

Mapping Talaqqi in International Literature: A Systematic Literature Review and Bibliometric Analysis with Opportunities for Technological Integration

Ade Putra Hayat^{1,2*}, Ridha Ahida¹, Hairul Fauzi³, Charles¹, Yan Guspriadi²

¹ Universitas Islam Negeri Sjech M. Djamil Djambek Bukittinggi

² Insititut Agama Islam Negeri Kerinci

³ Universitas Islam An Nadwah Kuala Tungkal

Email: adeputrahayat@iainkerinci.ac.id

*Corresponding Author

Abstract: Talaqqi, a classical face-to-face method of transmitting Islamic knowledge that emphasizes sanad authenticity and meaningful teacher-student relationships, constitutes the cornerstone of traditional Islamic pedagogy. This study maps the intellectual structure and research landscape of talaqqi in international literature through a hybrid Systematic Literature Review and bibliometric analysis of 24 Scopus-indexed documents published between 2013 and 2026. Employing the PRISMA 2020 protocol along with VOSviewer and Biblioshiny, the findings reveal talaqqi as an emerging research field experiencing a significant paradigmatic shift. While remaining firmly rooted in classical principles of sanad, Qur'anic education, and interpersonal pedagogy, the literature demonstrates an inductive emergence of technology, digital platforms, and automated classification models. The study highlights substantial opportunities for hybrid learning frameworks that integrate traditional talaqqi practices with artificial intelligence and digital tools while preserving epistemological integrity. These results offer important theoretical contributions and practical implications for the development of technology-enhanced Islamic pedagogy in higher education institutions.

Keywords: Talaqqi; Technology; Systematic Literature Review; Bibliometric

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Introduction

Talaqqi, the traditional face-to-face method of transmitting Islamic knowledge, is the cornerstone of classical Islamic pedagogy. Originating from the Prophet Muhammad and his companions, this method has ensured the continuity, authenticity, and spiritual depth of Islamic scholarship for centuries. The centrality of this method is evident in institutions such as madrasahs and pesantren, which have preserved genealogical and spiritual hierarchies through direct interaction between teachers and students. Along with the modern challenges facing Islamic education bureaucratic standardization, extremist reinterpretation, and technological transformation the study of talaqqi and its mechanisms of transmission remains essential for understanding tradition and adaptation in the Islamic world (Hamzah et al., 2019).

This method is characterized by direct face-to-face interaction between teacher and student, emphasizing the accuracy of verbal and non-verbal delivery while maintaining epistemological integrity (Fauziyati & Hidayat, 2024; Mujiburrohman, 2025). This method goes beyond simply memorizing sacred texts. It includes direct verification, the establishment of knowledge authorities, and the sustainability of authentic sanad (transmission chain). As a dynamic pedagogical framework, talaqqi encourages deep understanding through ongoing interpersonal relationships, thus expanding its relevance beyond traditional Qur'anic education (Ahmed, 2025; Samsuddin et al., 2024).

Talaqqi represents a holistic approach to knowledge delivery that integrates cognitive, social, and ethical dimensions (Mahyani, 2026; Sauri et al., 2016). This process ensures the authenticity and reliability of knowledge through personal interaction and continuous verification. This classical tradition has historically been the foundation for preserving Islamic science across generations (Mghari et al., 2022; Zahari & Yusof, 2022).

From an epistemological perspective (Ramli et al., 2014; Zahari & Yusof, 2022), Talaqqi offers a distinctive model that prioritizes human interaction as the primary vehicle for authentic learning. It challenges contemporary pedagogical approaches that often rely on digital media (Fauzah, 2025) impersonal and standardized content delivery. Unlike many modern learning models that emphasize efficiency and scalability, talaqqi underscores the irreplaceable value of hands-on observation, interactive dialogue, and the development of meaningful teacher-student bonds. This distinction highlights talaqqi's unique capacity to cultivate not only factual knowledge but also moral and spiritual depth in the learning process.

The epistemological strength of talaqqi lies in its ability to maintain the integrity of knowledge through the principles of sanad and scientific authority (Zahari & Yusof, 2022). In contrast to contemporary models that often prioritize technological convenience over relational depth, talaqqi maintains a strict verification mechanism that ensures the continuity and reliability of the knowledge transmitted (Tsaabitah et al., 2025). This fundamental difference places talaqqi as an important counterweight to the depersonalization often found in modern education systems. Despite this, the principles of talaqqi remain highly adaptable to the demands of the global educational landscape. The integration of classical traditions with modern technological innovations presents a significant opportunity to improve the accessibility and effectiveness of knowledge delivery without sacrificing its core essence.

In the era of globalization of education, digital platforms such as e-learning, artificial intelligence (AI), virtual reality (VR), and automated assessment tools offer a promising avenue to expand the reach of talaqqi (Hamzah et al., 2019). These technologies can facilitate simulated face-to-face interactions, expand access for geographically dispersed learners, and support scalable pedagogical practices while maintaining the fundamental values of direct verification and interpersonal connections (Kartini et al., 2026; M. Yasin et al., 2018).

Despite its rich theoretical foundation, global scientific references to talaqqi as a broader epistemological concept are still limited. Most of the existing literature focuses narrowly on its application in the education of the Qur'an (Abdelgelil et al., 2025; Almalki, 2023), rather than exploring its interdisciplinary potential in contemporary pedagogy. This scarcity creates a significant knowledge gap. Without systematic examination, there is a real risk that the adaptation of talaqqi technology may prioritize efficiency at the expense of epistemological depth. However, the chances of implementing this approach require a long way, because this is not a common discussion and has many manuscripts as empirical evidence. Therefore, a comprehensive mapping of the thematic evolution of talaqqi through a systematic literature review and bibliometric analysis is urgently needed.

