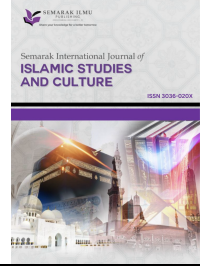




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A Systematic Literature Review on Al-Quran Based Pedagogical Approaches in Mathematics Teaching

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ABSTRACT

Integration of Islamic values in mathematics education has gained increasing attention, with Qur'an-based pedagogical approaches serving as a means to foster both cognitive development and character formation among learners. However, existing research aimed at achieving this integration remains vague and limited, particularly in terms of pedagogical strategies and their implications for mathematics teaching. This gap underscores the need for a systematic review to consolidate current evidence and identify effective practices. This bibliometric study seeks to identify the most widely applied educational practices in this field, by tracing current Qur'an-based pedagogical strategies in mathematics teaching. Guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, the study employed predetermined inclusion and exclusion criteria using the Dimensions.ai database, through a specialized search query that incorporated terms related to mathematics, the Qur'an, and Hadith, resulting in a final corpus of 127 articles from 2015 to 2024. Quantitative analyses to examine publication trends were conducted using Microsoft Excel, VOSviewer, and RStudio. The main findings indicate that the Qur'an-based pedagogical approach in mathematics teaching is predominantly implemented through the meaningful contextual learning, use of innovative products, collaborative activity-based approaches, values- and character-based learning, exposure to the history of Islamic education, and awareness of Islamic economics. Nevertheless, there are variations in the level of integration, with most studies reporting implementation at the classroom level rather than alignment within the curriculum. This study concludes that Qur'an-based pedagogical approaches hold significant potential in diversifying mathematics pedagogy while embedding values. However, further empirical research with robust designs is required to strengthen the current evidence base. Future research is recommended to explore interdisciplinary frameworks, teacher professional development, and policy alignment to ensure sustainable implementation.

Keywords:

Qur'an-based; pedagogy; mathematics teaching; systematic literature review

1. Introduction

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The Qur'an as the word of Allah and truly from Allah, explains everything. The heart finds rest when reciting the Qur'an because the Qur'an is powerful medicine. As the sources of Islamic teachings, the Qur'an and Hadith serve as guidance (al-huda), explanation (at-tibyan), differentiator (al-furqan), and even as a healer (as-syifa') [1]. One of the Quranic verses that motivate to deeply study the Qur'an is found in Surah Al-A'raf (7:52), which means:

"Certainly, We have brought to them a Book (the Qur'an) which We have explained in detail with knowledge, -a guidance and mercy to a people who believe"

Numerous concepts have been mentioned in the Holy Quran with the purpose of guiding humankind towards the pursuit and discovery of further knowledge. The knowledge encompassing a wide range of scientific disciplines such as physics, astronomy, astrophysics, chemistry, biology, mathematics, medicine, economics, pedagogy, psychology, embryology, geology, philosophy, cultural studies, natural sciences, and religious studies, among others. The richness and depth of its content render the Quran an inexhaustible source of knowledge that remains relevant across generations. As science and technology advance, many truths revealed in the Quran continue to be affirmed through empirical and scientific means [2]. This reinforces the notion that the Quran is a timeless and miraculous text that retains its value over centuries and contributes to the well-being and prosperity of humanity.

In the context of mathematics education, the Quran incorporates various principles directly linked to mathematical concepts. Its applications extend beyond the laws of inheritance (fara'id), encompassing the rules of zakat, financial management including saving and expenditure, accounting, and ethical principles in trade and commerce. Thus, integrating mathematical knowledge with Quranic content not only enhances students' understanding of the connection between revealed and rational knowledge but also fosters a holistic foundation of values within the learning process. One of the examples is in Surah al-Baqarah (2:280) that relate time, debt and values:

"And if the debtor is in a hard time (has no money), then grant him time till it is easy for him to repay, but if you remit it by way of charity, that is better for you if you did but know"

The Quranic verse from Surah Al-Baqarah (2:280), which advocates for ethical financial conduct and compassion towards debtors, can be related to mathematical learning through the application of concepts such as debt calculation, financial literacy, and interest-free loans. Integrating such values into mathematics education may enhance students' interest by demonstrating the relevance of mathematical knowledge to real-life, ethical decision-making grounded in religious teachings. This solution is a continuation of the ongoing concern regarding Malaysian students' achievement and interest in mathematics, which has become increasingly alarming.

The findings from international assessment institutions such as the Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS) shows there is a significant level of anxiety among students regarding mathematics, with 70% of students reporting a lack of confidence in the subject, and only 4% indicating a high level of confidence. Further analysis of students' interest in learning mathematics reveals that 32% reported disliking the subject, while 19% expressed a strong dislike, resulting in a total of 51% who are uninterested in learning mathematics. This percentage exceeds the proportion of students who reported liking mathematics (49%) [3]. This data give significant impact on students' understanding of mathematical concepts. Students who struggle with basic arithmetic or scientific principles may fall behind if foundational mathematical learning is not introduced early to establish a strong base for future academic success [4].

Teaching strategies that integrate the concept of the Al Quran in learning mathematics play a prominent role [5,6]. Traditional lecture-based approaches are increasingly being supplemented by

active learning methods such as (1) knowing, (2) understanding, (3) applying, and (4) analyzing [7], classification [8], reasoning, inductive reasoning, comprehension, problem solving, connections, communication, analytical thinking and creative thinking as well as analogy are included [9], history of Islamic civilization [10], mathematics module [11] until the AI-based module. This new approaches facilitated a more interactive, adaptive, and personalized learning experience, effectively catering to the diverse learning profiles of students [12].

Despite the cognitive transformation and evolution in mathematics education based on previous studies, the opportunity to learn mathematical concepts through the application of Islamic values and knowledge still calls for evaluating pedagogical practices and identifying the most effective elements of value formation for mathematics students. A better understanding of the intellectual structure of literature mathematical concepts in the Quran will help optimize learning outcomes and foster the integration of pedagogical competence, research in education, and better professional practices needed for students' futures.

This bibliometric study aims to address the need by identifying and analyzing mathematical concepts in the Quran as well as integrating teaching and learning practices with values in the era of educational technology. Through a rigorous analysis of a corpus of 127 articles written in English between 2015 and 2024, this research will provide valuable insights into emerging educational practices and contribute to guiding future pedagogical developments.

1.1 STEM and the Quran

In the past, especially during the Abbasid period, worldly knowledge developed rapidly in Islamic civilization. The existence of useful worldly knowledge such as medicine, mathematics, astronomy and so on did not contradict religious knowledge, but rather complemented each other, although religious knowledge had a higher position. However, in recent times, Muslims have been lagging behind in terms of worldly knowledge, as if this knowledge was foreign or had no place in religion, when in fact it was not so [13].

There is no doubt that a person with strong spiritual support has a great future. Therefore, scientific study of the Quran is very important. The Quran encompasses all fields of science. In other words, the Quran contains a lot of information from various fields of science: physics, astronomy, astrophysics, chemistry, biology, mathematics, medicine, Economics, Pedagogy, Psychology, Embryology, Geology, Philosophy, Cultural Studies, Natural Sciences, Religious Studies, and many others. Therefore, the Quran is a never-ending source of knowledge. As science and technology develop, the truth of the Quran is also confirmed [20].

Integrating STEM education with the teachings of the Quran is a concept that has gained significant traction in Malaysia and other Muslim-majority countries. It's often viewed as a way to foster a holistic education that not only equips students with critical scientific and technological skills but also instills strong ethical, moral, and spiritual values rooted in Islamic principles. However, knowledge about STEM and appreciation of the Quran are almost not implemented simultaneously due to the low level of teacher knowledge regarding STEM concepts that are in line with the meaning of the verses contained in the Arabic Quran [15]. This may be due to research that integrating Quranic contexts into mathematics instruction remains limited [16]. Therefore, previous studies have identified two main challenges, namely the need for educator training and limited resources in integrating religious content into STEM [17].

Although various strategies have been introduced, such as developing STEM education modules integrated with the Qur'an [18] and promoting values-based education [19], the literature reveals a lack of explicit exploration of Qur'an-based pedagogy in mathematics teaching. Most studies

emphasize general integration of values or the role of modern technology in enhancing mathematical competence [20], yet they do not sufficiently address how Qur'anic principles can be systematically embedded into mathematics pedagogy. Furthermore, the practical frameworks for integrating Qur'anic values into mathematical concepts and evaluating their impact on students' academic performance and holistic development remain underexplored.

