INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN PROGRESSIVE EDUCATION & DEVELOPMENT

OPEN ACCESS JOURNAL

Vol 15, Issue 2, (2026) E-ISSN: 2226-6348

The Impact of Technology on Improving Students' Understanding of Islamic Education: A Systematic Literature Review

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DOI Link: http://dx.doi.org/10.6007/IJARPED/v15-i2/28030

Published Online: 17 April 2026

Abstract

The integration of technology in Islamic Education has increased significantly in line with the demands of 21st-century learning, which emphasizes interactive and student-centred approaches. However, students' understanding remains a critical issue, particularly when technology is not effectively integrated into the teaching and learning process. Therefore, this study aims to systematically examine the use of technology in Islamic Education and its impact on students' understanding. This study adopts a Systematic Literature Review (SLR) approach guided by the PRISMA framework, which involves four main phases: identification, screening, eligibility, and inclusion. A total of 663 articles were identified from the Scopus and Web of Science databases, and after a systematic screening and evaluation process, 20 articles were selected for analysis. The findings reveal three main themes, namely the types of technology used in Islamic Education, the impact of technology on students' understanding, and the factors influencing the effectiveness of its use. Overall, the findings indicate that technology enhances students' conceptual understanding, engagement, and academic performance when implemented effectively. The novelty of this study lies in its comprehensive synthesis of technology use in Islamic Education by integrating multiple dimensions of analysis within a single review. This study contributes to the field of social sciences by providing a structured understanding of current research trends and offering practical insights for educators and policymakers in designing more effective technology-based teaching strategies aligned with Islamic values.

Keywords: Islamic Education, Student Understanding, Digital Learning, Impact Of Technology, Systematic Literature Review

Introduction

The rapid advancement of digital technology has significantly transformed the global education landscape, including the field of Islamic Education. In line with the demands of 21st-century learning, educational practices are increasingly oriented towards student-centred approaches that emphasise interaction, flexibility, and meaningful engagement. The integration of emerging technologies such as artificial intelligence (AI), interactive multimedia, and immersive technologies has opened new opportunities to enhance the

effectiveness of teaching and learning processes. Previous studies indicate that technologies such as augmented reality (AR) and virtual reality (VR) can improve students' achievement by providing more contextual and experiential learning environments (Choiri, Setiawan & Shofiyuddin 2025). In addition, the application of artificial intelligence enables adaptive learning by tailoring instructional content to suit individual students' needs (Faizin et al. 2025). This development highlights that technology functions not merely as a supporting tool, but as a crucial medium in facilitating effective learning.

In the context of learning outcomes, the integration of digital technology has also been associated with improvements in student engagement and understanding. The use of AI-supported learning materials, such as intelligent video-based content, has been found to enhance academic performance while strengthening students' comprehension of subject matter (Adiyono et al. 2025). Furthermore, AI technologies contribute to the development of students' creative thinking by offering innovative and flexible learning environments (Hamid & Salman 2025). The capability of technology to deliver content in visual, interactive, and adaptive forms makes it particularly valuable in Islamic Education, where many concepts require deeper and more structured explanation.

Despite these advancements, the implementation of technology in Islamic Education within the Malaysian context remains uneven. Several challenges continue to hinder its effective integration, particularly in terms of teachers' digital competence and readiness. Existing studies reveal that many Islamic Education teachers still operate at a basic level of digital literacy, primarily utilising simple tools such as presentation slides and online platforms (Reksiana et al. 2024). Moreover, the ability of teachers to integrate technology pedagogically remains a critical factor influencing the effectiveness of its use in the classroom (Murhayati et al. 2025). This suggests that the full potential of technology in enhancing students' understanding has yet to be optimally realised.

From a research perspective, previous studies also demonstrate several limitations that warrant further investigation. A significant number of studies tend to focus on issues related to technology adoption, teacher readiness, and implementation challenges, rather than directly examining the impact of technology on students' understanding in Islamic Education. For instance, research on the integration of the Technological Pedagogical Content Knowledge (TPACK) model primarily emphasises teachers' readiness and the challenges of technology use (Sri Murhayati et al. 2025). Similarly, studies on digital transformation in Islamic educational institutions often concentrate on management and organisational aspects, with limited attention given to student learning outcomes (Tantowi, Gunawan & Ibrahim 2025).

These limitations indicate a clear gap in the existing literature, particularly in understanding how various forms of technology influence students' comprehension in Islamic Education. Furthermore, gaps can also be identified from empirical, methodological, and theoretical perspectives. Empirically, many studies are conducted within limited context or small samples, which restricts the generalisability of findings (Sain et al. 2025). Methodologically, the reliance on single research approaches reduces the depth and comprehensiveness of analysis (Shafiq, Saleem & Ijaz 2026). From a theoretical standpoint, there remains a lack of a well-established framework that explains the relationship between

technology integration and students' understanding, particularly in incorporating Islamic values and ethical considerations (Azwar Rahmat 2025).

Therefore, this study adopts a Systematic Literature Review (SLR) approach to synthesis existing research on the use of technology in Islamic Education. The novelty of this study lies in its comprehensive integration of three key dimensions, namely the types of technology employed, their impact on students' understanding, and the factors influencing their effectiveness within the context of Islamic Education. Unlike previous studies that tend to focus on isolated aspects such as technology adoption or teacher readiness, this study provides a more holistic and structured analysis of the relationship between technology and students' understanding.

This study contributes to the field of social sciences by enriching the existing body of knowledge on educational technology and Islamic Education through a systematic synthesis of current research trends. In addition, it offers practical implications for educators and policymakers in designing more effective and contextually relevant technology-based teaching strategies that are aligned with both contemporary educational needs and Islamic values. Accordingly, the need to conduct a Systematic Literature Review (SLR) is significant to synthesize the findings of the study systematically and identify existing research gaps. In this regard, this study was conducted to examine the impact of technology on enhancing students' understanding in Islamic Education Students through a systematic literature review approach.

Specifically, this study aims to:
1. To identify the types of technology used in the teaching and learning of Islamic Education based on past studies
2. To analyze the impact of technology use on improving student understanding in Islamic Education
3. To identify factors that influence the effectiveness of technology use in improving student understanding in Islamic Education.

Research Question

In systematic literature review (SLR), the development of research questions is an important basic step in ensuring that the entire process of collecting, selecting and analyzing literature is carried out in an organized and focused manner. A clear research question allows researchers to identify the scope of the study more accurately and guide the process of synthesizing findings in a systematic and comprehensive manner (Kitchenham & Charters, 2007). In this study, the PiCo mnemonic approach is used as a framework in developing research questions, which include Population, Interest and Context, which are suitable for use in educational and qualitative research (Schlosser & Wendt, 2007).

In the context of this study, population refers to students in the field of Islamic Education, interest refers to the use of technology in teaching and learning, while context refers to efforts to improve students' understanding of Islamic Education. In this regard, the research questions that were developed are as follows:
1. What types of technology are used in the teaching and learning of Islamic Education based on past studies?
2. How does the use of technology affect students' understand of Islamic Education?

3. What factors influence the effectiveness of the use of technology in improving students' understanding of Islamic Education?