To address this gap, the study adopted a hybrid approach that combines Systematic Literature Review (SLR) and bibliometric analysis (Alsadi et al., 2025; Linnenluecke et al., 2019). Following the PRISMA 2020 protocol, this analysis examined the documents obtained from the screening in the Scopus international publication database. The study aims to map the intellectual structure and thematic development of talaqqi, and its opportunities to be integrated with technology,

1. What is the intellectual structure of talaqqi in Scopus-indexed international literature?
2. How is the talaqqi research landscape characterized in terms of chronological evolution, authorship and institutional contributions, and geographical distribution?

3. How do the dimensions of technology, digital platforms, and automated classification models emerge inductively from the talaqqi literature, and what opportunities and novelties arise?.

Method

Research Design

This study adopts a hybrid approach that combines *Systematic Literature Review* (SLR) and Bibliometric analysis (Alsadi et al., 2025; Linnenluecke et al., 2020). This approach was chosen to provide a comprehensive understanding of the development of the topic of Talaqqi, not only in terms of the quantity of publications and the scientific network (bibliometrics) (Donthu et al., 2021; van Eck & Waltman, 2010), but also thematic depth related to its position as a classical scientific transmission (SLR). This research protocol follows the guidelines *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (Page et al., 2021), to ensure transparency and reproducibility of the literature selection process. This design was chosen due to the limited amount of literature (24 documents), so that an inclusive and exploratory approach is more appropriate than strict thematic narrowing (Marlina & Samala, 2026; Samala et al., 2026)

Data Source

Primary data is obtained from the Scopus database, which is one of the largest and most internationally recognized peer-reviewed abstract and citation databases. The search was carried out without publication year limit (all years) until the date of data collection of May 23, 2026. The search strings used are: "talaqqi" which is limited to the TITLE-ABS-KEY field (title, abstract, and keyword). The initial search results yielded 28 documents..

Data Criteria

This study applies an *inclusive review strategy* in accordance with the objectives of comprehensive mapping. The inclusion criteria include all documents that:

1. Contains the keyword "talaqqi" in the title, abstract, or keyword. The researcher determined the use of the keyword only on "talaqqi" to obtain comprehensive data in the data search process
2. Published in a Scopus-indexed journal, conference proceedings, or book chapter;
3. Discuss talaqqi as an epistemological, pedagogical, or scientific transmission concept (Including discussion of the context of Qur'anic education and technology, other than that is not included)

The selection process is documented according to the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow (Page et al., 2021) to ensure transparency and reproducibility. From the criteria data that has been determined, and using the PRISMA systematic process, the results of 24 documents that are feasible and relevant to map the variables discussed are obtained.

Analysis Tools

Bibliometric Analysis (R Studio, VosViewer)

Bibliometric analysis was carried out to map the research landscape quantitatively, including:

- Distribution of publications by year and country;
- Co-occurrence keyword analysis;
- Citation and co-citation network.

The software used is VOSviewer (Bukar et al., 2023) for network visualization and Bibliometrix/Biblioshiny (R Studio) (As-Salafiyah & Marlina, 2022) for descriptive analysis and temporal trends.

Systematic Literature Review (PRISMA Protocol)

Qualitative analysis was carried out through the extraction of thematic data from 24 selected articles. The focus of the analysis is directed to identify how Talaqqi is conceptualized in contemporary literature. Findings from the bibliometric analysis were used to reinforce the context of

the qualitative discussion, resulting in a holistic interpretation of Talaqqi's position in the global academic landscape.

This study follows the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) 2020 protocol to ensure transparency and reproducibility of the literature screening process. At the identification stage, a literature search was performed on the Scopus database using the TITLE-ABS-KEY (talaqqi) search string. The search results succeeded in identifying 28 documents, the systematic literature process can be seen in Figure 1.

The PRISMA 2020 flow (Page et al., 2021) documents the transparent selection process: 28 initial records from Scopus (TITLE-ABS-KEY "talaqqi"), 0 from other registers, 28 screened, 28 full-text assessed, and 4 excluded for marginal relevance (e.g., non-pedagogical "talaqqi al-rukban"). Thus, 24 documents met all inclusion criteria

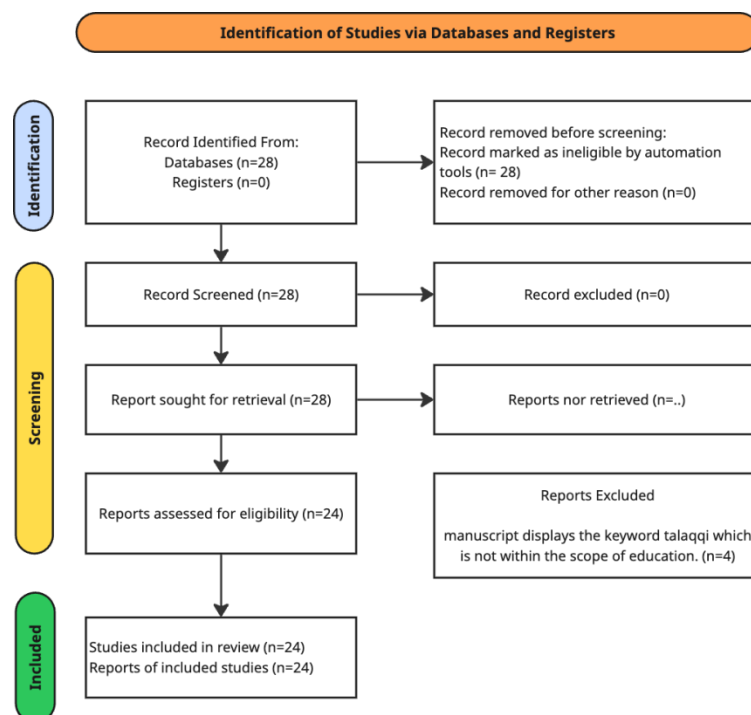


Figure 1. Flow of PRISMA Protocol

At the screening stage, all 28 identified documents were screened by title and abstract. No documents are excluded at this stage. Furthermore, *full-text* reports from 28 documents were downloaded for eligibility *assessment*. After an in-depth evaluation of the full-text, as many as 4 documents were issued because they only mentioned the keyword "talaqqi" marginally and were not within the scope of education or transmission of Islamic knowledge that was the focus of this research (e.g., talaqqi al-rukban).

