and relevant learning

materials (Rahmawati et al., 2024). Data analysis was conducted qualitatively through three stages: (1) data reduction, namely filtering, highlighting, and extracting important information from interviews, observations, and documents. The researchers then conducted an initial coding process by identifying meaningful statements related to AI utilization, algorithm awareness, digital literacy practices, religious moderation values, pedagogical strategies, and challenges faced by educators and students. Similar codes were grouped into broader categories to generate analytical themes; (2) data display, presenting findings in narrative form, tables, or diagrams to facilitate interpretation. The researchers compared findings across different data sources, including teacher interviews, student experiences, institutional perspectives, classroom observations, and supporting documents. Data displays were used to identify relationships between AI-based learning practices, algorithm understanding, and the formation of students' religious moderation attitudes. This stage enabled researchers to examine similarities, differences, and contextual factors influencing the implementation of moderation education strategies in the digital era; and (3) data verification/triangulation, comparing information from various sources to ensure consistency, validity, and reliability of the findings (Mayeli & Allahyari, 2022; Nurkhin et al., 2023). The researchers verified interpretations by conducting source triangulation (comparing information obtained from teachers, students, and school administrators), method triangulation (comparing interview, observation, and document findings), and theoretical triangulation by relating empirical findings to concepts of AI literacy, digital education, and religious moderation. Contradictory findings were reviewed and re-examined through additional analysis of field notes and supporting documents to ensure that conclusions accurately represented the research context.

Through this systematic analytical procedure, the study generated empirically grounded findings regarding how AI and algorithm-based digital environments influence religious understanding and how educational strategies can strengthen students' critical awareness, tolerance, and moderation values. This analytical approach ensured that the findings were not merely descriptive but represented an interpretive understanding of the relationship between technology, pedagogy, and religious moderation education in the AI era.

## Results

### AI Algorithms as a Factor Shaping Religious Understanding and Moderation

Based on interviews with teachers and students, it was found that AI algorithms on digital platforms play a significant role in shaping how students' access, interpret, and understand religious content. Most students stated that automated content recommendations often display repetitive or extreme material, potentially influencing their religious perceptions. Teachers also revealed that many students have difficulty distinguishing between moderate and biased information, making digital literacy crucial. These findings align with the concept of algorithmic influence in digital education literature, which emphasizes that algorithms not only present information but also shape mindsets and values. Through meta-literature analysis, this study confirms that understanding religious moderation in the AI era is not solely dependent on the curriculum but also influenced by students' interactions with algorithms and digital content.

**Tabel 1. Results of Interviews with Several Informants**

| Respondents | Digital Platform | Influence of Algorithms            | Impact on Moderation                 |
|-------------|------------------|------------------------------------|--------------------------------------|
| Student     | YouTube          | Extreme content appears frequently | Difficulty sorting content           |
| Student     | TikTok           | Repeated recommendations           | Limited understanding of moderation  |
| Teacher     | WhatsApp & LMS   | Lack of control over student feeds | Requires additional digital literacy |

|         |                  |                                       |                                             |
|---------|------------------|---------------------------------------|---------------------------------------------|
| Teacher | Google Classroom | AI helps recommend learning resources | Positive if guided by moderation guidelines |
|---------|------------------|---------------------------------------|---------------------------------------------|

Source: Primary data from interviews, compiled by the researcher (2025)

This table 1 shows a familiar pattern: digital algorithms influence exposure to religious content. Some students tend to follow popular content, while teachers recognize the need for pedagogical interventions to guide students in sorting information and critically understanding religious moderation. Interview results confirmed that AI algorithms are not merely a medium for conveying information but are a key player in shaping students' religious understanding. Students who were repeatedly exposed to extreme content had difficulty distinguishing between moderate and radical values. At the same time, those guided by teachers using digital literacy strategies demonstrated a better understanding of moderation. In other words, pedagogical control remains necessary, even though algorithms provide easy access and recommendations for materials. These findings underscore the need to integrate algorithmic literacy into religious education. A meta-analysis of the international literature supports these findings, showing that uncontrolled digital exposure can reinforce cognitive biases and extreme perceptions, while guided educational interventions can foster critical reflection. Thus, AI can be a positive or negative learning tool, depending on the pedagogical management applied.

Interpretation of these findings suggests that AI algorithms have a dual influence on students' religious understanding. On the one hand, algorithms enable rapid access to a wide range of learning resources, increasing exposure to diverse perspectives. On the other hand, uncontrolled algorithms tend to amplify popular or extreme content, thereby risking a decline in religious moderation. Therefore, teachers act as "algorithmic mediators," guiding students to understand content and instilling values of tolerance critically. Conceptually, these findings support the idea of algorithmic literacy for religious moderation, an educational approach that combines digital literacy with the formation of moderate values. These findings are novel because they emphasize the direct interaction between AI, students, and moderation education, a topic still rarely studied in the context of religious education and religious moderation in Indonesia and globally.