As Malaysia places a significant emphasis on STEM (Science, Technology, Engineering, and Mathematics) education as a key driver for economic growth, technological innovation, and human capital development, the country aims to produce a skilled workforce capable of navigating a rapidly evolving, STEM-driven economy. However, despite this focus, the integration of Qur'an-based pedagogy in mathematics education has not been sufficiently emphasized, creating a gap between national aspirations and the holistic educational approaches envisioned within the Islamic tradition. While Malaysia seeks to cultivate globally competitive graduates, there remains limited empirical evidence on how embedding Qur'anic values within mathematics pedagogy could contribute to both cognitive excellence and moral character development. This gap highlights the need for further research to align STEM education with Qur'anic pedagogical principles, ensuring that the pursuit of innovation and economic progress is balanced with ethical, spiritual, and cultural dimensions. Previous studies have linked Quran to the STEM using the abbreviation Q-STEM [18], and some even use the acronym STEAM, adding the letter A for art (language) and some are also linked to the Quran. However, this study does not focus on STEM and the Quran but on the element in STEM, namely mathematics, which is linked to the Quran.

1.2 Research Questions

This study aims to address the following research questions:

- i. What is the intellectual structure of literature mathematical concepts in the quran?
Objective 1: Examine the increasing trend in the publication of articles over the last decade.
Objective 2: Identify patterns, including the most prolific scientific journals, the most cited articles in the studied field, and the most relevant authors;
Objective 3: Analyze the dominant keywords in analyzing mathematical concepts by conducting a keyword co-occurrence analysis in studies related to the Holy Quran.
- ii. What holds in the future reasearch for mathematical concepts in the quran?
Objective 4: Analyze the teaching and learning practices of mathematics in studies related to the Quran.

2. Methodology

This article discusses the position of worldly knowledge that is beneficial from an Islamic point of view by referring to the main sources of Islam, namely the Qur'an and hadith and also the explanations of scholars. This article uses library research and text analysis methods to explain the relationship between the word ummi in the Prophet's hadith and the position of worldly knowledge (non-religious knowledge) in Islam [13].

The study by Bathla *et al.*, [21] explains that Systematic Literature Reviews (SLRs) and bibliometric analyses differ in terms of their methodological approaches—SLRs typically adopt qualitative methods, whereas bibliometric analysis relies on quantitative techniques. Some studies employed SLRs exclusively [22-25] while others, such as those by Bathla *et al.*, [21] and Rosmawati Mohamed [26], integrated both SLR and bibliometric analysis. Bibliometric analysis has been found

to address certain limitations inherent in the sole use of SLR. Furthermore, in-depth and critical content and text analyses are also necessary to uncover implicit meanings within the texts, thereby providing an empirical basis for the generation of research scope.

In this study, a Systematic Literature Review (SLR) was conducted based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. This was complemented by bibliometric content analysis to address Research Question 1, while text analysis was employed to respond to Research Question 2. Data collection was conducted by querying the Dimensions.ai database, recognized for its open access of international scientific publications from various journals. The exact Boolean query was designed to target documents that relate the Quran or Hadith in a mathematical context. The query syntax was as follows: Mathematics AND (quran OR hadith) selected from free text in title and abstract.

This query identified an initial total of 160 documents published between 2015 and 2024 that retrieved on 16th June 2025. Several filters were applied to ensure the quality and relevance using database and manually. First screening using database, taking year 2015 until 2024, only research articles were retained, reducing the corpus to 147 documents. Additionally, to focus on research articles that closely related to mathematical concepts and quran, only 142 were selected after screening manually. This process resulted in a final selection of 127 articles involved as in Figure 1:

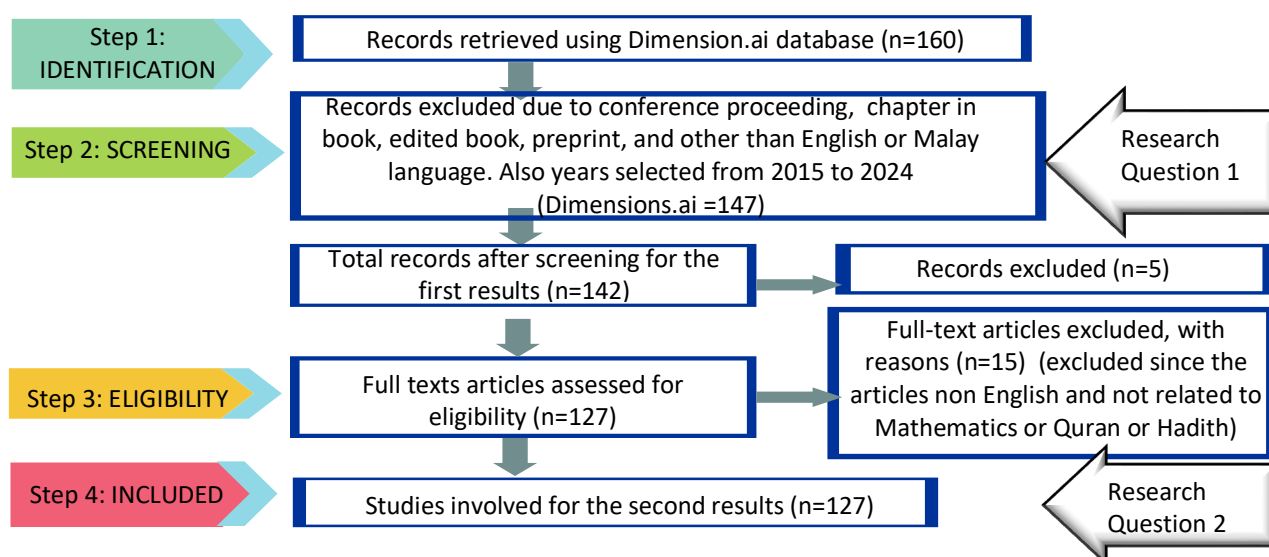


Fig. 1. PRISMA flowchart

3. Results

3.1 What is the intellectual structure of literature mathematical concepts in the quran?

3.1.1 Objective 1: Examine the increasing trend in the publication of articles over the last decade

The trend of publication from 2015 to 2024 shows a steady but modest growth in the early years, with only one or two publications annually from 2015 to 2016, followed by a slight increase between 2017 and 2018. A small dip occurred in 2019 before a notable rise in 2020 (15 publications), suggesting increased scholarly interest and possibly the influence of global initiatives linking mathematics with broader educational or religious contexts. Although the numbers fluctuated slightly between 2020 and 2023, the most striking pattern is the sharp surge in 2024, with 50 publications, more than triple the output of the previous year. This dramatic increase may be attributed to several factors: growing recognition of the importance of integrating Islamic perspectives into mathematics education, stronger institutional or governmental support for STEM

and values-based education, and the acceleration of digital research dissemination after the COVID-19 pandemic, which expanded opportunities for academic collaboration and publication.

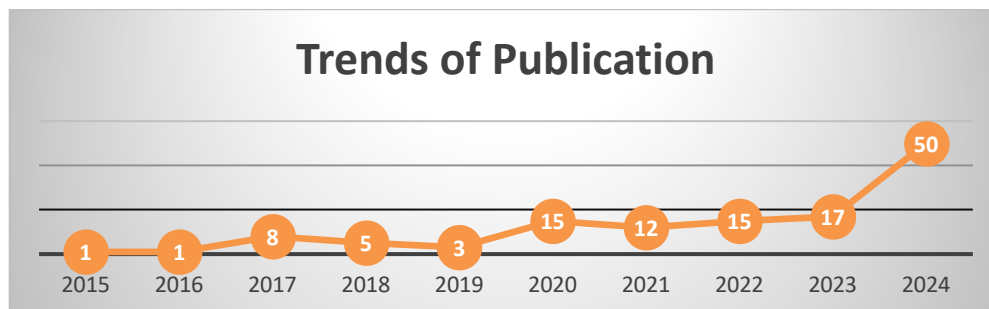


Fig. 2. Trends of publication

3.1.2 Objective 2: Identify patterns, including the most prolific scientific journals (high number of article published), the most cited articles in the studied field, and the most relevant authors.

