

Cyberreligion: the role of artificial intelligence as a communication medium for religious education learning in the digital era

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Abstract This research aims to obtain descriptive knowledge regarding the presence of cyberreligion, which includes discussing the role of artificial intelligence as a learning medium for Islamic religious education in the digital era. This phenomenon is studied through qualitative research using the literature review or literature review method. Data collection methods include documentation techniques by searching for data from magazines, books, online news media, etc. The research results show that currently artificial intelligence has become a learning communication medium for Islamic subjects through various methods, including: 1) matching and searching for N-gram based words; 2) search for the Al-Quran index; 3) increasing the accuracy of answers in the Al-Quran translation question and answer system; 4) application for memorizing verses of the Qur'an; 5) Islamic portal; 6) Islamic social media; 7) file sharing; and 8) Islamic chat in cyberspace. The development of artificial intelligence must also not be separated from Islamic ethics.

Keywords: *Artificial Intelligence, Communication Media, Cyberreligion*

Abstrak Penelitian ini bertujuan untuk mendapatkan pengetahuan deskriptif mengenai kehadiran *cyberreligion* yang didalamnya membahas mengenai peran kecerdasan buatan sebagai media pembelajaran pendidikan agama Islam di era digital. Fenomena tersebut dikaji melalui jenis penelitian kualitatif dengan metode tinjauan literatur atau tinjauan pustaka. Metode pengumpulan data meliputi teknik dokumentasi dengan mencari data dari majalah, buku, berita media online, dan lain-lain. Hasil penelitian menunjukkan bahwa saat ini kecerdasan buatan menjadi media komunikasi pembelajaran bagi mata Pelajaran Agama Islam melalui berbagai cara, di antaranya: 1) pencocokan dan pencarian kata berbasis N-gram; 2) pencarian indeks Al-Quran; 3) peningkatkan akurasi jawaban pada sistem tanya jawab terjemahan Al-Quran; 4) aplikasi menghafal ayat-ayat Alquran; 5) portal Islam; 6) media sosial Islami; 7) file sharing; dan 8) obrolan islam di jagat maya. Perkembangan kecerdasan buatan juga tidak boleh terlepas dari etika Islam.

Kata Kunci: *Cyberreligion, Kecerdasan Buatan, Media Komunikasi*

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Introduction

The existence of the Internet due to the development of information and communication technology has become a challenge as well as an opportunity in learning Islamic religious education. It is not without reason that the Internet has developed into an important tool used all over the world for various purposes. This makes it easier for users to obtain and access information when they need it.

Based on We Are Social data, Indonesia's population is 272.1 million people. Interestingly, in 2020, Indonesia had 175.4 million internet users. Compared to the previous year, the number of internet users in the country increased by 17% or 25 million. This means that 64% or half of Indonesia's population has access to cyberspace. Internet users aged 16-64 who use a variety of devices, including mobile phones (96%), smartphones (94%), non-smartphones (21%), and laptop or desktop computers (66%), tablets (23%), game consoles (16%), and virtual reality devices (5.1%) (Kemp in Toni, 2021).

The Association of Internet Service Providers (APJII) also conducted its latest survey in November 2020, showing that the number of internet users in Indonesia increased to 73.2 percent of the population (or the equivalent of 196.7 million internet users) in the second quarter.

Based on data from the Central Statistics Agency (BPS), the number of users in Indonesia is almost 200 million people or 266.9 million people (Association of Indonesian Internet Network Providers Toni, 2021). Data on the number of Internet users reflects the high interest of the Indonesian people in the Internet based on the information they always seek and request. In addition, technological developments in the field of communications have shortened distances between regions. It serves as a driving force for further innovation in all social, economic, cultural, political and religious fields.

In the end, activity patterns to fulfill human needs, including fulfilling the learning needs for Islamic religious education, are influenced by the presence of technology and the internet. Previous research on the Internet and religion was conducted by Salman on this topic (Toni, 2021).

This shows how the presence of the internet has a big impact on people's da'wah activities, and cyberspace can be a medium for spreading the Islamic religion. Study of the characteristics of the Internet that enable messages to be conveyed to audiences (viewers) of different ethnicities and religions. Moreover, the presence of the Internet can be used as a mediation tool to present the face of Islam and avoid misunderstandings by certain groups regarding Islamic teachings.

This situation in turn shows a more democratic form of religion, where religious interpretations are more diverse and no longer monolithic (Rumadi in Toni, 2021). In other words, access to religious knowledge is no longer the property of religious elites or so-called ulama (Hasan in Toni 2021).