### Strategy Education Based on the Integration of Digital Literacy and Religious Moderation

Classroom observations show that teachers who implement an integrative strategy of digital literacy and religious moderation can create a more critical and reflective learning environment. In practice, teachers use digital media, online learning platforms, and interactive simulations to stimulate students to recognize extreme content and internalize the value of tolerance. Observations noted that students actively compare information sources, discuss controversial content, and critically express their understanding of moderation. This strategy involves steps such as guided browsing, critical content analysis, and teacher-led moderation discussions. This concept aligns with the literature on neuropedagogy and algorithmic literacy, which emphasizes that effective education combines technological understanding with the development of social and moral values. A meta-analysis of previous research shows that integrating technology-based pedagogy with moral values improves students' critical reflection, empathy, and internalization of moderation principles.

**Tabel 2. Integrative Digital Literacy Strategy**

| Teacher Strategy       | Student Activities               | Impact on Moderation                 | Observation Notes                                |
|------------------------|----------------------------------|--------------------------------------|--------------------------------------------------|
| Guided browsing        | Students compare online content  | Increasing critical awareness        | The teacher provides critical question guidance  |
| Moderation discussion  | Student opinion presentation     | Internalizing the value of tolerance | Students actively argue with data                |
| Interactive simulation | Extreme content debate role-play | Moral reflection                     | Teachers assess empathy and argumentation skills |

|                                                                                    |                                    |                                       |                                          |
|------------------------------------------------------------------------------------|------------------------------------|---------------------------------------|------------------------------------------|
| Digital literacy evaluation                                                        | Online quizzes and source analysis | Measuring understanding of algorithms | The teacher provides individual feedback |
| Source: Adapted from the results of researcher observations and development (2025) |                                    |                                       |                                          |

The results in the table 2 show that the pedagogical strategy systematically integrates digital literacy and religious moderation, thus providing a real impact on critical awareness, moral reflection, and internalization of tolerance values in students. Observational findings confirm that an integrated strategy of digital literacy and religious moderation is efficacious in improving students' ability to filter information, understand algorithmic bias, and develop values of tolerance. Students engaged in structured activities such as guided browsing and moderated discussions demonstrated better understanding than those who only received conventional materials. This restatement reinforces the concept that religious moderation education in the AI era must be active, participatory, and based on controlled digital interactions. A meta-analysis of the literature supports these findings, emphasizing that pedagogical interventions that integrate technological literacy and socio-moral values can shape reflective, critical, and tolerant students. Therefore, this strategy is not simply a teaching method, but a new pedagogical model capable of facing the challenges of the digital era, while strengthening the internalization of religious moderation values among the younger generation.

The interpretation of these results suggests that an educational strategy integrating digital literacy and religious moderation is key to addressing the challenges of AI and algorithms in religious learning. With this approach, teachers act as facilitators, guiding students to understand content critically, distinguish between moderate and extreme information, and internalize the value of tolerance. Conceptually, these findings support the development of a "moderation-aware digital pedagogy," a pedagogical model that combines an understanding of algorithms, digital literacy, and the values of religious moderation. The novelty of this research lies in its emphasis on integrative practice in the field, rather than merely theory, thus opening opportunities for replication in various educational institutions. Furthermore, this approach demonstrates that technology does not have to be a threat but can be a pedagogical tool that strengthens religious moderation, provided that systematic, interaction-based strategies and reflective evaluation of student understanding guide it.

**Empirical Impact on Strengthening Digital Critical and Spiritual Awareness**

Based on curriculum documentation, learning modules, and evaluation reports, integrating digital literacy and religious moderation significantly strengthened students' critical and spiritual digital awareness. Documentation shows that students who participated in interactive modules, digital literacy quizzes, and religious content analysis projects were able to identify algorithmic bias, verify information sources, and respond to extreme content with a reflective attitude. Teachers noted an increase in students' ability to relate digital content to the principles of religious moderation and to express their understanding in discussions, essays, and presentations. A meta-analysis of the literature shows that the integration of technology and moral values in education can shape reflective, ethical, and spiritual competencies, especially in the digital context. These findings confirm that strengthening critical and spiritual digital awareness is not merely a side effect but an empirical result of implementing systematic, document-based, evaluative pedagogical strategies.