Knowing the number of articles published according to journal titles is crucial in bibliometric analysis, journal selection, and academic evaluation. Identifying the most prolific journals in the field is important, as it allows researchers to measure the number of articles published by each journal in the domain of mathematics and the Qur'an. In addition, it helps to identify leading and dominant journals as well as those that are actively publishing articles related to the research theme.

The analysis of journal titles in Table 1 reveals that Mosharafa: Jurnal Pendidikan Matematika is the most prolific, publishing three articles on the integration of mathematics and the Qur'an between 2015 and 2024. Other active journals include West Science Islamic Studies, Alifmatika Jurnal Pendidikan dan Pembelajaran Matematika, AlphaMath Journal of Mathematics Education, MAXIMA Jurnal Pendidikan Matematika, AKSIOMA Jurnal Program Studi Pendidikan Matematika, AL KHAWARIZMI Jurnal Pendidikan Matematika, ARITHMETIC Academic Journal of Math, and the International Journal of Modern Education. While these journals demonstrate active contributions, article selection should also consider topical relevance, field consistency, and journal reputation within the mathematics and Qur'an research domain.

Table 1

The analysis of journal titles

Journal title	Number of publications	Number of citations
Mosharafa Jurnal Pendidikan Matematika	3	0
West Science Islamic Studies	2	5
Alifmatika Jurnal Pendidikan dan Pembelajaran Matematika	2	2
AlphaMath Journal of Mathematics Education	2	2
MAXIMA Jurnal Pendidikan Matematika	2	1
AKSIOMA Jurnal Program Studi Pendidikan Matematika	2	0
AL KHAWARIZMI Jurnal Pendidikan Matematika	2	0
ARITHMETIC Academic Journal of Math	2	0
International Journal of Modern Education	2	0

The "number of citations" indicates how often an article is referenced in other scholarly works and serves as a measure of its academic impact. Highly cited articles are regarded as landmark studies that shape theoretical foundations and contribute significantly to the development of the field. Table 2 shows that the study by Huda *et al.*, [1], entitled Mengenal Matematika dalam Perspektif Islam, has

been cited 14 times. This indicates that the article is more influential compared to the work of Choirudin *et al.*, [27], which has only been cited 7 times. However, when viewed in the context of publication year, the higher citation count of Huda *et al.*, [1] is partly due to its earlier publication compared to Choirudin *et al.*, [27]. Nevertheless, researchers can identify primary and relevant sources from the reference lists provided by the authors of these articles.

Table 2

Number of citations of article until 2024

Year	Authors	Article's Title	Journal title	Number of publications	Number of citations
2017	[1]	Mengenal Matematika dalam Perspektif Islam	FOKUS Jurnal Kajian Keislaman dan Kemasyarakatan	1	14
2021	[27]	Development Of Qur'an And Hadith-Based Mathematics Module For Students' Mathematical Understanding And Religious Character	Jurnal Tatsqif	1	7
2023	[28]	Integrative Mathematics: Mathematical Concepts in Hadiths with the Theme of Uqiyah	West Science Islamic Studies	2	5
2023	[29]	Exploration of the Concept of Relation and Function in the Quran with the Theme of Q.S. Ar-Rahman			
2018	[30]	Pengembangan Bahan Ajar Matematika Berbasis Alquran Di Sekolah Dasar	Jurnal Inovasi Pendidikan dan Pembelajaran Sekolah Dasar	1	5
2021	[31]	The Relevance Of Odd-Even Verses In The Quran With Mathematics Education	Jurnal At-Tibyan Jurnal Ilmu Alqur'an dan Tafsir	1	4
2024	[32]	The Effect of "Si Andi" Flashcard Games on Improving Personal Safety Skills	JPUUD - Jurnal Pendidikan Usia Dini	1	3
2022	[33]	Penilaian Dampak Zakat, Infak, Sedekah Terhadap Kemiskinan Spiritual Dan Material Penerima Manfaat Laznas LMI: Pendekatan CIBEST	Jurnal Ekonomi Syariah Teori dan Terapan	1	3
2020	[34]	Pengaruh Pembelajaran Matematika Al-Qur'an dengan Model Pembelajaran Kooperatif Tipe Think Pair Share Terhadap Kemampuan Komunikasi Matematis Siswa	Jurnal Riset Pendidikan Matematika Jakarta	1	3
2020	[35]	Matematika dalam Rasionalitas Al-Quran; Bukti Perenialisme Atas Nalar Saintifik	SALAM Jurnal Sosial dan Budaya Syar i	1	3

The most relevant author is the researcher who makes the most significant and influential contributions to the specific area being studied and not solely dependent on the number of citations. Visual data from Biblioshiny RStudio shows that the most relevant author is Alghar as presented in Figure 3.

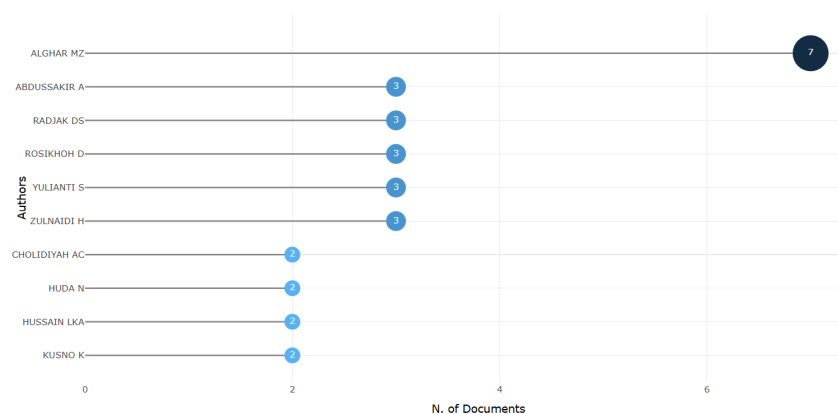


Fig. 3. The most relevant authors

The visualization generated by VOSviewer in Figure 4 illustrates co-authorship relationships among authors based on joint publications. Nodes represent authors, the node size reflects the number of publications, links indicate collaboration, link thickness represents the strength of collaboration, and node colors denote automatically generated collaboration clusters. The author with the most dominant Total Link Strength (TLS) is Alghar, which also explains why Alghar is the most relevant author as shown by his large node size, indicating high productivity, and numerous connections with other authors. Notably, the thick link with Abdussakir demonstrates strong collaboration, suggesting frequent co-authorship. Overall, TLS captures the extent and intensity of an author's collaborative relationships, where higher values reflect greater and more frequent co-authorship, thereby identifying the most prominent and active contributors in the field under study.

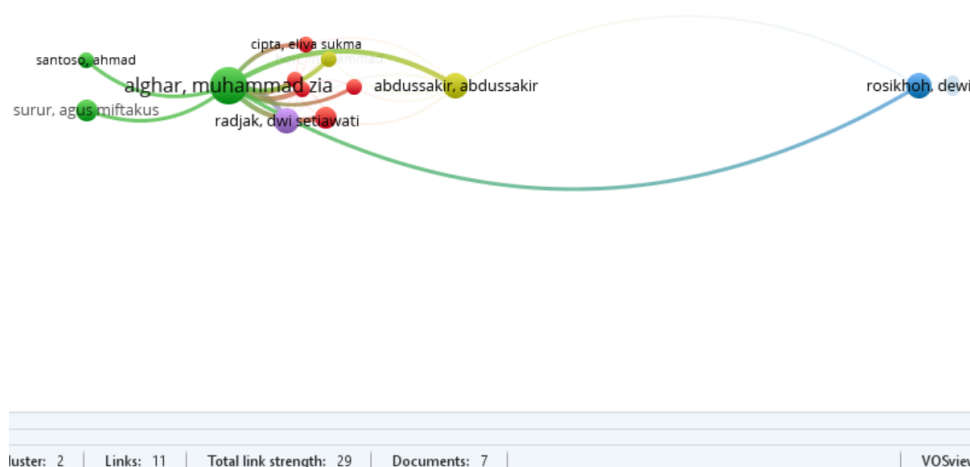


Fig. 4. Co-authorship relationships

3.1.3 Objective 3: Analyze the dominant keywords in analyzing mathematical concepts by conducting a keyword co-occurrence analysis in studies related to the Holy Quran

The frequency analysis of keywords in Figure 5, reveals that mathematics/mathematical (552) is the most dominant term, reflecting the centrality of mathematics as the core theme of the studies. This is followed by Islamic (283), learning (267), research (235) and study (191), indicating a strong emphasis on the integration of mathematics with Islamic perspectives and educational practices. However, the terms that can be grouped together are education (185), educational (79), and pendidikan (72), with a total of 336 occurrences. Other frequently occurring terms such as students, science, data, development, and Qur'an highlight the diverse contexts in which mathematics is being

applied, including pedagogy, empirical research, and religious integration. Less frequent but still significant keywords such as hadith, values, curriculum, knowledge, and skills point to the multidimensional nature of research in this area, which not only explores cognitive aspects but also emphasizes moral, spiritual, and curricular dimensions. Collectively, these dominant keywords suggest that the field is shaped by an intersection of mathematics, Islamic values, and educational innovation, positioning it as both a scholarly and faith-driven domain.