Significance of Study

This study has important significance in contributing to a more comprehensive understanding of the role of technology in improving student understanding in Islamic Education. Through the Systematic Literature Review (SLR) approach, this study can systematically collect and synthesize findings from various past studies, thus providing a clearer picture of the types of technology used, their effects on student understanding, and current research trends in this field. In addition, this study can also assist teachers and practitioners of Islamic education in planning more effective teaching strategies by utilizing technology optimally. From an academic perspective, this study contributes to filling the research gap by providing a comprehensive analysis of the relationship between technology and student understanding, while from a practical perspective, it can be used as a reference for stakeholders such as educators and policymakers in strengthening the implementation of technology in Islamic Education to be more relevant to the needs of 21st century education.

Literature Review

The development of technology in Islamic Education has shown significant changes in teaching and learning approaches, especially in improving students' understanding of learning content. The use of technology is seen to be able to support the delivery of knowledge more systematically and effectively through access to a variety of diverse digital resources. Studies show that the use of information technology in Islamic Education is able to improve student achievement and help them understand the content of the lesson more clearly (Hafizah & Januardi, 2025), in addition to digital transformation in education also strengthens learning experiences that are more dynamic and relevant to current needs (Juhairiah, Kinasih & Yuwono, 2024). This proves that technology plays an important role in supporting the improvement of student understanding in Islamic Education. In addition, the use of advanced technology such as artificial intelligence also has a significant impact on the student learning process. This technology allows the delivery of learning content to be tailored to individual ability levels, thus helping students understand concepts more deeply. Studies have found that the use of AI in Islamic education can increase the effectiveness of learning through an adaptive and responsive approach (Megawati, Alfarizi & Wahyuni, 2025), while the level of student acceptance of technology also influences the extent to which the technology helps improve their understanding (Faizin et al., 2025). Therefore, the use of technology that is appropriate for students' needs is seen to be able to improve understanding in Islamic Education more effectively.

In addition, the use of multimedia-based technology and interactive learning experiences also has a positive impact on student understanding. Technologies such as augmented reality and virtual reality allow students to experience learning in a more visual and contextual way, thus facilitating understanding of abstract concepts. A study by Choiri, Setiawan & Shofiyuddin (2025) shows that the use of AR and VR in zakat learning can improve student understanding through a deeper and more meaningful learning experience. In addition, the use of multimedia such as interactive learning software has also been found to help students understand the content more clearly through attractive visual presentation (Melinda, Faizi & Monfared, 2024). This approach shows that technology can support more

effective learning in Islamic Education. In addition, a study by Nur Azaliah Mar (2024) also emphasized that the use of technology in Islamic Education has the potential to pose risks such as the spread of unverified information and the negative influence of social media if not properly controlled. This finding shows that the use of technology needs to be accompanied by clear guidelines to be in line with Islamic values and principles.

However, the use of technology in Islamic Education is not free from various challenges that can affect its effectiveness on student understanding. These include constraints in terms of technological skills among teachers and the lack of infrastructure facilities that support the implementation of technology. The study found that the level of digital literacy of teachers still needs to be improved to ensure that the use of technology can be implemented more effectively (Reksiana et al., 2024). In addition, challenges related to the suitability of the use of technology with Islamic values and principles also need to be addressed so that the learning content remains in line with religious teachings (Abdelgelil, Tajir & Bidin, 2025). Therefore, a balanced approach is needed to ensure that technology can be utilized optimally.

Overall, the study findings show that technology has great potential in improving students' understanding of Islamic Education, but its effectiveness depends on systematic implementation and continuous support. Adiyono et al (2025) study also showed that the use of technology such as AI-based videos can improve students' achievement and their level of involvement in learning. In addition, technology is also able to stimulate students' creative thinking, thus helping them understand the learning content more deeply (Hamid & Salman, 2025). Therefore, the planned use of technology is seen to have a positive impact on students' understanding of Islamic Education.

Metodology

This study uses a Systematic Literature Review (SLR) approach guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework to ensure that the process of selecting, filtering and analyzing literature is carried out systematically, transparently and consistently. The PRISMA framework was chosen because of its ability to increase the consistency and reliability of study findings through a structured procedure. In the context of this study, this approach is used to comprehensively examine the use of technology in Islamic Education and its impact on improving student understanding. In addition, this approach also helps ensure that the selected articles are truly relevant and of good quality to support valid study findings and can be generalized in current educational practices.

For the purpose of data collection, two main databases, namely Scopus and Web of Science (WoS), were used because of their reputation as academic reference sources with extensive and high-quality journal coverage. The article search process was carried out using a combination of keywords related to the focus of the study such as “technology in Islamic education”, “digital learning”, “impact of technology”, “effect of technology”, “students’ understanding” and “Islamic education”. The search period was set between 2021 and 2026 to ensure that the articles obtained were up-to-date and reflected current developments in the field of technology-based education.

In accordance with the PRISMA guidelines, this study was carried out through four main stages, namely identification, screening, eligibility and inclusion. At the identification stage, a total of 663 articles were identified through searches in both databases, consisting of 489 articles from Scopus and 174 articles from Web of Science (WoS). Next, the initial screening process was carried out by removing duplicate articles and unrelated articles based on titles and abstracts. At the eligibility stage, only articles that met the inclusion criteria, which involved the use of technology in Islamic Education and assessed its impact on student understanding, were selected for analysis. Articles that were in the form of general reviews, editorials or did not have empirical data were excluded from this study.

Finally, data from the selected articles were analyzed using the SALSA (Search, Appraisal, Synthesis, and Analysis) approach as proposed by Booth et al. (2016) to enable the analysis process to be carried out systematically and comprehensively. This approach involves a literature search process, assessment of study quality, synthesis of findings and content analysis based on the focus of the study. The selected articles were analysed and categorised according to several main themes such as the types of technology used in Islamic Education, the impact of technology on student understanding and factors that influence the effectiveness of technology. This approach allows the study findings to be explained in a more systematic and comprehensive manner, thus providing a clear picture of the role of technology in improving student understanding in Islamic Education.

Identification

The identification phase is the initial stage in the systematic literature review process which aims to identify articles that are potentially relevant to the focus of the study. At this stage, several key keywords and related terms are identified to assist the literature search process in a more systematic and directed manner. The selection of keywords is made based on the main concept of the study and is supported by references from previous studies and relevant academic sources. Among the keywords used in the search process are Islamic Studies, technology in Islamic education, digital learning, impact of technology, effect of technology and students' understanding in Islamic education. These keywords are combined to form search strings that are adapted to the database used. The literature search process is carried out using two main databases, namely Scopus and Web of Science (WoS) because both provide extensive coverage of academic articles in the field of education and educational technology. As a result of this initial search process, a total of 663 articles has been identified as potentially relevant to the focus of the study, which is related to the impact of technology on improving students' understanding of Islamic Education.

Table 1
Article Search Keywords

Scopus (n = 489)	TITLE-ABS-KEY (("technology" OR "digital learning" OR "educational technology" OR "e-learning" OR "artificial intelligence" OR "multimedia learning") AND ("Islamic education" OR "Islamic studies" OR "religious education") AND ("students' understanding" OR "learning outcomes" OR "student comprehension" OR "academic achievement"))
WoS (n = 174)	TOPIC: (("technology" OR "digital learning" OR "educational technology" OR "e-learning" OR "artificial intelligence" OR "multimedia learning") AND ("Islamic education" OR "Islamic studies" OR "religious education") AND ("students' understanding" OR "learning outcomes" OR "student comprehension" OR "academic achievement"))

Based on the selected keywords, the article search process was carried out in three main databases, namely Scopus and Web of Science. All of these databases were selected based on several advantages they have. Scopus and Web of Science have good search strength in this SLR. After the keywords were selected, the database and search technique found a total of 489 articles from Scopus and 174 articles from Web of Science. Subsequently, 663 articles were successfully obtained, and all of these articles will go through the second stage in the systematic search strategy, namely screening.

