



# Trends and insights on multiple intelligences in Islamic schools: A bibliometric analysis

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## Abstract

In this comprehensive study, we explore the intersection between Multiple Intelligences (MI) theory and Islamic educational systems, employing bibliometric tools like Descriptive analysis and Author Network Visualization to reveal the intricate contours of academic collaboration and research in this domain. An increasing trend in publications and cross-cultural collaborations, particularly involving the United States, Indonesia, and Turkey, underscores the global relevance of integrating modern psychological theories like MI with Islamic education. Through citation and keyword analysis, we highlight a significant divergence between research on Islamic schools and MI, as well as an emerging interest in applying MI in religious educational contexts. Furthermore, our research identified a seriously alarming gap in the academic literature at this intersection, emphasizing the need for future exploration. In synthesizing the findings, we conclude that the fusion of MI with Islamic

pedagogy offers a robust approach to holistic learning in recognizing individual intelligence domains and fostering growth. The integration of these two fields promises to redefine education by melding traditional religious teachings with contemporary insights, creating a pathway for enhanced student understanding, progressive policy formulation, and innovative pedagogical strategies.

**Keywords:** multiple intelligences, Islamic schools, bibliometric analysis, network visualisation, research trend

## Introduction

The theory of Multiple Intelligences (MI) proposed by Howard Gardner in 1983 revolutionised the way educators view intelligence and learning (Gardner, 1983). The theory suggests that intelligence is not a single, fixed attribute but, rather, a combination of multiple intelligences that individuals possess to varying degrees (M. K. Smith, 2002). The impact of the Multiple Intelligences theory on education provides insights from numerous studies that support its implementation in educational settings. Gardner initially identified seven intelligences and later added two more. These intelligences are linguistic intelligence (Armstrong, 2009), logical-mathematical intelligence (Sternberg, 2000), spatial intelligence (Newcombe & Frick, 2010), bodily-kinesthetic intelligence (Shoval, 2011), musical intelligence (Hallam, 2010), interpersonal intelligence (Goleman, 1995), intrapersonal intelligence (Mayer & Salovey, 1997), naturalist intelligence (Louv, 2008), and existential intelligence (Roberts, 2010). The MI theory has transformed educational practice, shifting the focus from standardised testing to a more inclusive, individualised approach. Educators now recognise that students possess unique strengths and weaknesses across multiple intelligences, necessitating differentiated instruction. By catering to various learning styles and interests, teachers can foster a more engaging learning environment. MI has significantly influenced modern education, promoting a more holistic approach to learning. By acknowledging the diverse intelligences that students possess, educators can foster a more inclusive and engaging learning environment, ultimately enhancing student outcomes.

Education in Islamic schools often focuses on academic and spiritual intelligence, neglecting the other important aspects of intelligence essential for holistic individual development (El-dali, 2011; Lubis & Munawaroh, 2020). Therefore, it is crucial to explore and analyse information about the implementation of MI in Islamic schools. One way to achieve this is through bibliometric analysis, a method used to measure the influence of, and relationships among, scientific publications, authors, and institutions involved in research in a particular field (Bornmann & Mutz, 2015; Pritchard, 1969). Through bibliometric analysis, we can evaluate trends, patterns, and relationships between and among publications relevant to the topic of MI in Islamic schools, and identify the best methods, approaches, and practices to be applied in the Islamic education system (Armstrong, 2009; Hanafin, 2017). In recent decades, the concept of MI has become a popular topic in education research (Sternberg, 2003; Visser et al., 2006). This demonstrates that many researchers are interested in exploring the potential of this concept in various educational contexts. As already mentioned, one intriguing context to examine is Islamic education that has unique goals and principles (Al-Attas, 1980;

Rosyada, 2004). For example, Islamic education emphasises the concept of *insan kamil* [a perfect human being in terms of intellectual, emotional, and spiritual aspects] (Nasr, 2001). Consequently, the application of the MI concept in Islamic schools can help achieve a more holistic educational goal. Previous studies have attempted to explore the potential of MI in Islamic education. For instance, integrating MI into the Islamic school curriculum can improve the quality of learning and student outcomes (Supriatna et al., 2021). In addition, research has shown that a learning approach based on the notion of multiple intelligences can increase student motivation significantly and enhance achievement in Islamic Religious Education subjects (Syukur et al., 2023). However, not many studies have explored systematically the potential of MI in Islamic schools through bibliometric analysis. Therefore, in this study we aim to provide a more comprehensive overview of trends, patterns, and relationships between and among publications relevant to the topic of MI in Islamic schools. Additionally, we hope to offer recommendations for the best methods, approaches, and practices to be applied in the Islamic education system to optimise students' multiple intelligence potential. Relevant previous studies have investigated the influence of MI on the academic achievement of students in Islamic elementary schools (Alhamuddin & Bukhori, 2016), and the implementation of MI in Islamic Religious Education learning in middle schools (Munzaini et al., 2023). Both these studies indicate the potential of applying the concept of MI to improving the quality of education in Islamic schools.

The bibliometric analysis we conducted in this study encompasses the identification of data sources, data collection, and data analysis. Data sources include scientific databases such as Scopus, a primary source of scientific publications in various fields. Data collection involved searching for publications relevant to the topic of MI in Islamic schools using various combinations of keywords, such as multiple intelligences, Islamic education, and Islamic schools. Once the data was collected, we performed bibliometric analysis to identify trends, patterns, and relationships between and among these publications. Following De Bellis (2009), Hirsch (2005) and Sweileh et al. (2018) we used several indicators to measure the influence of these relationships and of the authors involved in the research. Some of these indicators include the number of publications, the number of citations, the h-index, and collaboration among authors and institutions. By using these indicators, we aimed to explore the potential of MI in Islamic schools more systematically and comprehensively. We hope to contribute to the exploration of the potential of MI in Islamic schools through bibliometric analysis so that this research can serve as a reference for researchers, practitioners, and policymakers in developing and implementing MI approaches in the Islamic education system. Some potential directions for future research could involve conducting case studies on the implementation of MI in various Islamic schools, evaluating the impact of such implementations on student outcomes and engagement, and exploring the challenges faced by educators in incorporating MI into the Islamic education curriculum. Additionally, it would be valuable to investigate the integration of technology in facilitating multiple intelligences-based learning in Islamic schools, as well as the potential role of cultural factors in shaping the application of MI in the context of Islamic education. In conclusion, understanding and applying the concept of MI in Islamic schools is crucial to providing a more holistic educational experience for students. By conducting a bibliometric analysis, we aim to shed

light on the current state of research on this topic, identify trends and patterns in the literature, and offer recommendations for best practices in the Islamic education system. Through these efforts, researchers, practitioners, and policymakers can work together to enhance the quality of education in Islamic schools and better cater to the diverse needs and potential of students.

Despite Howard Gardner's (1983) theory of MI gaining prominence and being increasingly incorporated into educational systems and pedagogical strategies, there remains a significant gap in the comprehensive bibliometric analysis of the application and impact of this theory in Islamic educational contexts (Sternberg, 2000). MI is recognised as being important in fostering holistic individual development (Armstrong, 2009; M. K. Smith, 2002), and a number of studies have investigated the implementation of MI in Islamic schools (Nurdin, 2020; Sabdaningtyas, 2019; Supriatna et al., 2021; Vadivukarasi & Gnanadevan, 2022). However, the systematic examination of the nature, distribution, and influence of these publications through bibliometric analysis remains thin. This gap in the literature presents an opportunity to elucidate patterns, trends, and relationships between and among publications related to MI in Islamic schools, thus providing a more comprehensive understanding of this topic in the specific context of Islamic education (Bornmann & Mutz, 2015; Pritchard, 1969). Such analysis could yield valuable insights for researchers, educators, and policymakers alike in enhancing and optimising the application of MI in Islamic schools for the pursuit of holistic individual development. Additionally, future research is required to examine the unique challenges of incorporating MI into the Islamic curriculum, the potential for integration of technology to facilitate MI-based learning, and the influence of cultural factors on the application of MI in Islamic educational settings (Karwadi, 2023; Permata, 2023). By bridging these gaps, the research community can contribute significantly to fostering a more holistic and inclusive educational experience in Islamic schools, thus providing a deeper understanding of the benefits and challenges of MI implementation in such contexts.

