A Literature Review of the Studies on Islam-Science-Technology in Web of Science

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Abstract

Over the past two centuries, the swift advancements in science and technology have elicited mixed reactions among Islamic countries and Muslim communities, characterized by both excitement and skepticism. This ambivalence partly stems from a widely acknowledged perception of a technological lag in Muslim societies compared to their Western counterparts a viewpoint shared by Western academics and Muslim intellectuals alike. Furthermore, Muslims' attitudes towards the contributions of Islam to science and technology diverge, influencing educational strategies within Islamic societies differently. In this study, utilizing the Web of Science database renowned for its access to prestigious journals, reviewed approximately 50 articles from 2007 to 2023. These articles, which focus on the intersections of science, technology, and Islam, as well as broader STEM education elements, employed a case study design and a qualitative research approach- complemented by content analysis of documents. The analysis revealed that a significant portion of these works engage in survey-based research on the integration of science and technology in Islamic educational settings, with some detailing specific projects in this area. This research is crucial for highlighting the strengths and shortcomings of scholarly endeavors in this domain. However, it also pointed out a notable omission: a thorough exploration of the theoretical underpinnings of Islamic Sciences, such as hadith, tafsir, and fiqh, and their pedagogy, indicating a substantial void in the literature.

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Introduction

The term science, synonymous with ilim, embodies the quest for understanding the essence of entities and adhering to beliefs that reflect reality. Despite the absence of a universally accepted definition, science is fundamentally regarded as the process of formulating and validating hypotheses that elucidate phenomena through meticulous observation and rational analysis based on observational outcomes. This perspective highlights that science is instrumental in generating theories regarding phenomena that are open to systematic scrutiny. On the other hand, technology entails the creation of machines and devices leveraging scientific principles. Historically, up to the early 19th century, the term "technique" was used to describe what we now refer to as technology, marking a significant evolution from methods grounded in practical experience to those informed by scientific understanding. This transition signifies the pivotal role of scientific knowledge in advancing technology.

The discourse on Islam's engagement with science and technology has captivated both Muslim scholars and Western academics over the past two centuries. This period reveals diverse viewpoints on the matter. Some Western intellectuals, like Russell, argue that Muslims have contributed little beyond interpreting classical Greek texts in the realm of science. Conversely, certain Muslim scholars contend that science, while not essential for human existence, does not deem scientific backwardness as detrimental. However, other voices highlight the significant scientific contributions made by Muslims, attributing any historical decline to external factors such as the Crusades and Mongol invasions. Despite these varying opinions, a consensus emerges among both Muslim and non-Muslim researchers that Islamic civilizations have historically made substantial contributions to science and technology, although this progress has noticeably slowed in the last two centuries. This observation refutes the notion that Muslims have been historically disengaged from science, philosophy, and technology. A testament to Islam's embrace of knowledge is the frequent reference to ilim (knowledge) in the Qur'an, encompassing both the pursuit of truth and the broader domain of science. Contemporary Muslim scholars emphasize this point, highlighting Islam's longstanding engagement with science and technology. This tradition has produced renowned scientists in fields such as mathematics, physics, and astronomy from Islamic lands. Recent scholarly articles, reflecting on Islam's value for science and technology, further illustrate this relationship, both directly and indirectly. This body of research underscores Islam's historical and ongoing commitment to advancing scientific and technological knowledge.

This study conducts a comprehensive analysis of 50 articles published in Web of Science journals, focusing on the themes of "science," "technology," and "Islam" from 2007 to 2023. The goal is to identify the subjects that researchers, both Muslim and non-Muslim, find significant and the theoretical frameworks they employ. Furthermore, the findings of this research will offer insights into the relevance of science and technology in the Islamic world today. Certainly, the number of articles on these topics is not confined to 50. However, for this research, a special filtering option was employed from the articles scanned in the Web of Science database. This filter was devised to examine the topics of "Islam", "Science", and "Technology" from an educational research perspective. The count of articles identified without this filtering reached 404. Since only 50 of these articles were pertinent to educational research, the research was delimited to these studies.