Screening

The screening stage was carried out to ensure that the selected articles were truly in line with the study objectives which focused on the use of technology in Islamic Education and its impact on student understanding. At this stage, the filtering process was carried out systematically using the specified inclusion and exclusion criteria. Only articles published between 2021 and 2026 and written in Malay and English were selected for analysis. In addition, the selected articles must be directly related to the field of Islamic Education, involve the use of technology in teaching and learning and assess the impact on student understanding. On the other hand, articles that were outside the specified year period were written in another language, or were not related to the focus of the study were excluded from the analysis. Studies that did not go through the peer review process, were not obtained from a recognized academic database, or did not have access to the full text were also removed to ensure that the quality of the sources used was guaranteed.

In addition, the inclusion criteria also emphasized the focus of the study findings, where only articles that discussed the use of technology such as artificial intelligence, multimedia, augmented reality, virtual reality or digital learning platforms in the context of Islamic Education were selected for analysis. Articles that did not focus on the impact of technology use on student understanding or were not related to the teaching of Islamic Education were excluded to ensure consistency with the scope of the study. Before the screening process was implemented, a total of 143 duplicate articles were identified and removed from the initial number. After the removal, a total of 520 articles were screened based on title and abstract. Of these, 400 articles were excluded because they did not meet the specified criteria, leaving a remaining 120 articles eligible to proceed to the next stage of eligibility assessment in this study.

Table 2
Inclusion Criteria Used

Kriteria	Incluison	Exclusion
Year of Publication	2021 - 2026	Year of issue before 2021
Publication Type	Journal articles and books related to the research topic	Publications that are not related to the research topic
Language Type	Malay and English Language	Besides Malay and English
Type of Finding	Empirical, conceptual/theoretical or literature study form	The study is not empirical and conceptual/theoretical, for example, it is just an editorial or brief review.
Focus on Findings	Studies involving the use of technology in Islamic Education and its impact on student understanding	Studies that are not related to Islamic Education or do not involve the use of technology in teaching and learning

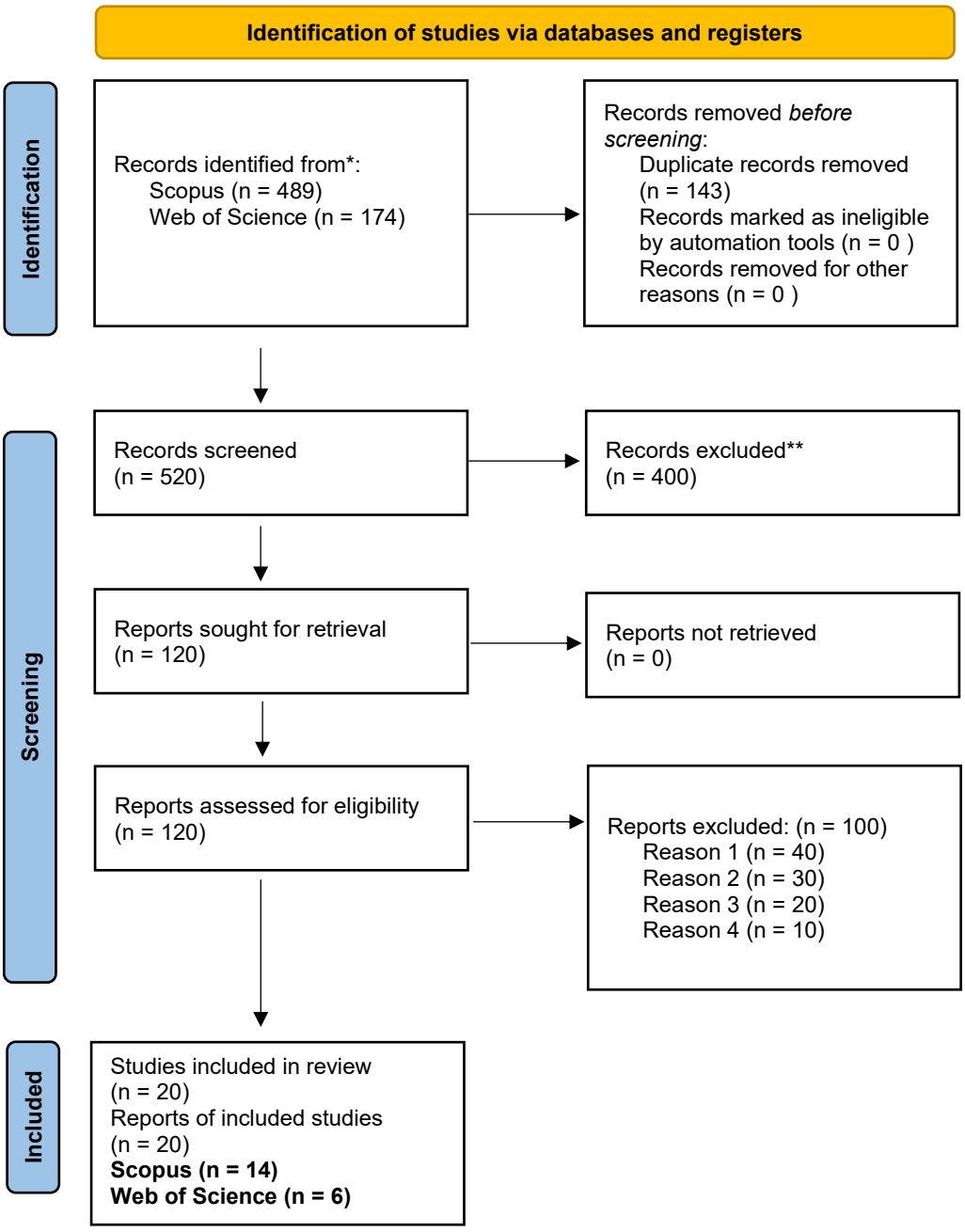
Eligibility

The eligibility stage was implemented to more thoroughly assess the suitability of articles that had passed the initial screening process. At this stage, a total of 120 articles that were identified as potentially relevant were analyzed in depth through full-text reading to ensure that each study truly met the set criteria and had a direct link to the focus of the study, namely the use of technology in Islamic Education and its impact on student understanding. This process also involved an assessment of the content of the study, the methodological approach used, the type of technology applied and the suitability of the study findings with the research objectives. In the evaluation process, several articles were excluded because they did not discuss the use of technology specifically in the context of Islamic Education or only focused on educational technology in general without relating it to student understanding.

In addition, articles were also excluded based on several criteria that had been set, such as not being directly related to Islamic Education, not involving the use of technology in teaching and learning, not focusing on aspects of student understanding and having a methodology that was unclear or did not support the study objectives. The setting of these criteria was intended to ensure that only truly relevant and high-quality articles were selected for analysis in this study. As a result of this evaluation process, 100 articles were excluded because they did not meet the specified study criteria. Therefore, the remaining 20 articles were selected as the final sample for analysis in this systematic literature review, consisting of 14 articles from the Scopus database and 6 articles from the Web of Science (WoS) database. These articles were then used in the analysis process to identify key findings related to the impact of technology on students' understanding of Islamic Education.