Everyone can easily access knowledge according to their preferences and needs. If you want answers to your questions, there is no need to contact the Ulama directly. Religious fatwas are no longer the exclusive right of traditional clerics. Now everyone can find answers and make decisions based on the information available in the media (Jinan in Toni 2021).

This phenomenon has led to the emergence of the term cyber religion to balance and utilize this technology. Now you can not only access the shows, but you can also easily learn (religious) lessons through online media equipped with pictures and tutorials, ranging from discussions of religious theory (fiqh and tafsir) to the practice of prayer and reading the Qur'an. According to Larsen's research (Toni, 2021), millions of Americans access religious news every day.

Pew Internet and the American Life Report Project have released new data showing that nearly two-thirds, or the majority, of Americans who go online use the Internet for spiritual or religious reasons. Sixty-four percent of Internet users engage in spiritual and religious activities online, representing approximately 82 million Americans. According to University of Colorado Boulder professor Stewart Hoover, lead author of the Pew Internet Project, the majority of people

access the internet for personal spiritual reasons, such as seeking outside their own traditions. He says his research shows that there is such a thing. This phenomenon shows a change in the role of spiritual teachers who are now being replaced by virtual humans. Online media users are generally academics: high school students and college students. To complete school or campus assignments or for personal purposes. However, quite a few people also use it to surf the internet. Based on this phenomenon, the author ties to study the role of artificial intelligence as a communication media for religious education learning in the digital era.

Methods

This research uses a method commonly known as a literature review (*library research*). Research activities include identifying problems to be studied systematically and analyzing documents containing data and information related to the research topic. Data collection methods include documentation techniques by searching for data from magazines, books, online news media, etc.

Results and Discussion

Challenges of Teaching Islamic Religious Education in the Digital Era

Education is a universal activity in human life. Islamic religious education is a conscious effort by the parties responsible for educating, guiding, developing and channeling the potential of children who function and play a role in accordance with their nature.

In the Islamic Religious Education Curriculum, Islamic Religious Education aims to strengthen and increase faith and foster piety and piety by instilling and developing in students knowledge, awareness, experience and experiences about Islam. In general, Islamic religious education aims to help students strengthen their faith, understanding, awareness and experience of Islam, so that they have faith and devotion to Allah the Exalted, and equip them with morals in their personal, social, national and state life.

The development of the Industrial Era 4.0 is a challenge for the world of education today, including learning Islamic religious education. Like it or not, teachers must be prepared to face increasingly complex challenges. The complexity of this challenge requires appropriate skills from teachers and the wider community. Therefore, people need to be educated because education is an inseparable part of human life and livelihood (Putra, 2019).

A. Malik Fajjar (in Putra 2019) said that currently there are three serious challenges: First, how do we protect ourselves from crisis attacks and what have we achieved. Second, education has a global feel. According to him, competition is needed at regional, national and international levels. Third, make changes and adjustments to the national education system to support a more democratic education process, pay attention to local needs and conditions, diversity of students, and encourage community participation.

Apart from the obstacles mentioned above, the problems facing our education are: First, past education management which put too much emphasis on cognitive aspects and ignored other aspects actually harmed the Indonesian nation. Apart from that, the challenge facing Islamic education in the Society 5.0 era is the lack of resources such as teachers, lecturers and other educational personnel available in the educational community.

Spiritual Needs for Students in the Digital Era

The existence of cyberreligions cannot be separated from the contribution of religious activists, ulama/chi, ulama, or missionaries as a counter to today's increasingly advanced digital communication technology. Islam as Rahmatan Lil'Alamin should be the solution to religious life. In other words, cyber religion answers the challenges of digital society in meeting spiritual needs.

The hope is that it can make it easier for people and students to study religion wherever they are, both at home and when traveling. Therefore, just because they are lazy about attending academic conferences, attending recitations, or studying at madrasas or Islamic boarding schools, there is no longer any reason why they cannot understand religion.

The digital era is a challenge that cannot be stopped. One way to overcome this is to change real communication patterns to virtual communication patterns and start spreading Islamic messages (guitar dawa) that penetrate time and space, changing complex cyber culture into practical cyber.

Of course, according to Malik (2021), this does not mean excluding and prioritizing scientific madrasas and ignoring ulama and murshid as parents and spiritual leaders. However, this is just a method of preaching that must be applied according to current needs. Because in reality the role of ulama will never be replaced by technological advances. The kyai's prayers for his students continue throughout his life, like the prayers of parents for their children. And most importantly, the blessing of student knowledge depends on the blessing of the teacher.