24 documents were declared to meet all inclusion criteria and were included in a systematic review and bibliometric analysis. A total of 24 eligible manuscripts were used as the basis for analysis in this study.

Results and Discussion

In the results and discussion section, the results obtained from the use of analysis tools will be explained, first the overall condition of the data pulled from the scopus database using R Studio (Biblioshiny) will be presented (Taqi et al., 2021), and VosViewer, after which there will be a discussion of the research questions asked by the researcher.

The bibliometric dataset comprises 24 documents published between 2013 and 2026, drawn from 19 sources. The collection reflects an emerging research domain with an annual growth rate of 0% and an average document age of 4.71 years. On average, each document receives 3.792 citations, At-Ta'lim: Jurnal Pendidikan, ISSN 2460-5360 (print) | 2548-4419 (online)

with 1685 total references and 111 author keywords. Collaboration is moderately intensive (3.62 co-authors per document), while international co-authorship stands at 12.5%.



Figure 2. Main Information Data

Table 1. Literature Data Quality (n=24)

Metadata	Description	Missing Counts	Missing %	Status
AB	Abstract	0	0.00	Excellent
DT	Document Type	0	0.00	Excellent
SO	Journal	0	0.00	Excellent
FROM	Keywords	0	0.00	Excellent
THE	Language	0	0.00	Excellent
PY	Publication Year	0	0.00	Excellent
TI	Title	0	0.00	Excellent
TC	Total Citation	0	0.00	Excellent
C1	Affiliation	1	4.17	Good
AU	Author	1	4.17	Good
CR	Cited References	1	4.17	Good
DI	DOI	4	16.67	Acceptable
RP	Corresponding Author	10	41.67	Poor
Id. at 1	Keyword Plus	21	87.50	Critical
WCU	Science Categories	24	100.00	Completely Missing

Table 1 presents the results of the metadata completeness evaluation of 24 documents that were successfully downloaded from the Scopus database and analyzed using Biblioshiny software (R package *bibliometrix*). This evaluation is an important step in bibliometric research to assess the quality and reliability of data before further analysis is carried out, such as keyword co-occurrence, publication trends, and mapping of scientific networks (Donthu et al., 2021; Aria & Cuccurullo, 2017).

Overall, the metadata quality of the research dataset was excellent. The eight core metadata variables Abstract (AB), Document Type (DT), Journal/Source (SO), Author Keywords (DE), Language (LA), Publication Year (PY), Title (TI), and Total Citation (TC) show 100% completeness and are in Excellent status (in green). This indicates that the bibliographic data foundation required for bibliometric analysis is available in complete and high quality.

The other three variables, namely Affiliation (CI), Author (AU), and Cited References (CR), were Good with a very low deficiency rate (only 1 document or 4.17%). DOI (DI) is in the Acceptable category with a missing rate of 16.67% (4 documents). Meanwhile, Corresponding Authors (RP) have Poor status with a fairly high level of deficiency (10 documents or 41.67%). Two variables showed less than optimal conditions, namely Keywords Plus (ID) which had Critical status (missing 87.50% or 21 documents) and Science Categories (WC) which had Completely missing status (100% or 24 documents, in red).

The shortcomings in Keywords Plus and Science Categories are not a significant obstacle to this study. The main bibliometric analysis (especially co-occurrence keywords and thematic mapping) relies more on Author Keywords (DE) which is 100% complete. According to Donthu et al. (2021), as

long as core metadata such as title, abstract, year of publication, and author keywords are available in full, the results of the bibliometric analysis remain valid and reliable. Therefore, the overall quality of the dataset used in this study is considered adequate and of high quality to support the entire systematic review process and bibliometric analysis.

What is the intellectual structure of talaqqi in Scopus-indexed international literature?

Keyword co-occurrence analysis using VOSviewer reveals a clear intellectual structure centered on talaqqi as the dominant node. The visualization identifies four thematic clusters with strong interconnections, confirming talaqqi as the gravitational core of the literature

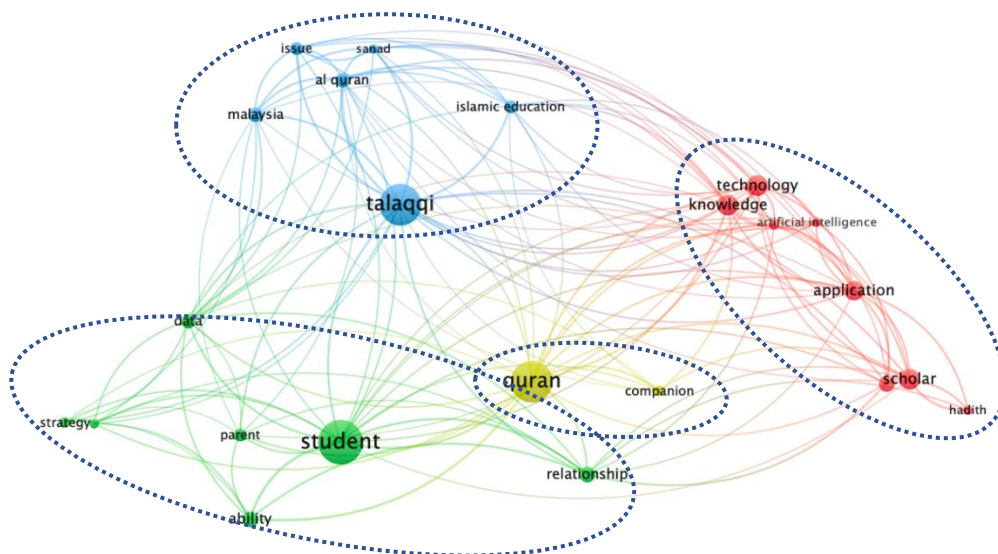


Figure 3. Visualization of the Co-Occurrence Keyword Network in Talaqqi Research

Keyword co-occurrence *analysis* using VOSviewer software resulted in a very clear network with four main thematic clusters. As seen in Figure 2, the keyword "talaqqi" appears as the central and most dominant node with the largest size and is bright blue in the center of the network. The central position and strong thickness of the connection lines suggest that "talaqqi" is the most frequently mentioned core concept and has the most close relationship with almost all other keywords in the 24 Scopus indexed documents analyzed. This confirms that talaqqi acts as the center of intellectual gravity in the literature studied.