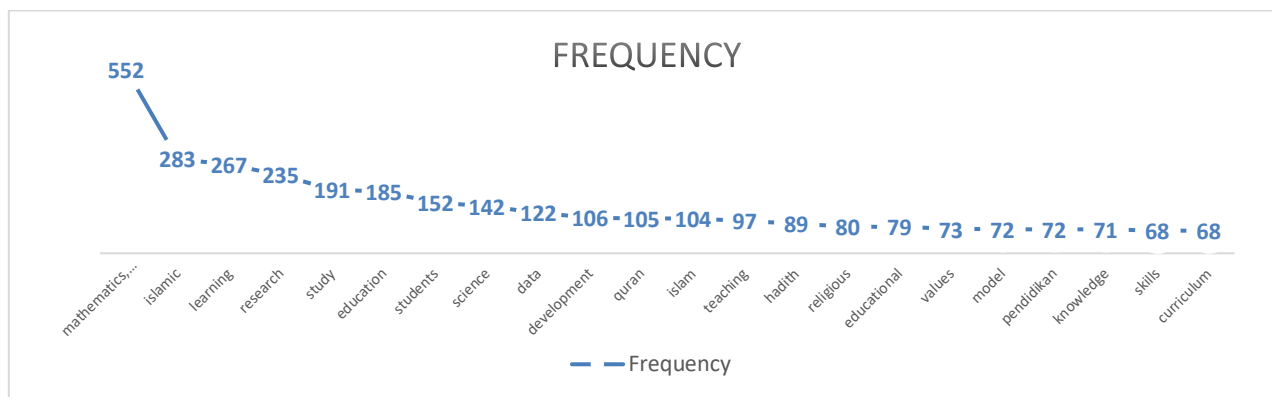


Fig. 5. Analysis of the dominant keywords

3.2 What holds in the future reasearch for mathematical concepts in the quran?

3.2.1 Objective 4: Analyze the teaching and learning practices of mathematics in studies related to the Quran

The findings on teaching and learning practices of mathematics in studies related to the Qur'an were obtained through content analysis of abstracts and full-text articles. The subsequent coding was translated into general themes, operational definitions, examples of strategies, and references indicating the sources, as presented in Table 3. The initial coding revealed that teaching and learning practices of mathematics in Qur'an-related studies were represented by five main themes, namely the integration of Islamic values in mathematics, meaningful contextual learning, the use of innovative products, collaborative activity-based approaches, and value- and character-based learning. However, if the articles were coded only within these five approaches, some articles could not be classified, as they discussed the development of education during the eras of the Khulafa' al-Rashidin, Abbasids, Umayyads, and Andalusia, as well as those related to Islamic economics, particularly in relation to zakat, infaq, sadaqah, waqf, the prohibition of riba, and social justice. Therefore, two additional themes emerged, namely Historical Exposure to Islamic Education and Islamic Economic Awareness

The integration of Islamic values in mathematics is defined as the combination of various mathematical concepts with values derived from the Qur'an, Hadith, and Islamic principles. According to Lateh [36], the concepts of Algebra, Statistics, and Arithmetic are linked with three aspects of Islamic integration: Muamalat, Fiqh, and Aqidah. Furthermore, Supiarmo *et al.*, [37] discuss fractional numbers in the Qur'an and Hadith, which highlight fractional numbers and number operations. The concept of balance in Islam can also be associated with mathematics, namely balanced happiness, balancing general science, particularly mathematics, with religious knowledge closely related to mathematics, such as clocks, symbols of time and units of time, calculating electricity bills, determining land and building taxes, and calculating profit and loss in trading processes, as mentioned by Choirudin *et al.*, [27]. In addition, the topic of sets has been linked by

Rahmi *et al.*, [5] with the concept of sets in the Qur'an, specifically Surah Al-Waqiah verses 7–14, in which Allah mentions that on the Day of Judgment, there will be three groups of people: the people of the right, the people of the left, and those who were foremost in faith. When addressing the concepts of sequences and series (applied to interest and savings) and linear functions (applied to market equilibrium under the influence of taxation), the integration of Islamic values can be emphasized in business mathematics lectures. In conclusion, previous studies have largely focused on the application of Islamic values through specific mathematical topics, the use of Hadith as contextual references in mathematical activities, and the connection of mathematical concepts with worship and daily practices.

Meaningful contextual learning connects mathematical concepts with real-life situations, local culture, and students' experiences. For example, during the time of Prophet Adam (AS), agriculture and animal husbandry had already emerged, with Habil being a shepherd (ra'iyah) and Qabil a farmer (harrathah), while during the time of Prophet Shu'ayb, weighing tools (technology) were introduced [34]. This indicates that mathematics can be related not only to local culture but also to contemporary contexts familiar to students. Environmental objects may also be used to explore mathematical concepts, as demonstrated by Kusno *et al.*, [38], who found that prayer rugs, mosque reliefs, and Qur'anic manuscript covers contain transformational geometry concepts such as symmetry, reflection, translation, rotation, and dilation. Similarly, the repetition of a verse in Surah al-Rahman 31 times within a specific range reflects a mathematical pattern and uniqueness [29]. Hands-on activities using environmental objects to explore number concepts are also emphasized by Surur *et al.*, [39], who explained that many acts of worship, such as ablution, prayer, and pilgrimage, involve precise rules, measurements, and calculations aligned with shar'i provisions. For instance, determining prayer times, counting rak'ahs, and finding the Qibla direction all require mathematical reasoning. Thus, mathematics becomes essential not only to deepen understanding but also to accurately practice Islamic teachings, reflecting the true meaning of fiqh as 'understanding

Teaching and learning practices of mathematics in studies related to the Qur'an can be implemented through the use of innovative products. This refers to the development of educational products such as modules or Islamic-STEM integration models that teachers can practically use, as well as worksheets based on the Qur'an and Hadith. For example, Choirudin *et al.*, [27] developed a module based on the Qur'an and Hadith integrated with visual media to support students' mathematical understanding by connecting new representations with existing knowledge structures through semi-concrete objects. Similarly, Rahmah *et al.*, [40] emphasized the use of learning models, where teaching materials integrated with Islamic values, such as numbered head structures embedded in learning videos, were shown to improve students' mathematical comprehension. Roy *et al.*, [16] further highlighted the relevance of technology-based products through a technology-enhanced Electronic Student Worksheet (E-SW) supported by problem-based learning and integrating Qur'anic contexts into integer learning. In addition, Faradila and Fahlevi [41] demonstrated the importance of technology as a basis for teaching and learning strategies, where animated video clips and Qur'anic and Hadith verses were presented as alternatives for instilling Islamic values in business mathematics lectures. The production and use of such innovative products represent practical approaches that not only benefit students in the classroom but can also be expanded and shared at national and international levels.

Activity-based collaborative approaches have long been emphasized through Vygotsky's sociocultural theory [42], which highlights students' active engagement with their environment. Vygotsky viewed cognitive growth as a collaborative process, complementing Piaget's theory that focused on the individual mind in interpreting information. Collaboration is part of deliberation (Musyawarah). Musyawarah, as described by Siregar [43] in the framework of problem solving

according to Tafsir Al-Azhar, is the first step that emphasizes the importance of collective discussion in decision-making. Therefore, collaborative activity is essential in stimulating students' thinking and engagement in learning. To implement this method, Subhi *et al.*, [34] applied the think-pair-share strategy in their study and found that students' mathematical communication skills improved significantly when Qur'an-based mathematics learning was integrated with this model. Similarly, Kusno *et al.*, [38] argued that collaborative interaction can become a culture, noting that culture is the result of social interaction within a community that carries educational values. This demonstrates that activity-based collaborative approaches provide opportunities for students to interact, discuss, and learn collectively. Moreover, through group activities to solve mathematical problems, students are able to practice learning by doing via experiments and simulations in a meaningful and effective way.

