



Dynamics of Modern and Qur'anic Learning Research (2016–2025) : A Scientometric Mapping Study Using R Biblioshiny

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Abstract: The rapid development of digital technology has profoundly transformed education in the twenty-first century. Nevertheless, modern learning approaches have increasingly been criticized for placing excessive emphasis on technical competencies while overlooking spiritual and moral dimensions. In contrast, Qur'anic learning promotes strong character values and spiritual purification, yet its integration with technological innovation within educational research remains limited and insufficiently systematic. This study aims to examine publication trends, thematic structures, and patterns of scientific collaboration in research on modern and Qur'anic learning during the 2016–2025 period. A bibliometric approach was employed using 136 articles retrieved from the Scopus database. The data were analyzed using R Biblioshiny to generate descriptive, conceptual, and structural mappings. The findings reveal an annual publication growth rate of 45.37%, with an average of 4.603 citations per document. The most frequently occurring keywords in the literature were “e-learning,” “Islamic education,” and “online learning.” Indonesia and Malaysia emerged as the leading contributors to scientific publications, while Universitas Islam Negeri Sunan Kalijaga was identified as the most productive institutional affiliation. The thematic mapping analysis classified “e-learning” as a motor theme, indicating its central role in driving research development within this field. The study concludes that although research productivity expanded substantially following the COVID-19 pandemic, the conceptual integration between modern pedagogy and Qur'anic spiritual values remains fragmented and is still in the consolidation phase. Future studies should strengthen theoretical integration, broaden international research collaboration, and develop integrative learning models capable of balancing global competencies with spiritual maturity grounded in Qur'anic values.

Keyword : Bibliometric, Islamic Education, Modern Learning, Qur'anic Learning

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How to Cite :

Introduction

The rapid advancement of digital technology and globalization has significantly transformed various aspects of human life in the twenty-first century. Among the sectors most profoundly influenced by this transformation is education (Archer & Sterling, 2024; Timotheou et al., 2023; Zou et al., 2023). According to a

UNESCO report, nearly 80% of countries worldwide have incorporated technology into their educational systems to improve both accessibility and educational quality (Team, 2023). The integration of digital technology has created broader opportunities for education to become more inclusive, effective, and responsive to contemporary societal needs. Technology-oriented learning approaches, including e-learning and online instruction, have increasingly become essential components of modern educational practices (Ismail & Ling, 2025; Mondal et al., 2025; Zou et al., 2023). Previous empirical findings also demonstrated that Technology Enhanced Learning (TEL) contributed significantly to increasing students' learning interest and engagement within Islamic Religious Education contexts (Patriasya, Zulaikhah, et al., 2025). At the same time, the ongoing digital revolution has intensified the need for curriculum reform and teaching strategies that are more flexible and aligned with current developments (Haqqi et al., 2025; Trianita et al., 2025; Zahraini et al., 2025). The demands of twenty-first century education also emphasize the importance of cultivating competencies such as critical thinking, problem-solving abilities, and collaborative skills (Herlinawati et al., 2024; Ramadhani et al., 2025; Stanikzai, 2023).

Despite the many advantages offered by digital technology, modern education has faced growing criticism regarding its overall direction and orientation. Critics argue that contemporary learning practices increasingly neglect spiritual and moral dimensions as educational processes become more deeply influenced by pragmatic values (Irawan & Rohman, 2025; Muflikhun et al., 2025; Nu'man & Junaedi, 2025). Modern learning systems tend to prioritize technical competence and productivity enhancement, often at the expense of character formation and social values, which are fundamentally important in shaping students' personal development (Rahmadani et al., 2025; Saputri et al., 2025). As a result, educators and policymakers have expressed concern that graduates of modern educational systems may possess strong technical abilities while lacking moral integrity and spiritual awareness. This situation has intensified calls for the integration of spiritual values into educational frameworks. Such integration is particularly urgent within the context of Islamic education, which has long emphasized the cultivation of noble character and revelation-based values as the primary foundation of learning (Basori et al., 2025).

In response to these concerns, Qur'anic learning has emerged as an educational approach that remains highly relevant in contemporary contexts. This model emphasizes the integration of revelation and human reason as complementary foundations of knowledge (Bhat & Bisati, 2025). Unlike modern educational approaches that often lean toward pragmatic objectives, Qur'anic-based education is not solely directed at cognitive achievement but also prioritizes character development and spiritual purification (*tazkiyatun nafs*) (Sulastri et al., 2021). Such an approach focuses on the internalization of Islamic values within students' daily

lives and personal conduct (Djuaini, 2025). Similar practices have long been implemented in Islamic boarding schools, where religious character is nurtured through structured daily activities, while independence and responsibility are strengthened through entrepreneurial programs (Oktari & Kosasih, 2019). Therefore, although technology-based learning provides numerous educational advantages, Qur'anic education offers a more balanced framework that integrates intellectual advancement with the cultivation of spiritual character (Arsyad & Fitroh, 2025; Novita et al., 2025; Rahman et al., 2025).

One of the major challenges in contemporary education is the effort to integrate technology-oriented modern learning with Qur'anic-based learning into a coherent and holistic educational framework. Several recent studies further emphasized that Islamic education should not merely adopt technological innovation, but also preserve spiritual traditions, moral values, and the identity of Qur'anic education within contemporary learning environments (Patriasya, Ridwan, et al., 2025). Existing studies generally continue to emphasize technology-driven instructional models that prioritize digital competence and twenty-first century learning skills, while the integration of spiritual, moral, and character dimensions rooted in Qur'anic values still receives limited scholarly attention (Herdiyanti et al., 2025; Intania et al., 2026; Warsito & Sunhaji, 2026). At the same time, Neni et al. (2024) argued that the incorporation of Qur'anic values within educational technology remains crucial for strengthening students' moral awareness and spiritual development in the digital era. Several bibliometric studies have previously explored the development of Islamic education research (Neni et al., 2024). Jannah et al. (2022), for instance, analyzed Islamic education publications indexed in Scopus between 2018 and 2022, with primary attention given to publication productivity and citation patterns within Islamic education studies (Jannah et al., 2022). In another study, Mannan et al. (2025) investigated trends related to digital technology in Islamic education and highlighted the growing prominence of technology-based approaches in Islamic learning environments (Mannan et al., 2025). Nevertheless, prior studies still leave important gaps. Existing bibliometric research has not specifically investigated the convergence between modern learning and Qur'anic learning within a unified analytical framework. In addition, earlier studies tended to concentrate on productivity indicators and publication trends without examining thematic relationships, collaboration networks, and conceptual structures in greater depth. Consequently, the intellectual connections between technological learning innovation and Qur'anic educational values remain insufficiently discussed within the current body of literature.

The selection of the 2016–2025 timeframe in this study was also grounded in both academic and contextual considerations. Around 2016, digital learning discourse began to expand rapidly within global educational systems through the widespread

implementation of e-learning, blended learning, and other forms of educational technology (Timotheou et al., 2023; Zou et al., 2023). Furthermore, educational transformation intensified considerably after 2020 due to the COVID-19 pandemic, which accelerated the adoption of digital learning practices across various educational contexts, including Islamic education institutions (Mannan et al., 2025). Examining publications from 2016 to 2025 therefore allows this study to capture the transition from the early growth phase of digital education toward the broader consolidation of technology integration in Islamic learning after the pandemic period. In addition, the combination of “modern learning” and “Qur’anic learning” was intentionally chosen because these topics are commonly discussed separately in previous research. Studies on modern learning frequently focus on digitalization, innovation, and twenty-first century educational competencies (Herlinawati et al., 2024; Ramadhani et al., 2025), whereas studies on Qur’anic learning place stronger emphasis on spiritual development, moral cultivation, and revelation-based educational principles (Bhat & Bisati, 2025; Neni et al., 2024). By combining these two perspectives, the present study seeks to provide a broader understanding of how technological advancement and Qur’anic educational values intersect and evolve within contemporary educational research.

