Islamic Education Management in the Digital Era: A Bibliometric Study of Da'wah-Based Digital Transformation in Yogyakarta (2020–2024)

Moh. Solikul Hadi[1]*, Dyah Listiyani[2], Mieko Kaisari[3], Slimani Sanna Leila[4]

[1] Sekolah Tinggi Agama Islam Masjid Syuhada Yogyakarta, Indonesia

[2] Universitas Islam Negeri Sunan Kalijaga Yogyakarta, Indonesia

[3] The University of Tokyo, Japan

[4]Universitas Al-Qarawiyyin, Maroko

*E-mail: mohsolikulhadi@staimsy.ac.id

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Abstract

This study aims to analyse research trends concerning digital transformation in Islamic Education Management through the integration of digital literacy and da'wah values in formal Islamic education in Yogyakarta during the period 2020–2024. The research employed a Systematic Literature Review (SLR) approach combined with quantitative bibliometric analysis. Data were collected from Scopus, Google Scholar, SINTA, and Garuda databases using keywords related to Islamic education management, digital literacy, digital da'wah, and formal Islamic education. A total of 74 selected articles were analysed using Zotero, VOSviewer, and Microsoft Excel to identify publication trends, dominant themes, and keyword co-occurrence patterns. The findings indicate a significant increase in scholarly attention toward digital transformation in Islamic education, particularly during 2022–2023 following the implementation of hybrid learning systems and the Merdeka Curriculum. The dominant research themes include digital literacy in madrasahs, digital da'wah through social media, and educational management transformation. The study concludes that digital transformation in Islamic education involves not only technological adaptation but also the integration of Islamic values, ethical communication, and value-based educational governance. This research contributes theoretically to the discourse of digital Islamic educational management and practically provides insights for policymakers, educators, and Islamic educational institutions in developing adaptive and digitally

Keywords: Islamic Education Management; Digital Literacy; Digital Da'wah; Bibliometric Analysis; Formal Islamic Education; Digital Transformation

INTRODUCTION

Yogyakarta, widely recognised as Indonesia's "City of Education," has long served as a strategic centre for the development of Islamic education and intellectual traditions (Sukmajati, 2022). According to the Regional Education Office of the Special Region of Yogyakarta, the province hosts more than 1,200 educational institutions, including a significant number of madrasahs, pesantren, and Islamic higher education institutions that actively contribute to the advancement of religious learning and educational innovation (Raihani, 2006). Within this educational landscape, formal Islamic institutions continue to play a crucial role not only in transmitting religious knowledge but also in strengthening the managerial capacity of Islamic education in response to contemporary societal transformation (Abrori & Hadi, 2020). The growing intersection between religion, technology, and educational governance has positioned Yogyakarta as an important locus for examining the evolution of Islamic Education Management in the digital era (Dzulfian Syafrian, 2025; Solihin, 2016).

The rapid expansion of digital technology has significantly transformed the management practices of formal Islamic education (Rosidah & Rahmayanti, 2025). Educational institutions are no longer merely responsible for curriculum delivery and religious instruction but are also required to manage digital learning environments, online communication systems, technology-based assessments, and digital religious engagement (Husni et al., 2025). This transformation accelerated during the COVID-19 pandemic, when Islamic schools and madrasahs across Indonesia adopted online and hybrid learning systems using platforms such as Zoom, Google Meet, Moodle, and Google Classroom

(Febriana et al., 2021). In Yogyakarta specifically, the integration of digital technology into Islamic educational management became increasingly visible through the emergence of digital da'wah programs, virtual religious learning communities, social media-based Islamic campaigns, and digitally mediated character education initiatives.

At the same time, digital literacy has emerged as a critical competency within contemporary Islamic education. Digital literacy is no longer understood solely as the technical ability to operate digital devices, but also as the capacity to critically evaluate information, ethically engage in online communication, and responsibly disseminate religious values through digital platforms (Ristianti et al., 2025). In the context of Islamic education, digital literacy intersects closely with da'wah values, particularly in fostering ethical communication, religious moderation, digital responsibility, and Islamic character formation among students. The Quranic command to "invite to the way of your Lord with wisdom and good instruction" (Quran 16:125) provides a normative foundation for contextualising da'wah practices within evolving technological environments (Hidayati & Sugiharto, 2024).

Between 2020 and 2024, the integration of digital literacy and da'wah values increasingly influenced the managerial orientation of Islamic educational institutions in Yogyakarta (Hamid, 2025). Educational leaders began incorporating digital transformation strategies into institutional planning, teacher development programs, curriculum design, and student assessment systems (Tahir & Rachman, 2025). The implementation of the Merdeka Curriculum in 2022 further strengthened this shift by encouraging schools to integrate digital competence, character education, and project-based learning into religious subjects (Huang, 2025). As a result, many Islamic schools initiated digital da'wah projects through podcasts, short videos, social media campaigns, and online Islamic discussions managed collaboratively by teachers and students (Michael et al., 2023).