## Theoretical framework

### Multiple intelligences: A multidimensional exploration of human cognitive capacities

The conceptualisation of intelligence has evolved over time, undergoing significant transformations in how it is understood and assessed. Historically, intelligence has often been seen as a singular trait, predominantly focusing on linguistic and logical-mathematical skills (M. K. Smith, 2002). Standardised testing systems perpetuated this perspective, thus putting an undue emphasis on these two dimensions, and subsequently narrowing the scope of what is deemed as intelligent (Nisbett et al., 2012). This monolithic understanding underwent a groundbreaking shift with the introduction of Howard Gardner's Multiple Intelligences (MI) theory in 1983 since he suggested that that intelligence is not limited to a singular trait but is, instead, multi-faceted. Each of the nine intelligences is underpinned by unique neural pathways, developmental processes, and evolutionary histories, all showcasing the myriad ways in which humans perceive, comprehend, and engage with their surroundings (Gardner & Hatch, 1989). What is particularly revolutionary about Gardner's MI theory is its assertion

that humans can be competent in various domains (Kornhaber et al., 2004). This perspective reshapes pedagogical practices and prompts a re-evaluation of educational curricula. Armstrong (2009) advocated for an educational framework that is aligned with MI, suggesting that it can cultivate more enriching and tailored learning experiences. Recognising the diverse cognitive capacities students exhibit carries with it the imperative to develop assessment methodologies that capture holistically a student's capabilities, rather than narrowly focusing on traditional markers of intelligence (Shearer, 2018). In concurrence, Sternberg (2000) asserted that MI theory paves the way for the development of a more encompassing educational landscape. By appreciating the multiplicity of intelligences, educators can create environments in which every student's unique potential is recognised, appreciated, and fostered.

### The convergence of MI theory and Islamic education: A comprehensive blueprint for holistic pedagogy

Islamic education and Gardner's (1983) MI theory find common ground in their aspiration for multifaceted human development. While Gardner's (1983) MI framework emphasised the existence of distinct intelligences beyond the conventional linguistic and logical-mathematical domains, historically, Islamic education has emphasised the development of both the spiritual and intellectual facets of an individual (Sanusi, 2017). Merging these two paradigms allows Islamic educational institutions to provide a nuanced approach to developing *insan kamil*, ensuring that students are not only knowledgeable but also ethically sound and emotionally intelligent, thus resonating with both Gardner's vision and Islamic aspirations (Ramly & Syukur, 2018).

### Towards a Diverse Curriculum: Integrating Multiple Avenues

Recognising the breadth of human potential, an MI-informed curriculum in Islamic contexts would mandate a diversification of traditional teaching methods. Such an approach requires a genuine appreciation of the arts, physical activities, collective undertakings, and environmental exploration as robust conduits for effective learning. This embrace of a diversified curriculum dovetails perfectly with Islamic pedagogy that has always advocated for the acquisition of knowledge from all conceivable sources, be it from a learned sage or the song of a bird (Setiawan et al., 2020).

### Empathy, Collaboration, and Self-awareness: Crafting a Cohesive Social Fabric

At the heart of Islamic teachings lies the profound emphasis on building and fostering a close-knit community grounded in understanding, compassion, and empathy (Warren, 2005). From the MI perspective, the emphasis on interpersonal and intrapersonal intelligences offers students valuable tools for introspection and building meaningful relationships. Not only does this amalgamation complement the MI framework, it also revitalises and contextualises Islamic principles that underscore the importance of brotherhood, emotional intelligence, and self-regulation in daily interactions and decision-making processes (Goleman, 1995; Mayer & Salovey, 1997).

## Nature, Existence, and Reflective Inquiry: Beyond the Classroom Walls

The Quran's recurrent allusion to nature as a source of divine signs beckons the believer to a state of perpetual contemplation and reflection (BÖwering, 2003). In this vein, the inclusion of naturalist and existential intelligences in the MI framework finds profound alignment with Islamic teachings. Islamic educators, therefore, have a golden opportunity to immerse students in nature-based learning experiences and existential inquiries, thereby fostering a profound connection with the environment and a deeper understanding of life's larger questions. Such an integrative approach not only enriches the learning experience but also fortifies the spirit of Islamic pedagogy (Naim et al., 2022).

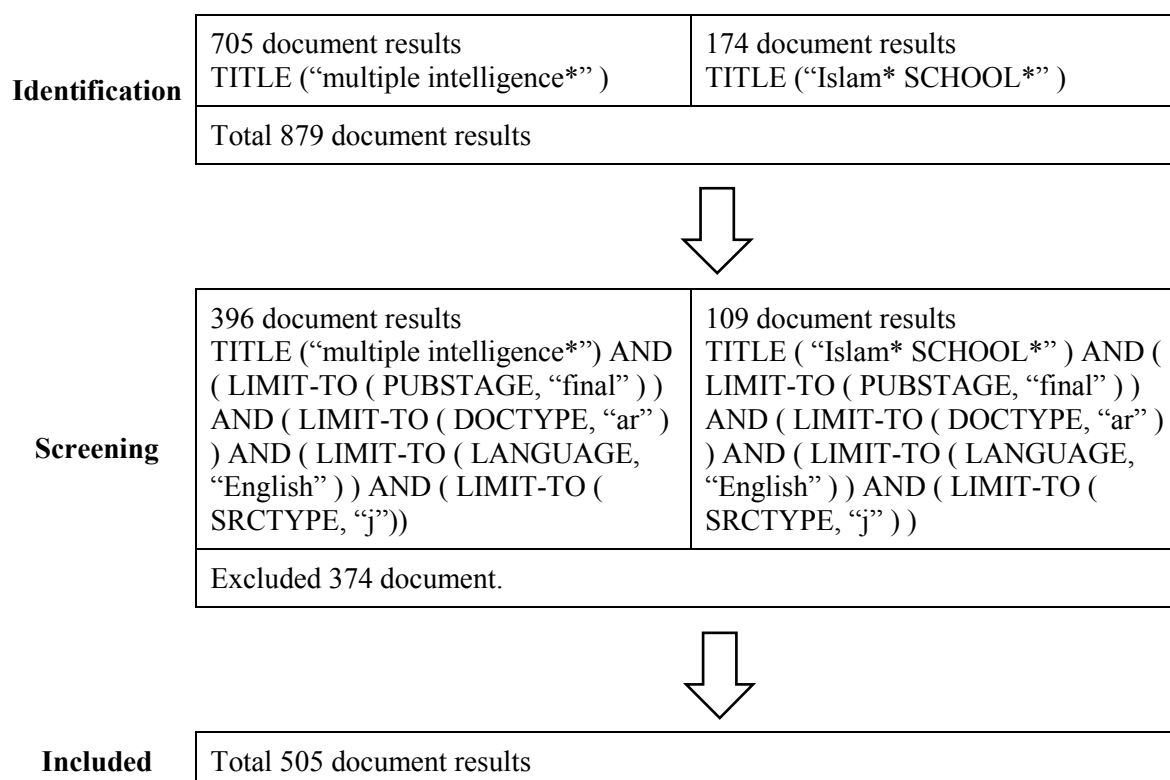
## Method

As pointed out above, we employed a bibliometric analysis method to explore MI in Islamic schools. This analysis can be used to identify trends, patterns, and relationships among publications, authors, and institutions involved in research (De Bellis, 2009).