Therefore, this study aims to analyze publication trends, thematic developments, collaboration patterns, and conceptual structures related to modern and Qur’anic learning research during the 2016–2025 period through a scientometric approach. The findings are expected to contribute to a deeper understanding of the intellectual landscape of technology-based Islamic education and support the development of more integrative educational models that combine technological advancement with spiritual and moral values grounded in the Qur’an.

Methodology

This study employed a bibliometric approach combined with scientometric analysis to map the development of research on modern learning and Qur’anic learning during the 2016–2025 period. The bibliometric approach was selected because it provides a quantitative and systematic overview of the dynamics of scientific publications within a particular field, including author productivity, citation impact, collaboration patterns, and the evolution of research themes (Sutamrin et al., 2025). In addition, scientometric analysis was applied to identify the intellectual structure and scientific networks established within studies related to modern and Qur’anic learning (Jannah et al., 2022). The integration of these two approaches enabled the study not only to examine publication trends quantitatively, but also to reveal collaborative patterns and thematic structures in a more comprehensive manner.

The research data were collected from the international Scopus database,

which was selected due to its extensive coverage of reputable journals and broad global indexing. The study focused on publications from 2016 to 2025 in order to capture the development and research dynamics that have emerged over the past decade. Data retrieval was conducted using a combination of relevant keywords, including “modern learning,” “online learning,” “digital learning,” “e-learning,” “blended learning,” “education technology,” “Qur’anic learning,” “Qur’an based education,” “Islamic education,” “religious education,” “Islamic pedagogy,” and “Islamic studies.” These keywords were combined using Boolean operators (AND, OR) to generate results that were both comprehensive and closely aligned with the research focus. All retrieved data were subsequently filtered to remove duplicate entries and publications considered irrelevant to the scope of the study.

To enhance the transparency and consistency of the document selection process, this study applied a set of inclusion and exclusion criteria during the screening stage. These criteria were established to ensure that all selected publications were closely aligned with the objectives and scope of the scientometric analysis. The criteria used for selecting and filtering the documents are presented in Table 1.

Table 1. Inclusion and Exclusion Criteria for Document Selection

Criteria Aspect	Inclusion Criteria	Exclusion Criteria
Publication Period	Publications issued between 2016 and 2025	Publications published before 2016 or after 2025
Document Type	Research articles and review paper	Editorials, conference abstracts, notes, book chapters, and other non-research documents
Language	Publications written in English	Publications published in languages other than English
Database Source	Documents indexed in the Scopus database	Publications not indexed in Scopus
Research Relevance	Studies discussing modern learning, digital learning, e-learning, Islamic education, Qur’anic learning, and educational technology	Studies unrelated to educational technology, Islamic education, or Qur’anic learning
Data Completeness	Documents containing complete bibliographic information and accessible metadata	Duplicate records and documents with incomplete metadata

The screening and filtering procedures were conducted systematically to maintain the relevance and reliability of the dataset. Publications that did not satisfy

the inclusion requirements were excluded from further analysis. In addition, duplicate records, incomplete bibliographic documents, and publications considered irrelevant to the focus of modern and Qur'anic learning integration were removed during the filtering process. After all screening stages had been completed, a final dataset consisting of 136 publications was obtained and subsequently analyzed using R Biblioshiny.

To provide a clearer overview of the document selection and filtering procedures, this study adapted the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. The PRISMA flow diagram was used to illustrate the stages of document identification, screening, eligibility assessment, and final inclusion in the scientometric analysis. Through this approach, the data selection process became more transparent, systematic, and easier to replicate in future studies. The complete stages of document selection used in this research are presented in Figure 1.

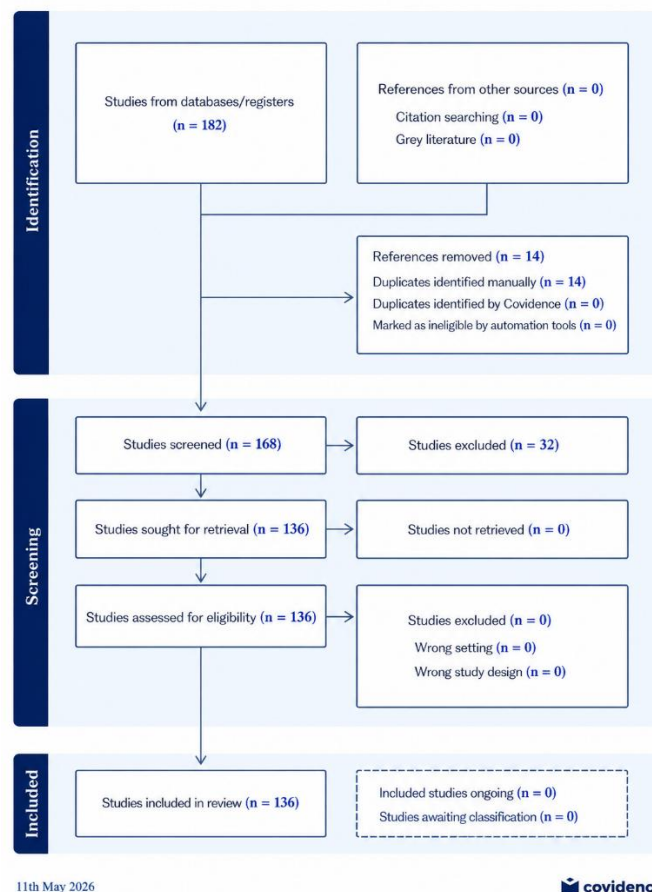


Figure 1. PRISMA Diagram

During the identification stage, document retrieval was conducted through the Scopus database using a combination of keywords related to modern learning,

digital learning, e-learning, Islamic education, and Qur'anic learning. The initial search process generated a total of 182 documents. Subsequently, a preliminary data cleaning process was carried out to identify duplicate records, resulting in the removal of 14 duplicated documents from the dataset. After the duplication screening had been completed, a total of 168 documents remained and proceeded to the next stage of screening.

At the screening stage, the remaining 168 documents were examined based on their titles, abstracts, and thematic relevance to the focus of modern learning and Qur'anic learning research. During this process, 32 documents were excluded because they did not sufficiently align with the objectives of the study, showed limited thematic relevance, or failed to satisfy the established inclusion criteria. Following the screening process, a total of 136 documents fulfilled the selection requirements and were considered eligible for further analysis.

At the included stage, all 136 selected documents were designated as the final dataset of the study. These publications were subsequently analyzed using R Biblioshiny to investigate publication trends, thematic developments, scientific collaboration patterns, and the conceptual structure of modern and Qur'anic learning research during the 2016–2025 period.

The retrieved data were exported in BibTeX format and analyzed using R Biblioshiny, a graphical interface developed from the Bibliometrix package. This software enables descriptive, conceptual, and structural analyses of publication data through both visual and quantitative approaches. The analytical procedures included: (1) annual scientific production analysis to identify publication growth trends; (2) analysis of average citations per year; (3) identification of the most productive authors, affiliations, and journals; (4) analysis of publication distribution across countries; (5) mapping of collaboration networks among authors and countries; and (6) thematic structure mapping through keyword co-occurrence analysis, word clouds, tree maps, and thematic maps.

To ensure data validity, a data cleaning process was conducted by standardizing variations in author names and unifying keywords that carried similar meanings. In addition, only documents categorized as articles and review papers were included in the analysis in order to maintain consistency in publication quality. Through this methodological design, the study is expected to provide a comprehensive overview of the research landscape surrounding modern and Qur'anic learning, both in terms of quantitative development and thematic structure, thereby serving as a foundation for future integrative research in the field of education.