The research is structured into four chapters, starting with an introduction that provides a brief assessment of the relationship between Islam, Muslims, and science and technology. This section also outlines the overall nature of the study. The second chapter delves into an analysis of selected articles from Web of Science (WOS)-indexed journals, particularly in the education sector, to explore how scientific and technological advancements are framed within issues directly relevant to Islam. In the third chapter, the focus shifts to articles that discuss the intersection of science, technology, and Islam but are indirectly related to Islamic matters. These include studies on primary and secondary education in Islamic countries and the educational processes at

Islamic universities, despite not directly addressing Islamic education or issues. The final chapter discusses the findings, shedding light on how recent academic articles have approached science, technology, and Islam.

This study will seek answers to the following questions under the specified headings:

1. What types of research have been conducted in recent years on Islam, science, and technology?
2. How many of the identified articles on Islam, science, and technology are directly related to Islamic subjects?
3. From what perspectives are Islam, science, and technology evaluated in articles that are directly related to Islamic topics?

Method

Research Design

In this study, we employed a case study design, a qualitative research method characterized by its exploratory, interpretive approach aimed at understanding issues within their natural settings. A case study is a detailed qualitative technique that scrutinizes a specific system through extensive data collection to gain comprehensive insights into its operations. Within this framework, we conducted a content analysis on articles from the Web of Science database, covering the period from 2007 to 2023, focusing on science, technology, Islam, and other aspects of STEM education, using the document analysis method. Document analysis is succinctly defined as a scientific method involving the collection, examination, interrogation, and analysis of various documents as the primary data source for research. By applying this method, the selected 50 articles will be reviewed in brief paragraphs to derive a comprehensive conclusion.

Findings and Classification of The Research in The Web of Science Database

The table 1 below displays the fields associated with the 404 articles scanned in the Web of Science database, which relate to the subject headings of Islam, Technology, and Science.

The table 2 shows the fields that emerged because of limiting the topics of Islam, Technology and Science in the web of science to the field of education.

Table 1

Web of Science Categories "Islam" "Science" "Technology" Topics

Categories	Number of Publication
Religion	59
Education Educational Research	45
Medicine General Internal	31
Information Science Library Science	24
Social Sciences Interdisciplinary	21
Engineering Electrical Electronic	18
Multidisciplinary Sciences	18
Engineering Multidisciplinary	16
Computer Science Information Systems	14
Computer Science Theory Methods	14
Environmental Sciences	14
History Philosophy of Science	14
Humanities Multidisciplinary	13
Public Environmental Occupational Health	12
Computer Science Interdisciplinary Applications	11
Social Issues	11
History	10
Management	10
Business	8
Economics	8
Environmental Studies	8

Medicine Research Experimental	8
Chemistry Analytical	7
Education Scientific Disciplines	7
Linguistics	7

Table 2

WOS Categories "Islam" "Science" "Technology" Topics to the field of educational researchs.

Categories	Number of Publication
Education Educational Research	45
Education Scientific Disciplines	7
Social Sciences Interdisciplinary	5
Linguistics	3
Education Special	2
Engineering Electrical Electronic	2
Computer Science Interdisciplinary Applications	1
Computer Science Theory Methods	1
Cultural Studies	1
Engineering Multidisciplinary	1
Green Sustainable Science Technology	1
History Philosophy of Science	1
Psychology Educational	1

Evaluation of Science and Technology Articles Directly Related to Islamic Issues

This section of the study compiles academic articles that intersect the realms of science, technology, and Islam, arranged in chronological order without a focus on thematic cohesion and offers a general review of their contents through paragraph summaries.

Ramiz Ali's study conducts a comprehensive analysis of blended learning, seeking to understand university students' perceptions of this educational approach and to identify variances in their attitudes. Engaging 407 university students, the research uncovered a general satisfaction with blended learning, albeit accompanied by numerous challenges in its implementation. A standout finding from the study is the notably more positive reception of blended learning among theology students compared to their peers in tourism, hotel management, and business administration. This indicates a distinct difference in how students across various disciplines perceive and engage with blended learning environments, with those in theology showing a greater openness and positivity towards this mode of learning (R. Ali, 2023).