Table 1. Key Developments in Islamic Education Management and Digital Transformation (2020–2024)

Year	Main Development	Source
2020	Full implementation of online learning in Islamic schools during the COVID-19 pandemic	Ministry of Religious Affairs of Indonesia, 2020
2021	Significant increase in social media-based digital da'wah activities among students and teachers	Ministry of Communication and Information Technology, 2021
2022	Merdeka Curriculum emphasized digital literacy and character-based education	Ministry of Education, Culture, Research and Technology, 2022
2023	Digital da'wah and educational technology training introduced in Islamic institutions	LP2M UIN Sunan Kalijaga, 2023
2024	Expansion of digital-based assessment and online religious learning management	Field Observation Data, 2024

As illustrated in Table 1, the pandemic period became a turning point in accelerating digital transformation within Islamic educational institutions. In 2020, the national transition toward online learning compelled madrasahs and pesantren to rapidly adopt digital management systems for instruction, communication, and student supervision. This condition subsequently stimulated broader experimentation with digital religious communication and technology-supported da'wah activities. By 2021, Islamic educational institutions increasingly utilised social media platforms such as TikTok, Instagram, YouTube, and Spotify to disseminate Islamic messages tailored to the communication preferences of Millennials and Generation Z students (Azizah et al., 2025).

The introduction of the Merdeka Curriculum in 2022 further reinforced the integration of digital literacy within educational management practices. Islamic schools were encouraged to develop project-based learning models that combined technological competence with Islamic values and character education (Salabi & Muharramah, 2026). Consequently, school administrators and teachers began

designing educational activities that integrated digital creativity, ethical communication, and religious engagement into classroom and extracurricular programs. By 2023 and 2024, digital da'wah training, online religious campaigns, and technology-supported Islamic learning evaluation had become increasingly institutionalised within formal Islamic education.

Despite these developments, the academic discussion surrounding the integration of da'wah values, digital literacy, and Islamic educational management remains fragmented (Ubaedullah & Suryono, 2025; Wardana et al., 2025). Existing studies generally examine digital literacy, digital da'wah, or educational technology separately without positioning them within a comprehensive framework of Islamic education management. Research on digital literacy frequently focuses on technical competencies and media use, whereas studies on da'wah primarily emphasize religious communication or moral persuasion in online environments (DiBenedetto & Zimmerman, 2011; Dzulfian Syafrian, 2025). Meanwhile, studies related to Islamic educational management tend to discuss institutional governance, leadership, curriculum administration, or quality assurance without specifically addressing the strategic role of digital religious literacy in educational management systems.

Several scholars have explored the role of digital technology in Islamic education, highlighting the effectiveness of social media, podcasts, and digital platforms for religious dissemination and student engagement. Other studies have investigated the implementation of technology-based learning management systems in madrasahs and pesantren. However, limited attention has been given to mapping how these themes have evolved collectively within the broader discourse of Islamic educational management (Kaso et al., 2021). Moreover, few studies systematically analyse publication trends, collaboration networks, dominant research themes, and emerging conceptual patterns related to digital da'wah and digital literacy in formal Islamic education.

Table 2. Research Gap in the Study of Da'wah Values, Digital Literacy, and Islamic Education Management

Aspect	**Research Gap**	**Research Implication**
Bibliometric Mapping	Limited bibliometric studies focusing on Islamic education management in Yogyakarta	Need for systematic scientific mapping and trend analysis
Conceptual Integration	Da'wah values and digital literacy are often studied separately	Lack of integrative theoretical framework
Educational Management	Limited discussion on digital transformation in Islamic education governance	Need for managerial and policy-oriented analysis
Empirical Trends	Insufficient analysis of publication patterns and collaboration networks	Requires comprehensive bibliometric exploration

As shown in Table 2, there remains a significant gap in understanding how digital literacy and da'wah values intersect within the management of formal Islamic education. Existing literature demonstrates a fragmented perspective that lacks systematic mapping of scientific trends and institutional transformation. Furthermore, studies focusing specifically on Yogyakarta as a regional hub of Islamic educational innovation remain scarce, despite its strategic role in shaping Islamic educational discourse in Indonesia.

Therefore, this study aims to conduct a bibliometric analysis of research trends related to the integration of da'wah values, digital literacy, and Islamic education management in formal Islamic education in Yogyakarta during the period 2020–2024. Through bibliometric mapping, this research seeks to identify dominant themes, publication growth, institutional collaborations, influential authors, and emerging research directions within the field. The study contributes theoretically by strengthening the discourse of digital transformation in Islamic Education Management and contributes practically by