Table 3

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases and registers only



The article selection process in this study is summarized through the PRISMA diagram to demonstrate transparency and systematicity in the selection of literature sources. At the identification stage, a total of 663 articles were identified from two main databases, namely Scopus (n = 489) and Web of Science (n = 174). After the process of removing duplicate articles, a total of 143 records were removed, leaving the remaining 520 articles to go through the screening stage. Next, at the screening stage, articles were filtered based on title and abstract and 400 articles were discarded because they did not meet the study criteria. A total of 120 articles were then identified to obtain full text and all of them were successfully obtained for assessment at the eligibility stage. In this stage, a total of 100 articles were removed because they did not meet the specified study focus. Finally, a total of 20 articles were selected for analysis in this systematic literature review, consisting of 14 articles from the Scopus database and 6 articles from the Web of Science database.

Quality Assessment

The articles selected in this study have gone through a quality assessment process to ensure that each study used meets the established academic standards and reduces the risk of bias in the literature analysis. This process is important to assess the level of reliability of the article in addition to ensuring that the studies analyzed have a clear methodological basis and are relevant to the research focus, namely the use of technology in Islamic Education and its impact on student understanding. In this study, quality assessment was carried out on 20 articles that had passed the qualification stage by considering several key aspects such as the clarity of the study objectives, the suitability of the methodology, the accuracy of data analysis and the importance of the findings to improving student understanding in Islamic Education.

For this purpose, two assessors with knowledge in the field of Islamic Education and educational technology were involved in the assessment process. The quality assessment was carried out using the Mixed Methods Appraisal Tool (MMAT) proposed by Hong et al. (2018) because the studies analyzed involved various research designs such as quantitative, qualitative and mixed methods. The use of this instrument allows each article to be systematically assessed based on the suitability of the research approach used and the strength of the methodology reported.

The evaluation process began by examining two basic criteria, namely the clarity of the research question or objective and the ability of the research findings to answer the questions posed. Articles that met both criteria were then evaluated based on specific criteria that were appropriate for their respective study designs. Each article was evaluated using three categories, namely Yes, No and Can't Tell, to ensure that the evaluation was conducted consistently and thoroughly. To ensure the accuracy and objectivity of the evaluation, both reviewers needed to reach a mutual agreement on each decision made. If there was a difference of opinion, further discussion was conducted until an agreement was reached. The results of this process showed that all the selected articles met the basic criteria set and had sufficient methodological quality to be analyzed in this study. Therefore, all 20 articles were used in the subsequent analysis to identify the main findings related to the impact of technology on students' understanding of Islamic Education.

Basic criteria/study	Abdelgelil, Tahir & Bidin (2025)	Reksiana et al. (2025)	Sain et al. (2025)	Nur Azaliah Mar (2024)	Murhayati et al. (2025)	Ubaedullah, Rokimin & Suryono (2025)	Hafizah & Januardi (2025)	Azwar Rahmat (2025)
Is the stated research question clear?	Y	Y	Y	Y	Y	Y	Y	Y
Are the data obtained able to answer the stated research questions?	Y	Y	Y	Y	Y	Y	Y	Y
Qualitative Criteria								
Is the qualitative approach used appropriate to answer the research questions?	Y	Y	Y	Y	Y	Y	Y	Y
Is the qualitative data collection methodology used sufficient to answer the research questions?	Y	Y	Y	C	Y	Y	Y	Y
Are the research results obtained from the data sufficient?	Y	Y	Y	Y	Y	C	C	C
Can the interpretation of the study results be proven with the data?	Y	Y	Y	C	Y	Y	Y	Y
Is there continuity between the sources, collection, analysis and interpretation of qualitative data?	Y	Y	Y	Y	Y	Y	Y	Y
Results	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
Basic criteria/study	Megawati, Alfarizi & Wahyuni (2025)	Adiyono et al. (2025)	Faizin et al. (2025)	Nurlela, Arifin & Hidayat (2025)	Atabik et al., (2025)	Shafiq, Saleem & Ijaz (2026)	Hamid & Salman (2025)	Melinda, Faizi & Monfared (2024)
Is the stated research	Y	Y	Y	Y	Y	Y	Y	Y

question clear?								
Are the data obtained able to answer the stated research questions?	Y	Y	Y	Y	Y	Y	Y	Y
Quantitative Criteria								
Is the sampling strategy used relevant to answering the research questions?	Y	Y	Y	C	Y	Y	Y	Y
Is the selected sample representative of the population being studied?	C	C	Y	C	Y	Y	Y	Y
Are the measurements used appropriate?	Y	Y	Y	Y	Y	Y	Y	Y
Is the risk of nonresponse bias low?	C	Y	Y	C	C	Y	Y	C
Is the statistical analysis used appropriate to answer the research questions?	Y	Y	Y	Y	Y	Y	Y	Y
Result	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted	Accepted
Basic criteria/study	Juhairiah, Kinasih &Yuwono (2024)	Choiri, Setiawan & Shofiyuddin (2025)	Tantowi, Gunawan & Ibrahim (2025)	Syafri & Budin (2025)				
Is the stated research question clear?	Y	Y	Y	Y				
Are the data obtained able to answer the stated research questions?	Y	Y	Y	Y				
Mixed-methods study								
Is there a reason to use mixed methods to answer	Y	Y	Y	Y				

research questions?								
Can these different research components be combined effectively to answer the research questions?	Y	Y	Y	Y				
Are the combined qualitative and quantitative results interpreted accurately?	Y	Y	Y	Y				
Are differences and inconsistencies between quantitative and qualitative results well addressed?	Y	Y	Y	Y				
Do the different study components comply with the quality criteria for each study design involved?	Y	Y	Y	Y				
Result	Accepted	Accepted	Accepted	Accepted				

Data Extraction and Analysis

The data extraction process in this study was carried out systematically by two researchers to ensure the accuracy and reliability of the information obtained from the articles that had passed the quality assessment stage. The main purpose of this process was to identify information related to the focus of the study, namely the use of technology in Islamic Education and its impact on student understanding. In its implementation, the researcher examined important parts of each article such as the abstract, study findings and discussion. In addition, other parts such as the methodology and introduction were also referred to if they contained relevant information. All identified data were then recorded and arranged in tabular form to facilitate the comparison and analysis process in a more organized and systematic manner.

After the data extraction process was completed, data analysis was carried out using a qualitative synthesis approach. This approach was chosen because the studies analyzed involved various research designs such as quantitative, qualitative and mixed methods studies. In this study, thematic analysis techniques were used to identify patterns, similarities and relationships between study findings obtained from selected articles. Each finding was

carefully analyzed and grouped according to certain categories if there were similarities or relationships between the findings, thus enabling the formation of clearer and more structured themes.

Through the clustering process, several main themes were identified based on the trends of the study findings analyzed. The results of the analysis showed that there were three main themes related to the use of technology in Islamic Education. The first theme related to the type of technology used in the teaching and learning of Islamic Education. The second theme involved the impact of technology use on improving student understanding. Meanwhile, the third theme related to factors that influence the effectiveness of technology use in improving student understanding in the context of Islamic Education.

Each main theme identified was then analyzed in more depth to identify more specific sub-themes. As a result of this process, several sub-themes were formed to describe the study findings in more detail and in line with the study objectives that had been set. To ensure the validity and reliability of the findings, all themes and sub-themes identified were reviewed by experts in the field of Islamic Education and educational technology. The results of the review showed that the themes formed were relevant and had a clear relationship with the focus of the study.