Result and Discussion

Finding

1. Main Information



Figure 2. Main Information of Data Extraction Results

Based on the data extraction results from the Scopus database, a summary of the main statistical findings is presented in Figure 2. During the 2016–2025 period, a total of 136 documents were indexed across 92 different journals or publication sources. The annual publication growth rate reached 45.37%, indicating a remarkably rapid increase in studies related to modern and Qur’anic learning, particularly after 2020. A total of 428 authors contributed to these publications, including 30 single authors. The rate of international collaboration was recorded at 14.71%, while the average number of authors per document was 3.32. The total number of author keywords reached 421 terms, reflecting the wide diversity of research topics explored within this field. In addition, the average age of the documents was 3.44 years, with an average citation rate of 4.603 citations per document.

2. Analysis of the Average Annual Citation Rate of Modern and Qur'anic Learning Articles (2016–2025)

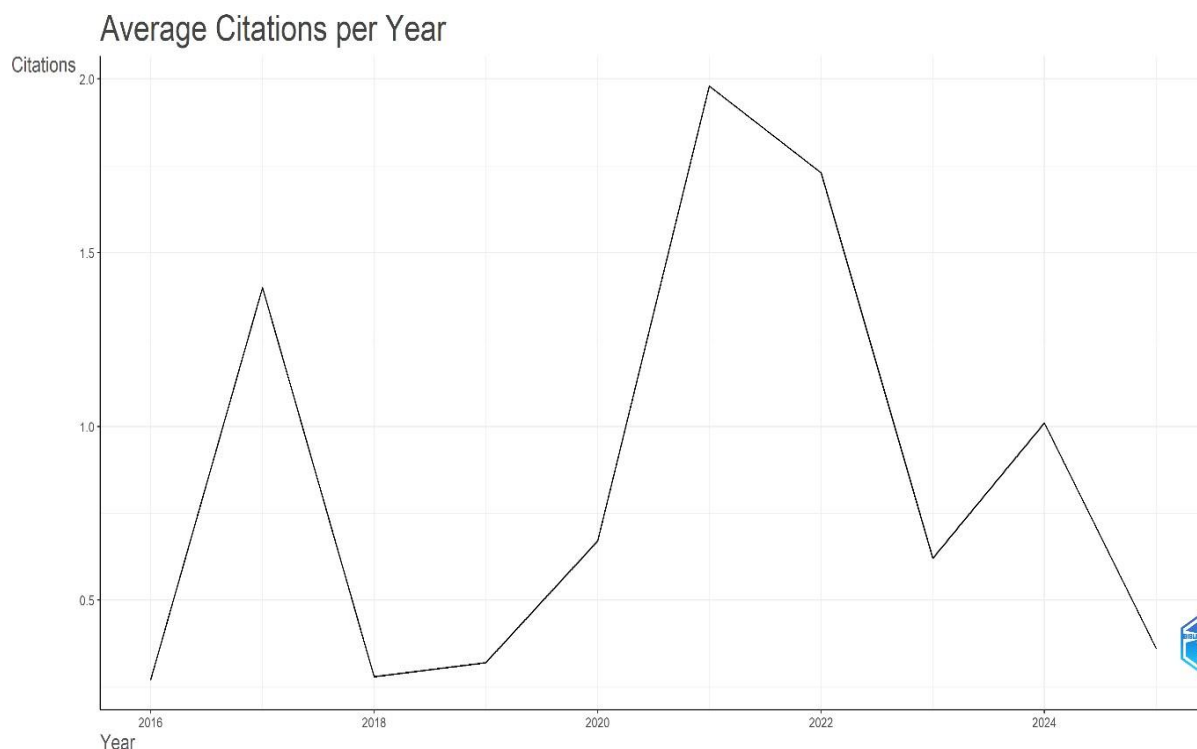


Figure 3. Trend of the Average Number of Citations per Article Each

Based on the analysis results, an overview of the average number of citations per year was obtained, as illustrated in the Average Citations per Year graph. The graph demonstrates fluctuations in the average citation rate throughout the observed period. In 2016, the average citation rate remained relatively low at approximately 0.25. A notable increase occurred in 2017, reaching around 1.4 citations. However, the average declined again in 2018 to approximately 0.27 and remained relatively stable in 2019 at about 0.3. Entering 2020, the average citation rate gradually increased to approximately 0.65. The highest average citation rate was recorded in 2021, reaching nearly 2.0, which represented the peak value during the study period. Although the citation rate remained relatively high in 2022, it experienced a slight decline to around 1.7. Subsequently, in 2023, the average citation rate decreased considerably to approximately 0.6 before rising again in 2024 to nearly 1.0. In 2025, the average citation rate declined once more to approximately 0.35. Overall, this pattern indicates that the average citation rate of articles related to modern and Qur'anic learning experienced considerable fluctuations, with the highest citation impact occurring during the 2021–2022 period.

3. Annual Scientific Production

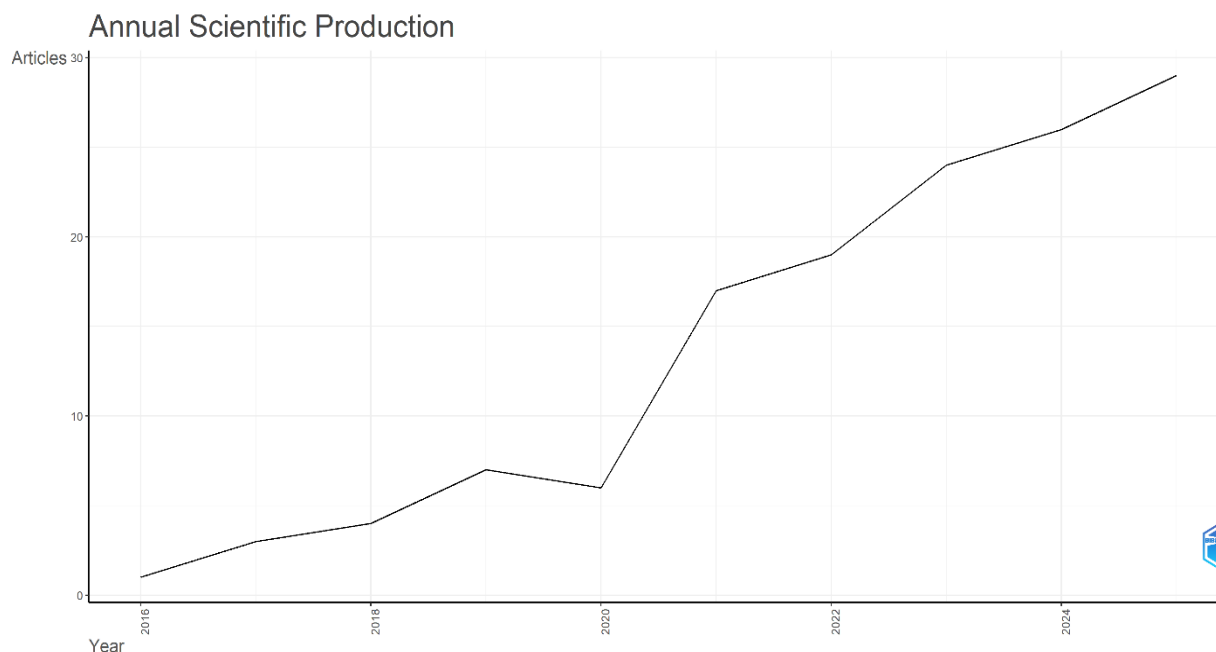


Figure 4. Annual Scientific Production

Based on the conducted analysis, the number of articles published in the field of modern and Qur'anic learning demonstrated a significant increase from 2016 to 2025. Beginning with a relatively low number of publications in 2016, the trend of scientific production started to show a noticeable surge in 2020. The peak of publication productivity occurred during 2021–2022, when the number of published studies rose substantially. This trend aligns with global developments influenced by the COVID-19 pandemic and the accelerating digital transformation within the educational sector. The sharp increase in publications can be interpreted as a response to the urgent need for adopting educational technology in the context of Islamic education, particularly through approaches such as online learning, e-learning, and the implementation of digital technology in Qur'anic education.