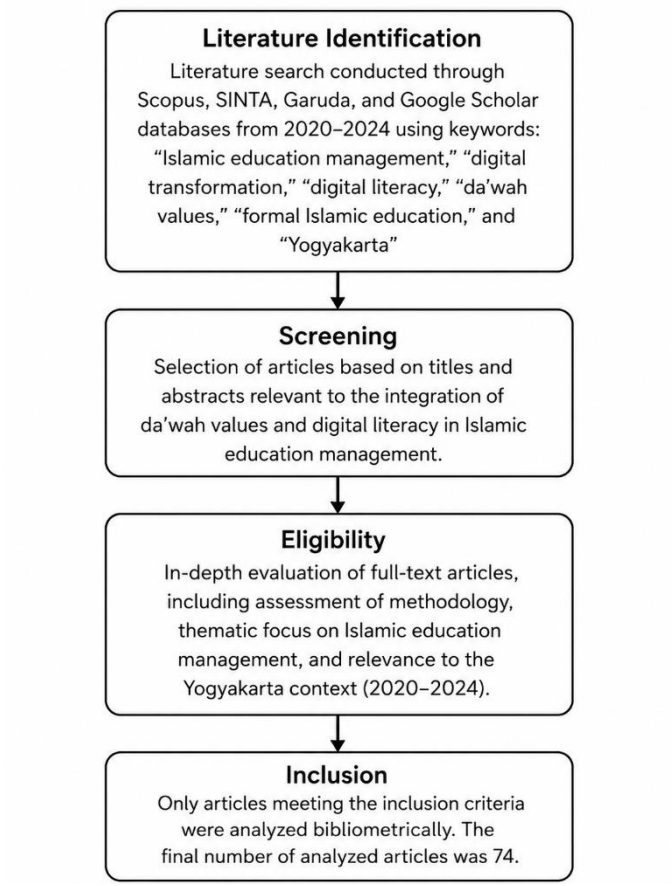
providing evidence-based insights for policymakers, school leaders, curriculum developers, and educators in designing adaptive, value-oriented, and digitally responsive Islamic educational systems.

METHOD/EXPERIMENT

Research Design

This study employed a Systematic Literature Review (SLR) approach combined with quantitative bibliometric analysis to examine research trends related to digital transformation, da'wah values, digital literacy, and Islamic Education Management within formal Islamic education in Yogyakarta during the period 2020–2024. The SLR method was selected because it enables a structured, transparent, and replicable process for identifying, evaluating, and synthesising scientific literature systematically (Kitchenham, 2004). Meanwhile, bibliometric analysis was utilised to map patterns of publication growth, keyword co-occurrence, institutional collaboration, thematic development, and emerging research trends within the selected studies.

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework was adopted to support the reporting and documentation of the literature selection process. In this study, PRISMA functioned as a reporting guideline rather than the principal methodological framework. Thus, the SLR constituted the core research methodology, while PRISMA enhanced the transparency and accountability of article identification, screening, eligibility ssessment,



and inclusion procedures.

Literature Identification and Selection

The literature identification process was conducted systematically using four major academic databases, namely Scopus, Google Scholar, SINTA, and Garuda. Scopus was prioritised due to its international academic reputation and broad indexation coverage, while Google Scholar, SINTA, and Garuda were employed to capture nationally recognised and locally relevant publications concerning Islamic educational management and digital transformation in Indonesia. The search process was

conducted using combinations of several keywords and Boolean operators, including "Islamic education management," "digital literacy," "digital transformation," "digital da'wah," "formal Islamic education," "madrasah," "Islamic schools," and "Yogyakarta." The initial search yielded approximately 165 scientific records published between 2020 and 2024.

During the screening stage, titles, abstracts, and keywords were reviewed to eliminate duplicate records, non-academic publications, opinion articles, conference summaries without full papers, and studies unrelated to formal Islamic education. This process resulted in 102 potentially relevant articles. Subsequently, a full-text eligibility assessment was conducted to examine methodological clarity, thematic relevance, geographical focus, and alignment with the scope of Islamic educational management and digital transformation. Articles that lacked empirical or systematic methodological explanation, failed to address Islamic educational institutions, or did not substantially discuss digital literacy and da'wah values were excluded. Following this assessment, 74 articles met all inclusion criteria and were selected for bibliometric analysis.

Bibliometric Tools and Data Processing

To ensure systematic data management and analytical consistency, this study utilised three primary tools: Zotero, VOSviewer, and Microsoft Excel. These tools were selected because of their complementary capabilities in academic reference management, bibliometric visualisation, and quantitative data analysis. Zotero was employed for citation management and literature organisation. This software facilitated the collection, storage, categorisation, and synchronisation of academic references from multiple databases. Zotero also assisted in identifying duplicate records and organising articles according to thematic categories such as digital literacy, digital da'wah, educational leadership, curriculum management, and Islamic educational governance.

VOSviewer was utilised to conduct bibliometric mapping and network visualisation analysis (Van Eck & Waltman, 2010). The software enabled the visual exploration of keyword co-occurrence, author collaboration networks, institutional affiliations, citation relationships, and thematic clusters related to Islamic educational management in the digital era. Through network visualisation, this study identified dominant research themes, emerging concepts, and patterns of scholarly interaction within the field. Microsoft Excel was used to support quantitative tabulation, descriptive statistical analysis, and trend classification. The selected studies were categorised based on publication year, journal indexation, research focus, methodological approach, institutional affiliation, and thematic orientation. Excel also facilitated the creation of frequency distributions, trend analyses, and data integration prior to bibliometric visualisation.

Integration and Analytical Rationale

The integration of Zotero, VOSviewer, and Microsoft Excel strengthened the reliability, transparency, and replicability of the bibliometric review process. Zotero supported efficient literature management and reference accuracy, VOSviewer enabled systematic mapping of scientific knowledge structures, while Excel facilitated statistical organisation and descriptive interpretation of publication data. The combined utilisation of these tools allowed this study to comprehensively analyse the evolution of research concerning digital literacy, da'wah values, and Islamic educational management in Yogyakarta. Furthermore, the bibliometric approach provided a broader understanding of conceptual developments, research productivity, institutional influence, and emerging scholarly trends within the discourse of digital transformation in Islamic education.