### Data sources and data collection

**Figure 1**

Data retrieval process based on The PRISMA flow diagram



Data collection in this study involved searching for publications relevant to the topic of MI in Islamic schools. Once relevant publications were identified, the necessary data for bibliometric analysis was extracted. This data includes information about authors, affiliations,

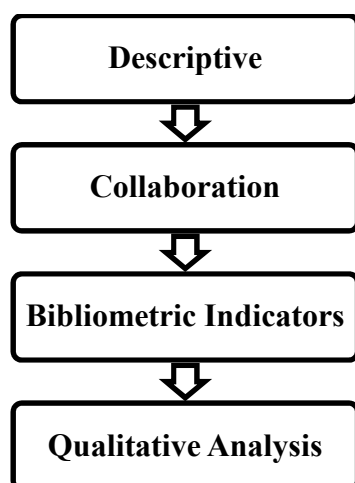
article titles, abstracts, keywords, publication years, citation counts, and publication sources (De Bellis, 2009).

While it is reasonable to argue that focusing solely on English publications could miss relevant studies in other languages, it is worth noting that English remains a dominant language in academic publishing (Hultgren, 2019). Many non-English researchers often strive to get their work published in English journals given their wider reach and perceived prestige (Altbach, 2007). Therefore, while there may be valuable insights in non-English studies, a significant portion of critical research is accessible in English, thus providing a broad understanding of the subject.

### Data analysis

As researchers, we conducted a tiered data analysis, starting with descriptive analysis, then collaborative analysis, then bibliometric indicator analysis and ending with qualitative analysis as explained in the figure below.

**Figure 2**  
Bibliometric data analysis process



The research methodology employed a multifaceted approach to understand the publications concerning the topic of MI in Islamic schools. Initially, a descriptive analysis was undertaken to provide a comprehensive view of the distribution of these publications. Factors such as the year of publication, authorship, type of compilation, and the source of publication were considered (see De Bellis, 2009). This step ensured that the research captured a holistic overview of the publication trends over time, allowing for the identification of potential growth areas and emerging themes. Subsequently, we delved deeper into the collaborative patterns of authors who have contributed to the research on MI in Islamic schools. By calculating the number of collaborations between these authors, we were able to paint a clearer picture of the academic network within this niche. Moreover, we generated a visual collaboration map to offer a more tangible representation of the relationships between authors (see Biscaro & Giupponi, 2014). Such a visual tool can be invaluable for identifying influential scholars and potential academic partnerships. To gauge the impact and

interconnectivity of the publications and their authors, we employed bibliometric indicators. These indicators encompass various metrics, including the number of publications, the frequency of citations, the h-index, and the extent of collaboration between authors. By using the guidelines set out by De Bellis (2009), we were able to assess the influence and interconnectedness of the research body on MI in Islamic schools. Furthermore, we executed a citation network analysis to shed light on the relationships between and among the different publications. By understanding how these works cite one another, we could identify seminal papers and the evolution of the discourse surrounding MI in Islamic schools, following the methods proposed by Zupic and Čater (2015). Finally, we carried out a qualitative analysis to distil the essence of the innovations and best practices in the application of MI in Islamic schools. By meticulously reviewing the abstracts and the core content of the identified publications, we were able to categorise and synthesise relevant information. This phase ensured that the findings were not just quantitative but also carried the depth and nuance of qualitative insights.

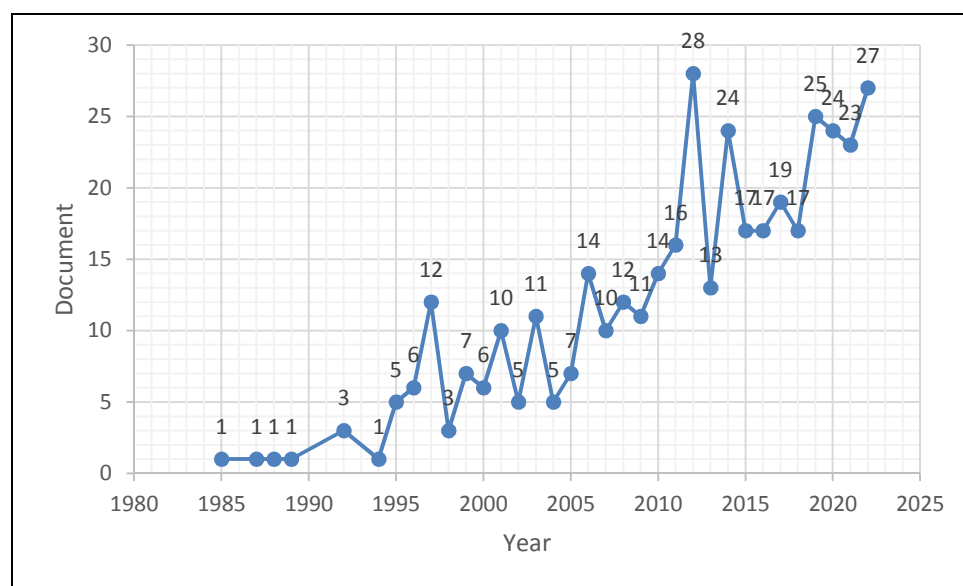
## Results and discussion

### Descriptive analysis

Descriptive analysis is an important stage in bibliometric analysis since researchers describe and summarise information obtained from data that has been collected (Zupic & Čater, 2015). There has been a significant increase in studies on MI and Islamic schools. It can be seen that the development of the number of documents increased over time and was highest in the 2000s as shown in the figure below.

**Figure 3**

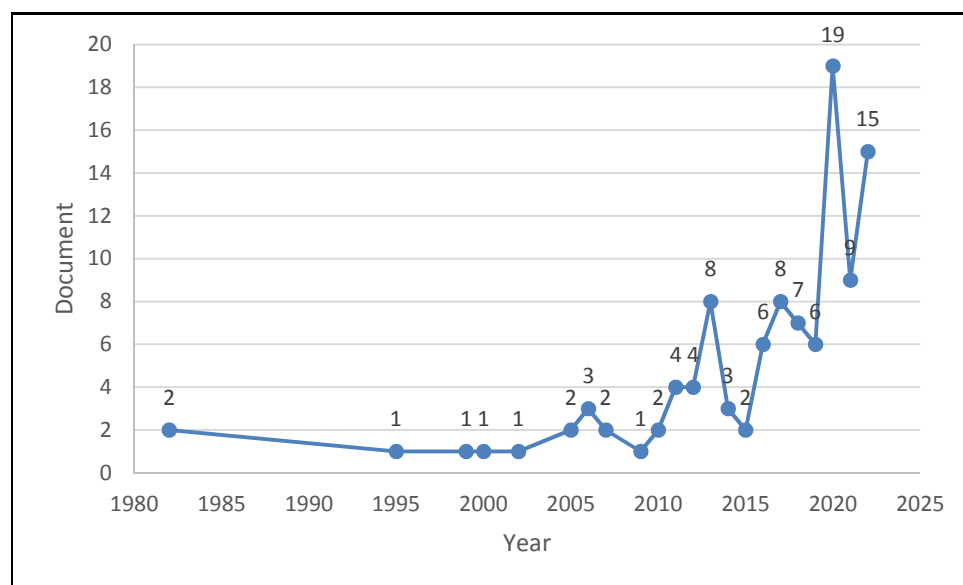
The development of the number of documents on the topic of multiple intelligence (1985–2022)