This trend indicates that although technology-based education has become a dominant theme within modern educational discourse, research concerning the integration of technology-driven learning with Qur'anic values has also attracted increasing scholarly attention. Nevertheless, the fluctuations observed in the annual citation rates reflect ongoing challenges related to the consolidation and broader acceptance of this approach within more traditional and conservative educational systems. These findings suggest that substantial opportunities remain for further development, particularly in bridging the gap between technological implementation in learning environments and a deeper understanding of education grounded in spiritual and moral values.

4. Word Cloud Analysis of Modern and Qur'anic Learning Articles (2016–2025)

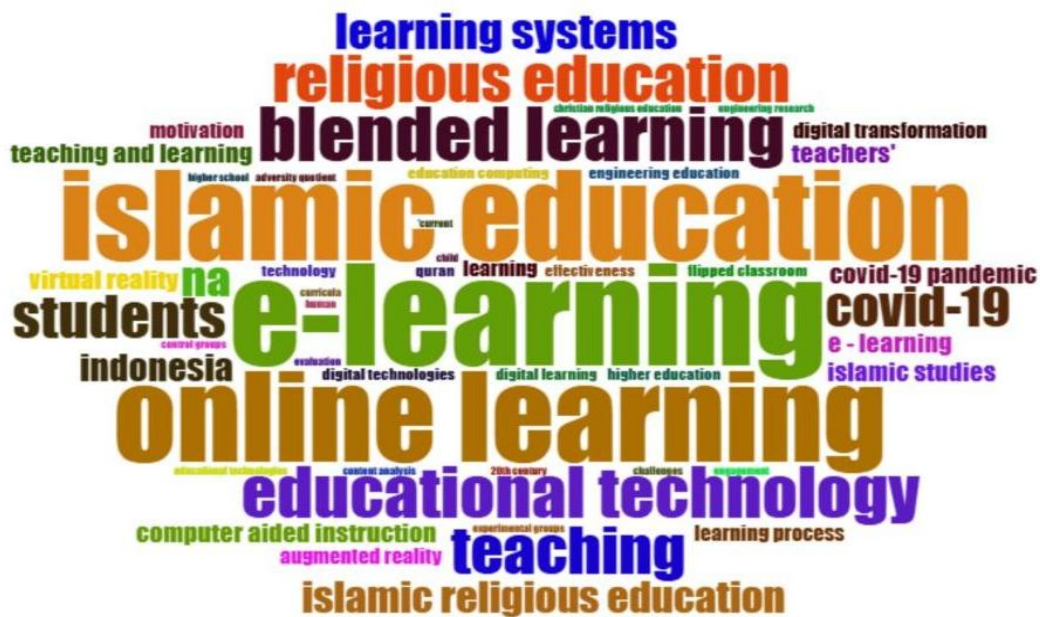


Figure 5. Word Cloud

Based on the results of the word cloud analysis, an overview was obtained regarding the most frequently occurring keywords in publications related to modern and Qur'anic learning. The visualization demonstrates that the terms "Islamic education," "e-learning," and "online learning" were the most dominant keywords within the research dataset. In addition, terms such as "blended learning," "educational technology," and "religious education" also appeared in relatively large sizes, indicating their significant frequency of occurrence. The presence of keywords such as "COVID-19" and "COVID-19 pandemic" suggests that the pandemic period strongly influenced research directions, particularly in the context of technology-based learning transformation within Islamic education. Other terms including "teaching," "students," "learning systems," and "Islamic studies" also emerged as supporting keywords, reflecting the relationship between digital learning innovation and educational institutions as well as learners. Furthermore, the appearance of keywords such as "virtual reality," "digital transformation," and "ICT" indicates a growing research tendency toward the utilization of more advanced technologies in Islamic education. Overall, the word cloud visualization reveals that the literature on modern and Qur'anic learning during the 2016–2025 period was largely dominated by the integration of digital learning technologies within the context of Islamic education, with the COVID-19 pandemic serving as one of the major factors driving the increased intensity of research on this theme.

5. Tree Map Analysis of Modern and Qur'anic Learning Articles (2016–2025)



Figure 6. Tree Map

Based on the tree map visualization, the distribution of keyword frequencies illustrates the proportional occurrence of research themes within the literature on modern and Qur'anic learning during the 2016–2025 period. The theme with the highest frequency was “e-learning,” which appeared 26 times (9%), followed by “Islamic education” and “online learning,” each occurring 23 times (8%). Furthermore, the theme “blended learning” appeared 14 times (5%), while “educational technology” was recorded 13 times (4%). Other themes with relatively significant frequencies included “religious education” and “teaching,” each appearing 12 times (4%), as well as “students,” which appeared 11 times (4%). In addition, the occurrence of the theme “COVID-19” ten times (3%) indicates the influence of the pandemic on research directions during the observed period. Several supporting themes, including “learning systems,” “Islamic religious education,” “Islamic studies,” “teachers,” and “virtual reality,” each accounted for approximately 2–3% of the total frequency. Themes with lower frequencies, such as “Quran,” “technology,” “digital transformation,” and “curricula,” suggest the presence of more specific explorations concerning the integration of technology and Islamic education. Overall, the tree map visualization demonstrates that the literature on

modern and Qur'anic learning was predominantly centered on the integration of digital learning technologies within the context of Islamic education, with "e-learning," "online learning," and "Islamic education" emerging as the primary focal themes of the research.

6. Most Productive Journals

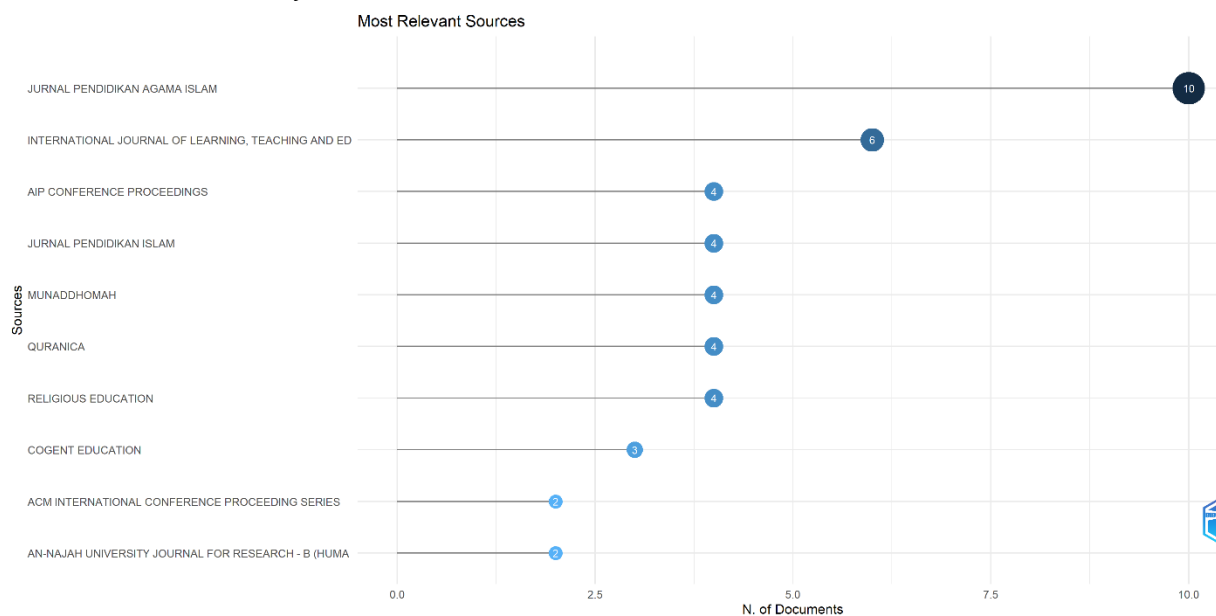


Figure 7. Most Productive Journals

In terms of the most frequently cited publication sources, the analysis revealed that "JURNAL PENDIDIKAN AGAMA ISLAM" ranked first with a total of 10 recorded documents. This finding highlights the significant role of Islamic education journals in exploring topics related to technology-based Qur'anic learning. In addition, other sources such as the "INTERNATIONAL JOURNAL OF LEARNING, TEACHING AND ED" and "AIP CONFERENCE PROCEEDINGS" also demonstrated notable contributions, with each source contributing 4 documents. The presence of these publication sources indicates that the literature concerning technology-oriented Islamic education has expanded considerably, although there remains a tendency for separation between modern technology-based education and education grounded in Qur'anic values.