The article explores the intricate relationship between space and time within Islamic architecture, starting with the hypothesis that space constitutes the universe's physical form while time acts as its consciousness. According to the authors, the static nature of space renders it directly perceptible to the senses, whereas the dynamic nature of time necessitates indirect perception by humans. The study delves into the role of time, whether direct or indirect, in shaping architectural structures, with a particular focus on Islamic architecture. It suggests that time plays a significant role in the spatial design of Islamic architectural works, contributing to their stability and continuity. The researchers argue that Islamic architecture exemplifies how the design of space can resonate with the zeitgeist, achieving this synthesis through the integration of art, literature, science, cultural values, and technological advancements. This investigation not only highlights the temporal dimensions of Islamic architectural design but also proposes a broader understanding of how architecture can embody the spirit of its era (AnasBarakat & Mahmoud, 2022).

Innovative approaches in intertwining science and religion play a crucial role in the spiritual advancement of society. Qambarov's study emphasizes the importance of uncovering the innovative potentials within science and religion for the educational system. It advocates for the establishment of a learning environment

that fosters free thought and competition among students, highlighting the need to integrate these innovative values into educational practices. This approach not only aims to enhance the intellectual and spiritual growth of students but also to prepare them for contributing positively to a society that values both scientific inquiry and religious insights (Qambarov, 2022).

The article focuses on creating a learning environment aligned with the International Society for Technology in Education (ISTE) standards, which set benchmarks for integrating technology into teaching and learning practices. The researcher chose the faculty of education at the Islamic University in Gaza City, Palestine, during the first semester of the 2017 academic year as the study sample. It advocates for the incorporation of ISTE standards into teacher preparation programs at the faculty of education and suggests organizing various courses for both students and educators on this topic. The study underscores the importance of equipping future educators with the necessary skills and knowledge to effectively utilize technology in their teaching methodologies, enhancing the overall educational experience (Aqel, 2021).

The research presents a case study on a community designed to enhance STEM (Science, Technology, Engineering, and Mathematics) education within an Islamic school in Southern Thailand. It reveals that the integration of Islamic Shura—a consultative decision-making process in Muslim communities—the Muslim way of life, and Islamic educational principles contributes to a distinct and engaging curriculum for STEM education. This approach underscores the compatibility and potential synergy between Islamic values and modern STEM education. Consequently, the study concludes that there is a significant need to form communities focused on STEM education within Islamic educational institutions, suggesting that such communities can play a pivotal role in enriching the educational experience by blending religious and scientific knowledge (Vasinayanuwatana et al., 2021).

The article highlights the critical role of listening in the educational sphere, introducing innovative listening courseware tailored to augment listening materials with Islamic knowledge. It outlines the creation of four distinct course units, each categorized by difficulty level and designed in alignment with the principles of communicative approach theory. The primary objective of this research is the development of a novel listening software rooted in the Ahl al-Sunnah wa'l-Jama'ah perspective, aiming to nurture individuals of high moral standing. This endeavor seeks to merge Islamic knowledge with science, technology, and culture, targeting university students. The initiative represents a strategic effort to enrich the educational experience by fostering a comprehensive understanding that bridges religious teachings with contemporary academic disciplines (Yaniafari et al., 2020).

The study carried out at the Islamic University of Bahawalpur, Pakistan, seeks to offer insights into the effectiveness of social media as an educational tool. Through surveys conducted among students, it emerges that social media significantly contributes to the learning process, particularly in fostering critical thinking and problem-solving skills. Furthermore, the research indicates that social media is instrumental in enhancing students' educational experiences, supporting comprehensive learning, and the adoption of forward-thinking approaches. This underscores the potential of social media platforms not just as means of social interaction but as valuable resources in the academic development of students, facilitating a more engaging and holistic approach to education (Hussain et al., 2018).

The article delves into the dichotomy of higher Islamic education in Indonesia, positing that science and religion have yet to find a harmonious integration within the higher education framework. This lack of common ground highlights the article's objective to explore a viable formula for bridging these two critical domains. Within this exploration, the study uncovers that science was initially perceived as an extension of colonial influence in Indonesia, whereas Islam and Islamic education served as bulwarks against colonialism. The researchers conclude that Islamic educational institutions have not become focal points for scientific inquiry, with a predominant focus on preserving faith over fostering scientific exploration. This analysis underscores the significance of the article in

recent scholarly efforts to unravel the complex relationship between science and religion, particularly within the context of educational processes (Iqbal, 2018).