Table 3. Criteria for Selecting Studies on Islamic Education Management and Digital Transformation

Aspect	Explanation	Primary Reference Source
Publication Timeframe	Articles published between 2020–2024 were selected to capture post-pandemic digital transformation trends in Islamic education.	Kitchenham, B. (2004). *Procedures for Performing Systematic Reviews*. Keele University and NICTA.

Relevant Topics	Studies focused on Islamic education management, digital literacy, digital da'wah, educational technology, and formal Islamic education.	Zaman, A. (2021). *Digitalisasi Dakwah dan Pendidikan Islam di Era Disrupsi*.
Geographical Focus	Studies explicitly discussing Yogyakarta or formal Islamic educational institutions in Indonesia.	Ma'arif, S. (2022). *Peta Kajian Pendidikan Islam Digital di Yogyakarta*.
Academic Eligibility	Articles must be peer-reviewed and employ empirical, bibliometric, or systematic review methodologies.	Booth, A., Sutton, A., & Papaioannou, D. (2016). *Systematic Approaches to a Successful Literature Review*.

Inclusion and Exclusion Criteria

The inclusion criteria were established to ensure the relevance and academic quality of the selected literature. Included studies had to: (1) be published between 2020 and 2024; (2) focus on formal Islamic education, digital literacy, digital transformation, da'wah values, or Islamic educational management; (3) employ scientific or systematic methodologies; and (4) contain explicit discussion related to Indonesia, particularly Yogyakarta or comparable Islamic educational contexts. Meanwhile, exclusion criteria were applied to remove studies lacking scientific rigour, methodological transparency, or thematic relevance. Publications such as editorials, news articles, opinion essays, duplicated records, and studies unrelated to formal Islamic education or digital transformation were excluded from analysis. By adhering to systematic review procedures and PRISMA-based reporting standards, this study established a transparent and replicable bibliometric framework. This methodological approach ensured the validity and credibility of the findings in mapping research developments concerning digital transformation and da'wah-oriented management within the contemporary landscape of Islamic Education Management.

RESULTS AND DISCUSSION

Results

To understand the development of research concerning digital transformation, da'wah values, and Islamic Education Management in formal Islamic education, an analysis was conducted on scientific publications indexed in Scopus, Google Scholar, SINTA, and Garuda during the period 2020–2024. The bibliometric mapping focused on publication growth, keyword co-occurrence, thematic classification, and the emerging relationship between digital literacy and Islamic educational management.

Table 4. Trends in the Number of Publications on Islamic Education Management and Digital Transformation (2020–2024)

Year	Number of Articles
2020	9
2021	15
2022	24
2023	28
2024*	14 (as of April)

Based on Table 4, the number of publications discussing digital transformation and Islamic educational management increased significantly after 2021. The highest publication growth occurred in 2022 and 2023, coinciding with the implementation of the Merdeka Curriculum, the expansion of hybrid learning systems, and the increasing institutional adoption of digital literacy programs in Islamic schools and madrasahs. These developments demonstrate that digital transformation has become a central

issue within contemporary Islamic educational discourse, particularly regarding educational governance, digital pedagogy, and value-based learning management.

The graph indicates a continuous upward trend in research productivity from 2020 to 2023. The sharp increase in 2022 reflects the acceleration of digitalisation in Islamic education following the post-pandemic educational transition. During this period, scholars increasingly explored topics related to online religious learning, digital leadership in madrasahs, technology-supported Islamic pedagogy, and digital da'wah practices within formal educational institutions. Although publication numbers in 2024 appear slightly lower, the trend remains relatively high considering that the data collection process only covered publications up to April 2024. To further examine the conceptual structure of the literature, keyword mapping was conducted using VOSviewer based on keyword co-occurrence analysis.