**Figure 4**

The development of the number of documents on the topic of Islamic School (1982–2022)



The confluence of MI theory and Islamic schools offers a rich tapestry of pedagogical insights, intertwining both Western educational theories and Islamic educational traditions. While, on the one hand, Gardner's (1983) introduction of MI theory brought forth the idea that intelligence is multifaceted, extending beyond traditional linguistic and mathematical capacities, Islamic schools, on the other hand, have been rooted historically in a holistic educational philosophy that integrates both spiritual and academic growth (Chanifah et al., 2021). While the preliminary findings in the bibliometric analysis indicated an uptrend in research publications about both MI and Islamic schools, especially in the 2000s, there is still a vast landscape to explore. For instance, the actual integration of MI practices in Islamic schools, their effectiveness, cultural considerations, and teacher training nuances are aspects that warrant deeper exploration (L. Smith & Abouammoh, 2013). Additionally, there is potential to delve into comparative studies between Islamic schools with and without MI integration to determine tangible educational outcomes (Ryan et al., 1998). Furthermore, the international perspective can also be broadened. Given the global spread of Islamic schools from the Middle East to Southeast Asia and the West, understanding regional variances in MI application becomes crucial. While bibliometric analysis reveals growing academic interest in MI's intersection with Islamic education, there is much terrain left uncharted. As educational landscapes evolve, ensuring the relevance and adaptability of theories like MI in diverse settings like Islamic schools remains an imperative academic and pedagogical task (Kristiawan et al., 2022).

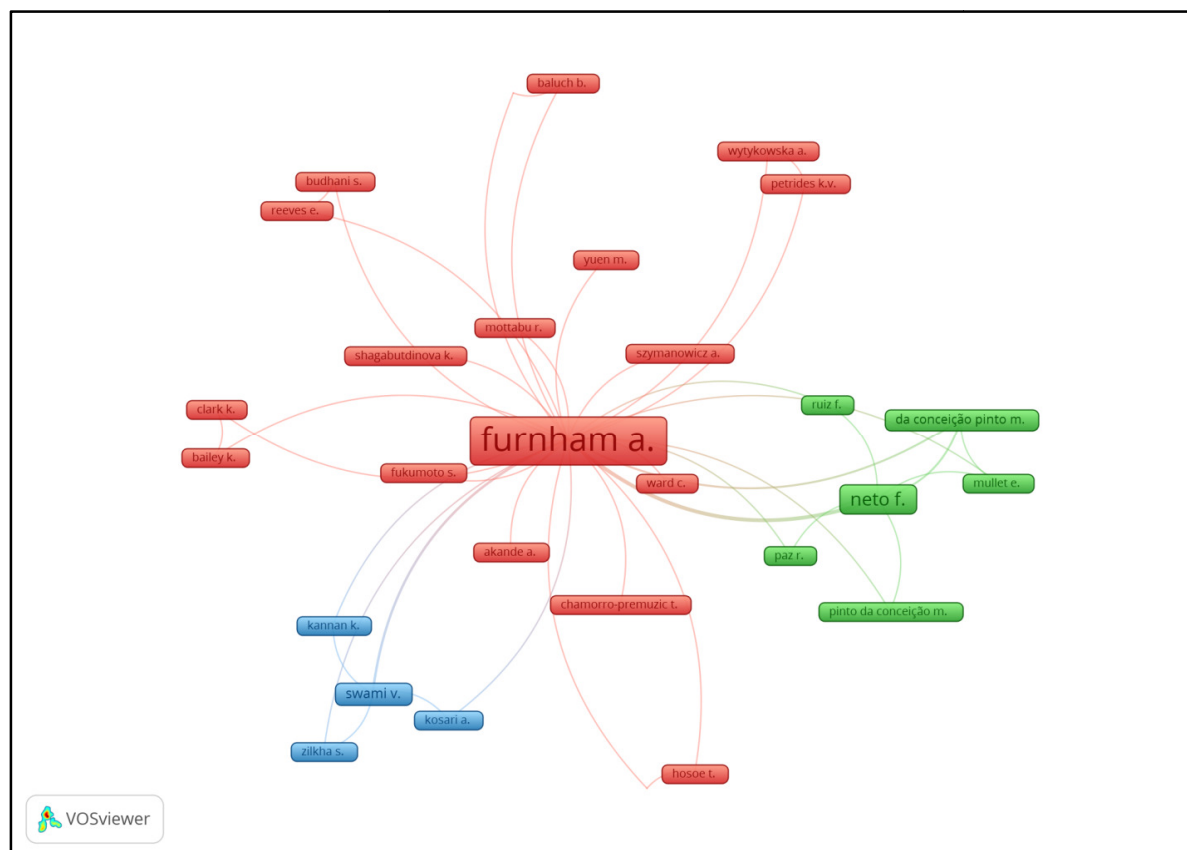
## Collaboration

### *Co-authorship by authors*

Author Network Visualisation is a bibliometric method used to visualise relationships between authors in a field of science based on their collaboration in scientific publications (Cobo et al., 2011). The Author Network Visualisation image shows dots or nodes that

represent authors and lines that connect between authors who collaborate. The larger the node size, the more publications that author has, while the thicker the line, the stronger the collaboration between the two authors is. Through Author Network Visualisation, we can see which authors often collaborate in research, and understand the relationship between these authors (Leydesdorff & Rafols, 2009). This information can be useful in identifying trends in research collaboration in the field of MI in Islamic schools, as well as helping researchers to build better collaboration networks in the future (Newman, 2004).

**Figure 5**  
Co-authorship by Author Network Visualisation



In this figure, the use of Author Network Visualisation reveals intricate patterns of co-authorship in the realm of research. The very division into three distinct clusters suggests the existence of specific sub-networks or thematic groupings within the broader research domain (Cobo et al., 2011). The red cluster, where Furnham A. emerges as the dominant author, is particularly noteworthy. A dominant author, as identified by a larger node or a centralised position within a network, can often be seen as a central player or a hub in the research community (Leydesdorff & Rafols, 2009). Such a position typically implies that Furnham A. has collaborated extensively with various researchers or has contributed significantly to the body of work represented by that cluster. It is worth delving into Furnham A.'s contributions since they might represent core themes or groundbreaking studies that have shaped that specific sub-field (Börner et al., 2003). The green and blue clusters that lack a dominant author present a different narrative. Such clusters often indicate a decentralised research ecosystem in which collaborations are more evenly spread out among participants. In such

networks, the absence of a central figure may suggest a more collaborative and democratic research environment in which no single author holds a gatekeeping role (Newman, 2001). However, a striking observation from the figure is that out of a vast pool of 1,032 authors, only 27 are interconnected in this co-authorship network. This points to a high level of fragmentation in the research community. While the 27 interconnected authors could represent key influencers or primary contributors, it is crucial to acknowledge the significant number of authors who operate outside this primary network. This could be for various reasons, including geographical constraints, niche research themes, or simply the nascent stages of their research careers (Leydesdorff & Wagner, 2008).

### *Co-authorship by country*

Collaboration between countries in research is one of the important indicators in bibliometric analysis. This collaboration shows how researchers from different countries work together on research and share knowledge, resources, and technology (Glänzel & Schubert, 2005). See Table 1 for the countries with the highest number of publications related to MI and Islamic schools.