The article examines the significant technological shifts occurring within libraries, aiming to evaluate the knowledge and readiness of library staff to adapt to these changes. It specifically focuses on Dr. Ahmed Erwa's library at Prince Abdul Qader University of Islamic Sciences in Constantine, Algeria, as a case study. Through this examination, the researchers propose various practical recommendations for library personnel and professionals to navigate the challenges brought forth by technological advancements and the proliferation of electronic databases. These suggestions are intended to enhance the staff's competencies in managing digital resources, ensuring that libraries can continue to serve as vital centers of knowledge and information in an increasingly digital world (Nabil & Bilel, 2018).

The study assessed the effectiveness of technology use in universities across Pakistan in enhancing students' self-directed learning processes. It specifically concluded that university students in Islamabad could significantly benefit from taking courses focused on the utilization of Web-based pedagogical tools to improve their learning outcomes (Rehman et al., 2018).

The research delves into the evolution of the Tatar language, examining the influence of science, technology, and Islamic culture on its development. It navigates through the contemporary challenges in cultural linguistics, aiming to uncover the national identity embedded within the Tatar people's mental framework. The study finds that the Tatar worldview, similar to other Eastern linguistic cultures, exhibits a more harmonious and complementary relationship between the soul and body compared to European perspectives. It highlights how the daily lives, work, and behaviors of the Tatars are deeply marked by Islamic traditions and laws, showcasing the profound impact of Islamic values on their society. Thus, the research stands out for its insightful linkage of linguistic analysis with the societal significance of Islamic values, offering a unique perspective on the role of language in reflecting and shaping cultural and religious identities (Sibgaeva et al., 2016).

This study explores Badiuzzaman Said Nursi's perspective on modern educational methods, with a particular focus on his approach to integrating scientific and religious knowledge. Badiuzzaman, a prominent thinker of the twentieth century, is posited by the researcher to have played a pivotal role in the transformation of Turkish society. Central to Nursi's educational philosophy is the concept of faith-based education, where the conscience serves as the foundation for religious sciences, and reason as the basis for civilization and progress. This dual emphasis, as revealed in the study, positions Nursi's educational model as both comprehensive and forward-thinking. Consequently, the research concludes that Nursi's approach presents a viable alternative model of education. This model actively incorporates religious values, offering a pathway to modernization and progress that resists the pressures of atheism and materialism (Jamshed, 2016).

This research aims to delve into the concept of emotional intelligence, regarded as a crucial aspect of advanced cognitive processes, specifically within the distinct contexts of Muslim and European societies. By selecting English language classes as the empirical setting, the study seeks to assess the impact of developed emotional intelligence on students' capacities to acknowledge and respect the divergent worldviews prevalent in Muslim and European cultures, which are predominantly influenced by religious sects and ethnicity, respectively. The differential behavioral and cognitive traditions of these societies serve as a backdrop for this examination. The conclusion posits that heightened emotional intelligence facilitates a greater willingness among students to understand and accept these cultural variances, thereby promoting a more nuanced approach to solving educational dilemmas and adopting a non-partisan perspective. This investigation highlights the pivotal role of emotional intelligence in enhancing educational methodologies and fostering a more inclusive and equitable academic discourse (Tikhonova & Kudinova, 2016).

The research investigates the critical thinking skills of students within Urdu language

classes, proposing enhancements to digital content and the collaborative learning atmosphere. Conducted at a school in Islamabad, the study highlights the significant role that digital educational materials play in teaching Urdu (S. Ali et al., 2015).

This article highlights the merging of theoretical knowledge and rational thought within educational curriculums, showcasing how technological advancements and scientific discoveries align with Islamic principles. The study was carried out in the Department of Qur'an and Sunnah Studies at Sains Islam Malaysia University. It posits that transmission, a body of knowledge from the Qur'an and Sunnah of Prophet Muhammad, and reason, which pertains to human intellectual achievements in civilization's progress, are interconnected. The research requested faculty members at the mentioned university to devise a curriculum that intertwines these two areas of study. Findings indicate that the department has effectively integrated both fields. However, it suggests that additional efforts are necessary to solidify this foundation further (Ibrahim et al., 2015).