Study	Design	Theme		
		Types of Technology Used in Teaching and Learning Islamic Education	The Impact of Technology Use on Improving Student Understanding	Factors That Influence the Effectiveness of Using Technology in Improving Students' Understanding of Islamic Education
1	QL			/
2	QL	/		
3	QL		/	
4	QL			/
5	QL			/
6	QL	/		
7	QL			/
8	QL	/		
9	QN		/	
10	QN		/	
11	QN			/
12	QN			/
13	QN		/	
14	QN			/
15	QN		/	
16	QN	/		
17	MX			/
18	MX		/	
19	MX		/	
20	MX			/

QN - Quantitative
QL - Qualitative

MX - Mix Methods

Study Results

Background of Study

Before discussing the main findings of this study, the focus is on the background of the articles/references selected for this SLR study. Of the 20 articles selected, five articles were published in 2024, and 14 articles were published in 2025. There was also one article published in 2026, which was also included to provide a more recent perspective to provide a more up-to-date picture regarding the use of technology in improving student understanding in Islamic Education.

Based on the publication, the selected articles were published in journals related to Islamic education and educational technology, including the International Journal of Quranic Research which extensively discusses the use of technology in education, including those discussing the use of artificial intelligence, multimedia, augmented reality and digital learning in the context of Islamic Education. In addition, several articles were also published in the Journal of Islamic Religious Education. The remaining articles were published in journals that emphasize technology-based teaching and learning innovations, such as the Journal of Vocational Education and Educational Technology Innovations. The diversity of these publication sources shows that studies related to the use of technology in Islamic Education are not only focused on specific fields but also receive attention in the broader field of education.

Overall, the diversity of years of publication and journals illustrates that studies related to the use of technology in Islamic Education are growing and receiving widespread attention among researchers. This shows that technology is seen as an important approach in improving student understanding and strengthening the effectiveness of teaching and learning Islamic Education. The publication of articles in recognized journals also indicates the importance and relevance of this study in contributing to more innovative educational practices and in line with the development of 21st century education.

Findings

Types of Technology Used in Teaching and Learning Islamic Education

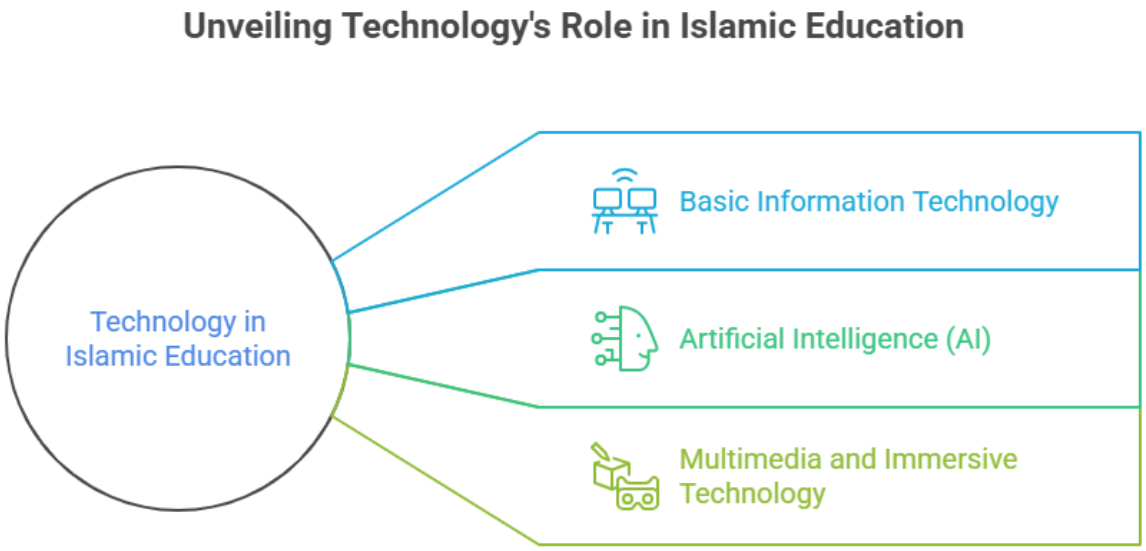
The use of technology in Islamic Education shows the diversity of approaches used by researchers to improve student understanding. Among the technologies identified include the use of basic information technology, digital learning platforms and interactive applications that support the teaching and learning process more systematically. Hafizah & Januardi's (2025) study shows that the use of information technology in Islamic Education can help students understand the learning content more clearly through a more planned and easily accessible presentation. In addition, the integration of technology in the Islamic Education curriculum is also seen to be able to strengthen the learning experience using various relevant digital resources (Ubaedullah, Rokimin & Suryono, 2025).

In addition to basic technology, studies also show an increase in the use of advanced technology such as artificial intelligence (AI) in Islamic Education. This technology is used to support more adaptive and responsive learning to student needs. Nur Azaliah Mar's (2024) study shows that the use of AI in education is found to be able to help students understand

the content more deeply by adapting the learning content according to individual ability levels. In addition, student acceptance of the use of AI technology also plays an important role in determining the effectiveness of its use in learning (Faizin et al., 2025). This shows that AI technology is increasingly gaining a place in Islamic Education as an innovative learning medium.

In addition, the use of multimedia technology and immersive technology such as augmented reality (AR) and virtual reality (VR) has also been identified in previous studies. This technology allows students to experience learning in a more visual and contextual way, thus helping to improve understanding of difficult-to-understand concepts. Studies show that the use of AR and VR in zakat learning can improve student understanding through a deeper learning experience (Choiri, Setiawan & Shofiyuddin, 2025). In addition, the use of multimedia such as interactive learning software also helps students understand the learning content through more interesting and easy-to-understand visual presentation (Melinda, Feizi & Monfared, 2024).

Overall, the study findings show that there are various types of technology used in Islamic Education, including basic technology, artificial intelligence, and multimedia and immersive technology. This diversity shows that technology plays an important role in supporting a more effective and interactive learning process. In addition, the use of this diverse technology also provides opportunities for students to understand the content of Islamic Education more deeply through an approach that is appropriate to their learning needs. Therefore, selecting the appropriate type of technology is important to ensure the effectiveness of its use in improving students' understanding of Islamic Education.



Impact of Technology Use on Improving Student Understanding of Islamic Education

The use of technology in Islamic Education has been found to have a significant impact on student understanding through increasing the clarity of the delivery of learning content. A study by Sain et al., (2025) showed that the use of a qualitative technology-based learning approach can help students understand concepts more deeply through active involvement in the learning process. The interaction that occurs using technology allows students to be