Mathematics is not only a form of knowledge but also a medium for character formation. Value- and character-based learning through mathematics needs to be strengthened in educational institutions in various ways. One way to appreciate noble values is by teaching mathematics while respecting culture [38], which aligns with Malaysia's cultural and ethnic diversity. Hasibuan *et al.*, [44] argue that learning mathematics not only teaches patience but also equips individuals with skills to deal with challenges in life. Solving mathematical problems often requires perseverance, multiple strategies, and the willingness to re-examine errors, all of which cultivate patience and resilience. The Qur'an and Hadith also encourage virtues such as kindness, as highlighted in QS Al Imran:200. Similarly, Western scholars such as Polya, Lester, Schoenfeld, and Mayer have introduced problem-solving models that remain influential references in mathematics education. The challenges faced in problem solving further nurture values such as tolerance, as explained by Nafi'an *et al.*, [45], who interpret tasamuh (tolerance) as mutual respect despite differences in religion, ethnicity, and culture—an idea analogous to the principle of open-ended problem solving in mathematics. Therefore, by emphasizing noble values such as trustworthiness, patience, and precision in calculations, the process of problem solving in mathematics becomes more meaningful, fostering gratitude to Allah when mathematical knowledge is applied to address real-life problems.

Students in educational institutions require exposure to the history of Islamic education to understand that mathematics, science, philosophy, medicine, and the arts once thrived in Islamic civilization, thus challenging the misconception that Islam hindered intellectual progress. During the Abbasid era (750–1258 CE), useful sciences such as mathematics, medicine, and astronomy were developed alongside religious sciences without contradiction, but rather in complementarity, with religious knowledge occupying the highest position [13]. History shows that the Abbasid dynasty produced eminent scholars across disciplines such as al-Farabi, al-Kindy, Ibn Rushd, Ibn Sina, Ibn Thufail, Ibn Bajjah, al-Ghazali, and Ibn Haiyam, marking rapid intellectual progress unparalleled by the West at the time [46]. Even contemporary scholars such as Je-nam and Ho-young [47] acknowledge the Abbasids' role in nurturing education through figures like al-Khawarizmi, whose Algebra became foundational for complex calculations in inheritance, trade, and surveying. Islamic education history also reveals not only the emergence of disciplines but also the methods of acquiring knowledge, from the halaqah approach in the Khulafa' al-Rashidin period to the more formalized compulsory and elective curricula, oral and written methods, memorization, discussion, and research in the Abbasid era [49]. Collectively, these developments demonstrate that the golden age of Islamic knowledge was inseparable from the Qur'an's call to reflection, inquiry, and the pursuit of truth, which guided the integration of tafsir, hadith, and fiqh with mathematics, science, and astronomy.

Teaching and learning practices of mathematics can also be implemented through an emphasis on Islamic economic sensitivity, where mathematical concepts are applied in zakat distribution, Islamic financing, and contemporary waqf models [50]. For instance, if a person owns 87 grams of

gold, after one haul, they are obliged to pay zakat of $87/40 = 2.175$ grams or its monetary equivalent. Scholars such as Muniri [50] have linked Islamic economics with contemporary issues including poverty, social justice, and banking systems, noting that fiqh governs economic conduct with clear foundations in the Qur'an and Hadith. Beyond zakat, economic dimensions are also reflected in determining the volume of water (two kulah), counting prayers, inheritance distribution (faraid), and calculating rewards. For example, in inheritance, if a deceased leaves a husband and two sisters, the husband's share is $\frac{1}{2}$ and the sisters' share is $\frac{2}{3}$, which totals $\frac{7}{6}$; since the numerator exceeds the denominator, the principle of 'aul is applied, adjusting the denominator to 7, thereby giving the husband $\frac{3}{7}$ and the two sisters $\frac{4}{7}$. Furthermore, Jaenudin [33] showed that zakat, infaq, and sadaqah distributed by the Zakat Development Community in South Sumatra improved the welfare index while reducing poverty levels. Overall, calculations in Islamic practices illustrate how mathematics underpins economic justice: zakat ensures redistribution of wealth and enhances purchasing power among mustahik, measurement of two kulah water establishes standards for fairness in trade and public health, prayer counts cultivate time discipline and productivity, faraid secures equitable family wealth distribution, and reward calculation fosters an ethical economic mindset grounded in sincerity, honesty, and accountability for both worldly and spiritual gains.

Table 3

Theme and operational definition of teaching strategies

No	Theme	Operational definition	Example of strategy	Reference
1.	Integration of Islamic Values in Mathematics	Combining mathematical concepts with Qur'an, Hadith, and Islamic principles.	- Islamic integrations in three aspects link Muamalat, Fiqh, and Aqidah with Algebra, Statistics, and Arithmetic. - Fractional numbers in the Qur'an and Hadith highlight the concept of fractions and number operations. - Balanced happiness emphasizes harmonizing general knowledge, especially mathematics, with religious knowledge through applications such as time, electricity bills, taxation, and profit-loss in trade. - The concept of sets is illustrated in Surah Al-Waqiah (7–14), which categorizes people on the Day of Judgment into three groups. - Business mathematics lectures integrate Islamic values through sequences and series (interest and savings) and linear functions (market equilibrium under taxation). - The implementation of mathematics integrated with Islamic values occurs in three stages—value instillation, implementation, and reflection—where religious character and motivation significantly influence learning achievement.	[36], [37], [27], [5], [41], [51]
2.	Meaningful Contextual Learning	Relating mathematics to real-life, culture, and experiences.	- During the time of Prophet Adam (AS), agriculture and animal husbandry were already practiced, while in Prophet Shu'ayb's era, weighing instruments (technology) were introduced. - Prayer rugs, mosque reliefs, and Qur'anic manuscript covers display transformational geometry concepts such as symmetry, reflection, translation, rotation, and dilation.	[34], [38], [29], [39], [49]

			• The repetition of verses in Surah Ar-Rahman 31 times reflects a distinct mathematical pattern and uniqueness in the chapter. • The study of fiqh shows that acts of worship such as ablution, prayer, and pilgrimage require precise rules, measurements, and calculations, demonstrating the essential role of mathematics in practicing Islamic teachings accurately. • Hajj rituals and daily prayers are structured through specific numerical counts—such as tawaf (7 times), sai (7 times), throwing pebbles (7), and the total of 17 daily prayer units (rak'ahs)—highlighting the mathematical foundation in worship.	
3.	Use of Innovative Products	• Developing modules, worksheets, and digital tools integrating Islamic content.	• Visual media in Qur'an- and Hadith-based modules supports mathematical understanding by connecting new procedures to prior knowledge using semi-concrete representations. • Islamic values integrated through learning models—such as numbered head structures or instructional videos—enhance students' mathematical comprehension. • Technology-enhanced Electronic Student Worksheets (E-SW) with problem-based learning integrate Qur'anic contexts into integer learning effectively. • Animated video clips and Qur'anic/Prophetic verses provide alternative media for embedding Islamic values in business mathematics lectures. • Didactical situations in devolution engage students (santri) in problem-solving zakat calculations, from interpreting tables to formulating models, thereby linking fiqh practices with mathematical reasoning.	[27], [40], [16], [41], [52]
4.	Collaborative Activity-Based Approaches	• Encouraging student interaction, group work, and problem-solving.	• Students' mathematical communication skills improved significantly after applying Qur'an-based mathematics learning with the think-pair-share model. • Culture is shaped through social interaction within society and inherently carries educational values.	[34], [38]
5.	Values- and Character-Based Learning	• Instilling noble values through mathematics education.	• Teaching mathematics while respecting culture reflects an approach that upholds noble values. • Mathematics fosters patience and perseverance, as problem-solving often requires repeated attempts, aligning with Qur'anic and Hadith teachings on kindness and resilience (e.g., QS Al Imran: 200). • The concept of tasamuh (tolerance)—respecting differences in religion, ethnicity, and culture—can be analogized in mathematics to open-ended problem solving, where multiple perspectives and solutions are valued.	[38], [44], [45]
6.	Exposure to the History of Islamic Education	Tracing Islamic knowledge development and integration of sciences.	Integration of Naqli and Aqli Knowledge • Islamic civilization, especially during the Abbasid era, integrated tafsir, hadith, and fiqh with mathematics, astronomy, medicine, and other sciences.	[13], [46], [47], [48]

- Religious and worldly knowledge complemented one another, with religion maintaining higher status.