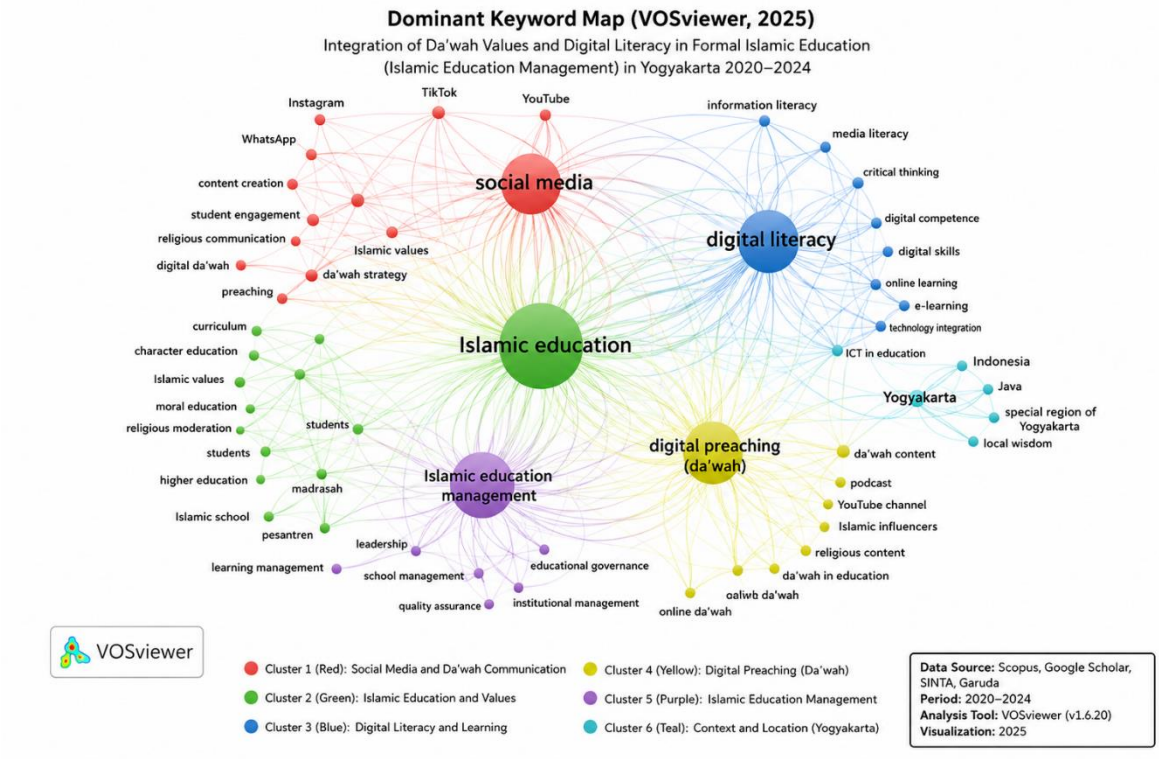


Figure 2. Dominant Keyword Map (VOSviewer, 2025)

The keyword visualisation demonstrates several dominant clusters interconnected within the broader discourse of Islamic educational management and digital transformation. The central cluster is occupied by the terms "Islamic education," "digital literacy," "social media," "digital preaching," and "education management." These findings indicate that recent studies increasingly position digital platforms not only as educational tools but also as strategic instruments for disseminating Islamic values, strengthening institutional communication, and supporting digital-based educational governance.

The term "digital literacy" appears closely connected with "social media," "character education," "Islamic values," and "online learning," reflecting the growing emphasis on ethical digital engagement within formal Islamic education. Meanwhile, "digital preaching" demonstrates strong associations with "YouTube," "TikTok," "Instagram," and "student engagement," indicating that social media has become an integral component of contemporary da'wah-oriented educational practices.

Interestingly, the term "Islamic education management" forms an important bridging cluster connecting institutional governance with digital transformation. This suggests that digitalisation is no longer viewed merely as a technological adaptation but increasingly as a managerial and strategic issue within Islamic educational institutions. The integration of digital literacy into school administration, curriculum development, teacher competency improvement, and student assessment reflects the

broader institutional transformation occurring in Islamic schools and madrasahs. The appearance of "Yogyakarta" within several interconnected clusters also indicates the region's emerging role as a centre of digital Islamic educational innovation. Although the quantity of region-specific publications remains relatively limited compared to broader Indonesian studies, the literature demonstrates a growing scholarly interest in Yogyakarta as a laboratory for integrating Islamic values, digital literacy, and educational management practices.

This trend aligns with the Islamic principle encouraging the dissemination of knowledge through contextual and effective means. The Prophet Muhammad SAW stated: "Convey from me even if only one verse" (HR. Bukhari), which implies that Islamic communication should adapt to changing societal contexts and available communication technologies. In the contemporary era, digital media functions as an extension of educational and da'wah spaces, enabling Islamic educational institutions to expand their pedagogical and moral influence beyond conventional classroom boundaries.

Table 5. Classification of Research Themes on Islamic Education Management and Digital Transformation

Theme	Number of Articles	Percentage (%)
Digital Literacy in Islamic Schools and Madrasahs	26	35.1%
Digital Da'wah and Social Media-Based Learning	19	25.7%
Islamic Education Management and Digital Transformation	15	20.3%
Teacher and Student Digital Competency Development	8	10.8%
Evaluation of Online and Hybrid Islamic Learning	6	8.1%

Table 5 demonstrates that the dominant research theme concerns digital literacy within Islamic educational institutions. This finding reflects the growing awareness that digital competence has become an essential component of contemporary Islamic education. The second dominant theme relates to digital da'wah and social media-based learning, indicating that digital communication platforms increasingly function as spaces for religious engagement and Islamic value dissemination among students.