This research addresses the premise that scientific education in the Islamic world typically falls short, offering an evaluation of how to rectify this shortfall by enhancing educational quality. It concludes that science, technology, and innovation (STI) play a crucial role in education, asserting that their integration requires a dynamic and well-informed national strategy (Zou'bi, 2015).

The study scrutinizes the claims and legal standards related to reproductive technology within major religions, including Catholicism, Evangelicalism, Judaism, and Islam. It aims to find a balance between scientific progress and immutable principles rooted in human dignity, exploring their boundaries and extent. This research evaluates the core beliefs and impacts of these religions on reproductive technology (Godoy Vazquez, 2014).

Saudi Arabia is actively working to bolster higher education by establishing new universities, with a political emphasis on prioritizing higher education to cultivate a generation dedicated to Islamic culture and values. This research aims to examine the existing framework of higher education in Saudi Arabia, using several universities as examples and delves into the nature of the Choice Based Credit System in Higher Education. The study concludes that enhancements to higher education have the potential to positively impact students' development and their adherence to Islamic culture and values (Clementking et al., 2013).

This research endeavors to assess contemporary viewpoints and influences in science education within Saudi Arabia, exploring these methodologies through the lens of moral and ethical consciousness. It examines the scientific mindset and the ramifications of science from an Islamic standpoint. The article contends that Saudi Arabian education has made significant strides in aligning with the objectives and principles of the 21st century, introducing new curricula that incorporate social, technological, ethical, and moral paradigms (Alarfaj, 2013).

This article outlines three proposals for integrating information and communication technologies (ICT) into educational curricula, with a particular emphasis on the Islamic Republic of Iran. The first two proposals view ICT solely as a tool to augment teaching and learning methods, while the third model provides recommendations for fostering competencies related to intellectual knowledge, faith, morality, and science within the context of ICT integration (Mehraban & Mazaheri, 2013).

This research investigates the utilization of technology in language teaching and learning within Islamic boarding schools in Indonesia, focusing on the simultaneous instruction of Arabic and English. The integration of technology in language education not only enhances students' knowledge but also facilitates their exploration of global opportunities. Consequently, the study establishes that Islamic boarding schools in Indonesia serve as valuable educational resources that connect young individuals to the broader world. Moreover, it underscores the pivotal role of technology in ensuring the success of the teaching and learning process for students (Wekke & Hamid, 2013).

This article presents findings on the utilization of social media and technology

among Malaysian youth, drawing from interviews conducted with 379 individuals aged between 20 and 24. The study analyzes the perspectives of students enrolled in various departments including Islamic sciences, economics, engineering, education, and arts across Malaysian universities. Based on the gathered data, the research highlights that the most frequented channels on the internet are "how-to" and "do-it-yourself" websites, while book and clothing sales websites are less commonly utilized. Additionally, the study indicates that students from Islamic sciences faculties exhibit greater engagement in political discussions on social media compared to their counterparts from other faculties (Yusop & Sumari, 2013).

The research on social media channel usage among university students encompassed three stages. Initially, it explored students' inclination toward social media usage, followed by an evaluation of the underlying reasons for such usage. Lastly, the study sought to identify the challenges encountered by students in their utilization of social media platforms. Conducted at Islami Bahawalpur University in Pakistan, the research revealed that 90% of the students utilize Facebook to enhance their academic endeavors and expand their social networks globally. Moreover, the study highlighted common issues such as slow internet speeds experienced by students during their engagement with social media (Hussain, 2012).

The research delves into how Islamic schools, while maintaining fidelity to their religious principles, endeavor to impart "modern knowledge" in subjects highly valued in contemporary society, such as English, mathematics, science, and information communication technology. Two Islamic schools in Singapore and Britain serve as case studies, with their histories, objectives, curricula, and teaching methodologies examined to understand how they integrate modern knowledge within their Islamic ethos. This article contributes to the global discourse on how Islamic schools preserve their cultural identity while adapting their educational approaches to the demands of the modern world, with a particular focus on schools in Muslim minority countries. The conclusions drawn from the study underscore the shared challenges encountered by students and educators in both institutions as they strive to cultivate a well-rounded curriculum (Tan, 2011).