Flourishing of Knowledge in the Abbasid Dynasty

- The Abbasid Bani Dynasty (750–1258M) became a hub of intellectual growth.
- Produced renowned scholars: al-Farabi, al-Kindi, Ibn Rushd, Ibn Sina, Ibn Thufail, Ibn Bajah, al-Ghazali, Ibn Hayyam, among others.
- Contributions spanned philosophy, theology, mathematics, physics, chemistry, biology, astronomy, and medicine.
- Scientific progress in the Abbasid era outpaced Western contributions of the time.

Al-Khawarizmi and Bayt al-Hikmah

- Al-Khawarizmi's Algebra was a milestone text written at Bayt al-Hikmah (House of Wisdom).
- Abbasid institutions nurtured education for scribes and bureaucrats skilled in inheritance division, returns, and measurements.

Pedagogical Approaches

- **Halaqah (circle learning):** emphasized direct teacher-student interaction.
- Guidance and memorization were central, especially in Qur'an, hadith, and Arabic.

Comparison of Education Systems

Khulafa' al-Rashidin Era:

- Educational content: Qur'an memorization, grammar, hadith, poetry, basic mathematics, life skills (archery, swimming, horsemanship), and Islamic ethics.
- Methods: lectures, memorization, exercises, and discussions.
- System: informal, centered on halaqah, no formal levels.

Abbasid Era:

- Educational content: divided into compulsory (Qur'an, prayer, grammar, Arabic, reading and writing) and elective subjects (arithmetic, poetry, history, advanced Arabic).
- Methods: oral, written, memorization, discussions, and discovery/research-based learning.
- System: halaqah combined with classical structures, introducing both formal and non-formal education.

7.	Awareness of Islamic Economics	Applying mathematics to Islamic economic principles.	• Case study approach: Students explore zakat distribution, Islamic financing, and contemporary waqf models. For example, from a hadith, 20 dinars require zakat of $\frac{1}{2}$ dinar, equivalent to 2.5%, while 87 grams of gold requires zakat of 2.175 grams. • Contextual learning: Links Islamic economics to contemporary issues such as poverty, social justice, and banking systems. Fiqh also regulates worship through precise calculations, including zakat, inheritance division, prayer counts, and water measurement for purity.	[50], [49], [33]
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- Critical discussion: Involves comparing capitalism, socialism, and Islamic economics, with mathematical applications in inheritance law. For instance, if a man dies leaving a wife and two sisters, inheritance is adjusted through the principle of 'aul, resulting in $\frac{3}{7}$ for the husband and $\frac{4}{7}$ for the sisters.
- Community projects: Students analyze the social impact of zakat and charity; evidence from South Sumatra shows that zakat distribution improved welfare indices and reduced poverty rates.

4. Conclusions

The bibliometric analysis reveals a steady yet significant increase in publications from 2015 to 2024, with a sharp surge in 2024, suggesting growing scholarly attention to the integration of mathematics with the Qur'an and Islamic values. This pattern reflects the rising recognition of Islamic pedagogy in mathematics education as a relevant and emerging field within both Islamic and global academic contexts. In addressing Objective 2, the findings identified several prolific journals such as *Mosharafa Jurnal Pendidikan Matematika*, *West Science Islamic Studies*, *Alifmatika Jurnal Pendidikan dan Pembelajaran Matematika*, and *AlphaMath Journal of Mathematics Education*, which serve as the main outlets for related publications. Highly cited articles—for instance, Huda *et al.*, [1] with 14 citations—stand out as foundational references, while authors such as Alghar and Abdussakir emerged as the most relevant contributors, demonstrated by their high total link strength (TLS) and extensive co-authorship networks. These patterns highlight the concentration of research within particular scholarly communities and journals that dominate the discourse. For Objective 3, keyword co-occurrence analysis demonstrated that dominant keywords include “mathematics/mathematical,” “education/ educational/ pendidikan,” “Islamic,” “learning,” “research,” “study,” and “students,” indicating a strong thematic orientation towards contextualizing mathematical concepts within religious and ethical frameworks.

The reviewed literature demonstrates that mathematics education can be meaningfully enriched by integrating Islamic values derived from the Qur'an, Hadith, and Islamic intellectual traditions. Studies also highlight several strategies including contextual learning, innovative product use, collaborative activity-based approaches, the infusion of values and character, exposure to the history of Islamic education, and awareness of Islamic economics all of which contribute to both cognitive and moral development. Historical perspectives from the Khulafa' al-Rashidin, Abbasid, and Andalusian eras illustrate the strong linkage between mathematics, jurisprudence, and economic practices such as zakat, infaq, and trade, reinforcing the relevance of mathematics to daily worship and societal well-being. Modern approaches—such as the incorporation of Qur'anic contexts in fractions, sets, sequences, and problem-solving—further illustrate that mathematics is not only a tool for logical reasoning but also a vehicle for cultivating patience, tolerance, gratitude, and ethical awareness. Thus, mathematics teaching and learning practices, when grounded in Islamic pedagogy, provide a holistic framework that nurtures intellectual competence while shaping aqidah, ibadah, and akhlaq, making mathematics education both spiritually meaningful and socially transformative.

Taken together, these findings confirm that the field is rapidly maturing, with expanding research outputs, stronger institutional and author collaborations, and increasingly sophisticated use of bibliometric tools to map Islamic pedagogical integration into mathematics. This not only situates mathematics as a discipline of logic and science but also as a medium for cultivating aqidah, ibadah,

and akhlaq in line with Qur'anic and Prophetic traditions. Future research on analyzing the teaching and learning practices of mathematics in studies related to the Quran should focus on developing comprehensive pedagogical frameworks that systematically integrate Qur'anic values with mathematical concepts, ensuring both academic rigor and spiritual relevance. Scholars could explore how different strategies—such as contextual learning, collaborative approaches, and technology-enhanced tools—can be adapted across diverse educational settings to improve mathematical understanding while instilling Islamic values. Longitudinal studies are needed to assess the long-term effects of such integrations on students' problem-solving skills, moral character, and readiness to apply mathematics in real-life religious and socio-economic contexts. Additionally, cross-cultural and comparative studies may provide insights into how Islamic pedagogy in mathematics can be contextualized in different Muslim-majority and minority settings, thus enriching the global discourse on faith-based STEM education.