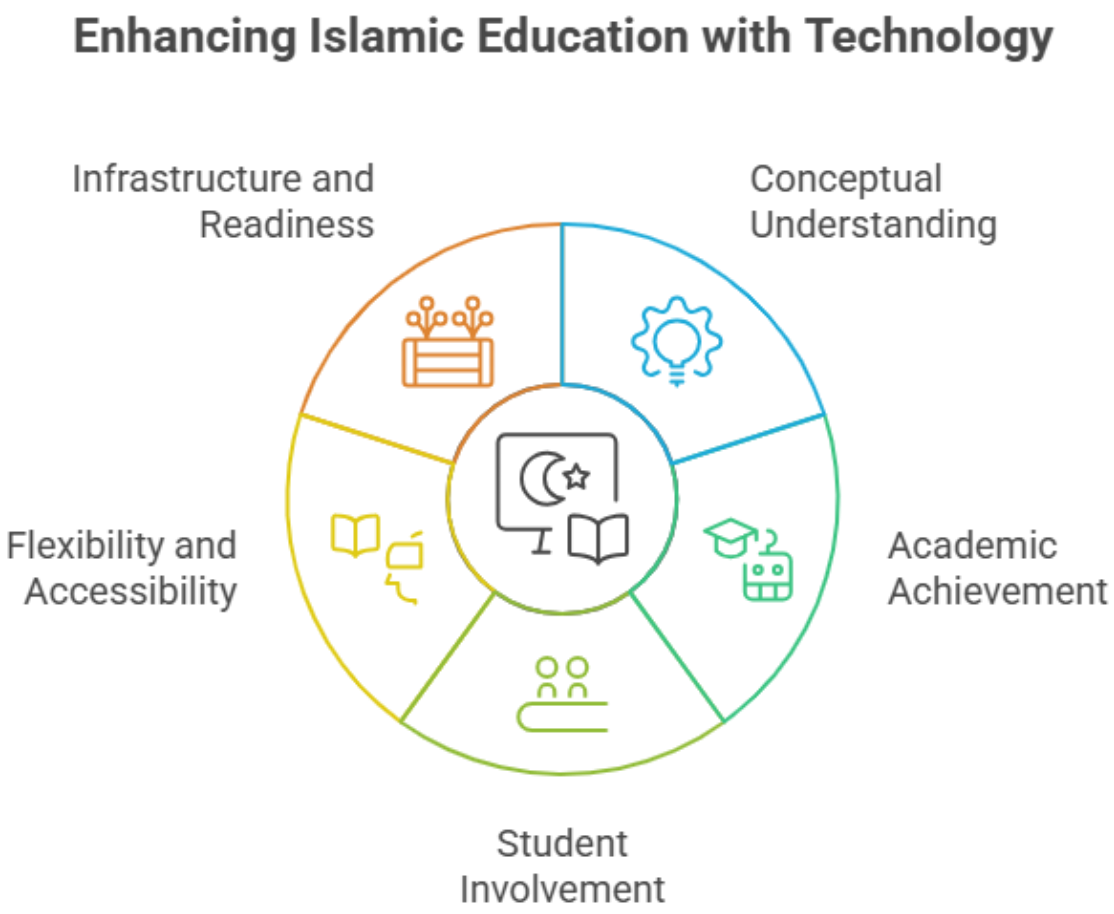
directly involved with the learning content, thus increasing their ability to understand a concept more clearly. In addition, other studies have found that digital transformation in Islamic Education provides students with the opportunity to access learning materials more flexibly and is not limited to the classroom environment alone. In line with the findings of this study, Ubaedullah, Rokimin and Suryono (2025) also stated that the effectiveness of technology in Islamic Education greatly depends on infrastructure support and the level of user readiness in applying it effectively. This ability allows students to review learning content at any time, thus helping them understand the content of the lesson more effectively and systematically (Juhairiah, Kinasih & Yuwono, 2024). This finding shows that technology plays an important role in strengthening students' understanding through more systematic learning delivery.

In addition, the use of technology also has a positive impact on improving students' academic achievement in Islamic Education. A study by Adiyono et al., (2025) found that the use of learning videos optimized through artificial intelligence can improve student performance by providing more focused and easy-to-understand content. This technology helps students understand learning topics visually and structurally, thus increasing their level of understanding of the content being learned. In addition, other studies show that the use of artificial intelligence technology can stimulate students' creative thinking in understanding learning concepts more deeply and through this approach, students do not only receive information passively but are also encouraged to think critically and creatively in applying the knowledge gained (Hamid & Salman, 2025). This proves that technology not only helps in terms of basic understanding but also improves students' cognitive abilities in Islamic Education.

Furthermore, technology is also seen to be able to increase student involvement in the learning process, thus contributing to increasing their understanding. Studies have shown that the use of technology-based learning approaches such as the flipped classroom method can increase interaction between students and teachers and encourage more active learning. This high level of involvement helps students understand the learning content more effectively because they are directly involved in the learning process (Atabik et al., 2025). In addition, other studies have also found that the use of technology in Islamic Education learning can increase student satisfaction with the learning process, which in turn has a positive impact on their understanding (Shafiq, Saleem & Ijaz, 2026). This satisfaction in turn encourages students to be more interested and focused in learning, thus having a positive impact on their understanding of the content of the lesson. These findings show that active student involvement is an important factor in improving understanding through the use of technology.

Overall, the study findings show that the use of technology has a positive impact on student understanding in Islamic Education from various aspects, including increased conceptual understanding, academic achievement and involvement in learning. Technology is able to make the learning process clearer, interactive and flexible, thus helping students master the learning content more effectively. Therefore, the planned and appropriate use of technology is seen as an effective medium in improving students' understanding in Islamic Education. In this regard, the integration of technology supported by appropriate pedagogical

approaches and active student involvement needs to be given attention to ensure that this positive impact can be maximized in the context of Islamic Education learning.



Factors that Influence the Effectiveness of Technology Use in Improving Student

Understanding of Islamic Education

The effectiveness of technology use in Islamic Education is influenced by management factors and learning environments that support the systematic implementation of technology. Studies show that efficient management of educational institutions plays an important role in ensuring that technology integration can be implemented effectively in the classroom. Good management not only provides adequate technology facilities but also supports teachers in implementing technology-based teaching in a planned manner (Tantowi, Gunawan & Ibrahim, 2025). In addition, other studies have found that the level of digital literacy among teachers also influences the effectiveness of technology use in Islamic Education. Teachers who have high digital skills are more able to integrate technology in teaching, thus helping students understand learning content more effectively (Reksiana et al., 2024). This situation shows that not only are technological facilities important, but the teacher's competence in using it effectively is also a major determinant in improving student understanding, because without sufficient digital skills, the technology provided cannot be fully utilized in the teaching and learning process.

In addition, psychological factors and student readiness also play an important role in determining the effectiveness of using technology in learning. Studies show that the

psychoeducation approach in digital education can help students adapt to the use of technology and improve their understanding of learning content. This emotional and cognitive support is important to ensure that students can use technology optimally in the learning process (Nurlela, Arifin & Hidayat, 2025). In addition, other studies have also found that students' acceptance of technology affects the level of effectiveness of its use in Islamic Education. Students who have a positive attitude towards technology tend to be more active in learning, thus increasing their understanding of the content of the lesson (Feizin et al., 2025). This shows that the aspect of students' attitude and acceptance of technology is a significant internal factor in influencing the effectiveness of learning, therefore efforts to improve student understanding must also consider students' mental and emotional readiness in using technology as a learning medium.

Next, pedagogical factors and teachers' teaching approaches also affect the effectiveness of the use of technology in Islamic Education. Murhayati et al.'s study, (2025) shows that the use of appropriate pedagogical models such as technology integration in teaching can help improve the effectiveness of student learning. Teachers who combine technological elements with effective teaching strategies can make learning more interactive and easier for students to understand. In addition, other studies show that the use of technology in teaching that is in line with Islamic values and principles is also important in ensuring the effectiveness of learning. This is because the suitability of technology content with the context of Islamic Education can help students understand learning more meaningfully (Abdelgelil, Tahir & Bidin, 2025). This situation proves that the suitability between technology and Islamic Education values needs to be paid attention to so that the learning that occurs is not only effective, but also in line with the principles that are to be applied, thus supporting student understanding more holistically.

Overall, the study findings show that the effectiveness of the use of technology in Islamic Education is influenced by various interrelated factors, including institutional management, student readiness and the teacher's pedagogical approach. These factors play an important role in determining the extent to which technology can be optimally utilized in improving student understanding. Therefore, a comprehensive and balanced approach needs to be considered to ensure that the use of technology in Islamic Education can have a positive and effective impact on student learning. In this regard, integration involving technical, pedagogical and student psychological aspects needs to be planned in an integrated manner so that the improvement in student understanding can be achieved optimally and continuously.