The research seeks to explore the comparative perspectives of Turkish and American societies regarding science. Turkey's reform initiatives, initiated by Atatürk, aimed at fostering a modern economy through the advancement of science and technology. However, researchers contend that Turkey has retained its identity as a religious society with deep historical roots. This prompts an inquiry into whether Turkey's outlook on science will align more closely with the American model or with European societies, which tend to be more philosophically secular than their American counterparts. Consequently, the study offers insights into whether Turkish society will emulate the American model, particularly considering the religious affiliations shared by Turkish and American societies (Titrek & Cobern, 2011).

The research evaluates the e-learning model in Islamic countries, noting its increasing popularity in recent years due to its cost-effectiveness and accessibility. The study primarily addresses the inadequacy of e-learning materials in the Islamic world and the gender segregation observed in educational institutions in certain conservative Islamic countries. Consequently, the research underscores the potential of online courses to offer a more comfortable educational environment for women and highlights the positive prospects associated with this approach (Weber, 2011).

The rapid advancement of medical sciences and emerging technologies in the field of medicine poses numerous ethical and moral dilemmas for individuals and societies. The researcher contends that it is imperative to preemptively discuss the potential benefits and risks of certain medical techniques that have yet to be introduced in Malaysia. Consequently, the article aims to delineate the legal, moral, and ethical principles that will accompany these advancements. Given Malaysia's recognition of Islam as the official religion and its status as a multiracial nation, these factors are pivotal in anticipating and addressing future challenges. Therefore, the article evaluates the progression

of medical techniques from an Islamic perspective, with a particular emphasis on their implications for Malaysia and Islamic principles (Yaakob et al., 2011).

The article offers a novel perspective on utilizing the e-learning method to teach the Holy Qur'an, focusing on the design and development of a system named "E-Halagat." It highlights the increasing integration of technology into Islamic education, particularly through computer-based methods. The proposed system aims to transition traditional Qur'anic circles held in mosques, known as "halagat" in Arabic, into a technological environment. The research introduces the E-Halagat system, emphasizing the significance of innovative technologies in facilitating Qur'anic instruction within a virtual setting (Elhadj, 2010).

The paper commences with the premise that although Muslims assert the compatibility of science and Islam, there exist numerous intellectual and institutional tensions, particularly within the Islamic world. Consequently, the paper concludes that many conservative Muslim scholars are resorting to creationism in an attempt to Islamize science or seeking alternative methods to uphold the precedence of faith while concurrently engaging with modern technology. As a result, the research underscores that these challenges have engendered diverse approaches and interpretations of science among Muslim scholars and communities. This underscores the necessity for continuous dialogue and negotiation on the coexistence of science and religion (Edis, 2009).

The research aims to analyze how the experiences and personal beliefs of Egyptian individuals within the context of science-technology-society influence science-based teaching processes. To achieve this, the research employed interviews and observations with 10 teachers. Consequently, the article presents a methodology to assess the extent and manner in which teachers' personal religious beliefs and experiences shape their teaching practices (Mansour, 2008).
This article explores the Islamic perspective on nature and its foundational principles, which played a significant role in the advancement of science during the golden age of Islam. These principles serve as valuable tools for contemporary Muslim scholars, underscoring the importance of Islamic science in comprehending Western scientific advancements. However, among researchers in Islamic sciences, there has been a notable trend toward embracing Western science and technology while sidelining Islamic values. In response, the article examines strategies to reconcile modern science with Islamic principles. The researcher concludes that integrating modern sciences with Islam presents a promising pathway toward fostering a more harmonious development of science and technology in Islamic nations (Faruqi, 2007).

Evaluation of Science and Technology Related Articles Indirectly Related to Islamic Issues

In this section of the study, academic articles relevant to science and technology but not specifically focused on Islamic issues will be listed chronologically, followed by general evaluations of their content.

This study investigates the attitudes of secondary school students towards the science of Biology in a sample of 506 students in Islamabad, Pakistan. Although the research is conducted in an Islamic country, its relevance to the topics of Science, Technology, and Islam is limited to the geographical location of the analysis. The study concludes that middle school students exhibit a positive attitude toward biology (Ahmad et al., 2022).