The "talaqqi" node in the image has a very strong connection to various dimensions. The blue cluster on the top left includes the Quran, sanad, Islamic education, issue, and malaysia which shows the epistemological and contextual roots of talaqqi in Islamic education. The green cluster in the lower left focuses on pedagogical and learning aspects with the keywords student, parent, strategy, data, ability, and relationship that describe attention to the learning process and interpersonal relationships. Meanwhile, the red cluster on the right represents the dimensions of modern technology and applications which include technology, knowledge, artificial intelligence, application, and scholar. The yellow cluster in the bottom center contains the Quran and a companion that shows the historical and theological foundations of talaqqi.

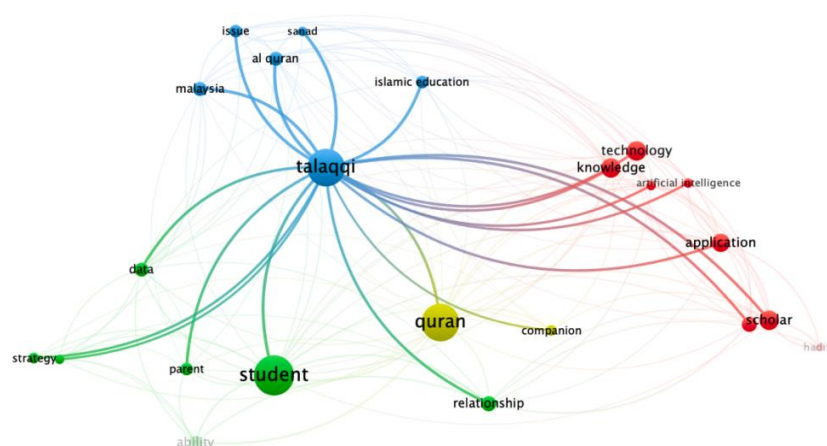


Figure 4. Visualization specifically for talaqqi co-occurrence and its relationship with other keywords

This visualization graphically shows that research on talaqqi is undergoing a significant thematic shift. Although still firmly rooted in the classical traditions of sanad, the Qur'an, and Islamic education, the "talaqqi" node is one of the few nodes that dominates the network, showing an increasingly close connection with technology and artificial intelligence clusters. This confirms that technology is emerging inductively as an important theme in contemporary talaqqi literature. Furthermore, the process of data extraction and qualitative thematic synthesis is carried out, in the following table,

Table 2. Summary of Characteristics and Critical Appraisal of Included Studies (n=24)

Authors	Title	Main Topics Covered	Key Benefits	Key Disadvantages
Hamzah et al. (2019)	A review on the needs analysis on online learning in islamic studies	The need for the development of online talaqqi learning in Malaysia and the identification of its challenges and opportunities in the context of contemporary Islamic education	Provide a realistic and contextual analysis of needs in Malaysia; highlighting the importance of digital talaqqi to expand the reach of da'wah without time and place limits	Research is qualitative exploratory on a small scale; lacks concrete models or prototypes
Ibrahim et al. (2015)	The Problems, Issues and Future Challenges of Automatic Speech Recognition for Quranic verse Recitation: A Review	The challenge of developing an Automatic Speech Recognition (ASR) system for the recitation of the Qur'an by paying attention to the rules of tajweed and the variety of readings	An in-depth comprehensive review of the technical challenges of ASR in the context of talaqqi and mushafahah; provides a clear direction of future research	It is a literature review only; has not presented a technical solution that has been empirically tested
Fauji et al. (2020)	Implementing Child-Friendly Teaching Methods to Improve Qur'an Reading Ability	The relationship between teaching methods (including talaqqi) and the ability to read the Qur'an of junior high school students using an action research approach	Using strong statistical analysis (Pearson correlation) and involving a sizable sample (283 students); Provide recommendations for practical	Too narrow a focus on one public school; generalization limited to the context of Islamic boarding schools or traditional Islamic