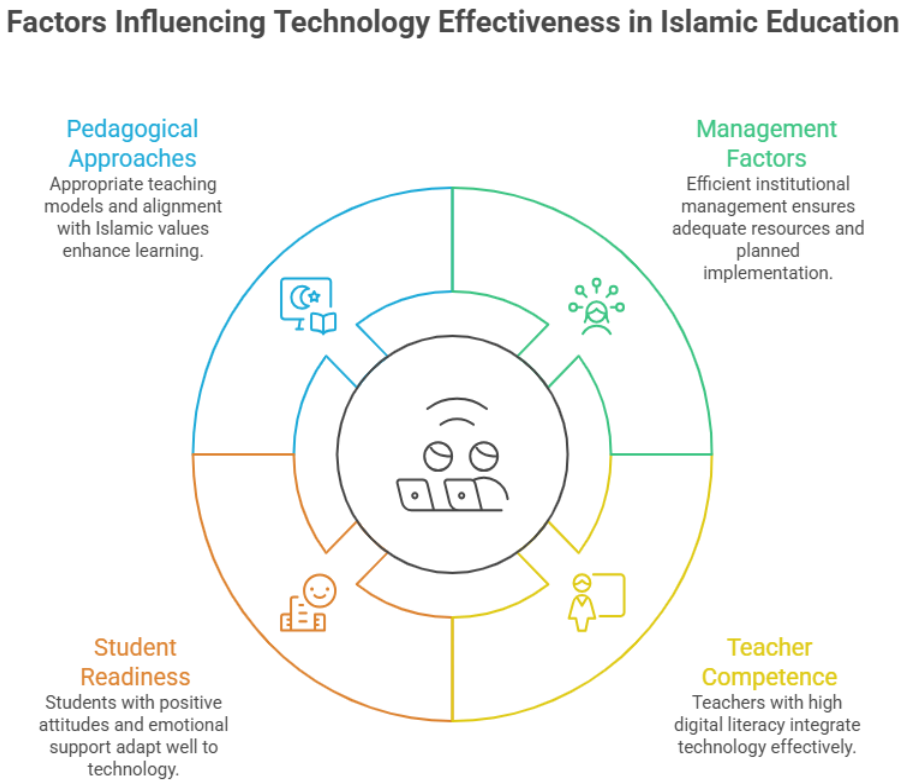


Table 4
Main Studies

NO	STUDY	TITLE	PURPOSE OF THE STUDY	METOD/SAMPLE	FINDINGS
1	Adiyono et al. (2025)	Can AI-Optimized YouTube Videos Enhance Islamic Religious Education?	Studying the effectiveness of AI-based YouTube videos in improving the achievement and engagement of Islamic Education students in vocational schools	Quantitative study using quasi-experimental design. Involving 100 students (50 experimental group, 50 control group) selected through stratified random sampling. Data were collected through pre & post tests and Likert scale questionnaires, analyzed using t-test	Students in the AI group showed significant improvement in scores compared to traditional methods. The level of engagement was also high, especially in terms of understanding and motivation. However, there were challenges such as internet problems and some students still tended to prefer traditional teaching methods.
2	Megawati, Alfarizi & Wahyuni (2025)	Artificial Intelligence Revolution in Indonesian Islamic Higher Education: How It Affects	Analyzing the role of AI in improving creativity, self-efficacy and learning performance of	Quantitative study using cross-sectional survey. Sample of 373 lecturers of Islamic higher education	AI capabilities have a significant impact on students' creativity and self-efficacy, as well as indirectly improving learning performance. However, the direct

		Students' Self-Efficacy, Creativity, and Learning Performance	students in Islamic higher education institutions.	institutions in Indonesia. Analysis using PLS-SEM	impact of AI on learning performance is not significant, indicating that AI integration is not yet optimal.
3	Abdelgelil, Tahir & Bidin (2025)	Challenges of Artificial Intelligence (AI) and Its Impact on Qur'anic Qira'at: A Thematic Review Analysis	Identify the challenges and effects of using AI on the knowledge of Quran recitation and evaluate its role in Islamic education	Qualitative research using thematic content analysis of 23 scientific articles	AI is effective as a tool to aid in tajwid and memorization, but it cannot replace talaqqi and sanad. There is a risk of invalid recitation, technology dependency, and the need for ethical guidelines based on shariah
4	Reksiana et al., (2024)	Digital Extension of Digital Literacy Competence for Islamic Religious Education Teachers	Analyzing the digital literacy competence of PAI teachers in several schools	Qualitative (phenomenology), 8 teachers and 4 principals, interviews, observations, documents	Teachers only use basic ICT (YouTube, PPT, Quizizz), not yet able to produce digital materials themselves
5	Juhairiah, Kinasih & Yuwono (2024)	Digital Transformation in Islamic Education: Opportunities, Challenges, and Its Impact on Islamic Values	Studying the opportunities, challenges and impact of technology in Islamic education	Qualitative (field and literature studies, interviews & FGDs)	Technology improves access & quality, but the main challenges are infrastructure, internet access & adherence to Islamic values
6	Choiri, Setiawan & Shofiyuddin (2025)	Enhancing Zakat Learning Outcomes Using Augmented Reality and Virtual Reality Technologies	Developing and evaluating the effectiveness of AR/VR modules in zakat learning	Design and development (R&D) studies using the ADDIE model and testing on students	AR/VR module significantly improves student achievement from 72 to 86 and receives high ratings from experts
7	Sain et al., (2025)	Enhancing Islamic Religious Education through IT-Based Learning: A Qualitative Study	Studying the impact of using information technology on learning	Qualitative research through interviews and observations	The use of IT increases student interest and engagement, but faces challenges in terms of facilities and teacher skills.
8	Nurlela, Arifin & Hidayat (2025)	Impact of Islamic Psychoeducation in Facing the Challenges of Digital Education Practices: Student and Lecturer Perceptions	Assessing the impact of psychoeducation approaches on student resilience	A quantitative study involving 450 respondents with regression analysis	Islamic psychoeducation has a positive and significant impact on students' emotional resilience levels.
9	Nur Azaliah Mar (2024)	Integration of Technology and	Studying the challenges and	Qualitative research in the	Technology provides benefits to PdP but there

		Islamic Education in the Digital Era: Challenges, Opportunities and Strategies	strategies of using technology in Islamic education	form of a literature review	are risks such as the spread of unverified information and the negative influence of social media.
10	Murhayati et al., (2025)	Integration of TPACK Model in Islamic Religious Education Curriculum: An Analysis of Readiness and Barriers	Analyzing teachers' readiness to use technology through the TPACK model	Qualitative case study research involving several schools	The level of teacher readiness varies and is highly dependent on training and institutional support.
11	Feizin et al., (2025)	Muslim students' acceptance of artificial intelligence in Islamic religious education: an extended TAM approach	Studying AI acceptance factors among students	A quantitative study using questionnaires and SEM analysis involving 224 students	Perceptions of ease and usefulness have a significant impact on students' attitudes and intentions to use AI.
12	Atabik et al., (2025)	Optimizing educational management through the flipped classroom method: An innovation in Islamic education learning in the digital era	Evaluating the effectiveness of flipped classroom on student understanding	Quasi-experimental study involving 60 students	The flipped classroom approach significantly improves student understanding compared to traditional methods.
13	Tantowi, Gunawan & Ibrahim (2025)	Optimizing Islamic Boarding School Management in the Digital Era: Analysis of Technology Effectiveness in Administration and Operations	Analyzing the impact of technology on the efficiency of Islamic education management	Mixed method study involving 500 respondents and panel data analysis	Technology improves management efficiency and quality of educational services
14	Syafri & Budin (2025)	Teachers, Parents, and the Digital Challenge: Understanding Islamic Character Formation in Singapore's Madrasa Education	Studying the formation of student character in the digital age.	Mixed methods study involving teachers and parents	Character education is effective but is affected by digital challenges such as social media