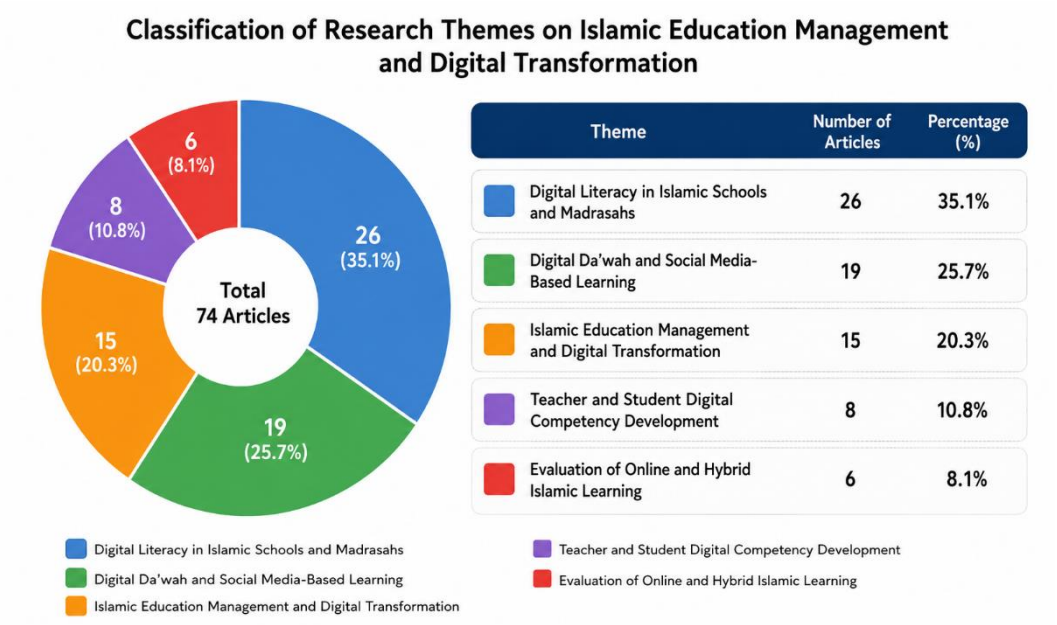


Diagram.

The diagram in Table 5 demonstrates that research on digital transformation within Islamic Education Management is predominantly concentrated on the theme of digital literacy in Islamic schools and madrasahs, accounting for 35.1% of the total reviewed studies. This finding indicates that scholars increasingly recognise digital literacy as a fundamental competency required in contemporary Islamic educational institutions. The dominance of this theme reflects the growing institutional awareness that students and teachers must possess not only technical digital skills but also ethical and critical digital competencies aligned with Islamic values. In the context of formal Islamic education, digital literacy is viewed as an essential component for strengthening learning quality, educational communication, and institutional adaptation in the digital era.

The second largest theme, Digital Da'wah and Social Media-Based Learning (25.7%), illustrates the rapid transformation of da'wah practices within educational environments. The high percentage of studies in this category suggests that social media platforms such as YouTube, TikTok, Instagram, and WhatsApp have become strategic instruments for disseminating Islamic values and engaging students in religious learning activities. This trend indicates that digital technology is no longer positioned merely as a supporting educational tool, but has evolved into a primary medium for Islamic communication, digital preaching, and student-centered religious engagement.

Meanwhile, the theme of Islamic Education Management and Digital Transformation represents 20.3% of the analysed studies, showing that institutional governance and managerial adaptation have become increasingly important within Islamic educational discourse. Research within this category generally focuses on digital leadership, technology-based curriculum management, online learning governance, institutional innovation, and policy adaptation in madrasahs and Islamic schools. The emergence of this theme demonstrates that digital transformation in Islamic education extends beyond pedagogical concerns and increasingly influences broader organisational and managerial structures.

The theme concerning Teacher and Student Digital Competency Development contributes 10.8% of the literature. Although smaller in proportion, this theme highlights the importance of human resource readiness in supporting sustainable digital transformation. Existing studies emphasise teacher training, digital pedagogical competence, media literacy skills, and students' ability to engage responsibly in digital learning environments. The relatively limited number of studies in this area indicates that competency development remains an underexplored field despite its strategic role in determining the effectiveness of digital transformation initiatives.

Finally, Evaluation of Online and Hybrid Islamic Learning constitutes the smallest proportion at 8.1%. This finding suggests that although online and hybrid learning systems became widely implemented during and after the COVID-19 pandemic, research focusing on evaluation frameworks, assessment models, and the effectiveness of digital Islamic learning remains limited. Most existing studies tend to prioritise implementation and adaptation processes rather than systematic evaluation of learning outcomes, institutional performance, and long-term educational impact.

Discussion

Increasing Scholarly Attention toward Digital Transformation in Islamic Education Management

The bibliometric analysis of the 74 selected articles demonstrates a substantial increase in scholarly attention toward digital transformation and Islamic Education Management between 2020 and 2024. The highest publication growth occurred during 2022 and 2023, indicating that the post-pandemic educational transition significantly accelerated academic interest in digital literacy, digital da'wah, and technology-based educational governance within formal Islamic education.

This publication surge strongly correlates with the implementation of the Merdeka Curriculum introduced by the Indonesian Ministry of Education, Culture, Research and Technology in 2022, which positioned digital literacy, character education, and project-based learning as central elements of contemporary education. Islamic educational institutions consequently began integrating digital platforms into religious learning, institutional management, and student engagement activities. The rapid adoption of hybrid learning systems in madrasahs and Islamic schools further encouraged researchers to explore how digital transformation reshaped educational leadership, curriculum management, and Islamic value transmission.