Authors	Title	Main Topics Covered	Key Benefits	Key Disadvantages
			methods that can be applied immediately	education
M. F. B. M. Yasin et al. (2018)	Contributions of technology towards development of Qur'anic Tajweed knowledge	Technological approach in the development of tajweed knowledge and the requirements to remain in accordance with Islamic principles	Provide a framework of highly relevant ethical and sharia conditions for the integration of technology with tajweed and talaqqi	A descriptive literature review; lacks empirical data or real technology testing
Ibrahim et al. (2013).	Automated tajweed checking rules engine for Quranic learning	Development of an automatic engine for checking tajweed rules to support the process of talaqqi and mushafahah in learning the Qur'an	Provide concrete empirical test results with a high accuracy rate (91.95% of sentences); Demonstrating the potential of technology as a supporter of talaqqi	Testing only one short surah (Al-Fatihah); has not been tested on more complex readings
Millie (2025)	"Talaqqi" in the age of bureaucracy; Symbiosis of pedagogical cultures in West Javanese "pesantren"	The tension between the practice of talaqqi in Islamic boarding schools and the bureaucratization and standardization of national education in Indonesia	In-depth analysis of the dynamics of traditional versus modern pedagogy; provides a rich ethnographic perspective	Focus only on Islamic boarding schools in West Java; Lack of concrete solutions for the reconciliation of the two systems
Ismail et al. (2024).	Fostering Emotional And Moral Development In Islamic Boarding Schools: The Impact Of Talaqqî And Halaqa Traditions	The relationship between teachers and students in the talaqqi and halaqa traditions and their impact on students' emotional and moral well-being	Integrating the psychological and educational aspects of Islam holistically; Highlighting the value of strong ta'zhim and manners	A single case study in one dayah of Aceh; Limited generalization
Basir et al. (2024).	Adapting and implementing the new normal: an Islamic university perspective	Post-COVID adaptation strategy through the e-Talaqqi model in Islamic universities and its harmonization with Maqasid Syariah	Propose conceptual frameworks that are innovative and relevant to post-pandemic conditions	Sample limitations (one university in Brunei); has not been extensively tested in various countries
Rashid et al. (2015)	Towards Automating the Evaluation of Holy Quran Recitations: a Pattern Recognition Perspective	Pattern recognition framework for automatic evaluation of Qur'an recitation as a supporter of talaqqi	Provides a systematic basic framework from a pattern recognition perspective	Still at the framework proposal stage; No comprehensive implementation and testing yet
Ramli et al. (2014)	Historical Reflection on the Involvement of Hadith Exponents from the 6th Century until 15th Hijrah in the Application of Talaqqi Bersanad	Historical reflection on the participation of hadith scholars in the application of Talaqqi Bersanad from the 6th to the 15th centuries Hijri	Provides a very strong and profound historical foundation regarding the continuity of sanad	Lack of connection of these historical traditions with applications and challenges in the digital age
Halim et al. (2025)	Analysis of the Effectiveness of the Tahfiz Method in Quran	Case study of talaqqi, tasmik, and murajaah methods on national Qur'an memorization	Providing examples of successful practices that are very concrete and	Very specific to one individual; less generalization to the wider

Authors	Title	Main Topics Covered	Key Benefits	Key Disadvantages
	Memorization: a Case Study of Muhammad Rifa'ei Bin Mat Zuki, National Quran Memorization Champion 2024;	champions	inspiring for tahfiz practitioners	population
Hulliyah et al. (2025)	Efficient Whisper Fine-Tuning with Low-Rank Adaptation (Lora) for Evaluating Al-Fatihah Recitation Accuracy	Application of AI Whisper model with LoRA technique for Qur'an memorization	Provides excellent technical results with a low error rate (WER 1.34%)	It has not discussed epistemological aspects such as sanad and authenticity in the context of AI
Mohd Rifain et al. (2024)	A Need Analysis for Developing Arabic Phonetics: A Strategy for Mastering the Pronunciation of Arabic Letters	The need to develop a hijaiyyah pronunciation model for elementary school students	Using in-depth PRAAT technical analysis and data-driven student recordings	Lacking in placing talaqqi as the main method; more phonetic focus
Alias and Yusof (2024).	Eminence and Contributions of the Companions in the Development and Teaching of the Qur'ān in the First Hijri Century	The role of the Prophet's companions in the development and teaching of the Qur'an in the first century of the Hijri	Provides a comprehensive historical overview of the foundations of talaqqi	Lack of exploration of implications and adaptation in the contemporary era
Yahya et al. (2025)	Empowering the Tradition of Quran Memorization through Artificial Intelligence (AI): A Conceptual and Contemporary Review;	The potential of AI applications (Tarteel AI and Memorize Quran AI) as a support for Qur'an memorization	Providing balanced and visionary tradition-technology hybrid recommendations	Still an application review; There have been no large-scale empirical tests
Shofiah et al. (2025)	Developing an Islamic Cognitive Behavioral Therapy (I-Cbt) Model to Enhance the Psychological Well-Being of Huffaz Students	Integration of Islamic Cognitive Behavioral Therapy (I-CBT) with talaqqi practice and huffaz psychological well-being	Deeply integrating psychological and spiritual dimensions	Focus only on one maahad tahfiz; Limited generalization
Ahmad et al. (2018).	Tajweed Classification Using Artificial Neural Network	Classification of tajweed rules using Artificial Neural Network	Provides detailed technical experiments with comparisons of multiple training algorithms	Testing only one rule of tajweed (Noon Sakinah and Tanween)
Hussin et al. (2018).	Contributions of Muhammad Mahfuz Al-Tarmasiy in the field of Islamic studies	Shaykh Muhammad Mahfuz Al-Tarmasiy's intellectual contribution to the study of Islam and the talaqqi system	Provide informative biographical analysis and institutional contributions	Lack of direct discussion of talaqqi practice in depth
Bafadal and Triwiyanto	Exploring the leadership of the	Parent-teacher collaboration in talaqqi	Propose an innovative	Very specific to one Islamic

Authors	Title	Main Topics Covered	Key Benefits	Key Disadvantages
(2026).	principal mobilizes collaboration between teachers and parents in children's learning based on Islamic parenting: Evidence from Indonesia	programs in Islamic early childhood education	prophetic-instructional leadership model	kindergarten institution
Adziz and Ismail (2023).	Usage Patterns of Digital Teaching and Learning Platforms Among Pondok Institutions in Kedah;	Patterns of use of digital platforms in talaqqi learning in cottages during the COVID-19 pandemic	Provides a strong Social Cognitive Theory-based analysis	Focus on only one hut (SZK Kedah); Less representative
Kalash (2020)	The Efforts Of Scholars In Spreading Moderation In The Past and Present Time And The Efforts Of South East Asia Scholars In Particular	The role of talaqqi as a method of spreading Islamic moderation and resistance to extremism	Provides a highly relevant and important moderation perspective	Lack of discussion of the dimensions of technology and digital adaptation
Zahari and Yusof (2022).	issues in the implementation of the talaqqi al-quan program in malaysia;	Issues of implementation of the Qur'an bersanad talaqqi program in Malaysia and recommendations for improvement	Provide concrete and contextual practical recommendations	Be descriptive; lack of in-depth analysis theoretically
Abdelgelil et al. (2025)	Challenges Of Artificial Intelligence (AI) And Its Impact On Qur'anic Qira'at: A Thematic Review Analysis	Challenges and impacts of using AI on Qira'at science and the authenticity of talaqqi and sanad	Provide strong and visionary Sharia ethics recommendations	Still a thematic survey; No empirical studies yet
Borham et al. (2024)	Teaching approach for indigenous people: an empirical study from Pahang, Malaysia	Approach to teaching talaqqi musyafahah to Orang Asli converts in Pahang	Provide an inclusive and contextual perspective that is rarely discussed	The scale of the research is very small (one village); Generalizations are very limited