**Table 1**

5 Countries with the most documents on MI in Islamic schools

Country	Documents
United States	102
Indonesia	65
Turkey	40
Australia	36
United Kingdom	34

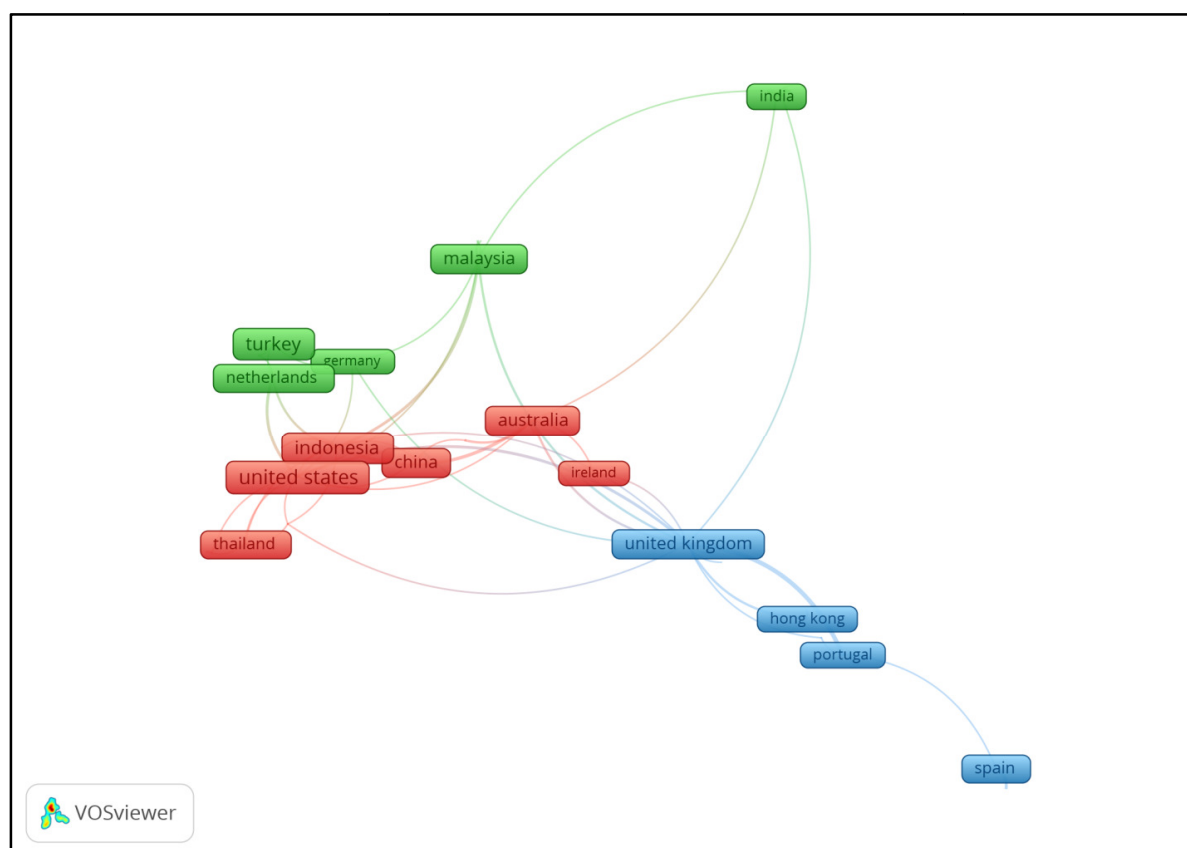
In this table, Indonesia stands out in ranking second with 65 documents. The presence of the United States at the top might seem initially surprising given its religious demographics, but this could be attributed to the nation's vast academic and research resources, and perhaps the multidisciplinary approach its scholars adopt towards global educational practices (Haleem et al., 2022). As the country with the world's largest Muslim population, it is expected that Islamic education would be a central focus in Indonesia (Hidayat & Darmadi, 2019). The number of documents stemming from Indonesia is indicative of its commitment to enhancing the educational quality of its Madrasah, or Islamic schools. This attention is not just a reflection of the nation's demographics but is also a testament to its concerted effort to bridge traditional religious values with contemporary educational practices (Stambach et al., 2011). The presence of Turkey in the list is also significant. Historically, Turkey has been a junction point between the East and the West, and this has influenced its educational systems profoundly. Turkey's secular governance combined with its deeply Islamic cultural roots makes its contribution to the discussion of MI in Islamic schools particularly valuable in

offering a blend of modern educational techniques while staying true to Islamic traditions (Köse et al., 2011). Australia and the United Kingdom, despite not having Muslim-majority populations, have diverse multicultural societies in which Islamic education has found a significant place (Khawaja et al., 2016; Meer & Modood, 2009). The documents from these countries might provide a fresh perspective since researchers there would be observing and analysing MI in Islamic schools from a context in which Islamic education is one of the many religious educational systems in operation.

In sum, the data presented in the table offers more than just a numerical insight. It provides a snapshot of global efforts to integrate modern intelligence theories into traditional Islamic educational systems, showing that this endeavour is indeed a global one. Each country's contribution, be it from a majority-Muslim nation like Indonesia or a multicultural hub like Australia, provides a unique perspective through which the integration of MI in Islamic schools can be understood and appreciated (Niyozov & Memon, 2011).

**Figure 6**

Co-authorship by country Network visualization



The visualisation of the co-authorship by country clusters sheds light on the intricate tapestry of international collaborations. It is evident that countries have formed alliances based on shared interests, resources, and perhaps geographical proximity. The United States and Indonesia, in forming the most substantial cluster, are noteworthy. This might be attributed to a combination of factors such as the academic prowess of the United States and the availability of resources, combined with Indonesia's rich heritage of Islamic schooling and its

relevance in the contemporary global academic discourse (Bond et al., 2021). Such a coalition can be seen to be a symbiotic relationship where the scholarly might of the United States complements the depth of Indonesia's experience and expertise in Islamic education. The green cluster, dominated by Malaysia and Turkey, is also significant. Malaysia, much like Indonesia, has a rich tradition of Islamic education and its educational strategies and practices resonate with several countries, including Turkey (Lubis, 2017). Turkey, with its unique position of bridging the East with the West, brings a blend of secular and Islamic pedagogy to the table (Köse et al., 2011). This creates a harmonious synthesis of modern and traditional educational practices. The blue cluster, where there is no dominant country, suggests a more decentralised approach. This could represent a multi-polar research paradigm in which various nations contribute equally, fostering a more egalitarian form of knowledge creation and dissemination (Held, 2019). The prominence of Indonesia in these collaborations underscores its dedication to ensuring that its vast Muslim demographic receives an education that is both contemporary and rooted in Islamic traditions. The emphasis on Madrasah education is not a mere reflection of demographic necessity but an endeavour to impart holistic education. The blend of religious tenets and modern pedagogy is seen as a means of producing globally competent citizens who are grounded in their faith (Sabki & Hardaker, 2013). The number of documents produced in this realm stands as testimony to Indonesia's ongoing efforts and its leading role in championing the cause of Islamic education in the global academic arena.

## Bibliometric indicators

### *Citation analysis*

Citation analysis is one of the main methods in bibliometric studies used to measure the impact and influence of a scientific work, such as a journal article, book, or conference, in a particular research field (Bornmann & Haunschild, 2018). We conducted two separate analyses between MI and Islamic schools to explain the citation analysis of MI and Islamic school studies and their relationship more clearly. While citations can indeed be a misleading metric, they still serve as an effective barometer of a study's influence and reach in the academic community (Aksnes et al., 2019). Moreover, without such quantitative metrics, reviews might rely heavily on subjective assessments that have their own set of biases (Frampton et al., 2022).