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References

- [1] Huda, Mualimul, and Mutia Mutia. "Mengenal matematika dalam perspektif islam." *FOKUS Jurnal Kajian Keislaman Dan Kemasyarakatan* 2, no. 2 (2017): 182. <https://doi.org/10.29240/jf.v2i2.310>
- [2] Bakar, Wan Norliza Wan. "Mathematics in the Holy Quran." *Journal of Academic Minds* 5, no. 1 (2011): 53-64.
- [3] Malaysia, Kementerian Pendidikan. "Laporan Awal Pencapaian Malaysia Dalam TIMSS 2023." *Putrajaya: Bahagian Perancangan dan Penyelidikan Dasar Pendidikan* (2024).
- [4] Kibtiyah, Mariah, and Fitriah M. Suud. "Relationship Between Big Five Personalities and Habit of Memorizing The Qur'an on Mathematics Learning Achievement through Mediator of Self-Regulated Learning." *Islamic Guidance and Counseling Journal* 7, no. 1 (2024). <https://doi.org/10.25217/0020247453900>
- [5] Rahmi, Izzati, Admi Nazra, Budi Rudianto, Mahdhivan Syafwan, Ferra Yanuar, Hazmira Yozza, Narwen Narwen, Monika Rianti Helmi, and Maiyastri Maiyastri. "Upaya Membangun Karakter Siswa melalui Integrasi Konsep Himpunan dan Al-Qur'an dalam Pembelajaran Matematika." *Buletin Ilmiah Nagari Membangun* 6, no. 4 (2023): 342-352. <https://doi.org/10.25077/bina.v7i4.538>
- [6] Mansur, Mansur, Yullys Helsa, and Ary Kiswanto Kenedi. "Al-Quran Based Learning Strategy in Teaching Mathematics at Primary Education." In *International Conference of Early Childhood Education (ICECE 2017)*, pp. 304-306. Atlantis Press, 2017. <https://doi.org/10.2991/icece-17.2018.78>
- [7] Ulum, Fatkhul, Julham Hukom, Haruna Abubakar Haruna, Bambang Irawan, Mokhammad Miftakhul Huda, and Mariana Mariana. "Development of a Case Method-Based Balaghah Learning Module: A Solution to Improve Students' Understanding of Balaghah Science." *Jurnal Pendidikan Progresif* 15, no. 3 (2025): 1688-1705. <https://doi.org/10.23960/jpp.v15i3.pp1688-1705>
- [8] Halistin, Halistin, Tandri Patih, Hilda Ayu Melvi Amalia, Ahmad Ahmad, Sarjaniah Zur, and Abdul Kadir. "Interconnectedness of Math, Biology and Islamic Education: Designing Teaching Materials for High School." *KnE Social Sciences* (2022): 217-228. <https://doi.org/10.18502/kss.v7i8.10739>
- [9] Hasri, Hasri, and Nur Rahmah. "Kemampuan Baca Tulis Al-Quran dan Korelasinya terhadap Kemampuan Matematika Mahasiswa Prodi Tadris Matematika IAIN Palopo." *Al-Khwarizmi: Jurnal Pendidikan Matematika dan Ilmu Pengetahuan Alam* 4, no. 2 (2016): 163-172. <https://doi.org/10.24256/jpmipa.v4i2.260>
- [10] Harahap, Alya Rahmadani, Dea Putri Ananda, Pinkan Indriyani Daulay, and Zulham Zulham. "Sejarah Peradaban Islam Dalam Perkembangan Matematika." *Bhinneka: Jurnal Bintang Pendidikan dan Bahasa* 2, no. 1 (2024): pp.173-179. <https://doi.org/10.59024/bhinneka.v2i1.651>
- [11] Muzakkir, Rose Amnah Abd Rauf, and Hutkemri Zulnaidi. "Enhancing Students' Mathematical Thinking Through The Quran-Science, Technology, Engineering, Arts, And Mathematics (Q-STEAM) Module." *Juku: Jurnal Kurikulum & Pengajaran Asia Pasifik* 12, no. 3 (2024): 1-7. <https://doi.org/10.22452/juku.vol12no3.1>
- [12] Achmad, Widya Karmila Sari, Sidrah Afriani Rachman, Latri Aras, and Muhammad Amran. "Differentiated instruction in reading in elementary schools: a systematic review." *International Journal of Evaluation and Research in Education (IJERE)* 13, no. 3 (2024): 1997-2005. <https://doi.org/10.11591/ijere.v13i3.27134>
- [13] Suleimān, Hassan, Alwi Alatas, and Abdul Bari Awang. "Analisis Hubungan Pengertian Ummī dalam Hadis Nabi (SAW) Dengan Kedudukan Ilmu Duniawi (Ilmu Bukan Agama) dalam Islam/Analysis of the Relationship between the

- Meaning of Ummī in the Hadith of the Prophet (PBUH) and the Position of Worldly Knowledge (Non-Religious Knowledge) in Islam." *UMRAN-Journal of Islamic and Civilizational Studies* 12, no. 1 (2025): 17-30. <https://doi.org/10.11113/umran2025.12n1.716>
- [14] Naýryzbaeva , R.F. "Issues Related to Science in the Quran." Iasaýı ýniversitetiniń habarshysy, (2020). <https://doi.org/10.47526/2020/2664-0686.036>
- [15] Ramli, Aini Aziziah, and Nor Hasniza Ibrahim. "Q-STEM Module Promotes Al-Quran Appreciation in Teaching STEM." In *2017 7th World Engineering Education Forum (WEEF)*, pp. 623-627. IEEE, 2017. <https://doi.org/10.1109/WEEF.2017.8466968>
- [16] Roy, La, Lekë Pepkolaj, and Rully Charitas Indra Prahmana. "Integrating Qur'an and Integer Learning in Developing Electronic Students' Worksheet through Problem-Based Learning." *AlphaMath: Journal of Mathematics Education* (2024): 157-176. <https://doi.org/10.30595/alphamath.v10i2.24421>
- [17] Siron, Yubaedi. "Integrating Islamic Values into STEM Education: Perspectives From In-Service and Pre-Service Early Childhood Educators." (2024). <https://doi.org/10.21043/thufula.v12i2.28796>
- [18] Ramli, Aini Aziziah, and Nor Hasniza Ibrahim. "Q-STEM Module Promotes Al-Quran Appreciation in Teaching STEM." In *2017 7th World Engineering Education Forum (WEEF)*, pp. 623-627. IEEE, 2017. <https://doi.org/10.1109/WEEF.2017.8466968>
- [19] Siregar, Hendra Irwandi, Silvia Anggraini Hasibuan, Kholidah Hannum, and Nur Choiro Siregar Hasibuan. "Integration Of Al-Quran Values In Stem Learning To Improve Student Achievement In Science Competitions Madrasah At Mas Darul Mursyid Medan." *KOMUNIKA: Journal Of Communication Science And Islamic Dakwah Yçpeðumenü: LPPM Universitas Ibn Khaldun Bogor* 8, no. 2 (2024): 35-44. <https://doi.org/10.32832/komunika.v8i2.17966>
- [20] Al-Salama, Arwa, Ashwaq Al-Saadi, Tamador Al-Youssef, Zainab Marir, and Hadeel Dawoud. "The Effect of Using Technological Innovations on the Achievement of Seventh-Grade Female Students in the Subject of Mathematics." *International Journal for Scientific Research* 3, no. 6 (2024): 86-116. <https://doi.org/10.59992/IJSR.2024.v3n6p4>
- [21] Bathla, Arushi, Ginni Chawla, and Ashish Gupta. "Benchmarking design-thinking as a tool for education: a systematic review and future research agenda." *Benchmarking: An International Journal* 32, no. 3 (2025): 965-991. <https://doi.org/10.1108/BIJ-09-2023-0603>
- [22] Yusoff, Ahmad Shidki Mat, Kamalambal Durairaj, Rosmawati Mohamed, Fan Siong Peng, Norhasliza Abdullah, Hazram Ismail, Salmiah Md Salleh, and Zuraidi Wahid. "Communication in mathematics among school children: A systematic review." *Journal of Advanced Research in Applied Sciences and Engineering Technology* 28, no. 2 (2022): 275-290. <https://doi.org/10.37934/araset.28.2.275290>
- [23] Ghazali, Munirah, Rosmawati Mohamed, and Zainun Mustafa. "A Systematic Review on the Definition of Children's Number Sense in the Primary School Years." *Eurasia Journal of Mathematics, Science and Technology Education* 17, no. 6 (2021). <https://doi.org/10.29333/ejmste/10871>
- [24] Mohamed, Rosmawati, Munirah Ghazali, and Mohd Ali Samsudin. "A systematic review on mathematical language learning using PRISMA in Scopus database." *Eurasia Journal of Mathematics, Science and Technology Education* 16, no. 8 (2020): em1868. <https://doi.org/10.29333/ejmste/8300>
- [25] Mohamed, Rosmawati, Munirah Ghazali, and Mohd Ali Samsudin. "A Systematic Review on Teaching Fraction for Understanding through Representation on Web of Science Database Using PRISMA." *LUMAT: International Journal on Math, Science and Technology Education* 9, no. 1 (2021): 100-125. <https://doi.org/10.31129/LUMAT.9.1.1449>
- [26] Mohamed, Rosmawati. "A bibliometric analysis on fractions as part-whole and fractions as measures in primary education." In *AIP Conference Proceedings*, vol. 3016, no. 1, p. 040001. AIP Publishing LLC, 2024. <https://doi.org/10.1063/5.0192695>
- [27] Choirudin, Choirudin, Agus Setiawan, M. Saidun Anwar, Eka Riyana, M. Sayyidul Abrori, and Wahyudi Wahyudi. "Development Of Qur'an And Hadith-Based Mathematics Module For Students' mathematical Understanding And Religious Character." *Jurnal Tatsqif* 19, no. 2 (2021): 114-132. <https://doi.org/10.20414/jtq.v19i2.4086>
- [28] Alghar, Muhammad Zia, Aam Choirotul Cholidiyah, and Dwi Setiawati Radjak. "Integrative mathematics: Mathematical concepts in hadiths with the Theme of Uqiyah." *West Science Islamic Studies* 1, no. 1 (2023): 93-101. <https://doi.org/10.58812/wsiss.v1i01.285>
- [29] Radjak, Dwi Setiawati, Muhammad Zia Alghar, and Aam Choirotul Cholidiyah. "Exploration of the Concept of Relation and Function in the Quran with the Theme of QS Ar-Rahman." *West Science Islamic Studies* 1, no. 1 (2023): 120-131. <https://doi.org/10.58812/wsiss.v1i01.309>
- [30] Kenedi, Ary Kiswanto, Yullys Helsa, and Sherlyane Hendri. "Pengembangan Bahan Ajar Matematika Berbasis Alquran Di Sekolah Dasar." *Jurnal Inovasi Pendidikan Dan Pembelajaran Sekolah Dasar* 2, no. 1 (2018): 29-36. <https://doi.org/10.24036/jippsd.v2i1.100034>