An analysis of 24 Scopus indexed articles revealed that the intellectual structure of talaqqi studies is multidimensional, dynamic, and undergoing a significant paradigmatic shift. Overall, talaqqi is no longer understood solely as a traditional teaching method, but rather as a complex epistemological and pedagogical framework that integrates contemporary historical, spiritual, moral, and technological dimensions. The keyword "talaqqi" emerged as a central concept that connects various thematic clusters, ranging from classical roots to digital adaptations, as reflected in the pattern of keyword co-occurrence generated through VOSviewer.

The classical dimension of talaqqi still dominates most of the literature reviewed. Some studies emphasize that talaqqi is a method of knowledge transmission that has its roots since the era of the Prophet PBUH and his companions, with an emphasis on face-to-face interaction, the chain of transmission (*Sanad*), as well as the formation of a full teacher-student relationship *ta'zhim* and *Manners* (Alias & Yusof, 2024; Ismail et al., 2024; Kalash, 2020; Millie, 2025; Ramli et al., 2014).

Talaqqi is seen as the main mechanism for maintaining the authenticity, continuity, and spiritual depth of Islamic knowledge across generations. In historical contexts, the practice *Talaqqi Bersanad* has been a consistent tradition among hadith scholars from the 6th to the 15th centuries A.D., which is systematically recorded in the works of the Hadith scholars. *Al-Thabat* (Ramli et al., 2014). In addition, talaqqi also plays a strategic role in spreading Islamic moderation and resistance to extremism, as this method strengthens orthodoxy and builds the moral character of students (Kalash, 2020). These studies affirm that talaqqi is not just a memorization technique, but a holistic pedagogical system that forms cognitive, affective, and spiritual dimensions simultaneously (Ismail et al., 2024; Shofiah et al., 2025).

On the other hand, contemporary literature shows an increasingly strong technological orientation in talaqqi studies. A number of studies specifically address integration *Automatic Speech Recognition* (ASR), *Artificial Intelligence* (AI), and an automatic tajweed checking system as a support or complement to traditional talaqqi methods (Abdelgelil et al., 2025; Ahmad et al., 2018; Hulliyah et al., 2025; Ibrahim et al., 2015; Ibrahim et al., 2013; Rashid et al., 2015; Yahya et al., 2025; M. F. B. M. Yasin et al., 2018). This approach emerged in response to the limitations of face-to-face practices, especially in the digital era and post-COVID-19 pandemic. Some studies have even proposed a *e-Talaqqi* or *Hybrid Learning* that combines Digital platform with the principle of talaqqi, thus expanding access to learning without sacrificing the essence of direct verification (Adziz & Ismail, 2023; Basir et al., 2024; Hamzah et al., 2019). Empirical findings show that technology is able to improve the efficiency of Qur'anic recitation evaluation, provide real-time feedback, and support self-paced learning, as evidenced by high levels of accuracy on Mel-Frequency Cepstral Coefficients (MFCC)-based systems and Neural Networks (Ahmad et al., 2018; Ibrahim et al., 2013).

This thematic shift reflects the productive tension between tradition and innovation. Although the technological dimension is increasingly dominant, an in-depth discussion of epistemological integrity *Sanad*, authenticity, and scientific authority in the digital environment are still relatively limited (Abdelgelil et al., 2025). Few studies explicitly link technological adaptation to the principles of *Sanad* and *Mushafahah* (Abdelgelil et al., 2025; Yahya et al., 2025). This shows an epistemological gap in the current literature, where the focus is more on technical and efficiency aspects than on the reconstruction of the complete epistemological framework of talaqqi. In addition, the emerging geographical and institutional contexts are also of interest. The majority of research comes from Malaysia and Indonesia, with an emphasis on practice in Islamic boarding schools, madrasas, and tahfiz institutions (Adziz & Ismail, 2023; Borham et al., 2024; Halim et al., 2025; Millie, 2025; Zahari & Yusof, 2022). Some studies have also explored the application of talaqqi in specific contexts, such as early childhood education, teaching for indigenous converts, as well as the development of huffaz psychological well-being through an approach *Islamic Cognitive Behavioral Therapy* (I-CBT) that is integrated with the practice of talaqqi (Bafadal & Triwiyanto, 2026; Shofiah et al., 2025).

The intellectual structure of talaqqi in the Scopus literature reviewed can be described as a dialectical field between the continuity of classical tradition and the demands of contemporary technological adaptation. Talaqqi remains positioned as a key pillar of Islamic pedagogy that guarantees authenticity and spiritual depth, but a growing body of research sees it as a flexible framework that can be integrated with digital innovation. These findings are in line with the characteristics of *the emerging research field* as shown by the growth of publications and the pattern of interdisciplinary collaboration between Islamic sciences, education, and information technology. Nevertheless, there are still gaps that need to be filled, especially in the development of a theoretical framework that is able to unite the principles of *sanad* and authenticity with technology without reducing the epistemological value of talaqqi itself.