The Concept of Religious Expression in the Digital Era (Cyber Religion)

In the book *Cyberspace* by Niniek Suparni (Malik, 2021), the cyber era began in 1987 with 10,000 boarding house networks, which grew rapidly to 100,000 boarding house networks in 1989. Continuing until the early 1990s, current Internet practitioners continue to develop technology. This is to achieve a fast and efficient communication environment. Online media is currently one of the internet products that is popular with the public because of its various conveniences.

In simple terms, Malik (2021) defines cyber as electronic media in a computer network that is used as an online communication tool connected to any part of the world. Cyber usually called the virtual world. A place where people can get to know each other, communicate, interact and trust each other, beyond the boundaries of space and time. Meanwhile, religion is religion or things related to religion, from theory to practice of worship. Therefore, cyber religion can be interpreted as things related to religions that are presented in cyberspace or the online world. In other words, cyberreligion refers to religious knowledge that spreads across spatial and temporal boundaries to all corners of the world through online media and cyberspace.

On the other hand, "real religion" can be interpreted as religion that exists in the real world, not in cyberspace where religious knowledge exists and is disseminated through media that is not classified as new media. Brenda Brashear (in Malik, 2021) describes cyberreligion as religious messages sent via cyberspace (the Internet) which can be accessed anytime and anywhere. Apart from that, Lorne L. Downson (Malik, 2021) stated that the existence of religions/religious organizations only exists and originates from cyberspace.

From there, the life of virtual community groups (cybercommunities) was formed, in the end a new culture (cyberculture) was formed, namely a culture that determines community communities from generation to generation, including religious needs. If we define cyberreligion as religious activity, then cyberculture is the process of learning about religion.

According to Moch. Fakhrozi (Malik, 2021) explains that cyber religion in a broad sense describes the process of cultural virtualization in today's society, namely religion and culture. Cyber religion is the use of innovative advances in Internet information technology for religious purposes.

Definition and Brief History of Artificial Intelligence (AI)

The use of computers is intended to help people search for or obtain information quickly and easily. According to Amrizal and Aini (Nawi, 2021), the function of computers was initially only intended to process and display data collection results. However, current technological advances allow computers to have greater processing power, resulting in more accurate and faster results.

Through this approach, humans try to create intelligent systems that operate within machines. Although this intelligent system does not yet master all human intelligence, it will help machines think and learn like the human brain. This is where the term artificial intelligence or AI (artificial intelligence) was born. Artificial intelligence, or AI for short, is a system built into machines, such as computers and robots, that allows them to behave in ways similar to human nature. Examples: emotions, ability to think, remembering things, thinking, etc.

According to Shabbir and Anwer (Nawi, 2021), AI systems were developed to study human behavior and recognize the ability of machines to provide responses and responses like humans. Russell and Norvig (in Nawi, 2021) define AI as a program that allows machines to perform human-like functions, such as decision making, problem solving and prediction. If we look back, the term AI was first used by John McCarthy in 1956 when he was conducting research in the field of computer science at Dartmouth, USA (in Nawi, 2021).

Other researchers who participated in this discussion included Allen Newell, Herbert Simon, Marvin Minsky, and Oliver Selfridge. They discuss how systems within computers can imitate and make intelligent decisions like the human mind. The results of their research turned out to be very positive when AI development began in the late 1970s and early 1980s. McCarthy then attracted the attention of mathematician Alan Turing. Turing put forward hypotheses and questions about the ability of machines to think. He carried out several related tests and found that machines can think and learn like humans (Nawi, 2021). This test became known as the Turing Test.

This means that computers can think as well as or even better than humans. Even if a computer provides an answer, a person cannot differentiate whether it is a human computer or a human. The development of AI research has brought many benefits and advantages to human life. Research shows that AI technology systems can help prevent cancer in the medical field, assist with the process of investing and buying and selling shares in the economic and financial fields, and provide pilots with information about aircraft location, air pressure and local weather conditions. It has been proven that it can be done. Private tutors have been introduced to schools in educational areas such as aviation, unmanned vehicles and robot driving. AI also plays a major role in business (Nawi, 2021). According to Winfield and Jirotko (Nawi 2021), the presence of AI reduces various costs and minimizes human labor.

Islamic Views on the Development of Artificial Intelligence

Basically, Islam really values its people, so they are always the people represented in science and technology, both on stage and off stage. Therefore, technology works together with Islam and each other, providing benefits to everyone, including humanity and Muslims themselves.