**Table 2**

The five articles with the most citations about Islamic schools

Title	Citations
Unveiled sentiments: Gendered Islamophobia and experiences of veiling among Muslim girls in a Canadian Islamic school (Zine, 2006)	148
Safe havens or religious 'ghettos'? Narratives of Islamic schooling in Canada (Zine, 2007)	48
Islamic Schools in the Netherlands: Expansion or marginalization? (Driessen &	47

Title	Citations
Merry, 2006)	
Islamic schools in three western countries: Policy and procedure (Merry & Driessen, 2005)	44
The institutionalisation of Islam in The Netherlands and in the UK: The case of Islamic schools (Dwyer & Meyer, 1995)	35

**Table 3**

The five articles with the most citations on MI

Title	Citation
Educational implications of the Theory of Multiple Intelligences (Gardner & Hatch, 1989)	309
Self-estimates of intelligence: Culture and gender difference in self and other estimates of both general (g) and multiple intelligences (Furnham, 2001)	220
Parents think their sons are brighter than their daughters: Sex Differences in parental self-estimations and estimations of their children's multiple intelligences (Furnham et al., 2002)	109
Beyond g: Putting multiple intelligences theory to the test (Visser et al., 2006)	105
Male hubris and female humility? A crosscultural study of ratings of self, parental, and sibling multiple intelligence in America, Britain, and Japan (Furnham et al., 2001)	95

From Table 2 and 3, the divergence in focus between articles related to Islamic schools and those dedicated to MI is evident. The top-cited articles on Islamic schools revolve primarily around societal topics such as Islamophobia, policy considerations, and the broader socio-cultural landscape in which these institutions operate. The lived experiences of Muslim students in Western countries, shedding light on the complex interplay between religion, identity, and schooling (Islam & Mercer-Mapstone, 2021). Their high citation count suggests the resonance of these issues in the academic community and the larger society (Ramadan, 2009). Conversely, the most cited articles on MI are dominated by Gardner's (1983) foundational work and several other studies, primarily those by Furnham (2001) and Furnham et al., (2001, 2002), that discuss cultural and gendered perspectives on self-estimations of intelligence. These studies underline the global intrigue about MI, not just as a theoretical construct but as a lens through which cultural, societal, and gender dynamics are examined (Nisbett et al., 2012). The glaring absence of intersecting articles between MI and Islamic schools raises intriguing questions. This gap suggests that the discourse on MI has been largely confined to a secular or non-religious educational context. The rich fabric of pedagogical practices in Islamic schools, often a blend of traditional religious teachings and contemporary education methods, might be engaging with MI in ways yet to be documented or analysed extensively in academic literature (Kadi, 2006).

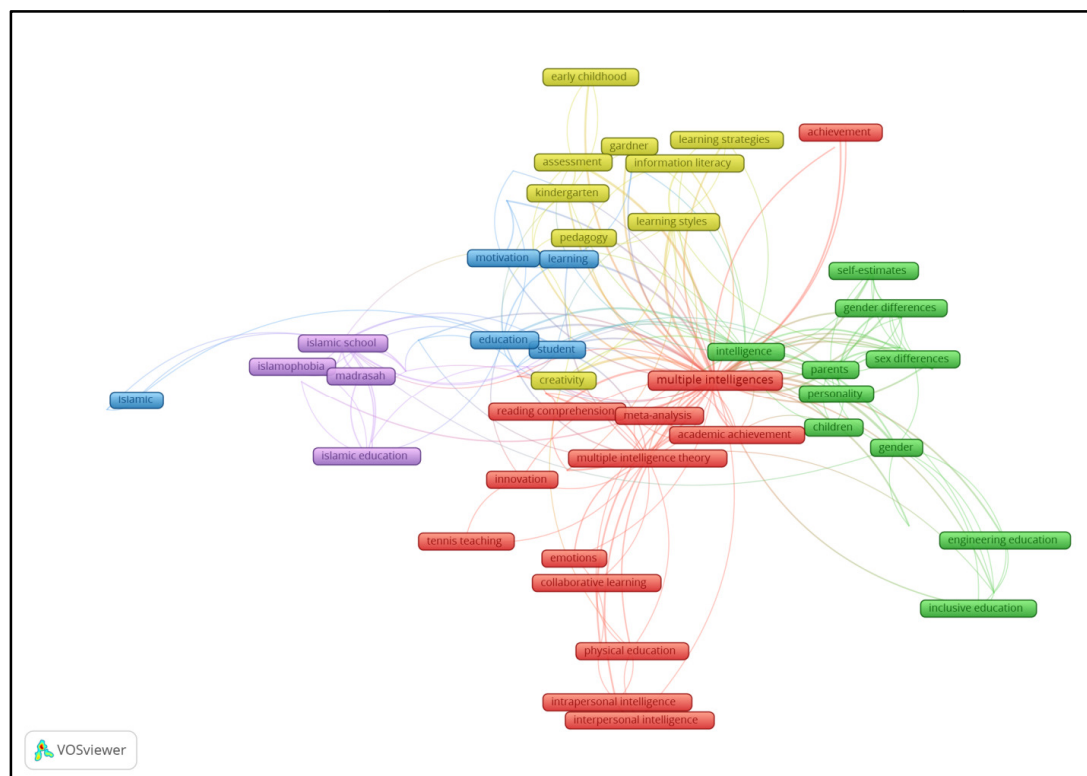
Furthermore, this bifurcation in research focus might be hinting at the broader academic silos that exist. The world of educational research, much like other disciplines, is prone to certain mainstream discourses gaining precedence over others. The apparent lack of convergence between MI and Islamic education might also stem from a focus on perceived immediate challenges like countering Islamophobia or understanding policy implications for Islamic schools, as opposed to pedagogical enhancements via MI (Bleich, 2012). However, it is pivotal to note that the lack of overlap in the most cited papers does not negate the presence or potential benefits of MI applications in Islamic schools; it merely underscores a potential area of research that remains under-explored. As the landscape of education continues to evolve globally, with an emphasis on personalised learning and catering to diverse learner needs, the integration of MI theory in diverse settings, including Islamic schools, could very well be the next frontier in educational research (Sajjad, 2020).

## Keywords

Keyword analysis is an important method in bibliometric studies to identify key topics and trends in a research field (van Eck & Waltman, 2014). There are 1,115 keywords contained in MI research and Islamic schools. But to facilitate the analysis, we provide a minimum threshold of three occurrences of a keyword so that the total keywords analysed amounted to 71.

**Figure 7**

Keywords network visualisation (with minimum number of occurrences of a keyword: 3)



Encompassing aspects such as online learning dynamics, elementary schooling methodologies, and the advancement of 21st century proficiencies, this cluster accentuates