- [31] Surur, Agus Miftakus, and Sri Pujilestari. "The Relevance of Odd-Even Verses in The Qur'an with Mathematics Education." *Jurnal At-Tibyan: Jurnal Ilmu Alqur'an dan Tafsir* 6, no. 2 (2021): 301-322. <https://doi.org/10.32505/at-tibyan.v6i2.3284>
- [32] Maritza, Erra Khanza, and Berliana Widi Scarvanovi. "The Effect of "Si Andi" Flashcard Games on Improving Personal Safety Skills." *JPUD-Jurnal Pendidikan Usia Dini* 18, no. 1 (2024): 112-128. <https://doi.org/10.21009/JPUD.181.08>
- [33] Jaenudin, M., and Ali Hamdan. "Penilaian Dampak Zakat, Infak, Sedekah Terhadap Kemiskinan Spiritual Dan Material Penerima Manfaat Laznas LMI: Pendekatan CIBEST." *Jurnal Ekonomi Syariah Teori Dan Terapan* 9, no. 3 (2022). <https://doi.org/10.20473/vol9iss20223pp362-378>
- [34] Subhi, Syafii Muhamad, Indah Nursupriana, and Nurma Izzati. "Pengaruh Pembelajaran Matematika Al-Qur'an dengan Model Pembelajaran Kooperatif Tipe Think Pair Share Terhadap Kemampuan Komunikasi Matematis Siswa." *Jurnal Riset Pendidikan Matematika Jakarta* 2, no. 2 (2020): 1-12. <https://doi.org/10.21009/jrpmj.v2i2.16207>
- [35] Aji, Rizqon Halal Syah. "Matematika Dalam Rasionalitas Al-Qur'an: Bukti Perennialisme Atas Nalar Saintifik." *SALAM: Jurnal Sosial & Budaya Syar-I* 7, no. 9 (2020): 787-800. <https://doi.org/10.15408/sjsbs.v7i9.16592>
- [36] Lateh, Afifi. "A model for integrating Islamic values and local contexts into mathematics instruction for secondary students." *ATTARBIYAH: Journal of Islamic Culture and Education* 7, no. 2 (2022): 107-124. <https://doi.org/10.18326/attarbiyah.v7i2.107-124>
- [37] Supiarmo, Mg, Primajati Gilang, Kurniawan Eka, And Oktavhari Dita. "Learning Mathematics Of Hadith Integration For Build Character Students In Elementary School." *Socio-Economic And Humanistic Aspects For Township And Industry Yypeðumenu: Tinta Emas Publisher* 2, no. 4 (2024): 597-603. <https://doi.org/10.59535/sehati.v2i4.358>
- [38] Kusno, Kusno, Eka Setyaningsih, and Anggun Badu Kusuma. "Ethnomathematics of Baitu Usyaqil Quran (BUQ) Mosque and Pesantren Darussalam, Banyumas Regency." *AlphaMath: Journal of Mathematics Education* 8, no. 2 (2022): 199-208. <https://doi.org/10.30595/alphamath.v8i2.15211>
- [39] Surur, Agus Miftakus, Magfirah Perkasa, and Sugiarni Sugiarni. "Integration of mathematics learning strategies with the cultivation of Islamic teaching values in the context of applicable jurisprudence." *Journal of Islamic Education* 6, no. 1 (2023): 45-60. <https://doi.org/10.18860/jie.v11i1.24354>
- [40] Rahmah, Hania, Turmudi Turmudi, and Muhammad Tareq Ghifari. "Research and development of mathematics teaching material integrated with islamic values: A systematic literature review." *Prisma Sains: Jurnal Pengkajian Ilmu Dan Pembelajaran Matematika Dan IPA IKIP Mataram* 12, no. 2 (2024): 306-315. <https://doi.org/10.33394/j-ps.v12i2.9519>
- [41] Faradila, Fahita, and Mahfudz Reza Fahlevi. "Penanaman Nilai-Nilai Islam Dalam Perkuliahan Matematika Bisnis Pada Prodi Akuntansi Syariah Iain Syaikh Abdurrahman Siddik Bangka Belitung." *Budgeting: Jurnal Akuntansi Syariah* 3, no. 1 (2022): 26-47. <https://doi.org/10.32923/bdg.v3i1.2736>
- [42] Vygotsky, Lev. *Mind in society: The development of higher psychological processes*. Cambridge, Massachusetts: Harvard University Press, 1978.
- [43] Siregar, Mhd Eko Nanda. "Problem solving dalam al-quran analisis tafsir al-azhar." PhD diss., Universitas Islam Negeri Sumatera Utara Medan, 2017.
- [44] Hasibuan, Vira Amelia Pratiwi, Neni Mariana, and Rooselyna Ekawati. "Literature Study: Elementary School Mathematics Learning with Islamic Integration." *International Journal of Emerging Research and Review* 2, no. 2 (2024): 000071-000071. <https://doi.org/10.56707/ijer.v2i2.71>
- [45] Nafi'an, Muhammad Ilman, Bagus Ahmadi, Muhammad Ngizzul Muttaqin, and Dian Septi Nur Afifah. "Internalization of Islamic Moderation Value in Mathematics Problem Solving." *ATHENA: Journal of Social, Culture and Society* 1, no. 3 (2023): 138-143. <https://doi.org/10.58905/athena.v1i3.139>
- [46] Asril, Asril. "MEMORIAL ABBASIYAH RA PANEN ILMU PENGETAHUA." *Khazanah: Jurnal Sejarah dan Kebudayaan Islam* (2017): 15-34. <https://doi.org/10.15548/khazanah.v0i0.52>
- [47] Park, Je-nam, Ho-young Nam. "The Tradition and Contemporary Role of Islamic Algebra as Seen in the Hall of Wisdom and the Distribution of the Legacy of the Qur'an." *Journal of Middle East Studies* 21, no. 2 (2022). <https://doi.org/10.52891/JMEA.2022.21.1.287>
- [48] Ermawati, Yulia, Lahmi, Ahmad, and Rahmi. "Analysis Of Islamic Education In The Era Of Khulafa Ar-Rashidin And Abbasid Dynasty." *Jurnal Islamika* 5, no. 1 (2022): 9-23. <https://doi.org/10.37859/jsi.v5i1.3245>
- [49] Muniri, Muniri. "Kontribusi Matematika dalam Konteks Fikih." *Ta'allum: Jurnal Pendidikan Islam* 4, no. 2 (2016): 193-214. <https://doi.org/10.21274/taalum.2016.4.2.193-214>
- [50] Annisa, Hurriyatul, Ulum, Moh Miftakhul, Muhammad Hasan Asnawi, and Nur Laili Arofah. "Pembelajaran Matematika Integrasi (Materi Bilangan Pecahan dan Pengeluaran Zakat Mal Menurut Islam)." *MAXIMA: Jurnal Pendidikan Matematika* 1, no. 2 (2024): 39-50. <https://doi.org/10.30739/maxima.v1i2.2569>

- [51] Kusmaryono, Imam, Mohamad Aminudin, and Mochamad Abdul Basir. "Analysis of Islamic Value-Integrated Mathematics Learning: Efforts to Form Prospective Mathematics Teacher with Religious Character." *Mosharafa: Jurnal Pendidikan Matematika* 13, no. 2 (2024): 431-448. <https://doi.org/10.31980/mosharafa.v13i2.2015>
- [52] Ramdhani, Sendi, Didi Suryadi, and Sufyani Prabawanto. "Development of Didactic Design for Learning Mathematics in Pesantren: Integration of Mathematics and Fiqh Learning." *Mosharafa: Jurnal Pendidikan Matematika* 12, no. 3 (2023): 655-666. <https://doi.org/10.31980/mosharafa.v12i3.833>