Thus, the intellectual structure of talaqqi in the Scopus indexed international literature is not static, but continues to evolve in response to the dynamics of Islamic education in the digital age. This shift opens up opportunities as well as challenges for future research to build a more comprehensive hybrid model, which not only improves accessibility and efficiency, but also maintains the epistemological and spiritual integrity of the talaqqi method as a living classical legacy.

How is the talaqqi research landscape characterized in terms of chronological evolution, authorship and institutional contributions, and geographical distribution?

Inductive analysis of 24 Scopus indexed articles shows that technological dimensions, digital platforms, and automated classification models are emerging organically and are increasingly dominant in the talaqqi literature. This emergence does not come from the initial assumptions of the research, but rather develops naturally through thematic patterns and *keyword co-occurrence* that are consistent throughout the corpus. As seen in **figure 8**, the "talaqqi" node appears as an intellectual center of gravity with a very strong connection to the technology cluster on the right (in red), which includes the keywords *technology*, *knowledge*, *artificial intelligence*, *application*, *scholar*, and *impact*. This graphically reinforces that technology has become an integral and integral element of contemporary talaqqi discourse.

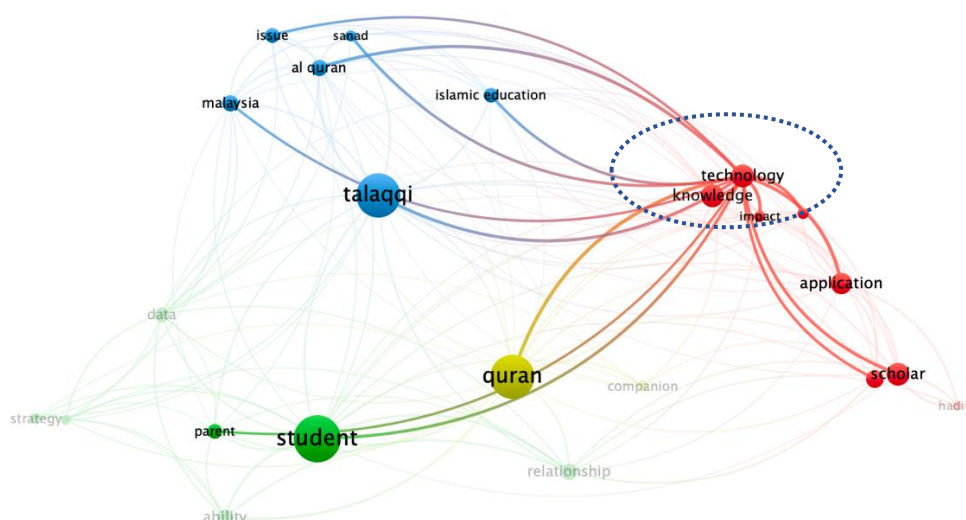


Figure 5. Co-Occurrence analysis focus on Technology

11 articles explicitly discuss the integration of technology with talaqqi, as summarized in **Table 2**. Some early studies focus on the development of *Automatic Speech Recognition* (ASR) and automatic tajweed checking system as a support for the talaqqi method and *Mushafahah* (Ahmad et al., 2018; Hamzah et al., 2019; Ibrahim et al., 2013; Rashid et al., 2015). The study demonstrated that Mel-Frequency Cepstral Coefficients (MFCC)-based algorithms combined with Hidden Markov Models (HMM) and Artificial Neural Networks were able to achieve a high level of accuracy in evaluating the Qur'anic recitation in real-time ((Ahmad et al., 2018; Ibrahim et al., 2013). More recent progress can be seen in the application of pre-trained models such as Whisper with Parameter-Efficient Fine-Tuning (PEFT) and Low-Rank Adaptation (LoRA) techniques, which managed to achieve a Word Error Rate (WER) of only 1.34% (Hulliyah et al., 2025). In addition, dedicated AI applications such as Tarteel AI and Memorize Quran AI have been developed to provide personalized feedback, tajweed error detection, as well as self-memorization support (Yahya et al., 2025).

Table 3. Article Discussion Technology in Relation into Talaqqi

Authors	Title	Highlights of Technologies Discussed with Talaqqi
Hamzah et al. (2019)	A Review on the Needs Analysis on Online Learning in Islamic Studies	The need for <i>online development of talaqqi</i> as an adaptation of face-to-face methods to digital platforms to expand access to Islamic learning in Malaysia
Ibrahim et al. (2015)	The Problems, Issues and Future Challenges of Automatic Speech Recognition for Quranic Verse Recitation: A Review	Development of <i>Automatic Speech Recognition (ASR)</i> to support the process of talaqqi and mushafahah in the evaluation of the recitation of the Qur'an and the rules of tajweed
M. F. B. M. Yasin et al. (2018)	Contributions of Technology towards Development of Qur'anic Tajweed Knowledge	A technological approach (speech recognition, interactive application) as a support for tajweed learning that remains based on the principle of talaqqi musyafahah
Ibrahim et al. (2013)	Automated Tajweed Checking Rules Engine for Quranic Learning	Development of <i>an automatic tajweed checking engine</i> using MFCC and HMM to support the talaqqi and mushafahah methods in real-time
Basir et al. (2024).	Adapting and Implementing the New Normal: An Islamic University Perspective	Introduction of <i>the e-Talaqqi</i> model as a post-COVID blended learning strategy that is in line with Maqasid Syariah
Rashid et al. (2015)	Towards Automating the Evaluation of Holy Quran Recitations: A Pattern Recognition Perspective	Pattern recognition <i>framework</i> for automatic evaluation of Qur'an recitation as a complement to traditional talaqqi method
Hulliyah et al. (2025)	Empowering the Tradition of Quran Memorization through Artificial Intelligence (AI)	Application of AI Whisper model with LoRA technique to support Qur'an memorization and complement talaqqi practice
Yahya et al. (2025)	AI as a Complement to Traditional Quran Memorization: Tarteel AI and Memorize Quran AI	AI applications (Tarteel AI and Memorize Quran AI) as talaqqi support tools that provide real-time feedback and personalization of memorization
Ahmad et al. (2018).	Tajweed Classification Using Artificial Neural Network	Classification of tajweed rules using <i>Artificial Neural Network</i> to improve reading accuracy in the context of talaqqi
Adziz and Ismail (2023).	Usage Patterns of Digital Teaching and Learning Platforms Among Pondok Institutions in Kedah	Patterns of use of digital platforms during the pandemic as a form of talaqqi adaptation in the cottage environment
Abdelgelil et al. (2025)	Challenges of Artificial Intelligence (AI) and Its Impact on Qur'anic Qira'at: A Thematic Review Analysis	The challenges and impacts of AI on Qira'at science and Sharia ethical recommendations in integration with talaqqi and sanad methods