| Tabel 3. Curriculum Documentation, Learning Modules, And Evaluation Reports |                                           |                                   |                                |
|-----------------------------------------------------------------------------|-------------------------------------------|-----------------------------------|--------------------------------|
| Documentation Types                                                         | Student Activities                        | Impact on Critical Awareness      | Impact on Digital Spirituality |
| Interactive modules                                                         | Digital content analysis                  | Improve verification capabilities | Cultivating value reflection   |
| Digital literacy quiz                                                       | Evaluation of understanding of algorithms | Identifying content bias          | Internalizing moderation       |

|                      |                           |                              |                                                   |
|----------------------|---------------------------|------------------------------|---------------------------------------------------|
| Project report       | Presentation & discussion | Critical thinking develops   | Awareness of digital responsibility is increasing |
| Essays & reflections | Opinion writing           | In-depth analysis of content | Spiritual expression and digital ethics           |

Source: Author's own compilation (2025)

Meanwhile, the table 3 shows a direct relationship between document-based activities and strengthening digital critical and spiritual awareness, which confirms that a systematic pedagogical approach can produce measurable reflective and ethical competencies.

The documentation confirms that implementing an integrative strategy of digital literacy and religious moderation empirically strengthens students' critical and spiritual digital awareness. Students can assess digital content objectively, distinguish between moderate and extreme information, and reflect on their understanding in essays, presentations, and discussions. This restatement emphasizes that these positive impacts are not merely theoretical but are evident in empirical data, as shown in evaluation documents and learning reports. A meta-analysis of the literature supports these findings, demonstrating that the integration of technology, critical pedagogy, and moral values shapes reflective and ethical learners. Thus, strengthening critical and spiritual digital awareness indicates the success of a pedagogical strategy of religious moderation in the algorithmic era. It also provides concrete evidence that education can positively utilize AI and digital technology to shape moderate and responsible religious character.

The interpretation of the findings from this documentation indicates that document-based activities and interactive modules can create learning experiences that combine digital literacy, critical thinking, and the internalization of spiritual values. These empirical impacts indicate that students not only understand digital content but also apply the principles of moderation in their daily lives, both online and offline. Conceptually, these findings support the notion of "digital spiritual literacy," namely, the ability of students to navigate the digital world with critical, ethical, and religious awareness. The novelty of this research lies in the empirical evidence linking document-based pedagogical strategies to strengthening digital critical and spiritual awareness, an area that remains largely under-researched. These results strengthen the overall research argument that AI and digital technology can be practical educational tools when combined with systematic religious moderation strategies based on empirical evaluation.

## Discussion

The finding that AI-driven algorithms influence students' religious understanding indicates that religious knowledge acquisition has shifted from traditional authority-based learning toward algorithm-mediated environments. In the digital age, students no longer interact solely with teachers or textbooks, but also with algorithms that determine the content they consume (Ardiansyah et al., 2025). This presents both opportunities and risks: students with proper guidance can gain diverse perspectives, but risks arise when extreme content becomes repetitive and uncontrolled (Ienca, 2023; Onia, 2024; Tsvyk & Tsvyk, 2022; Goran et al., 2024). The educational implication is the need to integrate algorithmic literacy and religious moderation into the curriculum, enabling students to assess information critically, sort out extreme content, and maintain the value of tolerance. Thus, AI is not merely a tool for delivering material but also a pedagogical component that must be understood and managed to ensure religious moderation education remains relevant and practical in the algorithmic age.

The correlation between AI algorithms and religious understanding can be explained through the concept of algorithmic influence. Algorithms filter and recommend content based on students' digital behavior, so exposure to extreme or biased content can influence their religious perceptions and interpretations (Adeleke Adeoye et al., 2025; Fawaid et al., 2025). This finding is consistent with digital education literature, which shows that uncontrolled interactions with technology can reinforce cognitive biases. Furthermore, teachers who practice algorithmic literacy

can mitigate these adverse effects. This correlation confirms that the influence of AI is not solely technical but also pedagogical, and the success of religious moderation depends on teachers' ability to guide students in digital navigation (Sulala, 2023; Dinda Febrianti Putri & Hina, 2024; Mundiri et al., 2025). By understanding this correlation, educational strategies can be designed to utilize AI as a positive tool while reducing the risk of extremism or religious misunderstanding among young people. The theoretical implication is that religious moderation education requires a transformation from content-based moderation education toward critical digital religious literacy education. Students should not only learn what moderation means but also understand how digital infrastructures influence their religious information ecosystem. This perspective provides a new framework for integrating AI literacy and religious education.