The distribution map of these publication sources also illustrates the dominance of Southeast Asian countries, particularly Indonesia and Malaysia, which occupied the leading positions in publication output. This finding suggests that both countries not only serve as major centers for research on the integration of technology in Islamic education, but also act as key contributors in developing research frameworks that combine Qur'anic values with technology-based pedagogical approaches. Publications originating from other countries, including the United States, Australia, as well as

several European and Middle Eastern nations, also contributed to this field, although in smaller proportions. The involvement of non-Muslim majority countries in these publications demonstrates that research on technology-based Islamic education is attracting increasing global attention, thereby creating opportunities for cross-cultural collaboration and multidisciplinary approaches in future research.

7. Analysis of the Most Relevant Authors in Modern and Qur'anic Learning Publication (2016-2025)

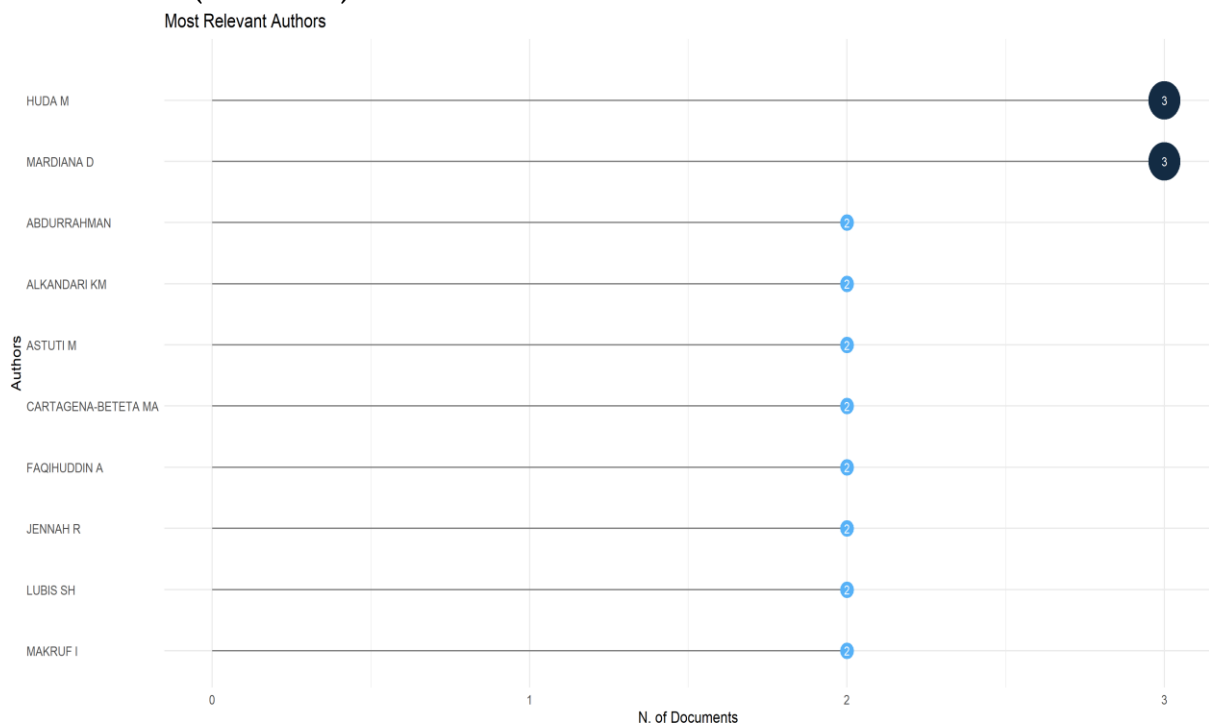


Figure 8. The Most Relevant Authors

Based on the analysis of 136 articles using R Biblioshiny, a list of the most productive authors in modern and Qur'anic learning research during the 2016–2025 period was identified. The Most Relevant Authors visualization indicates that Huda M and Mardiana D were the two most productive authors, each contributing 3 documents. Several other authors, including Abdurrahman, Alkandari KM, Astuti M, Cartagena-Beteta MA, Faqihuddin A, Jennah R, Lubis SH, and Makruf I, each contributed 2 documents within the research dataset. These findings suggest that research contributions in the field of modern and Qur'anic learning are relatively distributed among various authors, without strong dominance by any single individual researcher. The relatively balanced distribution of publication output indicates that studies on modern and Qur'anic learning continue to develop collaboratively and have not yet become concentrated within a specific research group. This pattern also reflects the multidisciplinary nature of the field, which involves contributions from diverse academic backgrounds and institutional

affiliations. Overall, the analysis of the most relevant authors demonstrates that research productivity in this area remains moderate and continues to offer broad opportunities for further development, particularly in strengthening wider international research collaboration networks.

8. Analysis of the Most Relevant Affiliations in Modern and Qur'anic Learning Publications (2016-2025)

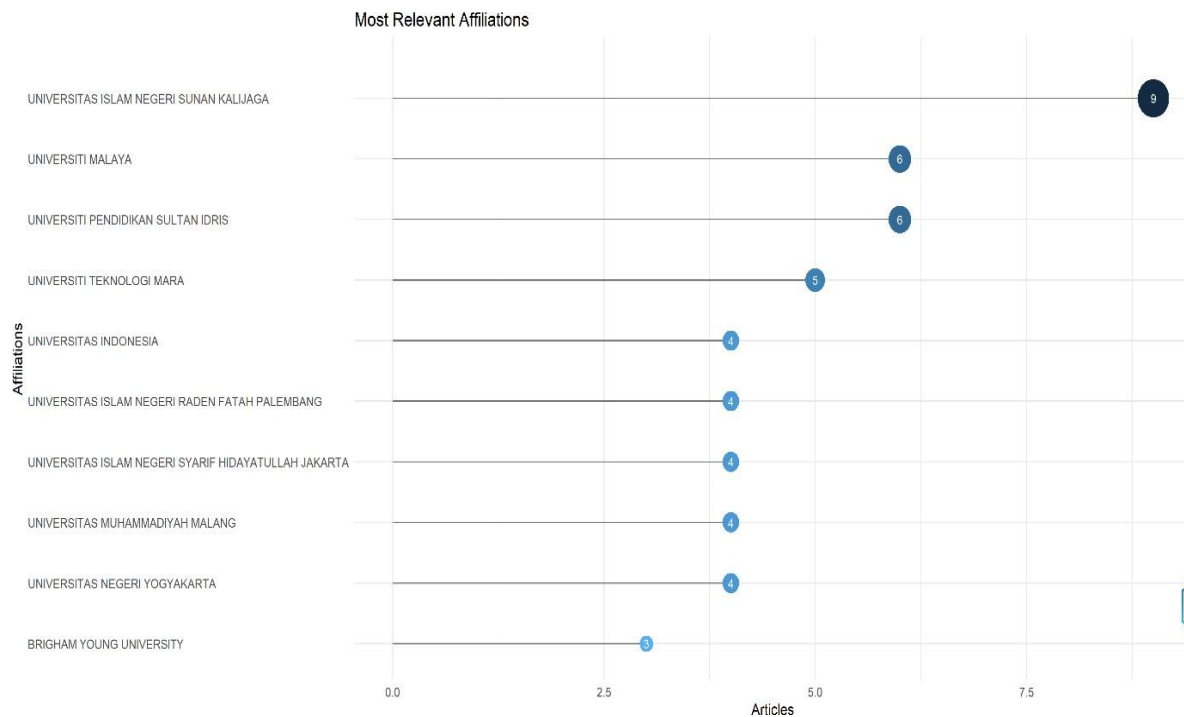


Figure 9. The Most Relevant Affiliations

Based on the analysis results, a list of the most productive institutions and affiliations in modern and Qur'anic learning research during the 2016–2025 period was identified. The Most Relevant Affiliations visualization indicates that Universitas Islam Negeri (UIN) Sunan Kalijaga ranked first with a total of 9 indexed articles within the research dataset. The next positions were occupied by Universiti Malaya and Universiti Pendidikan Sultan Idris, each contributing 6 articles. Meanwhile, Universiti Teknologi MARA recorded 5 articles. Several other institutions also demonstrated significant contributions with 4 articles each, including Universitas Indonesia, Universitas Islam Negeri Raden Fatah Palembang, Universitas Islam Negeri Syarif Hidayatullah Jakarta, Universitas Muhammadiyah Malang, and Universitas Negeri Yogyakarta. In addition, international institutions such as Brigham Young University also appeared in the dataset with 3 articles. This distribution indicates that research related to modern and Qur'anic learning is largely dominated by higher education institutions in Southeast Asia, particularly in