Digital platforms and models *E-learning* has also emerged as an important adaptation, especially in response to the limitations of face-to-face interaction during the COVID-19 pandemic. Some studies propose a framework *e-Talaqqi* that integrates the online platform with Islamic pedagogical principles, thus enabling virtual interactions that are close to face-to-face experiences while remaining in harmony with Maqasid Syariah (Adziz & Ismail, 2023; Basir et al., 2024; Hamzah et al., 2019). This approach not only improves accessibility for geographically remote communities, but also enriches the learning process through instantaneous, objective feedback that is difficult to obtain in conventional face-to-face sessions (Abdelgelil et al., 2025; M. F. B. M. Yasin et al., 2018)

The emergence of this technological dimension brings very significant opportunities. First, technology allows for greater scalability and inclusivity, so that the talaqqi method can reach a wider audience without being limited by time and place (Basir et al., 2024; Hamzah et al., 2019). Second, the automated system provides fast, consistent, and objective feedback, thus speeding up the process of improving reading and memorization (Ahmad et al., 2018; Hulliyah et al., 2025; Ibrahim et al., 2013). Third, digital platform integration opens up the possibilities of models *Hybrid Learning* that combines the power of the talaqqi tradition with technological innovation without sacrificing the essence of authenticity (Adziz & Ismail, 2023; Basir et al., 2024; Yahya et al., 2025).

Novelty (*novelty*) most prominent of this literature is the emergence of conceptual frameworks *Hybrid* that places technology not as a substitute, but as a substitute *Catalyst* for the classic talaqqi practice. Several studies emphasize the importance of maintaining principles *Sanad* and authenticity in the digital environment and propose a Sharia-based ethical protocol for the development of AI in Qira'at science (Abdelgelil et al., 2025; Yahya et al., 2025). This approach marks a shift from a technology-centric model to a more holistic and Islamic values-based model.

The inductive emergence of technological dimensions, digital platforms, and automatic classification models in the talaqqi literature indicates a dynamic evolution from classical methods to adaptive contemporary approaches. The visualization in Figure 3 and the summary in Table 2 clearly reinforce that technology has become an integral part of talaqqi discourse. The opportunities generated are huge, ranging from increased access, efficiency, to personalization of learning. However, the true novelty lies in the researchers' ability to develop an integrated framework that preserves the epistemological and spiritual integrity of the talaqqi method as a living classical heritage

Conclusion

This study maps the intellectual structure and research landscape of talaqqi in Scopus-indexed international literature through a hybrid approach that combines Systematic Literature Review and bibliometric analysis of 24 documents. The findings suggest that talaqqi is no longer understood solely as a traditional teaching method, but rather as a dynamic epistemological and pedagogical framework. Historically, talaqqi has remained firmly rooted in the principles of sanad, authenticity, face-to-face interaction, and the formation of a holistic teacher-student relationship. At the same time, contemporary literature reflects a significant paradigmatic shift, in which the dimensions of technology, digital platforms, and automated classification models appear inductively as increasingly prominent themes.

The talaqqi research landscape can be categorized as *an emerging research field* with steady growth since 2020, which is largely dominated by the contributions of researchers from Malaysia and Indonesia. Although the intensity of collaboration between authors is relatively high, the level of international collaboration is still low, signaling the need for a broader global perspective. The visualization of *keyword co-occurrence* graphically reinforces the finding that the "talaqqi" node serves as an intellectual center of gravity that connects classical clusters (sanad, Qur'an, and Islamic education) with technology clusters (artificial intelligence, application, and automated classification). The integration between these two clusters opens up vast opportunities for the development of *a hybrid learning model* that combines the power of the talaqqi tradition with digital innovation, without sacrificing its epistemological and spiritual essence.

Overall, this study confirms that talaqqi has strong potential as an adaptive Islamic pedagogical framework in the digital age. Technology is not seen as a threat, but rather as a catalyst that can expand reach, increase efficiency, and enrich the learning experience, as long as the principles of sanad, authenticity, and interpersonal relationships are maintained. These findings enrich the academic discourse on the integration between classical traditions and technological innovations in Islamic education, while providing relevant practical implications for the development of curricula and learning systems in madrasas, Islamic boarding schools, and Islamic universities.

Based on the findings of the study, some of the strategic recommendations for future development are as follows:

1. Development of Hybrid Talaqqi System in Higher Education Designing an academic platform that integrates the talaqqi method with *digital chains of transmission* (digital sanad) to support authentic virtual face-to-face learning.

2. Preparation of Sharia Ethics Protocol for AI Creating a Sharia-compliant framework for the application of Artificial Intelligence in talaqqi, tajwid, and memorization of the Qur'an to maintain the integrity of sanad and scientific authority.
3. Empirical Research of Hybrid Model Conducting empirical trials of *blended talaqqi* models in universities to measure the effectiveness of students' reading, memorization, and psychological well-being.
4. Expansion of Collaboration and Digital Datasets Encourages international collaboration and the creation of open datasets and digital ontologies to support computational authenticity verification.
5. Long-Term Impact Study Examining the ethical and spiritual impact of the use of technology on the sustainability of classic talaqqi values in the digital age.

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