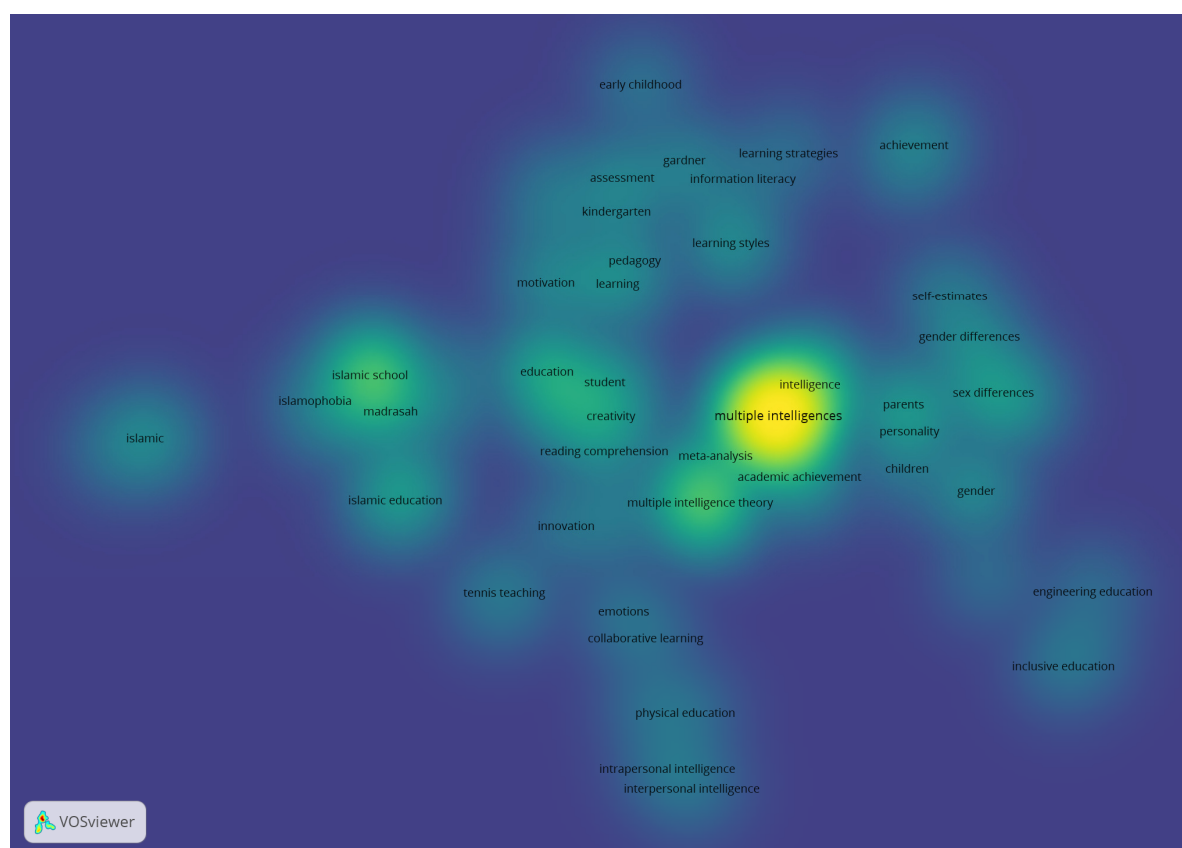




Keyword overlay visualisation is a visualisation technique in bibliometric studies used to display thematic relationships between keywords that exist in the field of research over a certain time span (van Eck & Waltman, 2010). The transition observed in the keywords related to MI studies between 2010 and 2015 indicates a shift in the focus of research. Initially, the research was centred on concepts such as creativity, learning, assessment, and personality. However, according to the visualisation, the recent trend has expanded to encompass broader concepts such as inclusive education, Islamic schools, and Islamic education. This shift suggests a growing interest in exploring the application of MI theory in diverse educational settings, including religious educational institutions such as Islamic schools (Tekke & İsmail, 2016). It also indicates that the exploration of MI theory in Islamic educational contexts is a timely and relevant research endeavour. Moreover, this shift in the research focus reflects a greater recognition of the diversity of intelligences and learning styles among students and the need for more inclusive, individualised educational approaches (Lei et al., 2021; Yavich & Rotnitsky, 2020). These changes in keyword themes suggest an expansion of the MI theory's application beyond conventional educational settings and into more specialised contexts such as Islamic education.

**Figure 8**

Keywords density visualisation (with minimum number of occurrences of a keyword being three)

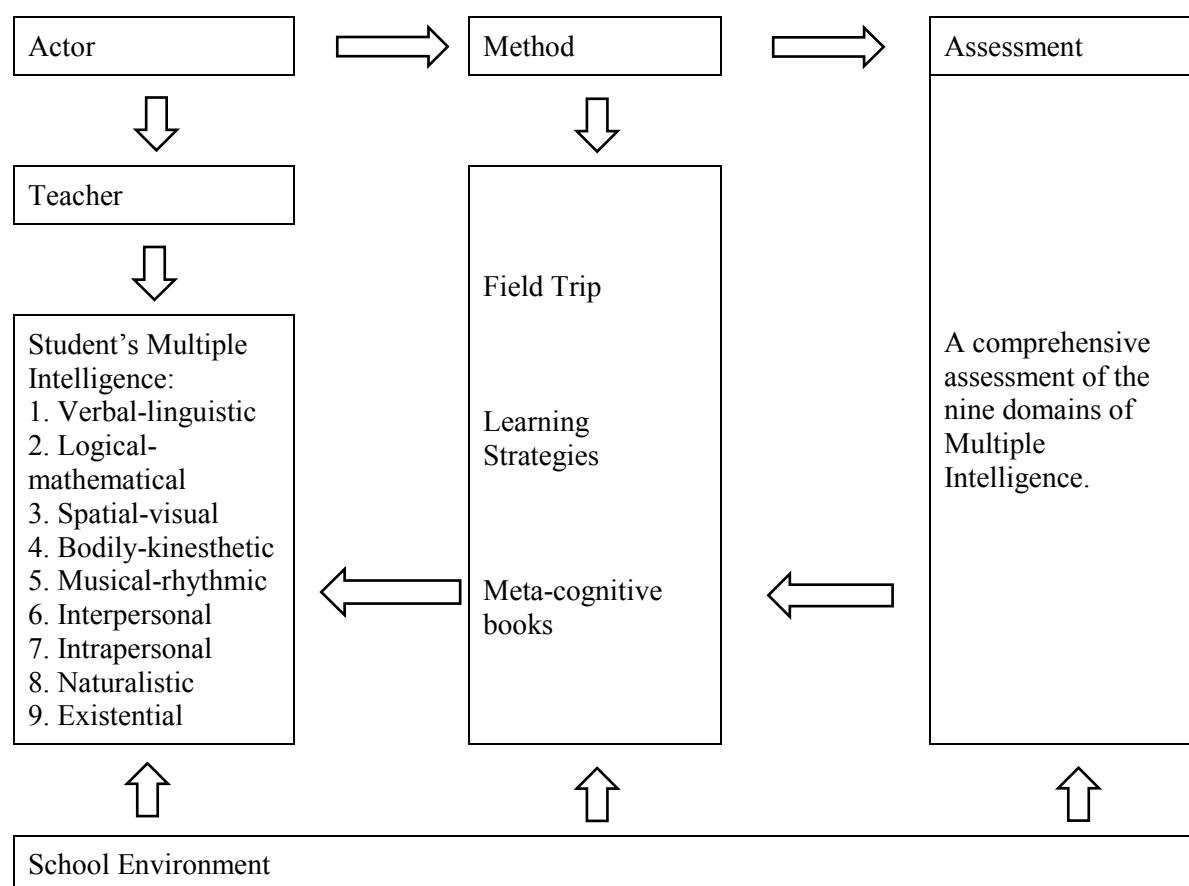


Keyword density visualisation is an invaluable tool in bibliometric studies since it aids in displaying the distribution of keywords based on their occurrence density in a particular research field (van Eck & Waltman, 2010). The analysis of keyword density in the context of MI and Islamic education reveals an intriguing pattern. The MI field appears to be well-

established and dense, indicating a substantial body of research and literature revolving around this concept. This density demonstrates the impact of MI theory on the broader field of education and the recognition of its importance in promoting a more holistic, individualised approach to learning (Sternberg, 2003). Conversely, the area of Islamic schools, when viewed through the lens of keyword density visualisation, is relatively less dense. This suggests that although some studies explore this topic, the research field of Islamic education, particularly in relation to MI, is not as densely populated as might be expected considering the significant Muslim population globally (Ayu & Marzuki, 2017; Chanifah, 2018; Hidayat & Prastowo, 2021). This disparity signifies a research gap that indicates that the integration and impact of MI in Islamic educational settings is an underexplored area of study. Hence, it presents a compelling opportunity for researchers worldwide to delve into this niche, contribute to the existing body of knowledge, and further enrich the discourse on MI's application in Islamic schools.