This research examines survey data concerning the perception of STEM (Science, Technology, Engineering, and Mathematics) education among Chemistry teachers. The relevance of this study to Islamic studies lies in its evaluation of STEM education practices through the perspectives of Chemistry teachers teaching in Islamic schools. The study concludes that STEM education is deemed essential in the educational process by Chemistry teachers in Islamic schools in Indonesia (Mardiyah et al., 2021).

In this study, the objective is to identify the factors hindering the adoption of sustainable transportation modes on university campuses. Two universities in Islamabad, Pakistan, namely Quaid-i-Azam University and National

University of Sciences and Technology, serve as examples. With the participation of 421 individuals, the survey finds that fostering a culture of sustainable transportation on campus is feasible through the provision of user-friendly and safe transportation infrastructure, alongside an increase in the frequency of shuttle buses (Baig et al., 2022).

The research investigates the utilization of technological pedagogical content knowledge (TPACK) skills among teachers in creating online school assessments for home-based learning, with a specific emphasis on Arab school educators in Malaysia. The study reveals that these teachers do not effectively employ TPACK skills, particularly within the context of home-based learning. Consequently, the research offers suggestions for enhancing pedagogical and content contributions to online learning methodologies (Sahrir et al., 2021).

A study assessing the influence of online education on academic performance was undertaken among Business faculties in Islamabad (Fahim et al., 2021).

In the research conducted in Islamic primary schools in Cirebon, Indonesia, an evaluation form was devised for the advancement of STREAM-integrated (Science, Technology, Religion, Engineering, Arts, and Mathematics) astronomy science as an enriching teaching resource. The findings indicate that this integration is both feasible and effective within primary school settings (Kurniawan et al., 2021).

The study examines the experiences and challenges encountered by students in mathematics classes within Federal Government schools in Islamabad, offering valuable insights into the subject (Ajma et al., 2020).

The article delves into the NEOM project, a key component of Saudi Arabia's Vision 2030, and offers recommendations for incorporating Internet of Things (IoT) technology into the initiative (Alharbi, 2020).

The research assesses student achievement in exams about fluid pressure and the body's respiratory system within Islamic schools in Jakarta. While not directly related to Islamic studies, this research provides a valuable perspective on innovative approaches to technology and science education in Islamic schools (Kasmanah et al., 2019).

The study investigates the influence of electronic teaching methods on university education, with a focus on students and lecturers in communication and media departments. Specifically, the researchers selected students from Al-Imam Al-Kadhim University College of Islamic Sciences in Baghdad as the sample. While technological teaching methods are continually evolving, particularly within communication faculties, challenges arise. One such challenge involves instructors' tendency to employ inappropriate techniques and adopt an individualistic teaching approach, potentially resulting in detrimental outcomes for students (Hussein et al., 2018).

The research detailing a measurement model utilized to assess student performance in the final exam on information technology at Imam Muhammad Ibn Saud Islamic University may not have direct relevance to the field of Islam (Talib et al., 2018).

This article explores the dynamics between academics at COMSATS Institute of Information Technology in Islamabad and the graduate students under their supervision. While the research may not be directly pertinent to our study, it offers insights into academic mentorship and student-supervisor relationships within the context of higher education institutions (Malik & Malik, 2015).

The research aims to assess expert opinions on teaching English for special purposes (ESP) at Islamic Kashm Azad University in Iran. While the study may not have direct relevance to Islamic studies, it contributes to understanding educational practices within the context of a university setting (Khanian et al., 2014).

While the research aimed to investigate the contributions of mobile technologies in the educational processes of university students, it may not have direct relevance to Islamic issues. However, conducting the research at the Islamic Azad University in the Islamic Republic of Iran allows for an indirect interest in the context of the study. The research concluded that the use of mobile-based instructional technologies

should be expanded in Iran and other developing countries, suggesting implications for educational practices within Islamic educational institutions (Taleb & Sohrabi, 2012).