Therefore, Muslims have the qualities of a scientist: critical (QS. Al-Isra/17: 36) and open to accepting the truth wherever the knowledge comes from (QS. Az-Zumar/39: 18) must be possessed. Always use your head and think critically (QS. Yunus/10: 10) (Budianto, 2021).

This leads to the fact that every Muslim must excel in the field of science and technology (IPTEK) as food that must be prioritized to achieve happiness both in this world and in the hereafter (QS. Al-Qashash/28: 77; QS. An-Nahl /16: 43; QS. Al-Mujadilah/58: 11; QS. At-Taubah/9: 122).

The Hadith of Rasulullah pbuh also recommends seeking knowledge, in line with the Al-Qur'an which emphasizes the importance of knowledge. He said in one of his hadiths: "*Whoever takes the path to seek knowledge, Allah will open for him the path to heaven*" (HR at-Tirmizi). He also said, "*Whoever goes out to seek knowledge, then he is on the path of Allah until he returns*" (HR at-Tirmizi) (Budianto, 2021).

The Role of Artificial Intelligence as a Communication Media for Learning Islamic Religious Education in the Digital Era

Religiosity is an individual's self-identification as a religious community in practicing the teachings of the religion they adhere to. Religion affects different people in different ways. This is motivated by various physical and psychological developments (Hamali in Toni, 2021).

Meanwhile, Hidayat (2020) revealed that there are many research papers that use artificial intelligence techniques to be applied to cases in the Islamic field. Al-Quran applications can be categorized into various types: search, digitization, and classification. In searching for applications, research was carried out within the Program of the Faculty of Computer Science Engineering, Faculty of Computer Science, Telekom University. "Analysis and Implementation of N-gram Based Word Matching and Searching in the Indonesian Translation of Al-Khur". The match-based search method makes it easy for you to find all clauses that contain the same entry word. Matching is more dynamic and flexible, unlike previous rule-based searches that were tailored to search keywords. N-Gram helps someone find information about certain words and combinations of words around them (Hidayat Nugraheni, Bijaksana, Dharmawyanto, 2020).

Another research conducted by Ferry Helwant from the Computer Science Research Program, Faculty of Communication and Computer Science, Muhammadiyah University of Surakarta, developed a web application with an Al-Quran index search function that displays characters, verses and topics. This application helps students quickly search for Al-Quran verses and characters as a legal basis and understand the contents of the Al-Quran. This application uses a database management system, MySQL, PHP, HTML and CSS programming languages, and Javascript. Providing application development opportunities by providing search functionality with similar words and keywords that have meaning, such as translation and index (Herwanto, Hernawan Sulistyanto, et al. in Hidayat, 2020).

Another thing was also done by Anisa Nurika from the Computer Science Research Program, Faculty of Computer Science, Sriwijaya University in research entitled "Query Expansion to Increase Answer Accuracy in the Indonesian Al-Quran Translation Question and Answer System". They are trying to improve the accuracy of retrieving results in the Al-Quran translation question and answer application by using the query extension method. The query expansion method uses a thesaurus based on co-occurrence analysis for query expansion (Nurika, Yusuriani, Mirasuwan, in Hidayat, 2020).

Furthermore, Budianto (2021) stated that in the field of Islamic religious education, artificial intelligence is used to create applications for memorizing verses of the Qur'an, and AI in online learning models helps students transfer knowledge, which is also said to be useful and knowledge is increasing. In addition, the use of artificial intelligence makes learning the Qur'an much more interesting, especially for children, compared to the traditional methods commonly used by many teachers in Indonesia.

Along with the rapid progress of technology, da'wah media also develops. Apart from education, we can also support research and development by making research that was initially difficult easier. One of them is data mining, which helps collect and predict the impact that social media may have, which also depends on the religious beliefs of social media users themselves. In addition, when searching for new technologies, it is possible to scientifically verify whether the technology is feasible based on the following scientific and technological theories and Islamic theories. Application to nuclear power, which may be an alternative source of electricity in the future. The results of this research can be used to find out facts in the field and find ways to predict them to minimize bad events and method inefficiencies. This is also introduced in the development of technology aimed at helping humanity (Budianto, 2021).