### Qualitative analysis

**Figure 9**  
Development of Multiple Intelligence in an Islamic School



Integrating the tenets of MI in the framework of Islamic education presents a unique amalgamation of cognitive diversification and religious pedagogy. Zupic & Čater (2015) emphasised the necessity of qualitative analysis in bibliometric studies to capture the context

behind numerical data, reinforcing the essence of this study on MI's implementation in Islamic schools.

The actor-method-assessment framework illustrated in Figure 9 delineates the pathways through which MI is cultivated in Islamic educational contexts. Central to this process are the educators; teachers, serving as the primary actors in this ecosystem, bear the responsibility of nurturing the nine domains of MI in their students. The strategies they employ encompass a spectrum of activities catering to distinct intelligences. For instance, by employing methods like explanation, writing, reading, and storytelling, teachers stimulate the linguistic intelligence of their pupils (Kartiah et al., 2014). Interpersonal intelligence is cultivated through dialogue, simulation, and presentation. Another noteworthy strategy is the use of field trips to tap into students' naturalistic intelligence, offering experiential learning and providing students with a practical interface with their environment, thus fostering their naturalistic propensities (Adisendjaja et al., 2019). Further expanding the repository of MI-enriched teaching tools is the advocacy for the development of MI-centric teaching materials that amalgamate core subjects like science, social studies, mathematics, Islamic religious education, and language, thus emphasising the importance of such integration in Indonesian public schools (Liliawati et al., 2019). The quest for accurate assessment of student MI has spurred the creation of innovative tools tailored to Islamic educational settings, such as the Huffaz Intelligence Test that is designed specifically for huffaz<sup>4</sup> in Malaysia and aligns intelligence domains with religious tenets (Rahim et al., 2017). Teachers not only serve as educators but also as nurturers of motivation, emphasising the importance of creating a conducive school environment for holistic learning without the need for coercive measures (Ma'arif, 2017). The ultimate aim is to infuse values and create a setting in which students willingly and joyfully immerse themselves in the learning process.

### The implications of integrating the MI approach in the Islamic education system

These implications are manifold and span various stakeholders like researchers, practitioners, and policymakers. Researchers stand on the cusp of an interdisciplinary goldmine, where the confluence of MI theory, deeply rooted in psychology and education, intersects with Islamic pedagogical practices. This nexus presents myriad opportunities to probe how modern educational paradigms resonate with long-standing Islamic educational methodologies. Furthermore, the cursory overview that current research provides regarding MI's role in Islamic schools warrants a deeper, more nuanced exploration. Empirical studies that delve into the practical ramifications of embedding MI in Islamic pedagogies are paramount. An area of burgeoning interest is the comparative analysis of Islamic educational institutions, those that have imbibed MI principles and those that have not. Such comparative studies can shed light on the tangible benefits of MI integration. Additionally, an intriguing dimension to explore is the influence of diverse cultural milieus within the vast Islamic world on the reception and assimilation of MI methodologies. Beyond the confines of Islamic education, an expansive area to venture into is the applicability of MI in various religious educational

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<sup>4</sup> Hafiz is a term used by Muslims for someone who has memorised the entire Quran. Hafiza is the female equivalent.

paradigms, enriching the discourse on the synergy between MI theory and religious teaching frameworks.

Turning our attention to practitioners, especially educators and school administrators, our research underscores a pivotal role: the incorporation of MI theory into Islamic schooling warrants a recalibration of the extant curriculum to make it more attuned to the varied intelligence domains of students, thereby ensuring a richer, more encompassing learning experience. Teachers, central to this MI-driven transformation, must be armed with the necessary training and tools to apply MI strategies deftly in classrooms. Of note is the introduction of tools such as the Huffaz Intelligence Test, signifying the horizon of possibilities in crafting tailored assessment mechanisms that resonate with the Islamic educational context.

Policymakers, too, have a pressing mandate. Recognising the immense value that MI integration brings to Islamic education is the first step. Crafting and championing policies that propel institutions toward MI-centric pedagogies is imperative. A repeated theme from the research is the undeniable need to foster collaboration, especially between fields that traditionally have operated in silos, like MI theory and Islamic education. Moreover, there is a clarion call for policies that bolster international academic collaborations, pooling diverse expertise for robust educational outcomes.

## Strengths and limitations of this research

This research has several prominent strengths. First, its methodology employed bibliometric analysis to provide a broad overview of the existing literature and its publication patterns. Furthermore, this study successfully filtered and analysed 505 relevant documents from the Scopus database. This accomplishment is paired with its ability to identify trends, particularly the increase in publications about MI in Islamic schools during the 2000s. Data visualisation, especially through co-author networks, offers a profound visual perspective, making it easier for readers to understand the results. Thematically, this research highlights the difference in focus between articles on Islamic schools and MI, indicating potential research areas that have yet to be explored. Moreover, the study provides insights into how MI can be integrated into Islamic education, including the development of specific assessment tools. We also emphasise the importance of teacher training to implement MI strategies as a recommendation for practitioners.

However, this research also has several weaknesses. There is a significant fragmentation in the research community, with only 27 out of 1,032 authors interconnected. Although the study underscores the potential for integrating MI into Islamic education, it appears that its application in the context of Islamic education remains limited. There are also concerns regarding data bias, given that the data was sourced solely from one database, Scopus. Hence, it is possible that some relevant literature might have been overlooked. This research may not account for regional and local variations in Islamic education, as well as how MI can be adapted in such contexts. Finally, there is a risk that this study might be overly reliant on

existing publications and might not consider sufficiently the views or perspectives of field practitioners and non-publication sources.

## Conclusion

The intricate relationship between MI theory and Islamic educational frameworks has emerged as central to contemporary academic discourse. Our bibliometric analyses, employing tools such as Descriptive Analysis and Author Network Visualisation, delineate the evolving academic terrain and the sophisticated nature of research collaboration in this domain. This synthesis indicates not only an increasing scholarly interest but also reveals gaps in the current body of knowledge. Countries like the United States, Indonesia, and Turkey have been at the forefront of this research, demonstrating cross-cultural academic collaborations. While the United States emphasises academic rigor and interdisciplinary methodologies, Indonesia and Turkey incorporate their deep-rooted Islamic heritage into the dialogue. These collaborations, illuminated by Author Network Visualisation and Co-authorship by Country Network visualisations, provide evidence of a globally relevant discourse on integrating MI principles into Islamic education paradigms.

A distinct dichotomy exists in the research themes surrounding Islamic schools and MI. Islamic school studies focus on socio-cultural constructs, while MI research broadens its scope to include gendered perspectives, cross-cultural examinations, and its applicability in various educational contexts. Notably, an increasing trend is discernible in the application of MI in religious and traditionally grounded pedagogies, highlighting the potential of blending modern psychological theories with time-honoured educational practices. For educators, recognising the diverse intelligence domains of students and moving beyond conventional teaching models is paramount. This recognition necessitates an evolution in pedagogical approaches in embracing MI principles while retaining the essence of Islamic education. Policymakers and institutional leaders face the dual challenge and opportunity of devising policies that blend MI's contemporary methodologies with the rich tapestry of Islamic education.

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