Indonesia and Malaysia, with additional contributions from global institutions. Overall, the affiliation analysis demonstrates that studies on modern and Qur'anic learning have developed actively within both Islamic-based universities and general educational institutions that focus on educational studies and learning technology.

9. Analysis of Country Production Trends Over Time (2016–2025)

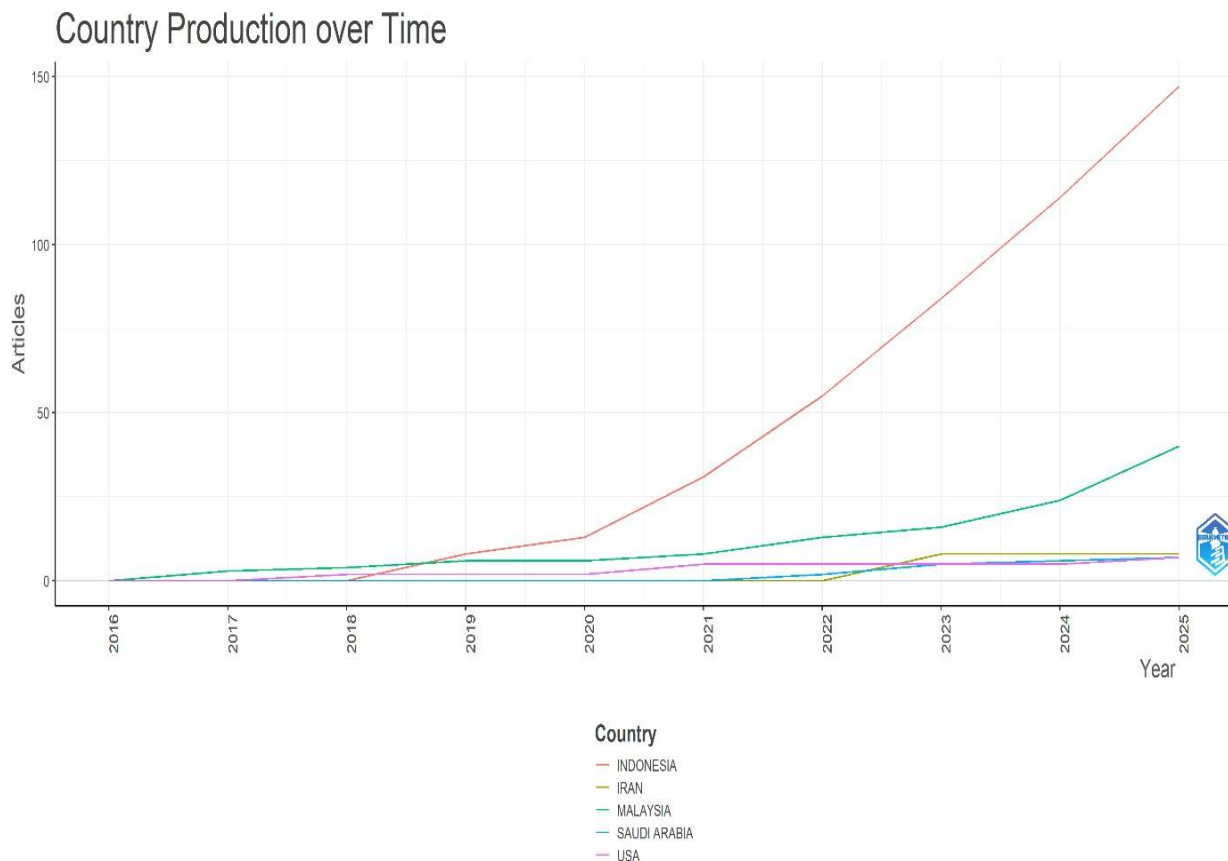


Figure 10. Country Production Trends Over Time

Based on the analysis of 136 articles using R Biblioshiny, an overview of the development of publication production by country over time was obtained. The Country Production over Time visualization indicates that Indonesia experienced the most significant publication growth during the 2016–2025 period. In the early years (2016–2018), the number of publications from various countries remained relatively low and stable. However, since 2019, a considerable increase has occurred, particularly in publications originating from Indonesia. This growth became even more pronounced during the 2020–2025 period, with a continuously rising trend that reached its peak in 2025. Malaysia also demonstrated a consistent upward trend, although the total number of publications remained lower than that of Indonesia. Other countries, including Iran, Saudi Arabia, and the United States, also showed gradual growth, particularly after 2021. Nevertheless, their growth rates were not as substantial as Indonesia's. Overall, the graph demonstrates that Southeast Asia,

especially Indonesia and Malaysia, has become the primary center for the development of research on modern and Qur'anic learning over the last decade. The sharp increase in publications after 2020 further suggests the influence of digital transformation and the COVID-19 pandemic on the rising intensity of research activities across different countries.