The finding that integrative strategies enhance critical awareness and moral reflection has significant implications for the practice of religious moderation education. This strategy demonstrates that combining digital literacy, interactive activities, and discussions about moderation can lead to deeper, more critical, and more participatory student understanding. This implication emphasizes that education not only transfers knowledge but also fosters reflective and ethical competencies through controlled digital interactions (Alamelu et al., 2025; Gupta, 2025). For educational institutions, this highlights the need for systematic development of modules and teacher guides, as well as continuous evaluation of the strategy's effectiveness (Ardiansyah et al., 2025). With this integrative strategy, religious moderation education can adapt to the dynamics of digital technology, increase student engagement, and reduce the risk of exposure to unfiltered, extreme content.

The correlation between integrative strategies and understanding of moderation can be explained through neuropedagogy and algorithmic literacy theories. Observations show that students who participate in guided browsing activities, moderated discussions, and interactive simulations develop higher levels of critical reflection skills than students who only receive conventional instruction (Amazian et al., 2024; Vadivel & Sunny, 2024; Şimşek & Şimşek, 2025). This occurs because the combination of active interaction with digital content and teacher guidance stimulates critical thinking, empathy, and the internalization of tolerant values. A meta-analysis of the literature supports that integrative pedagogical strategies enhance cognitive and moral engagement (Dawson & Agbozo, 2024). Thus, this correlation confirms that a systematic approach integrating technology and moral values not only facilitates content understanding but also shapes students' overall character, making digital literacy and religious moderation mutually reinforcing.

The finding that pedagogical strategies based on interactive modules and documentation strengthen digital critical and spiritual awareness has important implications for religious moderation education. This suggests that education can develop reflective and ethical competencies through structured digital learning experiences, not simply through the delivery of material (Hadiyanto et al., 2026). Students not only understand religious content but also internalize the principles of moderation in real life, both online and offline. This implication emphasizes the need to integrate documentation based evaluation, interactive modules, and reflective projects into the curriculum, so that strengthening digital critical and spiritual awareness becomes an indicator of the success of religious moderation education in the AI era (Hollanek & Nowaczyk-Basińska, 2024; Jain et al., 2024; Khowaja et al., 2024). Thus, digital technology can be utilized positively to shape moderate and responsible religious character.

The correlation between interactive document-based activities/modules and the strengthening of critical awareness and digital spirituality can be explained through student interaction with the content, reflection, and systematic evaluation (Sperling et al., 2024). Module documentation, quizzes, essays, and content analysis projects indicate that active student engagement improves students' ability to critically assess information, verify sources, and express spiritual values. A meta-analysis of the literature supports that the integration of technology and moral values strengthens reflective competence. In other words, the more structured the digital

learning experience, the greater the students' ability to practically apply the principles of religious moderation (Bouderhem, 2024; Sami et al., 2024). This correlation confirms that digital spiritual literacy can be developed through document-based pedagogical strategies and digital interactions, providing rare empirical evidence and highlighting the relevance of AI as an educational tool for developing moderate religious character.

The findings suggest that AI should not be positioned merely as a technological challenge or a source of risk but as an educational opportunity that requires ethical and pedagogical management. The main contribution of this study is the proposition that religious moderation education in the digital era must move beyond teaching values toward developing students' capacity to critically engage with algorithm-mediated information. Through this approach, AI can become a supportive educational tool for cultivating students who are digitally competent, critically aware, tolerant, and responsible in their religious engagement.

## Conclusion

This research confirms that AI algorithms, educational strategies based on digital literacy and religious moderation, and interactive documentation-based modules play a significant role in shaping critical, tolerant, and reflective religious understanding. AI algorithms influence access to and interpretation of religious content, making algorithmic literacy crucial. Integrative pedagogical strategies enhance students' ability to sort information, distinguish between moderate and extreme content, and foster values of tolerance. Interactive modules and learning documentation strengthen critical digital and spiritual awareness, resulting in measurable reflective and ethical competencies.

This research contributes both theoretically and practically by expanding the discourse on algorithmic literacy for religious moderation and providing guidance on implementing religious moderation education in the digital era. Scientifically, these findings enhance understanding of the interaction between AI and religious education; practically, they serve as a reference for teachers and institutions in designing adaptive, critical, and moderate learning strategies.

The limitations of this study lie in the limited sample size and focus on a specific context, so the results may not be fully representative of the entire student population. Furthermore, the qualitative approach, employing interviews, observations, and documentation, resulted in richer narratives but relatively limited quantitative generalizations. Recommendations for further research include conducting comparative studies across institutions or countries, incorporating quantitative methods to measure the impact of digital literacy and moderation more objectively. Future research could also explore the interaction of AI algorithms with new social media platforms, their long-term impact on religious understanding, and the development of more adaptive digital modules. Thus, further studies can strengthen the findings, provide broader empirical evidence, and serve as a reference for developing Islamic education curricula that are relevant, critical, and responsive to digital dynamics.

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