Several studies within the reviewed literature reveal that digital transformation in Islamic education is no longer limited to technological adaptation but increasingly represents a strategic institutional shift. Educational management practices now involve digital communication systems, online learning administration, social media engagement, and digital-based assessment mechanisms. This finding aligns with the argument of contemporary educational theorists that digitalisation has fundamentally transformed the organisational structure and governance culture of educational institutions.

The growing research attention also reflects generational changes in learning behaviour. Students belonging to Generation Z and the Alpha Generation increasingly engage with educational and religious content through digital platforms characterised by visual, interactive, and short-form communication. Consequently, Islamic educational institutions are required to redesign their pedagogical and managerial approaches to remain relevant within digitally mediated learning environments.

Centrality of Digital Literacy and Social Media in Islamic Educational Transformation

The keyword co-occurrence analysis using VOSviewer identified "digital literacy," "social media," "Islamic education," and "digital preaching" as the most dominant and interconnected keywords within the bibliometric network. The strong relationship among these keywords indicates that digital technology has become a central component of contemporary Islamic educational discourse.

The dominance of "digital literacy" reflects the increasing recognition that digital competence extends beyond technical ability and encompasses ethical communication, critical thinking, information evaluation, and responsible online engagement. In Islamic educational settings, digital literacy is increasingly associated with the development of Islamic character, religious moderation, and digital ethics. Thus, digital literacy functions not only as an educational competency but also as a medium for strengthening Islamic values within digital environments.

Similarly, the central position of "social media" demonstrates its growing role as a strategic educational and da'wah platform. Islamic schools, madrasahs, and pesantren increasingly utilise platforms such as YouTube, TikTok, Instagram, and WhatsApp to disseminate Islamic teachings, support collaborative learning, and strengthen institutional communication. The reviewed studies reveal that students demonstrate higher engagement with visual and interactive forms of religious content compared to conventional lecture-based approaches.

This transformation is consistent with the classical Islamic perspective articulated by Ibn Khaldun in *Muqaddimah*, which emphasises that methods of knowledge transmission evolve according to societal and technological developments while preserving the essential substance of knowledge itself. In the contemporary context, social media platforms function as modern instruments for educational communication and digital da'wah, enabling Islamic values to reach broader and more diverse audiences.

Several contemporary scholars also emphasise that digital religious communication has become increasingly multimodal, participatory, and global. Religious engagement is no longer restricted by physical spaces or institutional boundaries, as students and educators now interact within digital ecosystems that facilitate continuous access to Islamic learning materials, discussions, and value-based content.

Dominance of Digital Literacy and Digital Da'wah Themes

The thematic classification analysis demonstrates that the most dominant research focus concerns digital literacy in Islamic schools and madrasahs, accounting for 35.1% of the reviewed literature. This finding indicates that scholars increasingly consider digital literacy to be a foundational competency required for managing contemporary Islamic education.

The second dominant theme, digital da'wah and social media-based learning (25.7%), further illustrates the transformation of religious communication practices within formal educational environments. These studies primarily examine how social media platforms are utilised for moral education, religious instruction, Islamic campaigns, and interactive digital preaching activities among students.

The high proportion of research focusing on digital literacy and digital da'wah demonstrates that educational institutions increasingly perceive digital technology not merely as an instructional aid but as a transformative medium for value transmission and student engagement. Islamic educational institutions are therefore shifting toward value-based digital education models integrating technological competence with Islamic ethics and religious communication.

Table 6. Types of Digital Platforms Most Frequently Used in Islamic Educational Practices

Digital Platform	Number of Articles Analysed	Percentage
YouTube	31	41.9%
TikTok	20	27.0%
Instagram	16	21.6%
WhatsApp	7	9.5%

Table 6 demonstrates that YouTube remains the most dominant platform due to its ability to support long-duration educational videos, interactive religious discussions, and structured learning materials. However, TikTok has experienced rapid growth because of its short-form, highly engaging, and algorithmically viral content structure. This trend indicates that Islamic educational strategies increasingly adapt to students' digital consumption patterns, which prioritise concise, visual, and interactive communication formats.

Research findings further suggest that the effectiveness of digital da'wah and online Islamic learning is strongly influenced by narrative style, content presentation, and platform selection. Short-form videos, infographics, podcasts, and interactive live-streaming sessions are particularly effective in engaging younger audiences and encouraging participation in religious learning activities.

Emerging Importance of Yogyakarta in Digital Islamic Education Research

Although the keyword "Yogyakarta" appears less prominently than broader national contexts such as Jakarta or East Java, the reviewed literature demonstrates growing academic interest in Yogyakarta as a centre of digital Islamic educational innovation. Of the 74 analysed studies, 19 explicitly identified Yogyakarta as the primary research setting.

Most of these studies focus on digital transformation initiatives within madrasahs, pesantren, and Islamic universities in Yogyakarta, including hybrid learning implementation, digital curriculum integration, social media-based da'wah programs, and teacher digital competency training. Several Islamic educational institutions in Yogyakarta have adopted platforms such as Google Classroom, Moodle, Canva, Zoom, and YouTube to support value-oriented digital learning systems.