10. Analysis of the Thematic Cluster Map of Modern and Qur'anic Learning Research Articles (2016-2025)

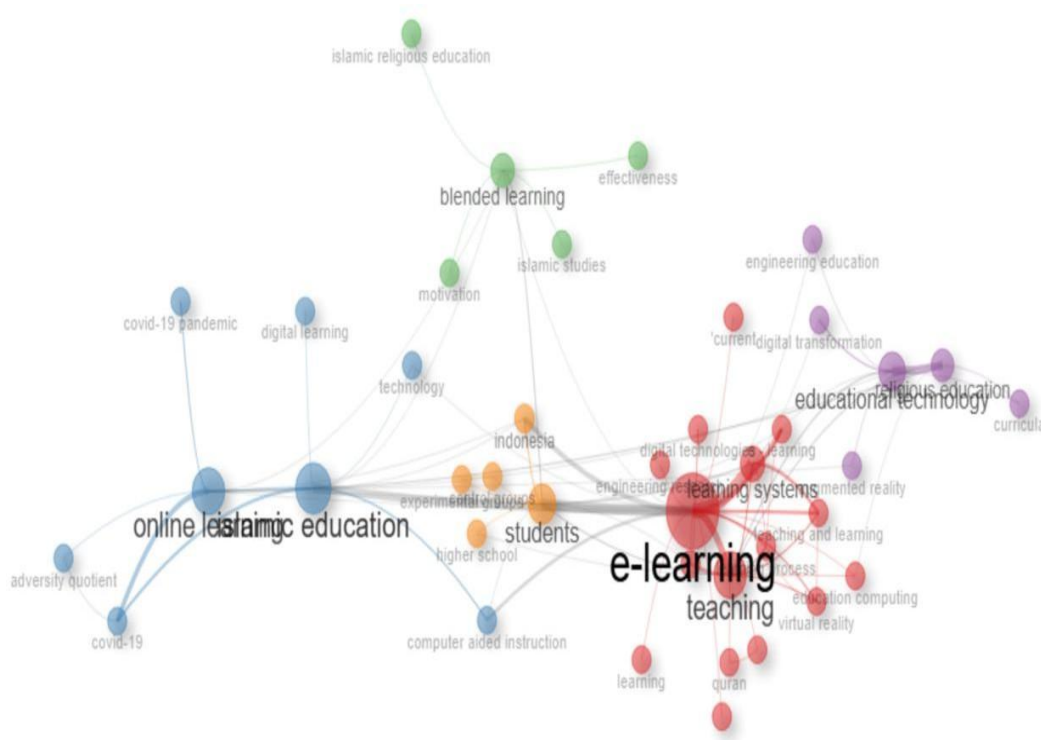


Figure 11. Thematic Cluster Map

Based on the co-occurrence network analysis of 136 articles using R Biblioshiny, a thematic cluster mapping was generated to illustrate the relationships among keywords in research on modern and Qur'anic learning during the 2016–2025 period. The network visualization reveals the formation of several major clusters, differentiated by colors and the interconnectedness among terms. The first cluster (displayed in red) is dominated by the theme “e-learning,” which appears as the largest and most central node within the network. This theme demonstrates strong connections with terms such as “teaching,” “learning systems,” “digital technologies,” “Quran,” and “virtual reality.” The dominance of the “e-learning” node indicates that digital technology-based learning has become the primary focus

within the research literature.

The second cluster (displayed in blue) is centered around the themes “online learning” and “Islamic education,” which are closely associated with terms such as “COVID-19,” “COVID-19 pandemic,” and “digital learning.” This finding suggests that the COVID-19 pandemic played a major role in accelerating the integration of online learning within the context of Islamic education. The third cluster (displayed in green) highlights the theme “blended learning,” which is linked to terms including “motivation,” “Islamic studies,” and “effectiveness.” This cluster indicates a research focus on the effectiveness of blended learning models in enhancing student motivation and learning outcomes within Islamic educational settings. Another cluster (displayed in purple) demonstrates relationships among “educational technology,” “digital transformation,” and “curricula,” reflecting the development of research directed toward more structural technology-based transformations within educational systems. Overall, the thematic cluster map demonstrates that research on modern and Qur’anic learning is divided into several major areas of focus, with “e-learning” functioning as the central theme that connects various pedagogical and technological approaches in Islamic education.

11. Thematic Map Analysis of Modern and Qur’anic Learning Research (2016–2025)

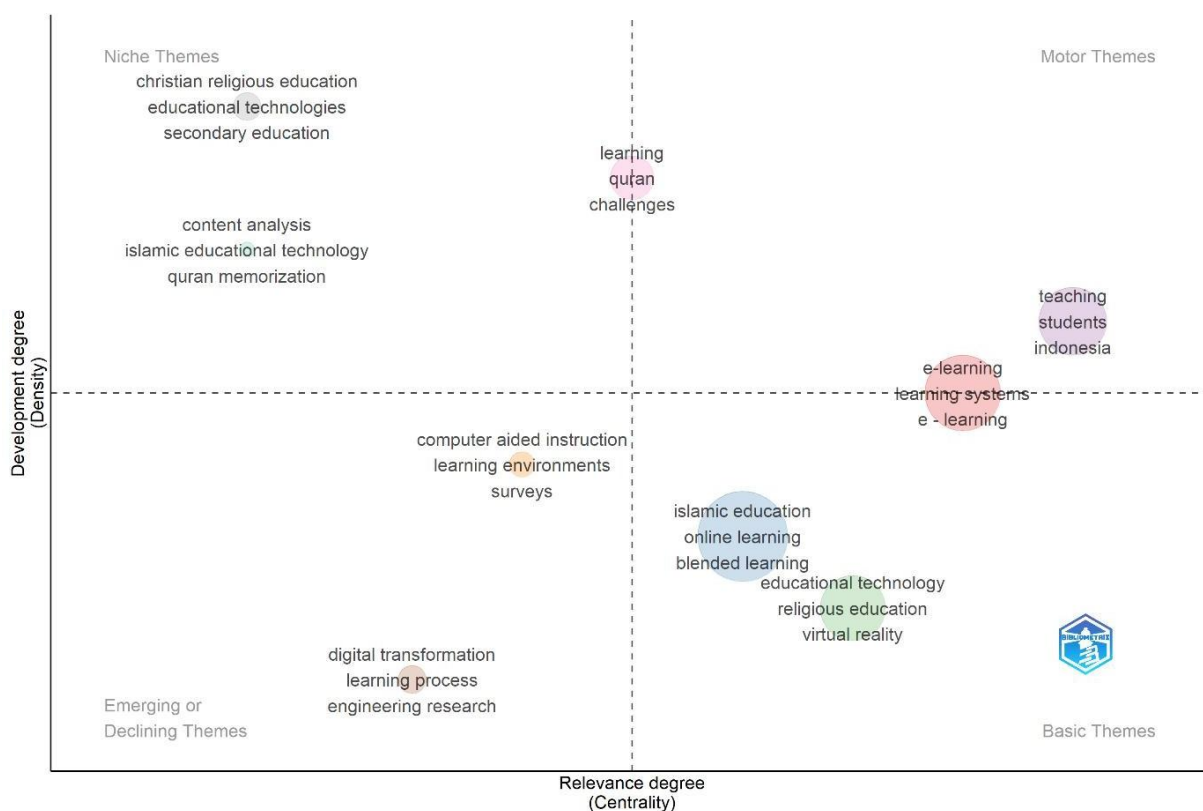


Figure 12. Thematic Map

Based on the thematic map analysis of 136 articles published during the 2016–2025 period, the theme “e-learning” was identified as a motor theme, meaning that it possesses both high centrality and high density, making it the primary driving force in the development of research on modern and Qur’anic learning. This theme is strongly connected with terms such as “learning systems,” “teaching,” “students,” and “Indonesia,” indicating that the research focus extends beyond technological aspects to include pedagogical implementation within the context of Islamic education. Within the basic themes quadrant, themes such as “Islamic education,” “online learning,” “blended learning,” “educational technology,” “religious education,” and “virtual reality” emerged as fundamental topics with high relevance. However, their development remains relatively broad and has not yet been fully consolidated from a theoretical perspective.

Meanwhile, the niche themes quadrant includes more specialized topics such as “Christian religious education,” “educational technologies,” “secondary education,” and “Quran memorization.” These themes reflect deeper exploration within specific contexts but remain less integrated with the mainstream direction of the research field. In the emerging or declining themes quadrant, terms such as “digital transformation,” “learning process,” and “engineering research” appeared, indicating themes that are either still in the early stages of development or have not yet become dominant within the literature. Overall, the thematic map confirms that the integration of digital technology, particularly through e-learning, has become the central dynamic in modern and Qur’anic learning research over the past decade, with increasing emphasis on pedagogical aspects and technology-based learning systems within the framework of Islamic education.