The study investigates how evidence-based practices can enhance the roles of librarians and experts in libraries across Malaysia. By analyzing 448 articles, the research sheds light on the breadth of library-related research across various disciplines. Interestingly, the findings indicate that research on librarianship is significantly less prevalent compared to studies in social sciences and science. While fields such as science, technology, engineering, philosophy, psychology, religion, and Islam each had over 400 articles, research specific to librarianship remained relatively scarce in comparison. This highlights the need for greater attention and investment in librarianship studies to bolster the effectiveness and relevance of library services in Malaysia (Hamzah & Hisham, 2011).

The article, conducted at the Islamic Azad University in Isfahan, focuses on the utilization of educational technologies in lifelong learning. The research concludes that lifelong learning, in conjunction with technology and science, can facilitate the development of natural abilities, foster curiosity about the world, enhance wisdom, empower individuals to utilize their experiences for societal betterment and assist older adults in navigating societal changes effectively (Mazaheri & Fadavi, 2011).

The paper highlights the transformative impact of the Internet, particularly its capacity to facilitate global collaboration, which is deemed one of the most significant developments since the Industrial Revolution. It underscores the importance of high-capacity optical networks and enabling technologies in education. The discussion revolves around a series of events that transpired at the US-Pakistan International workshop in Islamabad. While the research may not directly address Islamic issues, it provides valuable insights into the role of technology in education and international collaboration (Qazi et al., 2011).

The article focuses on the technological evolution of the learning society and aims to enhance the mobile learning curriculum in secondary schools. The research collects data in three stages using the Delphi Technique communication method. It examines teaching processes in subjects including Technology, Science, Mathematics, Malay Language, and Islamic Education in the context of mobile learning. This research serves as a crucial component in the development of a mobile learning curriculum design (Shuib & Idris, 2011).

The study, conducted among the Faculty of Social Sciences in Islamabad, seeks to assess the faculty's alignment with the government's objective of elevating undergraduate programs to international standards in terms of technology integration. Through a survey administered to students of the faculty, it was found that while the majority expressed satisfaction with the undergraduate program and curriculum, instructors predominantly adopt a monologue and argumentative teaching approach. Additionally, dissatisfaction was expressed regarding classroom size and limited technological facilities (Kayani & Morris, 2010).

Discussion and Conclusion

This research, conducted on 50 articles published in journals indexed in WOS between 2007 and 2023, highlights two key points. Firstly, it brings to light the predominant focus of recent academic research on the intersection of science, technology, and Islam, particularly within the realm of education. In the globalized world, Islamic education is experiencing significant transformation, particularly concerning scientific research and technological advancements. This shift has significantly influenced researchers' areas of interest. Secondly, the discussion around virtual education, e-learning methodologies, and elements of STEM education from an Islamic perspective is noteworthy. Researchers, particularly in Muslim-majority and developing nations such as Pakistan, Indonesia, Egypt, Malaysia, and Turkey, are diligently working on advancing Islamic education technologically while integrating scientific research with Islamic principles. These efforts are reflected in the articles analyzed, providing insights into how Muslims perceive science and technology in contemporary times.

Several articles included in this study comprise full-text papers presented at international symposiums, underscoring the global discourse on Islamic subjects and educational processes within the framework of technological and scientific advancements. This signifies a widespread discussion across various countries on the integration of technology and science into Islamic education. Except two articles, the direct contribution of science and technology to Islamic sciences in the articles about Islam and Muslim-related topics is notably limited. This limitation stems from the primary focus of these articles on analyzing theoretical approaches to educational methodologies. However, two articles stand out for their practical contributions: one introduces a computer application named e-halagat for Quran teaching and memorization, while the other presents a listening application designed for teaching Sunni thought and Islamic ethics. These articles offer valuable insights into the practical implementation of academic research, moving beyond mere theoretical discussions.

Articles on science and technology, which do not directly pertain to Islamic matters, predominantly offer findings and recommendations aimed at enhancing university curricula in Islamic countries concerning scientific and technological dimensions. The research has led to the conclusion that academic inquiry into Islamic subjects in recent years has demonstrated commendable quality, yet there is a pressing need to diversify topics. It is worth noting the necessity for research into harnessing scientific advancements and exploring diverse technological potentials, particularly within disciplines such as Islamic law, hadith, and tafsir, which constitute fundamental areas of Islamic scholarship.

Data Availability

The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Conflict of Interest

None

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