15	Ubaedullah, Rokimin & Soryono (2025)	Technology in Islamic Education Curriculum: Challenges and Opportunities	Identifying the challenges and opportunities of technology in the curriculum	A systematic review study using PRISMA	Technology has the potential to enhance learning but faces constraints of infrastructure and teacher skills
16	Shafiq, Saleem & Ijaz (2026)	The influence of affective AI literacy on student satisfaction in higher education	Studying the relationship between AI literacy and student satisfaction	A quantitative study using SEM involving 237 students	AI literacy has a significant impact on student perceptions and satisfaction
17	Hafizah & Januardi (2025)	The Influence of Information Technology Usage on Students' Learning Outcomes in Islamic Religious Education (PAI)	Assessing the impact of technology to the results learning	Systematic review study	The use of technology in the teaching and learning process has been found to be able to increase student motivation levels through a more interactive and engaging approach.
18	Hamid & Salman (2025)	The Role of Artificial Intelligence in Enhancing Creative Thinking among Students of the Departments of Quranic Sciences and Islamic Education	Studying the impact of AI on creative thinking	Quantitative study using SEM involving 357 respondents	AI enhances creative thinking with innovation as a mediating factor
19	Melinda, Feizi & Monfared (2024)	Transforming Religious Learning with Macromedia Flash 8: Improving Students' Understanding of the Material on Faith in the Apostles	Evaluating the effectiveness of interactive media in learning	Quasi-experimental study	Using Flash significantly improves student understanding and performance
20	Azwar Rahmat (2025)	The Role of Technology and Its Impact on Contemporary Islamic Education: Developments and Challenges	Analyzing the role of technology in Islamic Education Teaching and Learning	Qualitative research in the form of a literature review	Technology increases learning interactivity, but requires teacher and student readiness

Discussion and Results

The study findings for the three themes show that the use of technology in Islamic Education not only involves a variety of types of technology but also has a significant impact on student understanding and is influenced by various implementation factors. In terms of the type of technology, the findings show a shift from the use of basic technology to more advanced technologies such as artificial intelligence, multimedia and augmented reality. This development is in line with the findings of previous studies which emphasize that the integration of digital technology in education can support more flexible and student-centered learning (Hafizah & Januardi, 2025). In addition, external studies also support that 21st century educational technologies such as AI and digital learning can improve the effectiveness of content delivery and expand learning access (Fernandez et al., 2023). This shows that the diversity of technology is not just a variation of tools but reflects the evolution of pedagogical approaches in Islamic Education.

In terms of the impact on student understanding, the study findings show that technology plays a role in improving conceptual clarity, academic achievement and student engagement in learning. The use of technology allows content to be delivered in a more visual, interactive and easy to understand way, thus helping students build a deeper understanding (Adiyono et al., 2025). This finding is in line with a study by Richard E. Mayer through the Cognitive Theory of Multimedia Learning which emphasizes that learning that combines visual and verbal elements can improve information processing among students. In addition, a study by Himendra Balalle (2024) also states that digital technology increases student engagement, which directly contributes to increased understanding. Therefore, the impact of technology is not only limited to the delivery aspect but also involves the cognitive processes of students.

However, the study findings also show that the effectiveness of technology does not happen automatically but is instead influenced by certain factors such as teacher competence, student readiness and environmental support. Studies show that teachers who have high digital skills are more able to integrate technology effectively in teaching (Reksiana et al., 2024). This is in line with the Technological Pedagogical Content Knowledge (TPACK) framework which emphasizes the need for a balance between technological knowledge, pedagogy and content in teaching. In addition, external studies such as Chiu (2025) also support that the lack of teacher competence is one of the main challenges in the implementation of educational technology. Therefore, human factors play an important role in determining the success of the use of technology in Islamic Education.

In addition to teaching factors, psychological aspects and student acceptance are also identified as critical factors in influencing the effectiveness of technology. The study findings show that students who have a positive attitude towards technology are more likely to be actively involved in learning, thus increasing their understanding (Nurlela, Arifin & Hidayat, 2025). This is in line with the Technology Acceptance Model (TAM) which explains that the perception of the usefulness and ease of use of technology influences user acceptance. A study by Angela Schorr (2023) also shows that the acceptance of technology in education depends on the factors of user attitudes and beliefs. Therefore, the internal aspects of students need to be given attention to ensuring the effectiveness of the use of technology in improving their understanding.

Overall, this discussion shows that the use of technology in Islamic Education has great potential in improving student understanding, but its effectiveness depends on the interaction between the type of technology, the impact of learning and implementation factors. The diversity of technology provides wider learning opportunities, while its impact on student understanding depends on the extent to which the technology is used effectively. At the same time, factors such as teacher competence, student readiness and environmental support need to be given comprehensive attention. Therefore, a holistic and integrated approach needs to be taken to ensure that technology can be utilized optimally in improving students' understanding of Islamic Education, in line with the needs of 21st century education.

Recommendation of the Study

Based on the findings of the study, several suggestions are put forward to strengthen research and implementation of technology in Islamic Education in the future. From an empirical point of view, future studies are recommended to involve larger samples and various levels of education to assess the impact of technology on student understanding more comprehensively. In terms of policy, relevant parties such as the Ministry of Education and educational institutions need to formulate policies that support the systematic integration of technology, including the provision of infrastructure and professional training for teachers. Next, from a practical point of view, teachers are recommended to apply technology creatively and integrated in teaching to increase student engagement and understanding. From a conceptual perspective, further studies can develop a specific model or framework that combines technology with the principles of Islamic Education to ensure the suitability of content and approach. From a methodological aspect, future research is encouraged to use a mixed methods approach to obtain more comprehensive and in-depth findings. Meanwhile, from a theoretical point of view, this study can be expanded by integrating modern learning theories such as constructivism and the technology acceptance model to strengthen theoretical foundation in related studies. Overall, these suggestions are hoped to be a guide for researchers, educators and policy makers in improving the effectiveness of the use of technology in Islamic Education, thus contributing to the development of knowledge and educational practices that are more innovative and relevant to current needs, as well as increasing motivation to explore the potential of technology in continuously strengthening student understanding.

Conclusion

Overall, this study shows that the use of technology in Islamic Education plays a significant role in improving student understanding through a variety of more interactive, flexible and student-centered approaches. The study findings prove that technology not only helps clarify the delivery of learning content but also improves academic achievement and student involvement in the learning process. However, the effectiveness of its use depends on several important factors such as teacher competence, student readiness and the support of the learning environment. Therefore, the use of technology in Islamic Education needs to be planned and implemented holistically by considering pedagogical, technical and psychological aspects to ensure that its impact can be maximized. This study is expected to contribute to the development of research and more innovative teaching practices in Islamic Education, thus opening space for further exploration in efforts to improve the quality of student learning in line with current educational needs.

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