Furthermore, institutional collaborations between universities, Islamic schools, and governmental agencies have strengthened digital literacy programs and digital da'wah training within the region. However, despite these promising developments, the literature indicates that research concerning Yogyakarta remains predominantly descriptive and exploratory. Longitudinal studies, evaluative frameworks, and evidence-based policy analyses remain limited.

This condition suggests that Yogyakarta possesses significant potential to become a national model for digital Islamic educational management, yet requires more systematic research frameworks and institutional policy support. Future studies should therefore focus on evaluating the sustainability, effectiveness, and long-term impact of digital transformation initiatives within Islamic educational institutions.

Integration of Islamic Values and Digital Transformation

The findings of this study demonstrate that digital transformation within Islamic education increasingly involves the integration of technological competence with Islamic ethical values. Digital literacy is no longer interpreted solely as operational technological skill but also as the capacity to critically and ethically engage with digital information in accordance with Islamic principles.

This perspective aligns with the Qur'anic principle of conveying messages "with wisdom and good instruction" (Qur'an 16:125), which emphasises contextual, persuasive, and ethical communication. Within the digital era, social media and educational technologies become contemporary instruments for implementing these values in ways relevant to students' daily experiences.

Similarly, Qur'an 39:17–18 highlights the importance of critical engagement and discernment by praising those who "listen to what is said and follow the best of it." This principle reflects the broader objectives of digital literacy in Islamic education, namely fostering critical thinking, ethical judgment, responsible communication, and value-oriented decision-making within digital environments.

Consequently, the integration of digital literacy, Islamic values, and educational management reflects a broader transformation toward adaptive, ethical, and technologically responsive Islamic educational systems capable of addressing the challenges of contemporary digital society.

CONCLUSION

This study concludes that the development of research on digital transformation within Islamic Education Management in Yogyakarta during 2020–2024 demonstrates a significant increase in scholarly attention toward the integration of digital literacy, digital da'wah, and educational governance in formal Islamic education. The bibliometric findings reveal that the dominant research trends are concentrated on five major dimensions: digital literacy in Islamic schools and madrasahs, digital da'wah and social media-based learning, Islamic education management and digital transformation, digital competency development for teachers and students, and the evaluation of online and hybrid Islamic learning systems. These dimensions collectively illustrate that digital transformation in Islamic education is no longer limited to technological adaptation but has evolved into a broader managerial, pedagogical, and value-oriented transformation.

The synthesis of the findings shows that digital literacy within Islamic educational institutions should not be understood merely as technical competence in operating digital devices or online platforms. Rather, it encompasses critical thinking, ethical communication, responsible media engagement, and the ability to integrate Islamic values within digital learning environments. Similarly, digital da'wah is no longer restricted to conventional religious communication methods but has increasingly transformed into a multimodal, interactive, and technology-based educational strategy that aligns with the communication patterns of digitally native learners. Consequently, the integration of Islamic values and digital technology requires educational management systems that are adaptive, strategic, and responsive to the evolving dynamics of digital society.

Theoretically, this study contributes to expanding the discourse on digital transformation in Islamic education management by integrating the concepts of digital literacy, digital da'wah, and educational governance within a single bibliometric framework. The findings address the gap in previous studies that tended to examine these themes separately without mapping their conceptual interconnections and research development trends systematically. Through bibliometric analysis, this study provides a comprehensive overview of publication growth, dominant keywords, thematic clusters, and emerging research directions related to digital transformation in formal Islamic education.

Practically, the findings offer important implications for policymakers, school leaders, curriculum developers, and educators within Islamic educational institutions. The study highlights the necessity of strengthening digital infrastructure, enhancing teachers' digital competencies, developing value-oriented digital learning resources, and integrating Islamic digital ethics into institutional policies and curriculum design. Educational leaders are increasingly required to formulate managerial strategies capable of balancing technological innovation with the preservation of Islamic values, religious identity, and character education within digital learning ecosystems.

The findings further demonstrate that social media platforms such as YouTube, TikTok, Instagram, and WhatsApp have become strategic instruments for educational communication and digital da'wah among students. This indicates that Islamic educational institutions must adopt more flexible, participatory, and

student-centered approaches in designing learning interactions and value transmission strategies. Digital transformation therefore demands not only technological readiness but also institutional capacity to manage ethical, pedagogical, and cultural challenges emerging within digital educational environments.

Nevertheless, this study has several limitations. First, the research is based entirely on secondary bibliometric data and does not incorporate direct empirical perspectives from teachers, school leaders, or students. Second, the analysis primarily focuses on publication trends and thematic mapping, without evaluating the effectiveness of digital transformation practices within specific Islamic educational institutions. Third, although Yogyakarta serves as the regional focus, the number of region-specific empirical studies remains relatively limited compared to broader national-level research.

Therefore, future research is recommended to employ field-based approaches such as case studies, mixed-method research, longitudinal analysis, or action research to evaluate the practical implementation and sustainability of digital transformation initiatives within Islamic educational institutions. Further studies should also investigate leadership strategies, digital ethics, institutional culture, and policy frameworks that support the integration of Islamic values and digital literacy in formal Islamic education. Through such approaches, future research may contribute to developing more comprehensive, evidence-based, and contextually responsive models of digital Islamic education management in the contemporary era.

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