Another idea comes from Toni (2021). According to him, social media is also used in the learning process of Islamic religious education through digital media. Social media basically uses

an artificial intelligence algorithm system that identifies different religious expressions. This system can generally be classified into four broad categories, including:

- **Islamic Portal:** A portal can be understood as a website that displays various information, supported by various features and links to other, more specific websites. Likewise, Islamic portals are believed to strengthen online Muslim networks and play a role in network structure and expression of da'wah in a global context. Therefore, the Islamic portal is considered efficient because it can develop newer and more detailed religious knowledge and promote Islamic literacy through wider sources.
- **Islamic Social Media:** Islamic social media can be defined as a social network where users can create their own profiles either publicly or not in a system that formally articulates their relationships with other users. Likewise, various social media such as Facebook, Instagram and Twitter can provide community-based online friendships, which are provided in existing discussion forums. Through this group or community, Muslims carry out da'wah activities, for example sharing religious information.
- **File sharing:** Another form of da'wah activity on the Internet is file sharing, which is a place to share files in various formats, ranging from documents, videos, audio and Islamic software. In general, there are two types of file sharing methods: direct download and torrent download. One website that is classified as file sharing is YouTube.com. This resource is intended as an alternative way to share Islamic videos related to Muslims. This website also allows anyone to upload and download videos in .flv (Flash Video) format to MP4 format and redistribute them in online or offline contexts.
- **Islamic Chat:** Another service that is also gaining great popularity is online chat. This is a feature that allows Internet users to chat with other users in chat rooms, either text-based or via video conference. Therefore, the Islamic chat referred to here is a web-based chat facility specifically intended to discuss Islamic topics and the fifth is Islamic applications (Islamic apps). In general, Islamic applications can be divided into two large groups with different development directions. Firstly, the group's website is basically positioned as an Islamic resource that not only provides applications and software, but also includes documentation, software and many other functional services. This group can be operated from a personal computer (PC). Second, the group operationally operates these applications through providers such as the Play Store and App Store, and these applications are run via smartphones rather than PCs (Fakhruroji in Toni, 2021).

The Importance of Islamic Religious Ethics in the Development of Artificial Intelligence

It is important to remember that the influence of Islamic ethics on the use of digital technology does not only include individual behavior in using the technology, but also influences the process of technological development itself. In Islam, ethical values must be incorporated into the design and development of digital technology (Hasan et al., Nugraha, 2023).

This means that technology developers and designers need to consider the ethical implications of the technology they develop and ensure that the technology is consistent with Islamic values. In summary, Islamic ethics has a significant impact on the use of digital technology. Islamic ethical principles such as trust, honesty, common good, and privacy provide valuable guidance for the Muslim community on how to use digital technology responsibly and ethically.

In responding to various challenges and ethical problems posed by the use of digital technology, the Muslim community can utilize Islamic teachings to guide wise behavior in the era of rapidly developing digital technology. There is a close relationship between the concept of Islamic ethics and the use of digital technology.

Islamic ethics emphasizes responsibility, integrity and general welfare in all aspects of life, including the use of digital technology. This means that the Muslim community must use digital technology responsibly and pay attention to its impact on individuals and society.

Islamic Ethics provides valuable guidelines and principles to support Muslim communities in the responsible and ethical use of digital technology. One of the most important principles of Islamic ethics is the principle of 'amana' or authenticity. Regarding the use of digital technology, this principle emphasizes that the technology used by individuals must be considered a trust from Allah and therefore users must be responsible for its use (Mohammad & Fauzi in Nugraha, 2023).

This means the Muslim community must use technology responsibly and consider its impact on themselves and others. Furthermore, Islamic ethics also calls for the use of digital technology by considering integrity and moral values. Islamic ethical principles such as honesty, fairness and trust must be reflected in our actions when using digital technology.

The concept of Islamic ethics regarding digital technology also includes views regarding the common good. The use of digital technology must provide benefits to society as a whole, and not only to the interests of certain individuals or groups. Islamic ethics emphasizes that technology must bring positive benefits to society and not harm other people.

Islamic ethics also provides clear guidelines in terms of data protection and security. The Islamic concept of "sitr" teaches the importance of maintaining privacy and boundaries when dealing with other people (Ahmed & Emad, Nugraha, 2023). Therefore, when using digital technology, the Muslim community must ensure that their personal data and other sensitive information is adequately protected and not misused.

Conclusion

The research results show that currently artificial intelligence has become a learning communication medium for Islamic religious subjects through various methods, including: 1) N-gram based word matching and searching; 2) search for the Qur'an index; 3) Increasing the Accuracy of Answers in the Al-Quran Translation Question and Answer System; 4) application for memorizing verses of the Qur'an; 5) Islamic Portal; 6) Islamic Social Media; 7) File Sharing; and 8) Islamic Chat in the Virtual Universe. The development of artificial intelligence must also not be separated from Islamic ethics. Islamic ethical principles such as trust, honesty, common good, and privacy provide valuable guidance for the Muslim community on how to use digital technology responsibly and ethically.

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