12. Three-Field Plot Analysis

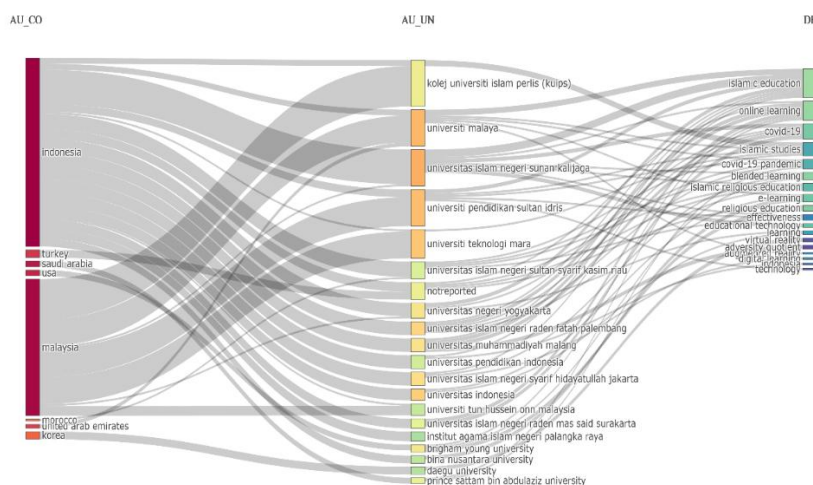


Figure 13. Three-Field Plot (Country, Affiliation, Keywords)

To examine the relationships among contributors, institutional affiliations, and research themes, a three-field plot analysis was conducted. The visualization results indicate that Indonesia, Malaysia, Turkey, Saudi Arabia, Morocco, the United Arab Emirates, and Korea were among the countries with the highest contributions to publications on modern and Qur'anic learning. These countries were connected to various authors and institutional affiliations, which were subsequently associated with specific research keywords. Indonesia and Malaysia appeared as the largest nodes within the visualization, indicating the dominant role of these two countries in the existing literature. Keywords such as "e-learning," "Islamic education," and "online learning" were the themes most frequently associated with authors from these countries. These findings reinforce previous results showing that Southeast Asia, particularly Indonesia and Malaysia, has become the primary center for the development of research integrating technology and Qur'anic values within educational contexts.

Discussion

The findings of this study indicate that over the past decade there has been a significant shift in the research landscape of modern and Qur'anic learning, marked by three main developments: a substantial increase in publication productivity with an annual growth rate of 45.37%, the strengthening of "e-learning" as a motor theme, and the expansion of cross-country collaboration networks, particularly between Indonesia and Malaysia. The sharp rise in publications after 2020 shows that digital transformation, especially during the COVID-19 pandemic, acted as a key catalyst in accelerating the integration of technology into Islamic education, consistent with Mannan et al. (2025) who reported a similar post-pandemic increase in digital Islamic education studies. However, beyond a situational response, this trend reflects that technology-based learning has become a mainstream discourse in modern education and is increasingly accepted within Qur'anic pedagogical contexts, a development that has not been widely emphasized in previous bibliometric studies such as Jannah et al. (2022).

Beyond the increase in research productivity, the dominance of "e-learning" as a motor theme in the thematic map indicates that technological innovation is no longer merely a supporting tool but has become a core structure in the development of learning models. This tendency reflects the growing awareness that technological transformation in Islamic education should remain connected to Islamic epistemological values and spiritual foundations rather than functioning solely as technical adaptation (Muammar et al., 2026). The strong linkage between "e-learning" and terms such as "learning systems," "teaching," and "students" shows that research attention has shifted from purely technical aspects toward more systemic pedagogical dimensions. The literature no longer focuses only on the use of technology but

increasingly examines how learning systems are redesigned within digital contexts, including in Islamic education. This development confirms that pedagogical modernization within Qur'anic studies is no longer marginal but has entered the structure of curricula and learning practices, reinforcing the conceptual argument proposed by Intania et al. (2026) regarding the necessity of integrating technology and spiritual values in Islamic education.

Nevertheless, the thematic map indicates that the conceptual integration between modern learning and Qur'anic learning is still developing along two relatively parallel streams. On the one hand, modern learning is dominated by discourse on twenty-first century skills, digitalization, and educational system transformation. On the other hand, Qur'anic learning continues to emphasize value internalization, character formation, and spiritual development. This thematic separation suggests that the epistemological synthesis between pedagogical modernity and the tawhid paradigm has not yet been fully consolidated in the scientific literature. This finding supports the arguments of Herdiyanti et al. (2025) and Warsito & Sunhaji (2026), who state that the integration of technology and Qur'anic values remains largely practical in nature, such as the use of technology in religious learning, rather than a deeper philosophical and methodological integration. In other words, most studies still focus on "how to use technology" rather than "how to integrate technology with Qur'anic values in a systematic framework."

From a geographical perspective, the dominance of Indonesia and Malaysia in scientific production confirms that Southeast Asia has become the central hub for research on technology-based Qur'anic learning. This finding aligns with the studies of Jannah et al. (2022) and Mannan et al. (2025), which also identify both countries as leading contributors in publications on technology-based Islamic education. This dominance can be explained by the fact that Indonesia and Malaysia have well-established Islamic education systems while also maintaining openness to digital innovation. However, the relatively limited pattern of international collaboration, with an international collaboration rate of only 14.71%, indicates that this research domain is not yet fully integrated into broader global research networks. At the same time, the involvement of non-Muslim countries such as the United States and Australia in several publications highlights the existence of potential cross-cultural and cross-paradigmatic dialogue. This potential should be further leveraged to develop more universal, technology-based religious learning models that can be accepted across diverse educational systems.

Conceptually, these findings point to the need for developing an integrative learning model that is not only adaptive to technological advancement but also grounded in Qur'anic values. Such integration should go beyond the digitalization of teaching methods and extend to the reconstruction of learning design that unifies cognitive, affective, and spiritual dimensions within a coherent pedagogical

framework. This aligns with the ideas proposed by Muflikhun et al. (2025) and Basori et al. (2025), who emphasize the necessity of restoring education based on Qur'anic values amid the ongoing currents of modernization. Therefore, modern learning and Qur'anic learning should not be positioned as opposing paradigms, but rather as complementary dimensions that enrich each other in shaping education that is globally relevant and spiritually meaningful. The main challenge ahead lies in translating this integrative vision into measurable and applicable curricula and classroom practices.

Overall, the results of this scientometric analysis indicate that research on modern and Qur'anic learning has entered a strong phase of quantitative expansion, while still remaining at a stage of conceptual consolidation. This confirms the statement by Neni et al. (2024) that the integration of Qur'anic values within technology-based learning still requires further development, both theoretically and practically. Therefore, future research agendas should be directed toward strengthening theoretical synthesis, expanding international collaboration, and exploring emerging technologies that align with Qur'anic values. Through these steps, this field has the potential to evolve from merely practical integration toward a more comprehensive and sustainable transformation of educational paradigms.

Conclusion

This study concludes that research on modern and Qur'anic learning during the 2016–2025 period has experienced significant quantitative growth, particularly following the COVID-19 pandemic, with an annual publication growth rate reaching 45.37%. The thematic analysis identified “e-learning” as a motor theme, indicating that the integration of digital technology within Islamic education has entered a substantial phase of expansion. Nevertheless, the findings also reveal that the conceptual relationship between modern learning and Qur'anic learning continues to develop along two relatively parallel trajectories. Modern learning research is predominantly associated with digitalization, technological innovation, and twenty-first century competencies, whereas Qur'anic learning research remains strongly oriented toward spiritual values, moral formation, and character development. This condition indicates that the epistemological synthesis between pedagogical modernity and the tawhid paradigm has not yet been fully consolidated within the existing scientific literature.

From a geographical perspective, Indonesia and Malaysia emerged as the primary contributors to research productivity in this field, with Universitas Islam Negeri Sunan Kalijaga identified as the most productive institutional affiliation. However, the relatively limited level of international collaboration, reflected in the collaboration rate of 14.71%, demonstrates that this research domain still requires broader global academic engagement. These findings suggest that future research should focus on strengthening theoretical integration, expanding international collaboration networks, and developing integrative learning models capable of

combining cognitive, affective, and spiritual dimensions within technology-based Islamic education. Through these efforts, the integration of modern and Qur'anic learning may evolve beyond practical adaptation toward a more comprehensive and sustainable educational transformation.

Despite the significant findings produced in this study, several limitations should be acknowledged. First, the dataset was derived exclusively from the Scopus database, which may limit the representation of relevant publications indexed in other international or regional databases. Second, the study included only English-language publications, potentially creating language bias and excluding relevant studies published in other languages, particularly within local Islamic education contexts. Third, the relatively limited corpus size of 136 articles may not fully represent the broader global landscape of research concerning modern and Qur'anic learning. Therefore, future studies are encouraged to expand database sources, include multilingual publications, and incorporate larger datasets in order to generate a more comprehensive understanding of the development of technology-based Islamic education research.

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